



Evaluation Report

NON - CBI

**Central Boiler, Inc. and WoodMaster Inc. (an
affiliate of Central Boiler, Inc.)**

500 Series (CB 560.1 and WM 500.1)

Report Number: 0117WB043E

OMNI-Test Laboratories, Inc.

Product Testing & Certification

www.omni-test.com



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Evaluation Report

Particulate Emissions of a Wood-Fired Outdoor Hydronic Heater type.

NON - CBI

Central Boiler, Inc. and WoodMaster Inc. (an affiliate of Central Boiler, Inc.)

models: Classic Edge 560.1, CleanFire 500.1

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**

AUTHORIZED SIGNATORIES

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2/3/2025

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TABLE OF CONTENTS

1 INTRODUCTION.....	6
1.1 Purpose of Test Program	6
1.2 Executive Summary.....	6
 2 MATERIALS AND METHODS	 7
2.1 Test Methodology.....	7
2.2 Description of Appliance Under Test and Model Variants.....	8
2.3 Appliance Installation.....	13
2.4 Appliance Conditioning.....	17
2.5 Dilution Tunnel.....	18
2.6 Particulate Sampling Systems.....	19
2.7 Particulate Sampling Probes and Filters	19
2.8 Flue Gas Sampling Equipment.....	21
2.9 Gravimetric Analysis Equipment.....	21
2.10 Test Fuel Acquisition.....	22
2.11 Specific Manufacturer Written Instructions.....	23
 3 TEST RESULTS	 27
3.1 Summary Tables.....	27
Table 1 - Particulate Emissions and Delivered Heat Output by Test Run.....	27
Table 2 - Burn-Rate Categories.....	27
Table 3 - First Hour Particulate Emissions by Test Run.....	27
Table 4 - SLM Efficiencies (CSA B415.1:22) by Test Run.....	27
Table 5 - Test Facility Conditions by Test Run.....	28
Table 6 - Preburn Fuel Load Properties by Test Run.....	28
Table 7 - Test Fuel Properties by Test Run.....	28
Table 8 - Dilution Tunnel Gas Measurements by Test Run.....	28
Table 9 - ASTM E2618 Test Parameters by Test Run.....	29
Table 10 - ASTM E2618 Test Results by Test Run.....	29
Table 11 - Year-Round Use Weighting, PM Emissions and Efficiencies.....	29
Table 12 - Heating Season Weighting, PM Emissions and Efficiencies.....	29
Table 13 - Year-Round Use Weighting, Carbon Monoxide Emissions.....	30
Table 14 - Heating Season Weighting, Carbon Monoxide Emissions.....	30
 4 DISCUSSION	 31
4.1 The Test Series	31

TABLE OF CONTENTS

Continued

4.2 Individual Test Run Narratives.....	33
Test Run 1 - Category IV	33
Test Run 2 - Category III	36
Test Run 3 - Category II	39
Test Run 4 - Category I	42
5 TEST DATA AND CALCULATIONS	45
Run 1.....	46
Run 2.....	127
Run 3.....	245
Run 4.....	416
Tares.....	690
Water Flow Sensor Verifications.....	694
6 APPLIANCE ENGINEERING DRAWINGS (CBI Report Only).....	695
7 APPLIANCE LABELING AND INSTALLATION / OPERATION MANUAL(S)..	696
8 QUALITY ASSURANCE / QUALITY CONTROL.....	851
8.1 OMNI's Quality Statement.....	851
8.2 Manufacturer's Quality Assurance Plan (CBI Report Only).....	852
8.3 Equipment List and Calibrations.....	853
8.4 Archived Test Specimen.....	893
9 REFERENCES.....	896
10 APPENDICIES.....	897
Appendix A - Appliance Conditioning Data	898
Appendix B - EPA 30-Day Notice of Testing.....	1013
Appendix C - EPA ALT-154.....	1018
Appendix D - Laboratory Analysis of Test Fuel.....	1022
11 REVISION HISTORY.....	1026

1. INTRODUCTION

1.1 Purpose of Test Program

The Central Boiler, Inc. 500 series Wood-Fired Outdoor Hydronic Heater type is an appliance designed for use in residential heating applications and is identified as being an affected facility under the US Environmental Protection Agency's jurisdiction (EPA SCC code 2104008610) and is subject to the US EPA's performance requirements. Central Boiler, Inc. and WoodMaster Inc. (an affiliate of Central Boiler, Inc.) contracted with OMNI to test the particulate emissions of the appliance in accordance with EPA regulations.

Testing was performed by OMNI at OMNI-Test Laboratories facility located at 13327 NE Airport Way - Portland, Oregon (45.563° latitude, -122.525° longitude and at an altitude of 30 feet above sea level). The unit was received in good condition and logged in on 11/25/24, then assigned and labeled with OMNI ID #2495. OMNI representative Riley Tiegs, Tony Tong and Ken Morgan conducted the certification testing and completed all testing by 12/07/24. This report is organized in accordance with the EPA-recommended outline and its format is characterized in the Table of Contents immediately preceding this section. The results in this report are limited to the item submitted.

1.2 Executive Summary

Year-Round Use Weighted Average Emissions-Rate :	0.075	lb./MMBtu.
Tested Heat Load Range :	24564 - 171956	Btu/hr.
Weighted Year-Round Efficiency:	80.6	%
Stack Loss Efficiency (<i>Straight Arithmetic Average</i>):	82.2	%
Average Carbon Monoxide Emission Rate:	1.83	g/min

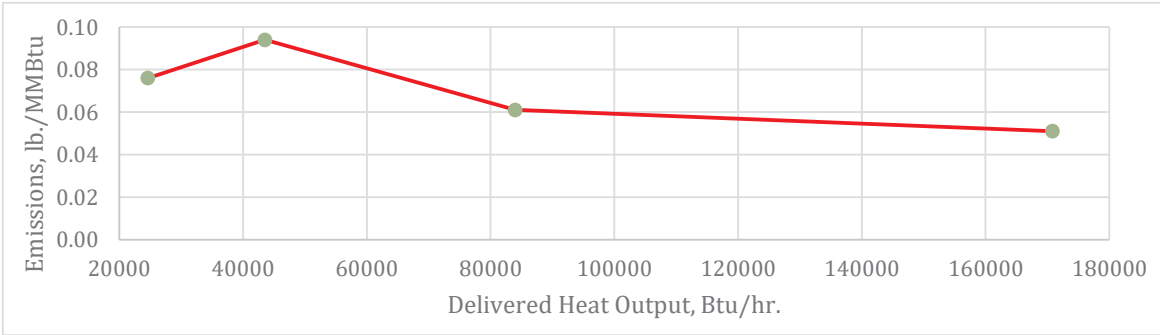


Figure 1 - Emissions Plot by Delivered Heat Output Rate

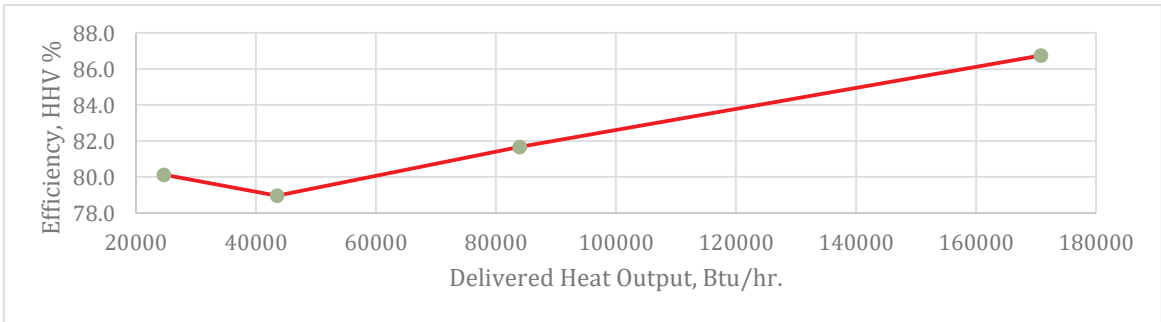


Figure 2 - Efficiency Plot (HHV) by Delivered Heat Output Rate

2. Materials and Methods

2.1 - Test Methodology

The testing methodology used for the evaluation of the appliance described in this report is composed of four distinct aspects:

- **Particulate Matter Emissions:**

The 500 Series (CB 560.1 and WM 500.1) Hydronic Heater was tested in accordance with the U.S. EPA 40 CFR Part 60, Subpart QQQQ – Standards of Performance for New Residential Wood Heaters using ASTM E2515-11 "Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel".

- **Appliance Operation Procedure:**

The 500 Series (CB 560.1 and WM 500.1) Hydronic Heater was fueled and operated following written instructions from the manufacturer and in accordance with ASTM E2618-13 "Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances". Tests were performed at the four heat output categories as follows:

- **Category IV:** Manufacturer's Rated Heat Output Capacity
- **Category III:** Heat Output 25 To 50% of Manufacturer's Rated Heat Output Capacity
- **Category II:** Heat Output 16 To 24% of Manufacturer's Rated Heat Output Capacity
- **Category I:** Heat Output less than 15% of Manufacturer's Rated Heat Output Capacity

- **Stack Loss Efficiency and Carbon Monoxide Emissions:**

Stack-loss efficiencies and carbon monoxide emissions were evaluated following CSA B415.1:22 "Performance testing of solid-biofuel-burning heating appliance". It is also used to calculate the emissions of carbon monoxide. Example calculations for CSA B415.1:22 are not provided in this report because OMNI uses software provided by CSA (version 2.4). Printouts of the software's reporting is provided in the test data section of this report for each test run.

- **Applicable Alternate Test Method(s):**

ALT -154 was used during this evaluation. See Appendix C for a copy of this alternate method.

2.2 Description of Appliance Under Test

The Central Boiler, Inc. 500 series are manually-fed cordwood-fueled hydronic heating appliances intended for residential installation and use.

The appliance is designed to heat and circulate water in a closed loop, supplying energy to an existing hydronic system. Its heavy gauge steel structure consists of a large, roughly rectangular firebox constructed of either carbon steel or titanium enhanced stainless steel and is surrounded by a water jacket. The unit is well insulated and protected by an outer sheet metal skin designed for outdoor installation.

A model variant is the CleanFire 500.1 by WoodMaster. There is no difference other than the model designation and color scheme for marketing purposes.



Figure 3 - model Classic Edge 560.1 Frontal View

Air Introduction System

Combustion air is regulated by a blower and multiple electric-actuated dampers which supply air to various parts of the firebox. Airflow through the firebox is “downdraft.” This means that when operating properly, this design gasifies the wood fuel in the upper portion of the firebox and burns this gas below the firebox in the Gasification, or "Reaction" Chamber. Flue gasses are routed through the heat exchanger and exit through an 6” (ID) flue opening at the upper area of the rear of the unit.

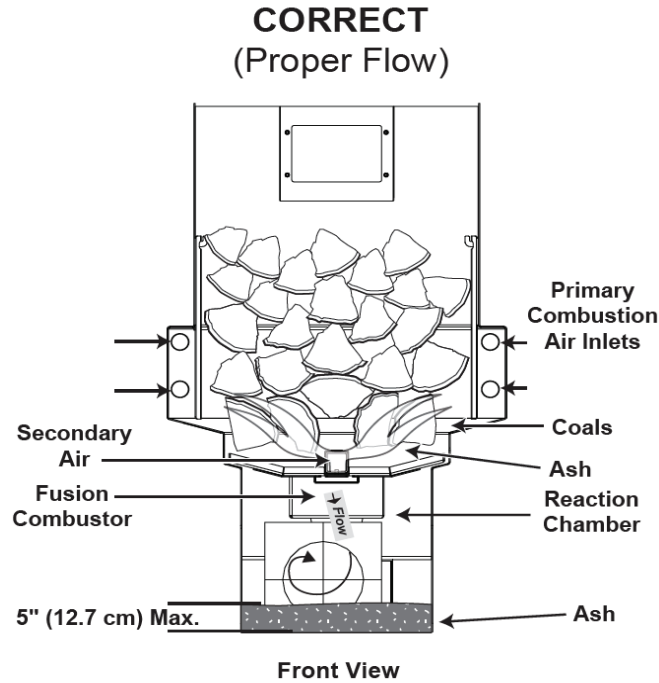


Figure 4 - Fuel, Combustion Air Path and Combustion Chamber relevant locations

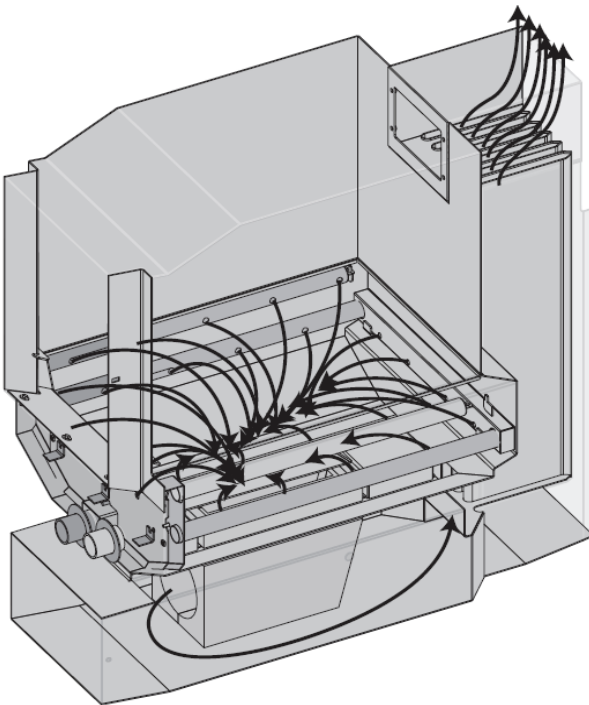


Figure 5 - Air Flow Diagram

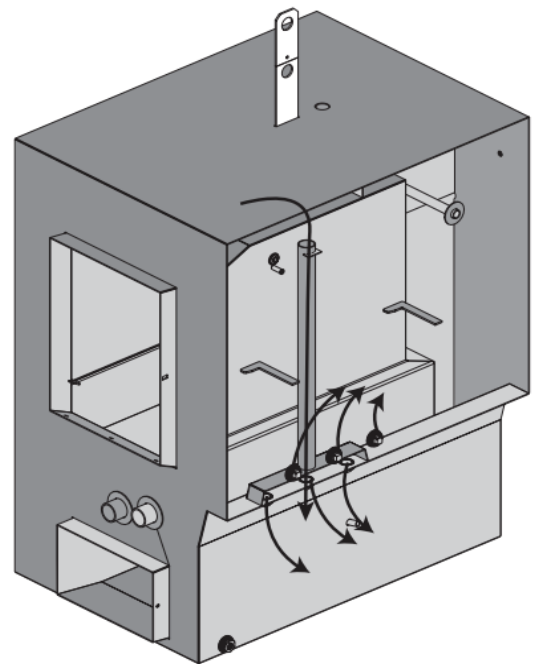


Figure 6 - Water Flow Diagram

The appliance responds to heat demand by cycling the combustion blower on and off depending on water temperature. Combustion air dampers actuate in response to combustion gas temperature in order to promote low emissions output and efficient operation. The water temperature set point is user adjustable.

Flue Outlet:

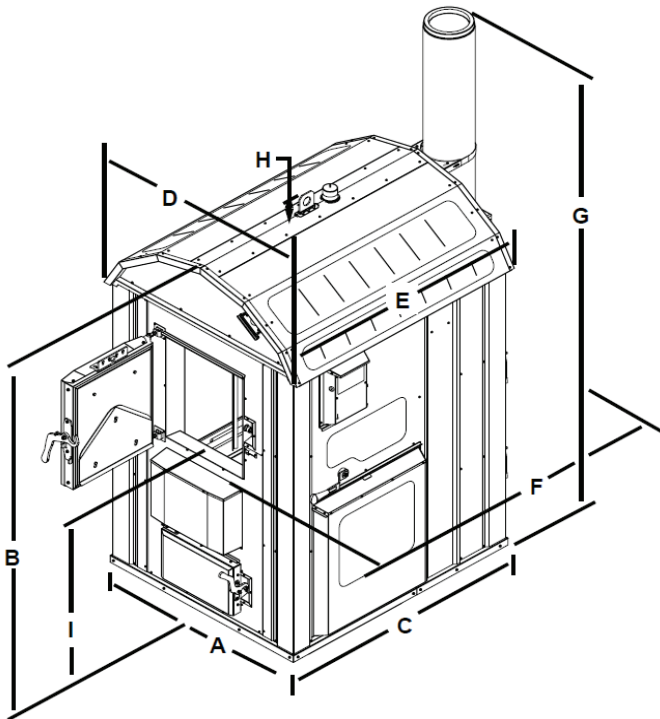
The 6” diameter flue exits the appliance on the back side, near the top. A built-in TEE section provides ready addition of vertical 6" solid-pack chimney sections.

Other Features:

Other features of the Classic Edge 560.1 include over temperature protection, atmospheric pressure vent for water circuit, network-enabled temperature logging and a gasification chamber access door.

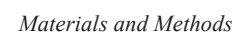
Appliance Dimensions and Capacities

Overall Height	76	inches
Overall Width	42.5	inches
Overall Depth	55.5	inches
Overall Depth (Including Chimney)	73.5	inches
Dry (Empty of water) Weight	1823	pounds
Wet (filled with water) Weight	3486	pounds
Water Jacket Capacity	200	gallons (nominally)
Total Firebox Volume	15.1	cubic feet
Usable Firebox Volume	13.72	cubic feet
Fuel Load Capacity	165	pounds (nominally, based on 12 lb./ft ³ of firebox volume)
Manufacturer's Stated Maximum Output Rate	190,000	Btu/hr.

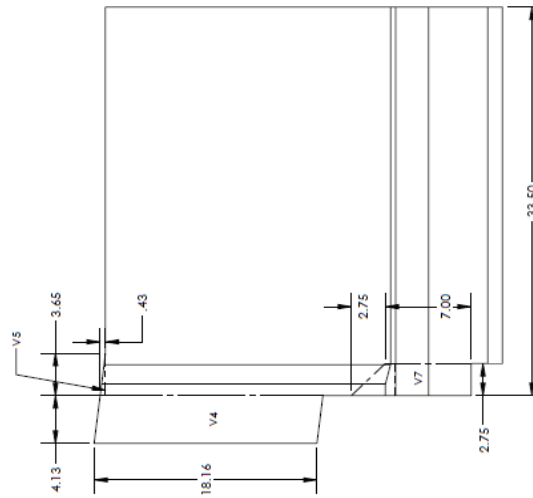
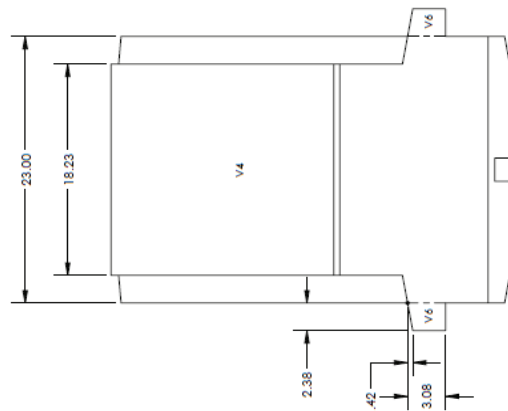
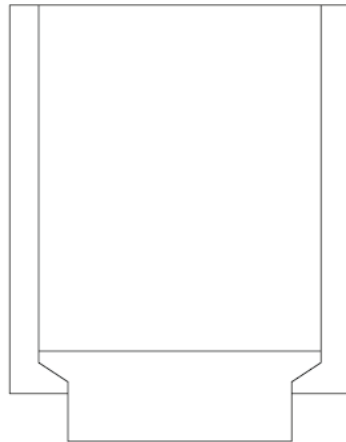


Classic Edge 560/560.1 Measurements									
	A	B	C	D	E	F	G	H	I
in.	42.5	76	55.5	45	56	73.5	151	5	37.5
cm	108	193	141	114	142	187	384	13	95

Firebox Volume Calculations



$V4 = 18.23 \times 18.16 \times 4.13 = 1367.26 \text{ in}^3$
 $V5 = 3.65 \times 43.23 \times 23 = 36.09 \text{ in}^3$
 $V6 = 3.08 \times 2.38 \times 33.50 = 245.57 - (2.38 \times 42 \times 33.50/2) = 228.83 \text{ in}^3$
 $V7 = 7.00 \times 23 \times 2.75 = 442.75 + (2.75 \times 2.75/2) \times 23 = 86.97 + 529.72 \text{ in}^3$
 Non-usable firebox volume = $V4 + V5 + V6 + V7 = 2390.73 \text{ in}^3 = 1.38 \text{ ft}^3$



IN DESIGN

[illegible]

2.3 Appliance Installation

The empty (dry) appliance was placed on a 5000 lb. scale that was zeroed beforehand and the weight of the appliance was noted. The scale was re-zeroed and the appliance was filled with water. The resulting weight was noted. The appliance was fitted with a section an 6-inch diameter solid-pack 103 HT type chimney that extended upward for a total system height of approximately 15 feet from the top of the platform scale. At a height of approximately 8 feet from the base of the appliance, a 3/8-inch diameter hole was drilled into the chimney for connection of the flue gas probe. Within 1 inch of this hole, a 3/16" diameter hole was drilled for the flue gas, which was a shielded Type K thermocouple. A 3/8" diameter hole was drilled into the lower portion of the chimney pipe within 1 foot of the appliance and a draft probe was inserted. Water lines for the Supply and Return connections between the boiler and heat exchanger were insulated and attached with a pump located in-line between the supply side of the heat exchanger input and the supply of the boiler.



Figure 7 - Central Boiler Classic Edge 560.1 installed in test structure and general work area



Figure 8 - Close-up of Classic Edge 560.1 installed in test booth



Figure 9 - Insulated Boiler Supply and Return Lines

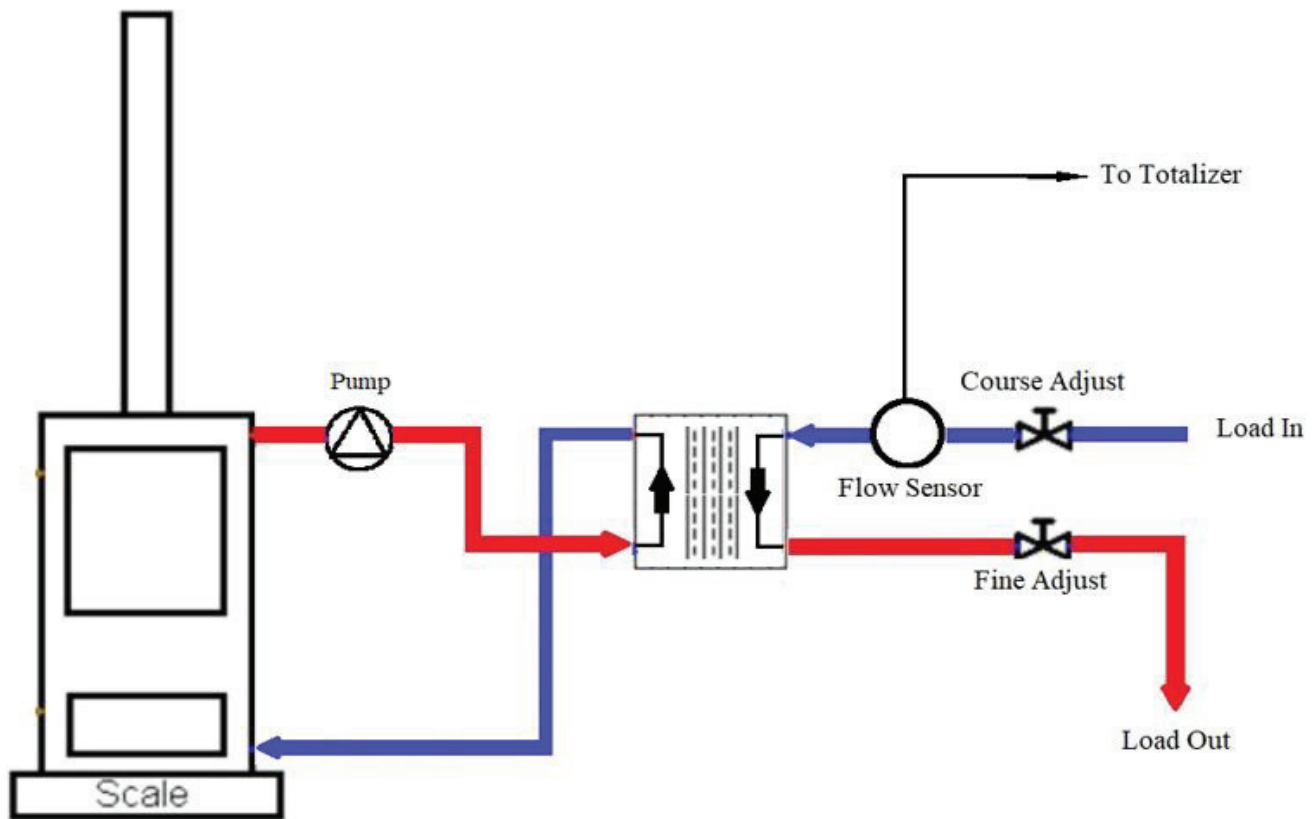


Figure 10 - Schematic of Heat Exchanger Plumbing

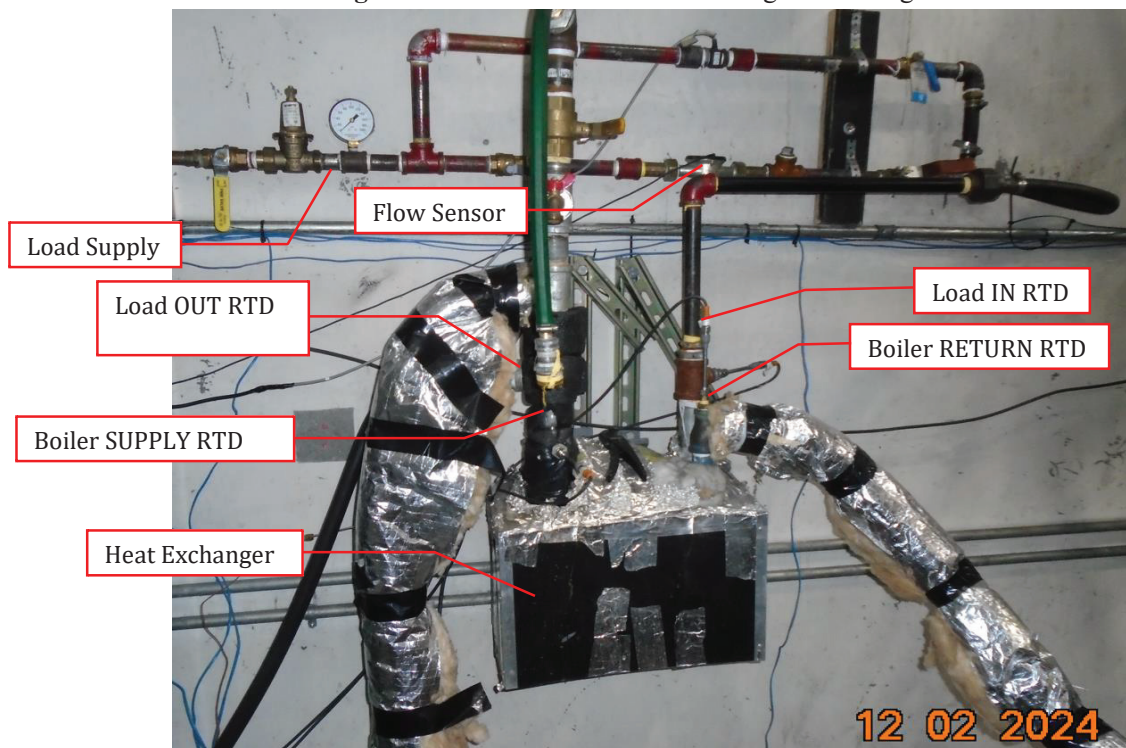


Figure 11 - Photograph of Heat Exchanger



Figure 12 - General Work Area, First Hour and Ambient Sampling Systems



Figure 13- General Work Area, Sampling Trains A and B and Water Flow DAQ systems



Figure 14- Broad View of General Work Area

2.4 Appliance Conditioning

Pre-test conditioning at a medium heat load for 84.9 hours was performed by the Central Boiler, Inc. staff at their facility in Greenbush Minnesota. This conditioning data has been placed in Appendix A of this report.

2.6 Particulate Sampling Systems

The sampling systems consisted of two independent datalogging systems, each managing two dry gas meters (a total of four dry gas meter sampling systems). One of the dual systems was designated for sampling of Trains A and B for the duration of test(s), and the other dual system was designated for sampling of the First Hour emissions with one dry gas meter system (Train C) and background ambient particulate (Train D) with the other. Each of these system trains were arranged identically and in accordance with Section 6 of ASTM E2515. The only exceptions are; 1) the pressure drop through an orifice on the exhaust end of each meter were monitored with a monometer to aid in identifying and responding to changes in the sample flow rates during operation as well as being used to account for internal meter pressures.

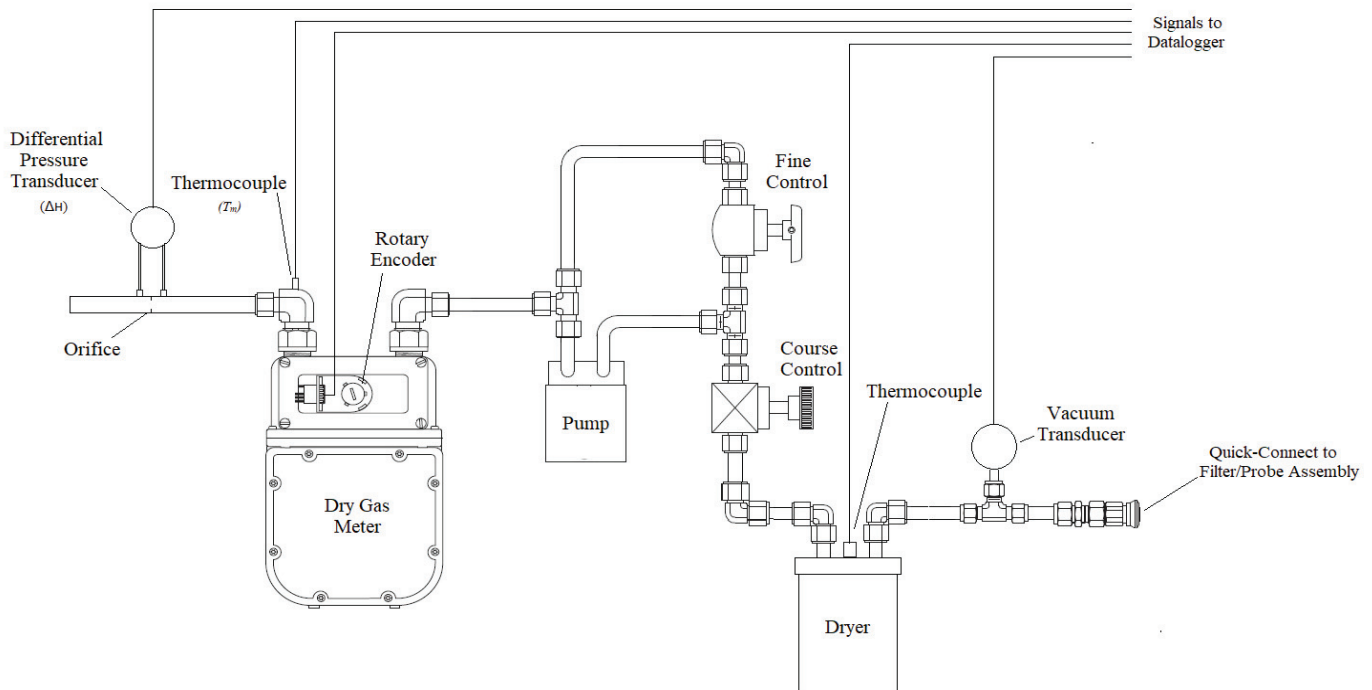


Figure 16 - Sampling System (typical) Used At OMNI-Test Laboratories

2.7 Particulate Sampling Probes and Filters

The probes used were 1/4" OD stainless steel. The probe holders used were aluminum, the O-ring seals used were 47mm x 3mm diameter Viton and the filters used were PALL A/E glass Fiber, 1μm, 47mm diameter.

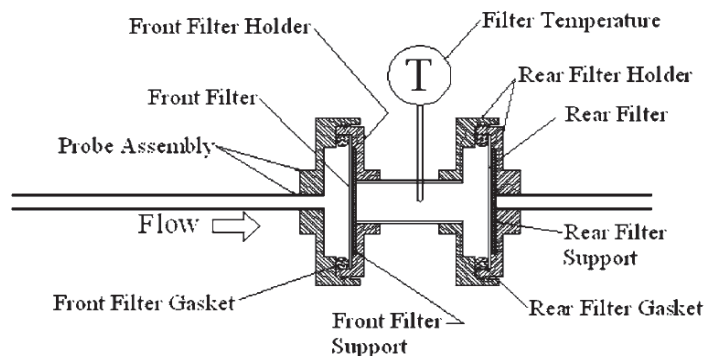


Figure 17 - Sample Probe Assembly as specified in ASTM E2515-11

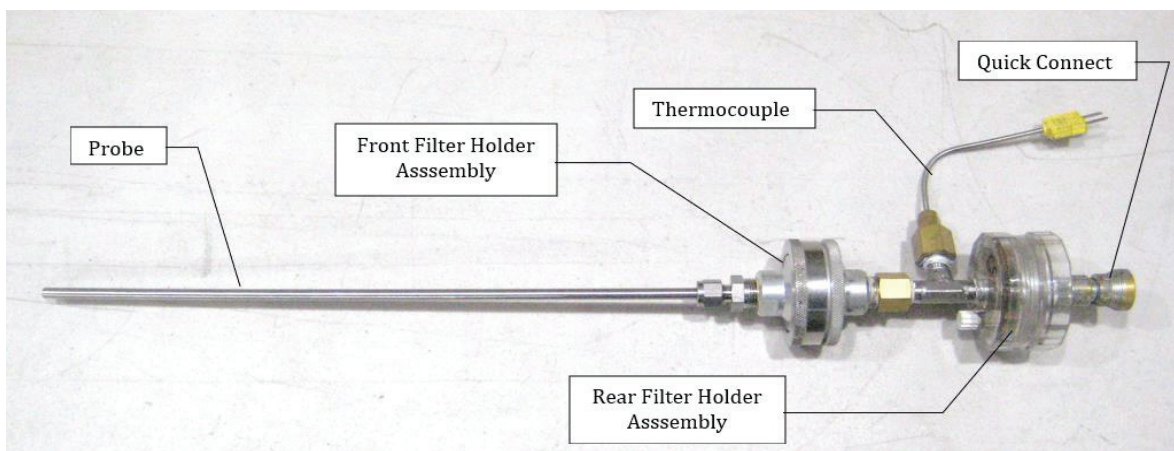


Figure 18 - Sample Probe used by OMNI

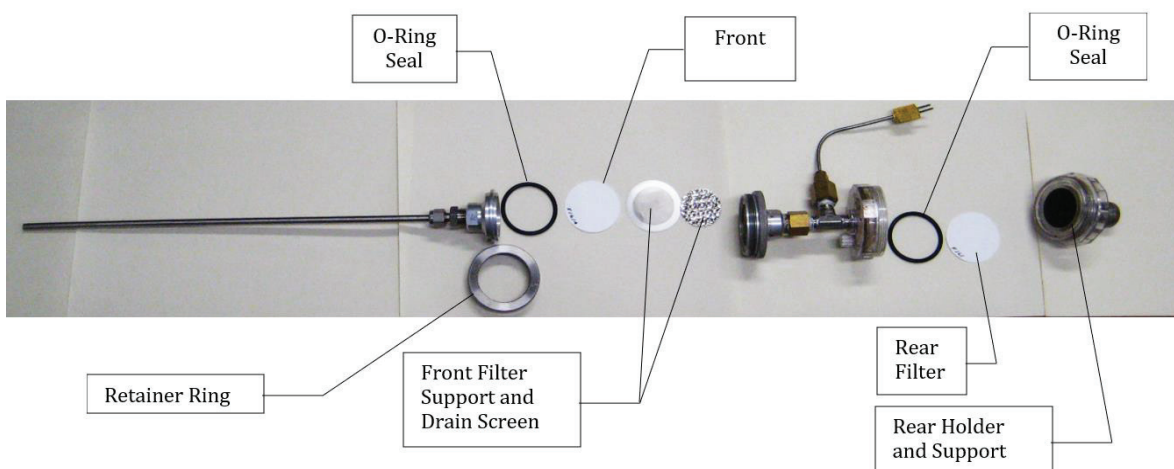


Figure 19 - Exploded View of Sample Probe Assembly used by OMNI

Clause 6.1.1 of ASTM E2515-11 requires that the filter face velocity shall not exceed 150 mm/sec (30 ft/sec). The O-ring seal covers a narrow portion of the perimeter of the filter thus reducing it's effective diameter from 47mm to 43mm. The area used in subsequent calculations of the filter face velocity is therefore based on 43mm diameter.



Figure 20 - Effective facial area of sample filter (file photo, not from the evaluation in this report)

2.8 Flue Gas Sampling Equipment

Carbon dioxide (CO_2) and carbon monoxide (CO) concentration measurements of the flue gases are required by CSA B415.1 to determine stack loss based efficiencies. Oxygen measurements are not taken as CSA B415.1 calculates oxygen empirically using mass-balance equations based upon the measured CO_2 and CO concentrations.

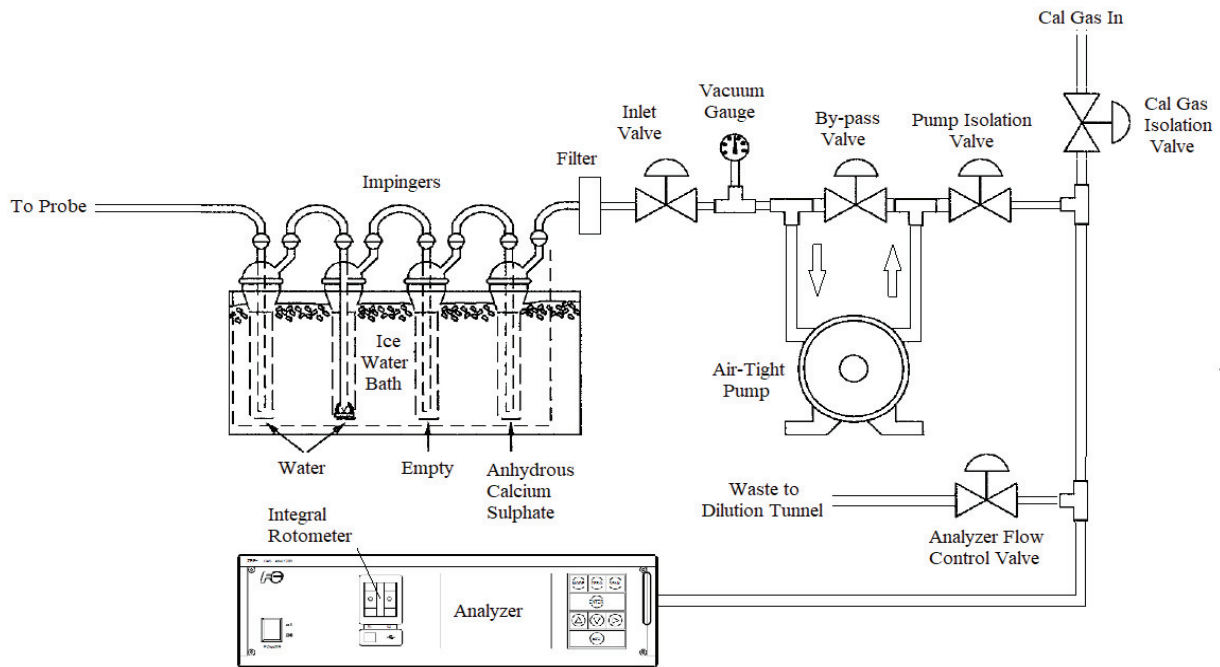


Figure 21 - Flue Gas Measurement System

2.9 Gravimetric Analysis Equipment

All taring of filters, Probes and O-Ring seals take place in a dedicated room for this purpose with ample facility for the preparation and handling of tared reagents as well as post-test processing. Upon test program completion, all filters are placed in plastic petri dishes, marked and stored for a period of 6 months.



Figure 22 - Analytical Scale and Desiccator

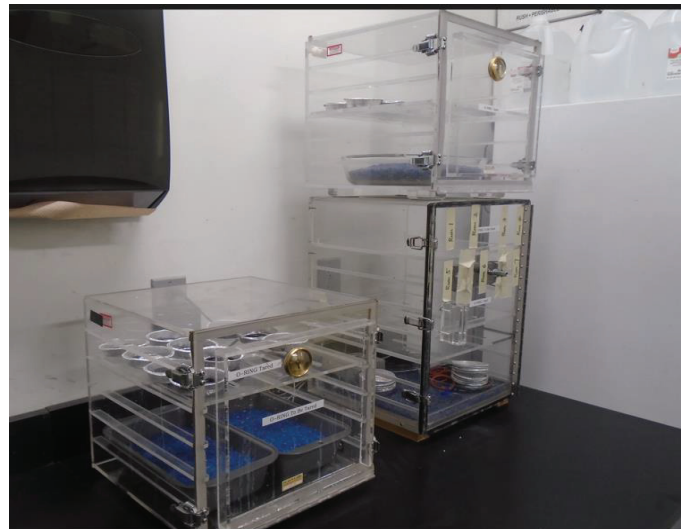


Figure 23 - Additional Desiccators

2.10 Test Fuel Acquisition

The fuel used for this test series was provided by the manufacturer and sent to OMNI at the same time as the appliance. The fuel species was Maple and the manufacturer had procured a laboratory analysis that was used for calorific values and elemental composition for use by CSA B415.1 (See Appendix D). This fuel supply was abundant enough to complete the entire test series. Few pieces were devoid of bark due to loosening with drying and handling, however the majority had retained their bark. The fuel was of good quality and devoid of any decay, moss or fungi.



Figure 24 - Typical bin of supplied fuel



Figure 25 - More fuel containers as shipped

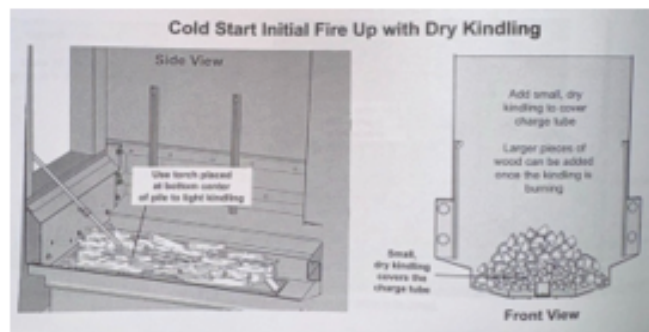
2.11 Specific Manufacturer's Written Operating Instructions

Classic Edge and CleanFire Operation Guide

The Following Information can be Found in your Owner's Manual

Cold Start Initial Fire Up with Dry Kindling

Open the firebox door and add small, dry kindling to cover the charge tube. Smaller kindling is preferred. It should be staggered and able to ignite and burn quickly for the initial fire. The intent is to make sure the combustion air will be able to flow past the charge tube and into the Reaction Chamber.



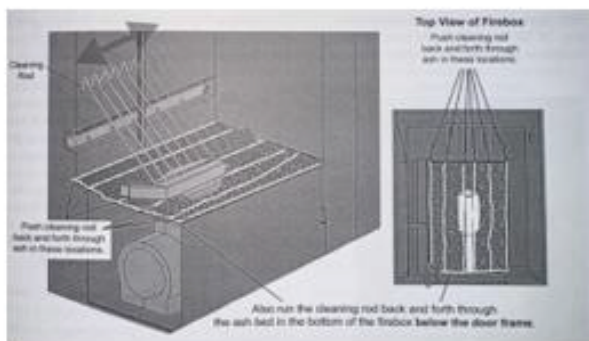
Wood Selection and Preparation

For the best results, it is best to burn seasoned split wood. However, it may be possible to burn some unsplit wood with the split wood depending on quality, size, moisture content and type. Properly seasoned wood has a moisture content of 20% or less. It is darker, has cracks in the end grain, and sounds hollow when smacked against another piece of wood. Most wood needs to be split to dry down to 20% within a year. Wood between 4" and 8" (10 and 20 cm) in diameter works well in most cases. Pieces of wood that are too large can reduce output capacity because they burn slower.

- Wood that works well in most cases:
 - Is between 4" and 8" (10 and 20 cm) in diameter
 - Is approximately 60-70% of the length of the firebox
 - Typically weighs 10-15 pounds per cubic foot for heavy heat loads
- Pieces of wood that are too large can reduce output capacity because they burn slower. Wood that is too long can cause bridging.
- Seasoned wood burns more efficiently, minimizes the amount of creosote formation, and reduces emissions.
- Maintain a quantity of smaller, drier pieces of wood for relighting the fire if the wood load is burned very low or becomes completely empty.

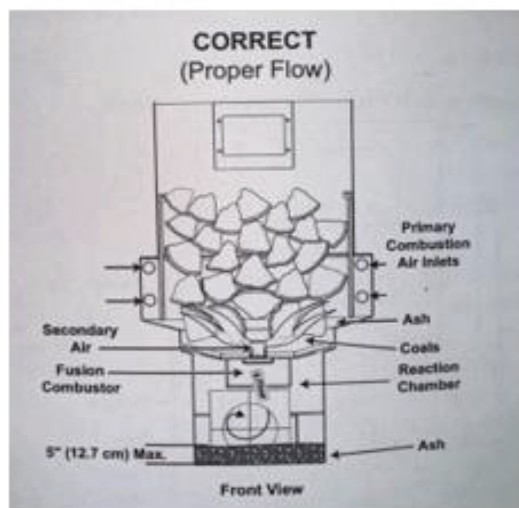
Stirring the Coal Bed

While it is important to not pack the charge tube with coals, it is equally important to bust up the coal bed and break down larger coals. When doing this, you must push the cleaning rod through the ash, coals, and remaining wood in the bottom of the firebox to loosen it up, including a pass on each side of the charge tube.



Combustion Gas Flow

A key point to remember about the operation of the Classic Edge and CleanFire is that as wood burns, the combustion gases flow down through the bottom of the firebox so the proper flow must be maintained as shown below:





Classic Edge 560.1 & CleanFire 500.1



Pre-burn Schedule

Btu/hr. draw at Max. capacity

- 0.0 lb. Add about 30 lb. of charcoal and/or small wood and initiate the burn
- Add roughly 30 lb. of small wood at a scale reading of 25 lb.
- Add around 40 lb. of small wood at a scale reading of 40 lb.
- Add approximately 40 lb. of small wood at a scale reading of 45 lb.
- Add about 40 lb. of small wood at a scale reading of 50 lb. Set heat Draw to Category to ensure at least 1 hour of readings.

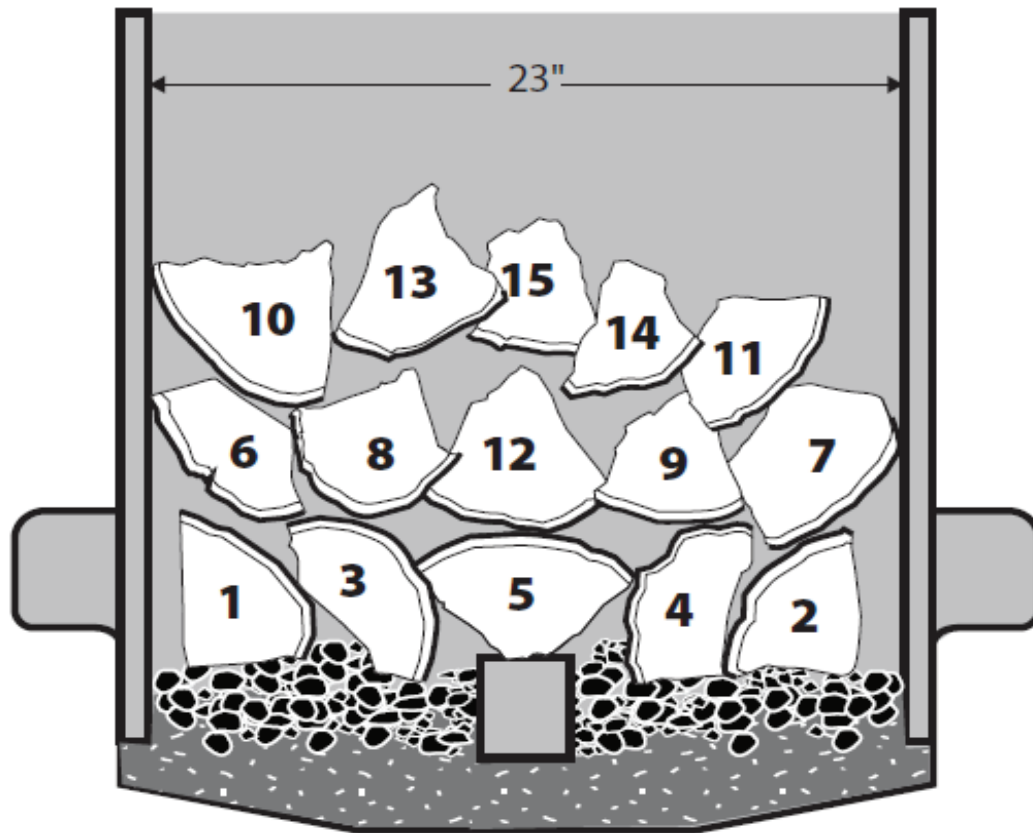
Note: Roughly 175 lb. Of preburn will be used.

- At a scale reading of about 35 lb., Analyze Burn (stir and level coals as necessary) ~3 lb. before preparing to load at a scale reading under 32lb.

Note: When stirring the coal bed, only fluff the top layer. Stirring the entire coal bed can cause the area around the charge tube to become packed with coals, resulting in poor combustion.

Example Wood Load Classic Edge 560.1/CleanFire 500.1

Volume = 13.72 ft³



- The above illustration is an example of the maximum number of logs for this firebox volume
- Average log weight will be approximately 11 lbs

Load Density = 12 lb/ft³
Target Load Wt. = 12 lb/ft³ x 13.72ft³ ≈ 165 lb

NOTE: "All test loads must follow Test Fuel Charge instruction/specifications as outlined in ASTM E2618-19 Section 12.2.3 and Table 2 and Figure 2"

3. Test Results

3.1 - Test Result Tables

Table 1 - Particulate Emissions and Delivered Heat Output, Sorted by load category

Run No.	Date	Heat Input Q _{IN} Btu (HHV)	Heat Input Q _{IN} Btu (LHV)	Heat Output Q _{OUT} Btu	HHV Efficiency η_{DEL} , %	LHV Efficiency η_{DEL} , %	Uncorrected ¹		Corrected ²		Test Duration θ , min
							ASTM E2515 Emissions (g/hr.)	Emissions Rate, Lb./MMBtu Output)	ASTM E2515 Emissions (g/hr.)	Emissions Rate, Lb./MMBtu Output)	
1	12/2/2024	1142061	1065668	990680	86.7	93.0	3.93	0.051	3.93	0.051	348
2	12/3/2024	1166786	1088739	952920	81.7	87.5	2.31	0.061	2.31	0.061	681
3	12/4/2024	1128188	1052723	890869	79.0	84.6	1.86	0.094	1.86	0.094	1228
4	12/5/2024	1158643	1081141	928391	80.1	85.9	0.85	0.076	0.85	0.076	2262
Averages		1148920	1072068	940715	81.9	87.7	2.24	0.071	2.24	0.071	1130

Table 2 - Burn-Rate Categories

Manufacture's Stated Max Output Rate:				190000	Btu/hr.
Run No.	Burn-Rate Category	Load Heat Output* (Btu/hr.)	Load Percentage (% of Max**)		
1	IV	171,956	90.50		
2	III	80,680	42.46		
3	II	41,710	21.95		
4	I	24,564	12.93		

*Represents heat output to load water only

**Maximum Manufacturer's Stated Rating

Table 3 - Particulate Emissions, g/hr., First Hour

Run No.	Uncorrected ¹	Corrected ²
1	0.62	0.62
2	2.38	2.38
3	6.64	6.64
4	7.99	7.99

¹ Uncorrected refers to gravimetric analysis that takes negative filter weights as a negative value in cases where filter residue was transferred to (stuck to) O-ring gaskets to account for the mass transfer.

² Corrected refers to gravimetric analysis where negative filter weights are taken as zero, thus reporting a higher value by over-reporting of transferred filter material. The corrected values were added to OMNI's reporting in response to a request by the US EPA.

Table 4 - B415.1 Efficiency and CO Emissions

Run No.	Heat Output (Btu/hr.)	Efficiency (%)		CO Emissions			
		HHV	LHV	g/kg	g/MJ	g/hr.	g/min
1	162980	82.7	88.8	4.97	0.31	53.19	0.89
2	84047	81.7	87.7	33.31	2.10	186.13	3.10
3	46256	83.9	90.0	45.03	2.77	134.9	2.25
4	24753	80.5	86.4	39.55	2.53	66.06	1.10
Averages	79509	82.2	88.2	30.72	1.93	110.07	1.83

Table 5 - Test Facility Conditions

Run No.	Room Temperature, °F		Barometric Pressure, in Hg		Room Air Relative Humidity, %		Room Air Velocity, fpm	
	Before	After	Before	After	Before	After	Before	After
1	59	66	30.31	30.32	41	34	8	5
2	61	63	30.32	30.32	34	33	15	6
3	65	62	30.28	30.38	32	31	27	37
4	64	62	30.36	30.10	33	34	25	17

Table 6 - Preburn Test Fuel load description

Run No.	Number of Pieces	Pre-Test Fuel Weight, lb.	Pre-Test Moisture %, Dry Basis	Coal Bed Weight lb.
1	14	180.0	19.7	31.9
2	12	174.0	20.6	27.3
3	15	176.5	21.3	31.0
4	13	180.0	21.6	28.9

Table 7 - Test Fuel Properties

Run No.	Mass lb., Wet	Mass, lb. Dry	Moisture content %, wb	Moisture content %, db	Length In.	Loading Density lb./ft ³	Direction ¹ E/W or N/S
1	166.3	136.80	17.75	21.59	22	12.12	N/S
2	168.5	139.77	17.05	20.6	22	12.28	N/S
3	165.7	135.15	18.44	22.6	22	12.08	N/S
4	168.8	138.79	17.78	21.6	22	12.30	N/S

¹ "E/W" means "East-West", meaning the lengths of the fuel pieces ran from right-to-left within the firebox relative to the firebox door opening. "N/S" means "North-South", meaning the lengths of the fuel pieces ran from front-to-back within the firebox relative to the firebox door opening.

Table 8 - Dilution Tunnel Gas Measurements Summary

Run No.	Length of test, min	Velocity, ft/sec	Flow Rate, dscfm	Temperature °F
1	348	21.89	1014.8	72.9
2	681	21.39	994.1	71.0
3	1228	21.34	997.6	68.3
4	2262	21.095	987.2	65.9

Table 9 - ASTM E2618 Test Condition Summary

Category	Run No.	Load % Capacity	Load ¹ , Btu/hr.		% of Maximum ² Load	Test Duration, min	Wood Weight as fired, lb.	Wood Moisture, % db	British thermal units		
			Target	Actual					Input LHV	Heat Input HHV	Heat Output ³
I	4	< 15 % of max	< 28500	24564	12.93	2262	168.8	21.62	1081141	1158643	928391
II	3	16 - 24 % of max	30400 - 45600	41710	21.95	1228	165.7	22.6	1052723	1128188	890869
III	2	25 - 50 % of max	47500 - 95000	80680	42.46	681	168.5	20.6	1088739	1166786	952920
IV	1	Max Capacity	190000	171956	90.50	348	166.3	21.6	1065668	1142061	990680

¹ Refers to sum of interval measurements of heat taken away by heat exchanger

² Maximum means manufacturer's maximum stated rating

³ Total heat output means heat taken by heat exchange plus heat gains or losses of appliance and water mass over course of test.

Table 10 - ASTM E2618 Test Results Summary Table

Category	Run No.	Load Capacity, %	Min Return Water Temp, °F	Particulate Emissions					Delivered Efficiency (HHV)	SLM Efficiency (HHV)
				Total, g	lb./MMBtu Output	g/MJ Output	g/hr.	g/kg		
I	4	< 15 % of max	158.9	32.19	0.076	0.033	0.85	0.51	80.1	80.5
II	3	16 - 24 % of max	158.6	38.00	0.094	0.04	1.86	0.62	79.0	83.9
III	2	25 - 50 % of max	138	26.25	0.061	0.026	2.31	0.41	81.7	81.7
IV	1	Max Capacity	120.7	22.78	0.051	0.022	3.93	0.37	86.8	82.7
Averages			144.0	29.81	0.071	0.030	2.24	0.48	81.9	82.2

¹ Load refers sum of interval measurements of heat taken away by heat exchanger

Table 11 - Year-Round Use Weighting

Category	Weighting Factor (F _i)	LHV $\eta_{del,i} \times F_i$	HHV $\eta_{del,i} \times F_i$	SLM (LHV) Efficiency x F _i (%)	SLM (HHV) Efficiency x F _i (%)	E _{g/MJ,i} x F _i	E _{g/kg,i} x F _i	E _{lb/MMBtu Out,i} x F _i	E _{g/hr,i} x F _i
I	0.437	37.526	35.016	37.757	35.179	0.014	0.223	0.033	0.371
II	0.238	20.141	18.794	21.420	19.968	0.010	0.148	0.022	0.443
III	0.275	24.069	22.459	24.118	22.468	0.007	0.113	0.017	0.635
IV	0.05	4.648	4.337	4.440	4.135	0.001	0.019	0.003	0.197
Totals	1	86.384	80.606	87.734	81.749	0.032	0.502	0.075	1.646

Table 12 - Heating Season Weighting

Category	Weighting Factor (F _i)	LHV $\eta_{del,i} \times F_i$	HHV $\eta_{del,i} \times F_i$	SLM (LHV) Efficiency x F _i (%)	SLM (HHV) Efficiency x F _i (%)	E _{g/MJ,i} x F _i	E _{g/kg,i} x F _i	E _{lb/MMBtu Out,i} x F _i	E _{g/hr,i} x F _i
I	0.175	15.027	14.022	15.120	14.088	0.006	0.089	0.013	0.149
II	0.275	23.272	21.715	24.750	23.073	0.011	0.171	0.026	0.512
III	0.45	39.386	36.752	39.465	36.765	0.012	0.185	0.027	1.040
IV	0.1	9.296	8.674	8.880	8.270	0.002	0.037	0.005	0.393
Totals	1	86.982	81.164	88.215	82.195	0.031	0.481	0.072	2.093

Table 13 – Year Round Use Weighting – Carbon Monoxide Emission

Category	Weighting Factor (F_i)	Rate (g/hr.), Unweighted	Rate (g/hr.) x F_i	Rate (g/min), Unweighted	Rate (g/min) x F_i
I	0.437	66.06	28.87	1.10	0.48
II	0.238	134.90	32.11	2.25	0.54
III	0.275	186.13	51.19	3.10	0.85
IV	0.05	53.19	2.66	0.89	0.04
Totals	1	440.28	114.82	7.34	1.91

Table 14 – Heating Season Weighting - Carbon Monoxide Emission Rates

Category	Weighting Factor (F_i)	Rate (g/hr.), Unweighted	Rate (g/hr.) x F_i	Rate (g/min), Unweighted	Rate (g/min) x F_i
I	0.175	66.06	11.56	1.10	0.19
II	0.275	134.9	37.10	2.25	0.62
III	0.45	186.13	83.76	3.10	1.40
IV	0.1	53.19	5.32	0.89	0.09
Totals	1	440.28	137.74	7.338	2.30

4. Discussion

4.1 The Test Series - Started December 2, 2024

The plan for this test series required a minimum of 4 test runs:

- * A load demand within $\pm 10\%$ of manufacturer's stated capacity (Category IV)
- * A load demand of 25-50% of manufacturer's stated capacity (Category III)
- * A load demand of 16-24% of manufacturer's stated capacity (Category II)
- * A load demand of less than 15% of the manufacturer's stated capacity (Category I)

The tests were performed in descending order of load demand (Category IV to Category I). No additional tests were required. The dilution tunnel was partially dismantled and cleaned on November 22, 2024 in advance of the test series.

For the first test of this series, a large kindling fire with scrap fuel was created within the cold appliance and allowed to burn somewhat robustly with the intent of driving out any moisture mass that may have accumulated in the appliance refractory materials and to pre-heat system to some degree. All coals and ashes were removed from the appliance and the scale re-zeroed. Subsequent tests did not require any cold-start kindling as the heat and readily ignitable coals remaining from the previous test was sufficient to light the newly added pre-burn charges. Before each pre-burn all coals and ash were removed, the scale re-zeroed, then sufficient coals added back to provide ignition of the preburn.

For the preburn fuel for all of the tests, nominal 22 -inch length pieces of fuel were randomly selected and measured for moisture content and weight. When a suitable mass of preburn fuel was produced, the pieces were cut roughly in half and some of the larger ones were further split. Typical preburn charges weighed nominally 165 lbs. ($\pm 10\%$) and were administered to the appliance in 20-40 lb. doses. Cutting the pieces into smaller chunks and administering in partial doses ensured a more even and uniform coal bed at the end of the preburn with minimal stirring. The load placed upon the appliance during the entire last hour of each preburn was at the target load draw for the respective test category to be performed.



Figure 26 - Typical Pre-Burn Pieces

OMNI personnel present and participating in the testing were Riley Tiegs, Tony Tong and Ken Morgan. Due to the length of the tests, varying number of OMNI team members were required resulting in multiple signatures in the written notes.

Manufacturer representatives Mark Reese, Justin Voecks and Kohl Zak were present for the majority of the test program departing on 12/05/24. Their presence was to inspect the initial set-up and to observe the tests that were performed.

The manufacturer's written instructions were that of what is contained within the owner's manual, a guide for preburn activities and a generalized visual representation of how the test load should appear within the firebox when loaded. The automatic nature of the appliance once a fire has been established required no further instruction.

Notes concerning CSA B415.1 "Stack Loss Method" versus delivered efficiencies

ASTM E2618-13, clause 13.4.5.1 requires; *"Whenever the overall efficiency (SLM) is found to be lower than the delivered efficiency (del), as determined by Eq 20 of this method, 14.1.7 of the test report must include a discussion of the reasons for this result."*

In this test series, the first test (category IV) resulted in the B415.1 Stack Loss Method (SLM) efficiencies being slightly lower than that of the delivered efficiency.

Table 15 - SLM (HHV) vs. Delivered Efficiencies,

Run No.	Category	SLM	Del	Difference
1	IV	82.7	86.8	-4.1
2	III	81.7	81.7	0.0
3	II	83.9	79.0	4.9
4	I	80.5	80.1	0.4

Routine calibrations of the water flow meter and of the continuous gas analyzers proved that these systems were accurate and in good working order and therefore instrumentation is not believed to be the cause for these discrepancies. Conversations with the manufacturer revealed that this has been a topic of discussion in the past and that their prior conversations with relevant parties concluded that it is possibly due to the way that CSA B415.1 factors fuel consumption and flue gas composition on an interval basis. On an interval basis, there is a Q_{in} (weight of fuel consumed) and a Q_{out} (heated mass of flue gasses) that CSA B415.1 uses to derive efficiency. The Classic Edge 560.1 uses electric actuators to adjust air entry into the combustion chamber. By design, upon entering the off-cycle, the appliance is programmed to modulate the air (incrementally decrease air flow) in order "ween" the firebox into a minimal oxygen level instead of a sudden depletion that could otherwise lead to serious safety concerns. The resulting flushing of gasses emitted from the appliance during this modulation does not correspond with the fuel consumption in terms of how the CSA B415.1 spreadsheet is calculating losses. Closure of the electric actuators also results in ceasing of stack flow as it cools during the off cycle with no incoming air to displace it. Therefore, it is possible that the combustion control system of this appliance may produce data that does not necessarily have the predicted relationship between fuel consumed and CO_2 production on an interval basis that is expected by the CSA B415.1 software that is designed for appliances that do not have idle stages or off cycles.

Additionally, the CSA -provided spreadsheet only allows entry of 1000 intervals of data. Run 3 data was input in 2 - minute intervals and run 4 was entered in 3 -minute intervals as these tests exceeded 1000 minutes.

4.2 - Individual Test Run Narratives

Run 1 - December 2, 2024, Target 100% Manufacturer's Rated Capacity

Preburn

Prior to commencement of the pre-burn, the appliance was cold from being freshly filled with facility water (approximately 55° F.), and a fire was created within the appliance using scrap pieces of fuel and with no load applied in order to heat the water and steel of the appliance more quickly. The appliance side pump was active during this time to internally distribute the heat evenly. The appliance was fired with scrap fuel for some time, then the remaining coals and ash were removed and the scale re-zeroed. During the preceding warming-up of the appliance, a suitable fuel load weighing 165.6 lb. was produced. Once the scale was zeroed, 10.0 lb. of active coals from the warm-up were placed back into the fire chamber and 15.5 lb. of the pre-burn charge was added. Each time the pre-burn charge had burned-down to between 20 and 40 pounds, additional 30-40 pound batch was added. This was repeated until the last batch of the preburn fuel had been added.

Preburn Activities		
Time	Activity	Fuel, Subtotal, lb.
11:29	Added 15.5 lb. Fuel	15.5
11:47	Added 30.1 lb. Fuel	45.6
12:26	Added 38.6 lb. Fuel	84.2
13:10	Added 40.5 lb. Fuel	124.7
14:05	Added 26.6 lb. Fuel	151.3
14:47	Added 28.7 lb. Fuel	180.0

The target category for this test was a category IV, therefore the load placed upon the unit was the maximum for the duration of the pre-burn. The only constraint with regard to the maximum load imposed on the boiler was to keep the boiler return temperature above 120° F as required by ASTM E2618 clause 12.2.9. The average load for the last hour of the preburn was 179,658 Btu/hr. with an average boiler return temperature of 127.8° F. It could be seen during the pre-burn that the boiler return temperature was trending downward slowly. By the end of the subsequent sampling portion of the test, the minimum boiler return temperature recorded was 120.7°, so this proved to be the maximum load that could be imposed on the boiler under laboratory conditions with respect to clause 12.2.9 of ASTM E2618.

The load output-rate for the last 60 minutes of the pre-burn was 179,658 Btu/hr. and the coal bed was 31.9 pounds.

Other activities during the pre-burn included preparation of the test fuel charge, assembly and leak-checking of the sampling probes, calibration of the continuous gas analyzers and velocity traverse measurements were made. Just before the end of the preburn, a calibration check of the water flow meter was conducted. Upon completion of the pre-burn, the remaining coals were raked and leveled and the platform scale was zeroed.

Run 1 - Sampling portion of test

Upon completion of the pre-burn and zeroing of the platform scale, the appliance was loaded and initiation of the sampling pumps were done simultaneously.

Sampling portion Start-up Procedures

- Bypass: Not used (Not needed, coals fully volatized)
- Fuel Loading: Fuel completely loaded by 65 seconds.
- Door: Fuel loading door closed at 70 seconds.



Figure 29 - Run 1 - Test Fuel



Figure 30- Run 1 - Freshly Loaded Appliance

At exactly one hour from the start of sampling, the first-hour (Sample Train C) was stopped and a leak check was immediately performed on it. The test continued without incident until it ended with zero mass remaining on the scale at 348 minutes from the start of the sampling portion of this test with a resultant load heat output rate of 171,956 Btu/hr. The target was a Category IV and the manufacturer's rated maximum heat output is 190,000 Btu/hr. ASTM E2618, clause 12.2.10 "Heat Output Capacity Validation" requires that a Category IV burn-rate be the first test in the series and that it must produce a heat output rate that is within 10% of the manufacturer's rated heat output capacity. This tested heat output was within 9.05 % of the rated manufacture's rated capacity and therefore qualifies as the Category IV test for this test series.

Upon completion of the sampling portion of the test, all remaining sampling trains (A, B and ambient background) were leak-checked. Other tasks performed were (but not limited to) leak checking of pitot tube, recording of environmental conditions, post-test verification of water flow meter, post-test verification of continuous gas analyzers and placement of disassembled sample probe elements in desiccator.

This test occurred without any anomalies. A review of all of the data indicates that no measurements or parameters specified in ASTM E2515 or ASTM E2618 were outside their respective specifications. This test run is considered valid and appropriate for inclusion in the test series.

Run 2 - Category III - December 3, 2024

Preburn

Prior to commencement of the pre-burn, all coals and ashes were removed and the scale was zeroed. Sufficient coals were added back to the appliance to assist in ignition of the preburn charge. Over the next 5.5 hours, the remainder of the preburn was added to the appliance in approximately 30 to 40 lb. batches at a time.

Preburn Activities		
Time	Activity	Fuel Added subtotal
9:23	Added 14.0 lb. Fuel	14.0
9:33	Added 43 lb. Fuel	57.0
10:09	Added 30.0 lb. Fuel	87.0
10:25	Stir	87.0
10:47	Added 35.5 lb. Fuel	122.5
11:39	Added 39.0 lb. of Fuel	161.5
11:58	Added 12.5 lb. of Fuel	174.0
12:58	Stir	174.0
13:52	Stir	174.0
14:45	Stir	174.0

The load output-rate for the last 60 minutes of the pre-burn was 90,134 Btu/hr. and the coal bed was 27.3 pounds.

Other activities during the pre-burn included preparation of the test fuel charge, assembly and leak-checking of the sampling probes, calibration of the continuous gas analyzers and velocity traverse measurements were made. Just before the end of the preburn, a calibration check of the water flow meter was conducted. Upon completion of the pre-burn, the remaining coals were raked and leveled and the platform scale was zeroed.

Run 2 - Sampling portion of test

Upon completion of the pre-burn and zeroing of the platform scale, the appliance was loaded and initiation of the sampling pumps were done simultaneously.

Sampling portion Start-up Procedures

Bypass: Not used (Not needed, coals fully volatized)
Fuel Loading: 58 seconds
Door Closed: 65 seconds



Figure 31 - Run 2 - Test Fuel



Figure 32 - Run 2 - Freshly Loaded Appliance

At exactly one hour from the start of sampling, the first-hour (Sample Train C) was stopped and a leak check was immediately performed on it. The test continued without incident until it ended with zero mass remaining on the scale at 681 minutes from the start of the test and a resulting load heat output rate of 80,680 Btu/hr. The target was a Category III which ASTM E2618, clause 4.3.3 defines as "A heat output of 25 to 50% of the manufacturer's Rated Heat Output Capacity". This test was performed at 42.46% of the manufacturer's rated heat output capacity and therefore qualifies as the Category III test for this test series.

Upon completion of the sampling portion of the test, all remaining sampling trains (A, B and ambient background) were leak-checked. Other tasks performed were (but not limited to) leak checking of pitot tube, recording of environmental conditions, post-test verification of water flow meter, post-test verification of continuous gas analyzers and placement of disassembled sample probe elements in desiccator.

This test occurred without any anomalies. A review of all of the data indicates that no measurements or parameters specified in ASTM E2515 or ASTM E2618 were outside their respective specifications. This test run is considered valid and appropriate for inclusion in the test series.

Run 3 - Category II - December 4, 2024

Preburn

Prior to commencement of the pre-burn, all coals and ashes were removed and the scale was zeroed. Sufficient coals were added back to the appliance to assist in ignition of the preburn charge. Over the next 6 hours the remainder of the preburn was added to the appliance in approximately 30 lb. batches at a time.

Preburn Activities		
Time	Activity	Fuel Added subtotal
6:41	Added 19.0 lb. Fuel	19.0
6:49	Added 33.5 lb. Fuel	52.5
7:18	Added 32.0 lb. Fuel	84.5
8:22	Added 34.5 lb. Fuel	119.0
9:19	Added 34.0 lb. Fuel	153.0
10:33	Added 23.5 lb. of Fuel	176.5
11:23	Stirred	176.5

The load output-rate for the last 60 minutes of the pre-burn was 42,069 Btu/hr. and the coal bed was 31.0 pounds.

Other activities during the pre-burn included preparation of the test fuel charge, assembly and leak-checking of the sampling probes, calibration of the continuous gas analyzers and velocity traverse measurements were made. Just before the end of the preburn, a calibration check of the water flow meter was conducted. Upon completion of the pre-burn, the remaining coals were raked and leveled and the platform scale was zeroed.

Run 3 - Sampling portion of Test

Upon completion of the pre-burn and zeroing of the platform scale, the appliance was loaded and initiation of the sampling pumps were done simultaneously.

Bypass: Not used (Not needed as coals were fully volatized)
Fuel Loading: 65 sec.
Door Closed: 76 sec.



Figure 33 - Run 3 - Test Fuel



Figure 34 - Run 3 Freshly Loaded Appliance

At exactly one hour from the start of sampling, the first-hour (Sample Train C) was stopped and a leak check was immediately performed on it. The test continued without incident until it ended with zero mass remaining on the scale at 1228 minutes from the start of the test and a resulting load heat output rate of 41,710 Btu/hr. The target was a Category II which ASTM E2618, clause 4.3.2 defines as "A heat output of 16 to 24% of the manufacturer's Rated Heat Output Capacity". This test was performed at 21.95% of the manufacturer's rated heat output capacity and therefore qualifies as the Category II test for this test series.

Upon completion of the sampling portion of the test, all remaining sampling trains (A, B and ambient background) were leak-checked. Other tasks performed were (but not limited to) leak checking of pitot tube, recording of environmental conditions, post-test verification of water flow meter, post-test verification of continuous gas analyzers and placement of disassembled sample probe elements in desiccator.

This test occurred without any anomalies. A review of all of the data indicates that no measurements or parameters specified in ASTM E2515 or ASTM E2618 were outside their respective specifications. This test run is considered valid and appropriate for inclusion in the test series.

Run 4 - Category I - December 5, 2024

Preburn

Prior to commencement of the pre-burn, all coals and ashes were removed and the scale was zeroed. Sufficient coals were added back to the appliance to assist in ignition of the preburn charge. Over the next 6 hours the remainder of the preburn was added to the appliance in approximately 30 lb. batches at a time.

Preburn Activities		
Time	Activity	Fuel Added subtotal
10:04	Added 16.0 lb. Fuel	16.0
10:17	Added 26.0 lb. Fuel	42.0
10:55	Added 43.0 lb. Fuel	85.0
12:08	Added 40.0 lb. Fuel	125.0
12:53	Stirred	125.0
13:09	Added 39.5 lb. Fuel	164.5
14:02	Stirred	164.5
14:25	Added 15.5 lb. Fuel	180.0

The load output-rate for the last 60 minutes of the pre-burn was 24,567 Btu/hr. and the coal bed was 28.9 pounds.

Other activities during the pre-burn included preparation of the test fuel charge, assembly and leak-checking of the sampling probes, calibration of the continuous gas analyzers and velocity traverse measurements were made. Just before the end of the preburn, a calibration check of the water flow meter was conducted. Upon completion of the pre-burn, the remaining coals were raked and leveled and the platform scale was zeroed.

Run 4 - Sampling portion of Test

Upon completion of the pre-burn and zeroing of the platform scale, the appliance was loaded and initiation of the sampling pumps were done simultaneously.

Bypass: Not used (Not needed as coals were fully volatized)
Fuel Loading: 60 seconds
Door Closed: 65 seconds



Figure 35 - Run 4 - Test Fuel



Figure 36 - Run 4 - Loaded Stove

At exactly one hour from the start of sampling, the first-hour (Sample Train C) was stopped and a leak check was immediately performed on it. The test continued without incident until it ended with zero mass remaining on the scale at 2262 minutes from the start of the test and a resulting load heat output rate of 24,564 Btu/hr. The target was a Category I which ASTM E2618, clause 4.3.1 defines as "A heat output of 15% or less of the manufacturer's Rated Heat Output Capacity". This test was performed at 12.93% of the manufacturer's rated heat output capacity and therefore qualifies as the Category I test for this test series.

Upon completion of the sampling portion of the test, all remaining sampling trains (A, B and ambient background) were leak-checked. Other tasks performed were (but not limited to) leak checking of pitot tube, recording of environmental conditions, post-test verification of water flow meter, post-test verification of continuous gas analyzers and placement of disassembled sample probe elements in desiccator.

This test occurred without any anomalies. A review of all of the data indicates that no measurements or parameters specified in ASTM E2515 or ASTM E2618 were outside their respective specifications. This test run is considered valid and appropriate for inclusion in the test series.

5. Test Data by Run

The data presented in this section is arranged as follows:

1. Test Run 1 as follows:
 - a. Run 1 Cover Page
 - b. Emissions Test Results
 - c. CSA B415 Results and Data
 - d. Test Fuel Properties
 - e. Velocity Traverse and Supplemental Data
 - f. Pre-Burn Data
 - g. Sample Train A and Dilution Tunnel Data
 - h. Sample Train B and Appliance Temperature Data
 - i. Sample Train C (First Hour) Data
 - j. Sample Train D (Background) and Flue Gas Data
 - k. Water Flow and Temperature Data
 - l. Gravimetric Analysis
 - m. Hand-Written Notes
 - n. Equations and Calculations
2. Subsequent test runs in the same format as above
3. Reagent Tares
4. Water Flow Sensor Verifications

Run 1 Test Data

Test Date: 12/2/2024
Manufacturer: Central Boiler
Model Classic Edge 560.1

Contents, in the following order:

- Emissions Test Results
- CSA B415 Results and Data
- Test Fuel Properties
- Velocity Traverse / Supplemental Data Worksheet
- Test Pre-Burn Data
- Sample Train A / Dilution Tunnel Data
- Sample Train B Data
- Sample Train C (First Hour) Data
- Sample Train D (Background) / Flue Gas Data
- Water Flow Data
- Gravimetric Lab Analysis
- Test Lab Notes
 - Appliance Operation Notes
 - Velocity Traverse / Supplemental Data Notes
 - Test Fuel Notes
 - Gravimetric Analysis Notes
- Equations and Calculations

Particulate Emissions and Delivered Efficiency Test Results

ASTM E2618 / ASTM E2515



Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Project No.: 0117WB043E
 Tracking No.: 2495
 Run: 1
 Test Date: 12/02/24

Quick View Summary	
lb./MMBtu	0.051
Delivered Efficiency %	86.7
PM 2.5 Emission Rate, g/hr.	3.93
PM 2.5 Emission Factor, g/kg	0.37

Particulate Emissions and Heat Output

Heat Input, Q_{IN} Btu	Heat Output Q_{OUT} Btu	Delivered Efficiency %	Uncorrected ¹		Corrected ²	
			ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)	ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)
1142061	990680	86.7	3.93	0.051	3.93	0.051

Burn Rate, dry kg/hr	10.70
Emission Rate, E_g /MJ	0.022
Load Heat Output Rate, Btu/hr	171956

	Avg. of Trains A and B		First Hour	
	Uncorrected	Corrected	Uncorrected	Corrected
Total Emissions - E_T , g	22.77	22.77	0.62	0.62
Emission Rate, g/hr	3.93	3.93	0.62	0.62
Emissions Factor, g/kg	0.37	0.37	n/a	n/a

Fuel and Appliance Parameters

Wet Fuel Mass	166.3	lb.
Duration of test	348	min
Higher Heating Value (HHV) of Fuel	8348	Btu
Lower Heating Value (LHV) of Fuel	7789.6	Btu
TI_{avg} - Average Temperature of Appliance at Start of Test:	130.7	°F
TF_{avg} - Average Temperature of Appliance at End of Test:	127.1	°F
MC_{Ave} - Average Moisture of Fuel, dry-basis:	21.56	%

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Dilution Tunnel Flow Parameters

	First Hour	Duration of Test
Average Tunnel Temperature, °F	70.4	72.9
Average Tunnel Gas Velocity (vs), feet/second	21.886	21.900
Average Tunnel Gas Flow Rate(Qsd)	DSCF/hr	61104.1
	DSCF/min	1018.4
Average Delta p, in. H ₂ O	0.114	0.114
Tunnel Static Pressure, in. H ₂ O	-0.380	-0.380
Total Time of Test, Min	60	348

Particulate Sample Parameters - Uncorrected

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	55.720	55.581	55.922	9.474
Average Gas Meter Temperature, °F	63	73	74	59
Total Sample Volume (V _{mstd}), DSCF	58.070	56.727	56.425	9.902
Total Particulates (mn), mg - m _n	0.0	3.7	3.6	0.1
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00007	0.00006	0.00001
Total Particulate Emissions (ET), grams	n/a	23.02	22.52	0.62
Particulate Emission Rate, g/hr	n/a	3.97	3.88	0.62
Emissions Factor, g/kg	n/a	0.37	0.36	n/a
Difference, ET from Average ET, grams	n/a	0.25	-0.25	n/a

Particulate Sample Parameters - Corrected for any negative filter weights

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	55.720	55.581	55.922	9.474
Average Gas Meter Temperature, °F	63	73	74	59
Total Sample Volume (V _{mstd}), DSCF	58.070	56.727	56.425	9.902
Total Particulates (mn), mg - m _n	0.0	3.7	3.6	0.1
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00007	0.00006	0.00001
Total Particulate Emissions (ET), grams	n/a	23.02	22.52	0.62
Particulate Emission Rate, g/hr	n/a	3.97	3.88	0.62
Emissions Factor, g/kg	n/a	0.37	0.36	n/a
Difference, ET from Average ET, grams	n/a	0.25	-0.25	n/a

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Test Methodology Specifications Quality Checks

Parameter	Requirement	Measured / Observed			Complies?
		First Hour	Train 1	Train 2	
Filter Temperature, °F	< 90	63	66	65	✓
Filter face velocity, fpm	< 30	8.94	9.48	8.73	✓
Dryer Exit, °F	< 80	51	49	49	✓
Tunnel Velocity, fpm	>800	1,313	1,314		✓
First Hour Leakage Rate	0.006	0.000			✓
Train A Leakage Rate	0.006		0.000		✓
Train B Leakage Rate	0.006			0.000	✓

Leakage Rate Limits (cfm) are < 4% of average sample rate or < 0.01 cfm, which ever is less

Parameter	Requirement	Measured / Observed			Complies?
		First Hour	A	B	
Negative Probe Weight	=> 0	0	0	0.1	✓
Pro-Rate Variation	< 90 for < 10% of θ	1.67%	0.00%	0.00%	✓
	> 110 for < 10% of θ	0.00%	0.57%	0.00%	✓
	# Readings < 80%	0	0	0	✓
	# Readings > 120%	0	0	0	✓
Room Temp, °F (min)	> 55		58		✓
Room Temp, °F (max)	< 90		66		✓
Dual Train Precision	(1) < 7.5%		1.10%		✓
1 or 2 must conform	(2) < 0.5 g/kg		0.01		
Room Air Velocity	< 50 fpm		8		✓
Preburn Min. Weight	149.7		179.2		✓
Preburn Max. Weight	182.9				✓
Min. Coal Bed Weight	16.6		31.9		✓
Max. Coal Bed Weight	33.3				✓

CSA B415.1-11 Efficiency Results

Manufacturer Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 1
Test Date: 12/2/2024

Efficiency results reported herein are based on a stack-loss method in accordance with CSA B415.1:22 "Performance testing of solid-biofuel-burning heating appliance". OMNI uses the spreadsheet provided by CSA that is to be used in conjunction with the current version of the test standard. The most recent version of the software is version 2.4, dated April 15, 2010. OMNI received confirmation from CSA on October 18, 2023 that this is the current version of the software.

Stack Loss Efficiency

Manufacturer: Central Boiler
Model: Edge 560.1
Date: 12/02/24
Run: 1
Control #: 2495
Test Duration: 348
Output Category: IV

Technicians: T. Tong, R. Tiegs, K. Morgan

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	82.8%	88.8%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	83%	89.2%

Output Rate (kJ/h)	171,835	163,004	(Btu/h)
Burn Rate (kg/h)	10.70	23.59	(lb/h)
Input (kJ/h)	207,655	196,983	(Btu/h)

Test Load Weight (dry kg)	62.07	136.80	dry lb
MC wet (%)	17.74		
MC dry (%)	21.57		
Particulate (g)	22.77		
CO (g)	309		
Test Duration (h)	5.80		

Emissions	Particulate	CO
g/MJ Output	0.02	0.31
g/kg Dry Fuel	0.37	4.97
g/h	3.93	53.20
lb/MM Btu Output	0.05	0.72

Air/Fuel Ratio (A/F)	8.87
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VERSION:

2.4

4/15/2010

VERSION: 2.4

4/15/2010

Manufacturer: Central Boiler

Model: Edge 560.1

Date: 12/2/2024

Run: 1

Control #: 2495

Test Duration: 348

Output Category: IV

Appliance Type: Non Cat (Cat, Non

Temp. Units F (F or C)

Weight Units lb (kg or lb)

Fuel Data

Maple

HHV 19,404 kJ/kg

%C 50.3

%H 6.1

%O 42.91

%Ash 0.69

Wood Moisture (% wet): 17.74

Load Weight (lb wet): 166.30

Burn Rate (dry kg/h): 10.70

Total Particulate Emissions: 22.77 g

Averages

0.05

13.75

#DIV/0!

284.88

62.56

Temp. (°F)

Elapsed
Time (min)Fuel Weight
Remaining (lb)Flue Gas Composition (%)
CO CO₂ O₂Flue
GasRoom
Temp

0	166.30	0.03	14.38		274.0	59.0
1	165.80	0.20	2.92		246.0	59.0
2	165.10	0.09	17.04		266.0	60.0
3	164.28	0.10	18.00		271.0	60.0
4	163.80	0.03	16.23		268.0	59.0
5	163.35	0.03	15.82		267.0	60.0
6	162.90	0.03	15.63		266.0	59.0
7	162.49	0.03	15.57		265.0	60.0
8	161.96	0.03	15.74		265.0	60.0
9	161.87	0.03	15.96		265.0	60.0
10	161.16	0.03	15.91		265.0	60.0
11	160.58	0.03	15.84		265.0	60.0
12	160.09	0.03	15.52		264.0	59.0
13	159.69	0.03	15.54		264.0	60.0
14	159.49	0.03	15.43		263.0	59.0
15	158.96	0.03	15.31		262.0	59.0
16	158.51	0.03	15.09		262.0	59.0
17	158.25	0.03	15.31		262.0	59.0
18	157.60	0.03	15.10		261.0	59.0
19	157.19	0.03	14.94		261.0	59.0
20	156.84	0.03	14.88		260.0	59.0
21	156.36	0.03	14.76		259.0	60.0
22	155.95	0.02	14.86		259.0	59.0
23	155.59	0.02	14.75		258.0	59.0
24	155.19	0.03	15.15		261.0	59.0

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
25	154.78	0.02	14.87		259.0	59.0
26	154.34	0.02	14.71		258.0	59.0
27	153.97	0.02	14.70		258.0	59.0
28	153.65	0.02	14.53		262.0	59.0
29	153.15	0.02	14.90		259.0	59.0
30	152.72	0.02	14.68		257.0	59.0
31	152.28	0.02	15.75		268.0	59.0
32	151.78	0.02	16.42		274.0	59.0
33	151.31	0.02	16.54		277.0	59.0
34	150.90	0.02	16.50		279.0	59.0
35	150.39	0.01	16.44		280.0	59.0
36	149.85	0.01	16.35		281.0	59.0
37	149.39	0.01	16.25		282.0	59.0
38	148.88	0.01	16.26		283.0	59.0
39	148.53	0.01	16.10		284.0	59.0
40	147.91	0.01	16.39		285.0	59.0
41	147.53	0.01	16.26		285.0	59.0
42	146.27	0.01	16.22		286.0	59.0
43	146.45	0.01	16.29		287.0	59.0
44	145.89	0.01	16.20		287.0	59.0
45	145.55	0.01	15.91		287.0	59.0
46	145.05	0.01	15.94		287.0	59.0
47	144.56	0.01	16.06		288.0	59.0
48	143.96	0.01	16.03		288.0	59.0
49	143.56	0.01151	15.96		289	59
50	143.03	0.00989	15.79		289	59
51	142.62	0.00966	15.89		289	59
52	141.91	0.00995	15.87		290	59
53	141.54	0.01063	15.85		289	59
54	141.05	0.01086	15.88		290	59
55	140.49	0.00924	16.01		290	59
56	139.86	0.00957	15.92		291	59
57	139.45	0.01546	15.91		290	59
58	139.05	0.01556	15.85		290	59
59	138.46	0.01271	15.74		290	59
60	138.23	0.01063	15.69		290	58
61	137.42	0.01157	15.68		289	59
62	137.10	0.01015	15.66		289	59
63	136.47	0.01015	15.6		289	59
64	135.44	0.01044	15.57		289	59
65	135.33	0.0107	15.4		289	59
66	134.94	0.01128	15.52		289	59

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
67	134.41	0.01083	15.67		290	59
68	133.97	0.01254	15.67		290	59
69	133.43	0.01031	15.73		291	59
70	132.91	0.01057	15.85		291	59
71	132.32	0.00889	15.84		292	59
72	131.62	0.00927	15.98		292	59
73	131.37	0.01057	15.84		293	59
74	130.69	0.01005	15.97		293	59
75	130.25	0.00999	15.9		293	59
76	129.77	0.01025	16.1		294	59
77	129.19	0.01141	16.26		291	59
78	128.71	0.01125	16.09		294	59
79	128.26	0.0107	16.13		295	59
80	127.64	0.01018	15.9		295	58
81	127.18	0.0129	16.13		297	58
82	126.69	0.01801	16.19		297	59
83	126.14	0.01222	15.7		296	59
84	125.55	0.02164	16.02		293	58
85	124.98	0.01721	16.12		294	59
86	124.65	0.01458	15.92		296	59
87	124.11	0.01899	15.91		294	59
88	123.51	0.00905	15.77		294	59
89	123.13	0.00905	15.52		293	59
90	122.58	0.01475	15.56		292	59
91	122.15	0.02735	16.03		290	59
92	121.27	0.04591	16.42		290	59
93	121.14	0.04465	16.36		290	59
94	120.58	0.04876	16.23		290	59
95	120.09	0.03	16.14		290	58
96	119.56	0.02	15.96		291	59
97	119.14	0.03531	15.94		294	59
98	118.47	0.05986	15.72		294	59
99	118.02	0.05168	16.27		293	59
100	117.58	0.02827	15.84		295	59
101	116.91	0.03905	15.84		297	59
102	116.44	0.05052	16.36		294	59
103	115.83	0.03513	15.84		295	59
104	115.31	0.04825	15.8		297	59
105	114.69	0.05168	16.34		295	59
106	114.06	0.04663	15.64		299	59
107	113.63	0.05601	15.65		301	59
108	113.03	0.05402	15.74		303	59

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
109	112.41	0.052	15.89		301	58
110	111.79	0.05083	15.71		303	59
111	111.14	0.05634	15.5		303	59
112	110.53	0.05925	15.71		303	59
113	110.03	0.07136	15.57		303	59
114	109.50	0.06853	15.78		300	59
115	108.79	0.04326	15.63		303	59
116	108.20	0.04645	15.62		303	59
117	107.71	0.03682	15.32		304	58
118	107.03	0.02854	15.07		304	59
119	106.52	0.02577	15.09		304	59
120	105.86	0.02721	14.93		304	59
121	105.34	0.02087	14.61		304	59
122	104.80	0.02183	14.51		304	59
123	104.12	0.02206	14.35		304	59
124	103.54	0.0252	14.32		303	59
125	102.99	0.02158	14.17		303	58
126	102.43	0.0231	14.05		303	58
127	101.87	0.02776	13.87		303	58
128	101.31	0.03669	13.66		303	58
129	100.75	0.04413	13.58		303	58
130	100.25	0.04731	13.36		302	58
131	99.76	0	13.08		302	59
132	99.17	0.01	12.93		301	59
133	98.54	0.01	12.84		300	60
134	98.03	0.05	12.5		299	60
135	97.50	0.12	12.11		298	60
136	96.99	0.15	11.93		296	60
137	96.45	0.18	11.82		295	61
138	95.96	0.21	11.76		294	61
139	95.55	0.24	11.77		294	61
140	94.92	0.31	10.38		292	61
141	94.53	0.27	10.26		291	61
142	94.04	0.29	11.4		291	62
143	93.53	0.33	11.29		290	61
144	92.97	0.28	11.41		291	62
145	92.48	0.13	11.72		291	62
146	92.03	0.01	12.31		292	62
147	91.57	0.06061	12.61		292	62
148	91.02	0	12.59		292	62
149	90.47	0.06352	12.59		292	62
150	89.95	0.06824	12.55		292	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
151	89.53	0.02	12.21		291	62
152	89.05	0.01	12.28		292	62
153	88.49	0.04	12.07		291	63
154	88.04	0.02	12.12		291	63
155	87.51	0.05	12		290	63
156	87.17	0.05	12.18		289	63
157	86.60	0.05	12.1		289	63
158	86.16	0.03	12.15		289	63
159	85.57	0.04	12.06		289	63
160	85.08	0.01	12.37		288	63
161	84.64	0.07	12.1		288	63
162	84.18	0	12.23		289	63
163	83.70	0.02	12.15		289	64
164	83.26	0.01	12.2		289	64
165	82.70	0.03	12.13		289	64
166	82.35	0.04	11.99		289	64
167	81.77	0.03	11.98		288	64
168	81.27	0.02	12.07		288	63
169	80.74	0.02	12.09		289	64
170	80.31	0.02	12.15		289	64
171	79.85	0.01	12.32		289	64
172	79.28	0.02	12.13		289	64
173	78.88	0.02	12.09		289	64
174	78.31	0.02	11.97		288	64
175	77.84	0.01	11.95		288	64
176	77.37	0.04	11.74		287	64
177	76.89	0.07	11.6		286	64
178	76.34	0.06	11.61		286	64
179	75.95	0.06	11.76		286	64
180	75.49	0.08	11.7		286	64
181	74.93	0.07	11.76		286	64
182	74.44	0.11	11.72		285	64
183	74.06	0.13	11.68		284	64
184	73.68	0.07	11.74		285	64
185	73.17	0.13	11.36		284	64
186	72.75	0.12	11.43		284	64
187	72.21	0.1	11.59		283	64
188	71.68	0.15	11.35		283	64
189	63.00	0.18	11.16		282	64
190	70.95	0.16	11.44		282	64
191	70.47	0.14	11.51		282	64
192	69.98	0.15	11.37		277	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
193	69.64	0.13	10.32		270	64
194	65.09	0.25	10.44		275	64
195	68.69	0.26	10.59		277	64
196	68.25	0.23	10.94		277	64
197	67.76	0.11	10.72		275	64
198	67.38	0.19	10.91		274	64
199	66.83	0.15	11		272	64
200	66.60	0.12	11.21		270	65
201	66.07	0.17	10.59		272	64
202	65.80	0.08583	11.65		267	64
203	65.35	0.07	11.01		268	64
204	64.94	0.02	12.39		276	64
205	64.40	0.02845	12.98		283	64
206	63.76	0.01585	14.02		289	64
207	63.48	0.01248	13.68		280	64
208	62.71	0.02194	13.13		286	65
209	62.30	0.01896	13.42		289	64
210	61.87	0.01576	14.27		288	65
211	61.28	0.01851	12.2		284	64
212	60.79	0.02291	13.31		289	65
213	60.24	0.02055	13.52		286	65
214	59.80	0.02084	13.55		288	65
215	59.23	0.01945	13.54		289	65
216	58.71	0.01773	13.62		288	65
217	58.15	0.01546	13.54		287	65
218	57.71	0.0188	13.53		289	65
219	57.35	0.01407	13.42		281	65
220	56.78	0.01559	11.88		268	65
221	56.46	0.05495	11.38		265	65
222	56.12	0.03203	12.01		265	65
223	55.70	0.0118	13.61		265	65
224	55.23	0.02433	12.58		264	65
225	54.70	0.03271	12.57		264	65
226	54.32	0.03119	12.65		264	65
227	53.90	0.02903	12.66		268	65
228	53.32	0.02294	13.84		280	65
229	52.86	0.01763	14.37		282	65
230	52.33	0.01313	14.12		279	65
231	51.87	0.01498	14.45		278	65
232	51.33	0.01812	14.21		277	65
233	50.82	0.01841	13.75		280	65
234	50.23	0.01492	13.6		282	65

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
235	49.77	0.01469	14.23		281	65
236	49.32	0.01559	14.17		282	65
237	48.62	0.01475	14.24		280	65
238	48.19	0.01355	13.68		282	65
239	47.67	0.01274	13.57		282	65
240	47.12	0.01239	14.11		280	65
241	46.52	0.01482	15.1		278	65
242	46.10	0.01721	14.21		278	65
243	45.55	0.01877	14.13		281	65
244	45.13	0.01715	13.53		283	66
245	44.48	0.01381	13.77		284	66
246	43.97	0.01424	13.94		285	65
247	43.56	0.01663	14.36		286	65
248	42.91	0.0131	13.8		283	66
249	42.37	0.0165	13.96		286	65
250	41.87	0.0152	13.53		286	65
251	41.24	0.01628	13.7		287	65
252	40.79	0.01423	13.63		287	65
253	40.26	0.01274	13.87		285	66
254	39.70	0.01381	13.47		285	65
255	39.13	0.01326	13.37		286	66
256	38.66	0.01245	13.32		285	66
257	38.11	0.01482	13.93		285	66
258	37.55	0.0144	13.45		285	65
259	37.19	0.01546	13.76		285	66
260	36.49	0.0165	13.98		285	66
261	36.11	0.01424	14.06		286	66
262	35.58	0.01378	14.15		285	65
263	35.03	0.012	14.26		281	66
264	34.37	0.01654	13.5		284	66
265	33.88	0.01466	13.41		287	65
266	33.38	0.01504	14.22		285	66
267	32.84	0.01443	15.02		281	66
268	32.21	0.01563	13.79		281	66
269	31.88	0.02259	13.81		287	66
270	31.31	0.02262	14.17		291	66
271	30.71	0.01809	13.52		289	66
272	30.25	0.02204	14.21		289	66
273	29.62	0.02139	14.21		289	66
274	29.11	0.02032	14.3		288	66
275	28.59	0.02061	14.24		289	66
276	28.09	0.01961	14.52		288	66

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
277	27.61	0.01793	13.59		290	65
278	27.21	0.01232	14.88		285	66
279	26.65	0.01531	12.86		288	66
280	26.23	0.02375	13.18		289	65
281	25.67	0.02323	13.26		290	66
282	25.22	0.02806	13.28		289	66
283	24.85	0.03039	13.09		289	65
284	24.29	0.02932	13.66		287	66
285	23.85	0.02447	14		287	66
286	23.33	0.02457	14.05		285	66
287	22.97	0.02608	13.85		285	66
288	22.46	0.02611	13.87		286	66
289	22.05	0.02259	13		287	66
290	21.57	0.0256	12.76		287	65
291	21.14	0.01848	13.26		286	66
292	20.74	0.01971	13.58		289	66
293	20.24	0.01531	12.79		287	66
294	19.93	0.01644	13.42		289	66
295	19.40	0.01508	12.9		287	66
296	19.18	0.01851	13.52		285	66
297	18.68	0.01605	13.47		289	66
298	18.30	0.0177	12.93		289	66
299	17.84	0.01936	13.52		288	66
300	17.37	0.02184	13.42		290	66
301	17.11	0.02216	13.54		291	66
302	16.63	0.02087	13.48		291	66
303	16.15	0.02864	13.33		290	66
304	15.73	0.02738	13.31		290	66
305	15.29	0.04484	13.2		290	66
306	14.85	0.05069	13.27		290	66
307	14.46	0.06279	12.89		288	66
308	14.06	0.04	12.23		286	66
309	13.82	0.08	11.92		284	66
310	13.41	0.15	11.73		282	66
311	13.10	0.15	11.77		281	66
312	12.75	0.15	11.77		281	66
313	12.37	0.13	11.68		282	66
314	12.10	0.17	11.51		280	66
315	11.70	0.26	11.46		279	66
316	11.33	0.17	11.86		279	66
317	10.91	0.12	11.82		279	66
318	10.65	0.12	11.73		279	66

[illegible]

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
Model : Classic Edge 560.1
Tracking No. : 2495
Project No. : 0117WB043E
Test Date : 12/2/2024
Run No. : 1

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Firebox Volume : 13.720 ft³
Manufacturer's Recommended Loading Density : 13
Ideal Fuel Weight : 178.36 lb.
Minimum Fuel Weight : 160.52 lb.
Maximum Fuel Weight : 196.20 lb.
Fuel Species : Maple

Fuel Piece Data

PC No.	Weight, Lb. (W _i)	Cross- Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	12.0	8.50	3.75	22.00	24.2	24.7	20.4	24.2	24.9	23.7	284.16
2	12.6	7.00	3.50	22.00	22.9	23.6	20.6	21.0	21.5	21.9	276.19
3	14.3	8.00	3.50	22.00	19.8	22.4	20.0	20.7	20.4	20.7	295.44
4	10.5	6.75	4.75	22.00	19.8	20.7	20.8	20.2	19.0	20.1	211.05
5	14.5	7.00	4.75	22.00	20.6	20.6	21.6	20.5	20.8	20.8	301.89
6	14.3	8.00	3.75	22.00	21.5	22.1	22.7	21.6	22.5	22.1	315.74
7	13.3	6.50	5.00	22.00	21.0	20.1	20.8	19.7	20.0	20.3	270.26
8	13.5	7.50	3.75	22.00	23.7	24.2	24.0	22.3	22.4	23.3	314.82
9	12.2	7.50	5.00	22.00	20.7	21.8	20.5	22.4	20.4	21.2	258.15
10	13.3	8.00	3.75	22.00	20.5	21.4	21.8	22.5	22.0	21.6	287.81
11	8.9	6.00	4.00	22.00	22.1	23.6	24.8	24.2	24.0	23.7	211.29
12	9.0	6.00	4.50	22.00	24.5	21.3	20.4	21.3	23.9	22.3	200.52
13	9.1	5.50	3.50	22.00	19.5	19.4	19.0	20.4	19.5	19.6	178.00
14	8.8	6.00	4.50	22.00	20.2	19.8	21.5	21.5	19.2	20.4	179.87
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	166.3										3585.19
Averages	11.88	7.02	4.14	22.00	21.50	21.84	21.35	21.61	21.46	21.55	256.08

Fuel Load Properties

Number of Pieces	Wet Weight, lb.	Dry Weight, lb.	Fuel Loading Density, lb/ft ³ Wet Basis	Fuel Loading Density, lb/ft ³ Dry Basis	Moisture, % dry basis (ΣW _i · MC _i) / ΣW _i	Moisture, % wet Basis
14	166.3	136.81	12.12	9.97	21.56	17.74

Compliance Checks, Loading Density and Moisture

	Fuel Load, Wet Lb.	Load Density, lb/ft ³ of FB vol	Number of moisture readings > 28%	Number of moisture readings < 18%	Average Fuel Moisture, % DB	
Measured	166.3	12.12	0	0	21.46	
Required	160.5 - 196.2	10 - 15	0	0	19 - 25	
Complies ?	Yes	Yes	Yes	Yes	Yes	

Compliance Checks, Fuel weights and Dimensions

	Cross Section of Individual Pieces		Minimum Piece Weight, Lb.	Maximum Piece Weight, Lb.
	Min	Max		
Measured	3.50	8.50	8.8	14.5
Required	3	12	8.8	26.5
Complies ?	Yes	Yes	Yes	Yes

Pre-Burn Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
Model : Classic Edge 560.1
Tracking No. : 2495
Project No. : 0117WB043E
Test Date : 12/2/2024
Run No. : 1

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Average Moisture Content, % Dry Basis : 19.7
Total Mass, lb. : 179.2

[illegible]

Dilution Tunnel Velocity Traverse and Supplementary Data

ASTM E2515-11

Run: 1
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1

Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/2/2024

Dilution Tunnel Velocity Traverse

Pitot Location								
Traverse Point	% of Diameter	Inches into Tunnel	dP in. H ₂ O	Tunnel Temp, °F	dP ^{1/2}	Tunnel Static Pressure	-0.380	in. H ₂ O
X1	4.4	0.53	0.100	70	0.316	Tunnel Moisture	2.00	%
X2	14.6	1.75	0.118	70	0.344	Tunnel Diameter	12.00	inches
X3	29.6	3.55	0.120	70	0.346	Pitot Tube C _p	0.99	inches
X4	70.4	8.45	0.114	70	0.338	Tunnel Molecular Weight	29	(dry)
X5	85.4	10.25	0.106	70	0.326	Tunnel Molecular Weight	28.78	(M _s , wet)
X6	95.6	11.47	0.086	70	0.293	Tunnel Area	0.78539816	ft ²
Y1	4.4	0.53	0.104	70	0.322	K _p	85.49	constant
Y2	14.6	1.75	0.120	70	0.346	P _s =P _{bar} +Tunnel Static	30.2820588	in HG
Y3	29.6	3.55	0.120	70	0.346	$V_{strav} = K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 21.844$		
Y4	70.4	8.45	0.110	70	0.332			
Y5	85.4	10.25	0.106	70	0.326			
Y6	95.6	11.47	0.070	70	0.265	$V_{scent} = K_p C_p \sqrt{\Delta p_{center}} \sqrt{\frac{T_{s,center}}{P_s M_s}} = 22.284$		
Center	50.0	6.00	0.114	70	0.338			

* Probe location must be no closer than 0.50 in to tunnel wall

$$F_P = V_{strav} / V_{scent} = 0.980$$

$$\text{Initial Tunnel Velocity, } V_s = F_P K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 21.379868 \text{ ft/sec}$$

Supplementary Data and Information

Environment	Test Start	Test End	
Time of Day	16:13	10:01	(Following Morning)
Barometric Pressure, in. Hg	30.31	30.32	
Room Air Velocity, fpm	8	5	
Room Air Temperature, °F	59	66	
Room Relative Humidity, %	41.0	34.0	
Platform Scale Audit, lb.	30.0	30.0	

Leak Checks

Pitot and associated tubing, (pass/fail) ¹	Pass	Pass
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See sampling box worksheets for sampling boxes

Dilution Tunnel

Date last cleaned	11/22/2024
Smoke Capture, % (visual) ²	100
Draft Inducement, (pass/fail) ³	Pass
Static Pressure, in. H ₂ O	-0.380
	-0.380

¹ Both sides (independently) of the pitot system are brought under a minimum vacuum of 3 in. H₂O and then sealed. Any indication of pressure loss is deemed a fail.

² Create a smoking condition during start of pre-burn activities and using adequate lighting pointed upward and around tunnel hood, visually observe if 100% of visible smoke is being captured by the hood. If not, increase flow tunnel flow and / or re-assess chimney proximity to draft hood as required and repeat until 100% capture is observed.

³ With the appliance installed and the dilution tunnel flow turned-off, observe the flue draft gauge while turning the dilution tunnel on. Any detectible response by the draft gauge associated with activation of the tunnel flow indicates that draft inducement is occurring. Determine the cause (i.e. flue chimney too deep into tunnel?) before continuing.

Preburn Data

ASTM E2618

Run: 1

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/2/24

Final Coal Bed Weight: 31.9 lb.
 Average Heat Output Rate Last One Hour, Btu/hr: 179657.6 Btu/hr.

Beginning Clock Time: 14:12Logging Intervqal, Min: 1

Note: Stack Temperature, Room temperature and flue draft were recorded on a separate DAQ and recorded only for the last mandatory hour of pre-burn.

Coal Bed Range **16.6 33.3**
 (lb): (min) (max)

121		Appliance					Load										
Elapsed Time (Min)	Fuel Remaining (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H2O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	oi, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	Room Temp °F	
0	63.7	147.2	138.3	9.0			55.8	147	90.9	3.712	1.0012	8.336	30.94	2815.1	168903		
1	63.3	147.0	137.9	9.1			55.7	146	90.7	3.795	1.0012	8.336	31.63	2872.3	172337		
2	62.8	146.9	138.2	8.7			55.7	146	90.6	3.629	1.0012	8.336	30.25	2745.8	164747		
3	62.1	146.0	135.5	10.5			55.6	145	89.5	4.264	1.0012	8.336	35.55	3185.7	191140		
4	61.7	145.8	135.3	10.5			55.5	145	89.4	4.347	1.0012	8.336	36.24	3242.1	194527		
5	61.2	145.6	135.1	10.5			55.5	145	89.1	4.292	1.0012	8.336	35.78	3193.3	191596		
6	60.7	145.1	134.3	10.8			55.5	144	88.6	4.485	1.0012	8.336	37.39	3316.4	198983		
7	60.1	144.4	133.9	10.4			55.4	143	87.9	4.485	1.0012	8.336	37.39	3290.6	197437		
8	59.6	144.5	134.0	10.5			55.4	143	87.8	4.375	1.0012	8.336	36.47	3206.7	192402		
9	58.9	144.4	134.6	9.8			55.4	143	88.0	4.140	1.0012	8.336	34.51	3042.1	182525		
10	58.2	144.5	134.7	9.8			55.4	144	88.2	4.099	1.0012	8.336	34.17	3016.3	180980		
11	57.9	144.0	134.3	9.7			55.4	143	87.7	4.112	1.0012	8.336	34.28	3010.7	180640		
12	57.3	143.9	134.1	9.7			55.4	143	87.6	4.140	1.0012	8.336	34.51	3027.5	181652		
13	56.6	143.9	134.0	9.8			55.3	143	87.5	4.140	1.0012	8.336	34.51	3024.0	181439		
14	56.1	143.9	134.2	9.8			55.3	143	87.7	4.140	1.0012	8.336	34.51	3031.4	181882		
15	55.6	143.8	134.0	9.8			55.3	143	87.5	4.140	1.0012	8.336	34.51	3023.9	181437		
16	54.9	143.5	133.8	9.7			55.3	143	87.4	4.140	1.0012	8.336	34.51	3018.4	181102		
17	54.7	143.7	133.8	10.0			55.3	143	87.3	4.195	1.0012	8.336	34.97	3056.8	183409		
18	54.1	143.5	133.6	9.9			55.3	143	87.2	4.181	1.0012	8.336	34.86	3044.3	182655		
19	53.4	143.4	133.6	9.8			55.3	143	87.2	4.195	1.0012	8.336	34.97	3054.7	183284		
20	52.9	143.1	133.4	9.8			55.3	142	87.0	4.181	1.0012	8.336	34.86	3035.4	182122		
21	52.3	143.4	133.4	9.9			55.3	142	87.0	4.181	1.0012	8.336	34.86	3036.3	182177		
22	51.9	143.1	133.4	9.8			55.3	142	86.9	4.195	1.0012	8.336	34.97	3043.0	182580		
23	51.3	143.0	133.2	9.8			55.3	142	86.7	4.168	1.0012	8.336	34.74	3016.8	181010		
24	50.7	142.9	133.1	9.8			55.3	142	86.7	4.195	1.0012	8.336	34.97	3036.5	182191		
25	50.1	142.5	132.8	9.8			55.3	142	86.3	4.181	1.0012	8.336	34.86	3010.9	180652		
26	49.8	142.7	132.9	9.8			55.2	142	86.4	4.181	1.0012	8.336	34.86	3015.6	180936		
27	49.1	142.6	133.3	9.3			55.2	142	86.5	4.085	1.0012	8.336	34.05	2947.8	176867		
28	48.6	142.2	132.6	9.6			55.2	141	86.1	4.112	1.0012	8.336	34.28	2954.5	177273		
29	48.1	142.5	133.4	9.0			55.2	142	86.4	3.961	1.0012	8.336	33.02	2854.8	171289		
30	47.8	142.1	132.5	9.6			55.2	141	85.9	4.126	1.0012	8.336	34.4	2958.0	177482		
31	46.3	141.8	132.0	9.7			55.2	141	85.6	4.237	1.0012	8.336	35.32	3028.6	181715		
32	45.8	141.7	132.0	9.8			55.2	141	85.5	4.223	1.0012	8.336	35.2	3013.4	180807		
33	45.2	141.6	131.9	9.7			55.2	141	85.4	4.223	1.0012	8.336	35.2	3011.7	180700		
34	44.9	141.4	131.8	9.7			55.2	141	85.3	4.223	1.0012	8.336	35.2	3007.1	180428		
35	45.1	141.0	131.3	9.7			55.2	140	84.8	4.223	1.0012	8.336	35.2	2988.9	179332		
36	73.6	141.2	131.5	9.7			55.2	140	85.0	4.223	1.0012	8.336	35.2	2997.0	179821		
37	71.6	140.8	131.1	9.7			55.1	140	84.6	4.237	1.0012	8.336	35.32	2990.0	179397		
38	71.1	140.9	131.3	9.6			55.1	140	84.8	4.237	1.0012	8.336	35.32	2999.9	179993		
39	70.5	140.8	131.2	9.6			55.1	140	84.7	4.223	1.0012	8.336	35.2	2985.3	179119		
40	70.0	140.8	131.1	9.6			55.2	140	84.6	4.223	1.0012	8.336	35.2	2980.1	178804		
41	69.4	140.7	131.0	9.7			55.2	140	84.4	4.237	1.0012	8.336	35.32	2984.3	179055		
42	68.8	140.5	131.0	9.6			55.1	140	84.5	4.237	1.0012	8.336	35.32	2986.7	179201		

121		Appliance					Load									
Elapsed Time (Min)	Fuel Remaining (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H2O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	σi, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	Room Temp °F
43	68.2	140.5	130.9	9.6			55.1	140	84.4	4.223	1.0012	8.336	35.2	2975.2	178512	
44	67.7	140.5	130.8	9.6			55.1	139	84.3	4.223	1.0012	8.336	35.2	2971.7	178300	
45	67.2	140.0	130.5	9.5			55.1	139	84.0	4.237	1.0012	8.336	35.32	2969.3	178159	
46	66.6	140.3	130.7	9.6			55.1	139	84.2	4.223	1.0012	8.336	35.2	2967.2	178034	
47	66.0	140.1	130.6	9.5			55.1	139	84.0	4.237	1.0012	8.336	35.32	2971.4	178281	
48	65.5	139.9	130.0	9.9			55.1	139	83.8	4.361	1.0012	8.336	36.35	3049.7	182982	
49	64.6	140.3	130.4	10.0			55.1	139	84.1	4.375	1.0012	8.337	36.47	3071.1	184266	
50	64.1	139.8	130.0	9.9			55.0	139	83.7	4.361	1.0012	8.337	36.35	3048.3	182899	
51	63.7	139.8	130.3	9.5			55.0	139	83.8	4.237	1.0012	8.337	35.32	2962.7	177762	
52	63.1	139.7	129.8	9.8			55.0	139	83.5	4.319	1.0012	8.337	36.01	3009.9	180596	
53	62.8	139.5	129.6	9.8			55.0	138	83.4	4.388	1.0012	8.337	36.58	3053.9	183232	
54	62.2	139.3	129.4	9.8	269	-0.046	55.0	138	83.2	4.375	1.0012	8.337	36.47	3037.3	182237	59
55	61.6	139.3	129.4	9.8	269	-0.046	55.0	138	83.1	4.388	1.0012	8.337	36.58	3044.6	182678	60
56	61.1	139.0	129.2	9.8	268	-0.044	55.0	138	82.9	4.375	1.0012	8.337	36.47	3025.5	181531	60
57	60.6	138.8	129.1	9.8	267	-0.043	55.0	138	82.8	4.388	1.0012	8.337	36.58	3031.1	181866	60
58	60.2	138.7	128.9	9.8	267	-0.042	55.0	137	82.5	4.375	1.0012	8.337	36.47	3011.4	180687	60
59	59.6	138.9	129.1	9.8	266	-0.046	55.0	138	82.8	4.375	1.0012	8.337	36.47	3023.1	181387	60
60	59.0	138.4	128.5	9.9	266	-0.043	55.0	137	82.3	4.416	1.0012	8.337	36.81	3033.3	182000	60
61	58.6	138.5	128.7	9.9	266	-0.044	55.0	137	82.5	4.430	1.0012	8.337	36.93	3049.0	182942	60
62	58.2	138.1	128.3	9.8	265	-0.043	55.0	137	82.1	4.430	1.0012	8.337	36.93	3035.0	182100	59
63	57.7	138.1	128.3	9.8	265	-0.044	55.0	137	82.0	4.430	1.0012	8.337	36.93	3032.5	181948	59
64	57.1	138.0	128.3	9.7	264	-0.043	55.0	137	81.9	4.430	1.0012	8.337	36.93	3028.6	181715	59
65	56.9	137.5	127.8	9.8	265	-0.043	55.0	136	81.4	4.430	1.0012	8.337	36.93	3010.3	180617	59
66	56.3	137.8	128.0	9.8	265	-0.044	54.9	137	81.7	4.430	1.0012	8.337	36.93	3020.3	181215	59
67	55.8	137.4	127.6	9.8	265	-0.043	55.0	136	81.3	4.430	1.0012	8.337	36.93	3004.9	180293	59
68	55.2	137.6	128.0	9.5	266	-0.042	54.9	137	81.6	4.402	1.0012	8.337	36.7	2997.1	179828	59
69	54.8	137.5	127.6	9.9	266	-0.044	54.9	136	81.4	4.485	1.0012	8.337	37.39	3046.3	182779	59
70	54.3	137.2	127.3	9.9	266	-0.044	54.9	136	81.1	4.526	1.0012	8.337	37.74	3062.4	183745	59
71	53.9	137.0	127.1	9.9	267	-0.043	54.9	136	80.8	4.499	1.0012	8.337	37.51	3032.8	181970	59
72	53.4	137.1	127.7	9.4	267	-0.047	54.9	136	81.1	4.278	1.0012	8.337	35.66	2896.4	173784	59
73	52.9	137.0	127.1	9.9	266	-0.042	54.9	136	80.9	4.554	1.0012	8.337	37.97	3075.0	184503	59
74	52.5	136.6	126.7	9.9	266	-0.045	54.9	135	80.5	4.526	1.0012	8.337	37.74	3039.7	182382	59
75	52.1	136.6	126.8	9.8	268	-0.044	54.9	135	80.6	4.526	1.0012	8.337	37.74	3045.2	182710	59
76	51.6	136.3	126.6	9.8	267	-0.041	54.9	135	80.3	4.526	1.0012	8.337	37.74	3033.5	182010	59
77	51.3	136.3	126.5	9.8	267	-0.041	54.9	135	80.2	4.540	1.0012	8.337	37.85	3040.8	182449	59
78	50.7	136.1	126.3	9.8	267	-0.043	54.8	135	80.0	4.526	1.0012	8.337	37.74	3023.3	181397	59
79	50.2	135.9	126.1	9.8	270	-0.042	54.8	135	79.9	4.540	1.0012	8.337	37.85	3026.7	181599	59
80	49.8	136.0	126.2	9.8	270	-0.044	54.8	135	80.0	4.540	1.0012	8.337	37.85	3030.7	181844	59
81	49.5	135.8	126.0	9.8	270	-0.043	54.8	135	79.7	4.526	1.0012	8.337	37.74	3013.0	180780	59
82	48.9	135.7	125.9	9.8	270	-0.044	54.8	134	79.6	4.526	1.0012	8.337	37.74	3008.6	180516	59
83	48.5	135.7	125.8	9.9	269	-0.041	54.8	134	79.5	4.540	1.0012	8.337	37.85	3012.3	180739	59
84	48.0	135.6	125.8	9.8	265	-0.041	54.8	134	79.6	4.568	1.0012	8.337	38.08	3036.3	182180	59
85	47.5	135.4	125.5	9.8	265	-0.042	54.8	134	79.2	4.554	1.0012	8.337	37.97	3012.3	180740	59
86	47.1	135.4	125.7	9.7	266	-0.043	54.8	134	79.5	4.540	1.0012	8.337	37.85	3011.6	180693	59
87	46.7	135.0	125.2	9.7	268	-0.041	54.8	134	78.9	4.582	1.0012	8.337	38.2	3018.2	181094	59
88	46.3	135.7	125.8	9.8	269	-0.042	54.8	134	79.5	4.554	1.0012	8.337	37.97	3023.4	181405	59
89	45.8	135.2	125.5	9.7	270	-0.044	54.8	134	79.3	4.554	1.0012	8.337	37.97	3014.1	180846	58
90	45.3	135.1	125.3	9.8	270	-0.043	54.8	134	79.0	4.554	1.0012	8.337	37.97	3002.3	180136	59
91	45.0	135.1	125.3	9.8	269	-0.044	54.8	134	79.1	4.554	1.0012	8.337	37.97	3006.1	180363	59
92	44.4	134.9	125.1	9.7	270	-0.044	54.8	134	78.9	4.568	1.0012	8.337	38.08	3007.3	180436	59
93	43.9	134.8	125.1	9.7	269	-0.043	54.8	134	78.9	4.568	1.0012	8.337	38.08	3006.5	180392	59
94	43.8	134.7	124.8	9.9	269	-0.042	54.8	133	78.6	4.595	1.0012	8.337	38.31	3014.2	180850	59
95	43.0	134.8	124.9	9.9	269	-0.042	54.8	133	78.7	4.637	1.0012	8.337	38.66	3045.4	182724	59
96	42.8	134.7	125.0	9.7	269	-0.045	54.7	133	78.7	4.568	1.0012	8.337	38.08	3001.6	180094	58
97	42.2	134.6	125.0	9.6	268	-0.042	54.7	133	78.6	4.526	1.0012	8.337	37.74	2969.7	178181	58
98	41.8	135.0	125.7	9.3	271	-0.044	54.7	134	79.0	4.430	1.0012	8.337	36.93	2921.2	175273	59
99	41.4	134.6	124.9	9.7	272	-0.042	54.7	133	78.6	4.485	1.0012	8.337	37.39	2942.2	176532	58
100	41.0	134.7	125.0	9.6	272	-0.042	54.7	133	78.7	4.526	1.0012	8.337	37.74	2974.2	178453	59
101	40.5	134.7	125.0	9.7	270	-0.042	54.7	133	78.6	4.526	1.0012	8.337	37.74	2968.8	178127	59

66

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 16:13

Test Length: 348 min

Recording Interval: 1 min

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.05 in. Hg

Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
Tot / Avg		166.3	55.581	0.160	1.28	73.5	1.82	65.73	48.93	62.56	100.0	72.9	0.114	0.338	21.90
Minimum	0.0	-7.9	0.000	0.158	1.25	64	1.73	58	37	58	97.4	69	0.108	0.329	21.45
Max	166.3	8.7	55.581	0.177	1.83	78	2.15	69	53	66	113.2	75	0.121	0.348	22.37
0	166.3		0.000		1.34	64	1.94	58	39	59		71	0.113	0.336	22.19
1	165.8	0.5	0.176	0.176	1.83	64	2.15	59	37	59	111.4	69	0.112	0.335	21.70
2	165.1	0.7	0.353	0.177	1.31	64	1.77	60	37	60	113.2	70	0.113	0.336	21.69
3	164.3	0.8	0.513	0.160	1.31	64	1.77	60	37	60	101.8	70	0.117	0.342	21.94
4	163.8	0.5	0.673	0.160	1.32	64	1.76	60	37	59	100.8	70	0.117	0.342	22.13
5	163.3	0.5	0.833	0.160	1.31	64	1.76	60	37	60	100.5	70	0.116	0.341	22.08
6	162.9	0.4	0.991	0.158	1.31	64	1.76	60	37	59	99.9	71	0.113	0.336	21.90
7	162.5	0.4	1.151	0.160	1.30	64	1.75	61	38	60	102.2	70	0.110	0.332	21.61
8	162.0	0.5	1.310	0.159	1.31	64	1.74	61	38	60	102.2	71	0.113	0.336	21.61
9	161.9	0.1	1.469	0.159	1.30	65	1.74	61	38	60	101.5	71	0.116	0.341	21.91
10	161.2	0.7	1.628	0.159	1.30	65	1.74	61	38	60	100.6	71	0.114	0.338	21.96
11	160.6	0.6	1.787	0.159	1.30	65	1.74	61	39	60	100.5	71	0.116	0.341	21.96
12	160.1	0.5	1.946	0.159	1.30	65	1.74	61	39	59	100.5	70	0.114	0.338	21.95
13	159.7	0.4	2.105	0.159	1.29	65	1.74	61	39	60	100.4	71	0.117	0.342	22.00
14	159.5	0.2	2.264	0.159	1.29	65	1.74	61	39	59	100.4	70	0.113	0.336	21.95
15	159.0	0.5	2.422	0.158	1.29	65	1.74	62	40	59	100.0	69	0.114	0.338	21.78
16	158.5	0.4	2.582	0.160	1.29	65	1.74	62	40	59	101.2	70	0.117	0.342	21.97
17	158.2	0.3	2.740	0.158	1.28	65	1.73	62	40	59	99.7	70	0.113	0.336	21.94
18	157.6	0.7	2.899	0.159	1.30	66	1.73	62	40	59	100.8	70	0.113	0.336	21.75
19	157.2	0.4	3.058	0.159	1.30	66	1.74	62	40	59	101.0	70	0.114	0.338	21.79
20	156.8	0.4	3.217	0.159	1.29	66	1.74	62	41	59	100.2	70	0.119	0.345	22.08
21	156.4	0.5	3.375	0.158	1.29	66	1.74	62	41	60	99.1	70	0.113	0.336	22.03
22	155.9	0.4	3.534	0.159	1.29	66	1.74	62	41	59	100.8	70	0.110	0.332	21.60
23	155.6	0.4	3.693	0.159	1.29	66	1.74	62	41	59	101.2	69	0.118	0.344	21.83
24	155.2	0.4	3.852	0.159	1.29	66	1.73	62	41	59	100.0	70	0.116	0.341	22.12
25	154.8	0.4	4.011	0.159	1.29	67	1.74	62	41	59	99.4	70	0.117	0.342	22.08
26	154.3	0.4	4.170	0.159	1.29	67	1.74	62	42	59	99.7	70	0.113	0.336	21.94
27	154.0	0.4	4.329	0.159	1.29	67	1.74	62	42	59	100.3	69	0.114	0.338	21.78
28	153.7	0.3	4.488	0.159	1.28	67	1.73	62	42	59	100.2	69	0.117	0.342	21.96
29	153.2	0.5	4.647	0.159	1.29	67	1.74	62	42	59	100.0	69	0.112	0.335	21.87
30	152.7	0.4	4.805	0.158	1.29	67	1.73	62	42	59	100.0	69	0.113	0.336	21.68
31	152.3	0.4	4.965	0.160	1.29	67	1.74	62	42	59	102.0	70	0.110	0.332	21.59
32	151.8	0.5	5.124	0.159	1.29	68	1.74	62	42	59	101.5	70	0.113	0.336	21.60
33	151.3	0.5	5.283	0.159	1.29	68	1.74	62	43	59	101.3	70	0.111	0.333	21.65
34	150.9	0.4	5.441	0.158	1.30	68	1.75	62	43	59	100.2	71	0.117	0.342	21.85
35	150.4	0.5	5.601	0.160	1.29	68	1.75	62	43	59	100.9	70	0.112	0.335	21.90
36	149.8	0.5	5.760	0.159	1.28	68	1.74	62	43	59	100.3	70	0.115	0.339	21.79
37	149.4	0.5	5.919	0.159	1.28	68	1.74	62	43	59	100.3	70	0.114	0.338	21.89
38	148.9	0.5	6.078	0.159	1.30	68	1.74	62	43	59	99.7	70	0.119	0.345	22.08
39	148.5	0.4	6.238	0.160	1.29	68	1.74	62	43	59	99.8	70	0.114	0.338	22.08
40	147.9	0.6	6.397	0.159	1.29	68	1.74	62	43	59	99.8	71	0.114	0.338	21.85

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 16:13

Test Length: 348 min

Recording Interval: 1 min

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.05 in. Hg

Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
41	147.5	0.4	6.556	0.159	1.29	69	1.75	62	43	59	99.5	70	0.121	0.348	22.19
42	146.3	1.3	6.715	0.159	1.29	69	1.75	63	44	59	98.2	71	0.118	0.344	22.37
43	146.5	-0.2	6.875	0.160	1.28	69	1.74	63	44	59	99.7	71	0.110	0.332	21.86
44	145.9	0.6	7.034	0.159	1.29	69	1.74	63	44	59	100.8	72	0.113	0.336	21.63
45	145.6	0.3	7.193	0.159	1.29	69	1.74	63	44	59	101.1	71	0.112	0.335	21.73
46	145.0	0.5	7.352	0.159	1.29	69	1.74	63	44	59	100.6	71	0.115	0.339	21.81
47	144.6	0.5	7.513	0.161	1.29	69	1.75	63	44	59	101.4	71	0.115	0.339	21.96
48	144.0	0.6	7.672	0.159	1.28	69	1.75	63	44	59	99.7	71	0.116	0.341	22.01
49	143.6	0.4	7.831	0.159	1.29	69	1.75	63	44	59	99.4	70	0.116	0.341	22.04
50	143.0	0.5	7.990	0.159	1.29	69	1.75	63	44	59	99.9	71	0.110	0.332	21.76
51	142.6	0.4	8.150	0.160	1.29	69	1.74	63	44	59	101.4	71	0.115	0.339	21.72
52	141.9	0.7	8.310	0.160	1.28	70	1.75	63	45	59	101.3	71	0.111	0.333	21.77
53	141.5	0.4	8.469	0.159	1.29	70	1.75	63	45	59	100.5	71	0.115	0.339	21.77
54	141.1	0.5	8.628	0.159	1.29	70	1.75	63	45	59	100.2	71	0.113	0.336	21.86
55	140.5	0.6	8.788	0.160	1.29	70	1.75	63	45	59	100.5	71	0.116	0.341	21.91
56	139.9	0.6	8.948	0.160	1.29	70	1.76	63	45	59	100.3	71	0.114	0.338	21.96
57	139.4	0.4	9.107	0.159	1.29	70	1.75	63	45	59	99.7	72	0.116	0.341	21.97
58	139.1	0.4	9.266	0.159	1.29	70	1.76	63	45	59	99.6	71	0.114	0.338	21.97
59	138.5	0.6	9.426	0.160	1.30	70	1.75	63	45	59	100.1	71	0.117	0.342	22.01
60	138.2	0.2	9.586	0.160	1.29	70	1.75	63	45	58	100.0	71	0.114	0.338	22.01
61	137.4	0.8	9.745	0.159	1.28	70	1.76	63	45	59	100.0	71	0.111	0.333	21.72
62	137.1	0.3	9.905	0.160	1.29	70	1.76	63	45	59	101.2	71	0.115	0.339	21.77
63	136.5	0.6	10.064	0.159	1.29	70	1.76	63	45	59	100.4	71	0.112	0.335	21.81
64	135.4	1.0	10.225	0.161	1.29	70	1.75	63	45	59	101.7	72	0.114	0.338	21.78
65	135.3	0.1	10.384	0.159	1.28	70	1.76	63	46	59	99.9	71	0.118	0.344	22.06
66	134.9	0.4	10.543	0.159	1.28	70	1.75	63	46	59	99.1	72	0.115	0.339	22.11
67	134.4	0.5	10.703	0.160	1.29	70	1.75	63	46	59	99.8	72	0.117	0.342	22.07
68	134.0	0.4	10.863	0.160	1.30	71	1.76	63	46	59	99.9	71	0.113	0.336	21.97
69	133.4	0.5	11.023	0.160	1.29	71	1.75	63	46	59	100.3	72	0.115	0.339	21.87
70	132.9	0.5	11.182	0.159	1.29	71	1.76	63	46	59	99.5	72	0.117	0.342	22.07
71	132.3	0.6	11.342	0.160	1.29	71	1.76	63	46	59	100.0	72	0.112	0.335	21.93
72	131.6	0.7	11.502	0.160	1.29	71	1.75	63	46	59	100.8	72	0.113	0.336	21.74
73	131.4	0.3	11.662	0.160	1.29	71	1.76	63	46	59	101.1	72	0.113	0.336	21.79
74	130.7	0.7	11.821	0.159	1.29	71	1.76	63	46	59	99.9	72	0.117	0.342	21.98
75	130.3	0.4	11.980	0.159	1.29	71	1.77	63	46	59	99.2	72	0.116	0.341	22.12
76	129.8	0.5	12.140	0.160	1.29	71	1.76	63	46	59	99.5	72	0.117	0.342	22.12
77	129.2	0.6	12.301	0.161	1.29	71	1.76	63	46	59	100.5	72	0.112	0.335	21.93
78	128.7	0.5	12.460	0.159	1.29	71	1.76	63	46	59	100.0	72	0.114	0.338	21.79
79	128.3	0.5	12.619	0.159	1.29	71	1.76	63	47	59	100.0	72	0.115	0.339	21.93
80	127.6	0.6	12.779	0.160	1.29	71	1.76	63	47	58	100.3	72	0.114	0.338	21.93
81	127.2	0.5	12.939	0.160	1.29	71	1.76	63	47	58	100.7	71	0.111	0.333	21.73
82	126.7	0.5	13.099	0.160	1.29	71	1.76	63	47	59	101.0	71	0.115	0.339	21.77
83	126.1	0.5	13.258	0.159	1.29	71	1.77	63	47	59	99.8	72	0.116	0.341	22.02
84	125.5	0.6	13.417	0.159	1.29	71	1.77	63	47	58	99.4	72	0.114	0.338	21.98

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 16:13

Test Length: 348 min

Recording Interval: 1 min

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.05 in. Hg

Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
85	125.0	0.6	13.577	0.160	1.30	71	1.76	63	47	59	100.6	72	0.112	0.335	21.79
86	124.7	0.3	13.737	0.160	1.29	71	1.77	63	47	59	100.3	72	0.120	0.346	22.07
87	124.1	0.5	13.896	0.159	1.29	71	1.77	63	47	59	98.5	72	0.117	0.342	22.31
88	123.5	0.6	14.056	0.160	1.29	71	1.76	63	47	59	99.3	72	0.114	0.338	22.03
89	123.1	0.4	14.215	0.159	1.29	71	1.76	63	47	59	99.6	72	0.114	0.338	21.88
90	122.6	0.5	14.376	0.161	1.29	71	1.76	63	47	59	101.0	71	0.115	0.339	21.92
91	122.2	0.4	14.535	0.159	1.28	71	1.76	63	47	59	99.4	71	0.116	0.341	22.01
92	121.3	0.9	14.694	0.159	1.29	71	1.77	63	47	59	99.5	72	0.113	0.336	21.92
93	121.1	0.1	14.854	0.160	1.29	71	1.76	63	48	59	100.5	71	0.114	0.338	21.82
94	120.6	0.6	15.015	0.161	1.28	71	1.76	63	48	59	101.0	71	0.116	0.341	21.96
95	120.1	0.5	15.174	0.159	1.28	71	1.76	63	48	58	99.4	71	0.114	0.338	21.96
96	119.6	0.5	15.333	0.159	1.29	71	1.77	63	48	59	99.3	71	0.117	0.342	22.01
97	119.1	0.4	15.492	0.159	1.29	71	1.78	63	48	59	98.7	72	0.119	0.345	22.25
98	118.5	0.7	15.652	0.160	1.28	71	1.77	63	48	59	99.1	71	0.114	0.338	22.11
99	118.0	0.5	15.812	0.160	1.28	71	1.76	63	48	59	100.0	72	0.114	0.338	21.87
100	117.6	0.4	15.971	0.159	1.29	71	1.77	63	48	59	100.2	71	0.111	0.333	21.73
101	116.9	0.7	16.131	0.160	1.29	71	1.77	63	48	59	100.8	72	0.117	0.342	21.87
102	116.4	0.5	16.290	0.159	1.29	71	1.77	63	48	59	99.7	72	0.113	0.336	21.98
103	115.8	0.6	16.450	0.160	1.28	71	1.77	63	48	59	100.4	72	0.114	0.338	21.83
104	115.3	0.5	16.610	0.160	1.29	71	1.77	63	48	59	100.6	72	0.115	0.339	21.93
105	114.7	0.6	16.769	0.159	1.29	71	1.77	63	48	59	99.8	72	0.113	0.336	21.88
106	114.1	0.6	16.928	0.159	1.29	72	1.77	63	48	59	100.1	72	0.113	0.336	21.79
107	113.6	0.4	17.089	0.161	1.28	71	1.77	63	48	59	101.2	72	0.116	0.341	21.93
108	113.0	0.6	17.248	0.159	1.28	71	1.77	63	48	59	99.4	72	0.116	0.341	22.07
109	112.4	0.6	17.407	0.159	1.28	72	1.78	63	48	58	99.3	71	0.112	0.335	21.87
110	111.8	0.6	17.566	0.159	1.29	72	1.78	63	48	59	100.4	72	0.110	0.332	21.58
111	111.1	0.7	17.727	0.161	1.28	72	1.77	63	48	59	101.9	72	0.116	0.341	21.79
112	110.5	0.6	17.886	0.159	1.27	72	1.77	63	49	59	100.2	73	0.110	0.332	21.80
113	110.0	0.5	18.045	0.159	1.28	72	1.77	63	49	59	100.4	73	0.115	0.339	21.76
114	109.5	0.5	18.205	0.160	1.29	72	1.78	63	49	59	100.8	73	0.113	0.336	21.90
115	108.8	0.7	18.365	0.160	1.29	72	1.77	63	49	59	100.8	72	0.111	0.333	21.70
116	108.2	0.6	18.525	0.160	1.29	72	1.78	63	49	59	101.2	73	0.114	0.338	21.75
117	107.7	0.5	18.683	0.158	1.28	71	1.78	63	49	58	99.6	72	0.114	0.338	21.89
118	107.0	0.7	18.843	0.160	1.29	72	1.77	63	49	59	100.3	72	0.115	0.339	21.93
119	106.5	0.5	19.003	0.160	1.29	72	1.78	63	49	59	100.0	72	0.115	0.339	21.98
120	105.9	0.7	19.163	0.160	1.28	72	1.78	63	49	59	99.7	72	0.117	0.342	22.07
121	105.3	0.5	19.322	0.159	1.28	72	1.78	63	49	59	98.7	72	0.117	0.342	22.17
122	104.8	0.5	19.481	0.159	1.29	72	1.78	63	49	59	98.7	72	0.115	0.339	22.07
123	104.1	0.7	19.641	0.160	1.29	72	1.78	63	49	59	100.0	72	0.112	0.335	21.83
124	103.5	0.6	19.801	0.160	1.28	72	1.78	63	49	59	100.5	72	0.116	0.341	21.88
125	103.0	0.6	19.960	0.159	1.28	72	1.78	63	49	58	99.5	72	0.114	0.338	21.98
126	102.4	0.6	20.120	0.160	1.29	72	1.78	63	49	58	100.3	72	0.113	0.336	21.83
127	101.9	0.6	20.279	0.159	1.28	72	1.78	63	49	58	99.3	72	0.120	0.346	22.12
128	101.3	0.6	20.440	0.161	1.28	72	1.78	63	49	58	100.3	72	0.109	0.330	21.93

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 16:13

Test Length: 348 min

Recording Interval: 1 min

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.05 in. Hg

Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
129	100.7	0.6	20.599	0.159	1.28	72	1.78	63	49	58	100.6	72	0.110	0.332	21.45
130	100.3	0.5	20.758	0.159	1.29	72	1.77	63	49	58	101.5	73	0.112	0.335	21.60
131	99.8	0.5	20.918	0.160	1.29	72	1.77	63	49	59	101.2	72	0.115	0.339	21.85
132	99.2	0.6	21.078	0.160	1.28	72	1.77	63	49	59	100.7	73	0.111	0.333	21.80
133	98.5	0.6	21.237	0.159	1.28	72	1.77	64	50	60	100.1	73	0.117	0.342	21.90
134	98.0	0.5	21.396	0.159	1.28	72	1.78	64	50	60	99.7	73	0.112	0.335	21.95
135	97.5	0.5	21.556	0.160	1.28	72	1.78	64	50	60	100.7	73	0.113	0.336	21.76
136	97.0	0.5	21.716	0.160	1.28	72	1.78	64	50	60	101.1	73	0.112	0.335	21.76
137	96.5	0.5	21.875	0.159	1.28	72	1.78	64	50	61	100.4	73	0.114	0.338	21.81
138	96.0	0.5	22.034	0.159	1.28	72	1.78	64	50	61	99.9	73	0.115	0.339	21.95
139	95.5	0.4	22.193	0.159	1.28	72	1.78	64	50	61	99.4	73	0.116	0.341	22.05
140	94.9	0.6	22.353	0.160	1.29	72	1.78	64	50	61	99.9	73	0.114	0.338	22.00
141	94.5	0.4	22.513	0.160	1.28	72	1.78	64	50	61	100.5	73	0.112	0.335	21.81
142	94.0	0.5	22.672	0.159	1.27	72	1.78	64	50	62	100.3	73	0.114	0.338	21.81
143	93.5	0.5	22.831	0.159	1.28	72	1.79	65	50	61	100.7	74	0.109	0.330	21.67
144	93.0	0.6	22.990	0.159	1.28	72	1.79	65	50	62	101.0	73	0.114	0.338	21.67
145	92.5	0.5	23.150	0.160	1.28	72	1.78	65	50	62	101.1	73	0.113	0.336	21.86
146	92.0	0.4	23.309	0.159	1.28	72	1.79	65	50	62	100.1	73	0.114	0.338	21.86
147	91.6	0.5	23.468	0.159	1.28	72	1.78	65	50	62	100.4	73	0.110	0.332	21.71
148	91.0	0.6	23.627	0.159	1.28	72	1.79	65	50	62	101.1	73	0.111	0.333	21.56
149	90.5	0.5	23.787	0.160	1.28	72	1.79	65	50	62	101.4	73	0.116	0.341	21.86
150	90.0	0.5	23.946	0.159	1.27	72	1.79	65	50	62	99.8	73	0.113	0.336	21.95
151	89.5	0.4	24.104	0.158	1.27	72	1.79	65	50	62	99.2	73	0.114	0.338	21.86
152	89.1	0.5	24.264	0.160	1.28	72	1.79	66	50	62	100.4	73	0.116	0.341	22.00
153	88.5	0.6	24.424	0.160	1.28	72	1.79	66	50	63	99.9	73	0.115	0.339	22.05
154	88.0	0.5	24.582	0.158	1.27	72	1.80	66	50	63	98.8	74	0.114	0.338	21.96
155	87.5	0.5	24.741	0.159	1.28	72	1.79	66	50	63	99.9	73	0.113	0.336	21.87
156	87.2	0.3	24.901	0.160	1.28	73	1.80	66	50	63	100.1	73	0.118	0.344	22.05
157	86.6	0.6	25.060	0.159	1.28	73	1.79	66	50	63	99.2	74	0.112	0.335	22.01
158	86.2	0.4	25.219	0.159	1.27	73	1.79	66	50	63	99.5	74	0.116	0.341	21.92
159	85.6	0.6	25.378	0.159	1.27	73	1.80	66	50	63	100.0	74	0.110	0.332	21.83
160	85.1	0.5	25.537	0.159	1.28	73	1.79	66	50	63	100.4	73	0.113	0.336	21.67
161	84.6	0.4	25.697	0.160	1.27	73	1.80	66	50	63	100.8	74	0.116	0.341	21.96
162	84.2	0.5	25.855	0.158	1.27	73	1.80	66	50	63	98.9	74	0.113	0.336	21.97
163	83.7	0.5	26.014	0.159	1.27	73	1.80	66	50	64	99.3	74	0.118	0.344	22.07
164	83.3	0.4	26.174	0.160	1.27	73	1.81	66	50	64	99.4	74	0.116	0.341	22.21
165	82.7	0.6	26.333	0.159	1.27	73	1.80	66	50	64	98.5	74	0.118	0.344	22.21
166	82.4	0.3	26.491	0.158	1.27	73	1.81	66	50	64	98.0	74	0.114	0.338	22.12
167	81.8	0.6	26.650	0.159	1.28	73	1.81	67	50	64	99.4	74	0.113	0.336	21.88
168	81.3	0.5	26.810	0.160	1.28	73	1.81	67	50	63	100.7	74	0.113	0.336	21.83
169	80.7	0.5	26.969	0.159	1.26	73	1.81	67	50	64	100.1	75	0.114	0.338	21.89
170	80.3	0.4	27.128	0.159	1.26	74	1.81	67	51	64	99.5	74	0.117	0.342	22.08
171	79.8	0.5	27.286	0.158	1.27	74	1.80	67	50	64	98.3	74	0.114	0.338	22.07
172	79.3	0.6	27.446	0.160	1.26	74	1.81	67	51	64	99.9	74	0.114	0.338	21.92

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 16:13
 Test Length: 348 min
 Recording Interval: 1 min

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.05 in. Hg
 Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
173	78.9	0.4	27.605	0.159	1.26	74	1.81	67	51	64	99.6	75	0.114	0.338	21.93
174	78.3	0.6	27.763	0.158	1.26	74	1.82	67	51	64	99.1	74	0.113	0.336	21.89
175	77.8	0.5	27.922	0.159	1.27	74	1.81	67	51	64	99.6	74	0.115	0.339	21.92
176	77.4	0.5	28.082	0.160	1.27	74	1.81	67	51	64	100.1	74	0.114	0.338	21.97
177	76.9	0.5	28.241	0.159	1.26	74	1.81	67	51	64	99.4	74	0.114	0.338	21.92
178	76.3	0.5	28.399	0.158	1.27	74	1.81	67	51	64	99.0	74	0.113	0.336	21.88
179	75.9	0.4	28.558	0.159	1.27	74	1.81	67	51	64	100.3	73	0.109	0.330	21.62
180	75.5	0.5	28.718	0.160	1.27	74	1.82	67	51	64	101.5	74	0.113	0.336	21.62
181	74.9	0.6	28.876	0.158	1.26	74	1.82	67	51	64	99.7	74	0.114	0.338	21.88
182	74.4	0.5	29.035	0.159	1.27	74	1.82	67	51	64	100.0	74	0.111	0.333	21.78
183	74.1	0.4	29.194	0.159	1.27	74	1.82	67	51	64	100.4	74	0.112	0.335	21.68
184	73.7	0.4	29.353	0.159	1.27	74	1.81	67	51	64	100.4	74	0.113	0.336	21.78
185	73.2	0.5	29.512	0.159	1.27	74	1.82	67	51	64	100.2	74	0.112	0.335	21.78
186	72.7	0.4	29.670	0.158	1.26	74	1.82	67	51	64	99.5	74	0.114	0.338	21.83
187	72.2	0.5	29.830	0.160	1.26	75	1.83	67	51	64	100.2	74	0.115	0.339	21.97
188	71.7	0.5	29.989	0.159	1.25	75	1.83	67	51	64	98.9	74	0.116	0.341	22.07
189	63.0	8.7	30.147	0.158	1.26	75	1.82	67	51	64	97.8	74	0.118	0.344	22.21
190	71.0	-7.9	30.306	0.159	1.27	75	1.82	67	51	64	98.3	74	0.114	0.338	22.12
191	70.5	0.5	30.466	0.160	1.26	75	1.82	67	51	64	99.7	74	0.113	0.336	21.88
192	70.0	0.5	30.625	0.159	1.26	75	1.82	67	51	64	99.6	74	0.114	0.338	21.88
193	69.6	0.3	30.783	0.158	1.26	75	1.82	67	51	64	98.9	73	0.113	0.336	21.87
194	65.1	4.6	30.942	0.159	1.27	75	1.82	67	51	64	99.5	73	0.114	0.338	21.86
195	68.7	-3.6	31.101	0.159	1.26	75	1.82	67	51	64	99.6	74	0.113	0.336	21.87
196	68.2	0.4	31.260	0.159	1.26	75	1.83	67	51	64	99.3	74	0.117	0.342	22.02
197	67.8	0.5	31.418	0.158	1.26	75	1.82	67	51	64	98.2	74	0.114	0.338	22.07
198	67.4	0.4	31.577	0.159	1.26	75	1.83	67	51	64	98.8	74	0.116	0.341	22.02
199	66.8	0.5	31.737	0.160	1.26	75	1.83	67	51	64	99.1	74	0.118	0.344	22.21
200	66.6	0.2	31.895	0.158	1.26	75	1.82	67	51	65	97.4	73	0.116	0.341	22.20
201	66.1	0.5	32.054	0.159	1.27	75	1.83	67	51	64	98.6	74	0.113	0.336	21.96
202	65.8	0.3	32.213	0.159	1.26	75	1.83	67	51	64	99.3	73	0.114	0.338	21.87
203	65.4	0.4	32.372	0.159	1.26	75	1.83	67	51	64	99.5	72	0.112	0.335	21.80
204	64.9	0.4	32.531	0.159	1.26	75	1.83	67	51	64	100.0	74	0.112	0.335	21.71
205	64.4	0.5	32.689	0.158	1.27	75	1.83	67	51	64	99.6	74	0.113	0.336	21.78
206	63.8	0.6	32.849	0.160	1.27	75	1.83	68	51	64	100.5	74	0.113	0.336	21.83
207	63.5	0.3	33.008	0.159	1.26	75	1.84	68	51	64	99.8	74	0.113	0.336	21.83
208	62.7	0.8	33.166	0.158	1.26	76	1.83	68	51	65	99.1	74	0.113	0.336	21.83
209	62.3	0.4	33.325	0.159	1.26	76	1.84	68	51	64	100.0	73	0.109	0.330	21.62
210	61.9	0.4	33.485	0.160	1.26	76	1.83	68	51	65	100.9	74	0.115	0.339	21.72
211	61.3	0.6	33.643	0.158	1.25	76	1.84	68	51	64	98.8	74	0.115	0.339	22.02
212	60.8	0.5	33.801	0.158	1.25	76	1.83	68	51	65	98.4	74	0.112	0.335	21.88
213	60.2	0.6	33.960	0.159	1.26	76	1.83	68	51	65	99.6	74	0.113	0.336	21.78
214	59.8	0.4	34.120	0.160	1.26	76	1.84	68	51	65	100.6	74	0.111	0.333	21.73
215	59.2	0.6	34.278	0.158	1.26	76	1.83	68	51	65	99.6	75	0.112	0.335	21.69
216	58.7	0.5	34.437	0.159	1.26	76	1.85	68	51	65	100.2	74	0.112	0.335	21.74

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 16:13
Test Length: 348 min
Recording Interval: 1 min

Test Date: 12/2/24
Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
 Pre-test 0 cfm @ 17.05 in. Hg
 Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
217	58.2	0.6	34.596	0.159	1.27	76	1.83	68	51	65	99.9	74	0.113	0.336	21.78
218	57.7	0.4	34.755	0.159	1.26	76	1.83	68	51	65	99.7	74	0.113	0.336	21.83
219	57.3	0.4	34.913	0.158	1.26	76	1.83	68	51	65	99.0	74	0.113	0.336	21.83
220	56.8	0.6	35.072	0.159	1.26	76	1.83	68	51	65	99.5	73	0.113	0.336	21.82
221	56.5	0.3	35.232	0.160	1.26	76	1.83	68	51	65	100.0	73	0.114	0.338	21.86
222	56.1	0.3	35.391	0.159	1.25	76	1.84	68	51	65	99.5	73	0.111	0.333	21.76
223	55.7	0.4	35.549	0.158	1.25	76	1.84	68	52	65	98.9	73	0.116	0.341	21.86
224	55.2	0.5	35.708	0.159	1.26	76	1.83	68	52	65	98.8	73	0.116	0.341	22.09
225	54.7	0.5	35.868	0.160	1.26	76	1.84	68	52	65	98.8	73	0.116	0.341	22.09
226	54.3	0.4	36.026	0.158	1.26	76	1.84	68	52	65	97.8	73	0.114	0.338	22.00
227	53.9	0.4	36.185	0.159	1.26	76	1.85	68	52	65	98.8	73	0.115	0.339	21.95
228	53.3	0.6	36.343	0.158	1.26	76	1.85	68	52	65	98.0	74	0.117	0.342	22.11
229	52.9	0.5	36.505	0.162	1.28	76	1.87	68	52	65	100.2	74	0.115	0.339	22.12
230	52.3	0.5	36.665	0.160	1.29	76	1.87	68	52	65	99.0	74	0.116	0.341	22.07
231	51.9	0.5	36.825	0.160	1.28	76	1.87	68	52	65	98.9	74	0.117	0.342	22.16
232	51.3	0.5	36.985	0.160	1.29	76	1.87	68	52	65	99.3	73	0.110	0.332	21.87
233	50.8	0.5	37.146	0.161	1.29	77	1.88	68	52	65	101.1	74	0.112	0.335	21.62
234	50.2	0.6	37.307	0.161	1.28	77	1.88	68	52	65	100.8	74	0.117	0.342	21.97
235	49.8	0.5	37.468	0.161	1.28	77	1.88	68	52	65	99.8	74	0.114	0.338	22.07
236	49.3	0.4	37.628	0.160	1.28	77	1.88	68	52	65	99.7	74	0.110	0.332	21.73
237	48.6	0.7	37.789	0.161	1.29	77	1.87	68	52	65	100.7	74	0.118	0.344	21.92
238	48.2	0.4	37.949	0.160	1.29	77	1.87	68	52	65	99.3	74	0.113	0.336	22.07
239	47.7	0.5	38.110	0.161	1.29	77	1.88	68	52	65	99.8	74	0.116	0.341	21.97
240	47.1	0.6	38.271	0.161	1.29	77	1.87	68	52	65	100.0	74	0.113	0.336	21.97
241	46.5	0.6	38.431	0.160	1.28	77	1.87	68	52	65	99.7	73	0.113	0.336	21.82
242	46.1	0.4	38.591	0.160	1.28	77	1.88	68	52	65	100.1	74	0.112	0.335	21.77
243	45.6	0.5	38.752	0.161	1.29	77	1.88	68	52	65	101.2	74	0.111	0.333	21.68
244	45.1	0.4	38.912	0.160	1.29	77	1.88	68	52	66	100.5	74	0.114	0.338	21.78
245	44.5	0.6	39.074	0.162	1.29	77	1.89	68	52	66	101.6	74	0.110	0.332	21.73
246	44.0	0.5	39.234	0.160	1.28	77	1.87	68	52	65	100.4	74	0.115	0.339	21.78
247	43.6	0.4	39.394	0.160	1.28	77	1.88	68	52	65	99.6	74	0.116	0.341	22.07
248	42.9	0.6	39.554	0.160	1.29	77	1.88	68	52	66	99.0	74	0.115	0.339	22.07
249	42.4	0.5	39.715	0.161	1.29	77	1.88	68	52	65	99.9	74	0.113	0.336	21.92
250	41.9	0.5	39.877	0.162	1.28	77	1.88	68	52	65	101.1	74	0.113	0.336	21.83
251	41.2	0.6	40.037	0.160	1.28	77	1.89	68	52	65	99.8	74	0.115	0.339	21.92
252	40.8	0.5	40.197	0.160	1.28	77	1.88	68	52	65	99.4	75	0.116	0.341	22.08
253	40.3	0.5	40.357	0.160	1.29	77	1.88	68	52	66	99.1	74	0.114	0.338	22.03
254	39.7	0.6	40.518	0.161	1.29	77	1.89	68	52	65	100.2	74	0.112	0.335	21.83
255	39.1	0.6	40.679	0.161	1.28	77	1.88	68	52	66	100.5	74	0.116	0.341	21.92
256	38.7	0.5	40.840	0.161	1.28	77	1.88	68	52	66	99.7	74	0.117	0.342	22.16
257	38.1	0.5	40.999	0.159	1.28	77	1.89	68	52	66	98.5	75	0.111	0.333	21.93
258	37.5	0.6	41.160	0.161	1.28	77	1.89	68	52	65	100.6	75	0.115	0.339	21.85
259	37.2	0.4	41.320	0.160	1.29	77	1.88	68	52	66	99.9	74	0.113	0.336	21.93
260	36.5	0.7	41.482	0.162	1.28	77	1.89	68	52	66	101.1	74	0.113	0.336	21.83

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 16:13

Test Length: 348 min

Recording Interval: 1 min

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.05 in. Hg

Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
261	36.1	0.4	41.642	0.160	1.28	77	1.88	68	52	66	99.9	74	0.114	0.338	21.88
262	35.6	0.5	41.802	0.160	1.28	77	1.89	68	52	65	100.1	74	0.111	0.333	21.78
263	35.0	0.5	41.962	0.160	1.29	77	1.88	68	52	66	100.2	74	0.115	0.339	21.83
264	34.4	0.7	42.123	0.161	1.28	77	1.89	68	52	66	100.6	74	0.112	0.335	21.88
265	33.9	0.5	42.284	0.161	1.28	77	1.89	68	52	65	100.8	75	0.113	0.336	21.79
266	33.4	0.5	42.444	0.160	1.27	77	1.89	68	52	66	100.5	75	0.111	0.333	21.75
267	32.8	0.5	42.604	0.160	1.28	77	1.89	68	52	66	100.9	74	0.110	0.332	21.60
268	32.2	0.6	42.764	0.160	1.29	77	1.89	68	52	66	100.6	74	0.116	0.341	21.83
269	31.9	0.3	42.925	0.161	1.28	77	1.89	68	52	66	100.5	75	0.112	0.335	21.93
270	31.3	0.6	43.086	0.161	1.29	77	1.89	68	52	66	100.1	75	0.118	0.344	22.04
271	30.7	0.6	43.247	0.161	1.28	77	1.90	68	52	66	99.7	74	0.113	0.336	22.08
272	30.2	0.5	43.406	0.159	1.28	77	1.89	69	52	66	99.0	75	0.112	0.335	21.79
273	29.6	0.6	43.567	0.161	1.28	78	1.89	69	52	66	100.9	74	0.113	0.336	21.79
274	29.1	0.5	43.727	0.160	1.28	77	1.89	69	52	66	99.6	74	0.117	0.342	22.02
275	28.6	0.5	43.888	0.161	1.28	78	1.89	68	52	66	100.1	75	0.110	0.332	21.89
276	28.1	0.5	44.049	0.161	1.28	78	1.89	68	52	66	100.7	75	0.114	0.338	21.75
277	27.6	0.5	44.209	0.160	1.28	78	1.90	69	52	65	100.2	75	0.112	0.335	21.85
278	27.2	0.4	44.369	0.160	1.28	78	1.90	69	52	66	99.2	74	0.120	0.346	22.13
279	26.7	0.6	44.529	0.160	1.28	78	1.90	69	52	66	98.2	74	0.115	0.339	22.26
280	26.2	0.4	44.690	0.161	1.27	78	1.89	69	52	65	99.0	74	0.116	0.341	22.07
281	25.7	0.6	44.851	0.161	1.28	78	1.89	69	52	66	99.5	75	0.115	0.339	22.08
282	25.2	0.4	45.011	0.160	1.28	78	1.89	69	52	66	99.6	75	0.110	0.332	21.80
283	24.8	0.4	45.171	0.160	1.28	78	1.89	69	53	65	100.5	74	0.112	0.335	21.64
284	24.3	0.6	45.331	0.160	1.28	78	1.90	69	53	66	100.2	74	0.115	0.339	21.88
285	23.9	0.4	45.492	0.161	1.28	78	1.89	69	52	66	100.0	75	0.115	0.339	22.03
286	23.3	0.5	45.653	0.161	1.27	78	1.90	69	53	66	99.7	74	0.115	0.339	22.03
287	23.0	0.4	45.813	0.160	1.28	78	1.90	69	52	66	98.8	74	0.117	0.342	22.12
288	22.5	0.5	45.973	0.160	1.28	78	1.89	69	53	66	98.2	74	0.119	0.345	22.31
289	22.1	0.4	46.133	0.160	1.28	78	1.90	69	53	66	98.4	74	0.111	0.333	22.02
290	21.6	0.5	46.294	0.161	1.28	78	1.89	69	53	65	100.1	74	0.115	0.339	21.83
291	21.1	0.4	46.455	0.161	1.28	78	1.90	69	53	66	100.4	74	0.112	0.335	21.88
292	20.7	0.4	46.614	0.159	1.28	78	1.90	69	52	66	99.8	74	0.108	0.329	21.54
293	20.2	0.5	46.774	0.160	1.28	78	1.90	69	52	66	100.8	74	0.116	0.341	21.73
294	19.9	0.3	46.935	0.161	1.28	78	1.90	69	53	66	100.5	75	0.113	0.336	21.98
295	19.4	0.5	47.096	0.161	1.28	78	1.90	69	53	66	100.5	74	0.110	0.332	21.69
296	19.2	0.2	47.256	0.160	1.28	78	1.90	69	53	66	100.5	74	0.113	0.336	21.68
297	18.7	0.5	47.416	0.160	1.27	78	1.91	69	52	66	100.0	74	0.115	0.339	21.92
298	18.3	0.4	47.576	0.160	1.28	78	1.91	69	52	66	99.4	75	0.114	0.338	21.98
299	17.8	0.5	47.736	0.160	1.28	78	1.91	69	52	66	99.5	74	0.113	0.336	21.89
300	17.4	0.5	47.897	0.161	1.28	78	1.91	69	52	66	100.4	74	0.113	0.336	21.83
301	17.1	0.3	48.057	0.160	1.27	78	1.91	69	52	66	99.4	74	0.117	0.342	22.02
302	16.6	0.5	48.217	0.160	1.28	78	1.90	69	52	66	99.1	75	0.113	0.336	22.03
303	16.1	0.5	48.377	0.160	1.28	78	1.91	69	52	66	99.3	75	0.115	0.339	21.94
304	15.7	0.4	48.537	0.160	1.28	78	1.91	69	52	66	98.9	74	0.118	0.344	22.17

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 1
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 16:13
 Test Length: 348 min
 Recording Interval: 1 min

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.05 in. Hg
 Post-Test 0 cfm @ 10.1 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
305	15.3	0.4	48.698	0.161	1.27	78	1.92	69	52	66	99.2	75	0.113	0.336	22.08
306	14.8	0.4	48.858	0.160	1.27	78	1.92	69	52	66	99.1	75	0.116	0.341	21.99
307	14.5	0.4	49.018	0.160	1.28	78	1.92	69	52	66	99.3	75	0.113	0.336	21.99
308	14.1	0.4	49.178	0.160	1.28	78	1.92	69	52	66	99.6	75	0.113	0.336	21.85
309	13.8	0.2	49.338	0.160	1.28	78	1.91	69	52	66	99.7	74	0.115	0.339	21.93
310	13.4	0.4	49.499	0.161	1.28	78	1.92	69	52	66	99.4	74	0.119	0.345	22.21
311	13.1	0.3	49.659	0.160	1.28	78	1.92	69	52	66	98.3	75	0.114	0.338	22.17
312	12.8	0.3	49.819	0.160	1.28	78	1.92	69	52	66	99.2	74	0.112	0.335	21.84
313	12.4	0.4	49.979	0.160	1.28	78	1.92	69	52	66	99.7	75	0.116	0.341	21.93
314	12.1	0.3	50.140	0.161	1.28	78	1.92	69	52	66	99.9	74	0.114	0.338	22.03
315	11.7	0.4	50.300	0.160	1.28	78	1.92	69	52	66	99.3	75	0.114	0.338	21.93
316	11.3	0.4	50.460	0.160	1.27	78	1.92	69	52	66	99.4	74	0.115	0.339	21.98
317	10.9	0.4	50.620	0.160	1.28	78	1.92	69	52	66	99.1	74	0.115	0.339	22.02
318	10.7	0.3	50.779	0.159	1.27	78	1.92	69	52	66	98.6	74	0.113	0.336	21.92
319	10.3	0.4	50.941	0.162	1.27	78	1.92	69	52	66	100.7	74	0.115	0.339	21.92
320	9.9	0.4	51.101	0.160	1.26	78	1.92	69	52	66	99.7	75	0.111	0.333	21.84
321	9.5	0.4	51.260	0.159	1.27	78	1.92	69	52	66	99.4	74	0.114	0.338	21.79
322	9.3	0.3	51.420	0.160	1.27	78	1.92	69	52	66	99.7	74	0.114	0.338	21.92
323	8.8	0.4	51.580	0.160	1.27	78	1.92	69	52	66	99.4	74	0.114	0.338	21.92
324	8.5	0.4	51.741	0.161	1.27	78	1.92	69	52	66	100.6	75	0.110	0.332	21.74
325	8.1	0.3	51.901	0.160	1.27	78	1.92	69	52	66	100.6	74	0.112	0.335	21.64
326	7.8	0.4	52.061	0.160	1.27	78	1.93	69	52	66	100.0	74	0.117	0.342	21.97
327	7.5	0.3	52.221	0.160	1.27	78	1.93	69	52	66	99.4	75	0.111	0.333	21.93
328	7.2	0.3	52.381	0.160	1.27	78	1.93	69	52	66	100.0	74	0.112	0.335	21.69
329	6.8	0.4	52.541	0.160	1.27	78	1.93	69	52	66	99.9	75	0.117	0.342	21.98
330	6.6	0.2	52.701	0.160	1.27	78	1.92	69	52	66	99.5	75	0.110	0.332	21.90
331	6.2	0.4	52.861	0.160	1.27	78	1.92	69	52	66	100.2	74	0.112	0.335	21.64
332	5.8	0.3	53.021	0.160	1.27	78	1.93	69	52	66	100.5	74	0.112	0.335	21.73
333	5.6	0.3	53.182	0.161	1.27	78	1.93	69	52	66	100.8	75	0.114	0.338	21.84
334	5.2	0.4	53.342	0.160	1.27	78	1.92	69	52	66	99.9	74	0.112	0.335	21.84
335	4.9	0.3	53.501	0.159	1.27	78	1.93	69	52	66	99.4	75	0.113	0.336	21.79
336	4.6	0.4	53.661	0.160	1.27	78	1.93	69	52	66	100.2	75	0.112	0.335	21.80
337	4.3	0.3	53.821	0.160	1.27	78	1.93	69	52	66	99.7	75	0.117	0.342	21.99
338	3.9	0.4	53.982	0.161	1.27	78	1.93	69	52	66	99.8	74	0.113	0.336	22.03
339	3.6	0.3	54.142	0.160	1.26	78	1.93	69	52	66	99.3	75	0.115	0.339	21.93
340	3.2	0.4	54.301	0.159	1.27	78	1.93	69	52	66	98.9	75	0.113	0.336	21.94
341	2.8	0.4	54.461	0.160	1.27	78	1.93	69	52	66	99.6	74	0.114	0.338	21.89
342	2.5	0.4	54.621	0.160	1.27	78	1.94	69	52	66	99.3	74	0.116	0.341	22.02
343	2.1	0.4	54.781	0.160	1.26	78	1.93	69	52	66	99.4	74	0.110	0.332	21.83
344	1.8	0.3	54.941	0.160	1.27	78	1.93	69	52	66	100.1	74	0.114	0.338	21.73
345	1.4	0.4	55.100	0.159	1.27	78	1.93	69	52	66	99.2	74	0.114	0.338	21.92
346	1.1	0.3	55.260	0.160	1.27	78	1.93	69	52	66	99.7	75	0.112	0.335	21.84
347	0.7	0.4	55.421	0.161	1.27	78	1.94	69	52	66	100.7	74	0.113	0.336	21.79
348	0.0	0.7	55.581	0.160	1.26	78	1.93	69	52	66	99.8	74	0.114	0.338	21.88

Train B - Particulate Sampling

ASTM E2515

Run: 1Test Date: 12/2/24Manufacturer: Central BoilerModel: Classic Edge 560.1Tracking No.: 2495Project No.: 0117WB043EMeter Box Y Regression Offset: 1.006Meter Box Y Regression Slope: 0Meter Box Dynamic Y: 1.006Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. HgPost-Test 0 cfm @ 9.95 in. Hg

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	55.922	0.161	1.03	74.5	2.17	64.84	49.05	100.0
Minimum	0.000	0.151	0.88	64	1.90	58	37	95.1
Max	55.922	0.163	1.05	79	2.30	68	53	103.0
0	0.000		0.88	64	1.90	58	40	
1	0.151	0.151	0.97	64	2.00	59	37	95.1
2	0.304	0.153	0.97	64	2.00	59	37	97.4
3	0.461	0.157	1.00	64	2.00	60	37	99.5
4	0.617	0.156	1.00	64	2.00	60	37	97.9
5	0.776	0.159	1.04	64	2.10	60	37	99.5
6	0.935	0.159	1.03	64	2.10	60	37	100.1
7	1.095	0.160	1.06	64	2.10	60	37	101.8
8	1.256	0.161	1.06	65	2.10	60	38	103.0
9	1.417	0.161	1.05	65	2.10	60	38	102.3
10	1.578	0.161	1.05	65	2.10	61	38	101.5
11	1.738	0.160	1.05	65	2.10	61	38	100.7
12	1.900	0.162	1.05	65	2.10	61	38	101.9
13	2.060	0.160	1.05	65	2.10	61	39	100.6
14	2.220	0.160	1.05	65	2.10	61	39	100.6
15	2.382	0.162	1.05	65	2.10	61	39	102.1
16	2.542	0.160	1.05	66	2.10	61	39	100.7
17	2.702	0.160	1.05	66	2.10	61	39	100.4
18	2.863	0.161	1.05	66	2.10	61	40	101.5
19	3.024	0.161	1.04	66	2.10	61	40	101.9
20	3.185	0.161	1.05	66	2.10	61	40	101.1
21	3.345	0.160	1.05	66	2.10	61	40	99.9
22	3.507	0.162	1.04	67	2.10	61	40	102.2
23	3.667	0.160	1.05	67	2.10	61	40	101.2
24	3.828	0.161	1.05	67	2.10	61	41	100.6
25	3.989	0.161	1.05	67	2.10	61	41	100.2
26	4.150	0.161	1.04	67	2.10	61	41	100.6
27	4.310	0.160	1.05	67	2.10	61	41	100.5
28	4.471	0.161	1.05	68	2.10	61	41	100.9
29	4.633	0.162	1.05	68	2.10	61	42	101.2
30	4.794	0.161	1.05	68	2.10	61	42	101.3
31	4.955	0.161	1.05	68	2.10	62	42	102.0
32	5.117	0.162	1.05	68	2.10	62	42	102.9
33	5.278	0.161	1.05	68	2.10	62	42	102.2
34	5.438	0.160	1.05	69	2.10	62	42	100.9
35	5.599	0.161	1.05	69	2.10	62	42	100.9
36	5.762	0.163	1.05	69	2.10	62	43	102.2
37	5.922	0.160	1.05	69	2.10	62	43	100.3
38	6.083	0.161	1.05	69	2.10	62	43	100.3
39	6.245	0.162	1.05	69	2.10	62	43	100.5
40	6.407	0.162	1.05	69	2.10	62	43	101.1

Train B - Particulate Sampling

ASTM E2515

Run: 1Manufacturer: Central BoilerModel: Classic Edge 560.1Tracking No.: 2495Project No.: 0117WB043ETest Date: 12/2/24Meter Box Y Regression Offset: 1.006Meter Box Y Regression Slope: 0Meter Box Dynamic Y: 1.006Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. HgPost-Test 0 cfm @ 9.95 in. Hg

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
41	6.568	0.161	1.05	70	2.10	62	43	100.1
42	6.729	0.161	1.05	70	2.10	62	43	98.9
43	6.891	0.162	1.05	70	2.10	62	44	100.3
44	7.053	0.162	1.05	70	2.10	62	44	102.1
45	7.214	0.161	1.05	70	2.10	62	44	101.8
46	7.376	0.162	1.06	70	2.10	62	44	101.9
47	7.538	0.162	1.06	70	2.10	62	44	101.4
48	7.699	0.161	1.04	70	2.10	62	44	100.3
49	7.860	0.161	1.05	70	2.10	62	44	100.0
50	8.022	0.162	1.05	71	2.10	62	44	101.1
51	8.184	0.162	1.05	71	2.10	62	44	101.9
52	8.346	0.162	1.05	71	2.10	62	45	101.9
53	8.507	0.161	1.05	71	2.10	62	45	101.1
54	8.668	0.161	1.06	71	2.10	62	45	100.9
55	8.831	0.163	1.05	71	2.10	62	45	101.8
56	8.992	0.161	1.05	71	2.10	62	45	100.3
57	9.154	0.162	1.05	71	2.10	62	45	100.9
58	9.315	0.161	1.05	71	2.10	62	45	100.3
59	9.478	0.163	1.05	71	2.10	62	45	101.3
60	9.639	0.161	1.05	71	2.10	62	45	100.0
61	9.801	0.162	1.05	72	2.10	62	45	101.2
62	9.963	0.162	1.05	72	2.10	62	45	101.7
63	10.125	0.162	1.05	72	2.10	62	46	101.4
64	10.286	0.161	1.05	72	2.10	62	46	100.9
65	10.448	0.162	1.05	72	2.10	62	46	100.9
66	10.610	0.162	1.05	72	2.10	62	46	100.2
67	10.772	0.162	1.05	72	2.10	62	46	100.2
68	10.934	0.162	1.05	72	2.10	62	46	100.5
69	11.095	0.161	1.05	72	2.10	62	46	100.3
70	11.257	0.162	1.06	72	2.10	62	46	100.8
71	11.420	0.163	1.05	72	2.10	62	46	101.3
72	11.581	0.161	1.05	72	2.10	62	46	100.8
73	11.743	0.162	1.05	72	2.10	62	46	101.8
74	11.905	0.162	1.05	72	2.10	62	46	101.2
75	12.067	0.162	1.05	72	2.10	62	46	100.4
76	12.229	0.162	1.05	72	2.10	62	47	100.1
77	12.390	0.161	1.05	72	2.10	62	47	99.9
78	12.552	0.162	1.06	72	2.10	62	47	101.3
79	12.715	0.163	1.05	72	2.10	62	47	101.9
80	12.877	0.162	1.05	72	2.10	62	47	101.0
81	13.038	0.161	1.05	72	2.10	62	47	100.7
82	13.200	0.162	1.05	72	2.10	62	47	101.6
83	13.363	0.163	1.05	73	2.10	62	47	101.6
84	13.524	0.161	1.05	73	2.10	62	47	99.9

Train B - Particulate Sampling

ASTM E2515

Run: 1

Test Date: 12/2/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. Hg

Post-Test 0 cfm @ 9.95 in. Hg

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
85	13.686	0.162	1.05	73	2.10	62	47	101.0
86	13.848	0.162	1.06	73	2.10	62	47	100.8
87	14.011	0.163	1.05	73	2.10	62	47	100.2
88	14.172	0.161	1.05	73	2.10	62	47	99.1
89	14.334	0.162	1.05	73	2.10	62	47	100.7
90	14.496	0.162	1.05	73	2.10	62	47	100.8
91	14.659	0.163	1.05	73	2.10	62	47	101.1
92	14.820	0.161	1.05	73	2.10	62	48	99.9
93	14.982	0.162	1.05	73	2.10	62	48	101.0
94	15.143	0.161	1.05	73	2.10	62	48	100.2
95	15.306	0.163	1.05	73	2.10	62	48	101.1
96	15.468	0.162	1.05	73	2.10	62	48	100.4
97	15.629	0.161	1.05	73	2.10	62	48	99.2
98	15.791	0.162	1.05	73	2.10	62	48	99.6
99	15.954	0.163	1.05	73	2.10	62	48	101.0
100	16.115	0.161	1.04	73	2.10	62	48	100.7
101	16.276	0.161	1.05	73	2.10	62	48	100.7
102	16.438	0.162	1.05	73	2.10	62	48	100.8
103	16.601	0.163	1.04	73	2.10	62	48	101.5
104	16.762	0.161	1.04	73	2.10	62	48	100.4
105	16.923	0.161	1.05	73	2.10	62	48	100.3
106	17.085	0.162	1.05	73	2.10	62	48	101.2
107	17.248	0.163	1.05	73	2.10	62	48	101.7
108	17.409	0.161	1.05	73	2.10	62	48	99.8
109	17.570	0.161	1.05	73	2.10	62	48	99.9
110	17.732	0.162	1.05	73	2.10	62	48	101.6
111	17.895	0.163	1.04	73	2.10	62	48	102.6
112	18.056	0.161	1.04	73	2.10	62	48	100.9
113	18.217	0.161	1.05	73	2.10	62	48	101.1
114	18.379	0.162	1.05	73	2.10	62	49	101.4
115	18.542	0.163	1.04	73	2.10	62	49	102.1
116	18.703	0.161	1.05	73	2.10	62	49	101.2
117	18.865	0.162	1.05	73	2.10	62	49	101.4
118	19.027	0.162	1.05	73	2.10	62	49	100.9
119	19.189	0.162	1.05	73	2.10	62	49	100.7
120	19.350	0.161	1.04	73	2.10	62	49	99.7
121	19.512	0.162	1.05	73	2.10	62	49	99.9
122	19.674	0.162	1.05	73	2.10	62	49	99.9
123	19.836	0.162	1.04	73	2.10	62	49	100.7
124	19.997	0.161	1.05	73	2.10	62	49	100.5
125	20.159	0.162	1.05	73	2.10	62	49	100.8
126	20.321	0.162	1.05	73	2.10	62	49	100.9
127	20.483	0.162	1.04	73	2.10	62	49	100.6
128	20.644	0.161	1.04	73	2.10	62	49	99.7

Train B - Particulate Sampling

ASTM E2515

Run: 1Manufacturer: Central BoilerModel: Classic Edge 560.1Tracking No.: 2495Project No.: 0117WB043ETest Start Time: 16:13Total Sampling Time: 348 minRecording Interval: 1 minTest Date: 12/2/24Meter Box Y Regression Offset: 1.006Meter Box Y Regression Slope: 0Meter Box Dynamic Y: 1.006Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. HgPost-Test 0 cfm @ 9.95 in. Hg

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
129	20.806	0.162	1.04	73	2.10	62	49	101.9
130	20.968	0.162	1.05	73	2.10	62	49	102.8
131	21.130	0.162	1.04	73	2.10	62	49	101.8
132	21.291	0.161	1.04	73	2.10	62	49	100.8
133	21.452	0.161	1.04	73	2.10	62	49	100.7
134	21.615	0.163	1.04	73	2.10	63	49	101.6
135	21.776	0.161	1.03	73	2.10	63	49	100.7
136	21.937	0.161	1.04	73	2.10	63	49	101.1
137	22.099	0.162	1.04	73	2.10	63	49	101.7
138	22.261	0.162	1.03	73	2.10	63	50	101.2
139	22.422	0.161	1.03	73	2.10	63	50	100.0
140	22.583	0.161	1.04	73	2.10	63	49	99.9
141	22.744	0.161	1.04	73	2.10	63	50	100.5
142	22.906	0.162	1.03	73	2.20	63	50	101.5
143	23.067	0.161	1.04	73	2.20	63	50	101.3
144	23.228	0.161	1.04	73	2.20	64	50	101.6
145	23.390	0.162	1.04	73	2.20	64	50	101.7
146	23.552	0.162	1.03	73	2.10	64	50	101.3
147	23.713	0.161	1.04	73	2.20	64	50	101.0
148	23.874	0.161	1.04	73	2.20	64	50	101.7
149	24.036	0.162	1.04	73	2.20	64	50	102.0
150	24.197	0.161	1.04	73	2.20	64	50	100.5
151	24.357	0.160	1.04	73	2.10	64	50	99.9
152	24.519	0.162	1.04	74	2.20	64	50	100.9
153	24.680	0.161	1.03	74	2.20	65	50	99.7
154	24.841	0.161	1.03	74	2.20	65	50	99.9
155	25.002	0.161	1.04	74	2.20	65	50	100.3
156	25.164	0.162	1.04	74	2.20	65	50	100.7
157	25.325	0.161	1.03	74	2.20	65	50	99.8
158	25.485	0.160	1.03	74	2.20	65	50	99.6
159	25.646	0.161	1.03	74	2.20	65	50	100.6
160	25.808	0.162	1.03	74	2.20	65	50	101.7
161	25.968	0.160	1.03	74	2.20	65	50	100.2
162	26.129	0.161	1.03	74	2.20	65	50	100.2
163	26.291	0.162	1.03	74	2.20	65	50	100.6
164	26.452	0.161	1.03	74	2.20	65	50	99.4
165	26.612	0.160	1.03	74	2.20	66	50	98.5
166	26.773	0.161	1.03	74	2.20	66	50	99.3
167	26.935	0.162	1.03	74	2.20	66	50	100.7
168	27.095	0.160	1.03	75	2.20	66	50	100.0
169	27.256	0.161	1.03	75	2.20	66	50	100.6
170	27.418	0.162	1.03	75	2.20	66	50	100.6
171	27.578	0.160	1.03	75	2.20	66	50	98.9
172	27.738	0.160	1.03	75	2.20	66	51	99.2

Train B - Particulate Sampling

ASTM E2515

Run: 1Manufacturer: Central BoilerModel: Classic Edge 560.1Tracking No.: 2495Project No.: 0117WB043ETest Start Time: 16:13Total Sampling Time: 348 minRecording Interval: 1 minTest Date: 12/2/24Meter Box Y Regression Offset: 1.006Meter Box Y Regression Slope: 0Meter Box Dynamic Y: 1.006Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. HgPost-Test 0 cfm @ 9.95 in. Hg

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
173	27.899	0.161	1.03	75	2.20	66	51	100.3
174	28.061	0.162	1.03	75	2.20	66	51	101.0
175	28.221	0.160	1.03	75	2.20	66	51	99.7
176	28.382	0.161	1.03	75	2.20	66	51	100.1
177	28.543	0.161	1.03	75	2.20	66	51	100.1
178	28.704	0.161	1.03	75	2.20	66	51	100.3
179	28.864	0.160	1.03	75	2.20	66	51	100.3
180	29.026	0.162	1.03	75	2.20	66	51	102.1
181	29.186	0.160	1.02	75	2.20	66	51	100.4
182	29.346	0.160	1.02	75	2.20	66	51	100.0
183	29.507	0.161	1.03	75	2.20	66	51	101.1
184	29.669	0.162	1.03	75	2.20	66	51	101.7
185	29.829	0.160	1.02	75	2.20	66	51	100.2
186	29.989	0.160	1.02	76	2.20	66	51	100.0
187	30.151	0.162	1.02	76	2.20	66	51	100.7
188	30.311	0.160	1.02	76	2.20	66	51	99.0
189	30.471	0.160	1.02	76	2.20	66	51	98.4
190	30.632	0.161	1.02	76	2.20	66	51	98.9
191	30.793	0.161	1.02	76	2.20	66	51	99.7
192	30.953	0.160	1.02	76	2.20	66	51	99.6
193	31.114	0.161	1.03	76	2.20	66	51	100.2
194	31.275	0.161	1.02	76	2.20	66	51	100.1
195	31.435	0.160	1.02	76	2.20	67	51	99.6
196	31.596	0.161	1.02	76	2.20	67	51	99.9
197	31.757	0.161	1.02	76	2.20	67	51	99.5
198	31.917	0.160	1.02	76	2.20	67	51	98.8
199	32.078	0.161	1.02	76	2.20	67	51	99.1
200	32.239	0.161	1.02	76	2.20	67	51	98.6
201	32.400	0.161	1.02	76	2.20	67	51	99.2
202	32.560	0.160	1.02	76	2.20	67	51	99.3
203	32.720	0.160	1.03	76	2.20	67	51	99.5
204	32.882	0.162	1.02	76	2.20	67	51	101.2
205	33.042	0.160	1.02	76	2.20	67	51	100.2
206	33.202	0.160	1.02	77	2.20	67	51	99.8
207	33.364	0.162	1.02	77	2.20	67	51	100.9
208	33.523	0.159	1.02	77	2.20	67	51	99.0
209	33.684	0.161	1.02	77	2.20	67	51	100.6
210	33.845	0.161	1.02	77	2.20	67	51	100.9
211	34.005	0.160	1.01	77	2.20	67	51	99.4
212	34.165	0.160	1.02	77	2.20	67	52	99.1
213	34.326	0.161	1.02	77	2.20	67	52	100.3
214	34.487	0.161	1.02	77	2.20	67	52	100.6
215	34.647	0.160	1.02	77	2.20	67	52	100.3
216	34.807	0.160	1.02	77	2.20	67	52	100.2

Train B - Particulate Sampling

ASTM E2515

Run: 1Manufacturer: Central BoilerModel: Classic Edge 560.1Tracking No.: 2495Project No.: 0117WB043ETest Start Time: 16:13Total Sampling Time: 348 minRecording Interval: 1 minTest Date: 12/2/24Meter Box Y Regression Offset: 1.006Meter Box Y Regression Slope: 0Meter Box Dynamic Y: 1.006Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. HgPost-Test 0 cfm @ 9.95 in. Hg

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
217	34.969	0.162	1.02	77	2.20	67	52	101.2
218	35.129	0.160	1.02	77	2.20	67	52	99.8
219	35.289	0.160	1.02	77	2.20	67	52	99.6
220	35.451	0.162	1.02	77	2.20	67	52	100.8
221	35.611	0.160	1.02	77	2.20	67	52	99.4
222	35.771	0.160	1.02	77	2.20	67	52	99.5
223	35.932	0.161	1.02	77	2.20	67	52	100.2
224	36.093	0.161	1.02	77	2.20	67	52	99.4
225	36.253	0.160	1.02	77	2.20	67	52	98.3
226	36.413	0.160	1.02	77	2.20	67	52	98.5
227	36.574	0.161	1.02	77	2.20	67	52	99.4
228	36.734	0.160	1.02	77	2.20	67	52	98.6
229	36.895	0.161	1.02	77	2.20	67	52	99.0
230	37.056	0.161	1.02	77	2.20	67	52	99.1
231	37.216	0.160	1.01	77	2.20	67	52	98.3
232	37.376	0.160	1.02	77	2.20	67	52	98.7
233	37.537	0.161	1.02	77	2.20	67	52	100.6
234	37.697	0.160	1.02	78	2.20	67	52	99.7
235	37.857	0.160	1.02	78	2.20	67	52	98.6
236	38.018	0.161	1.02	78	2.20	67	52	99.7
237	38.179	0.161	1.01	78	2.20	67	52	100.1
238	38.338	0.159	1.02	78	2.20	67	52	98.1
239	38.499	0.161	1.02	78	2.20	67	52	99.2
240	38.660	0.161	1.02	78	2.20	67	52	99.4
241	38.820	0.160	1.02	78	2.20	67	52	99.1
242	38.980	0.160	1.02	78	2.20	67	52	99.5
243	39.141	0.161	1.01	78	2.20	67	52	100.5
244	39.301	0.160	1.02	78	2.20	67	52	99.9
245	39.461	0.160	1.02	78	2.20	67	52	99.8
246	39.622	0.161	1.01	78	2.20	67	52	100.4
247	39.782	0.160	1.01	78	2.20	67	52	99.0
248	39.942	0.160	1.02	78	2.20	67	52	98.4
249	40.103	0.161	1.02	78	2.20	67	52	99.3
250	40.263	0.160	1.01	78	2.20	67	52	99.2
251	40.423	0.160	1.02	78	2.20	67	52	99.2
252	40.584	0.161	1.02	78	2.20	67	52	99.4
253	40.744	0.160	1.01	78	2.20	67	52	98.5
254	40.904	0.160	1.02	78	2.20	67	52	99.0
255	41.064	0.160	1.02	78	2.20	67	52	99.2
256	41.225	0.161	1.01	78	2.20	67	52	99.1
257	41.385	0.160	1.01	78	2.20	67	52	98.5
258	41.545	0.160	1.01	78	2.20	67	52	99.4
259	41.706	0.161	1.01	78	2.20	67	52	99.9
260	41.866	0.160	1.01	78	2.20	67	52	99.2

Train B - Particulate Sampling

ASTM E2515

Run: 1

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Date: 12/2/24

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. Hg

Post-Test 0 cfm @ 9.95 in. Hg

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
261	42.026	0.160	1.01	78	2.20	67	52	99.3
262	42.187	0.161	1.01	78	2.20	67	52	100.1
263	42.346	0.159	1.01	78	2.20	67	53	98.9
264	42.506	0.160	1.01	78	2.20	67	53	99.3
265	42.667	0.161	1.01	78	2.20	67	52	100.1
266	42.827	0.160	1.01	78	2.20	67	53	99.9
267	42.987	0.160	1.01	78	2.20	68	53	100.3
268	43.148	0.161	1.02	78	2.20	68	53	100.6
269	43.308	0.160	1.01	78	2.20	68	53	99.3
270	43.468	0.160	1.01	78	2.20	68	53	98.9
271	43.628	0.160	1.01	78	2.20	68	53	98.5
272	43.788	0.160	1.01	78	2.20	68	53	99.1
273	43.948	0.160	1.01	78	2.20	68	53	99.7
274	44.109	0.161	1.01	78	2.20	68	53	99.7
275	44.269	0.160	1.00	78	2.20	68	53	99.0
276	44.428	0.159	1.01	78	2.20	68	53	99.1
277	44.589	0.161	1.01	78	2.20	68	53	100.4
278	44.749	0.160	1.01	78	2.20	68	53	98.8
279	44.909	0.160	1.01	79	2.20	68	53	97.7
280	45.069	0.160	1.01	78	2.20	68	53	97.9
281	45.229	0.160	1.00	78	2.20	68	53	98.4
282	45.389	0.160	1.01	78	2.20	68	53	99.1
283	45.549	0.160	1.01	79	2.20	68	53	99.9
284	45.710	0.161	1.01	79	2.20	68	53	100.2
285	45.869	0.159	1.01	79	2.20	68	53	98.2
286	46.029	0.160	1.01	79	2.20	68	53	98.4
287	46.190	0.161	1.00	79	2.20	68	53	98.8
288	46.349	0.159	1.01	79	2.20	68	53	96.9
289	46.509	0.160	1.01	79	2.20	68	53	97.8
290	46.670	0.161	1.01	79	2.20	68	53	99.5
291	46.829	0.159	1.01	79	2.20	68	53	98.5
292	46.989	0.160	1.01	79	2.20	68	53	99.8
293	47.150	0.161	1.01	79	2.20	68	53	100.8
294	47.309	0.159	1.01	79	2.20	68	53	98.6
295	47.469	0.160	1.01	79	2.20	68	53	99.3
296	47.629	0.160	1.00	79	2.20	68	53	99.9
297	47.789	0.160	1.00	79	2.20	68	53	99.4
298	47.948	0.159	1.01	79	2.20	68	53	98.2
299	48.109	0.161	1.00	79	2.20	68	53	99.5
300	48.268	0.159	1.00	79	2.20	68	53	98.5
301	48.427	0.159	1.01	79	2.20	68	53	98.2
302	48.588	0.161	1.00	79	2.20	68	53	99.1
303	48.747	0.159	1.00	79	2.20	68	53	98.1
304	48.907	0.160	1.00	79	2.20	68	53	98.3

Train B - Particulate Sampling

ASTM E2515

Run: 1Manufacturer: Central BoilerModel: Classic Edge 560.1Tracking No.: 2495Project No.: 0117WB043ETest Start Time: 16:13Total Sampling Time: 348 minRecording Interval: 1 minTest Date: 12/2/24Meter Box Y Regression Offset: 1.006Meter Box Y Regression Slope: 0Meter Box Dynamic Y: 1.006Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.26 in. HgPost-Test 0 cfm @ 9.95 in. Hg

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
305	49.067	0.160	1.00	79	2.30	68	53	98.0
306	49.226	0.159	1.00	79	2.20	68	53	97.9
307	49.386	0.160	1.01	79	2.30	68	53	98.7
308	49.546	0.160	1.00	79	2.30	68	53	99.0
309	49.705	0.159	1.00	79	2.30	68	53	98.5
310	49.865	0.160	1.00	79	2.30	68	53	98.2
311	50.025	0.160	1.00	79	2.30	68	53	97.7
312	50.184	0.159	1.00	79	2.30	68	53	97.9
313	50.344	0.160	1.00	79	2.30	68	53	99.1
314	50.504	0.160	1.00	79	2.30	68	53	98.7
315	50.662	0.158	1.00	79	2.30	68	53	97.4
316	50.823	0.161	1.00	79	2.30	68	53	99.4
317	50.982	0.159	1.00	79	2.30	68	53	97.9
318	51.141	0.159	1.00	79	2.30	68	53	98.0
319	51.302	0.161	1.00	79	2.30	68	53	99.5
320	51.460	0.158	1.00	79	2.30	68	53	97.9
321	51.620	0.160	1.00	79	2.30	68	53	99.4
322	51.780	0.160	1.00	79	2.30	68	52	99.1
323	51.939	0.159	1.00	79	2.30	68	52	98.2
324	52.098	0.159	1.00	79	2.30	68	53	98.7
325	52.258	0.160	1.00	79	2.30	68	52	100.0
326	52.417	0.159	1.00	79	2.30	68	52	98.7
327	52.576	0.159	1.00	79	2.30	68	52	98.2
328	52.736	0.160	1.00	79	2.30	68	52	99.4
329	52.895	0.159	1.00	79	2.30	68	52	98.7
330	53.055	0.160	1.00	79	2.30	68	52	98.9
331	53.215	0.160	1.00	79	2.30	68	52	99.6
332	53.373	0.158	1.00	79	2.30	68	52	98.7
333	53.533	0.160	1.00	79	2.30	68	52	99.6
334	53.693	0.160	0.99	79	2.30	68	52	99.3
335	53.851	0.158	1.00	79	2.30	68	52	98.2
336	54.012	0.161	0.99	79	2.30	68	52	100.2
337	54.170	0.158	0.99	79	2.30	68	52	97.9
338	54.329	0.159	1.00	79	2.30	68	52	97.9
339	54.489	0.160	0.99	79	2.30	68	52	98.7
340	54.648	0.159	1.00	79	2.30	68	52	98.3
341	54.807	0.159	1.00	79	2.30	68	52	98.3
342	54.967	0.160	0.99	79	2.30	68	52	98.7
343	55.126	0.159	1.00	79	2.30	68	52	98.2
344	55.285	0.159	1.00	79	2.30	68	52	98.9
345	55.445	0.160	0.99	79	2.30	68	52	99.3
346	55.603	0.158	1.00	79	2.30	68	52	97.9
347	55.763	0.160	1.00	79	2.30	68	52	99.4
348	55.922	0.159	0.99	79	2.30	68	52	98.6

Train C - First Hour Particulate Sampling

Run:	1	Test Date:	12/2/24
Manufacturer:	Central Boiler	Meter Box Y Regression Offset:	1.01
Model:	Classic Edge 560.1	Meter Box Y Regression Factor:	0
Tracking No.:	2495	Meter Box Dynamic Y:	1.010
Project No.:	0117WB043E	Sample Box ID:	371
Start Time:	16:13	Sample Train Leak Checks	
Total Sampling Time:	60 min	Pre-test	0 cfm @ 22.07 in. Hg
Recording Interval:	1 min	Post-Test	0 cfm @ 5.12 in. Hg

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	9.474	0.158	2.22	59.5	1.59	62.1	51.4	100.0
Minimum	0.000	0.139	2.18	59	1.31	59	46	87.8
Max	9.474	0.167	2.48	60	1.87	63	56	106.6
0	0.000		2.45	59	1.79	58	47	
1	0.139	0.139	2.48	59	1.54	59	47	87.8
2	0.306	0.167	2.47	59	1.87	60	46	106.6
3	0.464	0.158	2.20	59	1.77	60	46	100.4
4	0.621	0.157	2.18	59	1.35	60	47	98.8
5	0.778	0.157	2.25	59	1.70	60	47	98.4
6	0.935	0.157	2.21	59	1.78	60	47	99.0
7	1.095	0.160	2.27	59	1.46	61	47	102.0
8	1.254	0.159	2.27	59	1.42	61	47	102.1
9	1.414	0.160	2.26	59	1.41	61	47	102.1
10	1.573	0.159	2.26	59	1.58	61	47	100.7
11	1.731	0.158	2.25	59	1.78	61	48	100.0
12	1.891	0.160	2.24	59	1.34	61	48	101.2
13	2.049	0.158	2.23	59	1.70	61	48	99.8
14	2.208	0.159	2.23	59	1.73	61	48	100.4
15	2.366	0.158	2.23	59	1.44	62	48	100.1
16	2.524	0.158	2.19	59	1.32	62	49	100.0
17	2.682	0.158	2.22	59	1.31	62	49	99.8
18	2.839	0.157	2.19	59	1.35	62	49	99.6
19	2.997	0.158	2.18	59	1.49	62	49	100.6
20	3.155	0.158	2.21	59	1.64	62	50	99.8
21	3.314	0.159	2.23	59	1.33	62	50	99.9
22	3.472	0.158	2.23	59	1.68	62	50	100.4
23	3.631	0.159	2.24	59	1.32	62	50	101.3
24	3.789	0.158	2.23	59	1.46	62	50	99.5
25	3.948	0.159	2.23	59	1.81	62	51	99.7
26	4.106	0.158	2.23	59	1.73	62	51	99.5
27	4.264	0.158	2.22	59	1.76	62	51	100.0
28	4.422	0.158	2.23	59	1.82	62	51	99.9
29	4.581	0.159	2.23	59	1.66	62	51	100.3
30	4.739	0.158	2.22	59	1.63	62	52	100.3
31	4.897	0.158	2.22	59	1.34	62	52	101.1
32	5.055	0.158	2.22	59	1.65	62	52	101.4

Train C - First Hour Particulate Sampling

Run:	1	Test Date:	12/2/24
Manufacturer:	Central Boiler	Meter Box Y Regression Offset:	1.01
Model:	Classic Edge 560.1	Meter Box Y Regression Factor:	0
Tracking No.:	2495	Meter Box Dynamic Y:	1.010
Project No.:	0117WB043E	Sample Box ID:	371
Start Time:	16:13	Sample Train Leak Checks	
Total Sampling Time:	60 min	Pre-test	0 cfm @ 22.07 in. Hg
Recording Interval:	1 min	Post-Test	0 cfm @ 5.12 in. Hg

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
33	5.212	0.157	2.22	59	1.82	63	52	100.6
34	5.370	0.158	2.19	60	1.32	63	52	100.7
35	5.528	0.158	2.22	60	1.47	63	52	100.0
36	5.686	0.158	2.21	60	1.76	63	53	100.1
37	5.845	0.159	2.19	60	1.33	63	53	100.7
38	6.002	0.157	2.21	60	1.59	63	53	98.9
39	6.160	0.158	2.22	60	1.79	63	53	99.1
40	6.318	0.158	2.21	60	1.76	63	53	99.7
41	6.476	0.158	2.19	60	1.71	63	53	99.4
42	6.633	0.157	2.22	60	1.69	63	54	97.6
43	6.791	0.158	2.22	60	1.82	63	54	99.0
44	6.950	0.159	2.20	60	1.33	63	54	101.4
45	7.107	0.157	2.21	60	1.82	63	54	100.4
46	7.265	0.158	2.21	60	1.66	63	54	100.6
47	7.423	0.158	2.20	60	1.77	63	54	100.0
48	7.581	0.158	2.19	60	1.50	63	54	99.6
49	7.738	0.157	2.21	60	1.43	63	55	98.7
50	7.896	0.158	2.21	60	1.70	63	55	99.9
51	8.054	0.158	2.19	60	1.63	63	55	100.7
52	8.212	0.158	2.21	60	1.82	63	55	100.7
53	8.370	0.158	2.21	60	1.69	63	55	100.5
54	8.527	0.157	2.21	60	1.82	63	55	99.7
55	8.685	0.158	2.19	60	1.39	63	55	100.0
56	8.843	0.158	2.21	60	1.36	63	56	99.8
57	9.000	0.157	2.20	60	1.82	63	56	99.1
58	9.159	0.159	2.20	60	1.70	63	56	100.3
59	9.315	0.156	2.21	60	1.43	63	56	98.2
60	9.474	0.159	2.18	60	1.37	63	56	100.0

Train D - Ambient Background and Flue Gas Data

Run: **1**

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
Tot / Avg	55.720	0.160	1.55	63.3	1.20	284.91	-0.047	466.2	0.05	13.75
Minimum	0.000	0.152	1.50	60	1.10	246.00	-0.053	83.7	0.00	2.92
Max	55.720	0.163	1.56	67	1.20	304.00	-0.036	1040.0	0.33	18.00
0	0.000		1.50	60	1.20	274	-0.043	319.7	0.03	14.38
1	0.152	0.152	1.51	60	1.10	246	-0.036	1040.0	0.20	2.92
2	0.306	0.154	1.50	60	1.20	266	-0.043	1040.0	0.09	17.04
3	0.465	0.159	1.56	60	1.20	271	-0.041	1040.0	0.10	18.00
4	0.627	0.162	1.56	60	1.20	268	-0.041	299.3	0.03	16.23
5	0.786	0.159	1.55	60	1.20	267	-0.041	294.4	0.03	15.82
6	0.948	0.162	1.55	60	1.20	266	-0.039	313.2	0.03	15.63
7	1.108	0.160	1.54	60	1.20	265	-0.039	325.8	0.03	15.57
8	1.267	0.159	1.54	60	1.20	265	-0.039	324.5	0.03	15.74
9	1.426	0.159	1.54	60	1.20	265	-0.042	318.1	0.03	15.96
10	1.585	0.159	1.53	60	1.20	265	-0.039	309.6	0.03	15.91
11	1.743	0.158	1.54	60	1.10	265	-0.041	301.9	0.03	15.84
12	1.901	0.158	1.54	60	1.20	264	-0.039	297.0	0.03	15.52
13	2.060	0.159	1.53	60	1.10	264	-0.039	288.3	0.03	15.54
14	2.217	0.157	1.53	60	1.20	263	-0.039	279.2	0.03	15.43
15	2.375	0.158	1.53	60	1.20	262	-0.039	271.4	0.03	15.31
16	2.532	0.157	1.53	60	1.10	262	-0.040	263.7	0.03	15.09
17	2.689	0.157	1.53	60	1.10	262	-0.039	259.8	0.03	15.31
18	2.847	0.158	1.52	60	1.20	261	-0.039	262.4	0.03	15.10
19	3.003	0.156	1.53	60	1.20	261	-0.038	269.5	0.03	14.94
20	3.162	0.159	1.55	60	1.20	260	-0.039	266.0	0.03	14.88
21	3.323	0.161	1.55	60	1.20	259	-0.040	251.7	0.03	14.76
22	3.483	0.160	1.55	60	1.20	259	-0.039	245.9	0.02	14.86
23	3.642	0.159	1.55	60	1.20	258	-0.039	246.2	0.02	14.75
24	3.803	0.161	1.55	60	1.20	261	-0.041	252.0	0.03	15.15
25	3.963	0.160	1.55	60	1.20	259	-0.039	220.3	0.02	14.87
26	4.123	0.160	1.55	60	1.20	258	-0.039	215.5	0.02	14.71
27	4.282	0.159	1.54	60	1.20	258	-0.038	213.5	0.02	14.70
28	4.442	0.160	1.54	60	1.20	262	-0.040	210.6	0.02	14.53
29	4.602	0.160	1.55	60	1.20	259	-0.039	187.3	0.02	14.90
30	4.761	0.159	1.55	60	1.20	257	-0.039	198.0	0.02	14.68
31	4.921	0.160	1.55	60	1.20	268	-0.040	217.7	0.02	15.75
32	5.081	0.160	1.54	60	1.20	274	-0.040	174.3	0.02	16.42

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
33	5.241	0.160	1.55	60	1.20	277	-0.043	169.8	0.02	16.54
34	5.400	0.159	1.55	60	1.20	279	-0.042	156.5	0.02	16.50
35	5.561	0.161	1.54	60	1.20	280	-0.043	134.8	0.01	16.44
36	5.720	0.159	1.54	60	1.20	281	-0.042	133.2	0.01	16.35
37	5.880	0.160	1.55	60	1.20	282	-0.044	133.9	0.01	16.25
38	6.040	0.160	1.54	60	1.10	283	-0.043	130.6	0.01	16.26
39	6.201	0.161	1.54	60	1.20	284	-0.043	115.7	0.01	16.10
40	6.360	0.159	1.55	60	1.20	285	-0.044	115.4	0.01	16.39
41	6.520	0.160	1.55	60	1.20	285	-0.046	120.6	0.01	16.26
42	6.681	0.161	1.55	60	1.20	286	-0.046	108.9	0.01	16.22
43	6.841	0.160	1.55	60	1.20	287	-0.043	111.9	0.01	16.29
44	7.000	0.159	1.55	60	1.20	287	-0.045	83.7	0.01	16.20
45	7.160	0.160	1.55	60	1.20	287	-0.045	110.2	0.01	15.91
46	7.320	0.160	1.55	60	1.20	287	-0.045	111.6	0.01	15.94
47	7.480	0.160	1.55	60	1.20	288	-0.043	118.6	0.01	16.06
48	7.640	0.160	1.55	60	1.20	288	-0.045	118.0	0.01	16.03
49	7.800	0.160	1.55	60	1.20	289	-0.044	115.1	0.01	15.96
50	7.961	0.161	1.55	60	1.20	289	-0.043	98.9	0.01	15.79
51	8.121	0.160	1.55	60	1.20	289	-0.046	96.6	0.01	15.89
52	8.281	0.160	1.55	60	1.20	290	-0.046	99.5	0.01	15.87
53	8.442	0.161	1.55	60	1.20	289	-0.045	106.3	0.01	15.85
54	8.602	0.160	1.54	60	1.10	290	-0.044	108.6	0.01	15.88
55	8.762	0.160	1.55	60	1.20	290	-0.046	92.4	0.01	16.01
56	8.921	0.159	1.55	60	1.20	291	-0.045	95.7	0.01	15.92
57	9.083	0.162	1.55	61	1.20	290	-0.047	154.6	0.02	15.91
58	9.243	0.160	1.55	61	1.20	290	-0.047	155.6	0.02	15.85
59	9.403	0.160	1.55	60	1.20	290	-0.047	127.1	0.01	15.74
60	9.563	0.160	1.55	61	1.20	290	-0.046	106.3	0.01	15.69
61	9.724	0.161	1.55	60	1.20	289	-0.046	115.7	0.01	15.68
62	9.884	0.160	1.55	61	1.20	289	-0.045	101.5	0.01	15.66
63	10.044	0.160	1.55	60	1.20	289	-0.046	101.5	0.01	15.60
64	10.204	0.160	1.54	60	1.20	289	-0.045	104.4	0.01	15.57
65	10.365	0.161	1.54	60	1.20	289	-0.046	107.0	0.01	15.40
66	10.525	0.160	1.55	61	1.20	289	-0.045	112.8	0.01	15.52
67	10.685	0.160	1.55	61	1.20	290	-0.046	108.3	0.01	15.67
68	10.845	0.160	1.55	60	1.20	290	-0.046	125.4	0.01	15.67

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
69	11.006	0.161	1.55	61	1.20	291	-0.045	103.1	0.01	15.73
70	11.166	0.160	1.55	61	1.20	291	-0.046	105.7	0.01	15.85
71	11.325	0.159	1.55	61	1.20	292	-0.046	88.9	0.01	15.84
72	11.486	0.161	1.55	61	1.20	292	-0.045	92.7	0.01	15.98
73	11.646	0.160	1.55	60	1.20	293	-0.047	105.7	0.01	15.84
74	11.806	0.160	1.55	61	1.20	293	-0.047	100.5	0.01	15.97
75	11.965	0.159	1.55	61	1.20	293	-0.046	99.9	0.01	15.90
76	12.127	0.162	1.54	61	1.20	294	-0.046	102.5	0.01	16.10
77	12.287	0.160	1.55	61	1.20	291	-0.045	114.1	0.01	16.26
78	12.447	0.160	1.55	61	1.20	294	-0.046	112.5	0.01	16.09
79	12.607	0.160	1.55	61	1.20	295	-0.044	107.0	0.01	16.13
80	12.768	0.161	1.55	61	1.20	295	-0.046	101.8	0.01	15.90
81	12.928	0.160	1.55	61	1.20	297	-0.047	129.0	0.01	16.13
82	13.088	0.160	1.55	61	1.20	297	-0.049	180.1	0.02	16.19
83	13.248	0.160	1.55	61	1.20	296	-0.046	122.2	0.01	15.70
84	13.408	0.160	1.55	61	1.20	293	-0.047	216.4	0.02	16.02
85	13.568	0.160	1.55	61	1.20	294	-0.045	172.1	0.02	16.12
86	13.727	0.159	1.55	61	1.20	296	-0.046	145.8	0.01	15.92
87	13.887	0.160	1.55	61	1.20	294	-0.044	189.9	0.02	15.91
88	14.048	0.161	1.55	61	1.20	294	-0.046	90.5	0.01	15.77
89	14.208	0.160	1.55	61	1.20	293	-0.045	90.5	0.01	15.52
90	14.367	0.159	1.55	61	1.20	292	-0.047	147.5	0.01	15.56
91	14.529	0.162	1.55	61	1.20	290	-0.046	273.5	0.03	16.03
92	14.689	0.160	1.55	61	1.20	290	-0.045	459.1	0.05	16.42
93	14.849	0.160	1.55	61	1.20	290	-0.045	446.5	0.04	16.36
94	15.009	0.160	1.55	61	1.20	290	-0.046	487.6	0.05	16.23
95	15.171	0.162	1.55	61	1.20	290	-0.043	1040.0	0.03	16.14
96	15.331	0.160	1.55	61	1.20	291	-0.046	744.3	0.02	15.96
97	15.491	0.160	1.55	61	1.20	294	-0.046	353.1	0.04	15.94
98	15.651	0.160	1.55	61	1.20	294	-0.047	598.6	0.06	15.72
99	15.812	0.161	1.55	61	1.20	293	-0.044	516.8	0.05	16.27
100	15.973	0.161	1.55	61	1.20	295	-0.049	282.7	0.03	15.84
101	16.133	0.160	1.55	61	1.20	297	-0.047	390.5	0.04	15.84
102	16.293	0.160	1.55	61	1.20	294	-0.045	505.2	0.05	16.36
103	16.454	0.161	1.55	61	1.20	295	-0.047	351.3	0.04	15.84
104	16.615	0.161	1.55	61	1.20	297	-0.047	482.5	0.05	15.80

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
105	16.775	0.160	1.55	61	1.20	295	-0.047	516.8	0.05	16.34
106	16.934	0.159	1.55	61	1.20	299	-0.046	466.3	0.05	15.64
107	17.095	0.161	1.55	61	1.20	301	-0.048	560.1	0.06	15.65
108	17.256	0.161	1.55	61	1.20	303	-0.048	540.2	0.05	15.74
109	17.416	0.160	1.55	61	1.20	301	-0.050	520.0	0.05	15.89
110	17.577	0.161	1.55	61	1.20	303	-0.049	508.3	0.05	15.71
111	17.738	0.161	1.54	61	1.20	303	-0.051	563.4	0.06	15.50
112	17.899	0.161	1.55	61	1.20	303	-0.047	592.5	0.06	15.71
113	18.059	0.160	1.55	61	1.20	303	-0.048	713.6	0.07	15.57
114	18.219	0.160	1.55	61	1.20	300	-0.048	685.3	0.07	15.78
115	18.381	0.162	1.55	61	1.20	303	-0.050	432.6	0.04	15.63
116	18.541	0.160	1.55	61	1.20	303	-0.051	464.5	0.05	15.62
117	18.702	0.161	1.55	61	1.20	304	-0.047	368.2	0.04	15.32
118	18.862	0.160	1.55	61	1.20	304	-0.048	285.4	0.03	15.07
119	19.023	0.161	1.55	61	1.20	304	-0.050	257.7	0.03	15.09
120	19.184	0.161	1.55	61	1.20	304	-0.049	272.1	0.03	14.93
121	19.344	0.160	1.55	61	1.20	304	-0.047	208.7	0.02	14.61
122	19.504	0.160	1.55	61	1.20	304	-0.049	218.3	0.02	14.51
123	19.666	0.162	1.55	61	1.20	304	-0.050	220.6	0.02	14.35
124	19.827	0.161	1.55	61	1.20	303	-0.048	252.0	0.03	14.32
125	19.987	0.160	1.55	61	1.20	303	-0.050	215.8	0.02	14.17
126	20.147	0.160	1.55	61	1.20	303	-0.050	231.0	0.02	14.05
127	20.309	0.162	1.55	61	1.20	303	-0.049	277.6	0.03	13.87
128	20.469	0.160	1.55	61	1.20	303	-0.051	366.9	0.04	13.66
129	20.630	0.161	1.55	61	1.20	303	-0.049	441.3	0.04	13.58
130	20.789	0.159	1.55	61	1.20	302	-0.049	473.1	0.05	13.36
131	20.951	0.162	1.55	61	1.20	302	-0.049	636.8	0.00	13.08
132	21.111	0.160	1.55	61	1.20	301	-0.049	782.4	0.01	12.93
133	21.271	0.160	1.55	61	1.20	300	-0.049	788.3	0.01	12.84
134	21.431	0.160	1.55	61	1.20	299	-0.049	1040.0	0.05	12.50
135	21.592	0.161	1.55	61	1.20	298	-0.047	1040.0	0.12	12.11
136	21.751	0.159	1.55	61	1.20	296	-0.047	1040.0	0.15	11.93
137	21.911	0.160	1.55	61	1.20	295	-0.047	1040.0	0.18	11.82
138	22.071	0.160	1.55	61	1.20	294	-0.047	1040.0	0.21	11.76
139	22.231	0.160	1.54	61	1.20	294	-0.048	1040.0	0.24	11.77
140	22.390	0.159	1.55	61	1.20	292	-0.047	1040.0	0.31	10.38

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
141	22.549	0.159	1.55	61	1.20	291	-0.048	1040.0	0.27	10.26
142	22.710	0.161	1.54	61	1.20	291	-0.047	1040.0	0.29	11.40
143	22.869	0.159	1.54	61	1.20	290	-0.049	1040.0	0.33	11.29
144	23.028	0.159	1.54	61	1.20	291	-0.047	1040.0	0.28	11.41
145	23.187	0.159	1.54	61	1.20	291	-0.047	1040.0	0.13	11.72
146	23.347	0.160	1.54	61	1.20	292	-0.046	843.3	0.01	12.31
147	23.505	0.158	1.55	61	1.20	292	-0.047	606.1	0.06	12.61
148	23.664	0.159	1.54	61	1.20	292	-0.048	627.6	0.00	12.59
149	23.824	0.160	1.54	61	1.20	292	-0.050	635.2	0.06	12.59
150	23.983	0.159	1.54	61	1.20	292	-0.051	682.4	0.07	12.55
151	24.142	0.159	1.54	61	1.20	291	-0.049	786.9	0.02	12.21
152	24.302	0.160	1.54	61	1.20	292	-0.049	663.4	0.01	12.28
153	24.462	0.160	1.54	61	1.20	291	-0.045	1000.0	0.04	12.07
154	24.621	0.159	1.54	61	1.20	291	-0.046	867.0	0.02	12.12
155	24.781	0.160	1.54	62	1.20	290	-0.049	1040.0	0.05	12.00
156	24.940	0.159	1.54	62	1.20	289	-0.047	1040.0	0.05	12.18
157	25.099	0.159	1.54	62	1.20	289	-0.047	1040.0	0.05	12.10
158	25.259	0.160	1.54	62	1.20	289	-0.048	1040.0	0.03	12.15
159	25.419	0.160	1.54	62	1.20	289	-0.047	1040.0	0.04	12.06
160	25.578	0.159	1.54	62	1.20	288	-0.046	837.2	0.01	12.37
161	25.737	0.159	1.54	62	1.20	288	-0.046	1040.0	0.07	12.10
162	25.898	0.161	1.54	62	1.20	289	-0.047	912.0	0.00	12.23
163	26.057	0.159	1.54	62	1.20	289	-0.047	811.9	0.02	12.15
164	26.216	0.159	1.54	62	1.20	289	-0.049	812.9	0.01	12.20
165	26.375	0.159	1.54	62	1.20	289	-0.050	1040.0	0.03	12.13
166	26.535	0.160	1.54	62	1.20	289	-0.046	1040.0	0.04	11.99
167	26.694	0.159	1.54	62	1.20	288	-0.049	1040.0	0.03	11.98
168	26.853	0.159	1.54	62	1.20	288	-0.048	888.4	0.02	12.07
169	27.013	0.160	1.54	62	1.20	289	-0.049	863.1	0.02	12.09
170	27.173	0.160	1.54	62	1.20	289	-0.047	948.5	0.02	12.15
171	27.332	0.159	1.54	63	1.20	289	-0.046	843.2	0.01	12.32
172	27.493	0.161	1.54	62	1.20	289	-0.049	863.7	0.02	12.13
173	27.652	0.159	1.54	63	1.20	289	-0.047	954.7	0.02	12.09
174	27.812	0.160	1.55	63	1.20	288	-0.047	871.8	0.02	11.97
175	27.971	0.159	1.54	63	1.20	288	-0.047	853.7	0.01	11.95
176	28.132	0.161	1.54	63	1.20	287	-0.048	1040.0	0.04	11.74

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
177	28.291	0.159	1.54	63	1.20	286	-0.046	1040.0	0.07	11.60
178	28.451	0.160	1.54	63	1.20	286	-0.046	1040.0	0.06	11.61
179	28.611	0.160	1.54	63	1.20	286	-0.047	1040.0	0.06	11.76
180	28.771	0.160	1.54	63	1.20	286	-0.047	1040.0	0.08	11.70
181	28.930	0.159	1.55	63	1.20	286	-0.047	1040.0	0.07	11.76
182	29.089	0.159	1.54	63	1.20	285	-0.046	1040.0	0.11	11.72
183	29.250	0.161	1.54	63	1.20	284	-0.046	1040.0	0.13	11.68
184	29.410	0.160	1.54	63	1.20	285	-0.047	1040.0	0.07	11.74
185	29.569	0.159	1.54	63	1.20	284	-0.047	1040.0	0.13	11.36
186	29.729	0.160	1.54	63	1.20	284	-0.049	1040.0	0.12	11.43
187	29.889	0.160	1.54	63	1.20	283	-0.046	1040.0	0.10	11.59
188	30.049	0.160	1.54	63	1.20	283	-0.047	1040.0	0.15	11.35
189	30.207	0.158	1.54	64	1.20	282	-0.046	1040.0	0.18	11.16
190	30.368	0.161	1.54	64	1.20	282	-0.048	1040.0	0.16	11.44
191	30.528	0.160	1.54	64	1.20	282	-0.048	1040.0	0.14	11.51
192	30.687	0.159	1.54	64	1.20	277	-0.046	1040.0	0.15	11.37
193	30.847	0.160	1.54	64	1.20	270	-0.045	1040.0	0.13	10.32
194	31.007	0.160	1.54	64	1.20	275	-0.047	1040.0	0.25	10.44
195	31.166	0.159	1.54	64	1.20	277	-0.045	1040.0	0.26	10.59
196	31.326	0.160	1.54	64	1.20	277	-0.048	1040.0	0.23	10.94
197	31.486	0.160	1.54	64	1.20	275	-0.044	1040.0	0.11	10.72
198	31.646	0.160	1.54	64	1.20	274	-0.043	1040.0	0.19	10.91
199	31.806	0.160	1.55	64	1.20	272	-0.046	1040.0	0.15	11.00
200	31.966	0.160	1.54	64	1.20	270	-0.046	1040.0	0.12	11.21
201	32.126	0.160	1.54	64	1.20	272	-0.046	1040.0	0.17	10.59
202	32.285	0.159	1.55	64	1.20	267	-0.044	858.3	0.09	11.65
203	32.444	0.159	1.54	64	1.20	268	-0.046	1040.0	0.07	11.01
204	32.604	0.160	1.54	64	1.20	276	-0.047	1040.0	0.02	12.39
205	32.764	0.160	1.54	64	1.20	283	-0.047	284.5	0.03	12.98
206	32.924	0.160	1.55	64	1.20	289	-0.048	158.5	0.02	14.02
207	33.083	0.159	1.54	64	1.20	280	-0.049	124.8	0.01	13.68
208	33.243	0.160	1.54	64	1.20	286	-0.048	219.4	0.02	13.13
209	33.403	0.160	1.55	64	1.20	289	-0.047	189.6	0.02	13.42
210	33.563	0.160	1.55	65	1.20	288	-0.047	157.6	0.02	14.27
211	33.723	0.160	1.54	65	1.20	284	-0.050	185.1	0.02	12.20
212	33.884	0.161	1.54	65	1.20	289	-0.048	229.1	0.02	13.31

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
213	34.044	0.160	1.55	65	1.20	286	-0.047	205.5	0.02	13.52
214	34.203	0.159	1.55	65	1.20	288	-0.047	208.4	0.02	13.55
215	34.364	0.161	1.54	65	1.20	289	-0.049	194.5	0.02	13.54
216	34.524	0.160	1.54	65	1.20	288	-0.050	177.3	0.02	13.62
217	34.684	0.160	1.54	65	1.20	287	-0.045	154.6	0.02	13.54
218	34.844	0.160	1.54	65	1.20	289	-0.048	188.0	0.02	13.53
219	35.005	0.161	1.54	65	1.20	281	-0.045	140.7	0.01	13.42
220	35.165	0.160	1.54	65	1.20	268	-0.045	155.9	0.02	11.88
221	35.325	0.160	1.54	65	1.20	265	-0.044	549.5	0.05	11.38
222	35.485	0.160	1.54	65	1.20	265	-0.046	320.3	0.03	12.01
223	35.646	0.161	1.54	65	1.20	265	-0.045	118.0	0.01	13.61
224	35.805	0.159	1.55	65	1.20	264	-0.046	243.3	0.02	12.58
225	35.965	0.160	1.55	65	1.20	264	-0.045	327.1	0.03	12.57
226	36.126	0.161	1.55	65	1.20	264	-0.048	311.9	0.03	12.65
227	36.286	0.160	1.54	65	1.20	268	-0.048	290.3	0.03	12.66
228	36.446	0.160	1.55	65	1.20	280	-0.047	229.4	0.02	13.84
229	36.606	0.160	1.54	65	1.20	282	-0.046	176.3	0.02	14.37
230	36.768	0.162	1.54	65	1.20	279	-0.046	131.3	0.01	14.12
231	36.928	0.160	1.54	65	1.20	278	-0.046	149.8	0.01	14.45
232	37.088	0.160	1.54	65	1.20	277	-0.049	181.2	0.02	14.21
233	37.248	0.160	1.55	65	1.20	280	-0.049	184.1	0.02	13.75
234	37.410	0.162	1.55	65	1.20	282	-0.049	149.2	0.01	13.60
235	37.570	0.160	1.54	66	1.20	281	-0.046	146.9	0.01	14.23
236	37.730	0.160	1.54	66	1.20	282	-0.048	155.9	0.02	14.17
237	37.890	0.160	1.55	66	1.20	280	-0.048	147.5	0.01	14.24
238	38.051	0.161	1.54	66	1.20	282	-0.051	135.5	0.01	13.68
239	38.212	0.161	1.54	66	1.20	282	-0.051	127.4	0.01	13.57
240	38.372	0.160	1.55	66	1.20	280	-0.047	123.9	0.01	14.11
241	38.532	0.160	1.55	66	1.20	278	-0.046	148.2	0.01	15.10
242	38.693	0.161	1.54	66	1.20	278	-0.051	172.1	0.02	14.21
243	38.854	0.161	1.54	66	1.20	281	-0.050	187.7	0.02	14.13
244	39.014	0.160	1.55	66	1.20	283	-0.049	171.5	0.02	13.53
245	39.174	0.160	1.54	66	1.20	284	-0.051	138.1	0.01	13.77
246	39.335	0.161	1.54	66	1.20	285	-0.047	142.4	0.01	13.94
247	39.495	0.160	1.54	66	1.20	286	-0.048	166.3	0.02	14.36
248	39.655	0.160	1.55	66	1.20	283	-0.047	131.0	0.01	13.80

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
249	39.816	0.161	1.54	66	1.20	286	-0.049	165.0	0.02	13.96
250	39.976	0.160	1.54	66	1.20	286	-0.049	152.0	0.02	13.53
251	40.137	0.161	1.54	66	1.20	287	-0.053	162.8	0.02	13.70
252	40.297	0.160	1.55	66	1.20	287	-0.048	142.3	0.01	13.63
253	40.458	0.161	1.54	66	1.20	285	-0.048	127.4	0.01	13.87
254	40.618	0.160	1.54	66	1.20	285	-0.050	138.1	0.01	13.47
255	40.779	0.161	1.55	66	1.20	286	-0.050	132.6	0.01	13.37
256	40.938	0.159	1.55	66	1.20	285	-0.051	124.5	0.01	13.32
257	41.099	0.161	1.55	66	1.20	285	-0.050	148.2	0.01	13.93
258	41.260	0.161	1.54	66	1.20	285	-0.052	144.0	0.01	13.45
259	41.420	0.160	1.55	66	1.20	285	-0.052	154.6	0.02	13.76
260	41.580	0.160	1.55	66	1.20	285	-0.049	165.0	0.02	13.98
261	41.740	0.160	1.54	66	1.20	286	-0.048	142.4	0.01	14.06
262	41.900	0.160	1.54	66	1.20	285	-0.047	137.8	0.01	14.15
263	42.060	0.160	1.55	66	1.20	281	-0.049	120.0	0.01	14.26
264	42.220	0.160	1.55	66	1.20	284	-0.050	165.4	0.02	13.50
265	42.382	0.162	1.55	66	1.20	287	-0.051	146.6	0.01	13.41
266	42.542	0.160	1.54	66	1.20	285	-0.047	150.4	0.02	14.22
267	42.702	0.160	1.55	66	1.20	281	-0.048	144.3	0.01	15.02
268	42.863	0.161	1.55	66	1.20	281	-0.046	156.3	0.02	13.79
269	43.024	0.161	1.54	66	1.20	287	-0.053	225.9	0.02	13.81
270	43.184	0.160	1.54	66	1.20	291	-0.052	226.2	0.02	14.17
271	43.345	0.161	1.55	66	1.20	289	-0.053	180.9	0.02	13.52
272	43.505	0.160	1.55	66	1.20	289	-0.050	220.4	0.02	14.21
273	43.666	0.161	1.55	66	1.20	289	-0.049	213.9	0.02	14.21
274	43.827	0.161	1.54	66	1.20	288	-0.049	203.2	0.02	14.30
275	43.987	0.160	1.55	66	1.20	289	-0.049	206.1	0.02	14.24
276	44.148	0.161	1.55	66	1.20	288	-0.051	196.1	0.02	14.52
277	44.308	0.160	1.54	66	1.20	290	-0.052	179.3	0.02	13.59
278	44.469	0.161	1.55	67	1.20	285	-0.050	123.2	0.01	14.88
279	44.629	0.160	1.55	67	1.20	288	-0.053	153.1	0.02	12.86
280	44.789	0.160	1.54	67	1.20	289	-0.050	237.5	0.02	13.18
281	44.950	0.161	1.54	67	1.20	290	-0.051	232.3	0.02	13.26
282	45.111	0.161	1.54	67	1.20	289	-0.052	280.6	0.03	13.28
283	45.272	0.161	1.55	67	1.20	289	-0.050	303.9	0.03	13.09
284	45.432	0.160	1.55	67	1.20	287	-0.049	293.2	0.03	13.66

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
285	45.594	0.162	1.55	67	1.20	287	-0.048	244.7	0.02	14.00
286	45.754	0.160	1.54	67	1.20	285	-0.051	245.7	0.02	14.05
287	45.915	0.161	1.55	67	1.20	285	-0.048	260.8	0.03	13.85
288	46.075	0.160	1.55	67	1.20	286	-0.049	261.1	0.03	13.87
289	46.237	0.162	1.54	67	1.20	287	-0.050	225.9	0.02	13.00
290	46.397	0.160	1.54	67	1.20	287	-0.050	256.0	0.03	12.76
291	46.558	0.161	1.55	67	1.20	286	-0.050	184.8	0.02	13.26
292	46.717	0.159	1.55	67	1.20	289	-0.051	197.1	0.02	13.58
293	46.880	0.163	1.55	67	1.20	287	-0.048	153.1	0.02	12.79
294	47.040	0.160	1.55	67	1.20	289	-0.050	164.4	0.02	13.42
295	47.201	0.161	1.55	67	1.20	287	-0.051	150.8	0.02	12.90
296	47.360	0.159	1.55	67	1.20	285	-0.052	185.1	0.02	13.52
297	47.522	0.162	1.55	67	1.20	289	-0.049	160.5	0.02	13.47
298	47.683	0.161	1.54	67	1.20	289	-0.050	177.0	0.02	12.93
299	47.843	0.160	1.54	67	1.20	288	-0.049	193.6	0.02	13.52
300	48.003	0.160	1.55	67	1.20	290	-0.049	218.4	0.02	13.42
301	48.165	0.162	1.54	67	1.20	291	-0.051	221.6	0.02	13.54
302	48.326	0.161	1.54	67	1.20	291	-0.049	208.7	0.02	13.48
303	48.486	0.160	1.55	67	1.20	290	-0.051	286.4	0.03	13.33
304	48.646	0.160	1.55	67	1.20	290	-0.050	273.8	0.03	13.31
305	48.807	0.161	1.54	67	1.20	290	-0.049	448.4	0.04	13.20
306	48.968	0.161	1.54	67	1.20	290	-0.050	506.9	0.05	13.27
307	49.129	0.161	1.55	67	1.20	288	-0.050	627.9	0.06	12.89
308	49.289	0.160	1.55	67	1.20	286	-0.050	1040.0	0.04	12.23
309	49.450	0.161	1.55	67	1.20	284	-0.048	1040.0	0.08	11.92
310	49.611	0.161	1.54	67	1.20	282	-0.046	1040.0	0.15	11.73
311	49.772	0.161	1.54	67	1.20	281	-0.048	1040.0	0.15	11.77
312	49.932	0.160	1.55	67	1.20	281	-0.046	1040.0	0.15	11.77
313	50.093	0.161	1.55	67	1.20	282	-0.047	1040.0	0.13	11.68
314	50.253	0.160	1.54	67	1.20	280	-0.048	1040.0	0.17	11.51
315	50.413	0.160	1.55	67	1.20	279	-0.048	1040.0	0.26	11.46
316	50.573	0.160	1.55	67	1.20	279	-0.047	1040.0	0.17	11.86
317	50.734	0.161	1.54	67	1.20	279	-0.045	1040.0	0.12	11.82
318	50.895	0.161	1.54	67	1.20	279	-0.048	1040.0	0.12	11.73
319	51.055	0.160	1.54	67	1.20	280	-0.048	1040.0	0.11	11.86
320	51.215	0.160	1.55	67	1.20	281	-0.047	1040.0	0.11	11.96

Train D - Ambient Background and Flue Gas Data

Run: 1

Test Date: 12/2/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 16:13

Total Sampling Time: 348 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
321	51.377	0.162	1.55	67	1.20	281	-0.048	1040.0	0.08	11.90
322	51.538	0.161	1.54	67	1.20	281	-0.049	1040.0	0.09	11.87
323	51.698	0.160	1.55	67	1.20	281	-0.046	1040.0	0.13	11.73
324	51.859	0.161	1.55	67	1.20	281	-0.045	1040.0	0.24	11.63
325	52.020	0.161	1.54	67	1.20	281	-0.049	1040.0	0.24	11.76
326	52.181	0.161	1.54	67	1.20	280	-0.047	1040.0	0.30	11.47
327	52.342	0.161	1.55	67	1.20	280	-0.047	1040.0	0.28	11.35
328	52.502	0.160	1.55	67	1.20	279	-0.048	1040.0	0.19	11.24
329	52.663	0.161	1.54	67	1.20	278	-0.047	1040.0	0.29	11.27
330	52.824	0.161	1.54	67	1.20	278	-0.046	1040.0	0.28	11.10
331	52.985	0.161	1.55	67	1.20	277	-0.047	1040.0	0.25	11.10
332	53.145	0.160	1.55	67	1.20	277	-0.046	1040.0	0.24	11.01
333	53.306	0.161	1.54	67	1.20	277	-0.047	1040.0	0.18	11.10
334	53.467	0.161	1.54	67	1.20	277	-0.046	1040.0	0.17	11.04
335	53.627	0.160	1.55	67	1.20	277	-0.048	1040.0	0.20	11.03
336	53.788	0.161	1.55	67	1.20	277	-0.048	1040.0	0.15	11.30
337	53.948	0.160	1.55	67	1.20	277	-0.049	1040.0	0.16	11.08
338	54.110	0.162	1.55	67	1.20	277	-0.049	1040.0	0.24	10.84
339	54.271	0.161	1.55	67	1.20	277	-0.045	1040.0	0.19	10.97
340	54.432	0.161	1.55	67	1.20	284	-0.047	273.8	0.03	14.51
341	54.592	0.160	1.55	67	1.20	284	-0.047	221.0	0.02	14.52
342	54.754	0.162	1.55	67	1.20	283	-0.048	160.2	0.02	13.08
343	54.915	0.161	1.54	67	1.20	282	-0.048	224.6	0.02	13.99
344	55.076	0.161	1.54	67	1.20	286	-0.049	262.2	0.03	13.66
345	55.236	0.160	1.55	67	1.20	288	-0.049	244.7	0.02	13.93
346	55.398	0.162	1.55	67	1.20	288	-0.049	204.2	0.02	13.66
347	55.559	0.161	1.54	67	1.20	287	-0.047	171.1	0.02	13.34
348	55.720	0.161	1.54	67	1.20	281	-0.045	126.5	0.01	13.00

Water Flow Data

ASTM E2618-13

Run: 1
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E

Test Date: 12/2/2024

Boiler Dry Weight, Lb. 1822.5
Boiler Water Weight, Lb. 1663

Test Start Time: 16:13
Total Sampling Time 348 min
Recording Interval 1 min

T_{avg} - Initial Average Boiler Temp, °F 130.68
 T_{Favg} - Final Average Boiler Temp, °F 127.07

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
Tot / Avg	124.3	133.5	9.20	54.3	132.3	77.93	4.392	1.0012	8.337	36.615	997343.8
Minimum	120.7	129.9	7.84	54.1	128.9	74.39	3.961	1.0012	8.337	33.021	2472.694
Max	129.0	138.9	10.02	54.6	137.6	83.14	4.844	1.0012	8.337	40.383	3085.691
0	125.8	135.6	9.74	54.6	134.4	79.75	4.526	1.0012	8.337	37.74	3013.1
1	125.4	135.1	9.75	54.6	133.8	79.23	4.513	1.0012	8.337	37.62	2984.4
2	125.3	135.1	9.76	54.6	133.7	79.13	4.540	1.0012	8.337	37.85	2998.9
3	125.2	135.0	9.74	54.6	133.7	79.12	4.540	1.0012	8.337	37.85	2998.4
4	125.0	134.7	9.67	54.6	133.4	78.83	4.554	1.0012	8.337	37.97	2996.4
5	124.9	134.7	9.83	54.6	133.3	78.66	4.568	1.0012	8.337	38.08	2999.2
6	125.2	134.9	9.72	54.6	133.7	79.04	4.540	1.0012	8.337	37.85	2995.5
7	124.8	134.5	9.70	54.6	133.2	78.63	4.554	1.0012	8.337	37.97	2989.1
8	125.0	134.6	9.63	54.6	133.4	78.78	4.568	1.0012	8.337	38.08	3003.6
9	124.4	134.1	9.69	54.6	132.8	78.19	4.554	1.0012	8.337	37.97	2972.4
10	124.3	134.0	9.65	54.6	132.6	78.02	4.568	1.0012	8.337	38.08	2974.7
11	124.6	134.3	9.68	54.6	132.9	78.31	4.554	1.0012	8.337	37.97	2976.6
12	124.3	133.9	9.58	54.6	132.7	78.06	4.568	1.0012	8.337	38.08	2976.4
13	124.1	133.6	9.51	54.6	132.3	77.74	4.554	1.0012	8.337	37.97	2955.0
14	124.0	133.5	9.55	54.6	132.3	77.73	4.568	1.0012	8.337	38.08	2963.8
15	123.5	133.3	9.83	54.6	132.0	77.42	4.623	1.0012	8.337	38.54	2987.4
16	123.3	133.1	9.83	54.5	131.7	77.18	4.706	1.0012	8.337	39.23	3031.7
17	123.2	133.0	9.84	54.5	131.5	77.02	4.706	1.0012	8.337	39.23	3025.3
18	123.1	132.9	9.81	54.5	131.4	76.85	4.706	1.0012	8.337	39.23	3018.5
19	122.6	132.3	9.67	54.6	131.0	76.43	4.720	1.0012	8.337	39.35	3011.0
20	122.6	132.3	9.68	54.5	130.9	76.38	4.692	1.0012	8.337	39.12	2991.5
21	122.4	131.9	9.58	54.5	130.7	76.14	4.706	1.0012	8.337	39.23	2990.8
22	122.1	131.7	9.60	54.5	130.4	75.83	4.692	1.0012	8.337	39.12	2969.7
23	122.3	132.0	9.70	54.5	130.6	76.11	4.706	1.0012	8.337	39.23	2989.6
24	122.0	131.5	9.53	54.5	130.3	75.76	4.706	1.0012	8.337	39.23	2975.8
25	121.3	131.2	9.89	54.5	129.7	75.13	4.775	1.0012	8.337	39.81	2994.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
26	120.8	130.7	9.89	54.5	129.2	74.65	4.844	1.0012	8.337	40.38	3018.3
27	121.1	130.9	9.87	54.5	129.4	74.93	4.844	1.0012	8.337	40.38	3029.7
28	120.7	130.5	9.74	54.5	129.0	74.53	4.844	1.0012	8.337	40.38	3013.6
29	121.3	130.5	9.26	54.5	129.2	74.67	4.678	1.0012	8.337	39.00	2915.8
30	121.1	130.3	9.20	54.5	129.1	74.54	4.582	1.0012	8.337	38.20	2850.8
31	121.0	130.2	9.20	54.5	128.9	74.39	4.582	1.0012	8.337	38.20	2844.8
32	121.3	130.5	9.19	54.5	129.2	74.62	4.568	1.0012	8.337	38.08	2845.1
33	121.3	130.5	9.20	54.5	129.2	74.64	4.568	1.0012	8.337	38.08	2846.0
34	121.3	130.5	9.18	54.5	129.1	74.63	4.582	1.0012	8.337	38.20	2853.9
35	121.3	130.5	9.21	54.5	129.2	74.68	4.568	1.0012	8.337	38.08	2847.5
36	121.5	130.8	9.27	54.5	129.5	74.92	4.568	1.0012	8.337	38.08	2856.4
37	121.6	130.8	9.19	54.5	129.6	75.03	4.568	1.0012	8.337	38.08	2860.7
38	121.8	131.1	9.36	54.5	129.7	75.18	4.568	1.0012	8.337	38.08	2866.3
39	121.8	131.1	9.28	54.5	129.7	75.20	4.568	1.0012	8.337	38.08	2867.4
40	122.1	131.4	9.30	54.5	130.1	75.61	4.568	1.0012	8.337	38.08	2882.8
41	122.0	131.3	9.31	54.5	130.0	75.47	4.568	1.0012	8.337	38.08	2877.6
42	122.2	131.6	9.38	54.5	130.2	75.69	4.568	1.0012	8.337	38.08	2885.8
43	122.2	131.4	9.26	54.5	130.2	75.69	4.582	1.0012	8.337	38.20	2894.4
44	122.6	131.9	9.33	54.5	130.7	76.12	4.568	1.0012	8.337	38.08	2902.5
45	122.5	131.8	9.37	54.5	130.5	75.99	4.568	1.0012	8.337	38.08	2897.5
46	122.5	131.9	9.39	54.5	130.7	76.15	4.582	1.0012	8.337	38.20	2912.1
47	122.8	132.2	9.40	54.5	131.0	76.44	4.568	1.0012	8.337	38.08	2914.5
48	122.8	132.3	9.42	54.5	130.9	76.40	4.568	1.0012	8.337	38.08	2913.1
49	122.9	132.3	9.42	54.5	131.0	76.50	4.568	1.0012	8.337	38.08	2916.6
50	123.2	132.7	9.48	54.5	131.4	76.86	4.582	1.0012	8.337	38.20	2939.4
51	123.2	132.6	9.43	54.5	131.3	76.84	4.554	1.0012	8.337	37.97	2920.7
52	123.0	132.4	9.40	54.5	131.2	76.68	4.568	1.0012	8.337	38.08	2923.5
53	123.4	132.8	9.40	54.5	131.6	77.05	4.568	1.0012	8.337	38.08	2937.8
54	123.2	132.7	9.44	54.5	131.4	76.90	4.568	1.0012	8.337	38.08	2932.2
55	123.7	133.2	9.54	54.5	131.9	77.40	4.568	1.0012	8.337	38.08	2951.0
56	123.4	132.9	9.50	54.5	131.5	77.01	4.568	1.0012	8.337	38.08	2936.2
57	123.6	133.2	9.60	54.5	131.7	77.21	4.582	1.0012	8.337	38.20	2952.6
58	123.9	133.5	9.62	54.5	132.1	77.57	4.568	1.0012	8.337	38.08	2957.6
59	123.4	133.0	9.60	54.5	131.6	77.11	4.554	1.0012	8.337	37.97	2931.1
60	123.9	133.4	9.51	54.5	132.2	77.61	4.568	1.0012	8.337	38.08	2959.3
61	124.0	133.5	9.52	54.5	132.3	77.76	4.582	1.0012	8.337	38.20	2974.0
62	123.9	133.6	9.70	54.5	132.2	77.65	4.568	1.0012	8.337	38.08	2960.8
63	124.0	133.6	9.65	54.5	132.3	77.72	4.554	1.0012	8.337	37.97	2954.2
64	124.2	133.8	9.70	54.5	132.4	77.93	4.540	1.0012	8.337	37.85	2953.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
65	124.1	133.7	9.58	54.5	132.4	77.92	4.568	1.0012	8.337	38.08	2970.9
66	124.2	133.8	9.60	54.5	132.5	78.00	4.554	1.0012	8.337	37.97	2964.9
67	124.3	133.9	9.63	54.5	132.6	78.07	4.582	1.0012	8.337	38.20	2985.6
68	124.0	133.6	9.60	54.5	132.3	77.77	4.568	1.0012	8.337	38.08	2965.1
69	124.1	133.8	9.71	54.5	132.3	77.80	4.568	1.0012	8.337	38.08	2966.3
70	124.5	134.2	9.63	54.5	132.9	78.38	4.554	1.0012	8.337	37.97	2979.3
71	124.2	133.8	9.59	54.5	132.6	78.02	4.568	1.0012	8.337	38.08	2974.9
72	124.6	134.2	9.66	54.5	132.9	78.40	4.568	1.0012	8.337	38.08	2989.4
73	124.6	134.3	9.62	54.5	132.9	78.32	4.540	1.0012	8.337	37.85	2968.1
74	124.7	134.3	9.62	54.5	133.1	78.52	4.513	1.0012	8.337	37.62	2957.8
75	124.7	134.2	9.56	54.5	133.0	78.46	4.513	1.0012	8.337	37.62	2955.4
76	125.0	134.7	9.72	54.5	133.3	78.78	4.526	1.0012	8.337	37.74	2976.6
77	125.2	134.8	9.60	54.5	133.5	78.96	4.513	1.0012	8.337	37.62	2974.1
78	125.1	134.8	9.71	54.6	133.4	78.86	4.540	1.0012	8.337	37.85	2988.6
79	125.2	134.9	9.63	54.5	133.6	79.10	4.526	1.0012	8.337	37.74	2988.4
80	125.3	135.0	9.73	54.5	133.7	79.22	4.526	1.0012	8.337	37.74	2992.9
81	125.4	135.0	9.69	54.5	133.8	79.26	4.513	1.0012	8.337	37.62	2985.5
82	125.5	135.2	9.63	54.5	134.0	79.43	4.513	1.0012	8.337	37.62	2992.0
83	125.5	135.2	9.68	54.5	134.0	79.44	4.526	1.0012	8.337	37.74	3001.5
84	125.8	135.6	9.81	54.5	134.3	79.73	4.513	1.0012	8.337	37.62	3003.2
85	125.9	135.7	9.80	54.5	134.4	79.84	4.526	1.0012	8.337	37.74	3016.4
86	125.9	135.7	9.78	54.5	134.3	79.81	4.513	1.0012	8.337	37.62	3006.1
87	126.3	135.7	9.41	54.5	134.5	79.95	4.457	1.0012	8.337	37.16	2974.8
88	126.3	136.1	9.87	54.5	134.7	80.21	4.457	1.0012	8.337	37.16	2984.2
89	125.9	135.7	9.76	54.5	134.5	79.94	4.526	1.0012	8.337	37.74	3020.2
90	126.0	135.7	9.70	54.5	134.5	79.99	4.526	1.0012	8.337	37.74	3022.1
91	126.2	136.1	9.89	54.5	134.7	80.22	4.526	1.0012	8.337	37.74	3030.8
92	126.7	136.1	9.44	54.5	135.1	80.52	4.444	1.0012	8.337	37.05	2986.8
93	126.6	136.3	9.66	54.5	135.2	80.66	4.402	1.0012	8.337	36.70	2964.1
94	126.1	135.9	9.78	54.5	134.6	80.10	4.526	1.0012	8.337	37.74	3026.6
95	126.3	136.1	9.83	54.5	134.8	80.30	4.540	1.0012	8.337	37.85	3043.2
96	126.4	136.2	9.80	54.5	135.0	80.52	4.526	1.0012	8.337	37.74	3042.1
97	126.3	136.0	9.75	54.5	134.7	80.22	4.513	1.0012	8.337	37.62	3021.7
98	126.3	136.1	9.81	54.5	134.8	80.28	4.513	1.0012	8.337	37.62	3024.0
99	126.6	136.5	9.91	54.5	135.1	80.66	4.540	1.0012	8.337	37.85	3056.7
100	126.5	136.4	9.91	54.5	135.0	80.54	4.513	1.0012	8.337	37.62	3033.6
101	126.4	136.2	9.80	54.5	135.0	80.50	4.526	1.0012	8.337	37.74	3041.6
102	126.7	136.5	9.84	54.5	135.3	80.76	4.526	1.0012	8.337	37.74	3051.3
103	126.4	136.2	9.83	54.5	134.9	80.43	4.526	1.0012	8.337	37.74	3038.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
104	126.6	136.5	9.83	54.5	135.2	80.73	4.526	1.0012	8.337	37.74	3050.1
105	126.6	136.5	9.89	54.5	135.2	80.72	4.526	1.0012	8.337	37.74	3049.6
106	126.9	136.8	9.93	54.5	135.6	81.07	4.540	1.0012	8.337	37.85	3072.4
107	126.8	136.8	9.97	54.5	135.4	80.90	4.526	1.0012	8.337	37.74	3056.7
108	127.0	137.0	9.96	54.5	135.6	81.08	4.513	1.0012	8.337	37.62	3054.1
109	126.9	136.8	9.87	54.5	135.5	81.07	4.526	1.0012	8.337	37.74	3062.9
110	127.4	137.3	9.95	54.5	136.0	81.56	4.526	1.0012	8.337	37.74	3081.7
111	127.1	137.0	9.94	54.5	135.7	81.27	4.526	1.0012	8.337	37.74	3070.4
112	127.3	137.1	9.87	54.5	135.9	81.46	4.513	1.0012	8.337	37.62	3068.4
113	127.5	137.4	9.85	54.5	136.2	81.73	4.513	1.0012	8.337	37.62	3078.6
114	127.7	137.5	9.79	54.5	136.3	81.87	4.457	1.0012	8.337	37.16	3046.2
115	127.8	137.6	9.81	54.4	136.4	81.95	4.430	1.0012	8.337	36.93	3030.3
116	128.1	138.0	9.94	54.4	136.7	82.29	4.444	1.0012	8.337	37.05	3052.4
117	127.9	137.7	9.82	54.4	136.5	82.06	4.457	1.0012	8.337	37.16	3053.3
118	128.0	138.0	9.93	54.4	136.7	82.24	4.457	1.0012	8.337	37.16	3059.7
119	128.1	138.0	9.90	54.5	136.7	82.26	4.444	1.0012	8.337	37.05	3051.3
120	128.1	137.9	9.86	54.4	136.7	82.30	4.444	1.0012	8.337	37.05	3052.5
121	128.0	137.9	9.85	54.4	136.7	82.23	4.457	1.0012	8.337	37.16	3059.5
122	128.6	138.6	9.93	54.4	137.3	82.86	4.444	1.0012	8.337	37.05	3073.5
123	128.5	138.4	9.95	54.4	137.2	82.72	4.444	1.0012	8.337	37.05	3068.2
124	128.4	138.4	9.97	54.4	137.1	82.62	4.444	1.0012	8.337	37.05	3064.6
125	128.6	138.6	9.99	54.4	137.2	82.79	4.444	1.0012	8.337	37.05	3070.6
126	128.7	138.7	9.99	54.4	137.4	82.93	4.457	1.0012	8.337	37.16	3085.7
127	128.5	138.5	10.02	54.4	137.2	82.74	4.430	1.0012	8.337	36.93	3059.4
128	128.6	138.5	9.91	54.4	137.4	82.95	4.444	1.0012	8.337	37.05	3076.6
129	128.6	138.4	9.82	54.4	137.2	82.77	4.416	1.0012	8.337	36.82	3050.8
130	128.7	138.5	9.77	54.4	137.4	82.95	4.388	1.0012	8.337	36.59	3038.4
131	128.8	138.6	9.77	54.4	137.5	83.05	4.402	1.0012	8.337	36.70	3051.8
132	128.7	138.5	9.80	54.4	137.3	82.83	4.388	1.0012	8.337	36.59	3034.1
133	128.7	138.7	9.97	54.4	137.3	82.85	4.402	1.0012	8.337	36.70	3044.4
134	128.7	138.6	9.83	54.4	137.4	82.93	4.388	1.0012	8.337	36.59	3037.7
135	129.0	138.9	9.85	54.4	137.6	83.14	4.388	1.0012	8.337	36.59	3045.4
136	128.5	138.3	9.79	54.4	137.1	82.72	4.388	1.0012	8.337	36.59	3030.2
137	128.6	138.3	9.76	54.4	137.1	82.71	4.388	1.0012	8.337	36.59	3029.9
138	128.2	137.9	9.70	54.4	136.8	82.39	4.388	1.0012	8.337	36.59	3018.0
139	128.4	138.1	9.75	54.4	137.0	82.54	4.402	1.0012	8.337	36.70	3033.2
140	128.1	137.9	9.75	54.4	136.6	82.21	4.402	1.0012	8.337	36.70	3021.0
141	128.1	137.9	9.76	54.4	136.7	82.26	4.388	1.0012	8.337	36.59	3013.2
142	127.9	137.6	9.71	54.4	136.4	81.96	4.388	1.0012	8.337	36.59	3002.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
143	127.7	137.3	9.64	54.4	136.2	81.81	4.430	1.0012	8.337	36.93	3025.0
144	127.3	137.0	9.71	54.4	135.7	81.33	4.416	1.0012	8.337	36.82	2997.8
145	127.2	136.9	9.65	54.4	135.7	81.27	4.416	1.0012	8.337	36.82	2995.9
146	127.3	136.9	9.63	54.4	135.8	81.38	4.430	1.0012	8.337	36.93	3009.2
147	126.7	136.3	9.56	54.4	135.2	80.77	4.430	1.0012	8.337	36.93	2986.6
148	127.0	136.6	9.59	54.4	135.4	80.99	4.416	1.0012	8.337	36.82	2985.6
149	126.6	136.2	9.60	54.4	134.9	80.54	4.416	1.0012	8.337	36.82	2968.9
150	126.6	136.2	9.52	54.4	135.0	80.65	4.416	1.0012	8.337	36.82	2973.0
151	126.5	136.0	9.51	54.4	134.8	80.45	4.416	1.0012	8.337	36.82	2965.4
152	126.3	135.9	9.56	54.4	134.7	80.31	4.430	1.0012	8.337	36.93	2969.6
153	126.0	135.6	9.54	54.4	134.4	80.02	4.416	1.0012	8.337	36.82	2949.7
154	126.2	135.7	9.55	54.4	134.5	80.10	4.416	1.0012	8.337	36.82	2952.5
155	126.0	135.6	9.55	54.4	134.3	79.96	4.416	1.0012	8.337	36.82	2947.4
156	126.0	135.5	9.55	54.3	134.2	79.88	4.430	1.0012	8.337	36.93	2953.9
157	125.6	135.1	9.44	54.4	133.9	79.56	4.416	1.0012	8.337	36.82	2932.7
158	125.5	134.9	9.37	54.4	133.8	79.42	4.416	1.0012	8.337	36.82	2927.5
159	125.2	134.7	9.47	54.3	133.4	79.10	4.430	1.0012	8.337	36.93	2924.7
160	125.2	134.7	9.46	54.4	133.3	78.97	4.416	1.0012	8.337	36.82	2911.1
161	125.7	134.6	8.90	54.4	133.4	79.05	4.333	1.0012	8.337	36.13	2859.2
162	125.1	134.4	9.36	54.4	133.3	78.90	4.347	1.0012	8.337	36.24	2862.8
163	124.9	134.2	9.36	54.4	133.0	78.65	4.444	1.0012	8.337	37.05	2917.2
164	124.8	134.2	9.39	54.3	133.0	78.64	4.430	1.0012	8.337	36.93	2907.8
165	124.5	133.9	9.37	54.3	132.6	78.28	4.430	1.0012	8.337	36.93	2894.6
166	124.3	133.6	9.31	54.3	132.4	78.04	4.416	1.0012	8.337	36.82	2876.7
167	124.4	133.7	9.27	54.3	132.5	78.12	4.430	1.0012	8.337	36.93	2888.6
168	124.2	133.4	9.20	54.3	132.2	77.91	4.416	1.0012	8.337	36.82	2871.8
169	123.9	133.3	9.31	54.3	132.0	77.66	4.430	1.0012	8.337	36.93	2871.5
170	124.1	133.4	9.36	54.3	132.1	77.80	4.430	1.0012	8.337	36.93	2876.8
171	124.0	133.3	9.24	54.3	132.0	77.74	4.402	1.0012	8.337	36.70	2856.8
172	123.9	133.2	9.27	54.3	131.9	77.60	4.430	1.0012	8.337	36.93	2869.3
173	123.9	133.1	9.20	54.3	131.9	77.62	4.430	1.0012	8.337	36.93	2870.1
174	123.6	132.7	9.12	54.3	131.6	77.28	4.430	1.0012	8.337	36.93	2857.6
175	123.7	132.9	9.17	54.3	131.7	77.38	4.430	1.0012	8.337	36.93	2861.1
176	123.5	132.7	9.21	54.3	131.5	77.16	4.430	1.0012	8.337	36.93	2853.2
177	123.6	132.8	9.18	54.3	131.5	77.20	4.430	1.0012	8.337	36.93	2854.6
178	123.2	132.3	9.10	54.3	131.1	76.82	4.430	1.0012	8.337	36.93	2840.7
179	123.6	132.7	9.07	54.3	131.6	77.36	4.430	1.0012	8.337	36.93	2860.4
180	123.1	132.2	9.11	54.3	131.0	76.73	4.430	1.0012	8.337	36.93	2837.3
181	123.2	132.2	9.08	54.3	131.1	76.77	4.430	1.0012	8.337	36.93	2838.8

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
182	123.1	132.1	9.06	54.3	130.9	76.64	4.430	1.0012	8.337	36.93	2833.9
183	122.8	131.8	9.05	54.3	130.7	76.45	4.430	1.0012	8.337	36.93	2826.8
184	122.7	131.7	9.01	54.3	130.5	76.23	4.416	1.0012	8.337	36.82	2810.0
185	122.8	132.0	9.11	54.3	130.7	76.45	4.430	1.0012	8.337	36.93	2827.0
186	122.6	131.6	9.04	54.3	130.4	76.14	4.430	1.0012	8.337	36.93	2815.3
187	122.5	131.6	9.07	54.3	130.3	76.00	4.430	1.0012	8.337	36.93	2810.2
188	122.4	131.5	9.05	54.3	130.2	75.91	4.430	1.0012	8.337	36.93	2806.9
189	122.2	131.2	8.99	54.2	130.0	75.71	4.416	1.0012	8.337	36.82	2791.0
190	122.1	131.1	8.96	54.2	129.9	75.61	4.444	1.0012	8.337	37.05	2804.4
191	122.1	131.0	8.88	54.2	129.8	75.56	4.388	1.0012	8.337	36.59	2767.9
192	121.9	130.8	8.85	54.2	129.6	75.34	4.388	1.0012	8.337	36.59	2759.7
193	121.8	130.7	8.82	54.3	129.5	75.21	4.416	1.0012	8.337	36.82	2772.3
194	121.9	130.6	8.71	54.2	129.3	75.05	4.347	1.0012	8.337	36.24	2723.2
195	122.6	130.6	8.09	54.3	129.7	75.49	4.057	1.0012	8.337	33.83	2556.6
196	122.4	130.5	8.11	54.3	129.5	75.24	4.057	1.0012	8.337	33.83	2548.0
197	122.5	130.6	8.07	54.3	129.6	75.30	4.043	1.0012	8.337	33.71	2541.6
198	122.7	130.6	7.88	54.3	129.6	75.31	4.002	1.0012	8.337	33.37	2515.7
199	122.2	130.5	8.23	54.3	129.4	75.13	4.085	1.0012	8.337	34.06	2561.7
200	121.9	130.1	8.15	54.3	129.2	74.90	4.126	1.0012	8.337	34.40	2579.7
201	121.9	130.1	8.18	54.3	129.0	74.75	4.140	1.0012	8.337	34.52	2583.3
202	122.0	130.2	8.23	54.3	129.1	74.85	4.126	1.0012	8.337	34.40	2578.1
203	121.8	129.9	8.15	54.3	128.9	74.65	4.140	1.0012	8.337	34.52	2579.7
204	121.8	129.9	8.14	54.3	128.9	74.67	4.126	1.0012	8.337	34.40	2571.7
205	122.2	130.0	7.84	54.3	129.1	74.79	3.961	1.0012	8.337	33.02	2472.7
206	121.8	130.0	8.20	54.3	129.0	74.68	4.140	1.0012	8.337	34.52	2580.7
207	122.0	130.3	8.26	54.3	129.2	74.95	4.126	1.0012	8.337	34.40	2581.6
208	122.1	130.3	8.25	54.3	129.3	75.03	4.140	1.0012	8.337	34.52	2593.0
209	122.3	130.6	8.32	54.3	129.4	75.14	4.126	1.0012	8.337	34.40	2588.2
210	122.5	130.9	8.35	54.3	129.7	75.41	4.140	1.0012	8.337	34.52	2606.2
211	122.5	130.7	8.22	54.3	129.8	75.49	4.085	1.0012	8.337	34.06	2573.9
212	123.0	131.0	7.99	54.3	130.1	75.79	4.016	1.0012	8.337	33.48	2540.6
213	122.8	131.1	8.37	54.2	130.0	75.80	4.126	1.0012	8.337	34.40	2610.9
214	122.7	131.1	8.40	54.2	130.0	75.77	4.140	1.0012	8.337	34.52	2618.6
215	122.8	131.2	8.39	54.3	130.1	75.87	4.126	1.0012	8.337	34.40	2613.3
216	123.1	131.4	8.37	54.3	130.3	76.05	4.126	1.0012	8.337	34.40	2619.5
217	123.0	131.3	8.30	54.3	130.3	76.00	4.140	1.0012	8.337	34.52	2626.3
218	123.1	131.4	8.35	54.3	130.3	76.04	4.126	1.0012	8.337	34.40	2619.1
219	123.2	131.6	8.39	54.3	130.5	76.20	4.126	1.0012	8.337	34.40	2624.7
220	123.2	131.5	8.36	54.2	130.5	76.25	4.140	1.0012	8.337	34.52	2634.9

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
221	122.9	131.4	8.47	54.2	130.2	75.99	4.126	1.0012	8.337	34.40	2617.2
222	122.9	131.2	8.30	54.2	130.2	75.94	4.140	1.0012	8.337	34.52	2624.3
223	122.5	130.8	8.26	54.2	129.8	75.55	4.126	1.0012	8.337	34.40	2602.1
224	122.8	131.2	8.32	54.3	130.1	75.86	4.126	1.0012	8.337	34.40	2612.8
225	122.6	130.8	8.20	54.2	129.9	75.67	4.126	1.0012	8.337	34.40	2606.3
226	122.8	131.1	8.31	54.3	130.1	75.82	4.140	1.0012	8.337	34.52	2620.1
227	122.5	130.7	8.22	54.3	129.8	75.53	4.126	1.0012	8.337	34.40	2601.6
228	122.4	130.7	8.29	54.3	129.6	75.31	4.126	1.0012	8.337	34.40	2594.0
229	122.4	130.6	8.23	54.3	129.6	75.38	4.126	1.0012	8.337	34.40	2596.2
230	122.5	130.8	8.28	54.2	129.8	75.53	4.126	1.0012	8.337	34.40	2601.5
231	122.8	131.0	8.26	54.3	130.0	75.79	4.126	1.0012	8.337	34.40	2610.6
232	122.7	131.0	8.30	54.2	129.9	75.66	4.126	1.0012	8.337	34.40	2606.0
233	122.6	131.0	8.34	54.2	129.9	75.70	4.126	1.0012	8.337	34.40	2607.3
234	122.9	131.1	8.29	54.2	130.2	75.92	4.140	1.0012	8.337	34.52	2623.6
235	122.8	131.1	8.29	54.2	130.1	75.88	4.126	1.0012	8.337	34.40	2613.6
236	122.9	131.3	8.38	54.3	130.2	75.94	4.126	1.0012	8.337	34.40	2615.6
237	122.9	131.2	8.28	54.2	130.2	75.91	4.140	1.0012	8.337	34.52	2623.2
238	122.9	131.2	8.36	54.3	130.1	75.84	4.126	1.0012	8.337	34.40	2612.2
239	123.0	131.4	8.35	54.2	130.3	76.09	4.126	1.0012	8.337	34.40	2620.8
240	123.0	131.3	8.33	54.2	130.3	76.03	4.126	1.0012	8.337	34.40	2618.7
241	122.9	131.2	8.37	54.2	130.1	75.91	4.126	1.0012	8.337	34.40	2614.5
242	123.2	131.5	8.37	54.2	130.5	76.30	4.126	1.0012	8.337	34.40	2627.9
243	123.3	131.7	8.37	54.2	130.6	76.39	4.126	1.0012	8.337	34.40	2631.3
244	123.3	131.7	8.37	54.2	130.7	76.44	4.126	1.0012	8.337	34.40	2632.8
245	123.2	131.6	8.38	54.2	130.6	76.37	4.126	1.0012	8.337	34.40	2630.3
246	123.3	131.7	8.39	54.2	130.7	76.43	4.112	1.0012	8.337	34.29	2623.8
247	123.5	131.9	8.43	54.2	130.8	76.56	4.126	1.0012	8.337	34.40	2636.9
248	123.4	131.8	8.42	54.2	130.8	76.53	4.126	1.0012	8.337	34.40	2635.8
249	123.5	131.8	8.36	54.2	130.8	76.61	4.126	1.0012	8.337	34.40	2638.5
250	123.5	131.9	8.37	54.2	130.8	76.60	4.126	1.0012	8.337	34.40	2638.4
251	123.6	132.0	8.39	54.2	130.9	76.72	4.126	1.0012	8.337	34.40	2642.6
252	123.7	132.1	8.38	54.2	131.1	76.87	4.126	1.0012	8.337	34.40	2647.5
253	123.7	132.1	8.48	54.2	131.0	76.79	4.126	1.0012	8.337	34.40	2645.0
254	123.8	132.2	8.43	54.2	131.2	76.96	4.126	1.0012	8.337	34.40	2650.7
255	123.8	132.2	8.40	54.2	131.2	77.02	4.126	1.0012	8.337	34.40	2652.9
256	123.8	132.3	8.47	54.2	131.2	77.00	4.126	1.0012	8.337	34.40	2652.0
257	123.9	132.3	8.44	54.2	131.2	77.04	4.112	1.0012	8.337	34.29	2644.5
258	123.9	132.4	8.55	54.2	131.3	77.09	4.140	1.0012	8.337	34.52	2664.2
259	124.0	132.5	8.52	54.2	131.5	77.28	4.140	1.0012	8.337	34.52	2670.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
260	124.0	132.6	8.57	54.2	131.4	77.21	4.154	1.0012	8.337	34.63	2677.2
261	124.1	132.6	8.54	54.2	131.6	77.35	4.140	1.0012	8.337	34.52	2673.2
262	124.1	132.8	8.66	54.2	131.6	77.36	4.140	1.0012	8.337	34.52	2673.4
263	124.0	132.6	8.58	54.2	131.5	77.33	4.168	1.0012	8.337	34.75	2690.2
264	124.1	132.7	8.53	54.2	131.7	77.47	4.140	1.0012	8.337	34.52	2677.4
265	124.1	132.8	8.66	54.2	131.6	77.40	4.154	1.0012	8.337	34.63	2683.7
266	124.2	132.8	8.56	54.2	131.7	77.53	4.154	1.0012	8.337	34.63	2688.4
267	124.2	132.8	8.58	54.2	131.7	77.56	4.168	1.0012	8.337	34.75	2698.2
268	124.6	133.2	8.63	54.2	132.2	77.99	4.168	1.0012	8.337	34.75	2713.3
269	124.4	133.1	8.62	54.2	132.0	77.80	4.140	1.0012	8.337	34.52	2688.8
270	124.4	133.0	8.59	54.2	131.9	77.76	4.168	1.0012	8.337	34.75	2705.4
271	124.7	133.3	8.66	54.2	132.3	78.09	4.168	1.0012	8.337	34.75	2716.6
272	124.4	133.2	8.74	54.2	132.1	77.90	4.195	1.0012	8.337	34.98	2728.1
273	124.8	133.5	8.75	54.2	132.4	78.22	4.195	1.0012	8.337	34.98	2739.2
274	124.5	133.2	8.73	54.2	132.1	77.94	4.181	1.0012	8.337	34.86	2720.3
275	125.0	133.7	8.72	54.2	132.6	78.45	4.181	1.0012	8.337	34.86	2738.1
276	125.2	133.6	8.46	54.2	132.6	78.49	4.126	1.0012	8.337	34.40	2703.4
277	125.0	133.8	8.81	54.2	132.7	78.51	4.140	1.0012	8.337	34.52	2713.1
278	124.9	133.7	8.80	54.2	132.6	78.42	4.195	1.0012	8.337	34.98	2746.3
279	125.0	133.8	8.80	54.2	132.7	78.52	4.209	1.0012	8.337	35.09	2758.7
280	125.1	133.9	8.82	54.2	132.8	78.63	4.195	1.0012	8.337	34.98	2753.4
281	125.0	133.8	8.77	54.2	132.7	78.59	4.195	1.0012	8.337	34.98	2752.1
282	125.0	133.8	8.80	54.2	132.8	78.61	4.181	1.0012	8.337	34.86	2743.8
283	125.2	134.0	8.85	54.2	132.9	78.74	4.209	1.0012	8.337	35.09	2766.5
284	124.7	133.9	9.15	54.1	132.7	78.54	4.319	1.0012	8.337	36.01	2831.8
285	124.8	134.0	9.13	54.1	132.8	78.67	4.333	1.0012	8.337	36.13	2845.6
286	124.9	134.0	9.16	54.1	132.8	78.70	4.333	1.0012	8.337	36.13	2846.8
287	125.0	134.2	9.19	54.1	132.9	78.82	4.319	1.0012	8.337	36.01	2841.9
288	124.9	134.0	9.11	54.1	132.8	78.74	4.347	1.0012	8.337	36.24	2857.1
289	124.8	133.9	9.11	54.1	132.7	78.56	4.319	1.0012	8.337	36.01	2832.5
290	124.7	133.8	9.14	54.1	132.6	78.45	4.347	1.0012	8.337	36.24	2846.7
291	124.8	133.9	9.12	54.1	132.7	78.53	4.333	1.0012	8.337	36.13	2840.4
292	124.6	133.8	9.21	54.1	132.5	78.35	4.333	1.0012	8.337	36.13	2834.0
293	124.9	134.0	9.14	54.1	132.9	78.74	4.333	1.0012	8.337	36.13	2848.0
294	124.7	133.8	9.15	54.1	132.6	78.48	4.333	1.0012	8.337	36.13	2838.9
295	125.0	134.1	9.09	54.1	133.0	78.94	4.333	1.0012	8.337	36.13	2855.2
296	124.8	134.1	9.28	54.1	132.8	78.70	4.375	1.0012	8.337	36.47	2873.9
297	124.7	134.0	9.30	54.1	132.6	78.52	4.388	1.0012	8.337	36.59	2876.5
298	124.8	134.0	9.24	54.1	132.8	78.71	4.375	1.0012	8.337	36.47	2874.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
299	124.6	133.8	9.28	54.1	132.6	78.48	4.361	1.0012	8.337	36.36	2857.0
300	124.7	133.9	9.28	54.1	132.7	78.55	4.375	1.0012	8.337	36.47	2868.4
301	124.5	133.9	9.35	54.1	132.7	78.64	4.402	1.0012	8.337	36.70	2889.8
302	124.5	134.0	9.45	54.1	132.7	78.60	4.471	1.0012	8.337	37.28	2933.8
303	124.8	134.2	9.43	54.1	133.0	78.91	4.457	1.0012	8.337	37.16	2936.0
304	124.5	134.0	9.47	54.1	132.6	78.56	4.457	1.0012	8.337	37.16	2923.2
305	124.4	133.8	9.40	54.1	132.6	78.53	4.471	1.0012	8.337	37.28	2931.1
306	124.5	134.1	9.62	54.1	132.6	78.52	4.471	1.0012	8.337	37.28	2930.6
307	124.5	134.0	9.48	54.1	132.6	78.51	4.471	1.0012	8.337	37.28	2930.2
308	124.7	134.2	9.50	54.1	132.9	78.79	4.471	1.0012	8.337	37.28	2940.8
309	124.4	133.8	9.39	54.1	132.6	78.53	4.485	1.0012	8.337	37.39	2940.1
310	124.5	134.0	9.45	54.1	132.7	78.61	4.471	1.0012	8.337	37.28	2933.8
311	124.1	133.5	9.42	54.1	132.2	78.14	4.485	1.0012	8.337	37.39	2925.6
312	124.3	133.8	9.47	54.1	132.5	78.45	4.499	1.0012	8.337	37.51	2946.1
313	124.0	133.5	9.43	54.1	132.1	78.06	4.485	1.0012	8.337	37.39	2922.5
314	124.2	133.7	9.46	54.1	132.3	78.18	4.485	1.0012	8.337	37.39	2926.9
315	123.8	133.2	9.39	54.1	131.8	77.75	4.485	1.0012	8.337	37.39	2910.8
316	123.5	132.9	9.33	54.1	131.6	77.58	4.485	1.0012	8.337	37.39	2904.4
317	123.8	133.1	9.33	54.1	131.8	77.69	4.457	1.0012	8.337	37.16	2890.7
318	123.8	133.1	9.26	54.1	131.8	77.74	4.444	1.0012	8.337	37.05	2883.7
319	123.6	132.9	9.24	54.1	131.6	77.53	4.444	1.0012	8.337	37.05	2875.8
320	123.3	132.6	9.28	54.1	131.3	77.21	4.444	1.0012	8.337	37.05	2864.1
321	123.5	132.8	9.24	54.1	131.6	77.47	4.457	1.0012	8.337	37.16	2882.4
322	123.3	132.5	9.19	54.1	131.2	77.14	4.444	1.0012	8.337	37.05	2861.5
323	123.3	132.4	9.10	54.1	131.2	77.07	4.402	1.0012	8.337	36.70	2832.2
324	123.4	132.5	9.09	54.1	131.2	77.14	4.375	1.0012	8.337	36.47	2816.8
325	123.5	132.6	9.10	54.1	131.3	77.25	4.388	1.0012	8.337	36.59	2829.8
326	123.2	132.2	8.96	54.1	131.0	76.95	4.402	1.0012	8.337	36.70	2827.7
327	123.4	132.5	9.07	54.1	131.3	77.20	4.388	1.0012	8.337	36.59	2827.9
328	122.9	131.9	9.03	54.1	130.6	76.56	4.375	1.0012	8.337	36.47	2795.8
329	123.2	132.3	9.09	54.1	131.0	76.90	4.388	1.0012	8.337	36.59	2816.9
330	123.0	132.0	8.98	54.1	130.8	76.69	4.402	1.0012	8.337	36.70	2818.2
331	122.8	131.8	9.02	54.1	130.6	76.51	4.388	1.0012	8.337	36.59	2802.6
332	122.8	131.8	8.99	54.1	130.6	76.54	4.388	1.0012	8.337	36.59	2803.9
333	122.5	131.5	8.98	54.1	130.2	76.16	4.375	1.0012	8.337	36.47	2781.2
334	122.7	131.7	8.95	54.1	130.5	76.40	4.388	1.0012	8.337	36.59	2798.7
335	122.5	131.5	8.94	54.1	130.2	76.13	4.402	1.0012	8.337	36.70	2797.5
336	122.4	131.3	8.92	54.1	130.2	76.06	4.388	1.0012	8.337	36.59	2786.4
337	122.4	131.4	8.97	54.1	130.2	76.12	4.375	1.0012	8.337	36.47	2779.7

<i>Elapsed Time (min)</i>	Appliance			Load							
	<i>T2 Return Temp °F</i>	<i>T1 Supply Temp °F</i>	<i>ΔT across Appliance</i>	<i>T3 Load IN Temp °F</i>	<i>Load Out Temp °F</i>	<i>Delta - T °F</i>	<i>Flow-Rate GPM</i>	<i>cp_i</i>	<i>σ_i</i>	<i>M_i Mass lb/min</i>	<i>Heat Output Btu</i>
338	122.2	131.2	8.91	54.1	130.0	75.90	4.388	1.0012	8.337	36.59	2780.4
339	122.0	130.9	8.88	54.1	129.7	75.62	4.388	1.0012	8.337	36.59	2770.1
340	122.0	131.0	8.98	54.1	129.7	75.60	4.388	1.0012	8.337	36.59	2769.5
341	122.4	131.4	8.99	54.1	130.1	75.98	4.388	1.0012	8.337	36.59	2783.2
342	122.2	131.1	8.89	54.1	129.8	75.74	4.388	1.0012	8.337	36.59	2774.6
343	122.3	131.2	8.96	54.1	130.0	75.86	4.388	1.0012	8.337	36.59	2779.0
344	122.4	131.3	8.94	54.1	130.1	76.03	4.388	1.0012	8.337	36.59	2785.1
345	122.4	131.3	8.92	54.1	130.0	75.91	4.388	1.0012	8.337	36.59	2780.7
346	122.5	131.5	8.97	54.1	130.3	76.16	4.388	1.0012	8.337	36.59	2790.1
347	122.5	131.5	8.95	54.1	130.2	76.11	4.402	1.0012	8.337	36.70	2797.0
348	122.6	131.6	9.04	54.1	130.3	76.23	4.388	1.0012	8.337	36.59	2792.5

Gravimetric Lab Data

ASTM E2515

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Run No.: 1
 Test Date: 12/2/24

OMNI Eq. ID Numbers
 Analytical Scale _____
 Audit Weight Set: _____
 Analytical Scale _____
 Hydrometer _____
 Filters are weighed In Pairs

Train A

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	5/14/24 @ 6:15	Filter	F481/A	241.8	238.3	3.5	3.5
Probe catch*	5/14/24 @ 6:15	Probe	OES 5	113567.1	113567.1	0.0	0.0
Filter seals catch*	5/14/24 @ 6:15	Seals	S896	3411.3	3411.1	0.2	0.2
				Total Particulate, mg:		3.7	3.7

Train B

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	5/14/24 @ 6:15	Filter	F482/A	240.7	237.5	3.2	3.2
Probe catch*	5/14/24 @ 6:15	Probe	OES 6	113706.7	113706.6	0.1	0.1
Filter seals catch*	5/14/24 @ 6:15	Seals	S897	3320.4	3320.1	0.3	0.3
Sub-Total				Total Particulate, mg:		3.6	3.6

Train C - First Hour

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	5/14/24 @ 6:15	Filter	F483/A	238.1	238.1	0.0	0.0
Probe catch*	5/14/24 @ 6:15	Probe	20	114253.1	114253.1	0.0	0.0
Filter seals catch*	5/14/24 @ 6:15	Seals	S898	3373.9	3373.8	0.1	0.1
				Total Particulate, mg:		0.1	0.1

Train D - Ambient Background

Sample Component Date / Time in Desiccator		Reagent	Filter # or	Weights			
				Final, mg	Tare, mg	Particulate, mg	
Filter catch*	5/14/24 @ 6:15	Filter	F415	125.4	125.5	0.0	
				Total Particulate, mg:		0.0	

$$\text{Final (mg)} - \text{Tare (mg)} = \text{Particulate (mg)}$$

NOTE: The Uncorrected values are those where any negative filter weights are taken as a negative value. This can possibly occur when filter matter adheres the O-ring seals and thereby transfers some mass to the O-ring. The Corrected values reflect where any negative filter weights are taken as ZERO, thus not accounting for any transfer of mass and resultingly over-reporting. Corrected values were added to this analysis to report the "Corrected" results in this report in response to a request by the US EPA. In cases where the Final weight minus the Tare weight of the Ambient filter occurs, it is taken as a ZERO. Any negative probe weights are evaluated pursuant to clause of ASTM E25215 (or appropriately associated test standard as defined in the introduction of this report).

Technician Signature: _____

Reviewed By: _____

Run 1 - Run Notes

Manufacturer Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 1
Test Date: 12/2/2024

This supplemental section of miscellaneous run notes is comprised of the following:

- Appliance Operation Notes
- Velocity Traverse / Supplemental Run Notes
- Test Fuel Notes
- Gravimetric Analysis Notes

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 0117WB043E Run Number: 1

Model: 560.1 Tracking Number: 2495 Date: 12/02/24

Test Crew: T. Tong, K. Morgan, R. Tiegs

Primary Air Control Settings

N/A - Automatic

Secondary: FixedTertiary/Pilot: N/AFan: Auto

Preburn Notes

Time	Notes
16:06	stirring the coal bed @ 36 lb. and tested 20 sec. SEE ATTACHED SEPERATE SHEET w/ PRE BURN NOTES

Sampling Portion Notes

Sketch test fuel configuration:

SEE Photographs

Start up procedures & Timeline:

Bypass:

Fuel loaded by: 65 sec.Door closed at: 70 sec.Primary air: N/A - AutomaticNotes: NONE

Time	Notes
16:16	Start
17:16	End 1st hr. Filter Pull
22:01	End test

Technician Signature: R. MorganDate: 12/02/24

Centred Boiler 560.1

12/02/24

RUN 1

PRE-BURN NOTES

<u>Time</u>	<u>SCALE</u>	<u>Notes</u>
11:29	0	Boiler Empty, SCALE ZEROED.
	30.0	Audit Weight $\rightarrow 30 \text{ lb} = 30.0$
11:29	10.0	10 lb. Coals Added
	25.5	15.5 lb Fuel Added (total)
11:47	20.0	ADDED 30.1 lb FUEL
	50.1	(sub-total Fuel ADDED = 40.1 lb)
12:26	30.0 30.2	ADDED 38.6 lb Fuel
	68.8	(78.7 lb. ADDED total)
13:10	40.3	ADDED 40.5 lb. FUEL
	80.8	(119.2 lb total ADDED so far)
14:05	40.2	26.6 lb. Fuel added
	66.8	(145.8 lb. sub-total)
14:47	44.9	ADDED 28.7 lb. Fuel
	73.6	(total Fuel added = 174.5 lb)

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 0117WB043E Run Number: 1
 Model: 560.1 Tracking Number: 2495 Date: 12-02-24
 Test Crew: T. Tong, K. Morgan, R. Ties

Supplemental Data

Test Booth No. 3 Sampling Start Time: 16:13 Sampling End Time: 22:01
 Tunnel Cleaned Date 11/22/24 % Smoke Capture 100 Induced Draft 0.000 in. H₂O

Systems Leak Checks			
System	Pre-Test	Post-Test	Sampling Probe Change-out
Pitot	0.000 @	0.000 @ 3"	
Train A	0.000 @ 17.25	0.001 @ 10.10	
Train B	0.000 @ 19.26	0.000 @ 9.95"	
Train C	0.000 @ 22.07	0 @ 5.12"	

Velocity Traverse, 6-inch tunnel			
Location	Microtector (in. H ₂ O)	Δp (in. H ₂ O)	Tunnel Temp., °F
Center	0.057	0.114	70
1	0.057	0.114	70
2	0.059	0.118	70
3	0.060	0.120	70
4	0.057	0.114	70
5	0.053	0.106	70
6	0.043	0.086	70
7			
8			
Tunnel Static (in. H ₂ O)		Pre-Test -0.38	Post-Test -0.38

1. 0.052, 0.109
 2. 0.060, 0.120
 3. 0.06, 0.120
 4. 0.055, 0.110
 5. 0.053, 0.106
 6. 0.035, 0.070

Miscellaneous Parameters			
Item	Initial	Final	Equipment No.
Room Air Velocity, ft/min.	8	5	00721
Scale Audit, lb. (20-80 % of fuel load)	30 = 30.0	30 = 30.0	00255, 00274, 00130
Room Relative Humidity, %	41	34	00715
Barometric Pressure, in. Hg	30.31	30.32	00715
Room Temperature, °F	59	66	00335, 00336

Flue Gas Continuous Analyzer						
Analyzer ID	00594	Response Time, sec.	29 sec.	Leak Check Performed?	✓	
Bias Checks	Concentration:		Pre-Test Response		Post-Test Response	
Concentration	Bottle No.	Value, %	Pre-Test Response		Post-Test Response	
			Zero	Span	Zero	Span
CO ₂ % Span	CC738144	16.88	0.00	16.88	0.13	15.00
CO % Span	CC738144	4.05	0.00	4.04	-0.008	
CO ppm Span	CC305741	500	0.0	497.0	-7	496
Zero	3AN2400	0.00				

Technician Signature: K. A. MorganDate: 12/04/24

Control No. P-SFDT-0002, Effective Date: 11/12/2024

Page 2 of 4

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
 Model : Classic Edge 560.1
 Tracking No. : 2495
 Project No. : 0117WB043E
 Test Date : 12-02-24
 Run No. : 1

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Firebox Volume : 13.720 ft³
 Manufacturer's Recommended Loading Density : 12
 Ideal Fuel Weight : 164.64 lb.
 Minimum Fuel Weight : 148.18 lb.
 Maximum Fuel Weight : 181.10 lb.
 Fuel Species : Maple

Fuel Piece Data

PC No.	Weight, Lb. (W _i)	Cross-Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	12.0	8.5	3.75	22	24.2	24.7	20.4	24.2	24.8		
2	12.6	7.0	3.5	22	22.9	23.6	20.6	21.0	21.5		
3	14.3	8.0	3.5	22	19.8	22.4	20.0	20.7	20.4		
4	10.5	6.75	4.75	22	19.8	20.7	20.8	20.2	19.0		
5	14.5	7.0	4.75	22	20.6	20.6	21.6	20.5	20.8		
6	14.3	8.0	3.75	22	21.5	22.1	22.7	21.6	22.5		
7	13.3	6.5	5.0	22	20.00	20.1	20.8	19.7	20.0		
8	13.5	7.5	3.75	22	23.7	24.2	24.0	22.3	22.4		
9	12.2	7.5	5.0	22	20.7	21.8	20.5	22.4	20.4		
10	13.3	8.0	3.75	22	20.5	21.4	21.8	22.5	22.0		
11	8.9	6.0	4.0	22	22.1	23.6	24.8	24.2	24.0		
12	9.0	6.0	4.5	22	24.5	21.3	20.4	21.3	23.9		
13	9.1	5.5	3.5	22	19.5	19.4	19.0	20.4	19.5		
14	8.8	6.0	4.5	22	20.2	19.8	21.5	21.5	19.2		
15											
16	166.3										
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	0.0										0.00
Averages	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

CBR: 16.6-33.2

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 0117WB043E Run Number: 1
 Model: 560.1 Tracking Number: 2495 Date: 12/02/24
 Test Crew: T. Tong, K. Morgan, R. Tiegs

Gravimetric Analysis Sheet

Assembled By:

T. Tong

Date/Time in Desiccator:

12/02/24 22:20
1st hr. 12/02/24 17:22

Weighing's				
Date/Time: 12-04-24 7:22	Date/Time: 12-05-24 08:40	Date/Time:	Date/Time:	Date/Time:
R/H %: 14.3	R/H %: 13.9	R/H %:	R/H %:	R/H %:
Temp: 68.2	Temp: 69	Temp:	Temp:	Temp:
100 mg Audit 99997.8	100 mg Audit 100.0	100 mg Audit	100 mg Audit	100 mg Audit
200 mg Audit: 200.0	200 mg Audit: 200.1	200 mg Audit	200 mg Audit	200 mg Audit
2 g Audit: 2000.2	2 g Audit: 2000.2	2 g Audit	2 g Audit	2 g Audit
100 g Audit: 99997.8	100 g Audit 99997.8	100 g Audit	100 g Audit	100 g Audit
Initials: JK	Initials: JK	Initials:	Initials:	Initials:

Train	Element	ID #	Tare (mg)	v	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)
A	Filter Pair	F483/481A	238.3	✓	241.8	241.8	—		
	Probe	0E85	113567.1	✓	113567.1	113567.1	—		
	O-Ring Set	S896	3411.1	✓	3411.3	3411.3	—		
B	Front Filter	F483/482A	237.5	✓	240.9	240.7	—		
	Probe	0E56	113706.6	✓	113706.6	113706.7	—		
	O-Ring Set	S897	3320.1	✓	3320.5	3320.4	—		
C (1st hr)	Front Filter	F483/483A	238.1	✓	238.1	238.1	—		
	Probe	20	114253.1	✓	114253.2	114253.1	—		
	O-Ring Set	S898	3373.8	✓	3373.9	3373.9	—		
BG	Filter	F415	125.5	✓	125.4	125.5	—		

Technician Signature: JK MorganDate: 12-05-24

Equations and Calculations – ASTM E2618 & ASTM E2515



Manufacturer Central Boiler
 Model: Classic Edge 560.1
 Project Number: 0117WB043E
 Run Number: 1

Summary of INPUT values necessary for calculations

Global Input Parameters for Equations	Value	Source
MC_{Ave} - Average Fuel Load Moisture Content, % dry basis	21.56	Fuel Properties Work Sheet
W_{fuel} - Fuel charge weight (wet), pounds	166.3	Fuel Properties Work Sheet
HHV - Higher Heating Value of Fuel, Btu/lb.	8348	ISO Lab Report ¹
LHV - Lower Heating Value of Fuel, Btu/lb.	7789.6	CSA B415.1:22 ²
W_{app} - Mass of dry boiler, lb.	1822.5	Measured
W_{water} - Mass of Water within Boiler, lb.	1663	Measured
V_{SCENT} - Average gas velocity at the center of the dilution tunnel calculated after the Pitot tube traverse, ft/sec	22.28	Traverse Worksheet
V_{STRAV} - Average gas velocity calculated after the multipoint Pitot traverse	21.84	Traverse Worksheet
θ - Duration of test, min	348	Train A Worksheet
P_{bar} - Barometric pressure (average) at the testing site, in. Hg	30.32	Traverse Worksheet
P_g - Tunnel Static Pressure	-0.38	Traverse Worksheet

¹ From an Ultimate Analysis performed on a sample of the fuel lot that was used.

² CSA B415 only accepts input for the HHV and calculates the LHV from that data. This differs from the LHV reported in the ultimate analysis, however the CSA value was used for consistency in comparing SLM and delivered efficiencies.

Sample Train Input Parameters for Equations	Train A	Train B	Train C	Train D
V_m - Volume of gas sample measured at the dry gas meter, dcf	55.581	55.922	9.474	55.72
Y Dry gas meter calibration factor	1.015	1.006	1.010	1.016
ΔH - Average pressure differential across the orifice meter, in. H ₂ O	1.28	1.03	2.22	1.55
T_m - Temperature of Dry Gas Meter, °F	73.5	74.5	59.5	63.3

Uncorrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.0	0.1	0.0	n/a
m_f - mass of particulate matter from filters, mg	3.5	3.2	0.0	0.0
m_g - mass of particulate matter from seals, mg	0.2	0.3	0.1	n/a

Corrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.0	0.1	0.0	n/a
m_f - mass of particulate matter from filters, mg	3.5	3.2	0.0	n/a
m_g - mass of particulate matter from seals, mg	0.2	0.3	0.1	n/a

TI_{avg} - Average Temperature of Appliance and Water at Start of Test, °F - ASTM E2618 equation (1)

$$TI_{avg} = (T1 + T2)/2 \quad \text{At beginning of Test}$$

Where,

	Value
$T1$ = Temperature at inlet of supply side of exchanger, °F	135.6
$T2$ = Temperature at outlet of supply side of exchanger, °F	125.8

$$Ti_{avg} = (135.55 + 125.81) / 2 = 130.7$$

 TF_{avg} - Average Temperature of Appliance and Water at End of Test, °F - ASTM E2618 equation (2)

$$TF_{avg} = (T1 + T2)/2 \quad \text{At end of test}$$

Where,

	Value
$T1$ = Temperature at inlet of load side of heat exchanger, °F	131.6
$T2$ = Temperature at outlet of load side of heat exchanger, °F	122.6

$$TF_{avg} = (131.59 + 122.55) / 2 = 127.1$$

 MC_{Ave} - Average Fuel Load Moisture Content, dry basis, % - ASTM E2618 equation (3)

$$MC_{Ave} = (\sum W_i \cdot MC_i) / \sum W_i$$

Where,

W_i = Weight of individual pieces
 MC_i = Average moisture content of individual fuel pieces, dry basis

$\sum(W_i \cdot MC_i)$	3585.2	Taken from fuel properties sheet
$\sum W_i$	166.3	Taken from fuel properties sheet

$$MC_{Ave} = (3585.2 / 166.3) = 21.56 \quad \%, \text{ dry basis}$$

Q_{in} - Heat Input, Btu (HHV) - ASTM E2618 equation (4)

$$Q_{in} = (W_{fuel} / (1 + (MC_{Ave}/100))) \times HHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	166.3
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	21.56
HHV =	Higher Heating Value of Fuel, Btu/lb.	8348

$$Q_{in} = (166.3 / (1 + (21.56 / 100))) \times 8348 = 1142060.614 \quad \text{Btu}$$

Q_{in LHV} - Heat Input, Btu (LHV) - ASTM E2618 equation (5)

$$Q_{in LHV} = (W_{fuel} / (1 + (MC_{Ave}/100))) \times LHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	166.3
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	21.56
LHV =	Higher Heating Value of Fuel, Btu/lb.	7789.6

$$Q_{in LHV} = (166.3 / (1 + (21.56 / 100))) \times 7789.6 = 1065667.867 \quad \text{Btu}$$

BR - Dry Burn-Rate, kg/hr

$$BR = [(W_{fuel} / (1 + (MC_{Ave}/100))) / 2.2046] / \theta$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	166.3
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	21.56
2.2046 =	Conversion kg -> lb.	2.2046
θ =	Duration of Test, hours	5.800

$$BR = [(166.3 / (1 + (21.56 / 100))) / 2.2046] / 5.8 = 10.70 \quad \text{kg/hr}$$

Q_{out} - Heat Output, Btu - ASTM E2618 equation (7)

$$Q_{out} = \left[\sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) \right] + (W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg})$$

Where,

	<u>Value</u>
C_{pi} = Specific heat of water during interval (i), Btu/lb °F	Varies
ΔT_i = Temperature difference between water entering and exiting heat exchanger (load), °F	Varies
M_i = Mass flow-rate of water through heat exchanger during interval (i), lb./min	Varies
t_i = Data sampling interval, min	<u>Varies</u>
W_{app} = Weight of empty appliance, lb.	1822.5
C_{steel} = Specific heat of steel, Btu/lb.°F	0.1
C_{pa} = Specific heat of water at average appliance temperature, Btu/lb °F	1.0010
W_{water} = Weight of water in supply side of system, lb.	1663
TF_{avg} = Average temperature of appliance and water at end of test	127.07
TI_{avg} = Average temperature of appliance and water at start of test	130.68

$$\sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) \quad \text{from Water Data sheet} = \quad 997343.8078 \quad 171955.8289$$

$$C_{pa} = 1.0014 + (-0.000003485 \cdot (TI_{avg} + TF_{avg}) / 2) = \quad 1.0010$$

$$(W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg}) = \quad -6664.26$$

$$Q_{OUT} = \quad 997343.808 + 1.001 \times -6664.265 = \quad 990679.54 \quad \text{Btu}$$

 $Heat Output Rate, Btu/hr$ - ASTM E2618 equation (15)

$$Heat Output Rate = Q_{OUT} / \theta$$

Where,

	<u>Value</u>
Q_{OUT} = Heat Output	990679.5
θ = Duration of test, hr	5.8000

$$Heat Output Rate = \quad 170806.8 \quad \text{Btu/hr}$$

V_S – Average gas velocity in the dilution tunnel, ft/sec - ASTM E2515 equation (9)

$$V_S = F_P \times K_P \times C_P \times (\sqrt{\Delta P})_{avg} \times \sqrt{\frac{T_{S(avg)}}{P_S \times M_S}}$$

Where

 F_P = Adjustment factor for center of tunnel pitot tube placement, where

$$F_P = V_{STRAV} / V_{SCENT}$$

 V_{SCENT} = Dilution tunnel velocity, at the center, ft/sec V_{STRAV} = Dilution tunnel velocity, multi-point pitot traverse, ft/sec K_P = Pitot tube constant, 85.49 C_P = Pitot tube coefficient: 0.99, unitless $\Delta P^{1/2}_{AVG}$ = Velocity pressure in the dilution tunnel, in H_2O $T_{S(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R P_S = Absolute average gas static pressure in tunnel, = Pbar + Pg, where

Pbar = Barometric Pressure, in. Hg,

Pg = Static pressure in tunnel, Hg (in H_2O / 13.6) M_S = The dilution tunnel wet molecular weight; M_S = 28.78 assuming a dry weight of 29 lb/lb-mole

(Duration of Test)

$$F_P = 0.9802$$

$$\Delta P^{1/2}_{AVG} = 0.3376$$

$$T_{S(avg)} = 532.9198$$

$$Pbar = 30.3150$$

$$Pg = -0.3800$$

$$P_S = 30.2871$$

$$V_S = 0.98 \times 85.49 \times 0.99 \times 0.338 \times \sqrt{[(533 / (30.29 \times 28.78))]}$$

$$V_S = \mathbf{21.900} \quad \text{ft/sec}$$

(First Hour of Test)

$$F_P = 0.9802$$

$$\Delta P^{1/2}_{AVG} = 0.3382$$

$$T_{S(avg)} = 530.3607$$

$$Pbar = 30.3100$$

$$Pg = -0.3800$$

$$P_S = 30.2821$$

$$V_S = 0.98 \times 85.49 \times 0.99 \times 0.338 \times \sqrt{[(530 / (30.28 \times 28.78))]}$$

$$V_S = \mathbf{21.886} \quad \text{ft/sec}$$

Q_{std} – Average gas flow rate in dilution tunnel, dscf/hr - ASTM E2515 equation (3)

$$Q_{std} = 3600 \times (1 - B_{ws}) \times v_s \times A \times \frac{T_{std}}{T_{s(avg)}} \times \frac{P_s}{P_{std}}$$

Where:

3600 = Conversion from seconds to hours (ASTM method uses 60 to convert in minutes)

B_{ws} = Water vapor in gas stream, proportion by volume; assume 2%

A = Cross sectional area of dilution tunnel, ft²

T_{std} = solute temperature, 528 °R

P_s = Absolute average gas static pressure in dilution tunnel, = Pbar + Pg , in Hg

$T_{s(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)

P_{std} = Standard absolute pressure, 29.92 in Hg

(Full Duration of Test):

$$\begin{aligned} B_{ws} &= 0.02 \\ A &= 0.78540 \\ P_s &= 30.29 \\ T_{s(avg)} &= 533 \\ V_s &= 21.90 \end{aligned}$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.9 \times 0.7854 \times (528 / 533) \times (30.29 / 29.92)$$

$$Q_{std} = \mathbf{60859.8} \quad \text{dscf/hr}$$

(First Hour):

$$\begin{aligned} B_{ws} &= 0.02 \\ A &= 0.78540 \\ P_s &= 30.28 \\ T_{s(avg)} &= 530 \\ V_s &= 21.886 \end{aligned}$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.886 \times 0.7854 \times (528 / 530) \times (30.28 / 29.92)$$

$$Q_{std} = \mathbf{61104.1} \quad \text{dscf/hr}$$

V_{m(std)} – Volume of Gas Sampled (Corrected), dscf - ASTM E2515 equation (6)

$$V_{m(std)} = K_1 V_m Y \frac{P_{bar} + \left(\frac{\Delta H}{13.6} \right)}{T_m}$$

Where:

K_1	=	17.64 °R/in. Hg
V_m	=	Volume of gas sample measured at the dry gas meter, dcf
Y	=	Dry gas meter calibration factor, dimensionless
P_{bar}	=	Barometric pressure at the testing site, in. Hg
ΔH	=	Average pressure differential across the orifice meter, in. H ₂ O
T_m	=	Absolute average dry gas meter temperature, °R

Train A

$$V_{m(std)} = 17.64 \times 55.581 \times 1.015 \times \frac{(30.32 + \frac{1.28}{13.6})}{(73.5 + 460)}$$

$$V_{m(std)} = \mathbf{56.727} \text{ dscf}$$

Train B

$$V_{m(std)} = 17.64 \times 55.922 \times 1.006 \times \frac{(30.32 + \frac{1.03}{13.6})}{(74 + 460)}$$

$$V_{m(std)} = \mathbf{56.425} \text{ dscf}$$

Train C (1st Hour)

$$V_{m(std)} = 17.64 \times 9.47 \times 1.010 \times \frac{(30.31 + \frac{2.22}{13.6})}{(59.5 + 460)}$$

$$V_{m(std)} = \mathbf{9.902} \text{ dscf}$$

Train D (Background)

$$V_{m(std)} = 17.64 \times 55.72 \times 1.016 \times \frac{(30.32 + \frac{1.55}{13.6})}{(63.3 + 460)}$$

$$V_{m(std)} = \mathbf{58.070} \text{ dscf}$$

mn – Total Particulate Matter Collected, mg - ASTM E2515 Equation (12)

$$m_n = m_p + m_f + m_g$$

Where:

- m_p = mass of particulate matter from probe, mg
- m_f = mass of particulate matter from filters, mg
- m_g = mass of particulate matter from filter seals, mg

Uncorrected:

Train A

$$m_n = 0.0 + 3.5 + 0.2$$
$$m_n = 3.7 \text{ mg}$$

Train B

$$m_n = 0.1 + 3.2 + 0.3$$
$$m_n = 3.6 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.0 + 0.0 + 0.1$$
$$m_n = 0.1 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.0$$
$$m_n = 0.0 \text{ mg}$$

Corrected:

Train A

$$m_n = 0.0 + 3.5 + 0.2$$
$$m_n = 3.7 \text{ mg}$$

Train B

$$m_n = 0.1 + 3.2 + 0.3$$
$$m_n = 3.6 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.0 + 0.0 + 0.1$$
$$m_n = 0.1 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.0$$
$$m_n = 0.0 \text{ mg}$$

**C_s - Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions
g/dscf - ASTM E2515 equation (13)**

$$C_s = K_2 \times \frac{m_n}{V_{m(std)}}$$

Where:

K₂ = Constant, 0.001 g/mg

m_n = Total mass of particulate matter collected in the sampling train, mg

V_{m(std)} = Volume of gas sampled corrected to dry standard conditions, dscf

Uncorrected:

Train A	C _s =	0.001 x	$\frac{3.7}{56.73}$
---------	------------------	---------	---------------------

C_s = **0.000065** g/dscf

Train B	C _s =	0.001 x	$\frac{3.6}{56.42}$
---------	------------------	---------	---------------------

C_s = **0.0000638** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{0.1}{9.90}$
--------------------	------------------	---------	--------------------

C_s = **0.000010** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.0}{58.07}$
----------------------	------------------	---------	---------------------

C_r = **0.000000** g/dscf

Corrected:

Train A	C _s =	0.001 x	$\frac{3.7}{56.73}$
---------	------------------	---------	---------------------

C_s = **0.000065** g/dscf

Train B	C _s =	0.001 x	$\frac{3.6}{56.42}$
---------	------------------	---------	---------------------

C_s = **0.0000638** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{0.1}{9.90}$
--------------------	------------------	---------	--------------------

C_s = **0.000010** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.0}{58.07}$
----------------------	------------------	---------	---------------------

C_r = **0.000000** g/dscf

ET – Total Particulate Emissions, g - ASTM E2515 equation (15)

$$E_T = (c_s - c_r) \times Q_{std} \times \theta$$

Where:

C_s	=	Concentration of particulate matter in tunnel gas, g/dscf
C_r	=	Concentration particulate matter room air, g/dscf
Q_{std}	=	Average dilution tunnel gas flow rate, dscf/hr
θ	=	Total time of test run, minutes

Uncorrected:

Train A

$$E_T = (0.000065 - 0.000000) \times 60859.8 \times 348 / 60$$

$$E_T = 23.02 \text{ g}$$

Train B

$$E_T = (0.000064 - 0.000000) \times 60859.8 \times 348 / 60$$

$$E_T = 22.52 \text{ g}$$

First Hour

$$E_T = (0.000010 - 0.000000) \times 61104.1 \times 60 / 60$$

$$E_T = 0.62 \text{ g}$$

Trains A and B Average

$$E_T = 22.77 \text{ g}$$

Corrected:

Train A

$$E_T = (0.000065 - 0.000000) \times 60859.8 \times 348 / 60$$

$$E_T = 23.02 \text{ g}$$

Train B

$$E_T = (0.000064 - 0.000000) \times 60859.8 \times 348 / 60$$

$$E_T = 22.52 \text{ g}$$

First Hour

$$E_T = (0.000010 - 0.000000) \times 61104.1 \times 60 / 60$$

$$E_T = 0.62 \text{ g}$$

Trains A and B Average

$$E_T = 22.77 \text{ g}$$

PM_R – Particulate emissions for test run, g/hr - ASTM E2780 equation (6)

$$PM_R = 60(E_T/\theta)$$

Where,

E_T = Total particulate emissions, grams

θ = Total length of full integrated test run, min

Uncorrected:

Train A	$E_T = 23.02 \text{ g}$
	$\theta = 348 \text{ min}$
	$PM_R = 60 \times (23.02 / 348)$
	$PM_R = \mathbf{3.97 \text{ g/hr}}$

Train B	$E_T = 22.52 \text{ g}$
	$\theta = 348 \text{ min}$
	$PM_R = 60 \times (22.52 / 348)$
	$PM_R = \mathbf{3.88 \text{ g/hr}}$

A and B Average	$PM_R = \mathbf{3.93 \text{ g/hr}}$
-----------------	-------------------------------------

First Hour	$E_T = 0.62 \text{ g}$
	$\theta = 60 \text{ min}$
	$PM_R = 60 \times (0.62 / 60)$
	$PM_R = \mathbf{0.62 \text{ g/hr}}$

Corrected:

Train A	$E_T = 23.02 \text{ g}$
	$\theta = 348 \text{ min}$
	$PM_R = 60 \times (23.02 / 348)$
	$PM_R = \mathbf{3.97 \text{ g/hr}}$

Train B	$E_T = 22.52 \text{ g}$
	$\theta = 348 \text{ min}$
	$PM_R = 60 \times (22.52 / 348)$
	$PM_R = \mathbf{3.88 \text{ g/hr}}$

A and B Average	$E_T = \mathbf{3.93 \text{ g}}$
-----------------	---------------------------------

First Hour	$E_T = 0.62 \text{ g}$
	$\theta = 60 \text{ min}$
	$PM_R = 60 \times (0.62 / 60)$
	$PM_R = \mathbf{0.62 \text{ g/hr}}$

E_{g/kg} - Particulate emission factor for test run, g/dry kg of fuel burned - ASTM E2618 equation (18)

$$E_{g/kg} = E_T / (W_{fuel} / (1 + MC/100))$$

Uncorrected:

Train A	E _T =	23.02	g
	W _{fuel} =	75.43	kg
	MC =	21.56	
	E _{g/kg} =	0.371	/kg

Train B	E _T =	22.52	g
	W _{fuel} =	75.43	kg
	MC =	21.56	
	E _{g/kg} =	0.363	/kg

Corrected:

Train A	E _T =	23.02	g
	W _{fuel} =	75.43	kg
	MC =	21.56	
	E _{g/kg} =	0.371	/kg

Train B	E _T =	22.52	g
	W _{fuel} =	75.43	kg
	MC =	21.56	
	E _{g/kg} =	0.363	/kg

PR - Proportional Rate Variation - ASTM E2515 equation (16)

$$PR = \left[\frac{\theta \times V_{mi} \times V_s \times T_m \times T_{si}}{\theta_i \times V_m \times V_{si} \times T_{mi} \times T_s} \right] \times 100$$

Where:

	Train A	Train B	Train C
θ = Total sampling time, min	348	348	60
θ_i = Length of recording interval, min	1	1	1
V_{mi} = Volume of gas sample measured by the dry gas meter during the "ith" time interval, dcf	0.177	0.153	0.167
V_m = Volume of gas sample as measured by dry gas meter, dcf	55.581	55.922	9.474
V_{si} = Average gas velocity in the dilution tunnel during the "ith" time interval, ft/sec	21.693	21.693	21.693
V_s = Average gas velocity in the dilution tunnel, ft/sec	21.902	21.902	21.891
T_{mi} = Absolute average dry gas meter temperature during the "ith" time interval, °R	524.0	524.0	519.0
T_m = Absolute average dry gas meter temperature, °R	533.5	534.5	519.5
T_{si} = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, °R	529.5	529.5	529.5
T_s = Absolute average gas temperature in the dilution tunnel, °R	532.9	532.9	530.4

NOTE: These calculations are for the Second interval of each train)

$$\text{Train A PR} = \left(\frac{348 \times 0.177 \times 21.902 \times 533 \times 530}{1 \times 55.581 \times 21.693 \times 524 \times 533} \right) \times 100 = 113.2 \%$$

$$\text{Train B PR} = \left(\frac{348 \times 0.153 \times 21.902 \times 534 \times 530}{1 \times 55.922 \times 21.693 \times 524 \times 533} \right) \times 100 = 97.4 \%$$

$$\text{Train C PR} = \left(\frac{60 \times 0.167 \times 21.891 \times 519 \times 530}{1 \times 9.474 \times 21.693 \times 519 \times 530} \right) \times 100 = 106.6 \%$$

Emission Rates and Factors - ASTM E2618 equations 16, 17, 18 and 19

Uncorrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 22.77 / (990679.5 \times 0.001055) = 0.0218$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (22.77 / 453.59) / (990679.5 \times 10^{-6}) = 0.0507$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 22.77 / \left((166.3 / (1 + 21.56 / 100)) / 2.2046 \right) = 0.367$$

Corrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 22.77 / (990679.5 \times 0.001055) = 0.0218$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (22.77 / 453.59) / (990679.5 \times 10^{-6}) = 0.0507$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 22.77 / \left((166.3 / (1 + 21.56 / 100)) / 2.2046 \right) = 0.367$$

Run 2 Test Data

Test Date: 12/3/2024
Manufacturer: Central Boiler
Model Classic Edge 560.1

Contents, in the following order:

- Emissions Test Results
- CSA B415 Results and Data
- Test Fuel Properties
- Velocity Traverse / Supplemental Data Worksheet
- Test Pre-Burn Data
- Sample Train A / Dilution Tunnel Data
- Sample Train B Data
- Sample Train C (First Hour) Data
- Sample Train D (Background) / Flue Gas Data
- Water Flow Data
- Gravimetric Lab Analysis
- Test Lab Notes
 - Appliance Operation Notes
 - Velocity Traverse / Supplemental Data Notes
 - Test Fuel Notes
 - Gravimetric Analysis Notes
- Equations and Calculations

Particulate Emissions and Delivered Efficiency Test Results

ASTM E2618 / ASTM E2515



Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Project No.: 0117WB043E
 Tracking No.: 2495
 Run: 2
 Test Date: 12/03/24

Quick View Summary	
lb./MMBtu	0.061
Delivered Efficiency %	81.7
PM 2.5 Emission Rate, g/hr.	2.31
PM 2.5 Emission Factor, g/kg	0.41

Particulate Emissions and Heat Output

Heat Input, Q_{IN} Btu	Heat Output Q_{OUT} Btu	Delivered Efficiency %	Uncorrected ¹		Corrected ²	
			ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)	ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)
1166786	952920	81.7	2.31	0.061	2.31	0.061

Burn Rate, dry kg/hr	5.59
Emission Rate, E_g /MJ	0.026
Load Heat Output Rate, Btu/hr	80680

	Avg. of Trains A and B		First Hour	
	Uncorrected	Corrected	Uncorrected	Corrected
Total Emissions - E_T , g	26.25	26.25	2.38	2.38
Emission Rate, g/hr	2.31	2.31	2.38	2.38
Emissions Factor, g/kg	0.41	0.41	n/a	n/a

Fuel and Appliance Parameters

Wet Fuel Mass	168.5	lb.
Duration of test	681	min
Higher Heating Value (HHV) of Fuel	8348	Btu
Lower Heating Value (LHV) of Fuel	7789.6	Btu
TI_{avg} - Average Temperature of Appliance at Start of Test:	140.1	°F
TF_{avg} - Average Temperature of Appliance at End of Test:	160.2	°F
MC_{Ave} - Average Moisture of Fuel, dry-basis:	20.56	%

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Dilution Tunnel Flow Parameters

	First Hour	Duration of Test
Average Tunnel Temperature, °F	79.6	71.0
Average Tunnel Gas Velocity (vs), feet/second	21.578	21.385
Average Tunnel Gas Flow Rate(Qsd)	DSCF/hr	59231.4
	DSCF/min	987.2
Average Delta p, in. H ₂ O	0.115	0.114
Tunnel Static Pressure, in. H ₂ O	-0.390	-0.390
Total Time of Test, Min	60	681

Particulate Sample Parameters - Uncorrected

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	110.712	109.935	109.565	9.57
Average Gas Meter Temperature, °F	66	76	77	63
Total Sample Volume (V _{mstd}), DSCF	114.776	111.719	110.110	9.941
Total Particulates (mn), mg - m _n	0.2	4.2	4.4	0.4
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00004	0.00004	0.00004
Total Particulate Emissions (ET), grams	n/a	25.45	27.05	2.38
Particulate Emission Rate, g/hr	n/a	2.24	2.38	2.38
Emissions Factor, g/kg	n/a	0.40	0.43	n/a
Difference, ET from Average ET, grams	n/a	-0.80	0.80	n/a

Particulate Sample Parameters - Corrected for any negative filter weights

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	110.712	109.935	109.565	9.570
Average Gas Meter Temperature, °F	66	76	77	63
Total Sample Volume (V _{mstd}), DSCF	114.776	111.719	110.110	9.941
Total Particulates (mn), mg - m _n	0.2	4.2	4.4	0.4
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00004	0.00004	0.00004
Total Particulate Emissions (ET), grams	n/a	25.45	27.05	2.38
Particulate Emission Rate, g/hr	n/a	2.24	2.38	2.38
Emissions Factor, g/kg	n/a	0.40	0.43	n/a
Difference, ET from Average ET, grams	n/a	-0.80	0.80	n/a

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Test Methodology Specifications Quality Checks

Parameter	Requirement	Measured / Observed			Complies?
		First Hour	Train 1	Train 2	
Filter Temperature, °F	< 90	67	65	65	✓
Filter face velocity, fpm	< 30	9.59	9.53	9.75	✓
Dryer Exit, °F	< 80	58	49	50	✓
Tunnel Velocity, fpm	>800	1,295	1,283		✓
First Hour Leakage Rate	0.006	0.000			✓
Train A Leakage Rate	0.006		0.000		✓
Train B Leakage Rate	0.006			0.000	✓

Leakage Rate Limits (cfm) are < 4% of average sample rate or < 0.01 cfm, which ever is less

Parameter	Requirement	Measured / Observed			Complies?
Negative Probe Weight	=> 0	0	0.3	0.3	✓
Pro-Rate Variation	< 90 for < 10% of θ	0.00%	0.00%	0.00%	✓
	> 110 for < 10% of θ	1.67%	0.147%	0.15%	✓
	# Readings < 80%	0	0	0	✓
	# Readings > 120%	0	0	0	✓
Room Temp, °F (min)	> 55		61		✓
Room Temp, °F (max)	< 90		68		✓
Dual Train Precision	(1) < 7.5%		3.05%		✓
<i>1 or 2 must conform</i>	(2) < 0.5 g/kg		0.03		
Room Air Velocity	< 50 fpm		15		✓
Preburn Min. Weight	151.7		165.6		✓
Preburn Max. Weight	185.4				✓
Min. Coal Bed Weight	16.9		27.3		✓
Max. Coal Bed Weight	33.7				✓

CSA B415.1-11 Efficiency Results

Manufacturer Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 2
Test Date: 12/3/2024

Efficiency results reported herein are based on a stack-loss method in accordance with CSA B415.1:22 "Performance testing of solid-biofuel-burning heating appliance". OMNI uses the spreadsheet provided by CSA that is to be used in conjunction with the current version of the test standard. The most recent version of the software is version 2.4, dated April 15, 2010. OMNI received confirmation from CSA on October 18, 2023 that this is the current version of the software.

Stack Loss Efficiency

Manufacturer: Central Boiler
Model: Edge 560.1
Date: 12/02/24
Run: 2
Control #: 2495
Test Duration: 681
Output Category: III

Technicians: T. Tong, R. Tiegs, K. Morgan

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	81.7%	87.7%
Combustion Efficiency	97.8%	97.8%
Heat Transfer Efficiency	84%	89.7%

Output Rate (kJ/h)	88,601	84,047	(Btu/h)
Burn Rate (kg/h)	5.59	12.31	(lb/h)
Input (kJ/h)	108,420	102,848	(Btu/h)

Test Load Weight (dry kg)	63.42	139.77	dry lb
MC wet (%)	17.05		
MC dry (%)	20.55		
Particulate (g)	26.25		
CO (g)	2,113		
Test Duration (h)	11.35		

Emissions	Particulate	CO
g/MJ Output	0.03	2.10
g/kg Dry Fuel	0.41	33.31
g/h	2.31	186.13
lb/MM Btu Output	0.06	4.88

Air/Fuel Ratio (A/F)	11.00
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VERSION:

2.4

4/15/2010

VERSION: 2.4

4/15/2010

Manufacturer: Central Boiler

Model: Edge 560.1

Date: 12/2/2024

Run: 2

Control #: 2495

Test Duration: 681

Output Category: III

Appliance Type: Non Cat (Cat, Non

Temp. Units F (F or C)

Weight Units lb (kg or lb)

Fuel Data

Maple

HHV 19,404 kJ/kg

%C 50.3

%H 6.1

%O 42.91

%Ash 0.69

Wood Moisture (% wet): 17.05

Load Weight (lb wet): 168.50

Burn Rate (dry kg/h): 5.59

Total Particulate Emissions: 26.25 g

Averages

0.82

10.27

#DIV/0!

225.34

63.73

Temp. (°F)

Elapsed
Time (min)Fuel Weight
Remaining (lb)Flue Gas Composition (%)
CO CO₂ O₂Flue
GasRoom
Temp

0	168.50	0.00	14.10		252.0	61.0
1	168.10	0.00	13.85		231.0	61.0
2	167.70	0.25	4.04		254.0	61.0
3	167.07	0.00	16.20		262.0	61.0
4	166.74	0.00	15.62		260.0	61.0
5	166.23	0.00	14.62		262.0	61.0
6	165.75	0.02	14.48		265.0	61.0
7	165.21	0.03	14.30		265.0	61.0
8	164.91	0.04	14.15		264.0	61.0
9	164.41	0.03	13.97		263.0	62.0
10	164.02	0.02	13.86		261.0	62.0
11	163.59	0.01	14.19		262.0	62.0
12	163.14	0.02	14.17		259.0	62.0
13	162.72	0.01	13.86		260.0	62.0
14	162.36	0.01	14.02		261.0	63.0
15	161.89	0.02	13.76		259.0	63.0
16	161.51	0.00	13.83		261.0	63.0
17	161.08	0.01	13.87		259.0	63.0
18	160.56	0.00	13.91		258.0	63.0
19	160.28	0.00	13.63		260.0	64.0
20	159.93	0.07	13.87		258.0	64.0
21	159.48	0.06	13.67		260.0	64.0
22	159.05	0.00	13.85		259.0	64.0
23	158.72	0.06	13.78		258.0	64.0
24	158.30	0.06	13.68		261.0	64.0

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
25	157.90	0.06	13.79		259.0	64.0
26	157.60	0.05	13.76		259.0	64.0
27	157.13	0.05	13.70		258.0	64.0
28	156.80	0.05	13.67		259.0	65.0
29	156.34	0.05	13.64		258.0	65.0
30	155.96	0.05	13.54		258.0	65.0
31	155.58	0.05	13.47		259.0	65.0
32	155.14	0.05	13.50		259.0	65.0
33	154.77	0.05	13.46		259.0	65.0
34	154.40	0.06	13.37		259.0	65.0
35	153.95	0.05	13.31		260.0	65.0
36	153.60	0.06	13.48		260.0	65.0
37	153.14	0.05	13.36		261.0	65.0
38	152.78	0.06	13.33		260.0	65.0
39	152.22	0.05	13.36		260.0	65.0
40	151.97	0.05	13.21		262.0	66.0
41	151.55	0.06	13.29		261.0	65.0
42	151.16	0.05	13.33		261.0	65.0
43	150.73	0.05	13.27		261.0	65.0
44	150.35	0.05	13.31		261.0	66.0
45	149.84	0.04	13.30		261.0	66.0
46	149.47	0.04	13.36		261.0	66.0
47	149.06	0.04	13.24		261.0	66.0
48	148.63	0.04	13.18		261.0	66.0
49	148.27	0.04191	13.15		261	66
50	147.83	0.0401	13.15		261	66
51	147.35	0.03867	13.18		262	66
52	147.01	0.03763	13.13		263	66
53	146.66	0.03854	13.16		263	66
54	146.29	0.03401	13.18		262	66
55	145.64	0.03563	13.08		262	66
56	145.43	0.03514	13.05		264	66
57	144.97	0.0355	13.25		263	66
58	144.71	0.03278	13.09		263	66
59	144.15	0.03298	13.03		263	66
60	143.80	0.0333	12.98		265	66
61	143.27	0.03569	13.23		264	66
62	143.15	0.03139	13.05		264	67
63	142.58	0.03126	13.02		264	66
64	142.18	0.03045	13.03		263	66
65	141.86	0.029	13.9		262	66
66	141.40	0.02774	14.13		261	66

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
67	141.06	0.02806	14		261	66
68	140.66	0.02812	14.07		261	66
69	140.09	0.02683	14.4		260	66
70	139.71	0.02741	14.28		260	66
71	139.28	0.0268	14.09		262	66
72	138.76	0.02693	13.94		261	67
73	138.54	0.02469	14.48		261	66
74	138.13	0.02421	14.65		261	66
75	137.69	0.0246	14.77		261	66
76	137.45	0.02576	14.92		262	67
77	137.01	0.02595	15.11		262	67
78	136.50	0.02402	15.16		263	66
79	136.11	0.02243	15.15		264	66
80	135.68	0.02253	15.2		264	66
81	135.25	0.02172	15.19		263	67
82	134.75	0.02081	14.92		264	67
83	134.59	0.02133	15.13		264	68
84	134.10	0.0211	14.89		264	67
85	133.51	0.02162	14.99		264	67
86	133.10	0.02162	15.03		264	67
87	132.96	0.02033	14.83		263	67
88	132.42	0.01835	14.23		264	67
89	132.11	0.02071	15		264	67
90	131.77	0.02078	15.07		265	67
91	131.32	0.02107	14.84		264	66
92	130.91	0.01942	14.34		265	66
93	130.44	0.02175	14.79		265	66
94	130.15	0.01922	14.26		266	66
95	129.55	0.02016	14.55		266	67
96	129.29	0.01987	14.66		266	67
97	128.85	0.01984	14.57		267	67
98	128.48	0.01974	14.49		267	67
99	128.06	0.0202	14.61		266	66
100	127.68	0.01896	14.08		268	66
101	127.41	0.01903	14.81		268	67
102	127.00	0.01955	14.8		268	67
103	126.60	0.01732	14.22		268	67
104	126.27	0.01663	14.51		267	66
105	126.05	0.01553	14.22		269	66
106	125.53	0.01696	14.96		269	66
107	125.14	0.01855	14.9		268	67
108	124.68	0.01948	14.71		269	66

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
109	124.31	0.0202	14.67		269	66
110	124.03	0.01732	14.71		270	66
111	123.50	0.02444	14.82		269	66
112	123.23	0.01569	14.4		268	66
113	122.68	0.01534	13.79		268	66
114	122.50	0.0167	13.82		269	65
115	122.04	0.01644	14.03		270	66
116	121.60	0.01786	14.26		271	66
117	121.33	0.01955	14.66		271	66
118	121.04	0.01786	14.63		272	65
119	120.53	0.01903	14.55		271	66
120	120.27	0.01977	14.15		272	65
121	119.94	0.01906	14.21		272	67
122	119.55	0.02104	13.87		273	66
123	118.95	0.02539	13.82		272	65
124	118.54	0.02	13.53		273	65
125	118.17	0.02194	13.67		273	66
126	117.89	0.0214	13.61		274	65
127	117.04	0.01909	13.78		274	64
128	117.06	0.02453	13.51		275	64
129	116.69	0.03107	13.73		277	66
130	116.31	0.0355	14.14		265	66
131	116.14	0.02	8.41		249	66
132	115.75	0.11	6.91		238	66
133	115.65	0.07	7.16		230	65
134	115.56	0.08	6.52		224	65
135	115.47	0.12	5.7		219	65
136	115.36	0.04	8.43		214	64
137	115.24	0	7.41		210	64
138	115.27	0	6.22		206	64
139	115.20	0.01	5.42		203	64
140	115.25	0	4.15		200	64
141	115.22	0.04	3.19		196	64
142	115.15	0.23	3.54		192	64
143	115.20	0.37	3.61		189	64
144	115.21	0.54	3.95		185	64
145	115.16	0.61	3.86		182	64
146	115.14	0.68	4		178	64
147	115.18	0.72	4.02		175	64
148	115.20	0.71	3.88		172	64
149	115.13	0.71	3.89		169	64
150	115.19	0.68	3.77		166	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
151	115.24	0.64	3.68		164	63
152	115.17	0.67	3.97		161	64
153	115.23	0.67	3.97		158	63
154	115.12	0.58	3.58		156	63
155	115.23	0.56	3.53		153	63
156	115.23	0.52	3.34		151	63
157	115.23	0.51	3.34		149	63
158	115.27	0.54	3.52		147	63
159	115.29	0.49	3.28		145	63
160	115.25	0.52	3.49		143	63
161	115.25	0.47	3.22		141	63
162	115.27	0.46	3.23		139	63
163	115.26	0.42	2.95		137	63
164	115.35	0.43	3.04		135	63
165	115.32	0.41	2.93		133	63
166	115.28	0.37	2.7		132	63
167	115.28	0.35	2.61		130	63
168	115.37	0.34	2.55		128	63
169	115.30	0.34	2.59		127	63
170	115.44	0.3	2.33		126	63
171	115.36	0.29	2.31		124	63
172	115.32	0.3	2.39		164	63
173	114.98	2.16	8.47		201	62
174	114.64	2.46	8.67		220	63
175	114.39	2.04	8.17		231	62
176	113.98	1.95	8.4		239	63
177	113.62	1.85	8.9		248	62
178	113.08	1.65	10.09		256	62
179	112.60	1.42	10.5		265	63
180	112.14	0.77	11.55		274	63
181	111.64	0.23	12.74		280	62
182	111.10	0.11	12.93		285	62
183	110.49	0.02	13.89		289	63
184	109.92	0.01	13.54		290	62
185	109.37	0.03	13.23		290	62
186	108.74	0.02	13.56		282	62
187	108.29	0.06146	13.88		284	62
188	107.82	0.04	13.24		285	62
189	107.23	0.02	13.38		284	62
190	106.84	0.04561	15.02		278	62
191	106.24	0.02	14.58		275	62
192	105.75	0.13	13.89		274	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
193	105.16	0.13	14.09		274	62
194	104.68	0.2	13.83		279	62
195	104.15	0.52	12.65		289	62
196	103.65	0.44	12.76		293	62
197	102.95	0.38	12.76		293	62
198	102.57	0.63	12.1		293	62
199	101.93	0.72	11.99		293	62
200	101.37	0.82	11.71		293	62
201	100.74	0.83	11.59		292	62
202	100.28	0.92	11.24		291	62
203	99.94	0.93	11.23		290	62
204	99.28	0.99	11.07		291	62
205	98.72	0.78	11.61		292	62
206	98.24	0.88	11.45		293	62
207	97.72	0.82	11.32		294	62
208	97.15	0.78	11.53		296	62
209	96.71	0.65	11.5		296	62
210	96.14	0.7	11.47		296	62
211	95.66	0.82	11.38		296	62
212	95.29	0.81	11.3		296	62
213	94.54	0.93	11.04		296	62
214	94.14	0.83	11.14		296	62
215	93.52	0.76	11.51		298	62
216	92.99	0.65	11.87		300	62
217	92.39	0.42	12.37		302	62
218	91.87	0.43	12.31		304	62
219	91.41	0.4	12.38		305	62
220	90.76	0.39	12.33		307	62
221	90.22	0.28	12.86		309	62
222	89.69	0.21	13.17		309	62
223	89.14	0.3	12.79		309	62
224	88.66	0.49	12.39		309	62
225	88.05	0.57	12.09		310	62
226	87.58	0.55	12.38		312	62
227	87.01	0.46	12.42		311	62
228	86.54	0.43	12.23		283	63
229	86.21	0.23	8.74		264	63
230	85.97	0.13	8.74		251	62
231	85.85	0.11	9.1		242	63
232	85.65	0.27	7.28		236	62
233	85.50	0.18	9.86		230	62
234	85.37	0.15	9.39		225	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
235	85.30	0.21	7.74		220	62
236	85.26	0.22	6.73		216	62
237	85.33	0.23	6.04		215	63
238	85.19	0.17	4.34		212	63
239	85.15	0.49	4.46		209	63
240	85.19	0.76	4.6		206	63
241	85.17	0.95	4.83		202	63
242	85.19	1.07	4.97		198	63
243	85.24	1.09	4.86		195	64
244	85.16	1.18	5.09		191	63
245	85.12	1.18	5.02		188	63
246	85.21	1.31	5.42		184	63
247	85.16	1.3	5.36		181	63
248	85.12	1.34	5.51		178	64
249	85.18	1.28	5.3		175	64
250	85.24	1.23	5.12		172	64
251	85.28	1.18	4.96		169	64
252	85.28	1.25	5.24		166	64
253	85.17	1.28	5.4		163	64
254	85.19	1.26	5.32		161	64
255	85.35	1.15	4.95		158	64
256	85.21	1.24	5.29		156	64
257	85.16	1.21	5.18		153	64
258	85.34	1.1	4.74		151	64
259	85.15	1.09	4.73		149	64
260	85.24	1.12	4.86		147	64
261	85.20	1.06	4.64		145	63
262	85.19	1.09	4.74		142	63
263	85.24	1.06	4.62		141	63
264	85.22	1.02	4.47		139	63
265	85.32	0.98	4.32		137	63
266	85.31	0.99	4.32		135	63
267	85.22	0.98	4.29		134	63
268	85.29	1.03	4.45		132	63
269	85.34	1.02	4.44		131	63
270	85.29	1.03	4.49		129	63
271	85.26	0.97	4.24		128	63
272	85.32	1	4.36		126	62
273	85.32	0.94	4.16		124	62
274	85.30	0.97	4.25		123	62
275	85.34	0.97	4.23		122	63
276	85.31	0.88	3.85		121	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
277	85.32	0.85	3.73		119	62
278	85.36	0.81	3.58		118	63
279	85.38	0.91	3.93		117	62
280	85.42	0.88	3.84		116	62
281	85.45	0.91	3.94		115	62
282	85.36	0.92	3.98		114	62
283	85.37	0.98	4.21		113	62
284	85.37	0.98	4.23		111	62
285	85.43	0.84	3.66		111	62
286	85.50	0.92	3.94		110	62
287	85.39	1.47	5.92		160	62
288	85.17	0.4	2.25		181	62
289	84.92	0.43	2.67		194	62
290	84.69	0.63	3.86		204	62
291	84.42	0.8	5.05		212	62
292	84.02	0.88	6.33		222	62
293	83.68	1.02	7.93		232	62
294	83.21	1.15	9.41		246	62
295	82.66	0.32	12.6		261	62
296	82.11	0.02	14.1		273	62
297	81.60	0	14.52		280	62
298	81.06	0.05454	14.79		284	62
299	80.51	0.04022	15.32		273	62
300	79.96	0.03376	15.9		269	62
301	79.52	0.04152	16.25		269	62
302	78.87	0.04182	16.53		269	62
303	78.16	0.03431	16.55		271	62
304	77.64	0.03	17.92		272	63
305	77.03	0.04438	16.37		272	62
306	76.34	0.06545	15.86		272	63
307	75.81	0	15.43		272	63
308	75.31	0.07	14.96		276	63
309	74.78	0.4	13.59		277	63
310	74.32	0.52	13.46		279	63
311	73.69	0.64	13.19		287	63
312	73.11	0.86	12.14		291	63
313	72.57	0.35	13.22		296	63
314	71.97	0.19	13.72		298	63
315	71.40	0.17	13.5		299	63
316	70.95	0.26	13.24		300	64
317	70.28	0.29	13.19		301	64
318	69.81	0.38	12.99		302	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
319	69.27	0.35	13.02		302	64
320	68.72	0.32	12.93		303	64
321	68.13	0.4	12.71		303	64
322	67.67	0.46	12.59		303	64
323	67.07	0.37	12.86		303	65
324	66.53	0.35	12.81		304	65
325	65.93	0.39	12.66		305	64
326	65.51	0.36	12.93		306	64
327	64.99	0.19	13.44		307	64
328	64.55	0.25	13.28		304	65
329	63.95	0.24	13.2		304	65
330	63.49	0.31	13.01		306	65
331	63.03	0.16	13.38		304	65
332	62.59	0.23	13.22		307	65
333	61.93	0.19	13.41		290	66
334	61.81	0.15	7.88		267	66
335	61.34	0.17	8.87		254	66
336	61.19	0.14	10.24		243	66
337	60.96	0.21	9.43		237	65
338	60.86	0.28	10.05		231	65
339	60.68	0.18	13.11		225	65
340	60.57	0.1	12.12		221	65
341	60.47	0.06	10.98		216	65
342	60.40	0.04	10.19		214	65
343	60.32	0.02	7.97		212	65
344	60.27	0.86	8.14		210	65
345	60.34	2.13	9.92		207	65
346	60.15	3.09	11.24		203	65
347	60.14	3.81	12.14		200	65
348	60.13	3.73	11.32		196	65
349	60.07	3.77	11.04		192	65
350	60.13	3.64	10.39		189	65
351	60.03	3.57	10.08		185	65
352	60.06	3.41	9.58		182	65
353	60.11	3.3	9.29		179	65
354	60.04	3.28	9.23		176	65
355	60.02	3.33	9.32		172	65
356	60.08	3.31	9.23		170	65
357	59.99	3.16	8.88		167	65
358	60.12	3.25	9.05		165	65
359	60.04	3.25	9.03		162	65
360	60.04	3.02	8.41		159	65

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
361	60.10	3.06	8.42		157	65
362	60.13	2.66	7.43		154	64
363	60.14	2.73	7.51		152	64
364	60.11	2.61	7.25		150	64
365	60.17	2.35	6.53		148	64
366	60.12	2.46	6.82		146	64
367	60.16	2.4	6.64		144	64
368	60.11	2.31	6.39		142	63
369	60.13	2.18	6.06		140	63
370	60.16	2.2	6.06		138	63
371	60.13	2.14	5.89		136	63
372	60.17	2.09	5.78		135	63
373	60.14	1.97	5.46		133	64
374	60.13	2.13	5.83		131	63
375	60.22	1.89	5.25		130	63
376	60.12	2.04	5.61		129	63
377	60.24	1.87	5.16		127	63
378	60.19	1.77	4.88		125	63
379	60.25	1.85	5.1		124	63
380	60.17	1.6	4.44		122	63
381	60.20	1.83	5.01		121	63
382	60.31	1.61	4.45		120	63
383	60.21	1.81	4.92		119	63
384	60.23	1.65	4.53		118	62
385	60.26	1.63	4.45		117	63
386	60.29	1.54	4.22		116	62
387	60.24	1.59	4.36		114	62
388	60.14	2.18	5.72		163	62
389	59.96	1.53	5.93		198	62
390	59.47	1.6	8.25		223	62
391	59.06	1.47	9.95		241	62
392	58.69	1.02	11.21		257	62
393	58.16	0.28	13.1		271	62
394	57.67	0.066	14.13		279	62
395	57.08	0.03613	15.08		275	62
396	56.70	0.02634	14.47		276	62
397	56.19	0.02554	15.03		275	62
398	55.62	0.03434	15.17		272	62
399	55.09	0.03664	16.05		270	62
400	54.57	0.04146	16.07		270	62
401	54.02	0.04664	16.19		271	62
402	53.65	0.03835	16.37		272	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
403	53.16	0.04622	16.39		273	62
404	52.61	0.04273	16.15		274	62
405	51.95	0.04336	16.33		275	62
406	51.50	0.04904	16.31		276	61
407	50.99	0.04976	16.54		277	62
408	50.25	0.05095	16.55		276	61
409	49.80	0.05238	16.85		277	61
410	49.26	0.06173	16.69		277	61
411	48.71	0.049	16.44		277	61
412	48.10	0.04191	15.97		277	62
413	47.57	0.0406	16.84		276	64
414	47.01	0.02	15.65		278	63
415	46.48	0.22	14.88		278	62
416	46.07	0.36	14.19		277	63
417	45.45	0.44	13.94		283	63
418	44.99	0.28	14		288	63
419	44.36	0.07102	15.81		286	64
420	43.98	0.05373	15.29		282	64
421	43.48	0	16.15		280	65
422	42.98	0	15.89		282	64
423	42.35	0.01	14.95		281	65
424	41.86	0	15.06		281	65
425	41.43	0	15.7		284	65
426	40.99	0.01	15.66		285	65
427	40.43	0.04	15.12		285	65
428	39.76	0.04	15.59		286	65
429	39.55	0.08	15.22		286	64
430	38.94	0.07	15.17		268	66
431	38.63	0.2	8.84		253	66
432	38.36	0.06	9.66		242	65
433	38.16	0.01	10.89		234	65
434	37.98	0.05	9.5		228	65
435	37.76	0.4	13.77		222	65
436	37.70	0.27	14.48		217	64
437	37.58	0.11	13.08		213	65
438	37.39	0.08	11.89		209	64
439	37.31	0.01	10.7		207	64
440	37.31	0.12	8.38		204	64
441	37.22	1.3	9.35		201	64
442	37.20	2.46	10.85		197	64
443	37.17	2.96	11.03		194	64
444	37.18	3.22	10.95		190	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
445	37.08	3.56	11.42		186	64
446	37.15	3.64	11.27		183	64
447	37.20	3.87	11.59		180	64
448	37.07	3.91	11.57		177	64
449	37.03	3.84	11.23		173	64
450	37.12	3.71	10.86		170	64
451	37.08	3.87	11.23		167	64
452	37.14	3.75	10.88		165	64
453	37.09	3.47	10.1		162	64
454	37.08	3.35	9.77		160	64
455	37.14	3.22	9.35		157	64
456	37.02	3.21	9.33		155	64
457	37.09	2.87	8.44		152	64
458	37.08	2.99	8.78		150	64
459	37.09	2.7	7.95		148	64
460	37.17	2.65	7.79		146	65
461	37.17	2.52	7.49		144	64
462	37.18	2.63	7.76		142	64
463	37.15	2.58	7.64		140	65
464	37.14	2.66	7.85		138	65
465	37.10	2.55	7.56		136	64
466	37.17	2.38	7.1		135	64
467	37.23	2.36	7.02		133	64
468	37.12	2.22	6.61		131	64
469	37.15	2.12	6.31		130	64
470	37.10	2.08	6.19		129	64
471	37.10	2.11	6.26		127	63
472	37.19	2.15	6.35		126	63
473	37.22	1.88	5.61		124	64
474	37.25	2.03	5.99		123	63
475	37.25	1.87	5.53		122	63
476	37.16	1.91	5.63		121	64
477	37.23	1.93	5.67		120	64
478	37.23	1.82	5.35		118	64
479	37.20	1.9	5.56		117	64
480	37.18	1.86	5.38		116	64
481	37.18	1.94	5.55		158	64
482	36.82	2.11	8.94		202	64

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
Model : Classic Edge 560.1
Tracking No. : 2495
Project No. : 0117WB043E
Test Date : 12/3/2024
Run No. : 2

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Firebox Volume : 13.720 ft³
Manufacturer's Recommended Loading Density : 13
Ideal Fuel Weight : 178.36 lb.
Minimum Fuel Weight : 160.52 lb.
Maximum Fuel Weight : 196.20 lb.
Fuel Species : Maple

Fuel Piece Data

PC No.	Weight, Lb. (W _i)	Cross- Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	10.0	5.75	5.00	22.00	18.9	19.2	19.4	18.9	18.9	19.1	190.60
2	10.7	7.50	3.50	22.00	21.4	21.5	18.4	21.2	21.2	20.7	221.92
3	11.4	7.00	3.25	22.00	22.0	21.9	22.0	24.6	20.2	22.1	252.40
4	11.8	8.00	5.00	22.00	19.5	19.3	20.0	18.3	19.7	19.4	228.45
5	12.9	7.00	5.50	22.00	20.6	20.2	21.1	20.1	22.0	20.8	268.32
6	13.0	7.00	5.00	22.00	19.3	20.5	21.6	23.0	23.0	21.5	279.24
7	10.8	7.50	5.00	22.00	19.2	20.7	21.1	19.5	21.0	20.3	219.24
8	8.8	6.50	4.00	22.00	20.4	20.5	18.4	18.6	19.9	19.6	172.13
9	12.4	8.00	4.75	22.00	18.9	19.3	20.7	20.1	19.3	19.7	243.78
10	14.0	8.00	4.00	22.00	19.0	19.8	18.6	19.6	19.9	19.4	271.32
11	11.9	7.00	5.00	22.00	23.0	21.8	23.6	21.2	19.8	21.9	260.37
12	11.5	7.00	5.00	22.00	23.8	23.7	23.0	21.2	20.1	22.4	257.14
13	11.4	6.50	5.00	22.00	21.3	21.8	22.0	19.6	19.8	20.9	238.26
14	9.1	6.00	4.50	22.00	22.3	20.0	20.4	20.5	19.6	20.6	187.10
15	8.8	6.00	5.00	22.00	19.6	19.1	20.0	21.2	18.7	19.7	173.54
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	168.5										3463.80
Averages	11.23	6.98	4.63	22.00	20.61	20.62	20.69	20.51	20.21	20.53	230.92

Fuel Load Properties

Number of Pieces	Wet Weight, lb.	Dry Weight, lb.	Fuel Loading Density, lb/ft ³ Wet Basis	Fuel Loading Density, lb/ft ³ Dry Basis	Moisture, % dry basis (ΣW _i · MC _i) / ΣW _i	Moisture, % wet Basis
15	168.5	139.77	12.28	10.19	20.56	17.05

Compliance Checks, Loading Density and Moisture

	Fuel Load, Wet Lb.	Load Density, lb/ft ³ of FB vol	Number of moisture readings > 28%	Number of moisture readings < 18%	Average Fuel Moisture, % DB	
Measured	168.5	12.28	0	0	20.21	
Required	160.5 - 196.2	10 - 15	0	0	19 - 25	
Complies ?	Yes	Yes	Yes	Yes	Yes	

Compliance Checks, Fuel weights and Dimensions

	Cross Section of Individual Pieces		Minimum Piece Weight, Lb.	Maximum Piece Weight, Lb.
	Min	Max		
Measured	3.25	8.00	8.8	14.0
Required	3	12	8.8	26.5
Complies ?	Yes	Yes	Yes	Yes

Pre-Burn Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
Model : Classic Edge 560.1
Tracking No. : 2495
Project No. : 0117WB043E
Test Date : 12/3/2024
Run No. : 2

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Average Moisture Content, % Dry Basis : 20.6
Total Mass, lb. : 165.6

[illegible]

Dilution Tunnel Velocity Traverse and Supplementary Data

ASTM E2515-11

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1

Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/3/2024

Dilution Tunnel Velocity Traverse

Pitot Location								
Traverse Point	% of Diameter	Inches into Tunnel	dP in. H ₂ O	Tunnel Temp, °F	dP ^{1/2}	Tunnel Static Pressure	-0.390	in. H ₂ O
X1	4.4	0.53	0.110	67	0.332	Tunnel Moisture	2.00	%
X2	14.6	1.75	0.120	67	0.346	Tunnel Diameter	12.00	inches
X3	29.6	3.55	0.118	68	0.344	Pitot Tube C _p	0.99	inches
X4	70.4	8.45	0.122	69	0.349	Tunnel Molecular Weight	29	(dry)
X5	85.4	10.25	0.108	69	0.329	Tunnel Molecular Weight	28.78	(M _s , wet)
X6	95.6	11.47	0.056	68	0.237	Tunnel Area	0.78539816	ft ²
Y1	4.4	0.53	0.100	70	0.316	K _p	85.49	constant
Y2	14.6	1.75	0.120	69	0.346	P _s =P _{bar} +Tunnel Static	30.2913235	in HG
Y3	29.6	3.55	0.122	68	0.349	$V_{strav} = K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 21.687$		
Y4	70.4	8.45	0.118	68	0.344			
Y5	85.4	10.25	0.108	68	0.329	$V_{scent} = K_p C_p \sqrt{\Delta p_{center}} \sqrt{\frac{T_{s,center}}{P_s M_s}} = 22.647$		
Y6	95.6	11.47	0.090	68	0.300			
Center	50.0	6.00	0.118	69	0.344	$F_p = V_{strav} / V_{scent} = 0.958$		

* Probe location must be no closer than 0.50 in to tunnel wall

$$\text{Initial Tunnel Velocity, } V_s = F_p K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 20.762664 \text{ ft/sec}$$

Supplementary Data and Information

Environment	Test Start	Test End	
Time of Day	14:49	2:24	(Following Morning)
Barometric Pressure, in. Hg	30.32	30.32	
Room Air Velocity, fpm	15	6	
Room Air Temperature, °F	61	63	
Room Relative Humidity, %	34.0	33.0	
Platform Scale Audit, lb.	30.0	30.0	

Leak Checks

Pitot and associated tubing, (pass/fail) ¹	Pass	Pass
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See sampling box worksheets for sampling boxes

Dilution Tunnel

Date last cleaned	11/22/2024
Smoke Capture, % (visual) ²	100
Draft Inducement, (pass/fail) ³	Pass
Static Pressure, in. H ₂ O	-0.390
	-0.390

¹ Both sides (independently) of the pitot system are brought under a minimum vacuum of 3 in. H₂O and then sealed. Any indication of pressure loss is deemed a fail.

² Create a smoking condition during start of pre-burn activities and using adequate lighting pointed upward and around tunnel hood, visually observe if 100% of visible smoke is being captured by the hood. If not, increase flow tunnel flow and / or re-assess chimney proximity to draft hood as required and repeat until 100% capture is observed.

³ With the appliance installed and the dilution tunnel flow turned-off, observe the flue draft gauge while turning the dilution tunnel on. Any detectible response by the draft gauge associated with activation of the tunnel flow indicates that draft inducement is occurring. Determine the cause (i.e. flue chimney too deep into tunnel?) before continuing.

Preburn Data

ASTM E2618

Run: 2

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/3/24

Final Coal Bed Weight: 27.3 lb.
 Average Heat Output Rate Last One Hour, Btu/hr: 90133.5 Btu/hr.

Beginning Clock Time: 12:49Logging Intervqal, Min: 1

NOTE: None

Coal Bed Range **16.9 33.7**
 (lb): (min) (max)

121		Appliance					Load										
Elapsed Time (Min)	Fuel Remaining (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H2O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	σi, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	Room Temp °F	
0	59.5	153.1	147.5	5.6	259	-0.046	54.6	153	98.3	2.424	1.0012	8.337	20.21	1989.1	119346	62	
1	59.1	153.6	148.4	5.2	259	-0.046	54.6	153	98.7	2.123	1.0012	8.337	17.7	1748.9	104931	62	
2	58.7	153.7	148.5	5.2	259	-0.046	54.7	153	98.8	2.096	1.0012	8.337	17.47	1727.7	103661	62	
3	58.4	153.7	148.6	5.2	259	-0.047	54.7	154	98.8	2.109	1.0012	8.337	17.58	1739.8	104389	61	
4	58.0	154.0	149.0	4.9	258	-0.046	54.8	154	98.9	2.041	1.0012	8.337	17.01	1684.6	101079	62	
5	57.7	154.2	149.3	4.9	258	-0.047	54.8	154	99.2	1.972	1.0012	8.337	16.44	1632.5	97952.9	62	
6	57.2	154.4	149.5	4.8	257	-0.047	54.8	154	99.3	1.972	1.0012	8.337	16.44	1635.3	98120.2	61	
7	56.9	154.6	149.8	4.8	255	-0.046	54.8	154	99.5	1.945	1.0012	8.337	16.21	1615.7	96939.8	61	
8	56.6	154.7	150.2	4.6	254	-0.047	54.8	155	99.7	1.890	1.0012	8.337	15.76	1572.8	94368.1	62	
9	55.9	155.3	150.9	4.4	248	-0.045	54.9	155	100.1	1.794	1.0012	8.337	14.96	1498.8	89926.1	62	
10	55.3	155.4	148.7	6.7	267	-0.049	54.9	155	100.4	2.205	1.0012	8.337	18.38	1847.8	110869	61	
11	54.8	153.7	143.4	10.3	264	-0.047	54.5	153	98.4	3.849	1.0012	8.337	32.09	3159.9	189594	62	
12	54.4	153.8	144.1	9.7	264	-0.047	54.2	153	98.6	3.630	1.0012	8.337	30.26	2986.6	179197	61	
13	53.9	153.9	146.5	7.3	266	-0.049	54.2	153	99.3	2.904	1.0012	8.337	24.21	2405.7	144341	63	
14	53.5	153.8	146.6	7.3	267	-0.048	54.3	153	99.1	2.808	1.0012	8.337	23.41	2323.3	139398	62	
15	53.2	153.5	146.3	7.2	267	-0.048	54.4	153	98.8	2.808	1.0012	8.337	23.41	2315.0	138897	62	
16	52.7	153.6	146.6	7.0	267	-0.047	54.4	153	98.8	2.739	1.0012	8.337	22.84	2258.9	135535	61	
17	52.3	153.7	146.4	7.3	266	-0.048	54.5	153	98.8	2.821	1.0012	8.337	23.52	2326.7	139605	61	
18	51.9	153.4	146.2	7.2	265	-0.047	54.5	153	98.5	2.808	1.0012	8.337	23.41	2308.0	138482	61	
19	51.6	153.2	146.0	7.2	265	-0.046	54.5	153	98.3	2.808	1.0012	8.337	23.41	2303.8	138229	62	
20	51.2	153.1	145.9	7.2	263	-0.047	54.5	153	98.2	2.808	1.0012	8.337	23.41	2300.6	138035	62	
21	50.9	153.3	146.1	7.2	263	-0.046	54.5	153	98.4	2.794	1.0012	8.337	23.29	2295.0	137703	61	
22	50.5	152.8	145.6	7.2	262	-0.046	54.5	152	97.9	2.808	1.0012	8.337	23.41	2295.1	137707	61	
23	50.2	153.0	145.9	7.1	261	-0.047	54.5	152	98.0	2.739	1.0012	8.337	22.84	2241.7	134501	61	
24	49.8	152.8	145.6	7.2	260	-0.046	54.4	152	97.9	2.780	1.0012	8.337	23.18	2273.0	136379	61	
25	49.5	152.6	145.4	7.2	260	-0.047	54.4	152	97.7	2.821	1.0012	8.337	23.52	2301.6	138094	63	
26	49.1	152.3	145.1	7.1	260	-0.046	54.4	152	97.5	2.808	1.0012	8.337	23.41	2284.0	137042	62	
27	48.9	152.3	145.1	7.2	260	-0.046	54.4	152	97.4	2.808	1.0012	8.337	23.41	2283.7	137025	62	
28	48.5	152.1	145.0	7.1	260	-0.046	54.4	152	97.3	2.808	1.0012	8.337	23.41	2280.2	136815	62	
29	48.2	151.8	144.7	7.1	260	-0.047	54.4	151	97.0	2.821	1.0012	8.337	23.52	2283.4	137005	61	
30	47.8	151.9	144.8	7.1	259	-0.046	54.4	151	97.1	2.808	1.0012	8.337	23.41	2275.3	136520	62	
31	47.5	151.7	144.6	7.1	259	-0.045	54.4	151	96.9	2.808	1.0012	8.337	23.41	2270.8	136250	62	
32	47.2	152.2	146.1	6.1	259	-0.046	54.4	152	97.4	2.465	1.0012	8.337	20.55	2005.2	120312	62	
33	46.8	151.9	145.9	6.1	259	-0.045	54.5	152	97.2	2.452	1.0012	8.337	20.44	1988.4	119304	62	
34	46.1	152.1	146.2	5.9	247	-0.012	54.5	152	97.3	2.383	1.0012	8.337	19.87	1935.2	116112	61	
35	45.8	152.5	146.6	5.9	261	-0.047	54.5	152	97.8	2.383	1.0012	8.337	19.87	1945.1	116704	62	
36	45.4	152.8	146.9	5.8	266	-0.047	54.5	153	98.0	2.369	1.0012	8.337	19.75	1939.0	116339	62	
37	44.9	152.9	147.0	5.9	267	-0.048	54.5	153	98.1	2.369	1.0012	8.337	19.75	1940.1	116405	62	
38	44.5	153.2	147.2	5.9	268	-0.049	54.5	153	98.3	2.369	1.0012	8.337	19.75	1945.1	116704	62	
39	44.1	153.3	147.3	6.0	268	-0.048	54.5	153	98.4	2.383	1.0012	8.337	19.87	1958.1	117483	61	
40	43.9	153.5	147.5	6.0	268	-0.046	54.5	153	98.6	2.369	1.0012	8.337	19.75	1950.8	117049	61	
41	43.4	153.6	147.6	6.0	268	-0.048	54.5	153	98.7	2.369	1.0012	8.337	19.75	1952.3	117135	62	
42	43.1	153.8	147.8	6.0	267	-0.046	54.5	153	98.9	2.369	1.0012	8.337	19.75	1957.0	117423	62	

121		Appliance						Load								
Elapsed Time (Min)	Fuel Remainin g (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H ₂ O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	σi, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	Room Temp °F
43	42.7	154.0	148.1	5.9	267	-0.047	54.5	154	99.2	2.342	1.0012	8.337	19.53	1939.3	116357	62
44	42.3	154.2	148.3	5.9	266	-0.047	54.5	154	99.4	2.342	1.0012	8.337	19.53	1942.9	116575	61
45	42.0	154.2	148.4	5.9	266	-0.046	54.6	154	99.4	2.342	1.0012	8.337	19.53	1943.6	116619	61
46	41.6	154.4	148.5	5.9	267	-0.046	54.5	154	99.6	2.342	1.0012	8.337	19.53	1948.0	116877	61
47	41.3	154.5	148.6	5.9	267	-0.047	54.5	154	99.7	2.328	1.0012	8.337	19.41	1938.5	116313	61
48	41.0	154.8	149.2	5.6	267	-0.047	54.5	155	100.0	2.246	1.0012	8.337	18.73	1875.7	112540	62
49	40.5	155.0	149.0	5.9	267	-0.046	54.6	155	100.1	2.287	1.0012	8.337	19.07	1911.2	114673	61
50	40.3	155.0	149.0	5.9	267	-0.046	54.6	155	100.1	2.328	1.0012	8.337	19.41	1945.8	116747	61
51	39.9	155.1	149.1	6.0	267	-0.045	54.6	155	100.3	2.342	1.0012	8.337	19.53	1959.9	117592	61
52	39.6	155.3	149.3	6.0	267	-0.046	54.6	155	100.4	2.342	1.0012	8.337	19.53	1963.1	117788	62
53	39.3	155.2	149.3	6.0	267	-0.045	54.6	155	100.4	2.328	1.0012	8.337	19.41	1951.5	117088	61
54	38.9	155.5	149.5	6.0	267	-0.047	54.6	155	100.7	2.328	1.0012	8.337	19.41	1956.5	117387	62
55	38.6	155.6	149.6	6.0	267	-0.046	54.6	155	100.8	2.328	1.0012	8.337	19.41	1958.9	117534	61
56	38.3	155.7	150.3	5.4	267	-0.046	54.6	155	100.8	2.246	1.0012	8.337	18.73	1890.0	113398	61
57	38.1	156.5	151.9	4.6	267	-0.046	54.6	156	101.6	1.931	1.0012	8.337	16.1	1637.2	98230.5	61
58	37.6	156.8	152.2	4.6	266	-0.046	54.7	157	101.8	1.822	1.0012	8.337	15.19	1548.5	92907.9	61
59	37.4	157.1	152.5	4.5	266	-0.045	54.8	157	102.0	1.822	1.0012	8.337	15.19	1551.2	93069.7	61
60	37.0	157.4	153.0	4.4	256	-0.046	54.8	157	102.3	1.781	1.0012	8.337	14.84	1520.6	91234.1	61
61	36.8	157.7	153.3	4.5	260	-0.045	54.9	157	102.6	1.781	1.0012	8.337	14.84	1525.1	91508.8	61
62	38.5	158.0	153.5	4.5	257	-0.041	54.9	158	102.9	1.767	1.0012	8.337	14.73	1517.2	91029.8	62
63	35.7	158.9	154.3	4.6	262	-0.048	54.9	159	103.7	1.767	1.0012	8.337	14.73	1528.7	91720.7	62
64	35.1	159.4	154.9	4.5	266	-0.046	54.9	159	104.3	1.767	1.0012	8.337	14.73	1537.7	92261.2	62
65	35.0	159.7	155.2	4.5	262	-0.047	54.8	160	104.7	1.767	1.0012	8.337	14.73	1543.7	92620.7	62
66	34.5	160.0	155.4	4.5	268	-0.047	54.8	160	104.9	1.767	1.0012	8.337	14.73	1547.6	92857.5	61
67	34.3	160.4	155.8	4.6	270	-0.047	54.8	160	105.3	1.781	1.0012	8.337	14.84	1564.8	93889.1	61
68	34.0	160.9	156.3	4.5	270	-0.047	54.8	161	105.8	1.739	1.0012	8.337	14.5	1535.8	92147.5	62
69	33.9	161.0	156.5	4.5	247	-0.042	54.8	161	106.0	1.739	1.0012	8.337	14.5	1538.7	92321.9	62
70	33.8	160.8	156.3	4.5	229	-0.039	54.8	161	105.8	1.726	1.0012	8.337	14.39	1523.6	91417.7	62
71	33.6	160.5	156.1	4.4	218	-0.039	54.9	160	105.5	1.739	1.0012	8.337	14.5	1531.4	91883.3	62
72	33.5	160.1	155.7	4.4	210	-0.037	54.9	160	105.1	1.726	1.0012	8.337	14.39	1513.9	90833.1	62
73	33.5	159.7	155.4	4.4	205	-0.037	54.9	160	104.7	1.726	1.0012	8.337	14.39	1508.8	90528.3	61
74	33.5	159.4	155.0	4.4	201	-0.036	54.9	159	104.3	1.739	1.0012	8.337	14.5	1515.0	90901.3	61
75	33.4	158.9	154.5	4.4	197	-0.036	54.9	159	103.9	1.726	1.0012	8.337	14.39	1496.5	89792.6	61
76	33.4	158.4	154.1	4.3	193	-0.035	54.9	158	103.5	1.739	1.0012	8.337	14.5	1502.2	90129.3	61
77	33.4	158.1	153.8	4.3	190	-0.034	54.9	158	103.1	1.739	1.0012	8.337	14.5	1496.5	89788.5	61
78	33.4	157.5	153.2	4.3	188	-0.032	54.9	157	102.5	1.739	1.0012	8.337	14.5	1488.4	89304.5	60
79	33.4	157.0	152.7	4.4	186	-0.032	54.9	157	102.1	1.753	1.0012	8.337	14.62	1493.4	89603.6	61
80	33.4	156.6	152.3	4.3	184	-0.031	54.9	157	101.6	1.767	1.0012	8.337	14.73	1498.8	89926.5	60
81	33.4	156.0	151.7	4.3	180	-0.031	54.9	156	101.0	1.781	1.0012	8.337	14.84	1500.9	90052.9	60
82	33.4	155.5	151.2	4.3	177	-0.03	54.9	155	100.5	1.767	1.0012	8.337	14.73	1481.9	88916.3	60
83	33.4	155.0	150.6	4.3	174	-0.03	54.9	155	100.0	1.794	1.0012	8.337	14.96	1497.3	89838.8	60
84	33.4	154.5	150.2	4.3	171	-0.029	54.9	154	99.5	1.794	1.0012	8.337	14.96	1489.7	89383.2	60
85	33.4	153.8	149.6	4.3	168	-0.028	54.9	154	98.8	1.808	1.0012	8.337	15.07	1491.4	89485.9	60
86	33.4	153.3	149.0	4.4	165	-0.028	54.9	153	98.3	1.822	1.0012	8.337	15.19	1494.7	89684.9	60
87	33.4	152.8	148.5	4.4	162	-0.027	54.9	153	97.9	1.849	1.0012	8.337	15.41	1510.7	90642.3	61
88	33.4	152.1	147.8	4.4	160	-0.027	54.8	152	97.2	1.876	1.0012	8.337	15.64	1521.9	91312.4	60
89	33.4	151.5	147.2	4.4	157	-0.027	54.8	151	96.6	1.863	1.0012	8.337	15.53	1501.4	90081.9	60
90	33.3	150.9	146.6	4.3	154	-0.026	54.8	151	96.0	1.876	1.0012	8.337	15.64	1503.0	90182.7	60
91	33.5	150.3	146.0	4.3	152	-0.025	54.8	150	95.3	1.876	1.0012	8.337	15.64	1492.5	89552.9	60
92	33.3	149.9	145.5	4.4	150	-0.025	54.8	150	94.9	1.904	1.0012	8.337	15.87	1508.5	90507.2	60
93	33.4	149.1	144.7	4.4	147	-0.024	54.8	149	94.1	1.918	1.0012	8.337	15.99	1506.6	90395.4	60
94	33.5	148.6	144.2	4.3	145	-0.025	54.8	148	93.6	1.931	1.0012	8.337	16.1	1508.5	90510.2	60
95	33.4	147.9	143.6	4.3	143	-0.023	54.8	148	93.0	1.918	1.0012	8.337	15.99	1488.6	89318.2	60
96	33.4	147.2	143.0	4.3	141	-0.023	54.8	147	92.3	1.931	1.0012	8.337	16.1	1488.5	89307.8	60
97	33.4	146.7	142.5	4.2	138	-0.023	54.8	147	91.8	1.931	1.0012	8.337	16.1	1479.4	88761.9	60
98	33.4	146.1	141.9	4.2	137	-0.023	54.8	146	91.2	1.918	1.0012	8.337	15.99	1459.8	87589.1	60
99	33.5	145.4	141.2	4.2	135	-0.022	54.8	145	90.4	1.931	1.0012	8.337	16.1	1457.2	87429.2	60
100	33.4	144.8	140.7	4.2	133	-0.022	54.8	145	89.9	1.931	1.0012	8.337	16.1	1449.3	86957.6	60
101	33.4	144.3	140.2	4.1	131	-0.022	54.8	144	89.4	1.918	1.0012	8.337	15.99	1431.2	85873.8	60

[illegible]

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 14:49

Test Length: 681 min

Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg

Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
Tot / Avg		168.5	109.935	0.161	1.30	75.9	1.86	64.83	48.87	63.73	100.0	71.0	0.114	0.338	21.39
Minimum	0.0	-0.2	0.000	0.158	1.27	66	1.82	61	43	61	97.6	62	0.107	0.327	20.94
Max	168.5	0.8	109.935	0.178	1.67	78	2.20	68	51	68	111.3	82	0.121	0.348	21.89
0	168.5		0.000		1.67	66	2.20	61	49	61		76	0.115	0.339	21.89
1	168.1	0.4	0.178	0.178	1.35	66	1.88	61	43	61	111.3	75	0.117	0.342	21.63
2	167.7	0.4	0.340	0.162	1.34	66	1.89	61	43	61	102.0	79	0.116	0.341	21.71
3	167.1	0.6	0.503	0.163	1.33	66	1.87	62	43	61	102.7	78	0.117	0.342	21.74
4	166.7	0.3	0.663	0.160	1.30	66	1.85	62	43	61	100.6	79	0.117	0.342	21.79
5	166.2	0.5	0.823	0.160	1.31	66	1.84	62	43	61	100.7	79	0.116	0.341	21.75
6	165.7	0.5	0.982	0.159	1.30	66	1.84	62	43	61	100.2	78	0.116	0.341	21.69
7	165.2	0.5	1.142	0.160	1.30	66	1.84	62	43	61	100.9	78	0.116	0.341	21.68
8	164.9	0.3	1.302	0.160	1.29	66	1.84	62	43	61	101.3	78	0.112	0.335	21.50
9	164.4	0.5	1.461	0.159	1.29	66	1.84	63	43	62	100.9	80	0.119	0.345	21.66
10	164.0	0.4	1.620	0.159	1.29	67	1.83	63	44	62	100.6	80	0.112	0.335	21.68
11	163.6	0.4	1.779	0.159	1.29	67	1.83	63	44	62	100.4	79	0.119	0.345	21.67
12	163.1	0.5	1.938	0.159	1.29	67	1.83	63	44	62	100.5	80	0.111	0.333	21.62
13	162.7	0.4	2.097	0.159	1.29	67	1.83	63	44	62	101.2	80	0.115	0.339	21.44
14	162.4	0.4	2.255	0.158	1.29	67	1.82	64	44	63	100.8	80	0.112	0.335	21.49
15	161.9	0.5	2.415	0.160	1.29	67	1.83	64	44	63	102.2	80	0.113	0.336	21.39
16	161.5	0.4	2.574	0.159	1.28	67	1.83	64	45	63	101.7	79	0.112	0.335	21.38
17	161.1	0.4	2.732	0.158	1.28	67	1.82	64	45	63	101.2	79	0.112	0.335	21.33
18	160.6	0.5	2.891	0.159	1.28	68	1.82	64	45	63	101.6	79	0.114	0.338	21.42
19	160.3	0.3	3.051	0.160	1.27	68	1.83	64	45	64	101.4	80	0.117	0.342	21.67
20	159.9	0.3	3.209	0.158	1.27	68	1.83	64	45	64	99.3	79	0.117	0.342	21.81
21	159.5	0.5	3.367	0.158	1.28	68	1.82	65	45	64	99.4	79	0.112	0.335	21.56
22	159.0	0.4	3.526	0.159	1.28	68	1.83	65	45	64	100.8	79	0.115	0.339	21.47
23	158.7	0.3	3.685	0.159	1.28	68	1.83	65	45	64	100.6	79	0.116	0.341	21.66
24	158.3	0.4	3.844	0.159	1.27	69	1.83	65	46	64	100.1	80	0.116	0.341	21.71
25	157.9	0.4	4.002	0.158	1.28	69	1.83	65	46	64	98.9	80	0.119	0.345	21.86
26	157.6	0.3	4.161	0.159	1.28	69	1.83	65	46	64	99.3	80	0.115	0.339	21.82
27	157.1	0.5	4.321	0.160	1.27	69	1.82	65	46	64	100.4	80	0.116	0.341	21.68
28	156.8	0.3	4.479	0.158	1.28	69	1.83	66	46	65	99.7	80	0.113	0.336	21.58
29	156.3	0.5	4.638	0.159	1.28	70	1.83	66	46	65	100.3	80	0.117	0.342	21.63
30	156.0	0.4	4.797	0.159	1.28	70	1.83	66	46	65	100.1	80	0.113	0.336	21.63
31	155.6	0.4	4.956	0.159	1.28	70	1.83	66	46	65	100.2	80	0.116	0.341	21.58
32	155.1	0.4	5.115	0.159	1.28	70	1.84	66	46	65	100.3	80	0.113	0.336	21.58
33	154.8	0.4	5.273	0.158	1.27	70	1.83	66	46	65	99.7	80	0.116	0.341	21.58
34	154.4	0.4	5.434	0.161	1.28	70	1.85	66	47	65	101.4	80	0.115	0.339	21.68
35	153.9	0.5	5.594	0.160	1.28	71	1.84	66	47	65	100.9	80	0.112	0.335	21.49
36	153.6	0.4	5.753	0.159	1.29	71	1.84	66	47	65	100.4	80	0.117	0.342	21.58
37	153.1	0.5	5.913	0.160	1.29	71	1.85	66	47	65	100.8	80	0.112	0.335	21.58
38	152.8	0.4	6.073	0.160	1.29	71	1.85	66	47	65	100.8	80	0.117	0.342	21.58
39	152.2	0.6	6.234	0.161	1.29	71	1.84	67	47	65	101.4	80	0.112	0.335	21.58
40	152.0	0.2	6.394	0.160	1.28	72	1.84	67	47	66	100.9	80	0.115	0.339	21.49

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 14:49
Test Length: 681 min
Recording Interval: 1 min

Test Date: 12/3/24
Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
 Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
41	151.5	0.4	6.554	0.160	1.29	72	1.85	67	47	65	100.9	80	0.113	0.336	21.54
42	151.2	0.4	6.714	0.160	1.29	72	1.84	67	47	65	100.8	80	0.115	0.339	21.54
43	150.7	0.4	6.874	0.160	1.29	72	1.85	67	47	65	100.9	80	0.112	0.335	21.49
44	150.4	0.4	7.035	0.161	1.29	72	1.86	67	47	66	102.1	80	0.111	0.333	21.30
45	149.8	0.5	7.195	0.160	1.28	72	1.84	67	47	66	101.1	80	0.119	0.345	21.63
46	149.5	0.4	7.355	0.160	1.29	72	1.85	67	48	66	99.8	80	0.116	0.341	21.86
47	149.1	0.4	7.515	0.160	1.29	73	1.85	67	48	66	99.3	80	0.118	0.344	21.82
48	148.6	0.4	7.676	0.161	1.30	73	1.85	67	48	66	99.9	80	0.116	0.341	21.82
49	148.3	0.4	7.837	0.161	1.29	73	1.85	67	48	66	100.5	80	0.113	0.336	21.58
50	147.8	0.4	7.997	0.160	1.28	73	1.86	67	48	66	100.7	80	0.113	0.336	21.44
51	147.3	0.5	8.157	0.160	1.29	73	1.85	67	48	66	101.3	80	0.111	0.333	21.35
52	147.0	0.3	8.317	0.160	1.29	73	1.86	67	48	66	102.2	80	0.107	0.327	21.06
53	146.7	0.4	8.478	0.161	1.29	73	1.85	67	48	66	103.5	80	0.111	0.333	21.06
54	146.3	0.4	8.639	0.161	1.29	74	1.85	67	48	66	102.7	80	0.113	0.336	21.35
55	145.6	0.7	8.799	0.160	1.29	74	1.85	67	48	66	100.9	80	0.115	0.339	21.54
56	145.4	0.2	8.959	0.160	1.29	74	1.86	68	48	66	100.3	81	0.115	0.339	21.64
57	145.0	0.5	9.120	0.161	1.29	74	1.86	68	48	66	101.0	80	0.112	0.335	21.50
58	144.7	0.3	9.280	0.160	1.30	74	1.86	68	48	66	101.1	81	0.111	0.333	21.31
59	144.2	0.6	9.442	0.162	1.30	74	1.85	68	48	66	102.6	80	0.114	0.338	21.40
60	143.8	0.3	9.602	0.160	1.29	74	1.86	68	48	66	100.2	81	0.120	0.346	21.83
61	143.3	0.5	9.762	0.160	1.29	74	1.85	68	48	66	99.1	80	0.115	0.339	21.87
62	143.2	0.1	9.923	0.161	1.29	75	1.85	68	48	67	100.5	81	0.111	0.333	21.45
63	142.6	0.6	10.084	0.161	1.29	75	1.86	68	49	66	101.5	80	0.114	0.338	21.40
64	142.2	0.4	10.245	0.161	1.29	75	1.85	68	49	66	101.3	80	0.113	0.336	21.49
65	141.9	0.3	10.406	0.161	1.29	75	1.86	68	49	66	101.4	80	0.111	0.333	21.35
66	141.4	0.5	10.567	0.161	1.30	75	1.85	68	49	66	101.5	80	0.115	0.339	21.44
67	141.1	0.3	10.727	0.160	1.29	75	1.85	68	49	66	100.6	80	0.112	0.335	21.49
68	140.7	0.4	10.888	0.161	1.29	75	1.85	68	49	66	101.5	80	0.111	0.333	21.30
69	140.1	0.6	11.049	0.161	1.29	75	1.86	68	49	66	101.5	80	0.116	0.341	21.49
70	139.7	0.4	11.211	0.162	1.29	75	1.86	68	49	66	101.4	80	0.114	0.338	21.63
71	139.3	0.4	11.372	0.161	1.29	75	1.85	68	49	66	101.2	81	0.110	0.332	21.36
72	138.8	0.5	11.532	0.160	1.29	76	1.86	68	49	67	100.6	80	0.118	0.344	21.55
73	138.5	0.2	11.693	0.161	1.30	76	1.86	68	49	66	100.2	80	0.114	0.338	21.72
74	138.1	0.4	11.854	0.161	1.29	76	1.85	68	49	66	100.2	80	0.114	0.338	21.54
75	137.7	0.4	12.016	0.162	1.29	76	1.86	68	49	66	101.1	80	0.116	0.341	21.63
76	137.4	0.2	12.177	0.161	1.28	76	1.85	68	49	67	100.4	80	0.113	0.336	21.58
77	137.0	0.4	12.338	0.161	1.29	76	1.85	68	49	67	101.3	82	0.110	0.332	21.32
78	136.5	0.5	12.499	0.161	1.29	76	1.85	68	49	66	102.1	80	0.111	0.333	21.22
79	136.1	0.4	12.659	0.160	1.29	76	1.85	68	49	66	101.1	79	0.114	0.338	21.38
80	135.7	0.4	12.821	0.162	1.29	76	1.86	68	49	66	101.6	79	0.113	0.336	21.47
81	135.2	0.4	12.982	0.161	1.30	76	1.85	68	49	67	100.6	78	0.115	0.339	21.51
82	134.8	0.5	13.144	0.162	1.30	76	1.86	68	49	67	101.1	78	0.113	0.336	21.50
83	134.6	0.2	13.305	0.161	1.28	77	1.86	68	49	68	100.7	77	0.112	0.335	21.34
84	134.1	0.5	13.466	0.161	1.29	77	1.85	68	49	67	100.7	77	0.114	0.338	21.38

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 14:49
Test Length: 681 min
Recording Interval: 1 min

Test Date: 12/3/24
Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
 Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
85	133.5	0.6	13.627	0.161	1.30	77	1.85	68	49	67	100.4	76	0.114	0.338	21.47
86	133.1	0.4	13.788	0.161	1.30	77	1.85	68	49	67	100.1	76	0.114	0.338	21.46
87	133.0	0.1	13.950	0.162	1.30	77	1.86	68	50	67	100.3	75	0.117	0.342	21.59
88	132.4	0.5	14.112	0.162	1.29	77	1.86	68	49	67	99.9	75	0.115	0.339	21.62
89	132.1	0.3	14.273	0.161	1.29	77	1.85	68	49	67	99.4	75	0.115	0.339	21.53
90	131.8	0.3	14.434	0.161	1.29	77	1.85	68	50	67	100.0	75	0.111	0.333	21.34
91	131.3	0.5	14.595	0.161	1.29	77	1.85	68	50	66	100.6	74	0.113	0.336	21.24
92	130.9	0.4	14.756	0.161	1.30	77	1.86	68	50	66	100.5	75	0.114	0.338	21.38
93	130.4	0.5	14.918	0.162	1.30	77	1.86	68	50	66	100.9	74	0.112	0.335	21.33
94	130.2	0.3	15.080	0.162	1.29	77	1.85	68	50	66	100.9	74	0.115	0.339	21.37
95	129.5	0.6	15.241	0.161	1.29	77	1.85	68	50	67	99.8	74	0.115	0.339	21.51
96	129.3	0.3	15.402	0.161	1.29	77	1.85	68	50	67	99.1	74	0.119	0.345	21.70
97	128.8	0.4	15.564	0.162	1.30	77	1.85	68	50	67	99.6	74	0.112	0.335	21.56
98	128.5	0.4	15.725	0.161	1.30	77	1.85	68	50	67	99.6	74	0.116	0.341	21.42
99	128.1	0.4	15.886	0.161	1.30	77	1.85	68	50	66	99.7	74	0.114	0.338	21.51
100	127.7	0.4	16.049	0.163	1.29	77	1.85	68	50	66	101.1	74	0.113	0.336	21.37
101	127.4	0.3	16.210	0.161	1.30	77	1.86	67	50	67	99.9	74	0.116	0.341	21.46
102	127.0	0.4	16.372	0.162	1.28	77	1.85	67	50	67	100.1	74	0.115	0.339	21.56
103	126.6	0.4	16.532	0.160	1.29	78	1.85	67	50	67	98.6	73	0.115	0.339	21.50
104	126.3	0.3	16.694	0.162	1.30	78	1.85	67	50	66	99.8	73	0.115	0.339	21.49
105	126.0	0.2	16.855	0.161	1.30	78	1.86	67	50	66	99.3	73	0.114	0.338	21.44
106	125.5	0.5	17.017	0.162	1.30	78	1.85	67	50	66	100.3	74	0.113	0.336	21.36
107	125.1	0.4	17.179	0.162	1.29	78	1.85	67	50	67	100.8	73	0.112	0.335	21.26
108	124.7	0.5	17.341	0.162	1.29	78	1.85	67	50	66	100.5	73	0.117	0.342	21.44
109	124.3	0.4	17.502	0.161	1.29	78	1.86	67	50	66	99.9	74	0.108	0.329	21.26
110	124.0	0.3	17.663	0.161	1.30	78	1.85	67	50	66	100.4	73	0.117	0.342	21.26
111	123.5	0.5	17.825	0.162	1.30	78	1.86	67	50	66	100.1	73	0.115	0.339	21.58
112	123.2	0.3	17.986	0.161	1.29	78	1.86	67	50	66	99.3	73	0.112	0.335	21.35
113	122.7	0.5	18.148	0.162	1.30	78	1.86	67	50	66	100.3	73	0.117	0.342	21.44
114	122.5	0.2	18.310	0.162	1.29	78	1.85	67	50	65	99.9	73	0.113	0.336	21.49
115	122.0	0.5	18.472	0.162	1.29	78	1.86	67	50	66	100.4	73	0.112	0.335	21.26
116	121.6	0.4	18.633	0.161	1.29	78	1.86	67	50	66	100.1	73	0.115	0.339	21.35
117	121.3	0.3	18.794	0.161	1.30	78	1.86	67	50	66	99.7	73	0.114	0.338	21.44
118	121.0	0.3	18.956	0.162	1.30	78	1.86	67	50	65	100.2	73	0.114	0.338	21.40
119	120.5	0.5	19.117	0.161	1.30	78	1.85	67	50	66	99.5	73	0.115	0.339	21.44
120	120.3	0.3	19.280	0.163	1.29	78	1.86	67	50	65	100.3	73	0.117	0.342	21.58
121	119.9	0.3	19.442	0.162	1.30	78	1.86	67	50	67	99.7	73	0.112	0.335	21.44
122	119.6	0.4	19.603	0.161	1.29	78	1.86	67	50	66	100.0	73	0.112	0.335	21.21
123	119.0	0.6	19.764	0.161	1.29	78	1.87	67	50	65	100.2	73	0.115	0.339	21.35
124	118.5	0.4	19.926	0.162	1.30	78	1.86	67	50	65	100.3	73	0.114	0.338	21.44
125	118.2	0.4	20.087	0.161	1.30	78	1.86	67	50	66	99.1	73	0.118	0.344	21.58
126	117.9	0.3	20.249	0.162	1.30	78	1.86	67	50	65	99.5	73	0.113	0.336	21.54
127	117.0	0.8	20.412	0.163	1.29	78	1.85	66	50	64	100.8	73	0.113	0.336	21.30
128	117.1	0.0	20.573	0.161	1.30	78	1.86	66	50	64	100.1	73	0.113	0.336	21.30

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
129	116.7	0.4	20.735	0.162	1.30	78	1.86	66	50	66	100.8	73	0.112	0.335	21.26
130	116.3	0.4	20.896	0.161	1.30	78	1.86	66	50	66	100.0	70	0.114	0.338	21.27
131	116.1	0.2	21.058	0.162	1.30	78	1.86	66	50	66	100.1	69	0.114	0.338	21.33
132	115.8	0.4	21.220	0.162	1.30	78	1.86	66	50	66	100.0	68	0.112	0.335	21.21
133	115.7	0.1	21.382	0.162	1.30	78	1.85	66	50	65	99.7	67	0.118	0.344	21.38
134	115.6	0.1	21.544	0.162	1.30	78	1.86	66	50	65	99.4	66	0.110	0.332	21.27
135	115.5	0.1	21.706	0.162	1.30	78	1.85	66	50	65	99.9	66	0.115	0.339	21.11
136	115.4	0.1	21.868	0.162	1.29	78	1.86	66	50	64	100.1	66	0.112	0.335	21.21
137	115.2	0.1	22.030	0.162	1.30	78	1.86	66	50	64	99.5	65	0.117	0.342	21.29
138	115.3	0.0	22.191	0.161	1.30	78	1.86	65	50	64	98.7	65	0.112	0.335	21.28
139	115.2	0.1	22.353	0.162	1.30	78	1.86	65	50	64	99.7	65	0.113	0.336	21.09
140	115.2	0.0	22.515	0.162	1.30	77	1.85	65	50	64	100.0	64	0.114	0.338	21.18
141	115.2	0.0	22.678	0.163	1.30	77	1.85	65	50	64	100.5	64	0.112	0.335	21.12
142	115.1	0.1	22.841	0.163	1.30	77	1.86	65	50	64	100.7	64	0.114	0.338	21.12
143	115.2	-0.1	23.002	0.161	1.29	77	1.86	65	50	64	99.0	64	0.116	0.341	21.31
144	115.2	0.0	23.164	0.162	1.29	77	1.86	65	50	64	99.2	64	0.114	0.338	21.31
145	115.2	0.0	23.326	0.162	1.29	77	1.85	65	50	64	99.6	64	0.112	0.335	21.12
146	115.1	0.0	23.487	0.161	1.30	77	1.86	65	50	64	99.1	64	0.117	0.342	21.26
147	115.2	0.0	23.649	0.162	1.30	77	1.85	65	50	64	98.9	64	0.117	0.342	21.49
148	115.2	0.0	23.812	0.163	1.30	77	1.85	65	50	64	99.1	64	0.115	0.339	21.40
149	115.1	0.1	23.974	0.162	1.30	77	1.85	65	49	64	98.7	64	0.117	0.342	21.40
150	115.2	-0.1	24.136	0.162	1.30	77	1.85	65	49	64	98.7	64	0.115	0.339	21.40
151	115.2	0.0	24.298	0.162	1.30	77	1.85	64	49	63	99.0	64	0.115	0.339	21.31
152	115.2	0.1	24.460	0.162	1.30	77	1.85	64	49	64	99.7	64	0.110	0.332	21.07
153	115.2	-0.1	24.622	0.162	1.30	77	1.85	64	49	63	100.5	64	0.113	0.336	20.98
154	115.1	0.1	24.784	0.162	1.30	77	1.85	64	49	63	100.0	64	0.116	0.341	21.26
155	115.2	-0.1	24.945	0.161	1.31	77	1.85	64	49	63	98.8	64	0.113	0.336	21.26
156	115.2	0.0	25.108	0.163	1.30	77	1.86	64	49	63	99.6	64	0.120	0.346	21.45
157	115.2	0.0	25.270	0.162	1.30	77	1.85	64	49	63	98.6	64	0.112	0.335	21.40
158	115.3	0.0	25.432	0.162	1.30	77	1.85	64	49	63	99.0	64	0.118	0.344	21.31
159	115.3	0.0	25.594	0.162	1.30	77	1.85	64	49	63	98.6	63	0.117	0.342	21.53
160	115.2	0.0	25.756	0.162	1.30	77	1.86	64	49	63	98.3	63	0.115	0.339	21.38
161	115.3	0.0	25.917	0.161	1.30	77	1.86	64	49	63	98.4	63	0.114	0.338	21.24
162	115.3	0.0	26.079	0.162	1.30	77	1.86	64	49	63	99.2	63	0.116	0.341	21.29
163	115.3	0.0	26.241	0.162	1.30	77	1.85	64	49	63	99.3	63	0.112	0.335	21.19
164	115.3	-0.1	26.404	0.163	1.29	77	1.85	64	49	63	100.3	63	0.114	0.338	21.10
165	115.3	0.0	26.566	0.162	1.30	77	1.86	64	49	63	99.7	63	0.114	0.338	21.19
166	115.3	0.0	26.728	0.162	1.30	77	1.85	64	49	63	99.5	63	0.114	0.338	21.19
167	115.3	0.0	26.890	0.162	1.30	77	1.85	64	49	63	99.0	63	0.119	0.345	21.43
168	115.4	-0.1	27.052	0.162	1.31	77	1.85	64	49	63	98.4	63	0.114	0.338	21.43
169	115.3	0.1	27.214	0.162	1.30	77	1.86	63	49	63	98.3	63	0.120	0.346	21.47
170	115.4	-0.1	27.376	0.162	1.30	77	1.85	63	49	63	98.3	63	0.113	0.336	21.43
171	115.4	0.1	27.538	0.162	1.31	77	1.86	63	49	63	99.0	63	0.115	0.339	21.19
172	115.3	0.0	27.701	0.163	1.29	77	1.85	63	49	63	100.2	67	0.115	0.339	21.33

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
173	115.0	0.3	27.862	0.161	1.30	77	1.86	64	49	62	99.3	69	0.113	0.336	21.30
174	114.6	0.3	28.024	0.162	1.30	77	1.85	64	49	63	100.0	70	0.117	0.342	21.42
175	114.4	0.3	28.186	0.162	1.30	77	1.86	64	49	62	99.8	71	0.113	0.336	21.44
176	114.0	0.4	28.347	0.161	1.30	77	1.85	64	49	63	99.2	71	0.117	0.342	21.45
177	113.6	0.4	28.509	0.162	1.30	77	1.86	64	49	62	99.9	72	0.113	0.336	21.46
178	113.1	0.5	28.671	0.162	1.30	77	1.86	64	49	62	100.1	73	0.116	0.341	21.43
179	112.6	0.5	28.834	0.163	1.30	77	1.85	64	49	63	101.0	74	0.113	0.336	21.45
180	112.1	0.5	28.995	0.161	1.30	77	1.87	64	49	63	100.1	74	0.113	0.336	21.32
181	111.6	0.5	29.157	0.162	1.30	77	1.86	64	49	62	101.0	75	0.114	0.338	21.38
182	111.1	0.5	29.318	0.161	1.30	77	1.86	64	49	62	99.7	75	0.118	0.344	21.62
183	110.5	0.6	29.479	0.161	1.30	77	1.85	64	49	63	99.2	75	0.114	0.338	21.62
184	109.9	0.6	29.641	0.162	1.30	77	1.86	64	49	62	100.5	75	0.111	0.333	21.29
185	109.4	0.6	29.803	0.162	1.30	77	1.86	64	49	62	101.1	75	0.116	0.341	21.39
186	108.7	0.6	29.966	0.163	1.30	77	1.86	64	49	62	101.2	73	0.112	0.335	21.42
187	108.3	0.4	30.127	0.161	1.30	76	1.86	64	49	62	100.1	74	0.115	0.339	21.36
188	107.8	0.5	30.288	0.161	1.30	76	1.86	64	49	62	100.4	75	0.112	0.335	21.38
189	107.2	0.6	30.450	0.162	1.30	76	1.85	65	50	62	100.9	73	0.115	0.339	21.37
190	106.8	0.4	30.611	0.161	1.30	76	1.87	65	50	62	99.9	73	0.115	0.339	21.49
191	106.2	0.6	30.773	0.162	1.30	76	1.86	65	50	62	100.5	73	0.112	0.335	21.35
192	105.7	0.5	30.935	0.162	1.31	76	1.86	64	50	62	100.6	73	0.117	0.342	21.44
193	105.2	0.6	31.097	0.162	1.30	76	1.86	65	50	62	99.8	72	0.117	0.342	21.67
194	104.7	0.5	31.258	0.161	1.29	76	1.86	65	50	62	98.8	74	0.117	0.342	21.68
195	104.2	0.5	31.419	0.161	1.30	76	1.86	65	50	62	98.9	75	0.117	0.342	21.71
196	103.7	0.5	31.581	0.162	1.29	76	1.86	65	50	62	99.9	76	0.114	0.338	21.59
197	102.9	0.7	31.742	0.161	1.30	76	1.86	65	50	62	100.0	76	0.114	0.338	21.46
198	102.6	0.4	31.903	0.161	1.30	76	1.86	65	50	62	99.9	76	0.118	0.344	21.64
199	101.9	0.6	32.066	0.163	1.30	76	1.86	65	50	62	100.4	76	0.117	0.342	21.78
200	101.4	0.6	32.227	0.161	1.29	76	1.87	65	50	62	99.1	76	0.115	0.339	21.64
201	100.7	0.6	32.389	0.162	1.29	76	1.86	65	50	62	100.3	76	0.115	0.339	21.55
202	100.3	0.5	32.550	0.161	1.30	76	1.87	65	50	62	100.2	76	0.112	0.335	21.41
203	99.9	0.3	32.711	0.161	1.30	76	1.86	65	50	62	100.5	76	0.115	0.339	21.41
204	99.3	0.7	32.873	0.162	1.30	76	1.86	65	50	62	100.6	76	0.117	0.342	21.64
205	98.7	0.6	33.034	0.161	1.30	76	1.87	65	50	62	99.4	76	0.115	0.339	21.64
206	98.2	0.5	33.197	0.163	1.30	76	1.86	65	50	62	101.2	76	0.112	0.335	21.41
207	97.7	0.5	33.358	0.161	1.29	76	1.87	65	50	62	100.9	76	0.112	0.335	21.27
208	97.2	0.6	33.519	0.161	1.30	76	1.87	65	50	62	101.2	76	0.112	0.335	21.27
209	96.7	0.4	33.680	0.161	1.29	76	1.87	65	50	62	101.0	76	0.114	0.338	21.36
210	96.1	0.6	33.842	0.162	1.30	76	1.86	65	50	62	100.9	76	0.116	0.341	21.55
211	95.7	0.5	34.003	0.161	1.30	76	1.86	65	50	62	100.0	76	0.113	0.336	21.50
212	95.3	0.4	34.165	0.162	1.30	76	1.86	65	50	62	101.2	76	0.112	0.335	21.31
213	94.5	0.8	34.327	0.162	1.30	76	1.86	65	50	62	101.5	76	0.114	0.338	21.36
214	94.1	0.4	34.488	0.161	1.29	76	1.87	65	50	62	100.3	76	0.116	0.341	21.55
215	93.5	0.6	34.649	0.161	1.30	76	1.86	65	50	62	99.7	76	0.116	0.341	21.64
216	93.0	0.5	34.810	0.161	1.30	76	1.87	65	50	62	99.9	76	0.112	0.335	21.46

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
217	92.4	0.6	34.971	0.161	1.30	76	1.87	65	50	62	100.6	76	0.113	0.336	21.31
218	91.9	0.5	35.133	0.162	1.30	76	1.86	65	50	62	101.7	77	0.112	0.335	21.32
219	91.4	0.5	35.295	0.162	1.29	76	1.86	65	51	62	102.1	77	0.110	0.332	21.19
220	90.8	0.7	35.456	0.161	1.29	76	1.87	65	51	62	101.1	77	0.118	0.344	21.48
221	90.2	0.5	35.617	0.161	1.30	76	1.87	65	51	62	99.9	77	0.115	0.339	21.71
222	89.7	0.5	35.778	0.161	1.30	76	1.86	65	51	62	99.5	77	0.116	0.341	21.62
223	89.1	0.6	35.940	0.162	1.30	76	1.87	65	51	62	100.0	77	0.118	0.344	21.76
224	88.7	0.5	36.101	0.161	1.30	76	1.86	65	51	62	99.3	77	0.114	0.338	21.66
225	88.1	0.6	36.263	0.162	1.30	76	1.86	65	51	62	101.0	77	0.110	0.332	21.29
226	87.6	0.5	36.425	0.162	1.29	76	1.87	65	51	62	102.0	77	0.113	0.336	21.24
227	87.0	0.6	36.585	0.160	1.30	76	1.87	65	51	62	100.6	77	0.113	0.336	21.38
228	86.5	0.5	36.747	0.162	1.30	76	1.86	65	51	63	100.7	69	0.115	0.339	21.40
229	86.2	0.3	36.908	0.161	1.30	76	1.86	65	51	63	99.5	69	0.113	0.336	21.32
230	86.0	0.2	37.070	0.162	1.30	76	1.86	65	51	62	100.5	67	0.112	0.335	21.16
231	85.9	0.1	37.232	0.162	1.30	76	1.86	65	51	63	100.6	67	0.114	0.338	21.18
232	85.7	0.2	37.394	0.162	1.30	76	1.86	65	51	62	100.2	66	0.114	0.338	21.27
233	85.5	0.2	37.556	0.162	1.29	76	1.86	65	51	62	100.0	65	0.113	0.336	21.20
234	85.4	0.1	37.717	0.161	1.30	76	1.86	65	50	62	99.5	65	0.114	0.338	21.19
235	85.3	0.1	37.878	0.161	1.31	76	1.86	64	50	62	99.1	65	0.117	0.342	21.37
236	85.3	0.0	38.040	0.162	1.30	76	1.86	64	50	62	99.6	65	0.111	0.333	21.24
237	85.3	-0.1	38.201	0.161	1.30	76	1.85	64	50	63	99.6	65	0.114	0.338	21.09
238	85.2	0.1	38.364	0.163	1.30	76	1.86	64	50	63	100.6	65	0.116	0.341	21.33
239	85.2	0.0	38.526	0.162	1.29	76	1.86	64	50	63	99.5	65	0.114	0.338	21.33
240	85.2	0.0	38.688	0.162	1.29	76	1.86	64	50	63	99.5	65	0.116	0.341	21.33
241	85.2	0.0	38.849	0.161	1.30	76	1.85	64	50	63	98.8	65	0.114	0.338	21.33
242	85.2	0.0	39.010	0.161	1.30	76	1.86	64	50	63	99.2	66	0.113	0.336	21.20
243	85.2	0.0	39.172	0.162	1.30	76	1.86	64	50	64	100.1	66	0.115	0.339	21.26
244	85.2	0.1	39.333	0.161	1.30	76	1.86	64	50	63	99.4	66	0.113	0.336	21.26
245	85.1	0.0	39.496	0.163	1.30	76	1.86	64	50	63	100.9	67	0.113	0.336	21.17
246	85.2	-0.1	39.658	0.162	1.30	76	1.86	64	50	63	100.4	66	0.114	0.338	21.22
247	85.2	0.0	39.819	0.161	1.29	76	1.86	64	50	63	99.7	68	0.113	0.336	21.23
248	85.1	0.0	39.980	0.161	1.30	76	1.85	64	50	64	99.9	68	0.113	0.336	21.20
249	85.2	-0.1	40.142	0.162	1.30	76	1.85	64	49	64	100.6	66	0.112	0.335	21.14
250	85.2	-0.1	40.303	0.161	1.30	76	1.85	64	49	64	100.1	66	0.112	0.335	21.07
251	85.3	0.0	40.465	0.162	1.30	76	1.86	64	49	64	100.8	66	0.113	0.336	21.11
252	85.3	0.0	40.628	0.163	1.30	76	1.86	64	49	64	100.9	65	0.115	0.339	21.25
253	85.2	0.1	40.789	0.161	1.29	76	1.86	64	49	64	99.6	65	0.110	0.332	21.09
254	85.2	0.0	40.951	0.162	1.29	76	1.86	64	49	64	100.7	65	0.114	0.338	21.05
255	85.3	-0.2	41.112	0.161	1.30	76	1.86	64	49	64	99.9	65	0.112	0.335	21.14
256	85.2	0.1	41.273	0.161	1.30	76	1.86	64	49	64	99.2	64	0.118	0.344	21.32
257	85.2	0.0	41.435	0.162	1.30	76	1.85	64	49	64	98.9	64	0.116	0.341	21.49
258	85.3	-0.2	41.597	0.162	1.30	76	1.86	64	49	64	98.7	64	0.116	0.341	21.40
259	85.2	0.2	41.759	0.162	1.30	76	1.86	64	49	64	99.3	64	0.113	0.336	21.26
260	85.2	-0.1	41.921	0.162	1.29	76	1.85	64	49	64	99.4	64	0.118	0.344	21.35

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
261	85.2	0.0	42.082	0.161	1.30	76	1.86	64	49	63	98.3	64	0.115	0.339	21.45
262	85.2	0.0	42.244	0.162	1.30	76	1.86	64	49	63	99.6	64	0.110	0.332	21.07
263	85.2	0.0	42.405	0.161	1.30	76	1.86	64	49	63	99.8	64	0.115	0.339	21.07
264	85.2	0.0	42.567	0.162	1.30	76	1.85	64	49	63	99.9	64	0.115	0.339	21.31
265	85.3	-0.1	42.729	0.162	1.29	76	1.86	64	49	63	99.5	64	0.114	0.338	21.26
266	85.3	0.0	42.891	0.162	1.30	76	1.85	64	49	63	99.1	63	0.119	0.345	21.44
267	85.2	0.1	43.053	0.162	1.29	76	1.86	64	49	63	98.6	63	0.114	0.338	21.43
268	85.3	-0.1	43.214	0.161	1.29	76	1.86	64	49	63	98.8	63	0.112	0.335	21.10
269	85.3	0.0	43.376	0.162	1.30	76	1.85	64	49	63	99.9	63	0.116	0.341	21.19
270	85.3	0.0	43.537	0.161	1.30	76	1.86	64	49	63	99.0	63	0.113	0.336	21.24
271	85.3	0.0	43.699	0.162	1.30	76	1.86	64	49	63	99.8	63	0.113	0.336	21.10
272	85.3	-0.1	43.861	0.162	1.30	76	1.85	63	49	62	100.0	63	0.114	0.338	21.15
273	85.3	0.0	44.023	0.162	1.30	76	1.86	63	49	62	99.7	63	0.115	0.339	21.24
274	85.3	0.0	44.185	0.162	1.30	76	1.86	63	49	62	99.4	63	0.115	0.339	21.29
275	85.3	0.0	44.346	0.161	1.30	76	1.85	63	49	63	99.0	63	0.112	0.335	21.15
276	85.3	0.0	44.508	0.162	1.30	76	1.85	63	49	62	100.0	63	0.114	0.338	21.10
277	85.3	0.0	44.670	0.162	1.30	76	1.86	63	49	62	99.3	63	0.120	0.346	21.47
278	85.4	0.0	44.831	0.161	1.30	76	1.86	63	49	63	97.8	62	0.113	0.336	21.42
279	85.4	0.0	44.994	0.163	1.30	76	1.86	63	49	62	100.0	62	0.112	0.335	21.03
280	85.4	0.0	45.156	0.162	1.30	76	1.86	63	49	62	99.9	62	0.116	0.341	21.17
281	85.4	0.0	45.318	0.162	1.30	76	1.85	63	49	62	99.6	62	0.112	0.335	21.17
282	85.4	0.1	45.479	0.161	1.30	76	1.86	63	49	62	99.3	62	0.113	0.336	21.03
283	85.4	0.0	45.641	0.162	1.30	76	1.86	63	49	62	99.9	62	0.115	0.339	21.17
284	85.4	0.0	45.803	0.162	1.30	76	1.86	63	49	62	99.2	62	0.117	0.342	21.36
285	85.4	-0.1	45.965	0.162	1.30	76	1.86	63	49	62	98.8	62	0.114	0.338	21.31
286	85.5	-0.1	46.127	0.162	1.31	76	1.86	63	48	62	99.1	62	0.116	0.341	21.27
287	85.4	0.1	46.289	0.162	1.29	76	1.87	63	48	62	100.0	67	0.110	0.332	21.13
288	85.2	0.2	46.451	0.162	1.30	76	1.86	63	48	62	101.3	68	0.111	0.333	20.96
289	84.9	0.3	46.612	0.161	1.29	76	1.86	63	49	62	100.7	68	0.114	0.338	21.16
290	84.7	0.2	46.774	0.162	1.30	76	1.87	63	49	62	100.1	69	0.118	0.344	21.49
291	84.4	0.3	46.935	0.161	1.30	76	1.87	63	49	62	98.4	69	0.118	0.344	21.69
292	84.0	0.4	47.097	0.162	1.30	76	1.87	63	49	62	99.3	70	0.112	0.335	21.42
293	83.7	0.3	47.259	0.162	1.31	76	1.87	63	49	62	100.3	71	0.115	0.339	21.30
294	83.2	0.5	47.421	0.162	1.30	76	1.87	63	49	62	100.3	71	0.116	0.341	21.50
295	82.7	0.6	47.582	0.161	1.30	76	1.87	63	49	62	99.3	72	0.115	0.339	21.51
296	82.1	0.5	47.744	0.162	1.29	76	1.86	63	49	62	100.0	73	0.116	0.341	21.53
297	81.6	0.5	47.905	0.161	1.30	76	1.87	63	49	62	99.2	73	0.117	0.342	21.63
298	81.1	0.5	48.066	0.161	1.30	76	1.87	64	49	62	98.9	73	0.116	0.341	21.63
299	80.5	0.5	48.228	0.162	1.30	76	1.87	64	49	62	99.6	71	0.115	0.339	21.52
300	80.0	0.6	48.390	0.162	1.30	76	1.87	64	49	62	99.6	73	0.119	0.345	21.66
301	79.5	0.4	48.552	0.162	1.30	76	1.87	64	49	62	99.2	72	0.116	0.341	21.71
302	78.9	0.6	48.713	0.161	1.29	76	1.86	64	49	62	98.3	72	0.120	0.346	21.75
303	78.2	0.7	48.874	0.161	1.29	76	1.86	64	49	62	98.5	73	0.114	0.338	21.67
304	77.6	0.5	49.036	0.162	1.30	76	1.87	64	49	63	99.6	72	0.117	0.342	21.53

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
305	77.0	0.6	49.197	0.161	1.30	76	1.87	64	49	62	99.3	72	0.114	0.338	21.52
306	76.3	0.7	49.358	0.161	1.31	76	1.87	64	49	63	99.5	73	0.116	0.341	21.48
307	75.8	0.5	49.521	0.163	1.29	76	1.86	64	49	63	100.6	73	0.116	0.341	21.58
308	75.3	0.5	49.682	0.161	1.30	76	1.87	64	49	63	99.1	74	0.117	0.342	21.64
309	74.8	0.5	49.843	0.161	1.29	76	1.86	64	50	63	99.1	74	0.116	0.341	21.65
310	74.3	0.5	50.005	0.162	1.30	76	1.87	64	50	63	100.2	75	0.113	0.336	21.47
311	73.7	0.6	50.166	0.161	1.30	76	1.86	64	50	63	100.6	77	0.112	0.335	21.31
312	73.1	0.6	50.327	0.161	1.30	76	1.87	64	50	63	100.9	77	0.115	0.339	21.43
313	72.6	0.5	50.489	0.162	1.31	76	1.87	65	50	63	100.9	78	0.116	0.341	21.63
314	72.0	0.6	50.651	0.162	1.30	76	1.87	65	50	63	100.7	78	0.113	0.336	21.54
315	71.4	0.6	50.812	0.161	1.29	76	1.86	65	50	63	100.7	78	0.112	0.335	21.35
316	71.0	0.4	50.973	0.161	1.30	76	1.86	65	50	64	101.2	79	0.113	0.336	21.36
317	70.3	0.7	51.134	0.161	1.30	76	1.87	65	50	64	100.9	79	0.115	0.339	21.52
318	69.8	0.5	51.296	0.162	1.30	76	1.87	65	50	64	100.8	79	0.117	0.342	21.70
319	69.3	0.5	51.457	0.161	1.30	76	1.86	65	50	64	99.5	79	0.117	0.342	21.80
320	68.7	0.6	51.620	0.163	1.30	76	1.86	65	50	64	101.0	79	0.113	0.336	21.61
321	68.1	0.6	51.781	0.161	1.30	76	1.86	65	50	64	100.6	79	0.113	0.336	21.42
322	67.7	0.5	51.942	0.161	1.29	76	1.87	66	50	64	100.5	80	0.118	0.344	21.67
323	67.1	0.6	52.103	0.161	1.30	76	1.86	66	50	65	99.6	80	0.117	0.342	21.86
324	66.5	0.5	52.264	0.161	1.30	76	1.87	66	50	65	99.4	80	0.116	0.341	21.77
325	65.9	0.6	52.425	0.161	1.30	76	1.86	66	50	64	100.0	80	0.113	0.336	21.58
326	65.5	0.4	52.588	0.163	1.29	76	1.87	66	50	64	101.8	80	0.115	0.339	21.54
327	65.0	0.5	52.749	0.161	1.30	76	1.87	66	50	64	100.6	80	0.114	0.338	21.58
328	64.5	0.4	52.910	0.161	1.29	76	1.87	66	50	65	100.4	80	0.116	0.341	21.63
329	63.9	0.6	53.071	0.161	1.30	76	1.87	66	50	65	100.4	80	0.113	0.336	21.58
330	63.5	0.5	53.232	0.161	1.30	76	1.88	66	50	65	100.6	80	0.115	0.339	21.54
331	63.0	0.5	53.393	0.161	1.30	76	1.87	66	50	65	100.6	80	0.114	0.338	21.58
332	62.6	0.4	53.555	0.162	1.29	76	1.87	66	50	65	101.5	81	0.112	0.335	21.45
333	61.9	0.7	53.716	0.161	1.30	76	1.86	66	50	66	100.6	75	0.116	0.341	21.50
334	61.8	0.1	53.878	0.162	1.29	76	1.87	66	50	66	100.1	73	0.116	0.341	21.60
335	61.3	0.5	54.039	0.161	1.30	76	1.87	66	50	66	99.6	72	0.111	0.333	21.34
336	61.2	0.1	54.200	0.161	1.30	76	1.87	66	50	66	100.0	72	0.117	0.342	21.38
337	61.0	0.2	54.362	0.162	1.29	76	1.87	66	50	65	100.0	70	0.115	0.339	21.54
338	60.9	0.1	54.524	0.162	1.30	76	1.86	66	50	65	99.8	70	0.114	0.338	21.38
339	60.7	0.2	54.686	0.162	1.30	76	1.86	66	50	65	100.5	69	0.111	0.333	21.19
340	60.6	0.1	54.847	0.161	1.29	76	1.86	66	50	65	100.3	69	0.114	0.338	21.18
341	60.5	0.1	55.008	0.161	1.29	76	1.87	66	50	65	99.9	69	0.115	0.339	21.36
342	60.4	0.1	55.170	0.162	1.30	76	1.87	66	50	65	99.5	69	0.119	0.345	21.59
343	60.3	0.1	55.331	0.161	1.30	76	1.86	66	50	65	98.3	69	0.116	0.341	21.64
344	60.3	0.1	55.493	0.162	1.30	76	1.86	66	50	65	99.5	69	0.112	0.335	21.32
345	60.3	-0.1	55.655	0.162	1.30	76	1.87	66	50	65	100.3	71	0.117	0.342	21.38
346	60.1	0.2	55.817	0.162	1.30	76	1.87	66	50	65	100.4	69	0.110	0.332	21.29
347	60.1	0.0	55.978	0.161	1.29	77	1.86	66	50	65	100.1	68	0.113	0.336	21.07
348	60.1	0.0	56.139	0.161	1.30	77	1.86	66	50	65	100.0	67	0.113	0.336	21.19

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
349	60.1	0.1	56.301	0.162	1.30	77	1.87	66	50	65	100.1	67	0.115	0.339	21.28
350	60.1	-0.1	56.462	0.161	1.30	77	1.87	66	50	65	99.1	66	0.114	0.338	21.31
351	60.0	0.1	56.624	0.162	1.30	77	1.87	66	50	65	99.9	66	0.112	0.335	21.16
352	60.1	0.0	56.787	0.163	1.29	77	1.86	66	49	65	101.1	66	0.112	0.335	21.07
353	60.1	0.0	56.948	0.161	1.30	77	1.86	66	49	65	99.7	66	0.115	0.339	21.21
354	60.0	0.1	57.110	0.162	1.29	77	1.86	65	49	65	99.6	66	0.116	0.341	21.39
355	60.0	0.0	57.271	0.161	1.29	77	1.86	65	49	65	99.1	65	0.109	0.330	21.10
356	60.1	-0.1	57.433	0.162	1.30	77	1.86	65	49	65	100.7	65	0.113	0.336	20.95
357	60.0	0.1	57.594	0.161	1.30	77	1.86	65	49	65	99.7	65	0.115	0.339	21.24
358	60.1	-0.1	57.756	0.162	1.30	77	1.86	65	49	65	99.6	65	0.114	0.338	21.28
359	60.0	0.1	57.919	0.163	1.29	77	1.86	65	49	65	100.1	65	0.115	0.339	21.28
360	60.0	0.0	58.080	0.161	1.30	77	1.87	65	49	65	98.9	65	0.114	0.338	21.28
361	60.1	-0.1	58.242	0.162	1.29	77	1.86	65	49	65	99.0	64	0.119	0.345	21.46
362	60.1	0.0	58.403	0.161	1.30	77	1.86	65	49	64	97.7	64	0.116	0.341	21.54
363	60.1	0.0	58.565	0.162	1.30	77	1.87	65	49	64	98.9	64	0.112	0.335	21.21
364	60.1	0.0	58.726	0.161	1.30	77	1.86	65	49	64	99.0	64	0.116	0.341	21.21
365	60.2	-0.1	58.888	0.162	1.30	77	1.86	65	49	64	99.2	64	0.116	0.341	21.40
366	60.1	0.0	59.051	0.163	1.30	77	1.86	65	49	64	99.5	64	0.115	0.339	21.35
367	60.2	0.0	59.213	0.162	1.30	77	1.86	64	49	64	98.7	64	0.118	0.344	21.45
368	60.1	0.0	59.374	0.161	1.30	77	1.86	64	49	63	98.1	64	0.113	0.336	21.35
369	60.1	0.0	59.536	0.162	1.30	77	1.86	64	49	63	99.5	64	0.113	0.336	21.12
370	60.2	0.0	59.697	0.161	1.30	77	1.86	64	49	63	99.1	63	0.115	0.339	21.20
371	60.1	0.0	59.859	0.162	1.30	77	1.86	64	49	63	99.4	63	0.114	0.338	21.24
372	60.2	0.0	60.021	0.162	1.30	77	1.86	64	49	63	99.7	63	0.111	0.333	21.05
373	60.1	0.0	60.184	0.163	1.30	77	1.86	64	49	64	100.8	63	0.114	0.338	21.05
374	60.1	0.0	60.346	0.162	1.30	77	1.87	64	49	63	100.0	63	0.113	0.336	21.15
375	60.2	-0.1	60.508	0.162	1.29	77	1.86	64	49	63	99.6	63	0.115	0.339	21.19
376	60.1	0.1	60.669	0.161	1.30	77	1.86	64	49	63	98.3	63	0.119	0.345	21.47
377	60.2	-0.1	60.831	0.162	1.30	77	1.87	64	49	63	98.3	63	0.114	0.338	21.43
378	60.2	0.0	60.992	0.161	1.31	77	1.86	64	49	63	98.6	63	0.112	0.335	21.10
379	60.3	-0.1	61.154	0.162	1.30	77	1.86	64	49	63	99.4	63	0.119	0.345	21.33
380	60.2	0.1	61.317	0.163	1.30	77	1.86	64	49	63	98.8	63	0.118	0.344	21.61
381	60.2	0.0	61.479	0.162	1.30	77	1.86	64	49	63	98.1	63	0.114	0.338	21.38
382	60.3	-0.1	61.641	0.162	1.29	77	1.86	63	49	63	99.0	63	0.115	0.339	21.24
383	60.2	0.1	61.803	0.162	1.30	77	1.86	63	49	63	99.4	63	0.113	0.336	21.19
384	60.2	0.0	61.965	0.162	1.30	77	1.86	63	49	62	99.2	62	0.117	0.342	21.28
385	60.3	0.0	62.126	0.161	1.30	77	1.86	63	49	63	98.0	62	0.116	0.341	21.41
386	60.3	0.0	62.288	0.162	1.30	77	1.86	63	49	62	98.5	62	0.116	0.341	21.36
387	60.2	0.1	62.450	0.162	1.30	77	1.86	63	48	62	98.9	62	0.113	0.336	21.22
388	60.1	0.1	62.613	0.163	1.30	77	1.87	63	49	62	100.1	67	0.117	0.342	21.32
389	60.0	0.2	62.775	0.162	1.30	77	1.87	63	49	62	99.3	69	0.117	0.342	21.57
390	59.5	0.5	62.936	0.161	1.29	77	1.87	63	49	62	98.3	70	0.117	0.342	21.60
391	59.1	0.4	63.098	0.162	1.30	77	1.86	63	49	62	99.6	71	0.111	0.333	21.35
392	58.7	0.4	63.259	0.161	1.30	77	1.87	63	49	62	100.3	72	0.112	0.335	21.13

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
393	58.2	0.5	63.421	0.162	1.30	77	1.87	64	49	62	101.2	73	0.114	0.338	21.29
394	57.7	0.5	63.583	0.162	1.30	77	1.87	64	49	62	100.5	73	0.116	0.341	21.49
395	57.1	0.6	63.745	0.162	1.30	77	1.86	64	49	62	100.0	72	0.114	0.338	21.48
396	56.7	0.4	63.907	0.162	1.30	77	1.87	64	49	62	100.2	72	0.113	0.336	21.33
397	56.2	0.5	64.068	0.161	1.30	77	1.87	64	49	62	100.1	72	0.113	0.336	21.28
398	55.6	0.6	64.229	0.161	1.30	76	1.87	64	49	62	100.5	71	0.110	0.332	21.13
399	55.1	0.5	64.391	0.162	1.30	76	1.87	64	49	62	101.4	71	0.114	0.338	21.17
400	54.6	0.5	64.552	0.161	1.30	76	1.87	64	49	62	100.3	71	0.114	0.338	21.36
401	54.0	0.5	64.714	0.162	1.30	76	1.87	64	49	62	100.5	71	0.114	0.338	21.36
402	53.6	0.4	64.877	0.163	1.30	76	1.87	64	49	62	101.2	71	0.113	0.336	21.31
403	53.2	0.5	65.038	0.161	1.29	76	1.87	64	49	62	99.9	72	0.116	0.341	21.41
404	52.6	0.5	65.199	0.161	1.30	76	1.87	64	49	62	99.4	72	0.116	0.341	21.56
405	52.0	0.7	65.361	0.162	1.30	76	1.87	64	49	62	99.5	71	0.117	0.342	21.60
406	51.5	0.4	65.522	0.161	1.30	76	1.87	64	49	61	98.8	71	0.115	0.339	21.54
407	51.0	0.5	65.683	0.161	1.30	76	1.87	64	49	62	99.5	72	0.113	0.336	21.37
408	50.2	0.7	65.846	0.163	1.29	76	1.87	64	49	61	101.4	73	0.114	0.338	21.34
409	49.8	0.4	66.008	0.162	1.30	76	1.87	64	49	61	100.6	72	0.115	0.339	21.43
410	49.3	0.5	66.169	0.161	1.30	76	1.87	64	50	61	99.6	72	0.115	0.339	21.47
411	48.7	0.6	66.330	0.161	1.30	76	1.88	64	50	61	99.6	72	0.114	0.338	21.42
412	48.1	0.6	66.492	0.162	1.29	76	1.87	64	50	62	100.6	72	0.113	0.336	21.33
413	47.6	0.5	66.653	0.161	1.30	76	1.88	64	50	64	100.4	72	0.112	0.335	21.24
414	47.0	0.6	66.814	0.161	1.30	76	1.88	64	50	63	100.2	73	0.117	0.342	21.43
415	46.5	0.5	66.977	0.163	1.30	76	1.88	64	50	62	100.6	73	0.116	0.341	21.63
416	46.1	0.4	67.138	0.161	1.30	76	1.88	64	50	63	99.3	73	0.114	0.338	21.49
417	45.5	0.6	67.300	0.162	1.29	76	1.87	64	50	63	100.4	74	0.115	0.339	21.45
418	45.0	0.5	67.461	0.161	1.30	76	1.87	64	50	63	100.4	75	0.110	0.332	21.28
419	44.4	0.6	67.622	0.161	1.30	76	1.87	64	50	64	100.9	74	0.114	0.338	21.24
420	44.0	0.4	67.784	0.162	1.30	76	1.87	64	50	64	101.2	74	0.114	0.338	21.42
421	43.5	0.5	67.946	0.162	1.30	76	1.88	64	50	65	100.4	74	0.117	0.342	21.56
422	43.0	0.5	68.108	0.162	1.30	76	1.88	64	50	64	100.2	75	0.114	0.338	21.57
423	42.3	0.6	68.269	0.161	1.29	76	1.87	65	50	65	99.7	74	0.115	0.339	21.47
424	41.9	0.5	68.430	0.161	1.29	76	1.87	65	50	65	99.9	75	0.114	0.338	21.47
425	41.4	0.4	68.592	0.162	1.30	76	1.88	65	50	65	100.9	75	0.113	0.336	21.39
426	41.0	0.4	68.753	0.161	1.30	76	1.88	65	50	65	100.7	75	0.112	0.335	21.29
427	40.4	0.6	68.914	0.161	1.30	76	1.87	65	50	65	100.3	76	0.119	0.345	21.59
428	39.8	0.7	69.076	0.162	1.30	76	1.87	65	50	65	99.8	76	0.117	0.342	21.83
429	39.6	0.2	69.238	0.162	1.30	76	1.87	65	50	64	99.7	76	0.114	0.338	21.60
430	38.9	0.6	69.399	0.161	1.30	76	1.87	65	50	66	99.7	72	0.114	0.338	21.42
431	38.6	0.3	69.561	0.162	1.30	76	1.87	65	50	66	100.2	71	0.116	0.341	21.46
432	38.4	0.3	69.721	0.160	1.30	76	1.87	65	50	65	98.8	70	0.113	0.336	21.39
433	38.2	0.2	69.883	0.162	1.30	76	1.87	65	50	65	100.3	69	0.114	0.338	21.28
434	38.0	0.2	70.045	0.162	1.30	76	1.86	65	50	65	100.4	69	0.114	0.338	21.32
435	37.8	0.2	70.208	0.163	1.29	76	1.87	65	50	65	100.8	69	0.115	0.339	21.36
436	37.7	0.1	70.369	0.161	1.30	76	1.87	65	50	64	98.7	69	0.121	0.348	21.69

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
437	37.6	0.1	70.530	0.161	1.29	76	1.86	65	50	65	97.8	69	0.116	0.341	21.73
438	37.4	0.2	70.691	0.161	1.30	76	1.86	65	50	64	98.3	68	0.115	0.339	21.45
439	37.3	0.1	70.853	0.162	1.30	76	1.86	65	50	64	99.5	68	0.116	0.341	21.44
440	37.3	0.0	71.014	0.161	1.30	76	1.87	65	50	64	98.9	68	0.115	0.339	21.44
441	37.2	0.1	71.177	0.163	1.30	76	1.87	65	50	64	100.4	68	0.114	0.338	21.34
442	37.2	0.0	71.339	0.162	1.30	76	1.86	65	50	64	100.2	68	0.113	0.336	21.25
443	37.2	0.0	71.501	0.162	1.30	76	1.87	65	50	64	100.4	68	0.114	0.338	21.25
444	37.2	0.0	71.662	0.161	1.29	76	1.86	64	50	64	100.1	68	0.110	0.332	21.11
445	37.1	0.1	71.824	0.162	1.30	76	1.87	64	50	64	101.0	68	0.115	0.339	21.16
446	37.1	-0.1	71.985	0.161	1.30	76	1.86	64	50	64	99.9	68	0.113	0.336	21.30
447	37.2	0.0	72.147	0.162	1.30	76	1.86	64	49	64	100.4	68	0.113	0.336	21.20
448	37.1	0.1	72.309	0.162	1.30	76	1.87	64	49	64	100.5	68	0.114	0.338	21.25
449	37.0	0.0	72.471	0.162	1.30	76	1.87	64	49	64	100.3	68	0.114	0.338	21.30
450	37.1	-0.1	72.633	0.162	1.30	76	1.86	64	49	64	100.3	68	0.113	0.336	21.25
451	37.1	0.0	72.794	0.161	1.29	76	1.86	64	49	64	99.1	68	0.120	0.346	21.53
452	37.1	-0.1	72.956	0.162	1.30	76	1.86	64	49	64	99.4	68	0.110	0.332	21.39
453	37.1	0.0	73.118	0.162	1.30	76	1.87	64	49	64	100.5	68	0.113	0.336	21.06
454	37.1	0.0	73.279	0.161	1.30	76	1.87	64	49	64	99.7	68	0.119	0.345	21.48
455	37.1	-0.1	73.442	0.163	1.30	76	1.87	64	49	64	100.5	68	0.108	0.329	21.25
456	37.0	0.1	73.604	0.162	1.30	76	1.86	64	49	64	101.1	68	0.113	0.336	20.97
457	37.1	-0.1	73.766	0.162	1.30	76	1.87	64	49	64	101.2	68	0.113	0.336	21.20
458	37.1	0.0	73.926	0.160	1.29	76	1.87	65	49	64	99.3	68	0.114	0.338	21.25
459	37.1	0.0	74.088	0.162	1.30	76	1.86	64	49	64	100.5	68	0.112	0.335	21.20
460	37.2	-0.1	74.250	0.162	1.30	76	1.86	65	49	65	100.3	68	0.117	0.342	21.34
461	37.2	0.0	74.411	0.161	1.30	76	1.86	65	49	64	99.0	69	0.116	0.341	21.54
462	37.2	0.0	74.574	0.163	1.30	76	1.86	65	49	64	100.1	71	0.116	0.341	21.52
463	37.2	0.0	74.736	0.162	1.29	76	1.87	65	49	65	99.9	68	0.112	0.335	21.33
464	37.1	0.0	74.897	0.161	1.30	76	1.87	65	49	65	99.6	68	0.115	0.339	21.25
465	37.1	0.0	75.058	0.161	1.30	76	1.86	65	49	64	99.6	67	0.113	0.336	21.29
466	37.2	-0.1	75.220	0.162	1.30	76	1.87	65	49	64	100.1	67	0.115	0.339	21.28
467	37.2	-0.1	75.382	0.162	1.30	76	1.86	65	49	64	99.6	66	0.117	0.342	21.45
468	37.1	0.1	75.543	0.161	1.30	77	1.86	64	48	64	98.4	66	0.115	0.339	21.44
469	37.1	0.0	75.706	0.163	1.30	77	1.87	64	49	64	99.8	66	0.115	0.339	21.35
470	37.1	0.0	75.868	0.162	1.30	77	1.86	64	49	64	98.9	65	0.119	0.345	21.52
471	37.1	0.0	76.030	0.162	1.30	77	1.86	64	48	63	98.1	65	0.118	0.344	21.65
472	37.2	-0.1	76.191	0.161	1.30	77	1.87	64	48	63	97.7	68	0.116	0.341	21.54
473	37.2	0.0	76.353	0.162	1.30	77	1.87	64	48	64	98.8	66	0.116	0.341	21.46
474	37.3	0.0	76.514	0.161	1.30	76	1.87	64	48	63	98.4	66	0.116	0.341	21.44
475	37.2	0.0	76.676	0.162	1.30	77	1.86	64	48	63	99.1	66	0.115	0.339	21.39
476	37.2	0.1	76.839	0.163	1.30	77	1.86	64	48	64	99.7	65	0.116	0.341	21.38
477	37.2	-0.1	77.001	0.162	1.29	77	1.86	64	48	64	99.2	66	0.114	0.338	21.34
478	37.2	0.0	77.163	0.162	1.30	77	1.87	64	48	64	99.4	66	0.116	0.341	21.35
479	37.2	0.0	77.324	0.161	1.30	76	1.86	64	48	64	98.7	66	0.115	0.339	21.39
480	37.2	0.0	77.486	0.162	1.29	76	1.87	64	48	64	99.6	67	0.114	0.338	21.31

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
481	37.2	0.0	77.647	0.161	1.30	76	1.87	64	48	64	100.1	71	0.110	0.332	21.13
482	36.8	0.4	77.809	0.162	1.30	77	1.88	64	48	64	101.3	73	0.116	0.341	21.28
483	36.5	0.3	77.971	0.162	1.31	77	1.87	64	48	64	100.8	75	0.113	0.336	21.46
484	36.0	0.4	78.133	0.162	1.29	77	1.88	64	48	64	100.8	76	0.114	0.338	21.40
485	35.5	0.5	78.294	0.161	1.29	77	1.88	64	48	65	100.2	77	0.115	0.339	21.51
486	35.1	0.4	78.456	0.162	1.30	77	1.87	65	48	64	100.7	78	0.114	0.338	21.53
487	34.7	0.4	78.617	0.161	1.30	77	1.87	65	48	65	99.6	76	0.118	0.344	21.66
488	34.4	0.4	78.778	0.161	1.30	77	1.86	65	48	65	99.5	77	0.112	0.335	21.56
489	34.0	0.4	78.940	0.162	1.30	77	1.87	65	48	65	101.3	80	0.112	0.335	21.32
490	33.6	0.4	79.102	0.162	1.30	77	1.87	65	49	65	101.3	77	0.117	0.342	21.55
491	33.4	0.2	79.263	0.161	1.29	77	1.88	65	49	64	100.1	77	0.110	0.332	21.43
492	33.0	0.4	79.425	0.162	1.29	77	1.87	65	49	64	101.3	75	0.114	0.338	21.27
493	32.6	0.4	79.586	0.161	1.29	77	1.88	65	49	65	100.1	75	0.117	0.342	21.58
494	32.2	0.4	79.747	0.161	1.30	77	1.88	65	49	63	99.0	74	0.117	0.342	21.71
495	31.8	0.4	79.908	0.161	1.30	77	1.88	65	49	64	98.7	74	0.116	0.341	21.65
496	31.5	0.4	80.070	0.162	1.30	77	1.88	65	49	64	99.8	74	0.114	0.338	21.51
497	31.1	0.3	80.232	0.162	1.30	77	1.88	65	49	64	100.7	74	0.111	0.333	21.27
498	30.7	0.4	80.394	0.162	1.29	77	1.87	65	49	64	101.5	73	0.111	0.333	21.12
499	30.4	0.4	80.555	0.161	1.30	77	1.87	65	49	65	101.3	76	0.112	0.335	21.19
500	30.0	0.3	80.716	0.161	1.30	77	1.87	65	49	64	100.9	74	0.113	0.336	21.29
501	29.6	0.4	80.878	0.162	1.30	77	1.87	65	49	65	101.4	74	0.110	0.332	21.18
502	29.2	0.4	81.039	0.161	1.30	77	1.88	65	49	64	101.4	74	0.110	0.332	21.04
503	28.8	0.5	81.201	0.162	1.30	77	1.88	65	49	65	102.0	74	0.113	0.336	21.18
504	28.4	0.4	81.363	0.162	1.29	77	1.88	65	49	65	101.1	74	0.115	0.339	21.42
505	28.0	0.4	81.524	0.161	1.29	77	1.88	65	49	65	99.8	74	0.114	0.338	21.46
506	27.5	0.5	81.685	0.161	1.30	77	1.88	65	49	64	99.4	75	0.119	0.345	21.66
507	27.1	0.4	81.846	0.161	1.30	77	1.88	65	49	65	98.7	75	0.117	0.342	21.81
508	26.8	0.4	82.008	0.162	1.30	77	1.88	66	49	65	99.9	75	0.110	0.332	21.39
509	26.4	0.3	82.170	0.162	1.30	77	1.88	66	49	66	101.4	75	0.112	0.335	21.15
510	26.0	0.4	82.332	0.162	1.30	77	1.88	66	49	65	102.1	78	0.111	0.333	21.23
511	25.6	0.4	82.493	0.161	1.29	77	1.87	66	49	65	101.2	77	0.114	0.338	21.34
512	25.3	0.3	82.654	0.161	1.30	77	1.87	66	49	65	100.4	77	0.115	0.339	21.52
513	24.9	0.4	82.815	0.161	1.29	77	1.88	66	49	65	100.4	76	0.110	0.332	21.32
514	24.4	0.5	82.976	0.161	1.30	77	1.87	66	49	65	101.1	75	0.111	0.333	21.11
515	24.1	0.3	83.138	0.162	1.30	77	1.88	66	49	65	101.6	76	0.116	0.341	21.40
516	23.6	0.5	83.300	0.162	1.30	77	1.88	66	49	65	100.9	76	0.112	0.335	21.46
517	23.3	0.3	83.461	0.161	1.29	77	1.88	66	49	65	100.5	75	0.112	0.335	21.26
518	23.0	0.3	83.622	0.161	1.29	77	1.87	66	49	65	100.8	75	0.113	0.336	21.29
519	22.6	0.4	83.784	0.162	1.29	77	1.88	66	49	65	101.1	75	0.114	0.338	21.39
520	21.9	0.6	83.945	0.161	1.30	77	1.88	66	49	65	100.5	75	0.111	0.333	21.29
521	21.6	0.4	84.106	0.161	1.30	77	1.89	66	49	64	100.6	75	0.115	0.339	21.34
522	21.2	0.4	84.268	0.162	1.29	77	1.87	66	49	65	100.9	75	0.113	0.336	21.44
523	20.9	0.3	84.430	0.162	1.29	77	1.88	66	49	65	100.8	75	0.114	0.338	21.39
524	20.5	0.4	84.591	0.161	1.29	77	1.88	66	49	65	100.2	75	0.113	0.336	21.39

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
525	20.1	0.4	84.752	0.161	1.29	77	1.88	66	49	65	100.0	76	0.117	0.342	21.54
526	19.8	0.2	84.913	0.161	1.29	77	1.88	66	49	65	99.6	74	0.113	0.336	21.53
527	19.5	0.3	85.074	0.161	1.30	77	1.87	66	49	65	99.8	70	0.111	0.333	21.19
528	19.2	0.3	85.236	0.162	1.30	77	1.88	66	49	65	100.5	68	0.116	0.341	21.27
529	19.0	0.2	85.399	0.163	1.29	77	1.87	66	49	64	100.7	67	0.111	0.333	21.24
530	18.8	0.1	85.560	0.161	1.29	77	1.88	66	49	64	99.4	67	0.117	0.342	21.28
531	18.6	0.2	85.721	0.161	1.30	77	1.87	66	49	64	99.0	66	0.113	0.336	21.36
532	18.4	0.2	85.882	0.161	1.30	77	1.87	65	49	63	98.8	65	0.116	0.341	21.29
533	18.5	-0.1	86.044	0.162	1.30	77	1.87	65	49	63	99.2	65	0.115	0.339	21.37
534	18.3	0.2	86.205	0.161	1.30	77	1.88	65	49	62	98.9	65	0.112	0.335	21.19
535	18.2	0.1	86.368	0.163	1.30	77	1.88	65	49	63	100.6	65	0.114	0.338	21.14
536	18.1	0.1	86.529	0.161	1.29	77	1.88	65	49	63	99.0	64	0.116	0.341	21.32
537	18.0	0.0	86.691	0.162	1.29	77	1.88	65	49	63	98.9	64	0.116	0.341	21.40
538	18.0	0.1	86.852	0.161	1.30	77	1.88	65	49	63	97.9	64	0.118	0.344	21.49
539	17.8	0.1	87.013	0.161	1.30	77	1.87	65	49	63	97.6	63	0.116	0.341	21.48
540	18.0	-0.1	87.175	0.162	1.29	77	1.87	64	49	62	98.6	66	0.116	0.341	21.41
541	17.9	0.1	87.337	0.162	1.30	77	1.87	64	49	62	99.0	66	0.116	0.341	21.44
542	17.8	0.0	87.499	0.162	1.30	77	1.87	64	49	62	98.9	64	0.115	0.339	21.37
543	17.8	0.0	87.661	0.162	1.29	77	1.88	64	49	62	98.8	64	0.117	0.342	21.40
544	17.8	0.0	87.822	0.161	1.29	77	1.87	64	49	63	98.1	64	0.115	0.339	21.40
545	17.7	0.1	87.983	0.161	1.29	77	1.87	64	49	62	99.1	64	0.108	0.329	20.98
546	17.7	0.0	88.145	0.162	1.30	77	1.87	64	49	63	100.4	64	0.118	0.344	21.12
547	17.7	0.0	88.306	0.161	1.30	77	1.88	64	49	63	98.7	64	0.115	0.339	21.45
548	17.7	0.0	88.469	0.163	1.30	77	1.88	64	49	63	99.9	65	0.112	0.335	21.18
549	17.7	0.0	88.631	0.162	1.30	77	1.87	64	49	62	99.9	65	0.115	0.339	21.19
550	17.7	0.0	88.792	0.161	1.29	76	1.87	64	49	63	98.7	65	0.118	0.344	21.47
551	17.7	0.0	88.954	0.162	1.29	76	1.88	64	49	63	98.7	66	0.117	0.342	21.57
552	17.7	0.0	89.115	0.161	1.29	76	1.88	64	49	63	98.5	66	0.112	0.335	21.30
553	17.7	0.0	89.276	0.161	1.30	76	1.87	64	49	63	99.1	66	0.117	0.342	21.30
554	17.7	-0.1	89.438	0.162	1.29	76	1.87	64	49	63	99.4	66	0.115	0.339	21.44
555	17.7	0.0	89.600	0.162	1.30	76	1.88	64	49	64	99.8	66	0.111	0.333	21.16
556	17.7	0.0	89.762	0.162	1.30	76	1.87	64	49	63	100.8	66	0.112	0.335	21.02
557	17.8	-0.1	89.924	0.162	1.29	76	1.88	64	49	64	101.1	66	0.111	0.333	21.02
558	17.8	0.0	90.085	0.161	1.30	76	1.87	64	48	64	100.1	67	0.116	0.341	21.22
559	17.7	0.0	90.246	0.161	1.29	76	1.87	64	48	64	99.5	67	0.113	0.336	21.32
560	17.8	0.0	90.408	0.162	1.30	76	1.87	64	48	63	99.8	66	0.116	0.341	21.31
561	17.7	0.0	90.569	0.161	1.30	76	1.87	64	48	63	98.8	67	0.117	0.342	21.50
562	17.8	-0.1	90.732	0.163	1.30	76	1.87	64	48	63	100.0	67	0.113	0.336	21.37
563	17.7	0.1	90.893	0.161	1.30	76	1.87	64	48	63	99.2	67	0.115	0.339	21.28
564	17.8	-0.1	91.055	0.162	1.29	76	1.87	64	48	62	99.6	67	0.117	0.342	21.46
565	17.7	0.1	91.216	0.161	1.30	76	1.87	64	48	63	98.5	68	0.117	0.342	21.56
566	17.8	-0.1	91.377	0.161	1.30	76	1.87	64	48	63	98.6	68	0.114	0.338	21.44
567	17.9	-0.1	91.539	0.162	1.30	76	1.87	64	48	63	99.8	68	0.114	0.338	21.30
568	17.8	0.0	91.701	0.162	1.30	76	1.87	64	48	63	100.6	68	0.110	0.332	21.11

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
569	17.8	0.0	91.863	0.162	1.29	76	1.87	64	48	64	101.0	67	0.114	0.338	21.10
570	17.9	-0.1	92.025	0.162	1.29	76	1.87	64	48	63	100.6	68	0.114	0.338	21.29
571	17.9	0.0	92.186	0.161	1.29	76	1.87	64	48	64	99.8	68	0.112	0.335	21.20
572	18.0	-0.1	92.348	0.162	1.30	76	1.87	64	48	64	101.0	68	0.111	0.333	21.06
573	18.0	0.0	92.509	0.161	1.30	76	1.87	64	48	64	100.4	68	0.114	0.338	21.16
574	17.9	0.0	92.670	0.161	1.30	76	1.87	64	48	64	100.0	68	0.113	0.336	21.25
575	17.9	0.1	92.832	0.162	1.29	76	1.88	64	48	64	100.7	71	0.113	0.336	21.23
576	17.6	0.2	92.994	0.162	1.29	76	1.88	64	48	64	101.1	73	0.113	0.336	21.28
577	17.2	0.4	93.156	0.162	1.29	76	1.87	64	48	64	101.4	74	0.111	0.333	21.22
578	16.8	0.4	93.317	0.161	1.29	76	1.87	64	48	64	100.9	76	0.115	0.339	21.34
579	16.4	0.4	93.478	0.161	1.30	76	1.87	64	48	64	100.4	77	0.115	0.339	21.56
580	16.1	0.3	93.639	0.161	1.30	76	1.87	64	48	64	100.0	77	0.115	0.339	21.57
581	15.7	0.4	93.801	0.162	1.30	76	1.88	65	48	64	100.3	78	0.118	0.344	21.72
582	15.3	0.4	93.963	0.162	1.30	76	1.87	65	48	64	100.5	80	0.112	0.335	21.61
583	15.1	0.2	94.124	0.161	1.29	76	1.88	65	48	65	100.8	78	0.112	0.335	21.33
584	14.7	0.4	94.285	0.161	1.29	76	1.87	65	48	64	101.6	78	0.110	0.332	21.21
585	14.5	0.2	94.447	0.162	1.29	76	1.87	65	48	64	102.1	77	0.115	0.339	21.34
586	14.1	0.3	94.607	0.160	1.30	77	1.88	65	48	64	100.0	77	0.113	0.336	21.48
587	13.9	0.2	94.769	0.162	1.30	77	1.88	65	48	64	101.0	76	0.113	0.336	21.37
588	13.5	0.4	94.931	0.162	1.29	76	1.88	65	48	64	100.9	76	0.116	0.341	21.50
589	13.3	0.3	95.092	0.161	1.29	77	1.87	65	48	64	100.2	76	0.111	0.333	21.41
590	12.9	0.3	95.253	0.161	1.29	77	1.87	65	48	64	100.5	76	0.115	0.339	21.36
591	12.7	0.2	95.414	0.161	1.29	77	1.88	65	48	64	100.2	77	0.115	0.339	21.56
592	12.4	0.3	95.575	0.161	1.29	77	1.88	65	48	64	99.8	75	0.114	0.338	21.50
593	12.2	0.3	95.737	0.162	1.30	76	1.87	65	48	64	101.1	75	0.109	0.330	21.20
594	11.8	0.3	95.899	0.162	1.28	76	1.87	65	48	64	102.3	75	0.111	0.333	21.06
595	11.6	0.2	96.060	0.161	1.30	76	1.87	65	48	65	101.3	76	0.116	0.341	21.40
596	11.4	0.2	96.221	0.161	1.29	76	1.88	65	48	64	99.9	76	0.117	0.342	21.69
597	11.1	0.3	96.382	0.161	1.29	76	1.88	65	48	65	99.7	76	0.112	0.335	21.50
598	10.8	0.3	96.543	0.161	1.29	76	1.89	65	48	65	99.9	76	0.119	0.345	21.60
599	10.6	0.2	96.705	0.162	1.29	76	1.88	65	48	65	99.7	75	0.117	0.342	21.82
600	10.3	0.3	96.866	0.161	1.29	76	1.88	66	48	65	99.0	75	0.114	0.338	21.58
601	10.1	0.2	97.028	0.162	1.29	77	1.88	66	49	65	101.2	76	0.108	0.329	21.16
602	9.6	0.4	97.189	0.161	1.29	77	1.88	66	49	64	102.2	78	0.109	0.330	20.95
603	9.5	0.1	97.350	0.161	1.29	77	1.88	66	49	65	102.0	76	0.114	0.338	21.24
604	9.3	0.2	97.511	0.161	1.29	77	1.88	66	49	65	100.8	75	0.112	0.335	21.35
605	9.0	0.3	97.672	0.161	1.29	77	1.88	66	49	65	100.4	75	0.114	0.338	21.34
606	8.7	0.3	97.833	0.161	1.30	77	1.88	66	49	65	100.6	74	0.110	0.332	21.24
607	8.5	0.2	97.995	0.162	1.29	77	1.88	66	49	65	101.3	74	0.115	0.339	21.27
608	8.2	0.3	98.156	0.161	1.28	77	1.88	66	49	65	100.4	75	0.112	0.335	21.38
609	8.0	0.2	98.317	0.161	1.29	77	1.88	66	49	65	100.5	74	0.112	0.335	21.24
610	7.6	0.4	98.478	0.161	1.30	77	1.88	66	49	65	100.9	75	0.112	0.335	21.24
611	7.3	0.3	98.639	0.161	1.29	77	1.88	66	49	64	100.6	75	0.115	0.339	21.39
612	7.1	0.2	98.800	0.161	1.29	77	1.88	66	49	65	99.9	75	0.115	0.339	21.53

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 14:49
 Test Length: 681 min
 Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.06 in. Hg
 Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
613	6.8	0.2	98.962	0.162	1.28	77	1.88	66	49	64	100.1	75	0.116	0.341	21.58
614	6.4	0.5	99.123	0.161	1.29	77	1.88	66	49	65	99.7	75	0.112	0.335	21.44
615	6.1	0.2	99.284	0.161	1.29	77	1.88	66	49	64	100.2	75	0.114	0.338	21.34
616	5.9	0.2	99.444	0.160	1.29	77	1.88	66	49	65	99.4	73	0.115	0.339	21.46
617	5.6	0.3	99.606	0.162	1.29	77	1.88	66	49	64	100.1	73	0.115	0.339	21.49
618	5.1	0.5	99.767	0.161	1.29	77	1.88	66	49	64	99.3	73	0.116	0.341	21.54
619	4.9	0.2	99.929	0.162	1.29	77	1.89	66	49	64	100.4	73	0.110	0.332	21.30
620	4.7	0.2	100.090	0.161	1.29	77	1.89	66	49	64	100.4	73	0.115	0.339	21.26
621	4.4	0.2	100.251	0.161	1.29	77	1.88	66	49	65	99.9	68	0.112	0.335	21.30
622	4.3	0.1	100.411	0.160	1.29	77	1.88	65	49	64	98.8	67	0.115	0.339	21.24
623	4.2	0.0	100.573	0.162	1.30	77	1.88	65	49	64	99.8	67	0.115	0.339	21.37
624	4.2	0.1	100.735	0.162	1.30	77	1.87	65	49	64	99.6	66	0.113	0.336	21.27
625	4.1	0.0	100.897	0.162	1.29	77	1.87	65	49	64	99.8	65	0.114	0.338	21.20
626	4.0	0.1	101.058	0.161	1.29	77	1.87	65	49	64	99.6	65	0.110	0.332	21.05
627	4.0	0.0	101.219	0.161	1.29	77	1.88	65	49	63	99.9	64	0.114	0.338	21.04
628	4.0	0.0	101.380	0.161	1.30	77	1.88	65	49	63	99.4	64	0.114	0.338	21.21
629	4.0	0.1	101.541	0.161	1.29	77	1.87	65	49	63	99.0	64	0.114	0.338	21.21
630	4.0	0.0	101.703	0.162	1.29	77	1.88	65	49	63	99.7	64	0.113	0.336	21.17
631	3.9	0.1	101.865	0.162	1.29	77	1.88	64	49	63	99.6	63	0.115	0.339	21.20
632	4.0	-0.1	102.026	0.161	1.30	77	1.88	64	49	63	98.6	63	0.116	0.341	21.33
633	4.1	0.0	102.188	0.162	1.29	77	1.88	64	49	63	98.9	63	0.115	0.339	21.33
634	4.1	0.0	102.349	0.161	1.29	77	1.87	64	49	63	98.6	63	0.113	0.336	21.19
635	4.0	0.1	102.510	0.161	1.29	76	1.87	64	48	63	99.3	63	0.112	0.335	21.05
636	4.1	-0.1	102.671	0.161	1.29	76	1.88	64	48	62	99.5	63	0.115	0.339	21.15
637	4.0	0.0	102.833	0.162	1.30	76	1.87	64	48	62	99.5	63	0.116	0.341	21.33
638	4.1	0.0	102.995	0.162	1.29	76	1.88	64	48	62	99.4	63	0.112	0.335	21.19
639	4.1	0.0	103.157	0.162	1.29	76	1.88	64	48	62	99.7	62	0.115	0.339	21.14
640	4.1	0.0	103.318	0.161	1.29	76	1.88	64	48	62	99.0	62	0.114	0.338	21.22
641	4.1	0.0	103.479	0.161	1.29	76	1.88	63	48	62	98.6	62	0.117	0.342	21.31
642	4.1	0.0	103.640	0.161	1.29	76	1.87	63	48	62	98.3	62	0.114	0.338	21.31
643	4.1	0.0	103.802	0.162	1.30	76	1.88	63	48	62	98.6	62	0.120	0.346	21.45
644	4.1	0.0	103.964	0.162	1.29	76	1.88	63	48	62	98.0	62	0.117	0.342	21.59
645	4.2	-0.1	104.126	0.162	1.30	76	1.87	63	48	62	98.1	62	0.116	0.341	21.41
646	4.2	0.0	104.287	0.161	1.29	76	1.87	63	48	62	98.5	62	0.112	0.335	21.17
647	4.2	0.0	104.448	0.161	1.29	76	1.88	63	48	62	99.3	62	0.113	0.336	21.03
648	4.2	0.0	104.610	0.162	1.30	76	1.87	63	48	61	99.6	62	0.118	0.344	21.31
649	4.2	-0.1	104.771	0.161	1.30	76	1.88	63	48	62	97.7	62	0.119	0.345	21.59
650	4.3	0.0	104.933	0.162	1.30	76	1.88	63	48	61	98.0	62	0.115	0.339	21.45
651	4.3	0.0	105.095	0.162	1.29	76	1.87	63	48	61	99.3	62	0.110	0.332	21.03
652	4.2	0.1	105.257	0.162	1.29	76	1.87	63	48	61	100.2	62	0.116	0.341	21.08
653	4.3	-0.1	105.418	0.161	1.29	76	1.87	63	48	61	99.1	62	0.113	0.336	21.22
654	4.3	0.0	105.579	0.161	1.30	76	1.88	62	48	61	99.1	62	0.113	0.336	21.08
655	4.3	0.0	105.741	0.162	1.29	76	1.87	62	48	61	99.7	62	0.116	0.341	21.22
656	4.3	0.0	105.902	0.161	1.30	76	1.88	62	48	61	99.0	62	0.111	0.333	21.13

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 2
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E

Test Start Time: 14:49
Test Length: 681 min
Recording Interval: 1 min

Test Date: 12/3/24

Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
Pre-test 0 cfm @ 17.06 in. Hg
Post-Test 0 cfm @ 9.8 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
657	4.3	-0.1	106.064	0.162	1.30	76	1.87	62	48	62	100.3	62	0.112	0.335	20.94
658	4.3	0.1	106.226	0.162	1.29	76	1.88	62	48	61	100.3	63	0.115	0.339	21.14
659	4.3	0.0	106.387	0.161	1.29	76	1.88	62	48	61	99.2	63	0.113	0.336	21.19
660	4.4	-0.1	106.549	0.162	1.29	76	1.88	62	48	61	99.5	62	0.116	0.341	21.23
661	4.4	0.0	106.710	0.161	1.30	76	1.88	62	48	61	98.4	62	0.116	0.341	21.36
662	4.4	0.0	106.871	0.161	1.30	76	1.87	62	48	61	98.1	62	0.116	0.341	21.36
663	4.4	0.0	107.033	0.162	1.30	76	1.88	62	48	61	98.6	62	0.117	0.342	21.41
664	4.4	0.0	107.195	0.162	1.29	76	1.87	62	48	62	98.6	62	0.115	0.339	21.36
665	4.4	0.0	107.356	0.161	1.29	76	1.88	62	48	62	98.2	63	0.117	0.342	21.37
666	4.5	-0.1	107.518	0.162	1.30	76	1.87	62	48	62	98.9	63	0.115	0.339	21.38
667	4.5	0.0	107.679	0.161	1.30	76	1.87	62	48	62	98.7	64	0.113	0.336	21.20
668	4.4	0.1	107.840	0.161	1.29	76	1.88	62	48	63	99.3	68	0.117	0.342	21.35
669	4.1	0.3	108.002	0.162	1.30	76	1.87	62	48	62	99.5	70	0.117	0.342	21.59
670	3.7	0.3	108.164	0.162	1.30	76	1.87	63	48	62	99.5	71	0.114	0.338	21.49
671	3.3	0.4	108.325	0.161	1.30	76	1.88	63	48	63	99.4	72	0.116	0.341	21.46
672	3.0	0.4	108.486	0.161	1.29	75	1.88	63	48	63	99.6	73	0.115	0.339	21.53
673	2.7	0.2	108.647	0.161	1.29	75	1.88	63	48	63	99.7	74	0.116	0.341	21.55
674	2.3	0.4	108.808	0.161	1.30	76	1.88	63	48	63	99.6	74	0.115	0.339	21.56
675	2.0	0.3	108.969	0.161	1.29	76	1.88	63	48	63	100.0	75	0.112	0.335	21.38
676	1.6	0.4	109.131	0.162	1.29	76	1.88	63	48	64	101.5	75	0.111	0.333	21.20
677	1.4	0.2	109.292	0.161	1.29	76	1.88	63	48	63	101.1	75	0.114	0.338	21.29
678	1.1	0.4	109.453	0.161	1.29	76	1.89	64	48	64	100.8	76	0.112	0.335	21.35
679	0.8	0.3	109.614	0.161	1.29	76	1.88	64	48	64	100.6	76	0.116	0.341	21.46
680	0.6	0.2	109.774	0.160	1.29	76	1.88	64	48	64	99.6	76	0.113	0.336	21.50
681	0.0	0.6	109.935	0.161	1.30	76	1.89	64	48	64	100.0	77	0.117	0.342	21.56

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	109.565	0.161	1.00	76.7	2.18	64.80	49.93	100.0
Minimum	0.000	0.159	0.98	66	2.10	61	44	97.2
Max	109.565	0.182	1.01	79	2.20	67	52	114.4
0	0.000		1.37	66	2.60	61	49	
1	0.182	0.182	1.59	66	2.80	62	44	114.4
2	0.350	0.168	1.01	66	2.10	62	44	106.3
3	0.510	0.160	1.00	66	2.10	62	44	101.3
4	0.670	0.160	1.00	66	2.10	62	44	101.1
5	0.829	0.159	1.02	66	2.10	62	44	100.5
6	0.989	0.160	1.02	66	2.10	62	44	101.3
7	1.150	0.161	1.01	66	2.10	62	44	102.0
8	1.309	0.159	1.01	66	2.10	62	44	101.2
9	1.470	0.161	1.01	67	2.10	63	44	102.6
10	1.630	0.160	1.01	67	2.10	63	44	101.6
11	1.789	0.159	1.01	67	2.10	63	44	100.9
12	1.949	0.160	1.00	67	2.10	63	44	101.7
13	2.109	0.160	1.00	67	2.10	63	45	102.3
14	2.268	0.159	1.00	67	2.10	63	45	102.0
15	2.428	0.160	1.00	67	2.10	63	45	102.7
16	2.588	0.160	1.00	67	2.10	64	45	102.9
17	2.747	0.159	0.99	68	2.10	64	45	102.2
18	2.907	0.160	1.00	68	2.10	64	45	102.7
19	3.067	0.160	1.00	68	2.10	64	45	101.9
20	3.226	0.159	1.00	68	2.10	64	45	100.4
21	3.386	0.160	1.00	68	2.10	64	45	101.2
22	3.546	0.160	1.00	69	2.10	64	46	101.9
23	3.705	0.159	1.00	69	2.10	65	46	100.9
24	3.865	0.160	1.00	69	2.10	65	46	101.1
25	4.025	0.160	0.99	69	2.10	65	46	100.7
26	4.184	0.159	1.00	69	2.10	65	46	99.8
27	4.344	0.160	1.00	70	2.10	65	46	100.8
28	4.504	0.160	0.99	70	2.10	65	46	101.2
29	4.664	0.160	1.00	70	2.10	65	46	101.3
30	4.823	0.159	0.99	70	2.10	65	47	100.6
31	4.984	0.161	1.00	70	2.10	66	47	102.0
32	5.143	0.159	1.00	71	2.10	66	47	100.7
33	5.303	0.160	1.00	71	2.10	66	47	101.3
34	5.463	0.160	0.99	71	2.10	66	47	101.0
35	5.622	0.159	1.00	71	2.10	66	47	100.6
36	5.782	0.160	1.00	71	2.10	66	47	101.5
37	5.943	0.161	0.99	72	2.10	66	47	101.8
38	6.102	0.159	1.00	72	2.10	66	47	100.4
39	6.262	0.160	1.00	72	2.10	66	48	101.1
40	6.423	0.161	1.00	72	2.10	66	48	101.9

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
41	6.582	0.159	1.00	72	2.10	66	48	100.8
42	6.742	0.160	1.00	72	2.10	66	48	101.3
43	6.903	0.161	0.99	72	2.10	67	48	102.0
44	7.063	0.160	1.00	73	2.10	67	48	101.9
45	7.223	0.160	1.00	73	2.10	67	48	101.4
46	7.383	0.160	1.00	73	2.10	67	48	100.1
47	7.543	0.160	1.00	73	2.10	67	48	99.7
48	7.703	0.160	1.00	73	2.10	67	48	99.8
49	7.864	0.161	1.00	73	2.10	67	48	101.0
50	8.024	0.160	1.00	74	2.10	67	48	101.1
51	8.184	0.160	1.00	74	2.10	67	48	101.6
52	8.345	0.161	1.00	74	2.10	67	48	103.1
53	8.505	0.160	1.00	74	2.10	67	49	103.2
54	8.665	0.160	1.00	74	2.10	67	49	102.5
55	8.826	0.161	1.00	74	2.10	67	49	102.0
56	8.986	0.160	0.99	74	2.10	67	49	100.8
57	9.146	0.160	1.00	75	2.10	67	49	100.8
58	9.307	0.161	1.00	75	2.10	67	49	102.1
59	9.468	0.161	1.00	75	2.10	67	49	102.3
60	9.628	0.160	1.00	75	2.10	67	49	100.5
61	9.788	0.160	1.00	75	2.10	67	49	99.4
62	9.950	0.162	1.00	75	2.10	68	49	101.5
63	10.110	0.160	1.00	75	2.10	68	49	101.3
64	10.270	0.160	1.00	75	2.10	68	49	101.2
65	10.431	0.161	1.00	75	2.10	68	49	101.9
66	10.591	0.160	1.00	76	2.10	68	49	101.3
67	10.751	0.160	1.00	76	2.10	68	49	100.9
68	10.913	0.162	1.00	76	2.10	68	50	102.5
69	11.073	0.160	0.99	76	2.10	68	50	101.2
70	11.233	0.160	1.00	76	2.10	68	50	100.4
71	11.394	0.161	1.00	76	2.10	68	50	101.5
72	11.555	0.161	0.99	76	2.10	68	50	101.7
73	11.715	0.160	1.00	76	2.10	68	50	100.1
74	11.876	0.161	1.00	76	2.10	68	50	100.7
75	12.037	0.161	1.00	76	2.10	68	50	101.0
76	12.197	0.160	1.00	77	2.20	68	50	100.1
77	12.358	0.161	1.00	77	2.20	68	50	101.6
78	12.519	0.161	1.00	77	2.10	68	50	102.4
79	12.680	0.161	1.00	77	2.10	68	50	102.0
80	12.840	0.160	1.00	77	2.10	68	50	100.7
81	13.001	0.161	1.00	77	2.10	68	50	100.9
82	13.162	0.161	1.00	77	2.20	68	50	100.8
83	13.323	0.161	1.00	77	2.10	68	50	101.1
84	13.483	0.160	1.00	77	2.10	68	50	100.6

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
85	13.645	0.162	1.00	77	2.20	68	50	101.5
86	13.806	0.161	1.00	77	2.20	68	50	100.6
87	13.966	0.160	1.00	77	2.10	68	50	99.6
88	14.127	0.161	1.00	77	2.10	68	50	99.7
89	14.288	0.161	1.00	78	2.20	68	50	99.8
90	14.449	0.161	1.00	78	2.10	68	50	100.3
91	14.610	0.161	1.00	78	2.10	68	50	100.9
92	14.771	0.161	1.00	78	2.10	68	51	100.8
93	14.932	0.161	1.00	78	2.10	68	51	100.6
94	15.092	0.160	1.01	78	2.10	68	51	99.9
95	15.254	0.162	1.01	78	2.20	68	51	100.7
96	15.415	0.161	1.00	78	2.10	67	51	99.4
97	15.576	0.161	1.00	78	2.10	67	51	99.3
98	15.736	0.160	1.00	78	2.20	67	51	99.3
99	15.898	0.162	1.00	78	2.10	67	51	100.6
100	16.058	0.160	1.00	78	2.10	67	51	99.5
101	16.219	0.161	1.00	78	2.20	67	51	100.2
102	16.381	0.162	1.00	78	2.20	67	51	100.4
103	16.542	0.161	1.00	78	2.10	67	51	99.6
104	16.702	0.160	1.00	78	2.10	67	51	99.1
105	16.863	0.161	1.01	78	2.10	67	51	99.8
106	17.025	0.162	1.00	78	2.20	67	51	100.8
107	17.185	0.160	1.00	78	2.10	67	51	100.0
108	17.346	0.161	1.00	78	2.10	67	51	100.3
109	17.508	0.162	1.00	78	2.10	67	51	101.1
110	17.669	0.161	1.00	78	2.20	67	51	100.9
111	17.830	0.161	1.00	78	2.10	67	51	100.0
112	17.991	0.161	1.01	78	2.10	67	51	99.8
113	18.153	0.162	1.00	78	2.10	67	51	100.8
114	18.313	0.160	1.00	78	2.10	67	51	99.2
115	18.474	0.161	1.00	78	2.20	67	51	100.3
116	18.635	0.161	1.01	78	2.20	67	51	100.6
117	18.797	0.162	1.00	78	2.10	67	51	100.8
118	18.957	0.160	1.00	78	2.20	67	51	99.4
119	19.118	0.161	1.00	79	2.10	67	51	99.9
120	19.280	0.162	1.00	78	2.20	67	51	100.1
121	19.441	0.161	1.00	78	2.20	66	51	99.6
122	19.601	0.160	1.01	78	2.10	66	51	99.8
123	19.763	0.162	1.00	78	2.20	66	51	101.3
124	19.924	0.161	1.00	78	2.10	66	51	100.1
125	20.085	0.161	1.00	78	2.20	66	51	99.6
126	20.246	0.161	1.00	78	2.10	66	51	99.4
127	20.408	0.162	1.01	78	2.20	66	51	100.7
128	20.568	0.160	1.00	78	2.20	66	51	100.0

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
129	20.729	0.161	1.01	79	2.20	66	51	100.6
130	20.891	0.162	1.01	78	2.10	66	51	101.0
131	21.053	0.162	1.00	78	2.10	66	51	100.6
132	21.213	0.160	1.00	78	2.10	66	51	99.3
133	21.375	0.162	1.01	78	2.10	66	51	100.2
134	21.537	0.162	1.00	78	2.10	66	51	99.9
135	21.698	0.161	1.00	78	2.10	66	51	99.8
136	21.859	0.161	1.00	78	2.10	65	51	99.9
137	22.020	0.161	1.01	78	2.10	65	51	99.4
138	22.182	0.162	1.00	78	2.10	65	51	99.8
139	22.343	0.161	1.00	78	2.10	65	51	99.6
140	22.504	0.161	1.00	78	2.10	65	51	99.8
141	22.666	0.162	1.01	78	2.20	65	51	100.2
142	22.828	0.162	1.00	78	2.10	65	51	100.4
143	22.988	0.160	1.01	78	2.10	65	51	98.7
144	23.150	0.162	1.01	78	2.10	65	51	99.5
145	23.311	0.161	1.01	78	2.10	65	51	99.3
146	23.473	0.162	1.00	78	2.10	65	51	100.0
147	23.634	0.161	1.01	78	2.10	65	51	98.5
148	23.795	0.161	1.01	78	2.10	65	51	98.2
149	23.958	0.163	1.01	78	2.10	64	51	99.7
150	24.119	0.161	1.00	78	2.10	64	51	98.4
151	24.280	0.161	1.01	78	2.10	64	51	98.6
152	24.441	0.161	1.01	78	2.10	64	51	99.4
153	24.604	0.163	1.01	78	2.10	64	51	101.4
154	24.765	0.161	1.01	78	2.10	64	51	99.7
155	24.926	0.161	1.01	78	2.10	64	51	99.1
156	25.087	0.161	1.01	78	2.10	64	51	98.6
157	25.249	0.162	1.01	78	2.10	64	51	98.9
158	25.410	0.161	1.00	78	2.10	64	50	98.6
159	25.572	0.162	1.01	78	2.10	64	50	98.9
160	25.733	0.161	1.01	78	2.10	64	50	98.0
161	25.895	0.162	1.00	78	2.10	64	50	99.3
162	26.056	0.161	1.00	78	2.10	64	50	98.9
163	26.218	0.162	1.01	78	2.10	64	50	99.6
164	26.380	0.162	1.01	78	2.10	64	50	100.0
165	26.541	0.161	1.00	78	2.10	64	50	99.4
166	26.702	0.161	1.00	78	2.10	64	50	99.2
167	26.864	0.162	1.01	78	2.10	64	50	99.3
168	27.026	0.162	1.01	78	2.10	64	50	98.7
169	27.187	0.161	1.01	78	2.10	64	50	98.0
170	27.348	0.161	1.01	78	2.10	64	50	98.0
171	27.509	0.161	1.01	78	2.10	64	50	98.7
172	27.672	0.163	1.00	78	2.10	64	50	100.5

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
173	27.832	0.160	1.01	78	2.10	64	50	99.0
174	27.994	0.162	1.01	78	2.10	64	50	100.3
175	28.155	0.161	1.01	78	2.10	64	50	99.5
176	28.317	0.162	1.00	78	2.20	64	50	100.2
177	28.478	0.161	1.01	78	2.20	64	50	99.6
178	28.639	0.161	1.01	78	2.20	64	50	99.8
179	28.801	0.162	1.01	78	2.10	64	50	100.6
180	28.962	0.161	1.00	78	2.20	64	50	100.4
181	29.123	0.161	1.00	78	2.20	64	50	100.6
182	29.284	0.161	1.01	78	2.20	64	50	100.0
183	29.446	0.162	1.01	78	2.20	64	50	100.1
184	29.606	0.160	1.01	78	2.20	64	50	99.6
185	29.767	0.161	1.00	78	2.20	64	50	100.8
186	29.929	0.162	1.01	78	2.20	64	50	100.9
187	30.091	0.162	1.00	77	2.20	64	50	101.0
188	30.251	0.160	1.00	77	2.20	64	50	100.1
189	30.412	0.161	1.01	77	2.20	65	50	100.6
190	30.574	0.162	1.01	77	2.20	65	50	100.8
191	30.735	0.161	1.00	77	2.20	65	51	100.2
192	30.896	0.161	1.01	77	2.20	65	51	100.3
193	31.057	0.161	1.01	77	2.20	65	51	99.5
194	31.219	0.162	1.00	77	2.20	65	51	99.7
195	31.379	0.160	1.00	77	2.20	65	51	98.6
196	31.540	0.161	1.01	77	2.20	65	51	99.6
197	31.702	0.162	1.00	77	2.20	65	51	100.9
198	31.863	0.161	1.00	77	2.20	65	51	100.2
199	32.023	0.160	1.00	77	2.20	65	51	98.8
200	32.185	0.162	1.01	77	2.20	65	51	100.0
201	32.346	0.161	1.00	77	2.20	65	51	100.0
202	32.507	0.161	1.00	77	2.20	65	51	100.5
203	32.668	0.161	1.00	77	2.20	65	51	100.8
204	32.830	0.162	1.01	77	2.20	65	51	100.9
205	32.990	0.160	1.00	77	2.20	65	51	99.1
206	33.150	0.160	1.00	77	2.20	65	51	99.7
207	33.312	0.162	1.00	77	2.20	65	51	101.8
208	33.473	0.161	1.00	77	2.20	65	51	101.5
209	33.634	0.161	1.00	77	2.20	65	51	101.3
210	33.795	0.161	1.00	77	2.20	65	51	100.6
211	33.957	0.162	1.00	77	2.20	65	51	100.9
212	34.117	0.160	1.00	77	2.20	65	51	100.2
213	34.277	0.160	1.00	77	2.20	65	51	100.5
214	34.439	0.162	1.00	77	2.20	65	51	101.2
215	34.600	0.161	0.99	77	2.20	65	51	100.0
216	34.760	0.160	1.00	77	2.20	65	51	99.6

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
217	34.921	0.161	1.00	77	2.20	65	51	100.9
218	35.083	0.162	1.00	77	2.20	65	51	102.0
219	35.243	0.160	1.00	77	2.20	65	51	101.1
220	35.404	0.161	1.00	77	2.20	65	51	101.4
221	35.565	0.161	1.00	77	2.20	65	51	100.2
222	35.726	0.161	1.00	77	2.20	65	51	99.8
223	35.887	0.161	1.00	77	2.20	65	51	99.7
224	36.047	0.160	1.00	77	2.20	65	51	99.0
225	36.209	0.162	1.00	77	2.20	65	52	101.3
226	36.369	0.160	1.00	77	2.20	65	51	101.1
227	36.530	0.161	1.01	77	2.20	65	51	101.5
228	36.692	0.162	1.01	77	2.20	65	51	101.0
229	36.853	0.161	1.00	77	2.20	65	51	99.8
230	37.014	0.161	1.00	77	2.20	65	51	100.1
231	37.175	0.161	1.00	77	2.20	65	51	100.3
232	37.337	0.162	1.00	77	2.20	65	51	100.5
233	37.497	0.160	1.00	77	2.20	65	51	99.1
234	37.658	0.161	1.01	77	2.20	64	51	99.8
235	37.820	0.162	1.00	77	2.20	64	51	100.0
236	37.981	0.161	1.00	77	2.10	64	51	99.2
237	38.142	0.161	1.00	77	2.10	64	51	99.9
238	38.303	0.161	1.00	77	2.20	64	51	99.7
239	38.465	0.162	1.00	77	2.20	64	51	99.8
240	38.626	0.161	1.00	77	2.20	64	51	99.1
241	38.787	0.161	1.00	77	2.10	64	51	99.1
242	38.948	0.161	1.00	77	2.10	64	51	99.5
243	39.109	0.161	1.00	77	2.10	64	51	99.8
244	39.270	0.161	1.00	77	2.20	64	51	99.7
245	39.431	0.161	1.00	77	2.20	64	51	100.0
246	39.593	0.162	1.00	77	2.10	64	51	100.7
247	39.754	0.161	1.00	77	2.20	64	51	100.0
248	39.914	0.160	1.00	77	2.20	64	51	99.6
249	40.075	0.161	1.00	77	2.20	64	51	100.3
250	40.237	0.162	1.00	77	2.20	64	51	101.0
251	40.397	0.160	1.00	77	2.20	64	51	99.8
252	40.559	0.162	1.00	77	2.20	64	51	100.5
253	40.720	0.161	0.99	77	2.10	64	51	99.9
254	40.881	0.161	1.00	77	2.20	64	51	100.3
255	41.042	0.161	1.00	77	2.20	64	51	100.2
256	41.203	0.161	1.00	77	2.20	64	51	99.5
257	41.365	0.162	1.00	77	2.20	64	51	99.2
258	41.525	0.160	1.00	77	2.20	64	50	97.8
259	41.686	0.161	1.00	77	2.20	64	50	98.9
260	41.848	0.162	1.00	77	2.20	64	50	99.7

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
261	42.009	0.161	1.00	77	2.20	64	50	98.6
262	42.170	0.161	1.00	77	2.20	64	50	99.3
263	42.330	0.160	1.00	77	2.10	64	50	99.5
264	42.493	0.163	1.00	77	2.20	64	50	100.8
265	42.653	0.160	1.00	77	2.20	64	50	98.5
266	42.814	0.161	1.00	77	2.20	64	50	98.8
267	42.975	0.161	1.00	77	2.10	64	50	98.3
268	43.137	0.162	1.00	77	2.20	64	50	99.7
269	43.297	0.160	1.00	77	2.10	64	50	99.0
270	43.458	0.161	1.00	77	2.20	64	50	99.3
271	43.621	0.163	1.00	77	2.10	64	50	100.7
272	43.781	0.160	1.00	77	2.10	64	50	99.1
273	43.942	0.161	1.00	77	2.10	64	50	99.4
274	44.103	0.161	1.00	77	2.10	63	50	99.1
275	44.265	0.162	1.00	77	2.20	63	50	99.9
276	44.426	0.161	1.00	77	2.20	63	50	99.7
277	44.587	0.161	1.00	77	2.20	63	50	99.0
278	44.749	0.162	1.00	77	2.10	63	50	98.7
279	44.910	0.161	1.00	77	2.10	63	50	99.0
280	45.071	0.161	1.00	77	2.20	63	50	99.6
281	45.232	0.161	1.00	77	2.20	63	50	99.3
282	45.394	0.162	1.00	77	2.20	63	50	100.2
283	45.555	0.161	1.00	77	2.10	63	50	99.6
284	45.716	0.161	1.01	77	2.20	63	50	98.9
285	45.877	0.161	1.01	77	2.20	63	50	98.5
286	46.039	0.162	1.00	77	2.10	63	50	99.4
287	46.200	0.161	1.00	77	2.20	63	50	99.6
288	46.361	0.161	1.00	77	2.20	63	50	101.0
289	46.523	0.162	1.00	77	2.20	63	50	101.6
290	46.683	0.160	1.00	77	2.20	63	50	99.2
291	46.844	0.161	1.00	77	2.20	63	50	98.7
292	47.005	0.161	1.00	77	2.20	63	50	98.9
293	47.167	0.162	1.00	77	2.20	63	50	100.7
294	47.327	0.160	1.00	77	2.20	63	50	99.3
295	47.488	0.161	1.00	77	2.20	64	50	99.6
296	47.650	0.162	1.00	77	2.20	64	50	100.3
297	47.811	0.161	1.00	77	2.20	64	50	99.5
298	47.971	0.160	1.00	77	2.20	64	50	98.6
299	48.132	0.161	1.00	77	2.20	64	50	99.3
300	48.294	0.162	1.00	77	2.20	64	50	99.9
301	48.454	0.160	1.00	77	2.20	64	50	98.3
302	48.615	0.161	1.00	77	2.20	64	50	98.6
303	48.777	0.162	1.00	77	2.20	64	50	99.4
304	48.937	0.160	1.00	77	2.20	64	50	98.7

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
305	49.098	0.161	1.00	77	2.20	64	50	99.6
306	49.259	0.161	1.00	77	2.20	64	50	99.8
307	49.420	0.161	1.00	77	2.20	64	50	99.7
308	49.581	0.161	1.00	77	2.20	64	50	99.4
309	49.742	0.161	1.00	77	2.20	64	50	99.4
310	49.904	0.162	1.00	77	2.20	64	50	100.5
311	50.064	0.160	1.00	77	2.20	64	50	100.3
312	50.224	0.160	1.00	77	2.20	64	50	100.6
313	50.386	0.162	1.00	77	2.20	64	51	101.2
314	50.547	0.161	1.00	77	2.20	65	51	100.4
315	50.707	0.160	1.00	77	2.20	65	51	100.4
316	50.868	0.161	1.00	77	2.20	65	51	101.5
317	51.030	0.162	1.00	77	2.20	65	51	101.9
318	51.190	0.160	1.00	77	2.20	65	51	99.8
319	51.350	0.160	1.00	77	2.20	65	51	99.2
320	51.512	0.162	1.00	77	2.20	65	51	100.6
321	51.673	0.161	0.99	77	2.20	65	51	100.9
322	51.833	0.160	1.00	77	2.20	65	51	100.2
323	51.994	0.161	1.00	77	2.20	66	51	99.9
324	52.155	0.161	1.00	77	2.20	66	51	99.7
325	52.315	0.160	1.00	77	2.20	66	51	99.7
326	52.476	0.161	1.00	77	2.20	66	51	100.9
327	52.638	0.162	1.00	77	2.20	66	51	101.5
328	52.798	0.160	1.00	77	2.20	66	51	100.0
329	52.958	0.160	1.00	77	2.20	66	51	100.0
330	53.119	0.161	1.00	77	2.20	66	51	100.9
331	53.280	0.161	1.00	77	2.20	66	51	100.9
332	53.441	0.161	1.00	77	2.20	66	51	101.2
333	53.601	0.160	1.00	77	2.20	66	51	100.3
334	53.763	0.162	1.00	77	2.20	66	51	100.4
335	53.923	0.160	1.00	77	2.20	66	51	99.3
336	54.084	0.161	1.00	77	2.20	66	51	100.3
337	54.245	0.161	1.00	77	2.20	66	51	99.7
338	54.406	0.161	0.99	77	2.20	66	51	99.5
339	54.566	0.160	1.00	77	2.20	66	51	99.6
340	54.727	0.161	1.00	77	2.20	66	51	100.6
341	54.889	0.162	1.00	77	2.20	66	51	100.8
342	55.049	0.160	1.00	77	2.20	66	51	98.6
343	55.210	0.161	1.00	77	2.20	66	51	98.6
344	55.372	0.162	1.00	77	2.20	66	51	99.8
345	55.532	0.160	0.99	78	2.20	66	51	99.3
346	55.693	0.161	1.00	78	2.20	66	51	99.9
347	55.854	0.161	1.00	78	2.20	66	51	100.3
348	56.015	0.161	1.00	78	2.20	66	51	100.4

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
349	56.176	0.161	1.00	78	2.20	66	51	99.8
350	56.337	0.161	1.00	78	2.20	66	51	99.4
351	56.498	0.161	1.00	78	2.20	66	51	99.6
352	56.659	0.161	1.00	78	2.20	66	51	100.1
353	56.820	0.161	1.00	78	2.20	65	51	100.0
354	56.981	0.161	1.00	78	2.20	65	51	99.3
355	57.142	0.161	1.00	78	2.20	65	51	99.4
356	57.303	0.161	1.00	78	2.20	65	51	100.4
357	57.464	0.161	1.00	78	2.20	65	51	100.0
358	57.625	0.161	1.00	78	2.20	65	51	99.3
359	57.786	0.161	0.99	78	2.20	65	51	99.2
360	57.947	0.161	1.00	78	2.20	65	50	99.2
361	58.108	0.161	1.00	78	2.20	65	50	98.7
362	58.269	0.161	1.00	78	2.20	65	50	98.0
363	58.430	0.161	1.00	78	2.20	65	50	98.5
364	58.591	0.161	1.00	78	2.20	65	50	99.3
365	58.753	0.162	1.00	78	2.20	65	50	99.5
366	58.914	0.161	0.99	78	2.20	65	50	98.5
367	59.074	0.160	1.00	78	2.20	65	50	97.8
368	59.236	0.162	1.00	78	2.20	64	50	99.0
369	59.397	0.161	1.00	78	2.20	64	50	99.2
370	59.558	0.161	1.00	78	2.20	64	50	99.4
371	59.719	0.161	1.00	78	2.20	64	50	99.1
372	59.881	0.162	1.00	78	2.20	64	50	100.0
373	60.042	0.161	0.99	78	2.20	64	50	99.9
374	60.203	0.161	1.00	78	2.20	64	50	99.6
375	60.364	0.161	1.00	78	2.20	64	50	99.3
376	60.526	0.162	1.00	78	2.20	64	50	99.2
377	60.687	0.161	1.00	78	2.20	64	50	98.0
378	60.847	0.160	1.01	78	2.20	64	50	98.3
379	61.009	0.162	1.00	78	2.20	64	50	99.7
380	61.171	0.162	1.00	78	2.20	64	50	98.5
381	61.332	0.161	1.00	78	2.20	64	50	97.8
382	61.493	0.161	1.00	78	2.20	64	50	98.7
383	61.655	0.162	1.01	78	2.20	64	50	99.7
384	61.816	0.161	0.99	78	2.20	64	50	98.9
385	61.977	0.161	1.00	78	2.20	64	50	98.3
386	62.138	0.161	1.00	78	2.20	64	50	98.1
387	62.300	0.162	1.00	78	2.20	63	50	99.2
388	62.461	0.161	1.00	78	2.20	64	50	99.1
389	62.622	0.161	1.00	78	2.20	64	50	99.0
390	62.783	0.161	1.00	78	2.20	64	50	98.6
391	62.945	0.162	1.00	78	2.20	64	50	99.9
392	63.105	0.160	1.00	78	2.20	64	50	100.0

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
393	63.266	0.161	1.00	78	2.20	64	50	100.9
394	63.428	0.162	1.00	78	2.20	64	50	100.8
395	63.589	0.161	1.00	78	2.20	64	50	99.6
396	63.749	0.160	1.00	78	2.20	64	50	99.3
397	63.911	0.162	1.00	78	2.20	64	50	101.0
398	64.072	0.161	0.99	78	2.20	64	50	100.8
399	64.233	0.161	1.00	77	2.20	64	50	101.0
400	64.394	0.161	1.00	78	2.20	64	50	100.5
401	64.555	0.161	1.00	78	2.20	64	50	100.0
402	64.716	0.161	1.00	77	2.20	64	50	100.2
403	64.876	0.160	1.00	77	2.20	64	50	99.6
404	65.038	0.162	1.00	77	2.20	64	50	100.3
405	65.199	0.161	0.99	77	2.20	64	50	99.2
406	65.359	0.160	1.00	77	2.20	64	50	98.5
407	65.520	0.161	1.00	77	2.20	64	50	99.8
408	65.682	0.162	1.00	77	2.20	64	50	101.1
409	65.842	0.160	1.00	77	2.20	64	50	99.7
410	66.003	0.161	1.00	77	2.20	64	50	99.9
411	66.164	0.161	1.00	77	2.20	64	50	99.9
412	66.326	0.162	1.00	77	2.20	64	51	100.9
413	66.486	0.160	1.00	77	2.20	64	51	100.1
414	66.647	0.161	1.00	77	2.20	64	51	100.5
415	66.809	0.162	1.00	77	2.20	64	51	100.3
416	66.969	0.160	1.00	77	2.20	64	51	98.9
417	67.130	0.161	1.00	77	2.20	64	51	100.1
418	67.291	0.161	1.00	77	2.20	64	51	100.7
419	67.452	0.161	0.99	77	2.20	64	51	101.2
420	67.612	0.160	1.00	77	2.20	64	51	100.2
421	67.773	0.161	1.00	77	2.20	64	51	100.1
422	67.934	0.161	0.99	77	2.20	65	51	99.8
423	68.095	0.161	1.00	77	2.20	65	51	100.0
424	68.255	0.160	1.00	77	2.20	65	51	99.6
425	68.417	0.162	1.00	77	2.20	65	51	101.2
426	68.577	0.160	1.00	77	2.20	65	51	100.3
427	68.738	0.161	1.00	77	2.20	65	51	100.6
428	68.899	0.161	1.00	77	2.20	65	51	99.4
429	69.060	0.161	1.00	77	2.20	65	51	99.4
430	69.220	0.160	1.00	77	2.20	65	51	99.4
431	69.381	0.161	1.00	77	2.20	65	51	99.9
432	69.542	0.161	0.99	77	2.20	65	51	99.7
433	69.702	0.160	1.00	77	2.20	65	51	99.3
434	69.863	0.161	1.00	77	2.20	65	51	100.0
435	70.025	0.162	1.00	77	2.20	65	51	100.5
436	70.186	0.161	0.99	77	2.20	65	51	99.0

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
437	70.346	0.160	0.99	77	2.20	65	51	97.5
438	70.507	0.161	1.00	77	2.20	65	51	98.6
439	70.668	0.161	1.00	77	2.20	65	51	99.2
440	70.829	0.161	1.00	77	2.20	65	51	99.2
441	70.990	0.161	1.00	77	2.20	65	51	99.4
442	71.151	0.161	1.00	77	2.20	65	51	99.9
443	71.312	0.161	1.00	77	2.20	65	51	100.1
444	71.473	0.161	1.00	77	2.20	64	51	100.4
445	71.634	0.161	1.00	77	2.20	65	51	100.6
446	71.796	0.162	1.00	77	2.20	64	51	100.8
447	71.956	0.160	1.00	77	2.20	64	51	99.5
448	72.117	0.161	1.00	77	2.20	64	51	100.2
449	72.279	0.162	1.00	77	2.20	64	51	100.6
450	72.440	0.161	1.00	77	2.20	64	51	100.0
451	72.600	0.160	1.00	77	2.20	64	50	98.8
452	72.761	0.161	1.00	77	2.20	64	50	99.1
453	72.923	0.162	1.00	77	2.20	64	50	100.8
454	73.083	0.160	1.00	77	2.20	64	50	99.3
455	73.244	0.161	1.00	77	2.20	64	50	99.5
456	73.406	0.162	1.00	77	2.20	64	50	101.4
457	73.567	0.161	0.99	77	2.20	64	50	100.9
458	73.727	0.160	0.99	77	2.20	64	50	99.6
459	73.888	0.161	1.00	77	2.20	65	50	100.2
460	74.050	0.162	0.99	77	2.20	64	50	100.6
461	74.210	0.160	1.00	77	2.20	64	50	98.7
462	74.371	0.161	1.00	77	2.20	65	50	99.1
463	74.532	0.161	1.00	77	2.20	65	50	99.5
464	74.693	0.161	0.99	77	2.20	65	50	99.9
465	74.854	0.161	1.00	77	2.20	65	50	99.9
466	75.015	0.161	1.00	77	2.20	65	50	99.7
467	75.176	0.161	1.00	77	2.20	65	50	99.3
468	75.337	0.161	1.00	77	2.20	64	50	98.8
469	75.498	0.161	1.00	77	2.20	64	50	99.0
470	75.660	0.162	0.99	78	2.20	64	50	99.3
471	75.820	0.160	1.00	78	2.20	64	50	97.2
472	75.981	0.161	1.00	78	2.20	64	50	98.0
473	76.142	0.161	1.00	78	2.20	64	50	98.5
474	76.304	0.162	1.00	77	2.20	64	50	99.3
475	76.465	0.161	1.00	78	2.20	64	50	98.8
476	76.625	0.160	1.00	78	2.20	64	50	98.1
477	76.787	0.162	1.00	78	2.20	64	50	99.5
478	76.948	0.161	0.99	77	2.20	64	50	99.2
479	77.109	0.161	1.00	78	2.20	64	50	99.0
480	77.270	0.161	1.00	77	2.20	64	50	99.2

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
481	77.432	0.162	0.99	78	2.20	64	50	100.9
482	77.592	0.160	1.00	77	2.20	64	50	100.3
483	77.752	0.160	1.00	78	2.20	64	50	99.9
484	77.914	0.162	1.00	77	2.20	64	50	101.2
485	78.075	0.161	0.99	77	2.20	65	50	100.7
486	78.235	0.160	1.00	77	2.20	65	50	100.0
487	78.396	0.161	1.00	78	2.20	65	50	100.0
488	78.557	0.161	1.00	78	2.20	65	50	99.8
489	78.717	0.160	1.00	78	2.20	65	50	100.3
490	78.878	0.161	1.00	78	2.20	65	50	101.0
491	79.040	0.162	1.00	78	2.20	65	50	101.1
492	79.200	0.160	0.99	78	2.20	65	50	100.3
493	79.360	0.160	1.00	78	2.20	65	50	99.8
494	79.521	0.161	1.00	78	2.20	65	50	99.3
495	79.682	0.161	0.99	78	2.20	65	50	99.0
496	79.842	0.160	1.00	78	2.20	65	50	98.9
497	80.003	0.161	1.00	78	2.20	65	50	100.3
498	80.165	0.162	0.99	78	2.20	65	50	101.8
499	80.325	0.160	1.00	78	2.20	65	50	100.9
500	80.485	0.160	1.00	78	2.20	65	50	100.6
501	80.647	0.162	1.00	78	2.20	65	50	101.7
502	80.807	0.160	0.99	78	2.20	65	50	101.1
503	80.967	0.160	1.00	78	2.20	65	50	101.1
504	81.129	0.162	1.00	78	2.20	65	50	101.4
505	81.290	0.161	0.99	78	2.20	65	50	100.1
506	81.450	0.160	0.99	78	2.20	65	50	99.0
507	81.610	0.160	1.00	78	2.20	65	50	98.3
508	81.772	0.162	0.99	78	2.20	65	50	100.2
509	81.932	0.160	0.99	78	2.20	66	50	100.5
510	82.093	0.161	0.99	78	2.20	66	50	101.8
511	82.254	0.161	1.00	78	2.20	66	50	101.5
512	82.414	0.160	0.99	78	2.20	66	50	100.1
513	82.574	0.160	0.99	78	2.20	66	50	100.0
514	82.735	0.161	0.99	78	2.20	66	50	101.4
515	82.897	0.162	0.99	78	2.20	66	50	101.9
516	83.056	0.159	0.99	78	2.20	66	50	99.3
517	83.217	0.161	1.00	78	2.20	66	50	100.8
518	83.378	0.161	1.00	78	2.20	66	50	101.1
519	83.538	0.160	1.00	78	2.20	66	50	100.1
520	83.699	0.161	1.00	78	2.20	66	50	100.8
521	83.860	0.161	0.99	78	2.20	66	50	100.9
522	84.020	0.160	0.99	78	2.20	66	50	99.9
523	84.180	0.160	1.00	78	2.20	66	50	99.8
524	84.342	0.162	0.99	78	2.20	66	50	101.2

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
525	84.502	0.160	0.99	78	2.20	66	50	99.7
526	84.662	0.160	0.99	78	2.20	66	50	99.2
527	84.823	0.161	1.00	78	2.20	66	50	100.1
528	84.984	0.161	1.00	78	2.20	66	50	100.2
529	85.145	0.161	0.99	78	2.20	65	50	99.8
530	85.305	0.160	1.00	78	2.20	65	50	99.0
531	85.467	0.162	1.00	78	2.20	65	50	99.9
532	85.627	0.160	0.99	78	2.20	65	50	98.4
533	85.788	0.161	1.00	78	2.20	65	50	98.9
534	85.949	0.161	1.00	78	2.20	65	50	99.2
535	86.110	0.161	0.99	78	2.20	65	50	99.7
536	86.270	0.160	1.00	78	2.20	65	50	98.7
537	86.432	0.162	1.00	78	2.20	65	50	99.2
538	86.593	0.161	0.99	78	2.20	65	50	98.2
539	86.753	0.160	0.99	78	2.20	64	50	97.3
540	86.914	0.161	1.00	78	2.20	64	50	98.3
541	87.075	0.161	1.00	78	2.20	64	50	98.7
542	87.236	0.161	0.99	78	2.20	64	50	98.6
543	87.397	0.161	0.99	78	2.20	64	50	98.5
544	87.558	0.161	1.00	78	2.20	64	50	98.4
545	87.719	0.161	1.00	77	2.20	64	50	99.5
546	87.880	0.161	1.00	77	2.20	64	50	100.3
547	88.040	0.160	1.00	77	2.20	64	50	98.5
548	88.202	0.162	1.00	77	2.20	64	50	99.7
549	88.363	0.161	1.00	77	2.20	64	50	99.8
550	88.523	0.160	0.99	77	2.20	64	50	98.5
551	88.684	0.161	1.00	77	2.20	64	50	98.4
552	88.846	0.162	0.99	77	2.20	64	50	99.4
553	89.006	0.160	1.00	77	2.20	64	50	98.8
554	89.167	0.161	1.00	77	2.20	64	50	99.1
555	89.328	0.161	1.00	77	2.20	64	50	99.5
556	89.489	0.161	0.99	77	2.20	64	50	100.4
557	89.649	0.160	0.99	77	2.20	64	50	100.2
558	89.810	0.161	0.99	77	2.20	64	50	100.4
559	89.971	0.161	0.99	77	2.20	64	50	99.8
560	90.132	0.161	0.99	77	2.20	64	50	99.5
561	90.292	0.160	1.00	77	2.20	64	50	98.5
562	90.454	0.162	0.99	77	2.20	64	50	99.6
563	90.614	0.160	0.99	77	2.20	64	50	98.9
564	90.775	0.161	1.00	77	2.20	64	50	99.3
565	90.936	0.161	1.00	77	2.20	64	50	98.8
566	91.097	0.161	0.99	77	2.20	64	50	98.9
567	91.258	0.161	0.99	77	2.20	64	50	99.5
568	91.418	0.160	1.00	77	2.20	64	50	99.7

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
569	91.580	0.162	0.99	77	2.20	64	50	101.3
570	91.741	0.161	0.99	77	2.20	64	50	100.3
571	91.901	0.160	1.00	77	2.20	64	50	99.5
572	92.063	0.162	1.00	77	2.20	64	50	101.3
573	92.224	0.161	0.99	77	2.20	64	50	100.7
574	92.384	0.160	0.99	77	2.20	64	49	99.7
575	92.545	0.161	0.99	77	2.20	64	49	100.4
576	92.706	0.161	0.99	77	2.20	64	49	100.8
577	92.866	0.160	0.99	77	2.20	64	49	100.5
578	93.027	0.161	1.00	77	2.20	64	49	101.3
579	93.188	0.161	0.99	77	2.20	64	49	100.7
580	93.349	0.161	0.99	77	2.20	64	49	100.3
581	93.509	0.160	1.00	77	2.20	65	49	99.4
582	93.670	0.161	1.00	77	2.20	65	49	100.2
583	93.831	0.161	0.99	77	2.20	65	49	101.1
584	93.991	0.160	0.99	77	2.20	65	49	101.2
585	94.151	0.160	1.00	77	2.20	65	49	101.1
586	94.313	0.162	0.99	77	2.20	65	49	101.6
587	94.473	0.160	0.99	77	2.20	65	49	100.2
588	94.633	0.160	1.00	77	2.20	65	49	100.1
589	94.795	0.162	0.99	77	2.20	65	50	101.2
590	94.955	0.160	0.99	77	2.20	65	50	100.3
591	95.115	0.160	1.00	77	2.20	65	50	100.1
592	95.276	0.161	1.00	77	2.20	65	50	100.3
593	95.437	0.161	0.99	77	2.20	65	50	100.9
594	95.597	0.160	0.99	77	2.20	65	50	101.3
595	95.758	0.161	0.99	77	2.20	65	50	101.6
596	95.919	0.161	0.99	77	2.20	65	50	100.2
597	96.079	0.160	0.99	77	2.20	65	50	99.3
598	96.239	0.160	0.99	77	2.20	65	50	99.5
599	96.401	0.162	0.99	77	2.20	65	50	100.0
600	96.560	0.159	0.99	77	2.20	66	50	98.1
601	96.721	0.161	0.99	77	2.20	66	50	100.9
602	96.882	0.161	0.99	77	2.20	66	50	102.7
603	97.042	0.160	0.99	77	2.20	66	50	101.9
604	97.202	0.160	0.99	77	2.20	66	50	100.6
605	97.363	0.161	0.99	77	2.20	66	50	100.9
606	97.523	0.160	0.99	77	2.20	66	50	100.5
607	97.683	0.160	0.99	77	2.20	66	50	100.5
608	97.844	0.161	0.99	77	2.20	66	50	100.9
609	98.004	0.160	0.99	77	2.20	66	50	100.4
610	98.164	0.160	0.99	77	2.20	66	50	100.7
611	98.324	0.160	0.99	77	2.20	66	50	100.5
612	98.486	0.162	0.98	77	2.20	66	50	101.0

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
613	98.645	0.159	0.99	77	2.20	66	50	98.7
614	98.806	0.161	0.99	77	2.20	66	50	100.2
615	98.967	0.161	0.99	77	2.20	66	50	100.7
616	99.126	0.159	0.99	77	2.20	66	50	99.2
617	99.287	0.161	0.99	77	2.20	66	50	100.0
618	99.448	0.161	0.99	77	2.20	66	50	99.8
619	99.608	0.160	0.99	77	2.20	66	50	99.6
620	99.767	0.159	0.99	77	2.20	66	50	99.6
621	99.928	0.161	0.99	77	2.20	65	50	100.4
622	100.089	0.161	0.99	77	2.20	65	50	99.9
623	100.249	0.160	0.99	77	2.20	65	50	99.0
624	100.409	0.160	0.99	77	2.20	65	50	98.9
625	100.570	0.161	0.98	77	2.20	65	50	99.7
626	100.730	0.160	0.99	77	2.20	65	50	99.5
627	100.891	0.161	0.99	77	2.20	65	50	100.4
628	101.052	0.161	0.99	77	2.20	65	50	99.9
629	101.212	0.160	0.99	77	2.20	64	50	98.9
630	101.373	0.161	0.99	77	2.20	64	50	99.6
631	101.534	0.161	0.99	77	2.20	64	50	99.5
632	101.694	0.160	0.99	77	2.20	64	50	98.4
633	101.854	0.160	0.99	77	2.20	64	50	98.1
634	102.015	0.161	0.99	77	2.20	64	50	99.1
635	102.176	0.161	0.98	77	2.20	64	50	99.7
636	102.336	0.160	0.99	77	2.20	64	50	99.2
637	102.497	0.161	0.99	77	2.20	64	50	99.2
638	102.658	0.161	0.99	77	2.20	64	50	99.1
639	102.818	0.160	0.99	77	2.20	64	50	98.8
640	102.979	0.161	0.99	77	2.20	64	50	99.3
641	103.140	0.161	0.99	77	2.20	64	50	98.9
642	103.301	0.161	0.99	77	2.20	63	50	98.6
643	103.461	0.160	0.99	77	2.20	63	50	97.7
644	103.622	0.161	0.99	77	2.20	63	50	97.7
645	103.783	0.161	0.99	77	2.20	63	50	97.8
646	103.943	0.160	0.99	77	2.20	63	50	98.1
647	104.104	0.161	0.99	77	2.20	63	50	99.6
648	104.265	0.161	0.99	77	2.20	63	50	99.3
649	104.425	0.160	0.99	77	2.20	63	50	97.4
650	104.586	0.161	0.99	77	2.20	63	49	97.7
651	104.747	0.161	0.99	77	2.20	63	49	99.0
652	104.908	0.161	0.99	77	2.20	63	49	99.8
653	105.068	0.160	0.99	77	2.20	63	49	98.8
654	105.229	0.161	1.00	77	2.20	63	49	99.4
655	105.390	0.161	0.99	77	2.20	63	49	99.4
656	105.550	0.160	0.99	77	2.20	63	49	98.7

Train B - Particulate Sampling

ASTM E2515

Run: 2

Test Date: 12/3/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.12 in. Hg

Post-Test 0 cfm @ 10.2 in. Hg

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
657	105.711	0.161	1.00	77	2.20	62	49	99.9
658	105.873	0.162	0.99	77	2.20	62	49	100.6
659	106.033	0.160	0.99	77	2.20	62	49	98.9
660	106.193	0.160	0.99	77	2.20	62	49	98.6
661	106.355	0.162	0.99	77	2.20	62	49	99.3
662	106.515	0.160	0.99	77	2.20	62	49	97.8
663	106.675	0.160	0.99	77	2.20	62	49	97.7
664	106.836	0.161	0.99	77	2.20	62	49	98.3
665	106.997	0.161	0.99	77	2.20	62	49	98.5
666	107.158	0.161	0.99	77	2.20	62	49	98.5
667	107.318	0.160	0.99	77	2.20	62	49	98.4
668	107.480	0.162	0.99	77	2.20	62	49	100.2
669	107.639	0.159	0.99	77	2.20	63	49	98.0
670	107.800	0.161	0.99	77	2.20	63	49	99.2
671	107.961	0.161	0.99	77	2.20	63	49	99.7
672	108.121	0.160	0.99	77	2.20	63	49	99.2
673	108.281	0.160	0.99	77	2.20	63	49	99.1
674	108.442	0.161	0.99	77	2.20	63	49	99.8
675	108.603	0.161	0.99	77	2.20	63	49	100.3
676	108.763	0.160	0.99	77	2.20	63	49	100.6
677	108.923	0.160	0.99	77	2.20	63	49	100.8
678	109.084	0.161	0.98	77	2.20	64	49	101.1
679	109.243	0.159	0.99	77	2.20	64	49	99.6
680	109.403	0.160	0.99	77	2.20	64	49	99.9
681	109.565	0.162	0.99	77	2.20	64	49	101.0

Train C - First Hour Particulate Sampling

Run:	<u>2</u>	Test Date:	<u>12/3/24</u>
Manufacturer:	<u>Central Boiler</u>	Meter Box Y Regression Offset:	<u>1.01</u>
Model:	<u>Classic Edge 560.1</u>	Meter Box Y Regression Factor:	<u>0</u>
Tracking No.:	<u>2495</u>	Meter Box Dynamic Y:	<u>1.010</u>
Project No.:	<u>0117WB043E</u>	Sample Box ID:	<u>371</u>
		Sample Train Leak Checks	
Start Time:	<u>14:49</u>	Pre-test	<u>0</u> cfm @ <u>22.2</u> in. Hg
Total Sampling Time:	<u>60</u> min	Post-Test	<u>0</u> cfm @ <u>5.13</u> in. Hg
Recording Interval:	<u>1</u> min		

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	9.570	0.160	2.25	62.9	1.64	64.8	57.9	99.8
Minimum	0.000	0.156	2.06	62	1.32	61	54	97.1
Max	9.570	0.179	3.30	65	5.00	67	62	110.6
0	0.000		3.18	62	4.88	60	55	
1	0.179	0.179	3.30	62	5.00	61	54	110.6
2	0.350	0.171	3.30	62	2.69	61	54	106.4
3	0.519	0.169	2.30	62	1.44	61	54	105.2
4	0.680	0.161	2.29	62	1.76	61	54	100.0
5	0.841	0.161	2.28	62	1.36	62	54	100.0
6	1.002	0.161	2.27	62	1.35	62	54	100.1
7	1.162	0.160	2.26	62	1.34	62	54	99.5
8	1.322	0.160	2.23	62	1.46	62	54	100.0
9	1.481	0.159	2.24	62	1.78	62	54	99.5
10	1.640	0.159	2.23	62	1.38	62	54	99.3
11	1.799	0.159	2.22	62	1.37	62	55	99.2
12	1.957	0.158	2.21	62	1.40	63	55	98.7
13	2.116	0.159	2.20	62	1.79	63	55	99.9
14	2.274	0.158	2.20	62	1.64	63	55	99.6
15	2.432	0.158	2.20	62	1.37	63	55	99.7
16	2.590	0.158	2.19	62	1.81	63	55	99.9
17	2.748	0.158	2.17	62	1.61	63	56	99.9
18	2.905	0.157	2.19	62	1.34	64	56	99.2
19	3.063	0.158	2.18	62	1.65	64	56	99.1
20	3.220	0.157	2.18	62	1.65	64	56	97.6
21	3.376	0.156	2.18	62	1.40	64	56	97.1
22	3.533	0.157	2.14	62	1.33	64	57	98.5
23	3.690	0.157	2.18	62	1.32	64	57	98.3
24	3.847	0.157	2.16	62	1.72	64	57	97.8
25	4.004	0.157	2.17	62	1.62	65	57	97.4
26	4.161	0.157	2.17	62	1.62	65	57	97.2
27	4.318	0.157	2.16	62	1.32	65	57	97.6
28	4.475	0.157	2.17	63	1.63	65	58	98.0
29	4.631	0.156	2.15	63	1.79	65	58	97.4
30	4.788	0.157	2.14	63	1.42	65	58	97.9
31	4.944	0.156	2.06	63	1.73	65	58	97.4
32	5.104	0.160	2.20	63	1.37	65	58	100.0

Train C - First Hour Particulate Sampling

Run:	<u>2</u>	Test Date:	<u>12/3/24</u>
Manufacturer:	<u>Central Boiler</u>	Meter Box Y Regression Offset:	<u>1.01</u>
Model:	<u>Classic Edge 560.1</u>	Meter Box Y Regression Factor:	<u>0</u>
Tracking No.:	<u>2495</u>	Meter Box Dynamic Y:	<u>1.010</u>
Project No.:	<u>0117WB043E</u>	Sample Box ID:	<u>371</u>
Start Time:	<u>14:49</u>	Sample Train Leak Checks	
Total Sampling Time:	<u>60</u> min	Pre-test	<u>0</u> cfm @ <u>22.2</u> in. Hg
Recording Interval:	<u>1</u> min	Post-Test	<u>0</u> cfm @ <u>5.13</u> in. Hg

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
33	5.263	0.159	2.22	63	1.73	65	58	99.4
34	5.422	0.159	2.22	63	1.79	66	59	99.2
35	5.581	0.159	2.22	63	1.37	66	59	99.4
36	5.740	0.159	2.22	63	1.77	66	59	99.6
37	5.899	0.159	2.20	63	1.34	66	59	99.4
38	6.058	0.159	2.22	63	1.42	66	59	99.4
39	6.217	0.159	2.22	63	1.81	66	59	99.5
40	6.374	0.157	2.18	63	1.35	66	59	98.4
41	6.532	0.158	2.18	63	1.65	66	60	99.2
42	6.690	0.158	2.18	63	1.73	66	60	99.1
43	6.848	0.158	2.15	64	1.32	66	60	99.1
44	7.005	0.157	2.20	64	1.42	66	60	99.0
45	7.165	0.160	2.26	64	1.47	66	60	100.5
46	7.325	0.160	2.26	64	1.82	66	60	99.3
47	7.486	0.161	2.26	64	1.56	67	61	99.4
48	7.646	0.160	2.26	64	1.41	67	61	98.9
49	7.807	0.161	2.22	64	1.86	67	61	100.1
50	7.967	0.160	2.26	64	1.43	67	61	100.3
51	8.127	0.160	2.22	64	1.62	67	61	100.8
52	8.287	0.160	2.25	64	1.57	67	61	101.8
53	8.447	0.160	2.25	64	1.81	67	61	102.5
54	8.607	0.160	2.24	64	1.52	67	61	101.9
55	8.768	0.161	2.25	64	1.86	67	61	101.4
56	8.928	0.160	2.25	64	1.86	67	62	100.2
57	9.089	0.161	2.23	64	1.49	67	62	100.9
58	9.249	0.160	2.25	64	1.82	67	62	101.1
59	9.410	0.161	2.23	65	1.81	67	62	101.8
60	9.570	0.160	2.25	65	1.50	67	62	99.9

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
Tot / Avg	110.712	0.163	1.56	66.1	1.20	225.30	-0.040	840.6	0.82	10.27
Minimum	0.000	0.156	1.52	62	1.10	110.00	-0.058	153.4	0.00	0.74
Max	110.712	0.169	1.62	68	1.20	312.00	-0.019	1040.0	5.23	17.92
0	0.000		1.60	62	1.20	252	-0.038	673.2	0.00	14.10
1	0.167	0.167	1.60	62	1.20	231	-0.042	678.0	0.00	13.85
2	0.336	0.169	1.62	62	1.20	254	-0.045	1040.0	0.25	4.04
3	0.503	0.167	1.57	62	1.20	262	-0.046	719.8	0.00	16.20
4	0.667	0.164	1.57	62	1.20	260	-0.047	703.9	0.00	15.62
5	0.830	0.163	1.56	62	1.20	262	-0.043	722.4	0.00	14.62
6	0.992	0.162	1.56	62	1.20	265	-0.045	879.7	0.02	14.48
7	1.153	0.161	1.55	62	1.20	265	-0.046	1012.5	0.03	14.30
8	1.313	0.160	1.54	62	1.20	264	-0.047	1040.0	0.04	14.15
9	1.473	0.160	1.54	62	1.20	263	-0.046	991.7	0.03	13.97
10	1.633	0.160	1.54	62	1.20	261	-0.043	911.5	0.02	13.86
11	1.792	0.159	1.54	62	1.20	262	-0.043	836.7	0.01	14.19
12	1.951	0.159	1.54	62	1.20	259	-0.044	936.3	0.02	14.17
13	2.110	0.159	1.54	62	1.20	260	-0.044	782.6	0.01	13.86
14	2.267	0.157	1.54	62	1.20	261	-0.043	810.1	0.01	14.02
15	2.426	0.159	1.53	62	1.20	259	-0.043	855.4	0.02	13.76
16	2.584	0.158	1.53	62	1.20	261	-0.043	735.0	0.00	13.83
17	2.741	0.157	1.53	63	1.20	259	-0.042	839.9	0.01	13.87
18	2.900	0.159	1.52	63	1.20	258	-0.044	691.3	0.00	13.91
19	3.057	0.157	1.53	63	1.20	260	-0.044	716.9	0.00	13.63
20	3.214	0.157	1.52	63	1.20	258	-0.043	668.0	0.07	13.87
21	3.371	0.157	1.53	63	1.20	260	-0.043	637.9	0.06	13.67
22	3.527	0.156	1.53	63	1.20	259	-0.043	681.6	0.00	13.85
23	3.685	0.158	1.52	63	1.20	258	-0.043	589.0	0.06	13.78
24	3.841	0.156	1.53	63	1.20	261	-0.043	580.9	0.06	13.68
25	3.998	0.157	1.52	63	1.20	259	-0.042	645.5	0.06	13.79
26	4.155	0.157	1.52	63	1.20	259	-0.043	531.8	0.05	13.76
27	4.311	0.156	1.52	63	1.20	258	-0.042	534.7	0.05	13.70
28	4.469	0.158	1.52	63	1.20	259	-0.043	530.8	0.05	13.67
29	4.626	0.157	1.53	63	1.10	258	-0.044	523.0	0.05	13.64
30	4.783	0.157	1.53	63	1.20	258	-0.043	531.4	0.05	13.54
31	4.940	0.157	1.52	63	1.20	259	-0.044	530.8	0.05	13.47
32	5.096	0.156	1.52	63	1.10	259	-0.043	543.4	0.05	13.50

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
33	5.254	0.158	1.52	63	1.20	259	-0.043	529.5	0.05	13.46
34	5.410	0.156	1.52	64	1.20	259	-0.044	563.8	0.06	13.37
35	5.568	0.158	1.52	64	1.20	260	-0.044	541.8	0.05	13.31
36	5.725	0.157	1.52	64	1.20	260	-0.044	554.1	0.06	13.48
37	5.881	0.156	1.53	64	1.20	261	-0.045	513.6	0.05	13.36
38	6.038	0.157	1.52	64	1.20	260	-0.044	590.0	0.06	13.33
39	6.194	0.156	1.53	64	1.20	260	-0.045	517.4	0.05	13.36
40	6.353	0.159	1.56	64	1.20	262	-0.045	538.2	0.05	13.21
41	6.516	0.163	1.55	64	1.20	261	-0.044	614.3	0.06	13.29
42	6.677	0.161	1.56	64	1.20	261	-0.044	473.8	0.05	13.33
43	6.839	0.162	1.56	64	1.20	261	-0.044	463.5	0.05	13.27
44	7.001	0.162	1.56	64	1.20	261	-0.044	457.0	0.05	13.31
45	7.163	0.162	1.56	64	1.20	261	-0.043	449.2	0.04	13.30
46	7.326	0.163	1.56	64	1.20	261	-0.043	427.5	0.04	13.36
47	7.488	0.162	1.56	64	1.20	261	-0.045	423.6	0.04	13.24
48	7.650	0.162	1.56	64	1.20	261	-0.044	423.3	0.04	13.18
49	7.812	0.162	1.56	65	1.20	261	-0.044	419.1	0.04	13.15
50	7.974	0.162	1.56	65	1.20	261	-0.043	401.0	0.04	13.15
51	8.137	0.163	1.56	65	1.20	262	-0.045	386.7	0.04	13.18
52	8.299	0.162	1.55	65	1.20	263	-0.045	376.3	0.04	13.13
53	8.461	0.162	1.56	65	1.20	263	-0.044	385.4	0.04	13.16
54	8.623	0.162	1.56	65	1.20	262	-0.044	340.1	0.03	13.18
55	8.784	0.161	1.56	65	1.20	262	-0.044	356.3	0.04	13.08
56	8.947	0.163	1.56	65	1.20	264	-0.044	351.4	0.04	13.05
57	9.110	0.163	1.55	65	1.20	263	-0.045	355.0	0.04	13.25
58	9.272	0.162	1.56	65	1.20	263	-0.046	327.8	0.03	13.09
59	9.434	0.162	1.56	65	1.20	263	-0.045	329.8	0.03	13.03
60	9.596	0.162	1.56	65	1.20	265	-0.045	333.0	0.03	12.98
61	9.758	0.162	1.55	65	1.20	264	-0.045	356.9	0.04	13.23
62	9.921	0.163	1.56	65	1.20	264	-0.045	313.9	0.03	13.05
63	10.083	0.162	1.56	65	1.20	264	-0.044	312.6	0.03	13.02
64	10.245	0.162	1.56	65	1.20	263	-0.045	304.5	0.03	13.03
65	10.407	0.162	1.56	66	1.20	262	-0.043	290.0	0.03	13.90
66	10.568	0.161	1.56	66	1.20	261	-0.045	277.4	0.03	14.13
67	10.731	0.163	1.56	66	1.20	261	-0.044	280.6	0.03	14.00
68	10.893	0.162	1.55	66	1.20	261	-0.044	281.2	0.03	14.07

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
69	11.055	0.162	1.56	66	1.20	260	-0.044	268.3	0.03	14.40
70	11.217	0.162	1.56	66	1.20	260	-0.044	274.1	0.03	14.28
71	11.379	0.162	1.56	66	1.20	262	-0.047	268.0	0.03	14.09
72	11.541	0.162	1.55	66	1.20	261	-0.043	269.3	0.03	13.94
73	11.704	0.163	1.56	66	1.20	261	-0.043	246.9	0.02	14.48
74	11.866	0.162	1.56	66	1.20	261	-0.044	242.1	0.02	14.65
75	12.028	0.162	1.56	66	1.20	261	-0.043	246.0	0.02	14.77
76	12.189	0.161	1.56	66	1.20	262	-0.044	257.6	0.03	14.92
77	12.351	0.162	1.56	66	1.20	262	-0.043	259.5	0.03	15.11
78	12.513	0.162	1.56	66	1.20	263	-0.044	240.2	0.02	15.16
79	12.676	0.163	1.55	66	1.20	264	-0.045	224.3	0.02	15.15
80	12.837	0.161	1.56	66	1.20	264	-0.044	225.3	0.02	15.20
81	13.000	0.163	1.56	66	1.20	263	-0.045	217.2	0.02	15.19
82	13.161	0.161	1.56	66	1.20	264	-0.044	208.1	0.02	14.92
83	13.325	0.164	1.56	66	1.20	264	-0.043	213.3	0.02	15.13
84	13.487	0.162	1.56	66	1.20	264	-0.043	211.0	0.02	14.89
85	13.649	0.162	1.55	67	1.20	264	-0.043	216.2	0.02	14.99
86	13.812	0.163	1.56	67	1.20	264	-0.045	216.2	0.02	15.03
87	13.974	0.162	1.56	67	1.20	263	-0.043	203.3	0.02	14.83
88	14.137	0.163	1.56	67	1.20	264	-0.043	183.5	0.02	14.23
89	14.300	0.163	1.56	67	1.20	264	-0.044	207.1	0.02	15.00
90	14.463	0.163	1.56	67	1.20	265	-0.045	207.8	0.02	15.07
91	14.625	0.162	1.56	67	1.20	264	-0.044	210.7	0.02	14.84
92	14.787	0.162	1.56	67	1.20	265	-0.045	194.2	0.02	14.34
93	14.949	0.162	1.56	67	1.20	265	-0.045	217.5	0.02	14.79
94	15.111	0.162	1.56	67	1.20	266	-0.045	192.2	0.02	14.26
95	15.274	0.163	1.56	67	1.20	266	-0.045	201.6	0.02	14.55
96	15.437	0.163	1.56	67	1.20	266	-0.045	198.7	0.02	14.66
97	15.599	0.162	1.56	67	1.20	267	-0.043	198.4	0.02	14.57
98	15.762	0.163	1.56	67	1.20	267	-0.045	197.4	0.02	14.49
99	15.924	0.162	1.56	67	1.20	266	-0.044	202.0	0.02	14.61
100	16.086	0.162	1.56	67	1.20	268	-0.044	189.6	0.02	14.08
101	16.250	0.164	1.56	67	1.20	268	-0.045	190.3	0.02	14.81
102	16.413	0.163	1.56	67	1.20	268	-0.046	195.5	0.02	14.80
103	16.576	0.163	1.56	67	1.20	268	-0.045	173.2	0.02	14.22
104	16.739	0.163	1.56	67	1.20	267	-0.045	166.3	0.02	14.51

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
105	16.901	0.162	1.56	67	1.20	269	-0.045	155.3	0.02	14.22
106	17.063	0.162	1.56	67	1.20	269	-0.046	169.6	0.02	14.96
107	17.227	0.164	1.56	67	1.20	268	-0.046	185.5	0.02	14.90
108	17.390	0.163	1.56	67	1.20	269	-0.045	194.8	0.02	14.71
109	17.553	0.163	1.56	67	1.20	269	-0.046	202.0	0.02	14.67
110	17.715	0.162	1.56	67	1.20	270	-0.046	173.2	0.02	14.71
111	17.877	0.162	1.56	67	1.20	269	-0.047	244.4	0.02	14.82
112	18.039	0.162	1.56	67	1.20	268	-0.045	156.9	0.02	14.40
113	18.203	0.164	1.56	67	1.20	268	-0.047	153.4	0.02	13.79
114	18.366	0.163	1.56	67	1.20	269	-0.046	167.0	0.02	13.82
115	18.529	0.163	1.55	67	1.20	270	-0.046	164.4	0.02	14.03
116	18.691	0.162	1.56	67	1.20	271	-0.046	178.6	0.02	14.26
117	18.854	0.163	1.56	67	1.20	271	-0.047	195.5	0.02	14.66
118	19.017	0.163	1.56	67	1.20	272	-0.047	178.6	0.02	14.63
119	19.179	0.162	1.55	67	1.20	271	-0.046	190.3	0.02	14.55
120	19.342	0.163	1.56	67	1.20	272	-0.047	197.7	0.02	14.15
121	19.505	0.163	1.56	67	1.20	272	-0.047	190.6	0.02	14.21
122	19.668	0.163	1.56	67	1.20	273	-0.047	210.4	0.02	13.87
123	19.831	0.163	1.56	67	1.20	272	-0.047	253.9	0.03	13.82
124	19.993	0.162	1.56	67	1.20	273	-0.047	200.0	0.02	13.53
125	20.155	0.162	1.56	68	1.20	273	-0.047	219.4	0.02	13.67
126	20.319	0.164	1.56	68	1.20	274	-0.046	214.0	0.02	13.61
127	20.482	0.163	1.56	67	1.20	274	-0.047	190.9	0.02	13.78
128	20.645	0.163	1.56	67	1.20	275	-0.047	245.3	0.02	13.51
129	20.808	0.163	1.56	67	1.20	277	-0.049	310.7	0.03	13.73
130	20.970	0.162	1.56	67	1.20	265	-0.044	355.0	0.04	14.14
131	21.132	0.162	1.56	67	1.20	249	-0.043	825.8	0.02	8.41
132	21.295	0.163	1.56	67	1.20	238	-0.043	1040.0	0.11	6.91
133	21.459	0.164	1.56	67	1.20	230	-0.042	1040.0	0.07	7.16
134	21.622	0.163	1.56	67	1.20	224	-0.040	1040.0	0.08	6.52
135	21.785	0.163	1.56	67	1.20	219	-0.040	1040.0	0.12	5.70
136	21.948	0.163	1.56	67	1.20	214	-0.039	1040.0	0.04	8.43
137	22.111	0.163	1.56	67	1.20	210	-0.039	781.7	0.00	7.41
138	22.273	0.162	1.56	67	1.20	206	-0.038	756.4	0.00	6.22
139	22.437	0.164	1.56	67	1.20	203	-0.036	800.5	0.01	5.42
140	22.600	0.163	1.56	67	1.20	200	-0.034	764.9	0.00	4.15

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
141	22.763	0.163	1.56	67	1.20	196	-0.034	1008.1	0.04	3.19
142	22.926	0.163	1.56	67	1.20	192	-0.033	1040.0	0.23	3.54
143	23.089	0.163	1.56	67	1.20	189	-0.032	1040.0	0.37	3.61
144	23.252	0.163	1.56	67	1.20	185	-0.032	1040.0	0.54	3.95
145	23.414	0.162	1.56	67	1.20	182	-0.031	1040.0	0.61	3.86
146	23.577	0.163	1.56	67	1.20	178	-0.031	1040.0	0.68	4.00
147	23.740	0.163	1.56	67	1.20	175	-0.030	1040.0	0.72	4.02
148	23.903	0.163	1.56	67	1.20	172	-0.030	1040.0	0.71	3.88
149	24.066	0.163	1.56	67	1.20	169	-0.029	1040.0	0.71	3.89
150	24.229	0.163	1.56	67	1.20	166	-0.029	1040.0	0.68	3.77
151	24.392	0.163	1.56	67	1.20	164	-0.028	1040.0	0.64	3.68
152	24.555	0.163	1.56	67	1.20	161	-0.028	1040.0	0.67	3.97
153	24.719	0.164	1.56	67	1.20	158	-0.027	1040.0	0.67	3.97
154	24.882	0.163	1.56	67	1.20	156	-0.027	1040.0	0.58	3.58
155	25.045	0.163	1.56	67	1.20	153	-0.026	1040.0	0.56	3.53
156	25.208	0.163	1.56	67	1.20	151	-0.026	1040.0	0.52	3.34
157	25.371	0.163	1.56	67	1.20	149	-0.025	1040.0	0.51	3.34
158	25.534	0.163	1.56	67	1.20	147	-0.025	1040.0	0.54	3.52
159	25.697	0.163	1.56	67	1.20	145	-0.024	1040.0	0.49	3.28
160	25.861	0.164	1.56	67	1.20	143	-0.024	1040.0	0.52	3.49
161	26.024	0.163	1.56	67	1.20	141	-0.024	1040.0	0.47	3.22
162	26.187	0.163	1.56	67	1.20	139	-0.023	1040.0	0.46	3.23
163	26.350	0.163	1.56	67	1.20	137	-0.023	1040.0	0.42	2.95
164	26.513	0.163	1.56	67	1.20	135	-0.023	1040.0	0.43	3.04
165	26.675	0.162	1.56	67	1.20	133	-0.022	1040.0	0.41	2.93
166	26.839	0.164	1.56	67	1.20	132	-0.022	1040.0	0.37	2.70
167	27.003	0.164	1.56	67	1.20	130	-0.022	1040.0	0.35	2.61
168	27.166	0.163	1.56	67	1.20	128	-0.022	1040.0	0.34	2.55
169	27.329	0.163	1.56	67	1.20	127	-0.021	1040.0	0.34	2.59
170	27.492	0.163	1.56	67	1.20	126	-0.021	1040.0	0.30	2.33
171	27.655	0.163	1.57	67	1.20	124	-0.021	1040.0	0.29	2.31
172	27.817	0.162	1.56	67	1.20	164	-0.038	1040.0	0.30	2.39
173	27.981	0.164	1.56	67	1.20	201	-0.040	1040.0	2.16	8.47
174	28.145	0.164	1.56	67	1.20	220	-0.043	1040.0	2.46	8.67
175	28.308	0.163	1.56	67	1.20	231	-0.044	1040.0	2.04	8.17
176	28.471	0.163	1.56	67	1.20	239	-0.045	1040.0	1.95	8.40

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
177	28.634	0.163	1.56	67	1.20	248	-0.046	1040.0	1.85	8.90
178	28.797	0.163	1.56	67	1.20	256	-0.047	1040.0	1.65	10.09
179	28.959	0.162	1.56	67	1.20	265	-0.049	1040.0	1.42	10.50
180	29.122	0.163	1.56	67	1.20	274	-0.051	1040.0	0.77	11.55
181	29.285	0.163	1.56	67	1.20	280	-0.052	1040.0	0.23	12.74
182	29.448	0.163	1.56	67	1.20	285	-0.053	1040.0	0.11	12.93
183	29.611	0.163	1.56	67	1.20	289	-0.050	1040.0	0.02	13.89
184	29.773	0.162	1.56	67	1.20	290	-0.051	826.5	0.01	13.54
185	29.936	0.163	1.56	67	1.20	290	-0.052	1021.7	0.03	13.23
186	30.099	0.163	1.56	67	1.20	282	-0.046	948.4	0.02	13.56
187	30.262	0.163	1.56	67	1.20	284	-0.052	614.6	0.06	13.88
188	30.426	0.164	1.56	67	1.20	285	-0.052	1040.0	0.04	13.24
189	30.589	0.163	1.56	67	1.20	284	-0.048	1019.4	0.02	13.38
190	30.752	0.163	1.56	67	1.20	278	-0.050	456.1	0.05	15.02
191	30.915	0.163	1.56	67	1.20	275	-0.050	823.9	0.02	14.58
192	31.077	0.162	1.56	67	1.20	274	-0.050	1040.0	0.13	13.89
193	31.241	0.164	1.56	67	1.20	274	-0.051	1040.0	0.13	14.09
194	31.405	0.164	1.56	67	1.20	279	-0.054	1040.0	0.20	13.83
195	31.568	0.163	1.56	67	1.20	289	-0.053	1040.0	0.52	12.65
196	31.731	0.163	1.56	67	1.20	293	-0.054	1040.0	0.44	12.76
197	31.894	0.163	1.56	67	1.20	293	-0.054	1040.0	0.38	12.76
198	32.056	0.162	1.57	67	1.20	293	-0.053	1040.0	0.63	12.10
199	32.218	0.162	1.56	67	1.20	293	-0.054	1040.0	0.72	11.99
200	32.381	0.163	1.56	67	1.20	293	-0.054	1040.0	0.82	11.71
201	32.545	0.164	1.56	67	1.20	292	-0.054	1040.0	0.83	11.59
202	32.708	0.163	1.56	67	1.20	291	-0.055	1040.0	0.92	11.24
203	32.871	0.163	1.56	67	1.20	290	-0.054	1040.0	0.93	11.23
204	33.034	0.163	1.57	67	1.20	291	-0.054	1040.0	0.99	11.07
205	33.197	0.163	1.56	67	1.20	292	-0.054	1040.0	0.78	11.61
206	33.360	0.163	1.56	67	1.20	293	-0.052	1040.0	0.88	11.45
207	33.524	0.164	1.56	67	1.20	294	-0.053	1040.0	0.82	11.32
208	33.687	0.163	1.56	67	1.20	296	-0.057	1040.0	0.78	11.53
209	33.850	0.163	1.56	67	1.20	296	-0.054	1040.0	0.65	11.50
210	34.013	0.163	1.56	67	1.20	296	-0.056	1040.0	0.70	11.47
211	34.177	0.164	1.57	67	1.20	296	-0.054	1040.0	0.82	11.38
212	34.339	0.162	1.56	67	1.20	296	-0.055	1040.0	0.81	11.30

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
213	34.502	0.163	1.56	67	1.20	296	-0.055	1040.0	0.93	11.04
214	34.666	0.164	1.56	67	1.20	296	-0.055	1040.0	0.83	11.14
215	34.829	0.163	1.56	67	1.20	298	-0.053	1040.0	0.76	11.51
216	34.992	0.163	1.56	67	1.20	300	-0.055	1040.0	0.65	11.87
217	35.155	0.163	1.56	67	1.20	302	-0.056	1040.0	0.42	12.37
218	35.318	0.163	1.56	67	1.20	304	-0.056	1040.0	0.43	12.31
219	35.481	0.163	1.56	66	1.20	305	-0.054	1040.0	0.40	12.38
220	35.643	0.162	1.56	66	1.20	307	-0.055	1040.0	0.39	12.33
221	35.807	0.164	1.56	67	1.20	309	-0.057	1040.0	0.28	12.86
222	35.970	0.163	1.56	66	1.20	309	-0.053	1040.0	0.21	13.17
223	36.133	0.163	1.56	66	1.20	309	-0.058	1040.0	0.30	12.79
224	36.296	0.163	1.56	66	1.20	309	-0.053	1040.0	0.49	12.39
225	36.459	0.163	1.56	66	1.20	310	-0.055	1040.0	0.57	12.09
226	36.621	0.162	1.56	66	1.20	312	-0.055	1040.0	0.55	12.38
227	36.785	0.164	1.56	66	1.20	311	-0.058	1040.0	0.46	12.42
228	36.948	0.163	1.56	66	1.20	283	-0.048	1040.0	0.43	12.23
229	37.111	0.163	1.56	66	1.20	264	-0.047	1040.0	0.23	8.74
230	37.274	0.163	1.56	66	1.20	251	-0.047	1040.0	0.13	8.74
231	37.437	0.163	1.57	66	1.20	242	-0.045	1040.0	0.11	9.10
232	37.599	0.162	1.56	66	1.20	236	-0.045	1040.0	0.27	7.28
233	37.761	0.162	1.56	66	1.20	230	-0.044	1040.0	0.18	9.86
234	37.924	0.163	1.56	66	1.20	225	-0.044	1040.0	0.15	9.39
235	38.087	0.163	1.56	66	1.20	220	-0.042	1040.0	0.21	7.74
236	38.249	0.162	1.56	66	1.20	216	-0.041	1040.0	0.22	6.73
237	38.412	0.163	1.57	66	1.20	215	-0.039	1040.0	0.23	6.04
238	38.574	0.162	1.56	66	1.20	212	-0.039	1040.0	0.17	4.34
239	38.736	0.162	1.56	66	1.20	209	-0.038	1040.0	0.49	4.46
240	38.900	0.164	1.56	66	1.20	206	-0.038	1040.0	0.76	4.60
241	39.063	0.163	1.56	66	1.20	202	-0.037	1040.0	0.95	4.83
242	39.226	0.163	1.56	66	1.20	198	-0.036	1040.0	1.07	4.97
243	39.388	0.162	1.56	66	1.20	195	-0.035	1040.0	1.09	4.86
244	39.551	0.163	1.56	66	1.20	191	-0.034	1040.0	1.18	5.09
245	39.713	0.162	1.56	66	1.20	188	-0.034	1040.0	1.18	5.02
246	39.876	0.163	1.56	66	1.20	184	-0.033	1040.0	1.31	5.42
247	40.040	0.164	1.56	66	1.20	181	-0.032	1040.0	1.30	5.36
248	40.202	0.162	1.56	66	1.20	178	-0.032	1040.0	1.34	5.51

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
249	40.365	0.163	1.56	66	1.20	175	-0.031	1040.0	1.28	5.30
250	40.527	0.162	1.56	66	1.20	172	-0.030	1040.0	1.23	5.12
251	40.689	0.162	1.56	66	1.20	169	-0.030	1040.0	1.18	4.96
252	40.852	0.163	1.56	66	1.20	166	-0.030	1040.0	1.25	5.24
253	41.015	0.163	1.56	66	1.20	163	-0.029	1040.0	1.28	5.40
254	41.178	0.163	1.56	66	1.20	161	-0.029	1040.0	1.26	5.32
255	41.341	0.163	1.56	66	1.20	158	-0.028	1040.0	1.15	4.95
256	41.503	0.162	1.56	66	1.20	156	-0.028	1040.0	1.24	5.29
257	41.666	0.163	1.56	66	1.20	153	-0.027	1040.0	1.21	5.18
258	41.829	0.163	1.56	66	1.20	151	-0.027	1040.0	1.10	4.74
259	41.993	0.164	1.56	66	1.20	149	-0.027	1040.0	1.09	4.73
260	42.155	0.162	1.56	66	1.20	147	-0.026	1040.0	1.12	4.86
261	42.318	0.163	1.56	66	1.20	145	-0.026	1040.0	1.06	4.64
262	42.481	0.163	1.56	66	1.20	142	-0.025	1040.0	1.09	4.74
263	42.643	0.162	1.56	66	1.20	141	-0.025	1040.0	1.06	4.62
264	42.805	0.162	1.56	66	1.20	139	-0.024	1040.0	1.02	4.47
265	42.969	0.164	1.56	66	1.20	137	-0.024	1040.0	0.98	4.32
266	43.132	0.163	1.56	66	1.20	135	-0.024	1040.0	0.99	4.32
267	43.295	0.163	1.56	66	1.20	134	-0.023	1040.0	0.98	4.29
268	43.458	0.163	1.56	66	1.20	132	-0.023	1040.0	1.03	4.45
269	43.620	0.162	1.56	66	1.20	131	-0.023	1040.0	1.02	4.44
270	43.782	0.162	1.56	66	1.20	129	-0.023	1040.0	1.03	4.49
271	43.946	0.164	1.56	66	1.20	128	-0.022	1040.0	0.97	4.24
272	44.109	0.163	1.56	66	1.20	126	-0.022	1040.0	1.00	4.36
273	44.272	0.163	1.56	67	1.20	124	-0.022	1040.0	0.94	4.16
274	44.435	0.163	1.56	67	1.20	123	-0.022	1040.0	0.97	4.25
275	44.597	0.162	1.56	66	1.20	122	-0.021	1040.0	0.97	4.23
276	44.760	0.163	1.56	67	1.20	121	-0.021	1040.0	0.88	3.85
277	44.922	0.162	1.56	66	1.20	119	-0.021	1040.0	0.85	3.73
278	45.086	0.164	1.56	67	1.20	118	-0.021	1040.0	0.81	3.58
279	45.249	0.163	1.56	67	1.20	117	-0.020	1040.0	0.91	3.93
280	45.412	0.163	1.56	66	1.20	116	-0.020	1040.0	0.88	3.84
281	45.575	0.163	1.56	66	1.20	115	-0.020	1040.0	0.91	3.94
282	45.737	0.162	1.57	67	1.20	114	-0.020	1040.0	0.92	3.98
283	45.900	0.163	1.56	67	1.20	113	-0.019	1040.0	0.98	4.21
284	46.063	0.163	1.56	66	1.20	111	-0.020	1040.0	0.98	4.23

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
285	46.226	0.163	1.56	66	1.20	111	-0.019	1040.0	0.84	3.66
286	46.388	0.162	1.56	66	1.20	110	-0.019	1040.0	0.92	3.94
287	46.551	0.163	1.56	66	1.20	160	-0.039	1040.0	1.47	5.92
288	46.713	0.162	1.57	66	1.20	181	-0.039	1040.0	0.40	2.25
289	46.876	0.163	1.56	66	1.20	194	-0.040	1040.0	0.43	2.67
290	47.039	0.163	1.56	66	1.20	204	-0.040	1040.0	0.63	3.86
291	47.202	0.163	1.56	66	1.20	212	-0.043	1040.0	0.80	5.05
292	47.365	0.163	1.56	66	1.20	222	-0.043	1040.0	0.88	6.33
293	47.528	0.163	1.56	66	1.20	232	-0.044	1040.0	1.02	7.93
294	47.691	0.163	1.56	66	1.20	246	-0.046	1040.0	1.15	9.41
295	47.854	0.163	1.57	66	1.20	261	-0.048	1040.0	0.32	12.60
296	48.017	0.163	1.57	66	1.20	273	-0.050	1040.0	0.02	14.10
297	48.180	0.163	1.56	66	1.20	280	-0.051	721.5	0.00	14.52
298	48.344	0.164	1.56	66	1.20	284	-0.051	545.4	0.05	14.79
299	48.507	0.163	1.56	66	1.20	273	-0.049	402.2	0.04	15.32
300	48.670	0.163	1.56	66	1.20	269	-0.051	337.6	0.03	15.90
301	48.832	0.162	1.56	66	1.20	269	-0.048	415.2	0.04	16.25
302	48.995	0.163	1.56	66	1.20	269	-0.053	418.2	0.04	16.53
303	49.157	0.162	1.57	66	1.20	271	-0.050	343.1	0.03	16.55
304	49.321	0.164	1.56	66	1.20	272	-0.051	929.3	0.03	17.92
305	49.484	0.163	1.56	66	1.20	272	-0.049	443.8	0.04	16.37
306	49.647	0.163	1.56	66	1.20	272	-0.051	654.5	0.07	15.86
307	49.810	0.163	1.56	66	1.20	272	-0.051	717.6	0.00	15.43
308	49.973	0.163	1.56	66	1.20	276	-0.048	1040.0	0.07	14.96
309	50.135	0.162	1.56	66	1.20	277	-0.047	1040.0	0.40	13.59
310	50.298	0.163	1.56	66	1.20	279	-0.056	1040.0	0.52	13.46
311	50.462	0.164	1.56	66	1.20	287	-0.052	1040.0	0.64	13.19
312	50.625	0.163	1.56	66	1.20	291	-0.051	1040.0	0.86	12.14
313	50.788	0.163	1.56	66	1.20	296	-0.053	1040.0	0.35	13.22
314	50.950	0.162	1.56	66	1.20	298	-0.054	1040.0	0.19	13.72
315	51.113	0.163	1.56	66	1.20	299	-0.055	1040.0	0.17	13.50
316	51.275	0.162	1.56	66	1.20	300	-0.053	1040.0	0.26	13.24
317	51.439	0.164	1.56	66	1.20	301	-0.054	1040.0	0.29	13.19
318	51.602	0.163	1.56	66	1.20	302	-0.053	1040.0	0.38	12.99
319	51.765	0.163	1.56	66	1.20	302	-0.052	1040.0	0.35	13.02
320	51.927	0.162	1.56	66	1.20	303	-0.054	1040.0	0.32	12.93

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
321	52.090	0.163	1.57	66	1.20	303	-0.055	1040.0	0.40	12.71
322	52.252	0.162	1.56	66	1.20	303	-0.052	1040.0	0.46	12.59
323	52.415	0.163	1.56	66	1.20	303	-0.053	1040.0	0.37	12.86
324	52.579	0.164	1.56	66	1.20	304	-0.055	1040.0	0.35	12.81
325	52.741	0.162	1.56	66	1.20	305	-0.054	1040.0	0.39	12.66
326	52.904	0.163	1.56	66	1.20	306	-0.054	1040.0	0.36	12.93
327	53.066	0.162	1.56	66	1.20	307	-0.053	1040.0	0.19	13.44
328	53.228	0.162	1.56	66	1.20	304	-0.054	1040.0	0.25	13.28
329	53.391	0.163	1.56	66	1.20	304	-0.054	1040.0	0.24	13.20
330	53.555	0.164	1.56	66	1.20	306	-0.054	1040.0	0.31	13.01
331	53.717	0.162	1.56	66	1.20	304	-0.054	1040.0	0.16	13.38
332	53.880	0.163	1.56	66	1.20	307	-0.056	1040.0	0.23	13.22
333	54.042	0.162	1.56	66	1.20	290	-0.047	1040.0	0.19	13.41
334	54.205	0.163	1.56	66	1.20	267	-0.047	1040.0	0.15	7.88
335	54.367	0.162	1.56	66	1.20	254	-0.046	1040.0	0.17	8.87
336	54.530	0.163	1.56	66	1.20	243	-0.045	1040.0	0.14	10.24
337	54.693	0.163	1.56	66	1.20	237	-0.044	1040.0	0.21	9.43
338	54.855	0.162	1.56	66	1.20	231	-0.043	1040.0	0.28	10.05
339	55.016	0.161	1.56	66	1.20	225	-0.042	1040.0	0.18	13.11
340	55.178	0.162	1.56	66	1.20	221	-0.042	1040.0	0.10	12.12
341	55.341	0.163	1.56	66	1.20	216	-0.040	1040.0	0.06	10.98
342	55.504	0.163	1.56	66	1.20	214	-0.039	1040.0	0.04	10.19
343	55.666	0.162	1.56	66	1.20	212	-0.039	917.9	0.02	7.97
344	55.829	0.163	1.56	66	1.20	210	-0.038	1040.0	0.86	8.14
345	55.991	0.162	1.56	66	1.20	207	-0.037	1040.0	2.13	9.92
346	56.153	0.162	1.56	66	1.20	203	-0.038	1040.0	3.09	11.24
347	56.317	0.164	1.56	66	1.20	200	-0.037	1040.0	3.81	12.14
348	56.480	0.163	1.56	66	1.20	196	-0.036	1040.0	3.73	11.32
349	56.642	0.162	1.56	66	1.20	192	-0.035	1040.0	3.77	11.04
350	56.805	0.163	1.56	66	1.20	189	-0.035	1040.0	3.64	10.39
351	56.967	0.162	1.56	66	1.20	185	-0.034	1040.0	3.57	10.08
352	57.129	0.162	1.56	66	1.20	182	-0.033	1040.0	3.41	9.58
353	57.292	0.163	1.56	66	1.20	179	-0.032	1040.0	3.30	9.29
354	57.455	0.163	1.56	66	1.20	176	-0.032	1040.0	3.28	9.23
355	57.617	0.162	1.56	66	1.20	172	-0.031	1040.0	3.33	9.32
356	57.780	0.163	1.56	66	1.20	170	-0.031	1040.0	3.31	9.23

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
357	57.942	0.162	1.56	66	1.20	167	-0.030	1040.0	3.16	8.88
358	58.104	0.162	1.56	67	1.20	165	-0.030	1040.0	3.25	9.05
359	58.268	0.164	1.56	67	1.20	162	-0.029	1040.0	3.25	9.03
360	58.431	0.163	1.56	67	1.20	159	-0.029	1040.0	3.02	8.41
361	58.594	0.163	1.56	67	1.20	157	-0.028	1040.0	3.06	8.42
362	58.756	0.162	1.56	67	1.20	154	-0.028	1040.0	2.66	7.43
363	58.919	0.163	1.56	67	1.20	152	-0.027	1040.0	2.73	7.51
364	59.081	0.162	1.56	67	1.20	150	-0.027	1040.0	2.61	7.25
365	59.244	0.163	1.56	67	1.20	148	-0.027	1040.0	2.35	6.53
366	59.407	0.163	1.56	67	1.20	146	-0.026	1040.0	2.46	6.82
367	59.570	0.163	1.56	67	1.20	144	-0.026	1040.0	2.40	6.64
368	59.733	0.163	1.56	67	1.20	142	-0.025	1040.0	2.31	6.39
369	59.895	0.162	1.57	67	1.20	140	-0.025	1040.0	2.18	6.06
370	60.058	0.163	1.56	67	1.20	138	-0.025	1040.0	2.20	6.06
371	60.220	0.162	1.56	67	1.20	136	-0.024	1040.0	2.14	5.89
372	60.384	0.164	1.56	67	1.20	135	-0.024	1040.0	2.09	5.78
373	60.547	0.163	1.56	67	1.20	133	-0.023	1040.0	1.97	5.46
374	60.709	0.162	1.56	67	1.20	131	-0.023	1040.0	2.13	5.83
375	60.872	0.163	1.56	67	1.20	130	-0.023	1040.0	1.89	5.25
376	61.035	0.163	1.56	67	1.20	129	-0.023	1040.0	2.04	5.61
377	61.197	0.162	1.56	67	1.20	127	-0.022	1040.0	1.87	5.16
378	61.361	0.164	1.55	67	1.20	125	-0.022	1040.0	1.77	4.88
379	61.524	0.163	1.56	67	1.20	124	-0.022	1040.0	1.85	5.10
380	61.687	0.163	1.56	67	1.20	122	-0.022	1040.0	1.60	4.44
381	61.849	0.162	1.56	67	1.20	121	-0.021	1040.0	1.83	5.01
382	62.012	0.163	1.57	67	1.20	120	-0.021	1040.0	1.61	4.45
383	62.174	0.162	1.56	67	1.20	119	-0.021	1040.0	1.81	4.92
384	62.337	0.163	1.56	67	1.20	118	-0.021	1040.0	1.65	4.53
385	62.501	0.164	1.56	67	1.20	117	-0.020	1040.0	1.63	4.45
386	62.664	0.163	1.56	67	1.20	116	-0.020	1040.0	1.54	4.22
387	62.827	0.163	1.56	67	1.20	114	-0.020	1040.0	1.59	4.36
388	62.990	0.163	1.57	67	1.20	163	-0.040	1040.0	2.18	5.72
389	63.152	0.162	1.56	67	1.20	198	-0.041	1040.0	1.53	5.93
390	63.314	0.162	1.57	67	1.20	223	-0.044	1040.0	1.60	8.25
391	63.477	0.163	1.56	67	1.20	241	-0.045	1040.0	1.47	9.95
392	63.640	0.163	1.56	67	1.20	257	-0.049	1040.0	1.02	11.21

Train D - Ambient Background and Flue Gas Data

Run: 2
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/3/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 14:49
 Total Sampling Time: 681 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
393	63.803	0.163	1.56	67	1.20	271	-0.049	1040.0	0.28	13.10
394	63.966	0.163	1.56	67	1.20	279	-0.053	660.0	0.07	14.13
395	64.129	0.163	1.57	67	1.20	275	-0.048	361.3	0.04	15.08
396	64.291	0.162	1.56	67	1.20	276	-0.048	263.4	0.03	14.47
397	64.454	0.163	1.56	67	1.20	275	-0.051	255.4	0.03	15.03
398	64.618	0.164	1.56	67	1.20	272	-0.048	343.4	0.03	15.17
399	64.781	0.163	1.56	67	1.20	270	-0.051	366.4	0.04	16.05
400	64.944	0.163	1.56	67	1.20	270	-0.046	414.6	0.04	16.07
401	65.107	0.163	1.57	67	1.20	271	-0.049	466.4	0.05	16.19
402	65.270	0.163	1.56	67	1.20	272	-0.050	383.5	0.04	16.37
403	65.433	0.163	1.56	67	1.20	273	-0.051	462.2	0.05	16.39
404	65.596	0.163	1.56	67	1.20	274	-0.051	427.3	0.04	16.15
405	65.760	0.164	1.57	67	1.20	275	-0.051	433.6	0.04	16.33
406	65.923	0.163	1.56	67	1.20	276	-0.051	490.4	0.05	16.31
407	66.085	0.162	1.56	66	1.20	277	-0.052	497.6	0.05	16.54
408	66.248	0.163	1.57	66	1.20	276	-0.049	509.5	0.05	16.55
409	66.411	0.163	1.57	66	1.20	277	-0.051	523.8	0.05	16.85
410	66.573	0.162	1.57	66	1.20	277	-0.053	617.3	0.06	16.69
411	66.737	0.164	1.56	66	1.20	277	-0.050	490.0	0.05	16.44
412	66.900	0.163	1.56	66	1.20	277	-0.050	419.1	0.04	15.97
413	67.064	0.164	1.56	66	1.20	276	-0.051	406.0	0.04	16.84
414	67.227	0.163	1.56	66	1.20	278	-0.055	837.4	0.02	15.65
415	67.390	0.163	1.56	66	1.20	278	-0.051	1040.0	0.22	14.88
416	67.552	0.162	1.56	66	1.20	277	-0.049	1040.0	0.36	14.19
417	67.715	0.163	1.56	66	1.20	283	-0.050	1040.0	0.44	13.94
418	67.879	0.164	1.56	66	1.20	288	-0.051	1040.0	0.28	14.00
419	68.042	0.163	1.56	66	1.20	286	-0.051	710.2	0.07	15.81
420	68.204	0.162	1.56	66	1.20	282	-0.051	537.3	0.05	15.29
421	68.367	0.163	1.56	66	1.20	280	-0.051	784.1	0.00	16.15
422	68.530	0.163	1.57	66	1.20	282	-0.051	760.0	0.00	15.89
423	68.692	0.162	1.56	66	1.20	281	-0.049	844.6	0.01	14.95
424	68.855	0.163	1.56	66	1.20	281	-0.051	816.1	0.00	15.06
425	69.019	0.164	1.56	66	1.20	284	-0.052	872.1	0.00	15.70
426	69.182	0.163	1.56	66	1.20	285	-0.050	889.5	0.01	15.66
427	69.344	0.162	1.56	66	1.20	285	-0.051	1020.6	0.04	15.12
428	69.507	0.163	1.56	66	1.20	286	-0.050	1040.0	0.04	15.59

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
429	69.669	0.162	1.56	66	1.20	286	-0.052	1040.0	0.08	15.22
430	69.832	0.163	1.56	66	1.20	268	-0.046	1040.0	0.07	15.17
431	69.995	0.163	1.56	66	1.20	253	-0.045	1040.0	0.20	8.84
432	70.158	0.163	1.56	66	1.20	242	-0.044	1040.0	0.06	9.66
433	70.321	0.163	1.56	66	1.20	234	-0.043	830.1	0.01	10.89
434	70.483	0.162	1.56	66	1.20	228	-0.042	1040.0	0.05	9.50
435	70.646	0.163	1.56	66	1.20	222	-0.042	1040.0	0.40	13.77
436	70.808	0.162	1.56	66	1.20	217	-0.041	1040.0	0.27	14.48
437	70.971	0.163	1.56	66	1.20	213	-0.041	1040.0	0.11	13.08
438	71.134	0.163	1.56	66	1.20	209	-0.040	1040.0	0.08	11.89
439	71.297	0.163	1.56	66	1.20	207	-0.038	925.4	0.01	10.70
440	71.460	0.163	1.57	66	1.20	204	-0.038	1040.0	0.12	8.38
441	71.622	0.162	1.57	66	1.20	201	-0.038	1040.0	1.30	9.35
442	71.784	0.162	1.57	66	1.20	197	-0.038	1040.0	2.46	10.85
443	71.948	0.164	1.56	66	1.20	194	-0.037	1040.0	2.96	11.03
444	72.110	0.162	1.56	66	1.20	190	-0.036	1040.0	3.22	10.95
445	72.273	0.163	1.56	66	1.20	186	-0.036	1040.0	3.56	11.42
446	72.436	0.163	1.56	66	1.20	183	-0.034	1040.0	3.64	11.27
447	72.598	0.162	1.56	66	1.20	180	-0.034	1040.0	3.87	11.59
448	72.761	0.163	1.56	66	1.20	177	-0.033	1040.0	3.91	11.57
449	72.924	0.163	1.56	66	1.20	173	-0.033	1040.0	3.84	11.23
450	73.087	0.163	1.56	66	1.20	170	-0.032	1040.0	3.71	10.86
451	73.250	0.163	1.56	66	1.20	167	-0.031	1040.0	3.87	11.23
452	73.413	0.163	1.56	66	1.20	165	-0.030	1040.0	3.75	10.88
453	73.575	0.162	1.56	66	1.20	162	-0.030	1040.0	3.47	10.10
454	73.738	0.163	1.56	66	1.20	160	-0.030	1040.0	3.35	9.77
455	73.900	0.162	1.56	66	1.20	157	-0.029	1040.0	3.22	9.35
456	74.064	0.164	1.56	66	1.20	155	-0.028	1040.0	3.21	9.33
457	74.227	0.163	1.56	66	1.20	152	-0.028	1040.0	2.87	8.44
458	74.389	0.162	1.56	66	1.20	150	-0.028	1040.0	2.99	8.78
459	74.552	0.163	1.56	66	1.20	148	-0.027	1040.0	2.70	7.95
460	74.714	0.162	1.56	66	1.20	146	-0.027	1040.0	2.65	7.79
461	74.876	0.162	1.57	66	1.20	144	-0.026	1040.0	2.52	7.49
462	75.039	0.163	1.56	66	1.20	142	-0.024	1040.0	2.63	7.76
463	75.202	0.163	1.56	66	1.20	140	-0.025	1040.0	2.58	7.64
464	75.364	0.162	1.56	66	1.20	138	-0.025	1040.0	2.66	7.85

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
465	75.527	0.163	1.57	66	1.20	136	-0.024	1040.0	2.55	7.56
466	75.690	0.163	1.56	66	1.20	135	-0.024	1040.0	2.38	7.10
467	75.852	0.162	1.56	66	1.20	133	-0.024	1040.0	2.36	7.02
468	76.016	0.164	1.56	66	1.20	131	-0.024	1040.0	2.22	6.61
469	76.179	0.163	1.56	66	1.20	130	-0.023	1040.0	2.12	6.31
470	76.342	0.163	1.56	66	1.20	129	-0.023	1040.0	2.08	6.19
471	76.505	0.163	1.56	66	1.20	127	-0.023	1040.0	2.11	6.26
472	76.668	0.163	1.57	66	1.20	126	-0.022	1040.0	2.15	6.35
473	76.831	0.163	1.57	66	1.20	124	-0.022	1040.0	1.88	5.61
474	76.994	0.163	1.57	66	1.20	123	-0.022	1040.0	2.03	5.99
475	77.158	0.164	1.56	66	1.20	122	-0.022	1040.0	1.87	5.53
476	77.321	0.163	1.56	66	1.20	121	-0.021	1040.0	1.91	5.63
477	77.484	0.163	1.56	66	1.20	120	-0.021	1040.0	1.93	5.67
478	77.647	0.163	1.56	66	1.20	118	-0.021	1040.0	1.82	5.35
479	77.809	0.162	1.57	66	1.20	117	-0.021	1040.0	1.90	5.56
480	77.972	0.163	1.56	66	1.20	116	-0.020	1040.0	1.86	5.38
481	78.135	0.163	1.56	66	1.20	158	-0.039	1040.0	1.94	5.55
482	78.298	0.163	1.56	66	1.20	202	-0.041	1040.0	2.11	8.94
483	78.461	0.163	1.56	66	1.20	233	-0.045	1040.0	1.67	12.82
484	78.624	0.163	1.56	66	1.20	255	-0.047	1040.0	0.88	13.67
485	78.786	0.162	1.57	66	1.20	269	-0.048	1040.0	0.15	14.78
486	78.949	0.163	1.56	66	1.20	278	-0.049	1040.0	0.04	14.70
487	79.111	0.162	1.56	66	1.20	274	-0.044	790.2	0.00	14.39
488	79.275	0.164	1.56	66	1.20	277	-0.046	413.3	0.04	13.82
489	79.438	0.163	1.56	66	1.20	278	-0.045	280.9	0.03	13.72
490	79.600	0.162	1.56	66	1.20	277	-0.050	291.9	0.03	13.97
491	79.763	0.163	1.56	66	1.20	275	-0.050	319.1	0.03	13.87
492	79.925	0.162	1.56	66	1.20	269	-0.047	334.0	0.03	13.96
493	80.087	0.162	1.56	66	1.20	271	-0.045	286.8	0.03	13.86
494	80.251	0.164	1.56	66	1.20	269	-0.047	293.5	0.03	14.16
495	80.414	0.163	1.56	66	1.20	268	-0.046	311.1	0.03	14.10
496	80.576	0.162	1.56	66	1.20	268	-0.047	301.7	0.03	14.26
497	80.739	0.163	1.56	66	1.20	268	-0.047	316.9	0.03	14.42
498	80.901	0.162	1.56	66	1.20	269	-0.047	333.4	0.03	14.70
499	81.063	0.162	1.56	66	1.20	270	-0.046	352.4	0.04	14.85
500	81.227	0.164	1.56	66	1.20	270	-0.046	361.2	0.04	14.89

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
501	81.390	0.163	1.56	66	1.20	271	-0.048	374.8	0.04	15.02
502	81.553	0.163	1.56	66	1.20	272	-0.047	396.1	0.04	15.09
503	81.716	0.163	1.56	66	1.20	273	-0.049	388.4	0.04	15.46
504	81.878	0.162	1.56	66	1.20	273	-0.048	482.0	0.05	14.90
505	82.041	0.163	1.56	66	1.20	273	-0.048	561.3	0.06	14.77
506	82.203	0.162	1.56	66	1.20	273	-0.046	672.9	0.07	14.64
507	82.367	0.164	1.56	66	1.20	273	-0.048	811.2	0.01	14.49
508	82.530	0.163	1.56	66	1.20	274	-0.047	938.8	0.02	14.43
509	82.693	0.163	1.56	66	1.20	274	-0.049	1040.0	0.03	14.38
510	82.856	0.163	1.56	66	1.20	274	-0.048	1040.0	0.05	14.30
511	83.018	0.162	1.56	66	1.20	274	-0.046	1040.0	0.08	14.19
512	83.180	0.162	1.56	66	1.20	280	-0.048	1040.0	0.12	13.89
513	83.343	0.163	1.56	66	1.20	282	-0.047	1040.0	0.18	13.87
514	83.506	0.163	1.56	66	1.20	282	-0.048	1040.0	0.10	14.29
515	83.669	0.163	1.56	66	1.20	287	-0.054	1040.0	0.21	13.93
516	83.831	0.162	1.56	66	1.20	289	-0.052	1040.0	0.26	13.72
517	83.994	0.163	1.56	66	1.20	288	-0.047	1040.0	0.13	13.73
518	84.156	0.162	1.56	66	1.20	287	-0.048	1040.0	0.09	13.93
519	84.320	0.164	1.56	66	1.20	291	-0.049	1040.0	0.16	13.90
520	84.483	0.163	1.56	66	1.20	291	-0.052	1040.0	0.15	14.01
521	84.646	0.163	1.56	67	1.20	292	-0.052	1040.0	0.17	13.79
522	84.808	0.162	1.56	67	1.20	293	-0.051	1040.0	0.15	13.65
523	84.971	0.163	1.56	67	1.20	291	-0.049	1040.0	0.09	13.84
524	85.133	0.162	1.56	67	1.20	292	-0.052	1040.0	0.18	13.95
525	85.296	0.163	1.56	67	1.20	296	-0.051	1040.0	0.21	13.59
526	85.460	0.164	1.56	67	1.20	294	-0.051	1040.0	0.15	13.52
527	85.623	0.163	1.56	67	1.20	281	-0.046	1040.0	0.15	13.89
528	85.785	0.162	1.56	67	1.20	259	-0.045	1040.0	0.14	6.27
529	85.948	0.163	1.56	67	1.20	246	-0.044	1040.0	0.03	6.89
530	86.111	0.163	1.56	67	1.20	237	-0.043	615.6	0.06	8.28
531	86.273	0.162	1.56	67	1.20	231	-0.042	638.3	0.06	8.06
532	86.437	0.164	1.56	67	1.20	226	-0.042	1040.0	0.11	10.71
533	86.600	0.163	1.56	67	1.20	221	-0.042	1040.0	0.13	12.50
534	86.763	0.163	1.56	67	1.20	216	-0.041	1040.0	0.07	12.00
535	86.926	0.163	1.56	67	1.20	212	-0.040	1040.0	0.05	11.58
536	87.088	0.162	1.57	67	1.20	210	-0.038	937.1	0.02	10.93

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
537	87.251	0.163	1.56	67	1.20	208	-0.038	949.4	0.05	8.76
538	87.414	0.163	1.56	67	1.20	204	-0.039	1040.0	1.38	11.01
539	87.577	0.163	1.56	67	1.20	201	-0.040	1040.0	2.91	13.61
540	87.741	0.164	1.56	67	1.20	197	-0.038	1040.0	3.69	14.38
541	87.904	0.163	1.56	67	1.20	194	-0.039	1040.0	4.24	15.00
542	88.067	0.163	1.56	67	1.20	190	-0.038	1040.0	4.56	15.20
543	88.230	0.163	1.56	67	1.20	187	-0.037	1040.0	4.99	15.82
544	88.392	0.162	1.56	67	1.20	184	-0.036	1040.0	4.90	15.14
545	88.555	0.163	1.56	67	1.20	180	-0.036	1040.0	4.84	14.62
546	88.719	0.164	1.56	67	1.20	177	-0.035	1040.0	4.83	14.37
547	88.882	0.163	1.56	67	1.20	174	-0.034	1040.0	4.60	13.51
548	89.044	0.162	1.56	67	1.20	171	-0.033	1040.0	4.58	13.23
549	89.206	0.162	1.56	67	1.20	168	-0.032	1040.0	4.25	12.12
550	89.369	0.163	1.56	66	1.20	165	-0.032	1040.0	4.21	11.89
551	89.531	0.162	1.56	66	1.20	162	-0.031	1040.0	4.16	11.63
552	89.694	0.163	1.56	66	1.20	160	-0.031	1040.0	4.32	11.98
553	89.858	0.164	1.56	67	1.20	157	-0.030	1040.0	3.92	10.91
554	90.020	0.162	1.56	67	1.20	154	-0.030	1040.0	3.51	9.83
555	90.183	0.163	1.56	66	1.20	152	-0.029	1040.0	3.52	9.79
556	90.346	0.163	1.56	66	1.20	150	-0.029	1040.0	3.69	10.15
557	90.508	0.162	1.56	66	1.20	148	-0.028	1040.0	3.44	9.47
558	90.671	0.163	1.56	66	1.20	146	-0.028	1040.0	3.48	9.59
559	90.835	0.164	1.56	66	1.20	143	-0.027	1040.0	3.06	8.47
560	90.998	0.163	1.56	66	1.20	141	-0.027	1040.0	2.94	8.13
561	91.161	0.163	1.56	66	1.20	140	-0.027	1040.0	2.95	8.11
562	91.323	0.162	1.56	66	1.20	138	-0.026	1040.0	2.83	7.78
563	91.487	0.164	1.56	66	1.20	136	-0.025	1040.0	2.70	7.45
564	91.650	0.163	1.57	66	1.20	134	-0.026	1040.0	2.69	7.36
565	91.813	0.163	1.56	66	1.20	133	-0.024	1040.0	2.47	6.83
566	91.976	0.163	1.56	66	1.20	131	-0.024	1040.0	2.38	6.61
567	92.139	0.163	1.56	66	1.20	130	-0.023	1040.0	2.33	6.43
568	92.302	0.163	1.56	66	1.20	128	-0.024	1040.0	2.40	6.61
569	92.465	0.163	1.56	66	1.20	126	-0.023	1040.0	2.19	6.06
570	92.628	0.163	1.56	66	1.20	125	-0.023	1040.0	2.07	5.74
571	92.791	0.163	1.56	66	1.20	124	-0.022	1040.0	2.05	5.68
572	92.955	0.164	1.57	66	1.20	122	-0.022	1040.0	2.07	5.72

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
573	93.118	0.163	1.56	66	1.20	121	-0.021	1040.0	1.95	5.40
574	93.281	0.163	1.56	66	1.20	119	-0.021	1040.0	1.82	5.05
575	93.444	0.163	1.56	66	1.20	150	-0.041	1040.0	1.89	5.24
576	93.607	0.163	1.56	66	1.20	191	-0.041	1040.0	2.52	9.82
577	93.769	0.162	1.56	66	1.20	216	-0.042	1040.0	2.89	11.00
578	93.932	0.163	1.56	66	1.20	232	-0.042	1040.0	3.36	11.14
579	94.096	0.164	1.56	66	1.20	246	-0.045	1040.0	2.20	11.87
580	94.259	0.163	1.56	66	1.20	256	-0.046	1040.0	2.20	11.78
581	94.422	0.163	1.56	66	1.20	267	-0.047	1040.0	1.38	12.91
582	94.584	0.162	1.56	66	1.20	273	-0.046	1040.0	0.79	13.69
583	94.747	0.163	1.56	66	1.20	277	-0.049	1040.0	0.52	13.58
584	94.909	0.162	1.56	66	1.20	280	-0.048	1040.0	0.34	13.82
585	95.073	0.164	1.56	66	1.20	281	-0.047	1040.0	0.38	13.67
586	95.236	0.163	1.56	66	1.20	282	-0.049	1040.0	0.17	13.32
587	95.399	0.163	1.56	66	1.20	283	-0.049	1040.0	0.18	13.22
588	95.562	0.163	1.56	66	1.20	285	-0.048	1040.0	0.17	13.15
589	95.724	0.162	1.56	66	1.20	285	-0.045	1040.0	0.10	13.37
590	95.887	0.163	1.56	66	1.20	285	-0.047	1040.0	0.07	13.08
591	96.050	0.163	1.56	66	1.20	287	-0.049	1040.0	0.41	12.94
592	96.214	0.164	1.57	66	1.20	284	-0.050	1040.0	0.24	13.27
593	96.377	0.163	1.56	66	1.20	283	-0.047	1040.0	0.07	13.51
594	96.540	0.163	1.56	66	1.20	280	-0.046	351.2	0.04	13.63
595	96.703	0.163	1.56	66	1.20	281	-0.046	430.5	0.04	13.38
596	96.865	0.162	1.56	66	1.20	282	-0.047	640.8	0.06	13.32
597	97.027	0.162	1.56	66	1.20	281	-0.049	730.2	0.07	13.30
598	97.191	0.164	1.56	66	1.20	278	-0.050	738.0	0.00	13.55
599	97.354	0.163	1.56	66	1.20	276	-0.046	975.0	0.02	13.70
600	97.516	0.162	1.56	66	1.20	277	-0.049	1040.0	0.05	13.46
601	97.679	0.163	1.56	66	1.20	278	-0.047	1040.0	0.10	13.49
602	97.841	0.162	1.56	66	1.20	278	-0.048	1040.0	0.13	13.48
603	98.003	0.162	1.57	66	1.20	277	-0.048	1023.3	0.03	13.63
604	98.166	0.163	1.56	66	1.20	277	-0.049	1030.3	0.03	13.58
605	98.329	0.163	1.56	66	1.20	278	-0.048	1040.0	0.08	13.56
606	98.492	0.163	1.56	66	1.20	278	-0.048	1040.0	0.11	13.54
607	98.655	0.163	1.56	66	1.20	278	-0.049	1040.0	0.09	13.60
608	98.817	0.162	1.56	66	1.20	281	-0.049	1040.0	0.18	13.46

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
609	98.979	0.162	1.56	66	1.20	282	-0.051	1040.0	0.43	13.22
610	99.143	0.164	1.56	66	1.20	285	-0.049	1040.0	0.64	12.95
611	99.306	0.163	1.57	66	1.20	289	-0.050	1040.0	0.53	13.08
612	99.469	0.163	1.56	66	1.20	289	-0.051	1040.0	0.51	12.98
613	99.632	0.163	1.56	66	1.20	290	-0.049	1040.0	0.22	13.09
614	99.795	0.163	1.56	67	1.20	289	-0.051	1040.0	0.26	12.93
615	99.957	0.162	1.56	67	1.20	291	-0.054	1040.0	0.23	12.69
616	100.120	0.163	1.56	67	1.20	285	-0.048	595.9	0.06	13.75
617	100.282	0.162	1.56	67	1.20	282	-0.047	318.2	0.03	13.98
618	100.445	0.163	1.56	66	1.20	281	-0.048	349.2	0.03	13.96
619	100.607	0.162	1.56	67	1.20	281	-0.048	388.7	0.04	13.88
620	100.770	0.163	1.56	67	1.20	281	-0.048	441.2	0.04	13.76
621	100.933	0.163	1.56	67	1.20	260	-0.044	654.5	0.00	11.31
622	101.096	0.163	1.56	67	1.20	245	-0.044	731.9	0.00	4.11
623	101.259	0.163	1.56	67	1.20	236	-0.042	698.5	0.07	3.42
624	101.423	0.164	1.56	67	1.20	229	-0.041	470.3	0.05	3.33
625	101.586	0.163	1.56	67	1.20	224	-0.041	559.7	0.06	2.92
626	101.748	0.162	1.56	67	1.20	219	-0.040	439.5	0.04	3.85
627	101.911	0.163	1.56	67	1.20	215	-0.040	386.8	0.04	3.56
628	102.074	0.163	1.56	67	1.20	211	-0.039	386.8	0.04	2.80
629	102.236	0.162	1.56	67	1.20	207	-0.038	401.7	0.04	2.40
630	102.401	0.165	1.57	67	1.20	204	-0.036	395.2	0.04	1.94
631	102.564	0.163	1.56	67	1.20	201	-0.035	265.1	0.03	1.30
632	102.726	0.162	1.56	67	1.20	197	-0.034	323.0	0.03	1.02
633	102.889	0.163	1.56	67	1.20	193	-0.034	538.6	0.05	0.91
634	103.052	0.163	1.57	67	1.20	190	-0.033	737.0	0.00	0.91
635	103.214	0.162	1.56	67	1.20	187	-0.032	954.9	0.02	0.99
636	103.378	0.164	1.56	67	1.20	183	-0.032	978.6	0.02	0.94
637	103.542	0.164	1.56	67	1.20	180	-0.032	1040.0	0.04	1.03
638	103.705	0.163	1.56	67	1.20	177	-0.031	1040.0	0.03	0.95
639	103.868	0.163	1.56	67	1.20	174	-0.031	1040.0	0.04	1.01
640	104.031	0.163	1.56	67	1.20	170	-0.030	1040.0	0.03	0.94
641	104.194	0.163	1.56	67	1.20	168	-0.029	1040.0	0.04	1.01
642	104.356	0.162	1.56	67	1.20	165	-0.029	1040.0	0.04	1.00
643	104.520	0.164	1.56	67	1.20	162	-0.028	1040.0	0.04	1.03
644	104.683	0.163	1.56	67	1.20	159	-0.028	1040.0	0.04	1.07

Train D - Ambient Background and Flue Gas Data

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
645	104.846	0.163	1.56	67	1.20	157	-0.027	1040.0	0.04	0.99
646	105.009	0.163	1.56	67	1.20	154	-0.027	1040.0	0.04	1.00
647	105.172	0.163	1.56	67	1.20	152	-0.027	1040.0	0.04	1.08
648	105.335	0.163	1.57	67	1.20	150	-0.026	1040.0	0.03	0.94
649	105.497	0.162	1.57	67	1.20	147	-0.026	1040.0	0.04	0.99
650	105.661	0.164	1.56	66	1.20	145	-0.026	1040.0	0.04	1.04
651	105.824	0.163	1.56	66	1.20	143	-0.025	1040.0	0.03	0.98
652	105.987	0.163	1.56	66	1.20	141	-0.025	1040.0	0.03	0.99
653	106.150	0.163	1.56	66	1.20	139	-0.024	1040.0	0.03	0.97
654	106.312	0.162	1.57	66	1.20	137	-0.024	993.4	0.02	0.88
655	106.475	0.163	1.57	66	1.20	136	-0.024	1027.4	0.03	0.92
656	106.638	0.163	1.56	66	1.20	134	-0.023	971.1	0.02	0.88
657	106.801	0.163	1.57	66	1.20	132	-0.023	1040.0	0.03	0.95
658	106.965	0.164	1.56	66	1.20	130	-0.023	969.2	0.02	0.84
659	107.128	0.163	1.56	66	1.20	129	-0.022	966.2	0.02	0.86
660	107.291	0.163	1.56	66	1.20	127	-0.022	913.5	0.02	0.80
661	107.454	0.163	1.57	66	1.20	126	-0.022	856.2	0.01	0.74
662	107.616	0.162	1.57	66	1.20	124	-0.022	953.0	0.02	0.84
663	107.779	0.163	1.56	66	1.20	123	-0.021	872.0	0.01	0.76
664	107.943	0.164	1.57	66	1.20	121	-0.021	873.7	0.01	0.74
665	108.106	0.163	1.56	66	1.20	120	-0.021	961.1	0.02	0.79
666	108.269	0.163	1.56	66	1.20	119	-0.021	947.4	0.02	0.82
667	108.432	0.163	1.56	66	1.20	128	-0.032	873.7	0.01	0.74
668	108.595	0.163	1.56	66	1.20	186	-0.038	1040.0	1.64	9.33
669	108.757	0.162	1.57	66	1.20	213	-0.040	1040.0	5.04	11.53
670	108.920	0.163	1.56	66	1.20	228	-0.043	1040.0	5.23	9.85
671	109.083	0.163	1.56	66	1.20	240	-0.045	1040.0	5.23	9.96
672	109.246	0.163	1.56	66	1.20	246	-0.044	1040.0	5.14	9.89
673	109.409	0.163	1.56	66	1.20	254	-0.046	1040.0	4.14	10.95
674	109.572	0.163	1.57	66	1.20	262	-0.046	1040.0	3.12	11.67
675	109.735	0.163	1.56	66	1.20	268	-0.047	1040.0	2.29	12.03
676	109.897	0.162	1.56	66	1.20	272	-0.046	1040.0	1.12	12.86
677	110.061	0.164	1.57	66	1.20	272	-0.048	1040.0	1.82	11.81
678	110.224	0.163	1.56	66	1.20	274	-0.048	1040.0	1.87	11.67
679	110.387	0.163	1.56	66	1.20	277	-0.048	1040.0	1.64	11.94
680	110.549	0.162	1.56	66	1.20	280	-0.051	1040.0	1.26	12.50

Train D - Ambient Background and Flue Gas Data

Run: 2

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Date: 12/3/2024

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 14:49

Total Sampling Time: 681 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
681	110.712	0.163	1.56	66	1.20	283	-0.049	1040.0	1.65	12.12

Water Flow Data

ASTM E2618-13

Run: 2

Test Date: 12/3/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Boiler Dry Weight, Lb. 1822.5

Boiler Water Weight, Lb.	1663
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TI_{avg} - Initial Average Boiler Temp, °F	140.10
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TF_{avg} - Final Average Boiler Temp, °F	160.24
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Test Start Time: 14:49

Total Sampling Time	681	min
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Recording Interval	<u>1</u>	min
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Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	c _{p i}	σ _i	M _i Mass lb/min	Heat Output Btu
Tot / Avg	164.2	168.1	3.86	54.3	167.9	113.65	1.427	1.0012	8.337	11.893	915723.2
Minimum	137.8	142.4	2.69	53.5	142.0	87.36	1.109	1.0012	8.336	9.249	1014.132
Max	177.8	181.3	4.74	55.2	181.2	127.30	2.164	1.0012	8.338	18.041	1592.578
0	137.8	142.4	4.67	54.7	142.0	87.36	2.150	1.0012	8.337	17.93	1567.9
1	138.1	142.8	4.67	54.7	142.5	87.87	2.150	1.0012	8.337	17.93	1577.2
2	138.1	142.7	4.63	54.7	142.5	87.81	2.164	1.0012	8.337	18.04	1586.2
3	138.4	143.1	4.68	54.6	142.8	88.12	2.150	1.0012	8.337	17.93	1581.7
4	139.4	143.8	4.40	54.6	143.6	88.92	2.054	1.0012	8.337	17.13	1524.9
5	139.7	144.1	4.38	54.7	143.8	89.17	2.000	1.0012	8.337	16.67	1488.4
6	140.0	144.5	4.42	54.7	144.3	89.58	2.027	1.0012	8.337	16.90	1515.7
7	140.5	144.9	4.45	54.7	144.7	90.02	2.013	1.0012	8.337	16.79	1512.8
8	140.8	145.3	4.50	54.7	145.0	90.30	2.027	1.0012	8.337	16.90	1527.9
9	141.1	145.6	4.51	54.7	145.3	90.68	2.041	1.0012	8.337	17.01	1544.7
10	141.4	145.9	4.52	54.6	145.6	91.00	2.027	1.0012	8.337	16.90	1539.7
11	142.1	146.4	4.32	54.7	146.1	91.40	1.972	1.0012	8.337	16.44	1504.7
12	142.6	146.8	4.23	54.7	146.6	91.83	1.918	1.0012	8.337	15.99	1469.8
13	142.7	147.1	4.34	54.8	146.8	92.04	1.931	1.0012	8.337	16.10	1483.7
14	143.1	147.5	4.41	54.8	147.2	92.41	1.945	1.0012	8.337	16.21	1500.1
15	143.3	147.7	4.39	54.8	147.5	92.68	1.945	1.0012	8.337	16.21	1504.5
16	143.7	148.2	4.42	54.8	147.9	93.04	1.959	1.0012	8.337	16.33	1521.1
17	144.0	148.4	4.38	54.8	148.2	93.32	1.931	1.0012	8.337	16.10	1504.2
18	144.4	148.9	4.46	54.8	148.6	93.81	1.876	1.0012	8.337	15.64	1469.2
19	144.6	149.1	4.46	54.8	148.9	94.07	1.959	1.0012	8.337	16.33	1537.9
20	144.9	149.4	4.49	54.8	149.1	94.27	1.931	1.0012	8.337	16.10	1519.5
21	145.2	149.7	4.48	54.8	149.4	94.57	1.931	1.0012	8.337	16.10	1524.5
22	145.6	150.1	4.49	54.8	149.7	94.92	1.931	1.0012	8.337	16.10	1530.1
23	145.9	150.3	4.49	54.8	150.1	95.28	1.918	1.0012	8.337	15.99	1525.0
24	146.1	150.6	4.49	54.8	150.4	95.51	1.931	1.0012	8.337	16.10	1539.5
25	146.4	150.9	4.48	54.9	150.7	95.81	1.918	1.0012	8.337	15.99	1533.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
26	146.7	151.2	4.52	54.9	150.9	96.06	1.931	1.0012	8.337	16.10	1548.3
27	146.8	151.3	4.53	54.9	151.0	96.15	1.918	1.0012	8.337	15.99	1538.9
28	147.2	151.7	4.56	54.9	151.5	96.57	1.918	1.0012	8.337	15.99	1545.6
29	147.5	152.0	4.56	54.9	151.7	96.84	1.904	1.0012	8.337	15.87	1538.8
30	147.7	152.2	4.59	54.9	151.9	97.01	1.931	1.0012	8.337	16.10	1563.7
31	148.0	152.5	4.52	54.9	152.3	97.40	1.904	1.0012	8.337	15.87	1547.7
32	148.3	152.9	4.57	54.9	152.7	97.75	1.904	1.0012	8.337	15.87	1553.3
33	148.5	153.1	4.53	54.9	152.8	97.94	1.890	1.0012	8.337	15.76	1545.2
34	148.8	153.3	4.53	54.9	153.0	98.17	1.876	1.0012	8.337	15.64	1537.5
35	149.0	153.5	4.52	54.9	153.3	98.41	1.876	1.0012	8.337	15.64	1541.2
36	149.4	153.9	4.48	54.9	153.7	98.78	1.863	1.0012	8.337	15.53	1535.9
37	149.8	154.3	4.52	54.9	154.1	99.17	1.863	1.0012	8.337	15.53	1541.8
38	150.0	154.5	4.46	54.9	154.2	99.32	1.835	1.0012	8.337	15.30	1521.5
39	150.4	154.8	4.44	54.9	154.6	99.69	1.822	1.0012	8.337	15.19	1515.8
40	150.4	154.8	4.43	54.9	154.6	99.70	1.822	1.0012	8.337	15.19	1515.9
41	151.0	155.3	4.30	55.0	155.1	100.15	1.739	1.0012	8.337	14.50	1454.0
42	151.3	155.8	4.46	55.0	155.6	100.56	1.822	1.0012	8.337	15.19	1529.0
43	151.3	155.8	4.46	55.0	155.6	100.64	1.808	1.0012	8.337	15.07	1518.7
44	151.6	156.1	4.49	55.0	155.8	100.84	1.822	1.0012	8.337	15.19	1533.3
45	152.0	156.5	4.48	55.0	156.2	101.20	1.808	1.0012	8.337	15.07	1527.1
46	152.2	156.7	4.50	55.0	156.5	101.49	1.808	1.0012	8.337	15.07	1531.5
47	152.4	156.9	4.53	55.0	156.6	101.61	1.808	1.0012	8.337	15.07	1533.4
48	152.7	157.2	4.51	55.0	157.0	101.98	1.808	1.0012	8.337	15.07	1538.9
49	152.9	157.4	4.51	55.0	157.2	102.22	1.794	1.0012	8.337	14.96	1530.9
50	153.2	157.7	4.51	55.0	157.5	102.51	1.794	1.0012	8.337	14.96	1535.2
51	153.5	158.1	4.57	55.0	157.7	102.69	1.794	1.0012	8.337	14.96	1537.9
52	153.8	158.2	4.48	55.0	158.0	103.00	1.781	1.0012	8.337	14.84	1530.8
53	153.8	158.3	4.50	55.1	158.0	102.98	1.781	1.0012	8.337	14.84	1530.4
54	154.5	159.0	4.45	55.1	158.8	103.70	1.767	1.0012	8.337	14.73	1529.3
55	154.7	159.0	4.32	55.1	158.8	103.71	1.726	1.0012	8.336	14.39	1493.8
56	155.0	159.3	4.37	55.1	159.0	103.93	1.712	1.0012	8.336	14.27	1485.2
57	155.3	159.7	4.39	55.1	159.4	104.26	1.698	1.0012	8.336	14.16	1477.9
58	155.7	160.0	4.26	55.1	159.8	104.63	1.671	1.0012	8.336	13.93	1459.2
59	155.5	160.1	4.51	55.1	159.9	104.80	1.753	1.0012	8.336	14.62	1533.5
60	155.9	160.4	4.52	55.1	160.2	105.11	1.767	1.0012	8.336	14.73	1550.0
61	156.0	160.6	4.53	55.1	160.4	105.36	1.767	1.0012	8.337	14.73	1553.8
62	156.2	160.7	4.58	55.1	160.5	105.42	1.767	1.0012	8.337	14.73	1554.6
63	156.6	161.2	4.57	55.1	161.0	105.89	1.753	1.0012	8.337	14.62	1549.5
64	156.9	161.3	4.42	55.1	161.2	106.03	1.712	1.0012	8.336	14.27	1515.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
65	157.0	161.6	4.58	55.1	161.4	106.24	1.753	1.0012	8.336	14.62	1554.5
66	157.3	161.8	4.60	55.1	161.6	106.48	1.767	1.0012	8.336	14.73	1570.3
67	157.3	161.9	4.58	55.2	161.7	106.51	1.753	1.0012	8.336	14.62	1558.6
68	157.7	162.3	4.61	55.1	162.1	106.96	1.767	1.0012	8.336	14.73	1577.4
69	157.9	162.6	4.63	55.1	162.4	107.27	1.753	1.0012	8.336	14.62	1569.6
70	158.3	163.0	4.68	55.1	162.7	107.60	1.767	1.0012	8.336	14.73	1586.9
71	158.5	162.9	4.47	55.1	162.7	107.67	1.712	1.0012	8.337	14.27	1538.6
72	158.9	163.3	4.35	55.1	163.1	108.00	1.657	1.0012	8.337	13.82	1493.9
73	159.4	163.6	4.19	55.1	163.4	108.36	1.602	1.0012	8.337	13.36	1449.3
74	159.5	163.9	4.37	55.1	163.7	108.62	1.657	1.0012	8.336	13.82	1502.4
75	159.7	164.1	4.37	55.1	163.9	108.83	1.657	1.0012	8.337	13.82	1505.4
76	159.9	164.4	4.41	55.1	164.1	109.04	1.657	1.0012	8.336	13.82	1508.3
77	160.4	164.8	4.41	55.2	164.5	109.38	1.644	1.0012	8.336	13.70	1500.5
78	160.6	165.0	4.42	55.0	164.7	109.70	1.644	1.0012	8.337	13.70	1504.9
79	160.7	165.2	4.48	54.8	165.0	110.17	1.657	1.0012	8.337	13.82	1524.0
80	161.2	165.7	4.44	54.7	165.5	110.81	1.644	1.0012	8.337	13.70	1520.2
81	161.4	165.8	4.46	54.6	165.6	110.99	1.644	1.0012	8.337	13.70	1522.7
82	161.6	166.0	4.47	54.6	165.9	111.32	1.657	1.0012	8.337	13.82	1539.9
83	161.9	166.4	4.51	54.5	166.2	111.69	1.644	1.0012	8.337	13.70	1532.3
84	162.2	166.8	4.51	54.5	166.5	112.06	1.644	1.0012	8.337	13.70	1537.4
85	162.5	167.0	4.54	54.4	166.8	112.39	1.644	1.0012	8.337	13.70	1541.9
86	162.7	167.3	4.57	54.4	167.1	112.68	1.644	1.0012	8.337	13.70	1545.9
87	162.9	167.4	4.56	54.4	167.3	112.89	1.644	1.0012	8.337	13.70	1548.8
88	163.2	167.8	4.58	54.4	167.6	113.26	1.644	1.0012	8.337	13.70	1553.8
89	163.5	168.1	4.61	54.3	167.9	113.61	1.644	1.0012	8.337	13.70	1558.7
90	163.8	168.4	4.59	54.3	168.2	113.91	1.644	1.0012	8.337	13.70	1562.7
91	164.1	168.6	4.47	54.3	168.4	114.09	1.602	1.0012	8.337	13.36	1526.1
92	164.3	168.9	4.62	54.3	168.7	114.43	1.644	1.0012	8.337	13.70	1569.9
93	164.4	169.0	4.68	54.2	168.8	114.54	1.630	1.0012	8.337	13.59	1558.4
94	164.9	169.5	4.67	54.2	169.3	115.08	1.644	1.0012	8.337	13.70	1578.8
95	165.3	169.7	4.39	54.2	169.5	115.34	1.589	1.0012	8.337	13.25	1529.7
96	165.6	170.1	4.57	54.2	169.9	115.67	1.589	1.0012	8.337	13.25	1534.1
97	165.8	170.3	4.51	54.2	170.2	115.96	1.602	1.0012	8.337	13.36	1551.2
98	165.8	170.4	4.52	54.2	170.2	116.01	1.589	1.0012	8.337	13.25	1538.6
99	166.2	170.8	4.55	54.2	170.6	116.39	1.602	1.0012	8.337	13.36	1557.0
100	166.8	171.3	4.46	54.2	171.1	116.87	1.548	1.0012	8.337	12.90	1509.8
101	167.0	171.4	4.45	54.2	171.2	117.06	1.548	1.0012	8.337	12.90	1512.3
102	167.2	171.7	4.49	54.2	171.5	117.27	1.548	1.0012	8.337	12.90	1515.0
103	167.6	172.1	4.51	54.2	171.9	117.68	1.548	1.0012	8.337	12.90	1520.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
104	167.9	172.4	4.46	54.2	172.2	118.04	1.548	1.0012	8.337	12.90	1525.1
105	168.1	172.6	4.49	54.2	172.5	118.27	1.548	1.0012	8.337	12.90	1528.0
106	168.4	172.9	4.52	54.2	172.7	118.48	1.548	1.0012	8.337	12.90	1530.7
107	168.8	173.2	4.46	54.2	173.0	118.85	1.534	1.0012	8.337	12.79	1521.9
108	169.1	173.6	4.42	54.1	173.4	119.25	1.507	1.0012	8.337	12.56	1499.7
109	169.5	174.0	4.48	54.1	173.7	119.58	1.520	1.0012	8.337	12.68	1517.5
110	169.8	174.2	4.43	54.1	174.0	119.93	1.507	1.0012	8.337	12.56	1508.3
111	170.0	174.5	4.46	54.1	174.4	120.26	1.520	1.0012	8.337	12.68	1526.2
112	170.2	174.6	4.48	54.1	174.4	120.35	1.507	1.0012	8.337	12.56	1513.6
113	170.5	175.0	4.50	54.1	174.7	120.67	1.507	1.0012	8.337	12.56	1517.6
114	170.8	175.3	4.48	54.1	175.1	121.04	1.507	1.0012	8.337	12.56	1522.2
115	171.1	175.6	4.54	54.1	175.4	121.30	1.507	1.0012	8.337	12.56	1525.5
116	171.2	175.7	4.51	54.1	175.5	121.43	1.507	1.0012	8.337	12.56	1527.2
117	171.7	176.2	4.55	54.1	176.0	121.94	1.520	1.0012	8.337	12.68	1547.5
118	171.8	176.3	4.54	54.0	176.1	122.08	1.507	1.0012	8.337	12.56	1535.3
119	172.0	176.6	4.56	54.1	176.4	122.32	1.507	1.0012	8.337	12.56	1538.3
120	172.4	176.9	4.57	54.0	176.8	122.71	1.507	1.0012	8.337	12.56	1543.2
121	172.7	177.2	4.57	54.0	177.1	123.09	1.507	1.0012	8.338	12.56	1548.1
122	172.9	177.4	4.55	54.1	177.2	123.17	1.507	1.0012	8.337	12.56	1549.1
123	173.3	177.9	4.64	54.1	177.6	123.54	1.507	1.0012	8.337	12.56	1553.7
124	173.3	177.9	4.57	54.1	177.7	123.70	1.507	1.0012	8.337	12.56	1555.7
125	173.5	178.2	4.63	54.0	177.9	123.84	1.493	1.0012	8.337	12.45	1543.3
126	174.7	178.7	4.06	54.0	178.5	124.44	1.342	1.0012	8.337	11.19	1394.3
127	175.1	179.2	4.10	54.1	179.0	124.94	1.342	1.0012	8.337	11.19	1399.9
128	175.4	179.5	4.11	54.0	179.3	125.26	1.329	1.0012	8.337	11.08	1389.2
129	175.7	179.9	4.13	54.1	179.7	125.61	1.342	1.0012	8.337	11.19	1407.4
130	175.9	180.1	4.16	54.1	179.9	125.81	1.329	1.0012	8.337	11.08	1395.3
131	175.5	180.2	4.65	54.1	180.1	125.97	1.452	1.0012	8.337	12.10	1526.6
132	175.2	179.8	4.60	54.1	179.8	125.68	1.479	1.0012	8.337	12.33	1551.9
133	175.2	179.8	4.55	54.1	179.7	125.57	1.466	1.0012	8.337	12.22	1536.2
134	175.0	179.5	4.54	54.1	179.4	125.32	1.466	1.0012	8.337	12.22	1533.1
135	174.9	179.4	4.53	54.1	179.3	125.19	1.466	1.0012	8.337	12.22	1531.5
136	174.5	179.0	4.44	54.1	179.0	124.93	1.452	1.0012	8.337	12.10	1514.1
137	174.5	178.8	4.30	54.0	178.7	124.63	1.424	1.0012	8.338	11.88	1482.0
138	174.0	178.4	4.42	54.1	178.3	124.27	1.438	1.0012	8.337	11.99	1491.8
139	173.6	178.0	4.39	54.0	177.9	123.86	1.466	1.0012	8.337	12.22	1515.2
140	173.1	177.5	4.40	54.0	177.4	123.40	1.466	1.0012	8.338	12.22	1509.7
141	172.6	177.0	4.39	54.0	176.9	122.87	1.452	1.0012	8.338	12.10	1489.1
142	172.3	176.7	4.41	54.0	176.6	122.61	1.466	1.0012	8.338	12.22	1499.9

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
143	171.8	176.1	4.33	54.0	176.1	122.08	1.466	1.0012	8.338	12.22	1493.4
144	171.3	175.7	4.42	54.0	175.7	121.65	1.493	1.0012	8.338	12.45	1516.1
145	170.8	175.2	4.41	54.0	175.1	121.12	1.493	1.0012	8.338	12.45	1509.5
146	170.3	174.7	4.44	54.0	174.6	120.58	1.520	1.0012	8.338	12.68	1530.2
147	169.8	174.2	4.40	54.0	174.1	120.12	1.507	1.0012	8.338	12.56	1510.7
148	169.4	173.7	4.34	54.0	173.7	119.73	1.507	1.0012	8.338	12.56	1505.7
149	168.9	173.2	4.33	54.0	173.2	119.19	1.507	1.0012	8.338	12.56	1499.0
150	168.3	172.7	4.33	54.0	172.6	118.58	1.507	1.0012	8.338	12.56	1491.4
151	167.8	172.1	4.28	54.0	172.1	118.08	1.520	1.0012	8.338	12.68	1498.6
152	167.3	171.6	4.26	54.0	171.5	117.52	1.507	1.0012	8.338	12.56	1478.0
153	166.8	171.1	4.27	54.0	171.0	116.99	1.520	1.0012	8.338	12.68	1484.8
154	166.1	170.4	4.33	54.0	170.3	116.32	1.520	1.0012	8.338	12.68	1476.2
155	165.5	169.8	4.29	54.0	169.7	115.69	1.548	1.0012	8.338	12.90	1494.7
156	165.0	169.3	4.29	54.0	169.2	115.27	1.534	1.0012	8.338	12.79	1476.1
157	164.5	168.7	4.26	53.9	168.7	114.74	1.548	1.0012	8.338	12.90	1482.4
158	164.0	168.3	4.28	53.9	168.1	114.19	1.548	1.0012	8.338	12.90	1475.4
159	163.4	167.6	4.22	53.9	167.5	113.62	1.534	1.0012	8.338	12.79	1455.0
160	162.8	167.0	4.19	53.9	167.0	113.07	1.548	1.0012	8.338	12.90	1460.8
161	162.2	166.4	4.17	53.9	166.3	112.46	1.548	1.0012	8.338	12.90	1452.9
162	161.6	165.7	4.15	53.9	165.7	111.80	1.548	1.0012	8.338	12.90	1444.5
163	161.2	165.3	4.19	53.9	165.2	111.33	1.548	1.0012	8.338	12.90	1438.3
164	160.3	164.8	4.44	53.9	164.7	110.83	1.644	1.0012	8.338	13.70	1520.6
165	159.6	164.0	4.41	53.9	164.0	110.09	1.657	1.0012	8.338	13.82	1523.1
166	159.1	163.4	4.36	53.9	163.4	109.52	1.644	1.0012	8.338	13.70	1502.6
167	158.5	162.8	4.34	53.8	162.7	108.90	1.657	1.0012	8.338	13.82	1506.6
168	157.8	162.2	4.35	53.8	162.1	108.24	1.657	1.0012	8.338	13.82	1497.4
169	157.2	161.5	4.28	53.8	161.4	107.55	1.657	1.0012	8.338	13.82	1488.0
170	156.5	160.8	4.25	53.8	160.7	106.87	1.657	1.0012	8.338	13.82	1478.5
171	156.1	160.3	4.23	53.8	160.3	106.43	1.657	1.0012	8.338	13.82	1472.4
172	155.4	159.6	4.23	53.8	159.5	105.71	1.657	1.0012	8.338	13.82	1462.4
173	154.7	158.9	4.19	53.8	158.8	104.98	1.671	1.0012	8.338	13.93	1464.3
174	154.2	158.4	4.16	53.8	158.3	104.46	1.657	1.0012	8.338	13.82	1445.1
175	153.8	158.1	4.33	53.8	158.0	104.19	1.698	1.0012	8.338	14.16	1477.1
176	153.3	157.6	4.33	53.8	157.5	103.68	1.726	1.0012	8.338	14.39	1493.7
177	153.1	157.4	4.28	53.8	157.2	103.41	1.726	1.0012	8.338	14.39	1489.8
178	153.0	157.3	4.31	53.8	157.2	103.36	1.726	1.0012	8.338	14.39	1489.0
179	153.0	157.4	4.33	53.8	157.2	103.36	1.712	1.0012	8.338	14.27	1477.3
180	153.1	157.4	4.34	53.8	157.2	103.42	1.726	1.0012	8.338	14.39	1489.9
181	153.4	157.7	4.36	53.8	157.5	103.71	1.726	1.0012	8.338	14.39	1494.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
182	153.7	158.1	4.37	53.8	157.8	103.97	1.726	1.0012	8.338	14.39	1497.9
183	153.9	158.3	4.42	53.8	158.0	104.24	1.726	1.0012	8.338	14.39	1501.7
184	154.3	158.8	4.49	53.8	158.5	104.74	1.739	1.0012	8.338	14.50	1520.9
185	154.6	159.1	4.46	53.8	158.8	105.04	1.739	1.0012	8.338	14.50	1525.2
186	155.0	159.5	4.47	53.8	159.3	105.47	1.739	1.0012	8.338	14.50	1531.5
187	155.3	159.8	4.51	53.8	159.6	105.83	1.739	1.0012	8.338	14.50	1536.7
188	155.6	160.1	4.54	53.8	159.9	106.11	1.753	1.0012	8.338	14.62	1553.0
189	155.9	160.4	4.49	53.8	160.2	106.37	1.739	1.0012	8.338	14.50	1544.6
190	156.4	161.0	4.58	53.8	160.8	107.00	1.739	1.0012	8.338	14.50	1553.7
191	156.8	161.4	4.58	53.8	161.2	107.40	1.739	1.0012	8.338	14.50	1559.5
192	157.3	161.8	4.47	53.8	161.5	107.69	1.712	1.0012	8.338	14.27	1539.1
193	157.6	162.2	4.64	53.8	162.0	108.23	1.726	1.0012	8.338	14.39	1559.3
194	157.9	162.5	4.63	53.8	162.3	108.53	1.753	1.0012	8.338	14.62	1588.3
195	158.2	162.9	4.72	53.8	162.6	108.86	1.739	1.0012	8.338	14.50	1580.7
196	158.8	163.5	4.64	53.8	163.3	109.50	1.739	1.0012	8.338	14.50	1590.0
197	159.3	164.0	4.67	53.8	163.8	110.02	1.726	1.0012	8.338	14.39	1585.0
198	159.8	164.5	4.70	53.8	164.3	110.55	1.726	1.0012	8.338	14.39	1592.6
199	160.2	165.0	4.74	53.8	164.7	110.94	1.712	1.0012	8.338	14.27	1585.5
200	161.0	165.6	4.60	53.8	165.3	111.55	1.698	1.0012	8.338	14.16	1581.6
201	161.5	166.1	4.58	53.8	165.9	112.07	1.657	1.0012	8.338	13.82	1550.4
202	161.9	166.4	4.56	53.8	166.2	112.41	1.644	1.0012	8.338	13.70	1542.2
203	162.5	167.1	4.62	53.8	166.8	113.03	1.657	1.0012	8.338	13.82	1563.7
204	163.0	167.6	4.64	53.8	167.4	113.60	1.657	1.0012	8.338	13.82	1571.7
205	163.3	168.0	4.65	53.8	167.7	113.94	1.644	1.0012	8.338	13.70	1563.4
206	164.0	168.7	4.67	53.8	168.4	114.60	1.657	1.0012	8.338	13.82	1585.4
207	164.5	169.2	4.69	53.8	168.9	115.10	1.644	1.0012	8.338	13.70	1579.2
208	165.0	169.7	4.73	53.8	169.4	115.61	1.644	1.0012	8.338	13.70	1586.2
209	165.6	170.1	4.54	53.8	169.9	116.08	1.602	1.0012	8.338	13.36	1552.9
210	166.0	170.6	4.56	53.8	170.4	116.58	1.575	1.0012	8.338	13.13	1532.8
211	166.6	171.1	4.56	53.8	170.8	117.06	1.589	1.0012	8.338	13.25	1552.5
212	167.0	171.6	4.61	53.8	171.4	117.59	1.575	1.0012	8.338	13.13	1546.2
213	167.6	172.2	4.60	53.8	172.0	118.18	1.575	1.0012	8.338	13.13	1553.9
214	168.0	172.6	4.62	53.8	172.4	118.66	1.589	1.0012	8.338	13.25	1573.8
215	168.5	173.1	4.65	53.8	172.9	119.15	1.575	1.0012	8.338	13.13	1566.7
216	169.2	173.6	4.49	53.8	173.4	119.63	1.534	1.0012	8.338	12.79	1532.0
217	169.8	174.3	4.52	53.8	174.0	120.22	1.520	1.0012	8.338	12.68	1525.8
218	170.5	174.9	4.48	53.8	174.7	120.91	1.507	1.0012	8.338	12.56	1520.7
219	170.9	175.4	4.51	53.8	175.2	121.40	1.507	1.0012	8.338	12.56	1526.8
220	171.4	176.0	4.54	53.8	175.8	121.98	1.507	1.0012	8.338	12.56	1534.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
221	172.0	176.6	4.61	53.8	176.3	122.51	1.507	1.0012	8.338	12.56	1540.8
222	172.6	177.1	4.57	53.8	176.9	123.07	1.507	1.0012	8.338	12.56	1547.9
223	173.4	178.0	4.59	53.8	177.7	123.92	1.507	1.0012	8.338	12.56	1558.6
224	173.8	178.4	4.62	53.7	178.2	124.44	1.507	1.0012	8.338	12.56	1565.1
225	174.3	179.0	4.65	53.8	178.7	124.93	1.493	1.0012	8.338	12.45	1557.0
226	174.8	179.6	4.73	53.8	179.3	125.53	1.493	1.0012	8.338	12.45	1564.4
227	175.9	180.2	4.33	53.8	179.9	126.16	1.452	1.0012	8.338	12.10	1529.0
228	177.5	181.1	3.58	53.8	180.8	126.95	1.192	1.0012	8.338	9.94	1262.8
229	177.7	181.2	3.54	53.9	181.1	127.20	1.151	1.0012	8.338	9.59	1221.6
230	177.8	181.3	3.53	53.9	181.2	127.30	1.137	1.0012	8.338	9.48	1208.1
231	177.7	181.3	3.54	54.0	181.1	127.10	1.151	1.0012	8.338	9.59	1220.7
232	177.6	181.2	3.52	54.2	181.0	126.86	1.137	1.0012	8.337	9.48	1203.9
233	177.6	181.1	3.51	54.2	181.0	126.74	1.137	1.0012	8.337	9.48	1202.7
234	177.4	180.9	3.46	54.4	180.8	126.44	1.151	1.0012	8.337	9.59	1214.3
235	177.3	180.7	3.45	54.4	180.6	126.22	1.137	1.0012	8.337	9.48	1197.7
236	177.0	180.4	3.46	54.5	180.3	125.82	1.151	1.0012	8.337	9.59	1208.3
237	176.7	180.2	3.42	54.6	180.0	125.44	1.137	1.0012	8.337	9.48	1190.3
238	176.5	180.0	3.44	54.7	179.9	125.17	1.151	1.0012	8.337	9.59	1202.1
239	176.3	179.6	3.36	54.7	179.6	124.86	1.151	1.0012	8.337	9.59	1199.1
240	176.0	179.3	3.37	54.8	179.3	124.46	1.137	1.0012	8.337	9.48	1181.0
241	175.8	179.1	3.34	54.8	179.0	124.20	1.151	1.0012	8.337	9.59	1192.7
242	175.4	178.8	3.34	54.9	178.7	123.78	1.151	1.0012	8.337	9.59	1188.7
243	175.0	178.3	3.31	55.0	178.3	123.31	1.151	1.0012	8.337	9.59	1184.2
244	174.7	178.0	3.28	55.0	177.9	122.92	1.137	1.0012	8.337	9.48	1166.4
245	174.6	177.7	3.12	55.0	177.6	122.66	1.109	1.0012	8.337	9.25	1135.9
246	174.1	177.4	3.29	55.0	177.3	122.28	1.137	1.0012	8.337	9.48	1160.3
247	173.7	176.9	3.26	55.0	176.9	121.86	1.151	1.0012	8.337	9.59	1170.2
248	173.3	176.6	3.25	55.0	176.6	121.51	1.151	1.0012	8.337	9.59	1166.8
249	173.0	176.2	3.21	55.0	176.1	121.15	1.151	1.0012	8.337	9.59	1163.4
250	172.6	175.8	3.23	54.8	175.7	120.94	1.137	1.0012	8.337	9.48	1147.6
251	172.5	175.5	3.04	54.6	175.4	120.81	1.109	1.0012	8.337	9.25	1118.8
252	171.9	175.1	3.24	54.5	175.1	120.55	1.137	1.0012	8.337	9.48	1143.9
253	171.4	174.6	3.23	54.5	174.6	120.13	1.151	1.0012	8.337	9.59	1153.7
254	171.0	174.2	3.18	54.4	174.1	119.75	1.151	1.0012	8.337	9.59	1150.0
255	170.6	173.8	3.18	54.4	173.7	119.39	1.151	1.0012	8.337	9.59	1146.5
256	170.2	173.3	3.17	54.3	173.3	118.95	1.151	1.0012	8.337	9.59	1142.4
257	169.9	173.0	3.15	54.3	173.0	118.69	1.151	1.0012	8.337	9.59	1139.8
258	169.4	172.6	3.15	54.3	172.5	118.22	1.164	1.0012	8.337	9.71	1148.9
259	169.0	172.1	3.10	54.3	172.1	117.81	1.151	1.0012	8.337	9.59	1131.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
260	168.5	171.6	3.11	54.2	171.6	117.36	1.151	1.0012	8.337	9.59	1127.1
261	168.1	171.2	3.10	54.2	171.2	116.96	1.164	1.0012	8.337	9.71	1136.6
262	167.7	170.8	3.09	54.2	170.7	116.52	1.151	1.0012	8.337	9.59	1119.1
263	167.3	170.4	3.09	54.2	170.3	116.15	1.151	1.0012	8.337	9.59	1115.5
264	166.9	169.9	3.05	54.2	169.9	115.71	1.164	1.0012	8.337	9.71	1124.5
265	166.5	169.5	3.07	54.1	169.5	115.34	1.164	1.0012	8.337	9.71	1120.9
266	166.1	169.1	3.04	54.2	169.1	114.92	1.151	1.0012	8.337	9.59	1103.6
267	165.6	168.7	3.04	54.1	168.6	114.51	1.151	1.0012	8.337	9.59	1099.7
268	165.1	168.2	3.04	54.1	168.1	114.05	1.164	1.0012	8.337	9.71	1108.3
269	164.7	167.7	2.99	54.1	167.6	113.54	1.151	1.0012	8.337	9.59	1090.4
270	164.4	167.4	2.99	54.1	167.3	113.20	1.164	1.0012	8.337	9.71	1100.1
271	163.9	166.9	2.98	54.1	166.8	112.76	1.164	1.0012	8.337	9.71	1095.8
272	163.4	166.4	2.96	54.0	166.4	112.32	1.151	1.0012	8.338	9.59	1078.8
273	163.0	166.0	2.96	54.0	165.9	111.88	1.164	1.0012	8.338	9.71	1087.3
274	162.6	165.6	2.92	54.0	165.5	111.48	1.164	1.0012	8.338	9.71	1083.4
275	162.2	165.2	2.95	54.0	165.0	111.04	1.164	1.0012	8.338	9.71	1079.1
276	161.8	164.7	2.92	54.0	164.6	110.64	1.164	1.0012	8.338	9.71	1075.3
277	161.3	164.3	2.92	54.0	164.1	110.18	1.164	1.0012	8.338	9.71	1070.8
278	160.9	163.8	2.87	53.9	163.7	109.78	1.164	1.0012	8.338	9.71	1066.9
279	160.5	163.4	2.87	53.9	163.3	109.36	1.164	1.0012	8.338	9.71	1062.8
280	160.0	162.8	2.85	53.9	162.8	108.88	1.164	1.0012	8.338	9.71	1058.1
281	159.5	162.4	2.83	53.9	162.3	108.37	1.164	1.0012	8.338	9.71	1053.1
282	159.2	162.0	2.83	53.9	162.0	108.04	1.178	1.0012	8.338	9.82	1062.3
283	158.7	161.6	2.81	53.9	161.5	107.56	1.164	1.0012	8.338	9.71	1045.3
284	158.3	161.1	2.80	53.9	161.0	107.09	1.164	1.0012	8.338	9.71	1040.8
285	157.8	160.6	2.80	53.9	160.5	106.63	1.164	1.0012	8.338	9.71	1036.3
286	157.4	160.2	2.78	53.9	160.1	106.22	1.178	1.0012	8.338	9.82	1044.4
287	157.0	159.8	2.75	53.9	159.7	105.77	1.164	1.0012	8.338	9.71	1027.9
288	156.4	159.2	2.76	53.9	159.1	105.23	1.178	1.0012	8.338	9.82	1034.7
289	156.0	158.8	2.75	53.9	158.7	104.75	1.164	1.0012	8.338	9.71	1018.0
290	155.7	158.4	2.72	53.9	158.3	104.35	1.164	1.0012	8.338	9.71	1014.1
291	155.3	158.0	2.69	53.9	157.9	103.99	1.178	1.0012	8.338	9.82	1022.5
292	154.6	157.5	2.91	53.9	157.5	103.54	1.219	1.0012	8.338	10.16	1053.6
293	154.4	157.3	2.89	53.9	157.2	103.24	1.233	1.0012	8.338	10.28	1062.3
294	154.3	157.2	2.89	53.9	157.0	103.11	1.246	1.0012	8.338	10.39	1072.8
295	154.3	157.1	2.87	53.9	157.0	103.05	1.233	1.0012	8.338	10.28	1060.4
296	154.5	157.4	2.91	53.9	157.2	103.29	1.233	1.0012	8.338	10.28	1062.9
297	154.7	157.7	2.95	53.9	157.4	103.56	1.246	1.0012	8.338	10.39	1077.5
298	155.1	158.0	2.94	53.9	157.8	103.90	1.233	1.0012	8.338	10.28	1069.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
299	155.5	158.5	2.96	53.9	158.2	104.30	1.233	1.0012	8.338	10.28	1073.3
300	156.0	159.0	2.99	53.9	158.7	104.83	1.246	1.0012	8.338	10.39	1090.7
301	156.4	159.4	3.01	53.9	159.1	105.25	1.233	1.0012	8.338	10.28	1083.0
302	156.8	159.8	2.99	54.0	159.6	105.61	1.205	1.0012	8.338	10.05	1062.6
303	157.3	160.3	3.02	54.2	160.0	105.85	1.233	1.0012	8.337	10.28	1089.2
304	157.7	160.7	3.04	54.2	160.5	106.29	1.233	1.0012	8.337	10.28	1093.7
305	158.3	161.4	3.03	54.3	161.2	106.89	1.233	1.0012	8.337	10.28	1099.9
306	158.9	162.0	3.11	54.3	161.7	107.43	1.246	1.0012	8.337	10.39	1117.7
307	159.5	162.5	3.08	54.4	162.3	107.89	1.233	1.0012	8.337	10.28	1110.1
308	160.1	163.2	3.01	54.5	162.9	108.36	1.192	1.0012	8.337	9.93	1077.8
309	160.5	163.7	3.12	54.6	163.4	108.87	1.233	1.0012	8.337	10.28	1120.2
310	161.0	164.2	3.13	54.6	163.9	109.28	1.233	1.0012	8.337	10.28	1124.4
311	161.6	164.7	3.16	54.7	164.5	109.77	1.233	1.0012	8.337	10.28	1129.4
312	162.2	165.4	3.19	54.7	165.2	110.45	1.233	1.0012	8.337	10.28	1136.5
313	162.9	166.1	3.20	54.7	165.8	111.06	1.233	1.0012	8.337	10.28	1142.7
314	163.5	166.8	3.25	54.9	166.4	111.54	1.233	1.0012	8.337	10.28	1147.6
315	164.3	167.5	3.26	54.9	167.3	112.36	1.233	1.0012	8.337	10.28	1156.1
316	165.0	168.3	3.28	54.9	168.0	113.13	1.219	1.0012	8.337	10.16	1151.0
317	165.7	169.0	3.30	54.9	168.7	113.78	1.233	1.0012	8.337	10.28	1170.7
318	166.4	169.8	3.36	54.9	169.5	114.53	1.233	1.0012	8.337	10.28	1178.4
319	167.1	170.5	3.33	54.9	170.3	115.37	1.219	1.0012	8.337	10.16	1173.8
320	167.9	171.3	3.40	54.9	171.0	116.03	1.233	1.0012	8.337	10.28	1193.8
321	168.7	172.1	3.39	55.0	171.7	116.73	1.219	1.0012	8.337	10.16	1187.7
322	169.5	172.8	3.32	55.0	172.5	117.56	1.205	1.0012	8.337	10.05	1182.7
323	170.1	173.5	3.42	54.9	173.2	118.29	1.219	1.0012	8.337	10.16	1203.6
324	170.8	174.2	3.45	55.1	174.0	118.94	1.219	1.0012	8.337	10.16	1210.1
325	171.5	175.0	3.49	55.1	174.7	119.66	1.219	1.0012	8.337	10.16	1217.5
326	172.0	175.5	3.51	55.0	175.3	120.25	1.219	1.0012	8.337	10.16	1223.5
327	172.8	176.3	3.51	55.0	176.0	121.03	1.205	1.0012	8.337	10.05	1217.6
328	173.6	177.2	3.55	55.1	176.9	121.82	1.219	1.0012	8.337	10.16	1239.4
329	174.2	177.8	3.56	55.0	177.5	122.49	1.219	1.0012	8.337	10.16	1246.3
330	174.8	178.4	3.59	55.0	178.1	123.10	1.205	1.0012	8.337	10.05	1238.4
331	175.4	179.0	3.61	55.0	178.9	123.87	1.205	1.0012	8.337	10.05	1246.2
332	176.1	179.7	3.67	55.0	179.5	124.42	1.205	1.0012	8.337	10.05	1251.7
333	176.8	180.5	3.71	55.1	180.3	125.18	1.205	1.0012	8.337	10.05	1259.3
334	177.0	180.7	3.67	55.1	180.6	125.56	1.205	1.0012	8.337	10.05	1263.2
335	177.1	180.9	3.71	55.0	180.7	125.61	1.205	1.0012	8.337	10.05	1263.6
336	177.2	180.9	3.72	55.1	180.7	125.66	1.205	1.0012	8.337	10.05	1264.1
337	177.1	180.7	3.66	55.1	180.6	125.56	1.205	1.0012	8.337	10.05	1263.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
338	177.1	180.7	3.66	55.2	180.7	125.49	1.205	1.0012	8.336	10.05	1262.5
339	176.9	180.5	3.62	55.1	180.4	125.31	1.205	1.0012	8.336	10.05	1260.6
340	176.7	180.3	3.63	55.1	180.2	125.08	1.205	1.0012	8.336	10.05	1258.3
341	176.5	180.1	3.61	55.1	180.0	124.89	1.205	1.0012	8.336	10.05	1256.4
342	176.2	179.8	3.57	55.2	179.7	124.54	1.205	1.0012	8.336	10.05	1252.9
343	176.0	179.6	3.61	55.2	179.5	124.32	1.205	1.0012	8.336	10.05	1250.6
344	175.8	179.3	3.58	55.2	179.2	124.08	1.205	1.0012	8.336	10.05	1248.2
345	175.4	179.0	3.54	55.1	178.9	123.81	1.205	1.0012	8.336	10.05	1245.5
346	175.1	178.6	3.52	55.1	178.5	123.41	1.219	1.0012	8.336	10.16	1255.7
347	174.7	178.2	3.54	54.9	178.1	123.23	1.205	1.0012	8.337	10.05	1239.7
348	174.3	177.8	3.49	54.7	177.7	123.00	1.205	1.0012	8.337	10.05	1237.4
349	174.0	177.5	3.51	54.7	177.4	122.77	1.219	1.0012	8.337	10.16	1249.2
350	173.6	177.1	3.51	54.5	177.0	122.49	1.205	1.0012	8.337	10.05	1232.4
351	173.2	176.7	3.46	54.5	176.7	122.21	1.219	1.0012	8.337	10.16	1243.5
352	172.8	176.3	3.47	54.5	176.1	121.68	1.205	1.0012	8.337	10.05	1224.2
353	172.4	175.9	3.44	54.4	175.8	121.39	1.219	1.0012	8.337	10.16	1235.1
354	172.0	175.4	3.45	54.3	175.4	121.07	1.205	1.0012	8.337	10.05	1218.1
355	171.5	175.0	3.44	54.3	174.9	120.59	1.219	1.0012	8.337	10.16	1227.0
356	171.2	174.6	3.42	54.2	174.6	120.34	1.205	1.0012	8.337	10.05	1210.7
357	170.7	174.2	3.43	54.2	174.1	119.87	1.219	1.0012	8.337	10.16	1219.8
358	170.3	173.7	3.40	54.2	173.7	119.46	1.219	1.0012	8.337	10.16	1215.5
359	169.9	173.3	3.38	54.2	173.3	119.09	1.219	1.0012	8.337	10.16	1211.8
360	169.5	172.9	3.39	54.1	172.9	118.75	1.219	1.0012	8.337	10.16	1208.3
361	169.0	172.4	3.35	54.1	172.3	118.29	1.219	1.0012	8.337	10.16	1203.7
362	168.6	172.0	3.35	54.0	171.9	117.87	1.219	1.0012	8.337	10.16	1199.4
363	168.2	171.5	3.32	54.0	171.5	117.41	1.219	1.0012	8.337	10.16	1194.7
364	167.7	171.0	3.32	54.0	171.0	116.97	1.219	1.0012	8.338	10.16	1190.2
365	167.2	170.6	3.32	54.0	170.5	116.51	1.233	1.0012	8.338	10.28	1198.9
366	166.7	170.0	3.32	54.0	169.9	115.93	1.219	1.0012	8.338	10.16	1179.7
367	166.4	169.6	3.26	54.0	169.6	115.60	1.219	1.0012	8.338	10.16	1176.3
368	165.9	169.2	3.24	54.0	169.2	115.16	1.219	1.0012	8.338	10.16	1171.8
369	165.4	168.7	3.25	54.0	168.6	114.65	1.233	1.0012	8.338	10.28	1179.7
370	165.1	168.3	3.23	54.0	168.2	114.22	1.219	1.0012	8.338	10.16	1162.2
371	164.6	167.8	3.22	54.0	167.7	113.76	1.219	1.0012	8.338	10.16	1157.6
372	164.1	167.3	3.22	53.9	167.2	113.28	1.233	1.0012	8.338	10.28	1165.7
373	163.6	166.8	3.20	53.9	166.8	112.83	1.233	1.0012	8.338	10.28	1161.0
374	163.1	166.3	3.17	53.9	166.3	112.32	1.219	1.0012	8.338	10.16	1143.0
375	162.7	165.9	3.19	53.9	165.8	111.91	1.233	1.0012	8.338	10.28	1151.6
376	162.3	165.5	3.15	53.9	165.4	111.47	1.233	1.0012	8.338	10.28	1147.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
377	161.9	165.0	3.11	53.9	164.9	111.03	1.219	1.0012	8.338	10.16	1129.8
378	161.4	164.6	3.12	53.9	164.5	110.62	1.233	1.0012	8.338	10.28	1138.3
379	160.9	164.0	3.10	53.9	163.9	110.07	1.233	1.0012	8.338	10.28	1132.6
380	160.5	163.6	3.09	53.9	163.5	109.55	1.233	1.0012	8.338	10.28	1127.3
381	160.1	163.1	3.05	53.9	163.1	109.18	1.219	1.0012	8.338	10.16	1111.0
382	159.5	162.6	3.06	53.9	162.5	108.62	1.233	1.0012	8.338	10.28	1117.7
383	159.1	162.1	3.02	53.9	162.0	108.14	1.233	1.0012	8.338	10.28	1112.8
384	158.7	161.7	3.01	53.9	161.6	107.69	1.233	1.0012	8.338	10.28	1108.1
385	158.2	161.2	2.99	53.8	161.1	107.31	1.246	1.0012	8.338	10.39	1116.5
386	157.8	160.8	2.99	53.9	160.7	106.82	1.233	1.0012	8.338	10.28	1099.2
387	157.3	160.3	2.97	53.8	160.2	106.37	1.233	1.0012	8.338	10.28	1094.6
388	156.8	159.7	2.94	53.9	159.7	105.82	1.233	1.0012	8.338	10.28	1089.0
389	156.3	159.2	2.90	53.9	159.2	105.38	1.233	1.0012	8.338	10.28	1084.3
390	155.9	158.8	2.92	53.8	158.8	104.92	1.219	1.0012	8.338	10.16	1067.6
391	155.9	158.8	2.93	53.8	158.7	104.85	1.233	1.0012	8.338	10.28	1078.9
392	155.8	158.8	2.94	53.8	158.6	104.79	1.233	1.0012	8.338	10.28	1078.3
393	155.9	158.8	2.95	53.8	158.7	104.82	1.233	1.0012	8.338	10.28	1078.7
394	156.2	159.2	2.98	53.9	158.9	105.07	1.233	1.0012	8.338	10.28	1081.2
395	156.6	159.6	3.00	53.9	159.4	105.52	1.233	1.0012	8.338	10.28	1085.8
396	157.0	160.0	3.00	53.8	159.8	105.92	1.246	1.0012	8.338	10.39	1102.0
397	157.5	160.5	3.00	53.9	160.2	106.36	1.219	1.0012	8.338	10.16	1082.3
398	157.9	160.9	3.03	53.8	160.7	106.90	1.246	1.0012	8.338	10.39	1112.2
399	158.3	161.4	3.06	53.8	161.1	107.32	1.233	1.0012	8.338	10.28	1104.3
400	158.9	161.9	3.06	53.8	161.7	107.87	1.233	1.0012	8.338	10.28	1110.0
401	159.3	162.4	3.12	53.8	162.1	108.34	1.233	1.0012	8.338	10.28	1114.9
402	159.9	163.0	3.09	53.8	162.7	108.96	1.233	1.0012	8.338	10.28	1121.3
403	160.5	163.6	3.15	53.8	163.4	109.53	1.233	1.0012	8.338	10.28	1127.1
404	160.9	164.1	3.18	53.8	163.9	110.08	1.233	1.0012	8.338	10.28	1132.7
405	161.6	164.7	3.17	53.8	164.5	110.68	1.219	1.0012	8.338	10.16	1126.3
406	162.1	165.3	3.18	53.8	165.1	111.24	1.233	1.0012	8.338	10.28	1144.6
407	162.7	165.9	3.22	53.8	165.6	111.83	1.233	1.0012	8.338	10.28	1150.8
408	163.3	166.5	3.24	53.8	166.2	112.45	1.233	1.0012	8.338	10.28	1157.1
409	163.9	167.2	3.25	53.8	166.9	113.10	1.219	1.0012	8.338	10.16	1150.9
410	164.5	167.7	3.28	53.9	167.4	113.57	1.233	1.0012	8.338	10.28	1168.6
411	165.1	168.4	3.32	54.0	168.1	114.09	1.219	1.0012	8.338	10.16	1160.9
412	165.7	169.0	3.29	54.2	168.7	114.54	1.233	1.0012	8.337	10.28	1178.6
413	166.3	169.6	3.31	54.1	169.4	115.27	1.219	1.0012	8.337	10.16	1172.9
414	166.9	170.3	3.34	54.3	170.0	115.72	1.219	1.0012	8.337	10.16	1177.5
415	167.8	171.2	3.37	54.4	170.8	116.41	1.219	1.0012	8.337	10.16	1184.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
416	168.2	171.6	3.38	54.4	171.4	117.03	1.233	1.0012	8.337	10.28	1204.2
417	168.9	172.3	3.40	54.4	172.0	117.54	1.219	1.0012	8.337	10.16	1195.9
418	169.5	172.9	3.41	54.6	172.7	118.11	1.219	1.0012	8.337	10.16	1201.8
419	170.0	173.4	3.42	54.6	173.2	118.59	1.219	1.0012	8.337	10.16	1206.6
420	170.7	174.2	3.43	54.6	174.0	119.38	1.219	1.0012	8.337	10.16	1214.7
421	171.3	174.8	3.49	54.7	174.5	119.79	1.219	1.0012	8.337	10.16	1218.9
422	171.8	175.3	3.50	54.7	175.0	120.32	1.219	1.0012	8.337	10.16	1224.2
423	172.3	175.8	3.51	54.6	175.6	120.91	1.219	1.0012	8.337	10.16	1230.3
424	173.0	176.5	3.53	54.7	176.2	121.52	1.205	1.0012	8.337	10.05	1222.5
425	173.6	177.1	3.55	54.8	176.9	122.11	1.219	1.0012	8.337	10.16	1242.5
426	174.2	177.7	3.57	54.8	177.4	122.61	1.205	1.0012	8.337	10.05	1233.5
427	174.9	178.5	3.60	54.7	178.3	123.51	1.219	1.0012	8.337	10.16	1256.7
428	175.4	179.1	3.62	54.9	178.9	124.00	1.205	1.0012	8.337	10.05	1247.5
429	176.0	179.7	3.65	54.8	179.4	124.58	1.219	1.0012	8.337	10.16	1267.6
430	176.6	180.4	3.72	54.9	180.1	125.22	1.205	1.0012	8.337	10.05	1259.7
431	177.0	180.6	3.65	54.8	180.5	125.66	1.205	1.0012	8.337	10.05	1264.2
432	176.9	180.6	3.68	54.9	180.4	125.49	1.205	1.0012	8.337	10.05	1262.4
433	176.8	180.5	3.67	54.9	180.4	125.53	1.205	1.0012	8.337	10.05	1262.8
434	177.0	180.5	3.56	54.9	180.4	125.52	1.192	1.0012	8.337	9.93	1248.4
435	176.8	180.5	3.66	54.9	180.4	125.43	1.178	1.0012	8.337	9.82	1233.2
436	176.6	180.3	3.68	54.9	180.2	125.32	1.205	1.0012	8.337	10.05	1260.7
437	176.4	180.0	3.66	54.9	180.0	125.02	1.205	1.0012	8.337	10.05	1257.7
438	176.3	179.9	3.61	55.0	179.8	124.81	1.205	1.0012	8.337	10.05	1255.6
439	176.0	179.6	3.59	54.9	179.5	124.59	1.205	1.0012	8.337	10.05	1253.4
440	175.7	179.4	3.62	55.0	179.2	124.25	1.205	1.0012	8.337	10.05	1249.9
441	175.5	179.1	3.55	55.0	179.0	124.04	1.205	1.0012	8.337	10.05	1247.9
442	175.2	178.7	3.55	55.0	178.6	123.65	1.205	1.0012	8.337	10.05	1243.9
443	174.9	178.4	3.52	55.1	178.3	123.29	1.205	1.0012	8.337	10.05	1240.3
444	174.5	178.0	3.50	55.0	177.9	122.87	1.205	1.0012	8.337	10.05	1236.1
445	174.3	177.8	3.50	55.0	177.6	122.66	1.205	1.0012	8.337	10.05	1234.0
446	173.8	177.4	3.52	55.0	177.3	122.28	1.219	1.0012	8.337	10.16	1244.2
447	173.5	177.0	3.46	55.1	176.9	121.82	1.205	1.0012	8.337	10.05	1225.5
448	173.1	176.5	3.45	55.1	176.5	121.41	1.205	1.0012	8.337	10.05	1221.4
449	172.7	176.1	3.44	55.1	176.1	120.98	1.219	1.0012	8.337	10.16	1230.9
450	172.3	175.8	3.44	55.0	175.7	120.63	1.205	1.0012	8.337	10.05	1213.5
451	171.9	175.4	3.43	55.0	175.3	120.30	1.219	1.0012	8.337	10.16	1224.0
452	171.6	175.0	3.45	55.1	174.9	119.82	1.205	1.0012	8.337	10.05	1205.4
453	170.7	174.4	3.73	55.1	174.4	119.25	1.301	1.0012	8.336	10.85	1295.1
454	170.1	173.8	3.70	55.1	173.8	118.76	1.315	1.0012	8.337	10.96	1303.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
455	169.8	173.5	3.69	55.0	173.4	118.40	1.315	1.0012	8.337	10.96	1299.4
456	169.2	172.9	3.66	55.0	172.9	117.80	1.315	1.0012	8.337	10.96	1292.9
457	168.8	172.5	3.64	55.0	172.4	117.42	1.315	1.0012	8.337	10.96	1288.6
458	168.4	172.0	3.65	55.0	172.0	117.02	1.315	1.0012	8.337	10.96	1284.3
459	167.9	171.5	3.63	54.9	171.4	116.54	1.315	1.0012	8.337	10.96	1279.0
460	167.4	171.0	3.62	54.9	171.0	116.13	1.329	1.0012	8.337	11.08	1287.8
461	166.9	170.5	3.62	54.9	170.5	115.55	1.315	1.0012	8.337	10.96	1268.1
462	166.5	170.1	3.57	55.0	170.0	115.03	1.315	1.0012	8.337	10.96	1262.4
463	166.0	169.5	3.58	54.9	169.5	114.60	1.329	1.0012	8.337	11.08	1270.8
464	165.5	169.1	3.59	54.7	169.0	114.29	1.329	1.0012	8.337	11.08	1267.4
465	165.0	168.6	3.54	54.5	168.5	113.97	1.315	1.0012	8.337	10.96	1250.9
466	164.5	168.0	3.54	54.3	168.0	113.63	1.329	1.0012	8.337	11.08	1260.2
467	164.0	167.5	3.52	54.3	167.5	113.12	1.329	1.0012	8.337	11.08	1254.5
468	163.6	167.1	3.50	54.2	167.0	112.78	1.329	1.0012	8.337	11.08	1250.7
469	163.0	166.5	3.48	54.2	166.5	112.25	1.329	1.0012	8.337	11.08	1244.9
470	162.5	166.0	3.49	54.2	165.9	111.71	1.329	1.0012	8.337	11.08	1238.9
471	162.0	165.5	3.46	54.1	165.4	111.29	1.329	1.0012	8.337	11.08	1234.2
472	161.1	164.9	3.78	54.1	164.8	110.75	1.411	1.0012	8.337	11.76	1304.2
473	160.5	164.3	3.75	54.2	164.2	110.02	1.452	1.0012	8.337	12.10	1333.4
474	160.0	163.7	3.73	54.3	163.7	109.35	1.438	1.0012	8.337	11.99	1312.7
475	159.4	163.1	3.75	54.4	163.0	108.64	1.438	1.0012	8.337	11.99	1304.2
476	158.9	162.6	3.69	54.4	162.5	108.10	1.452	1.0012	8.337	12.10	1310.0
477	158.3	162.0	3.67	54.4	162.0	107.55	1.438	1.0012	8.337	11.99	1291.0
478	157.8	161.5	3.68	54.4	161.4	106.94	1.452	1.0012	8.337	12.10	1296.0
479	157.3	160.9	3.64	54.5	160.9	106.36	1.466	1.0012	8.337	12.22	1301.0
480	156.7	160.3	3.61	54.5	160.3	105.75	1.438	1.0012	8.337	11.99	1269.5
481	156.2	159.8	3.58	54.6	159.7	105.14	1.466	1.0012	8.337	12.22	1286.2
482	155.7	159.2	3.57	54.6	159.1	104.54	1.452	1.0012	8.337	12.10	1266.9
483	155.3	158.9	3.58	54.6	158.7	104.06	1.452	1.0012	8.337	12.10	1261.1
484	155.2	158.8	3.56	54.6	158.7	104.07	1.466	1.0012	8.337	12.22	1273.0
485	155.2	158.7	3.58	54.7	158.6	103.90	1.452	1.0012	8.337	12.10	1259.1
486	155.4	159.0	3.61	54.7	158.8	104.07	1.466	1.0012	8.337	12.22	1273.0
487	155.8	159.4	3.57	54.7	159.2	104.53	1.452	1.0012	8.337	12.10	1266.7
488	156.0	159.6	3.63	54.7	159.4	104.65	1.452	1.0012	8.337	12.10	1268.2
489	156.4	160.0	3.64	54.7	159.8	105.07	1.452	1.0012	8.337	12.10	1273.2
490	156.7	160.3	3.68	54.7	160.1	105.45	1.466	1.0012	8.337	12.22	1290.0
491	156.8	160.7	3.93	54.4	160.5	106.03	1.493	1.0012	8.337	12.45	1321.3
492	157.1	161.0	3.97	54.3	160.8	106.52	1.548	1.0012	8.337	12.90	1376.2
493	157.4	161.4	4.01	54.2	161.2	106.96	1.548	1.0012	8.337	12.90	1381.8

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
494	157.8	161.9	4.04	54.1	161.7	107.53	1.548	1.0012	8.337	12.90	1389.3
495	158.3	162.2	3.93	54.1	161.9	107.86	1.534	1.0012	8.337	12.79	1381.2
496	158.8	162.7	3.89	54.0	162.5	108.44	1.479	1.0012	8.337	12.33	1339.0
497	159.1	163.0	3.87	54.0	162.8	108.78	1.493	1.0012	8.338	12.45	1355.6
498	159.7	163.6	3.92	53.9	163.5	109.53	1.493	1.0012	8.338	12.45	1365.0
499	160.0	164.0	3.96	53.9	163.7	109.79	1.493	1.0012	8.338	12.45	1368.3
500	160.6	164.6	3.97	54.0	164.3	110.32	1.479	1.0012	8.338	12.33	1362.2
501	161.0	165.0	3.99	54.2	164.7	110.51	1.493	1.0012	8.337	12.45	1377.2
502	161.6	165.6	3.97	54.3	165.4	111.11	1.479	1.0012	8.337	12.33	1372.0
503	162.0	165.9	3.99	54.3	165.8	111.46	1.493	1.0012	8.337	12.45	1389.0
504	162.6	166.7	4.06	54.3	166.4	112.07	1.479	1.0012	8.337	12.33	1383.8
505	163.2	167.3	4.07	54.4	167.0	112.56	1.493	1.0012	8.337	12.45	1402.7
506	163.7	167.8	4.08	54.4	167.5	113.04	1.479	1.0012	8.337	12.33	1395.8
507	164.3	168.3	3.97	54.5	168.1	113.60	1.452	1.0012	8.337	12.10	1376.6
508	164.8	168.8	3.97	54.5	168.5	114.01	1.438	1.0012	8.337	11.99	1368.6
509	165.4	169.4	4.00	54.6	169.1	114.55	1.424	1.0012	8.337	11.88	1361.9
510	165.9	169.9	4.01	54.5	169.6	115.11	1.438	1.0012	8.337	11.99	1381.8
511	166.6	170.6	4.01	54.6	170.3	115.65	1.424	1.0012	8.337	11.88	1375.1
512	167.0	171.0	4.05	54.5	170.8	116.33	1.424	1.0012	8.337	11.88	1383.2
513	167.7	171.8	4.08	54.3	171.4	117.12	1.424	1.0012	8.337	11.88	1392.6
514	168.1	172.2	4.08	54.2	172.0	117.80	1.438	1.0012	8.337	11.99	1414.2
515	168.9	172.9	3.97	54.1	172.6	118.46	1.397	1.0012	8.337	11.65	1381.4
516	169.6	173.5	3.97	54.1	173.3	119.18	1.370	1.0012	8.337	11.42	1362.6
517	170.1	174.1	4.01	54.1	173.9	119.80	1.370	1.0012	8.337	11.42	1369.7
518	170.8	174.8	4.02	54.0	174.5	120.48	1.356	1.0012	8.338	11.31	1363.8
519	171.4	175.4	4.04	54.0	175.1	121.14	1.370	1.0012	8.338	11.42	1385.0
520	171.9	176.0	4.04	54.0	175.7	121.68	1.356	1.0012	8.338	11.31	1377.3
521	172.6	176.6	4.05	54.0	176.4	122.40	1.370	1.0012	8.338	11.42	1399.4
522	173.3	177.3	3.96	53.9	177.0	123.03	1.329	1.0012	8.338	11.08	1364.4
523	173.9	177.9	3.98	53.9	177.7	123.77	1.329	1.0012	8.338	11.08	1372.6
524	174.6	178.6	4.07	53.9	178.3	124.39	1.329	1.0012	8.338	11.08	1379.6
525	175.1	179.2	4.05	53.9	178.9	125.09	1.315	1.0012	8.338	10.96	1373.0
526	175.7	179.8	4.11	53.8	179.6	125.75	1.329	1.0012	8.338	11.08	1394.7
527	176.3	180.4	4.17	53.8	180.1	126.35	1.329	1.0012	8.338	11.08	1401.3
528	176.7	180.8	4.10	53.9	180.7	126.80	1.315	1.0012	8.338	10.96	1391.7
529	176.6	180.7	4.14	53.9	180.6	126.71	1.329	1.0012	8.338	11.08	1405.2
530	176.6	180.8	4.15	53.8	180.6	126.85	1.315	1.0012	8.338	10.96	1392.4
531	176.5	180.6	4.13	53.8	180.5	126.70	1.329	1.0012	8.338	11.08	1405.2
532	176.2	180.3	4.09	53.8	180.2	126.46	1.315	1.0012	8.338	10.96	1388.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
533	176.2	180.3	4.12	53.8	180.1	126.34	1.329	1.0012	8.338	11.08	1401.2
534	175.8	179.9	4.07	53.8	179.9	126.08	1.315	1.0012	8.338	10.96	1383.9
535	175.6	179.7	4.07	53.8	179.6	125.77	1.329	1.0012	8.338	11.08	1394.8
536	175.3	179.4	4.05	53.8	179.3	125.51	1.315	1.0012	8.338	10.96	1377.7
537	175.1	179.1	4.00	53.7	179.0	125.29	1.329	1.0012	8.338	11.08	1389.6
538	174.8	178.8	3.96	53.7	178.7	125.00	1.315	1.0012	8.338	10.96	1372.0
539	174.4	178.3	3.95	53.7	178.2	124.55	1.315	1.0012	8.338	10.96	1367.1
540	173.9	177.8	3.94	53.7	177.7	124.00	1.329	1.0012	8.338	11.08	1375.2
541	173.5	177.5	3.91	53.7	177.4	123.68	1.329	1.0012	8.338	11.08	1371.7
542	173.2	177.1	3.88	53.8	177.1	123.24	1.315	1.0012	8.338	10.96	1352.7
543	172.8	176.7	3.87	54.0	176.7	122.69	1.329	1.0012	8.338	11.08	1360.7
544	172.3	176.2	3.89	54.0	176.1	122.09	1.315	1.0012	8.338	10.96	1340.0
545	172.0	175.8	3.82	54.1	175.8	121.68	1.342	1.0012	8.337	11.19	1363.4
546	171.5	175.3	3.83	54.2	175.3	121.11	1.315	1.0012	8.337	10.96	1329.3
547	171.1	174.9	3.85	54.3	174.8	120.53	1.329	1.0012	8.337	11.08	1336.7
548	170.7	174.5	3.79	54.4	174.5	120.10	1.329	1.0012	8.337	11.08	1331.8
549	170.2	174.0	3.79	54.4	173.9	119.49	1.329	1.0012	8.337	11.08	1325.1
550	169.7	173.5	3.75	54.5	173.4	118.92	1.329	1.0012	8.337	11.08	1318.8
551	169.3	173.1	3.75	54.4	173.0	118.59	1.342	1.0012	8.337	11.19	1328.6
552	168.8	172.6	3.73	54.5	172.5	118.00	1.329	1.0012	8.337	11.08	1308.6
553	168.4	172.1	3.71	54.6	172.1	117.47	1.329	1.0012	8.337	11.08	1302.7
554	167.9	171.6	3.68	54.6	171.5	116.92	1.329	1.0012	8.337	11.08	1296.6
555	167.5	171.2	3.72	54.6	171.1	116.52	1.329	1.0012	8.337	11.08	1292.1
556	167.1	170.7	3.63	54.7	170.7	115.97	1.329	1.0012	8.337	11.08	1286.0
557	166.7	170.2	3.50	54.6	170.2	115.55	1.301	1.0012	8.337	10.85	1254.9
558	166.0	169.8	3.81	54.6	169.7	115.02	1.356	1.0012	8.337	11.30	1301.8
559	165.0	169.0	3.97	54.6	169.0	114.34	1.452	1.0012	8.337	12.10	1385.7
560	164.4	168.3	3.98	54.7	168.3	113.67	1.479	1.0012	8.337	12.33	1403.5
561	163.8	167.8	3.98	54.6	167.8	113.18	1.466	1.0012	8.337	12.22	1384.5
562	163.3	167.2	3.92	54.6	167.2	112.57	1.466	1.0012	8.337	12.22	1377.0
563	162.7	166.6	3.93	54.6	166.6	112.00	1.479	1.0012	8.337	12.33	1382.9
564	162.3	166.2	3.92	54.6	166.1	111.47	1.479	1.0012	8.337	12.33	1376.3
565	161.8	165.6	3.89	54.6	165.6	111.02	1.466	1.0012	8.337	12.22	1358.1
566	161.1	165.0	3.87	54.6	164.9	110.31	1.479	1.0012	8.337	12.33	1362.0
567	160.6	164.5	3.85	54.7	164.4	109.74	1.479	1.0012	8.337	12.33	1355.0
568	160.0	163.9	3.85	54.6	163.8	109.19	1.479	1.0012	8.337	12.33	1348.1
569	159.4	163.2	3.79	54.6	163.2	108.51	1.479	1.0012	8.337	12.33	1339.8
570	158.9	162.7	3.80	54.7	162.6	107.96	1.479	1.0012	8.337	12.33	1333.0
571	158.5	162.2	3.77	54.7	162.1	107.47	1.479	1.0012	8.337	12.33	1327.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
572	157.9	161.6	3.73	54.7	161.6	106.92	1.479	1.0012	8.337	12.33	1320.1
573	157.3	161.0	3.71	54.7	160.9	106.26	1.493	1.0012	8.337	12.45	1324.1
574	156.7	160.4	3.69	54.7	160.4	105.67	1.479	1.0012	8.337	12.33	1304.7
575	156.2	159.9	3.68	54.7	159.9	105.14	1.479	1.0012	8.337	12.33	1298.1
576	155.7	159.4	3.66	54.7	159.3	104.58	1.479	1.0012	8.337	12.33	1291.2
577	155.2	158.9	3.65	54.7	158.7	104.02	1.493	1.0012	8.337	12.45	1296.3
578	155.1	158.8	3.66	54.7	158.5	103.79	1.479	1.0012	8.337	12.33	1281.4
579	155.0	158.7	3.64	54.7	158.5	103.86	1.493	1.0012	8.337	12.45	1294.2
580	155.0	158.7	3.67	54.7	158.5	103.84	1.479	1.0012	8.337	12.33	1282.1
581	155.2	158.9	3.67	54.7	158.7	103.98	1.493	1.0012	8.337	12.45	1295.7
582	155.5	159.2	3.70	54.7	159.0	104.27	1.493	1.0012	8.337	12.45	1299.4
583	156.0	159.8	3.71	54.6	159.5	104.88	1.479	1.0012	8.337	12.33	1294.9
584	156.4	160.1	3.75	54.4	159.9	105.45	1.493	1.0012	8.337	12.45	1314.1
585	156.9	160.6	3.74	54.3	160.4	106.14	1.479	1.0012	8.337	12.33	1310.5
586	157.4	161.2	3.78	54.2	160.9	106.76	1.493	1.0012	8.337	12.45	1330.4
587	157.9	161.8	3.83	54.1	161.6	107.45	1.493	1.0012	8.337	12.45	1339.0
588	158.5	162.3	3.85	54.1	162.1	108.02	1.479	1.0012	8.337	12.33	1333.8
589	158.9	162.8	3.88	54.0	162.5	108.51	1.479	1.0012	8.338	12.33	1339.9
590	159.5	163.4	3.88	54.0	163.2	109.20	1.479	1.0012	8.338	12.33	1348.4
591	160.2	164.1	3.91	54.0	163.8	109.84	1.479	1.0012	8.338	12.33	1356.3
592	160.8	164.7	3.92	54.0	164.4	110.42	1.493	1.0012	8.338	12.45	1376.1
593	161.4	165.3	3.97	54.2	165.1	110.91	1.479	1.0012	8.337	12.33	1369.4
594	161.9	165.9	3.99	54.3	165.7	111.40	1.479	1.0012	8.337	12.33	1375.6
595	162.4	166.4	4.00	54.3	166.1	111.81	1.466	1.0012	8.337	12.22	1367.8
596	163.0	167.0	4.04	54.3	166.7	112.42	1.479	1.0012	8.337	12.33	1388.1
597	163.5	167.5	4.03	54.4	167.2	112.83	1.479	1.0012	8.337	12.33	1393.1
598	164.0	168.0	4.03	54.4	167.8	113.41	1.466	1.0012	8.337	12.22	1387.4
599	164.6	168.6	4.08	54.5	168.4	113.87	1.466	1.0012	8.337	12.22	1392.9
600	165.0	169.1	4.11	54.5	168.9	114.42	1.479	1.0012	8.337	12.33	1412.8
601	165.5	169.6	4.13	54.5	169.4	114.87	1.466	1.0012	8.337	12.22	1405.2
602	166.1	170.3	4.19	54.5	169.9	115.41	1.479	1.0012	8.337	12.33	1425.0
603	166.5	170.7	4.16	54.5	170.5	116.04	1.466	1.0012	8.337	12.22	1419.6
604	167.1	171.3	4.21	54.3	171.0	116.72	1.466	1.0012	8.337	12.22	1427.9
605	167.5	171.7	4.18	54.2	171.4	117.29	1.466	1.0012	8.337	12.22	1434.9
606	167.9	172.2	4.22	54.1	172.0	117.85	1.479	1.0012	8.337	12.33	1455.2
607	168.4	172.7	4.26	54.1	172.5	118.41	1.466	1.0012	8.337	12.22	1448.6
608	168.9	173.2	4.28	54.0	172.9	118.93	1.466	1.0012	8.338	12.22	1454.9
609	169.3	173.6	4.29	54.0	173.4	119.40	1.466	1.0012	8.338	12.22	1460.7
610	170.0	174.3	4.29	53.9	174.0	120.10	1.466	1.0012	8.338	12.22	1469.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
611	170.7	174.9	4.18	53.9	174.7	120.73	1.424	1.0012	8.338	11.88	1435.6
612	171.0	175.4	4.37	53.9	175.2	121.29	1.452	1.0012	8.338	12.10	1470.0
613	172.2	176.1	3.84	53.9	175.7	121.83	1.342	1.0012	8.338	11.19	1365.1
614	173.0	176.8	3.79	53.9	176.5	122.67	1.274	1.0012	8.338	10.62	1304.3
615	173.6	177.4	3.81	53.9	177.2	123.31	1.274	1.0012	8.338	10.62	1311.2
616	174.2	178.0	3.80	53.8	177.7	123.88	1.260	1.0012	8.338	10.51	1303.1
617	174.7	178.6	3.88	53.8	178.3	124.52	1.274	1.0012	8.338	10.62	1324.0
618	175.3	179.2	3.89	53.8	179.0	125.18	1.274	1.0012	8.338	10.62	1331.1
619	175.6	179.7	4.14	53.8	179.5	125.66	1.342	1.0012	8.338	11.19	1408.1
620	176.2	180.2	4.00	53.9	179.9	126.09	1.301	1.0012	8.338	10.85	1369.6
621	176.9	180.9	3.99	53.8	180.6	126.80	1.260	1.0012	8.338	10.51	1333.8
622	177.0	180.9	3.94	53.8	180.8	127.01	1.274	1.0012	8.338	10.62	1350.6
623	176.8	180.8	3.93	53.8	180.7	126.83	1.260	1.0012	8.338	10.51	1334.1
624	176.7	180.6	3.90	53.7	180.5	126.80	1.260	1.0012	8.338	10.51	1333.8
625	176.7	180.6	3.91	53.8	180.4	126.63	1.274	1.0012	8.338	10.62	1346.5
626	176.4	180.3	3.90	53.7	180.2	126.47	1.260	1.0012	8.338	10.51	1330.3
627	176.1	180.0	3.87	53.8	179.9	126.09	1.274	1.0012	8.338	10.62	1340.7
628	175.9	179.7	3.85	53.8	179.7	125.91	1.260	1.0012	8.338	10.51	1324.4
629	175.5	179.3	3.82	53.8	179.3	125.47	1.274	1.0012	8.338	10.62	1334.2
630	175.3	179.1	3.79	53.8	179.0	125.27	1.260	1.0012	8.338	10.51	1317.7
631	174.9	178.7	3.78	53.7	178.6	124.95	1.274	1.0012	8.338	10.62	1328.7
632	174.6	178.4	3.78	53.7	178.3	124.59	1.260	1.0012	8.338	10.51	1310.6
633	174.2	177.9	3.71	53.7	177.9	124.23	1.260	1.0012	8.338	10.51	1306.8
634	173.7	177.4	3.72	53.6	177.4	123.79	1.274	1.0012	8.338	10.62	1316.3
635	173.3	177.0	3.71	53.7	176.9	123.27	1.274	1.0012	8.338	10.62	1310.8
636	172.9	176.6	3.70	53.7	176.5	122.85	1.260	1.0012	8.338	10.51	1292.3
637	172.6	176.1	3.54	53.6	176.1	122.44	1.246	1.0012	8.338	10.39	1273.9
638	172.1	175.8	3.66	53.6	175.8	122.18	1.274	1.0012	8.338	10.62	1299.2
639	171.6	175.2	3.65	53.6	175.2	121.57	1.260	1.0012	8.338	10.51	1278.8
640	171.1	174.8	3.63	53.6	174.7	121.05	1.274	1.0012	8.338	10.62	1287.2
641	170.7	174.4	3.66	53.6	174.3	120.72	1.274	1.0012	8.338	10.62	1283.7
642	170.2	173.9	3.62	53.6	173.8	120.23	1.274	1.0012	8.338	10.62	1278.4
643	169.7	173.4	3.61	53.7	173.3	119.62	1.274	1.0012	8.338	10.62	1271.9
644	169.3	172.9	3.58	53.6	172.8	119.19	1.274	1.0012	8.338	10.62	1267.4
645	168.9	172.5	3.56	53.5	172.4	118.88	1.274	1.0012	8.338	10.62	1264.2
646	168.3	171.9	3.54	53.6	171.9	118.28	1.274	1.0012	8.338	10.62	1257.7
647	167.9	171.4	3.53	53.6	171.3	117.74	1.274	1.0012	8.338	10.62	1252.0
648	167.5	171.0	3.52	53.6	171.0	117.35	1.287	1.0012	8.338	10.73	1261.2
649	167.0	170.5	3.48	53.7	170.5	116.81	1.274	1.0012	8.338	10.62	1242.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
650	166.5	170.0	3.46	53.7	169.9	116.27	1.274	1.0012	8.338	10.62	1236.3
651	166.1	169.6	3.46	53.7	169.5	115.84	1.287	1.0012	8.338	10.73	1245.0
652	164.9	168.8	3.89	53.6	168.8	115.22	1.411	1.0012	8.338	11.76	1357.0
653	164.3	168.2	3.87	53.5	168.1	114.62	1.424	1.0012	8.338	11.88	1362.9
654	163.8	167.7	3.86	53.6	167.6	114.01	1.424	1.0012	8.338	11.88	1355.7
655	163.3	167.2	3.87	53.7	167.1	113.44	1.424	1.0012	8.338	11.88	1348.9
656	162.8	166.6	3.80	53.6	166.5	112.95	1.424	1.0012	8.338	11.88	1343.1
657	162.2	166.0	3.77	53.6	165.9	112.39	1.424	1.0012	8.338	11.88	1336.4
658	161.6	165.3	3.76	53.5	165.3	111.78	1.438	1.0012	8.338	11.99	1342.0
659	161.1	164.8	3.75	53.6	164.8	111.20	1.424	1.0012	8.338	11.88	1322.3
660	160.6	164.3	3.73	53.7	164.3	110.63	1.397	1.0012	8.338	11.65	1290.2
661	159.8	163.7	3.89	53.8	163.7	109.88	1.466	1.0012	8.338	12.22	1344.3
662	159.0	162.9	3.94	53.8	162.9	109.04	1.507	1.0012	8.338	12.56	1371.4
663	158.5	162.5	3.92	53.8	162.4	108.58	1.520	1.0012	8.338	12.68	1378.0
664	157.9	161.8	3.89	53.9	161.8	107.82	1.534	1.0012	8.338	12.79	1380.7
665	157.3	161.2	3.87	54.0	161.1	107.06	1.507	1.0012	8.338	12.56	1346.5
666	156.8	160.7	3.85	54.1	160.6	106.52	1.534	1.0012	8.337	12.79	1364.1
667	156.2	160.0	3.82	54.1	159.9	105.77	1.520	1.0012	8.337	12.68	1342.4
668	155.7	159.4	3.79	54.2	159.4	105.22	1.520	1.0012	8.337	12.68	1335.3
669	155.2	159.0	3.75	54.2	158.9	104.69	1.520	1.0012	8.337	12.68	1328.6
670	155.0	158.8	3.77	54.2	158.6	104.40	1.534	1.0012	8.337	12.79	1336.9
671	154.9	158.6	3.78	54.3	158.5	104.22	1.520	1.0012	8.337	12.68	1322.6
672	154.8	158.6	3.78	54.3	158.4	104.14	1.534	1.0012	8.337	12.79	1333.4
673	154.8	158.6	3.80	54.3	158.4	104.12	1.534	1.0012	8.337	12.79	1333.2
674	155.1	158.9	3.81	54.3	158.6	104.31	1.520	1.0012	8.337	12.68	1323.7
675	155.4	159.2	3.81	54.4	158.9	104.55	1.534	1.0012	8.337	12.79	1338.8
676	155.8	159.6	3.84	54.4	159.4	105.02	1.520	1.0012	8.337	12.68	1332.8
677	156.3	160.2	3.86	54.3	159.9	105.59	1.534	1.0012	8.337	12.79	1352.0
678	156.7	160.6	3.89	54.4	160.4	106.00	1.534	1.0012	8.337	12.79	1357.4
679	157.3	161.2	3.91	54.4	161.0	106.57	1.520	1.0012	8.337	12.68	1352.4
680	157.9	161.7	3.80	54.4	161.5	107.07	1.493	1.0012	8.337	12.45	1334.2
681	158.3	162.2	3.97	54.4	162.0	107.57	1.534	1.0012	8.337	12.79	1377.4

Gravimetric Lab Data

ASTM E2515

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Run No.: 2
 Test Date: 12/3/24

OMNI Eq. ID Numbers
 Analytical Scale _____
 Audit Weight Set: _____
 Analytical Scale _____
 Hydrometer _____
 Filters are weighed In Pairs

Train A

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	5/14/24 @ 6:15	Filter	F484/A	241.7	238.2	3.5	3.5
Probe catch*	5/14/24 @ 6:15	Probe	33	113942.2	113941.9	0.3	0.3
filter seals catch*	5/14/24 @ 6:15	Seals	S899	3309.7	3309.3	0.4	0.4
				Total Particulate, mg:		4.2	4.2

Train B

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	5/14/24 @ 6:15	Filter	F485/A	242.2	238.5	3.7	3.7
Probe catch*	5/14/24 @ 6:15	Probe	53	118272.7	118272.4	0.3	0.3
filter seals catch*	5/14/24 @ 6:15	Seals	S900	3383.6	3383.2	0.4	0.4
Sub-Total				Total Particulate, mg:		4.4	4.4

Train C - First Hour

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	5/14/24 @ 6:15	Filter	F486/A	237.3	237.1	0.2	0.2
Probe catch*	5/14/24 @ 6:15	Probe	58	117067.5	117067.5	0.0	0.0
filter seals catch*	5/14/24 @ 6:15	Seals	S901	3361.5	3361.3	0.2	0.2
				Total Particulate, mg:		0.4	0.4

Train D - Ambient Background

Sample Component Date / Time in Desiccator		Reagent	Filter # or	Weights			
				Final, mg	Tare, mg	Particulate, mg	
Filter catch*	5/14/24 @ 6:15	Filter	F416	125.6	125.4	0.2	
				Total Particulate, mg:		0.2	

$$\text{Final (mg)} - \text{Tare (mg)} = \text{Particulate (mg)}$$

NOTE: The Uncorrected values are those where any negative filter weights are taken as a negative value. This can possibly occur when filter matter adheres the O-ring seals and thereby transfers some mass to the O-ring. The Corrected values reflect where any negative filter weights are taken as ZERO, thus not accounting for any transfer of mass and resultingly over-reporting. Corrected values were added to this analysis to report the "Corrected" results in this report in response to a request by the US EPA. In cases where the Final weight minus the Tare weight of the Ambient filter occurs, it is taken as a ZERO. Any negative probe weights are evaluated pursuant to clause of ASTM E25215 (or appropriately associated test standard as defined in the introduction of this report).

Technician Signature: _____

Reviewed By: _____

Run 2 - Run Notes

Manufacturer: Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 2
Test Date: 12/3/2024

This supplemental section of miscellaneous run notes is comprised of the following:

- Appliance Operation Notes
- Velocity Traverse / Supplemental Run Notes
- Test Fuel Notes
- Gravimetric Analysis Notes

ASTM E2780 Wood Heater Test Notes

Client: Central BoilerProject Number: 0117 WB 043 E Run Number: 2Model: 560.1Tracking Number: 2495 Date: 12/03/24

Test Crew: _____

Primary Air Control Settings

Automatic

Secondary: FixedTertiary/Pilot: N/AFan: Auto

Preburn Notes

Time	Notes
14:45	stirring coal bed

Sampling Portion Notes

Sketch test fuel configuration:

SEE Photos

Start up procedures & Timeline:

Bypass: Not UsedFuel loaded by: 58 secDoor closed at: 65 secPrimary air: N/A - AutomaticNotes: NONE

Time	Notes
14:49	Test started
02:50	test complete

Technician Signature: [Signature]Date: 12/04/24

PRE-BURN

12-03-24

CENTRAL Boiler 560.1 RUN 2

TIME

SCALE

NOTES

9:23

14.0

Charcoal - ignited

9:33

11.8

ADDED 43 lb.

54.0

A (57 lb. total)

10:09

28.0

Added 30 lb.

58.0

(87 lb. total)

10:25

46.5

STIR

10:47

34.5

ADDED 35.5 lb.

70.0

(122.5 lb. total)

11:38

43.0

Added 39.0 lb

82.0

(161.5 total)

11:58

70.0

ADDED 12.5 lb

82.5

(173 lb. total)

12:58

56.0

STIR

13:52

35.0

STIR

14:45

32.5

STIR

14:49

Loaded by 58 sec
Door Closed by 65 sec.

ASTM E2780 Wood Heater Test Notes

Client: Control Boiler Project Number: 0117W13043E Run Number: 2
 Model: 560.1 Tracking Number: 12495 Date: 12/03/24
 Test Crew: K. Morgan, T. Tong, R. Tieg

Supplemental Data

Test Booth No. 3 Sampling Start Time: 14:49 Sampling End Time: 02:24 (12/04/24)
 Tunnel Cleaned Date 11/22/24 % Smoke Capture 100 Induced Draft 0 in. H₂O

Systems Leak Checks			
System	Pre-Test	Post-Test	Sampling Probe Change-out
Pitot	@	0.00 @ 3"	
Train A	0.000 @ 17.06	0.002 @ 9.8"	
Train B	0.000 @ 17.12	0.002 @ 10.2"	
Train C	0.000 @ 22.20	0.000 @ 5.13"	

Velocity Traverse, 6-inch tunnel			
Location	Microtector (in. H ₂ O)	Δp (in. H ₂ O)	Tunnel Temp., °F
Center	.059	.118	69
1	.055	.110	67
2	.060	.120	67
3	.059	.118	68
4	.061	.122	69
5	.054	.108	69
6	.028	.056	68
7			
8			
Tunnel Static (in. H ₂ O)		Pre-Test -0.39	Post-Test -0.79

1	.050	.100	70
2	.060	.120	69
3	.061	.122	68
4	.094	.118	68
5	.054	.108	68
6	.045	.090	68

Miscellaneous Parameters			
Item	Initial	Final	Equipment No.
Room Air Velocity, ft/min.	15	6	00721
Scale Audit, lb. (20-80 % of fuel load)	30 = 30		002550027400132
Room Relative Humidity, %	34	33	00715
Barometric Pressure, in. Hg	30.32	30.32	00715
Room Temperature, °F	61	63	00335.00336

Flue Gas Continuous Analyzer						
Analyzer ID	05594	Response Time, sec.	30	Leak Check Performed?	✓ ✓	
Bias Checks	Concentration:		Pre-Test Response		Post-Test Response	0225
Concentration	Bottle No.	Value, %	Pre-Test Response		Post-Test Response	
			Zero	Span	Zero	Span
CO ₂ % Span	C0738144	16.88	0.00	16.89	0	16.91
CO % Span	C0738144	4.05	0.00	4.04	0	4.10
CO ppm Span	C0305741	500	0.0	498.5	0	494
Zero	3AA2400	0.00				

Technician Signature: [Signature]Date: 12/04/2024

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler

Model : 560.1

Tracking No. : 2495

Project No. : 0117WB043E

Test Date : 12-03-24

Run No. : 2

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Firebox Volume : 13.720 ft³

Manufacturer's Recommended Loading Density : 12

Ideal Fuel Weight : 164.64 lb.

Minimum Fuel Weight : 148.18 lb.

Maximum Fuel Weight : 181.10 lb.

Fuel Species : Maple

11:18

Fuel Piece Data

PC No.	Weight, Lb. (W _i)	Cross-Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	10.0	5.75	5.00	22.0	18.9	19.2	19.4	18.9	18.9		
2	10.7	7.50	3.50	22.0	21.4	21.5	18.4	21.2	21.2		
3	11.4	7.0	3.25	22.0	22.0	21.9	22.0	24.6	20.2		
4	11.8	8.0	5.0	22.0	19.5	19.3	20.0	18.3	19.7		
5	12.9	7.0	5.5	22.0	20.6	20.2	21.1	20.1	22.0		
6	13.0	7.0	5.0	22.0	19.3	20.5	21.6	23.0	23.0		
7	10.8	7.5	5.0	22.0	19.2	20.7	21.1	19.5	21.0		
8	8.8	6.5	4.0	22.0	20.4	20.5	18.4	18.6	19.9		
9	12.4	8.0	4.75	22.0	18.9	19.3	20.7	20.1	19.3		
10	14.0	8.0	4.0	22.0	19.2	19.8	18.6	19.6	19.9		
11	11.9	7.0	5.0	22.0	23.0	21.8	23.6	21.2	19.8		
12	11.5	7.0	5.0	22.0	23.8	23.7	23.0	21.2	20.1		
13	11.4	6.5	5.0	22.0	21.3	21.8	22.0	19.6	19.8		
14	9.1	6.0	4.5	22.0	22.3	20.0	20.4	20.5	19.6		
15	8.8	6.0	5.0	22.0	19.6	19.1	20.0	21.2	18.7		
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	0.0										0.00
Averages	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

116.4

160.3

168.5

CBR: 16.9-33.7

Client: Central BoilerProject Number: 0117WB043ERun Number: 2Model: 560.1Tracking Number: 249.5Date: 12/03/24

Test Crew: _____

Gravimetric Analysis Sheet

Assembled By:

Tony Tong

Date/Time in Desiccator:

C: at 15:5502:2812-04-2024

Weighing's

Date/Time:	Date/Time:	Date/Time:	Date/Time:	Date/Time:
12-05-24 08:40	12-09-24 08:14			
R/H %:	R/H %:	R/H %:	R/H %:	R/H %:
13.9	17.1			
Temp:	Temp:	Temp:	Temp:	Temp:
69	67.9			
100 mg Audit:	100 mg Audit:	100 mg Audit:	100 mg Audit:	100 mg Audit:
100.0	100.0			
200 mg Audit:	200 mg Audit:	200 mg Audit:	200 mg Audit:	200 mg Audit:
200.1	200.0			
2 g Audit:	2 g Audit:	2 g Audit:	2 g Audit:	2 g Audit:
2000.2	2000.2			
100 g Audit:	100 g Audit:	100 g Audit:	100 g Audit:	100 g Audit:
99997.8	99997.9			
Initials:	Initials:	Initials:	Initials:	Initials:
<u>KL</u>	<u>KL</u>			

Train	Element	ID #	Tare (mg)	✓	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)
A	Filter Pair	<u>F484/484</u>	238.2	✓	241.7	241.7	—		
	Probe	33	11394.9	✓	11394.2	11394.2	—		
	O-Ring Set	5899	3309.3	✓	3309.8	3309.7	—		
B	Front Filter	<u>F485/485</u>	238.5	✓	242.1	242.2	—		
	Probe	53	118272.4	✓	118272.7	118272.7	—		
	O-Ring Set	5900	3383.2	✓	3383.6	3383.6	—		
C (1 st hr)	Front Filter	<u>F486/486</u>	237.1	✓	237.2	237.3	—		
	Probe	58	117067.5	✓	117067.5	117067.5	—		
	O-Ring Set	5901	3361.3	✓	3361.4	3361.5	—		
BG	Filter	F416	125.4	✓	125.7	125.6	—		

Technician Signature: _____

Date: 12/09/24

Equations and Calculations – ASTM E2618 & ASTM E2515



Manufacturer Central Boiler
 Model: Classic Edge 560.1
 Project Number: 0117WB043E
 Run Number: 2

Summary of INPUT values necessary for calculations

Global Input Parameters for Equations	Value	Source
MC_{Ave} - Average Fuel Load Moisture Content, % dry basis	20.56	Fuel Properties Work Sheet
W_{fuel} - Fuel charge weight (wet), pounds	168.5	Fuel Properties Work Sheet
HHV - Higher Heating Value of Fuel, Btu/lb.	8348	ISO Lab Report ¹
LHV - Lower Heating Value of Fuel, Btu/lb.	7789.6	CSA B415.1:22 ²
W_{app} - Mass of dry boiler, lb.	1822.5	Measured
W_{water} - Mass of Water within Boiler, lb.	1663	Measured
V_{SCENT} - Average gas velocity at the center of the dilution tunnel calculated after the Pitot tube traverse, ft/sec	22.65	Traverse Worksheet
V_{STRAV} - Average gas velocity calculated after the multipoint Pitot traverse	21.69	Traverse Worksheet
θ - Duration of test, min	681	Train A Worksheet
P_{bar} - Barometric pressure (average) at the testing site, in. Hg	30.32	Traverse Worksheet
P_g - Tunnel Static Pressure	-0.39	Traverse Worksheet

¹ From an Ultimate Analysis performed on a sample of the fuel lot that was used.

² CSA B415 only accepts input for the HHV and calculates the LHV from that data. This differs from the LHV reported in the ultimate analysis, however the CSA value was used for consistency in comparing SLM and delivered efficiencies.

Sample Train Input Parameters for Equations	Train A	Train B	Train C	Train D
V_m - Volume of gas sample measured at the dry gas meter, dcf	109.935	109.565	9.57	110.712
Y Dry gas meter calibration factor	1.015	1.006	1.010	1.016
ΔH - Average pressure differential across the orifice meter, in. H ₂ O	1.30	1.00	2.25	1.56
T_m - Temperature of Dry Gas Meter, °F	75.9	76.7	62.9	66.1

Uncorrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.3	0.3	0.0	n/a
m_f - mass of particulate matter from filters, mg	3.5	3.7	0.2	0.2
m_g - mass of particulate matter from seals, mg	0.4	0.4	0.2	n/a

Corrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.3	0.3	0.0	n/a
m_f - mass of particulate matter from filters, mg	3.5	3.7	0.2	n/a
m_g - mass of particulate matter from seals, mg	0.4	0.4	0.2	n/a

TI_{avg} - Average Temperature of Appliance and Water at Start of Test, °F - ASTM E2618 equation (1)

$$TI_{avg} = (T1 + T2)/2 \quad \text{At beginning of Test}$$

Where,

	Value
$T1$ = Temperature at inlet of supply side of exchanger, °F	142.4
$T2$ = Temperature at outlet of supply side of exchanger, °F	137.8

$$Ti_{avg} = (142.43 + 137.77) / 2 = 140.1$$

 TF_{avg} - Average Temperature of Appliance and Water at End of Test, °F - ASTM E2618 equation (2)

$$TF_{avg} = (T1 + T2)/2 \quad \text{At end of test}$$

Where,

	Value
$T1$ = Temperature at inlet of load side of heat exchanger, °F	162.2
$T2$ = Temperature at outlet of load side of heat exchanger, °F	158.3

$$TF_{avg} = (162.23 + 158.26) / 2 = 160.2$$

 MC_{Ave} - Average Fuel Load Moisture Content, dry basis, % - ASTM E2618 equation (3)

$$MC_{Ave} = (\sum W_i \cdot MC_i) / \sum W_i$$

Where,

W_i = Weight of individual pieces
 MC_i = Average moisture content of individual fuel pieces, dry basis

$\sum(W_i \cdot MC_i)$	3463.8	Taken from fuel properties sheet
$\sum W_i$	168.5	Taken from fuel properties sheet

$$MC_{Ave} = (3463.8 / 168.5) = 20.56 \quad \%, \text{ dry basis}$$

Q_{in} - Heat Input, Btu (HHV) - ASTM E2618 equation (4)

$$Q_{in} = (W_{fuel} / (1 + (MC_{Ave} / 100))) \times HHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	168.5
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	20.56
HHV =	Higher Heating Value of Fuel, Btu/lb.	8348

$$Q_{in} = (168.5 / (1 + (20.56 / 100))) \times 8348 = 1166785.763 \quad \text{Btu}$$

Q_{in LHV} - Heat Input, Btu (LHV) - ASTM E2618 equation (5)

$$Q_{in LHV} = (W_{fuel} / (1 + (MC_{Ave} / 100))) \times LHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	168.5
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	20.56
LHV =	Higher Heating Value of Fuel, Btu/lb.	7789.6

$$Q_{in LHV} = (168.5 / (1 + (20.56 / 100))) \times 7789.6 = 1088739.145 \quad \text{Btu}$$

BR - Dry Burn-Rate, kg/hr

$$BR = [(W_{fuel} / (1 + (MC_{Ave} / 100))) / 2.2046] / \theta$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	168.5
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	20.56
2.2046 =	Conversion kg -> lb.	2.2046
θ =	Duration of Test, hours	11.350

$$BR = 168.5 / (1 + (20.56 / 100)) / 2.2046 / 11.35 = 5.59 \quad \text{kg/hr}$$

Q_{out} - Heat Output, Btu - ASTM E2618 equation (7)

$$Q_{out} = \left[\sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) \right] + (W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg})$$

Where,

		<u>Value</u>
C_{pi}	Specific heat of water during interval (i), Btu/lb °F	Varies
ΔT_i	Temperature difference between water entering and exiting heat exchanger (load), °F	Varies
M_i	Mass flow-rate of water through heat exchanger during interval (i), lb./min	Varies
t_i	Data sampling interval, min	<u>Varies</u>
W_{app}	Weight of empty appliance, lb.	1822.5
C_{steel}	Specific heat of steel, Btu/lb.°F	0.1
C_{pa}	Specific heat of water at average appliance temperature, Btu/lb °F	1.0009
W_{water}	Weight of water in supply side of system, lb.	1663
TF_{avg}	Average temperature of appliance and water at end of test	160.24
TI_{avg}	Average temperature of appliance and water at start of test	140.10

$$\sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) \quad \text{from Water Data sheet} = \quad 915723.2342 \quad 80680.46116$$

$$C_{pa} = 1.0014 + (-0.000003485 \cdot (TI_{avg} + TF_{avg}) / 2) = \quad 1.0009$$

$$(W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg}) = \quad 37197.09$$

$$Q_{OUT} = \quad 915723.234 + 1.0009 \times 37197.091 = \quad 952920.32 \quad \text{Btu}$$

Heat Output Rate, Btu/hr - ASTM E2618 equation (15)

$$\text{Heat Output Rate} = Q_{OUT} / \theta$$

Where,	<u>Value</u>
Q_{OUT} = Heat Output	952920.3
θ = Duration of test, hr	11.3500

$$\text{Heat Output Rate} = \quad 83957.7 \quad \text{Btu/hr}$$

V_S – Average gas velocity in the dilution tunnel, ft/sec - ASTM E2515 equation (9)

$$V_S = F_P \times K_P \times C_P \times (\sqrt{\Delta P})_{avg} \times \sqrt{\frac{T_{S(avg)}}{P_S \times M_S}}$$

Where

F_P = Adjustment factor for center of tunnel pitot tube placement, where

$$F_P = V_{STRAV} / V_{SCENT}$$

V_{SCENT} = Dilution tunnel velocity, at the center, ft/sec

V_{STRAV} = Dilution tunnel velocity, multi-point pitot traverse, ft/sec

K_P = Pitot tube constant, 85.49

C_P = Pitot tube coefficient: 0.99, unitless

$\Delta P^{1/2}_{AVG}$ = Velocity pressure in the dilution tunnel, in H_2O

$T_{S(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R

P_S = Absolute average gas static pressure in tunnel, = Pbar + Pg, where

Pbar = Barometric Pressure, in. Hg,

Pg = Static pressure in tunnel, Hg (in H_2O / 13.6)

M_S = The dilution tunnel wet molecular weight; M_S = 28.78 assuming a dry weight of 29 lb/lb-mole

(Duration of Test)

$$F_P = 0.9576$$

$$\Delta P^{1/2}_{AVG} = 0.3381$$

$$T_{S(avg)} = 531.0469$$

$$P_{bar} = 30.3200$$

$$P_g = -0.3900$$

$$P_S = 30.2913$$

$$V_S = 0.958 \times 85.49 \times 0.99 \times 0.338 \times \sqrt{[(531 / (30.29 \times 28.78))]}$$

$$V_S = \mathbf{21.385} \quad \text{ft/sec}$$

(First Hour of Test)

$$F_P = 0.9576$$

$$\Delta P^{1/2}_{AVG} = 0.3384$$

$$T_{S(avg)} = 539.5902$$

$$P_{bar} = 30.3200$$

$$P_g = -0.3900$$

$$P_S = 30.2913$$

$$V_S = 0.958 \times 85.49 \times 0.99 \times 0.338 \times \sqrt{[(540 / (30.29 \times 28.78))]}$$

$$V_S = \mathbf{21.578} \quad \text{ft/sec}$$

Q_{std} – Average gas flow rate in dilution tunnel, dscf/hr - ASTM E2515 equation (3)

$$Q_{std} = 3600 \times (1 - B_{ws}) \times v_s \times A \times \frac{T_{std}}{T_{s(avg)}} \times \frac{P_s}{P_{std}}$$

Where:

3600 = Conversion from seconds to hours (ASTM method uses 60 to convert in minutes)

B_{ws} = Water vapor in gas stream, proportion by volume; assume 2%

A = Cross sectional area of dilution tunnel, ft²

T_{std} = solute temperature, 528 °R

P_s = Absolute average gas static pressure in dilution tunnel, = Pbar + Pg , in Hg

$T_{s(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)

P_{std} = Standard absolute pressure, 29.92 in Hg

(Full Duration of Test):

$$\begin{aligned} B_{ws} &= 0.02 \\ A &= 0.78540 \\ P_s &= 30.29 \\ T_{s(avg)} &= 531 \\ V_s &= 21.38 \end{aligned}$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.385 \times 0.7854 \times (528 / 531) \times (30.29 / 29.92)$$

$$Q_{std} = \mathbf{59646.3} \quad \text{dscf/hr}$$

(First Hour):

$$\begin{aligned} B_{ws} &= 0.02 \\ A &= 0.78540 \\ P_s &= 30.29 \\ T_{s(avg)} &= 540 \\ V_s &= 21.578 \end{aligned}$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.578 \times 0.7854 \times (528 / 540) \times (30.29 / 29.92)$$

$$Q_{std} = \mathbf{59231.4} \quad \text{dscf/hr}$$

V_{m(std)} – Volume of Gas Sampled (Corrected), dscf - ASTM E2515 equation (6)

$$V_{m(std)} = K_1 V_m Y \frac{P_{bar} + \left(\frac{\Delta H}{13.6} \right)}{T_m}$$

Where:

K_1	=	17.64 °R/in. Hg
V_m	=	Volume of gas sample measured at the dry gas meter, dcf
Y	=	Dry gas meter calibration factor, dimensionless
P_{bar}	=	Barometric pressure at the testing site, in. Hg
ΔH	=	Average pressure differential across the orifice meter, in. H ₂ O
T_m	=	Absolute average dry gas meter temperature, °R

Train A

$$V_{m(std)} = 17.64 \times 109.935 \times 1.015 \times \frac{(30.32 + \frac{1.30}{13.6})}{(75.9 + 460)}$$

$$V_{m(std)} = \mathbf{111.719} \text{ dscf}$$

Train B

$$V_{m(std)} = 17.64 \times 109.565 \times 1.006 \times \frac{(30.32 + \frac{1.00}{13.6})}{(77 + 460)}$$

$$V_{m(std)} = \mathbf{110.110} \text{ dscf}$$

Train C (1st Hour)

$$V_{m(std)} = 17.64 \times 9.57 \times 1.010 \times \frac{(30.32 + \frac{2.25}{13.6})}{(62.9 + 460)}$$

$$V_{m(std)} = \mathbf{9.941} \text{ dscf}$$

Train D (Background)

$$V_{m(std)} = 17.64 \times 110.71 \times 1.016 \times \frac{(30.32 + \frac{1.56}{13.6})}{(66.1 + 460)}$$

$$V_{m(std)} = \mathbf{114.776} \text{ dscf}$$

mn – Total Particulate Matter Collected, mg - ASTM E2515 Equation (12)

$$m_n = m_p + m_f + m_g$$

Where:

- m_p = mass of particulate matter from probe, mg
- m_f = mass of particulate matter from filters, mg
- m_g = mass of particulate matter from filter seals, mg

Uncorrected:

Train A

$$m_n = 0.3 + 3.5 + 0.4$$
$$m_n = 4.2 \text{ mg}$$

Train B

$$m_n = 0.3 + 3.7 + 0.4$$
$$m_n = 4.4 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.0 + 0.2 + 0.2$$
$$m_n = 0.4 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.2$$
$$m_n = 0.2 \text{ mg}$$

Corrected:

Train A

$$m_n = 0.3 + 3.5 + 0.4$$
$$m_n = 4.2 \text{ mg}$$

Train B

$$m_n = 0.3 + 3.7 + 0.4$$
$$m_n = 4.4 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.0 + 0.2 + 0.2$$
$$m_n = 0.4 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.2$$
$$m_n = 0.2 \text{ mg}$$

**C_s - Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions
g/dscf - ASTM E2515 equation (13)**

$$C_s = K_2 \times \frac{m_n}{V_{m(std)}}$$

Where:

K₂ = Constant, 0.001 g/mg

m_n = Total mass of particulate matter collected in the sampling train, mg

V_{m(std)} = Volume of gas sampled corrected to dry standard conditions, dscf

Uncorrected:

Train A	C _s =	0.001 x	$\frac{4.2}{111.72}$
---------	------------------	---------	----------------------

C_s = **0.000038** g/dscf

Train B	C _s =	0.001 x	$\frac{4.4}{110.11}$
---------	------------------	---------	----------------------

C_s = **0.0000400** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{0.4}{9.94}$
--------------------	------------------	---------	--------------------

C_s = **0.000040** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.2}{114.78}$
----------------------	------------------	---------	----------------------

C_r = **0.000000** g/dscf

Corrected:

Train A	C _s =	0.001 x	$\frac{4.2}{111.72}$
---------	------------------	---------	----------------------

C_s = **0.000038** g/dscf

Train B	C _s =	0.001 x	$\frac{4.4}{110.11}$
---------	------------------	---------	----------------------

C_s = **0.0000400** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{0.4}{9.94}$
--------------------	------------------	---------	--------------------

C_s = **0.000040** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.2}{114.78}$
----------------------	------------------	---------	----------------------

C_r = **0.000000** g/dscf

ET – Total Particulate Emissions, g - ASTM E2515 equation (15)

$$E_T = (c_s - c_r) \times Q_{std} \times \theta$$

Where:

C_s	=	Concentration of particulate matter in tunnel gas, g/dscf
C_r	=	Concentration particulate matter room air, g/dscf
Q_{std}	=	Average dilution tunnel gas flow rate, dscf/hr
θ	=	Total time of test run, minutes

Uncorrected:

Train A

$$E_T = (0.000038 - 0.000000) \times 59646.3 \times 681 / 60$$

$$E_T = 25.45 \text{ g}$$

Train B

$$E_T = (0.000040 - 0.000000) \times 59646.3 \times 681 / 60$$

$$E_T = 27.05 \text{ g}$$

First Hour

$$E_T = (0.000040 - 0.000000) \times 59231.4 \times 60 / 60$$

$$E_T = 2.38 \text{ g}$$

Trains A and B Average

$$E_T = 26.25 \text{ g}$$

Corrected:

Train A

$$E_T = (0.000038 - 0.000000) \times 59646.3 \times 681 / 60$$

$$E_T = 25.45 \text{ g}$$

Train B

$$E_T = (0.000040 - 0.000000) \times 59646.3 \times 681 / 60$$

$$E_T = 27.05 \text{ g}$$

First Hour

$$E_T = (0.000040 - 0.000000) \times 59231.4 \times 60 / 60$$

$$E_T = 2.38 \text{ g}$$

Trains A and B Average

$$E_T = 26.25 \text{ g}$$

PM_R – Particulate emissions for test run, g/hr - ASTM E2780 equation (6)

$$PM_R = 60(E_T/\theta)$$

Where,

E_T = Total particulate emissions, grams

θ = Total length of full integrated test run, min

Uncorrected:

Train A

$$E_T = 25.45 \text{ g}$$

$$\theta = 681 \text{ min}$$

$$PM_R = 60 \times (25.45 / 681)$$

$$PM_R = \mathbf{2.24 \text{ g/hr}}$$

Train B

$$E_T = 27.05 \text{ g}$$

$$\theta = 681 \text{ min}$$

$$PM_R = 60 \times (27.05 / 681)$$

$$PM_R = \mathbf{2.38 \text{ g/hr}}$$

A and B Average

$$PM_R = \mathbf{2.31 \text{ g/hr}}$$

First Hour

$$E_T = 2.38 \text{ g}$$

$$\theta = 60 \text{ min}$$

$$PM_R = 60 \times (2.38 / 60)$$

$$PM_R = \mathbf{2.38 \text{ g/hr}}$$

Corrected:

Train A

$$E_T = 25.45 \text{ g}$$

$$\theta = 681 \text{ min}$$

$$PM_R = 60 \times (25.45 / 681)$$

$$PM_R = \mathbf{2.24 \text{ g/hr}}$$

Train B

$$E_T = 27.05 \text{ g}$$

$$\theta = 681 \text{ min}$$

$$PM_R = 60 \times (27.05 / 681)$$

$$PM_R = \mathbf{2.38 \text{ g/hr}}$$

A and B Average

$$E_T = \mathbf{2.31 \text{ g}}$$

First Hour

$$E_T = 2.38 \text{ g}$$

$$\theta = 60 \text{ min}$$

$$PM_R = 60 \times (2.38 / 60)$$

$$PM_R = \mathbf{2.38 \text{ g/hr}}$$

E_{g/kg} - Particulate emission factor for test run, g/dry kg of fuel burned - ASTM E2618 equation (18)

$$E_{g/kg} = E_T / (W_{fuel} / (1 + MC/100))$$

Uncorrected:

Train A	E _T =	25.45	g
	W _{fuel} =	76.43	kg
	MC =	20.56	
	E _{g/kg} =	0.401	/kg

Train B	E _T =	27.05	g
	W _{fuel} =	76.43	kg
	MC =	20.56	
	E _{g/kg} =	0.427	/kg

Corrected:

Train A	E _T =	25.45	g
	W _{fuel} =	76.43	kg
	MC =	20.56	
	E _{g/kg} =	0.401	/kg

Train B	E _T =	27.05	g
	W _{fuel} =	76.43	kg
	MC =	20.56	
	E _{g/kg} =	0.427	/kg

PR - Proportional Rate Variation - ASTM E2515 equation (16)

$$PR = \left[\frac{\theta \times V_{mi} \times V_s \times T_m \times T_{si}}{\theta_i \times V_m \times V_{si} \times T_{mi} \times T_s} \right] \times 100$$

Where:

	Train A	Train B	Train C
θ = Total sampling time, min	681	681	60
θ_i = Length of recording interval, min	1	1	1
V_{mi} = Volume of gas sample measured by the dry gas meter during the "ith" time interval, dcf	0.162	0.168	0.171
V_m = Volume of gas sample as measured by dry gas meter, dcf	109.935	109.565	9.57
V_{si} = Average gas velocity in the dilution tunnel during the "ith" time interval, ft/sec	21.672	21.672	21.672
V_s = Average gas velocity in the dilution tunnel, ft/sec	21.385	21.385	21.579
T_{mi} = Absolute average dry gas meter temperature during the "ith" time interval, °R	526.0	526.0	522.0
T_m = Absolute average dry gas meter temperature, °R	535.9	536.7	522.9
T_{si} = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, °R	537.0	537.0	537.0
T_s = Absolute average gas temperature in the dilution tunnel, °R	531.0	531.0	539.6

NOTE: These calculations are for the Second interval of each train)

$$\text{Train A PR} = \left(\frac{681 \times 0.162 \times 21.385 \times 536 \times 537}{1 \times 109.935 \times 21.672 \times 526 \times 531} \right) \times 100 = 102.0 \%$$

$$\text{Train B PR} = \left(\frac{681 \times 0.168 \times 21.385 \times 537 \times 537}{1 \times 109.565 \times 21.672 \times 526 \times 531} \right) \times 100 = 106.3 \%$$

$$\text{Train C PR} = \left(\frac{60 \times 0.171 \times 21.579 \times 523 \times 537}{1 \times 9.57 \times 21.672 \times 522 \times 540} \right) \times 100 = 106.4 \%$$

Emission Rates and Factors - ASTM E2618 equations 16, 17, 18 and 19

Uncorrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 26.25 / (952920.3 \times 0.001055) = 0.0261$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (26.25 / 453.59) / (952920.3 \times 10^{-6}) = 0.0607$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 26.25 / \left((168.5 / (1 + 20.56 / 100)) / 2.2046 \right) = 0.414$$

Corrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 26.25 / (952920.3 \times 0.001055) = 0.0261$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (26.25 / 453.59) / (952920.3 \times 10^{-6}) = 0.0607$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 26.25 / \left((168.5 / (1 + 20.56 / 100)) / 2.2046 \right) = 0.414$$

Run 3 Test Data

Test Date: 12/4/2024
Manufacturer: Central Boiler
Model Classic Edge 560.1

Contents, in the following order:

- Emissions Test Results
- CSA B415 Results and Data
- Test Fuel Properties
- Velocity Traverse / Supplemental Data Worksheet
- Test Pre-Burn Data
- Sample Train A / Dilution Tunnel Data
- Sample Train B Data
- Sample Train C (First Hour) Data
- Sample Train D (Background) / Flue Gas Data
- Water Flow Data
- Gravimetric Lab Analysis
- Test Lab Notes
 - Appliance Operation Notes
 - Velocity Traverse / Supplemental Data Notes
 - Test Fuel Notes
 - Gravimetric Analysis Notes
- Equations and Calculations

Particulate Emissions and Delivered Efficiency Test Results

ASTM E2618 / ASTM E2515



Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Project No.: 0117WB043E
 Tracking No.: 2495
 Run: 3
 Test Date: 12/04/24

Quick View Summary	
lb./MMBtu	0.094
Delivered Efficiency %	79.0
PM 2.5 Emission Rate, g/hr.	1.86
PM 2.5 Emission Factor, g/kg	0.62

Particulate Emissions and Heat Output

Heat Input, Q_{IN} Btu	Heat Output Q_{OUT} Btu	Delivered Efficiency %	Uncorrected ¹		Corrected ²	
			ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)	ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)
1128188	890869	79.0	1.86	0.094	1.86	0.094

Burn Rate, dry kg/hr	3.00
Emission Rate, E_g /MJ	0.040
Load Heat Output Rate, Btu/hr	41710

	Avg. of Trains A and B		First Hour	
	Uncorrected	Corrected	Uncorrected	Corrected
Total Emissions - E_T , g	38.00	38.00	6.64	6.64
Emission Rate, g/hr	1.86	1.86	6.64	6.64
Emissions Factor, g/kg	0.62	0.62	n/a	n/a

Fuel and Appliance Parameters

Wet Fuel Mass	165.7	lb.
Duration of test	1228	min
Higher Heating Value (HHV) of Fuel	8348	Btu
Lower Heating Value (LHV) of Fuel	7789.6	Btu
TI_{avg} - Average Temperature of Appliance at Start of Test:	161.5	°F
TF_{avg} - Average Temperature of Appliance at End of Test:	181.6	°F
MC_{Ave} - Average Moisture of Fuel, dry-basis:	22.61	%

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Dilution Tunnel Flow Parameters

	First Hour	Duration of Test
Average Tunnel Temperature, °F	69.1	68.3
Average Tunnel Gas Velocity (vs), feet/second	21.445	21.344
Average Tunnel Gas Flow Rate(Qsd)	DSCF/hr	59948.0
	DSCF/min	999.1
Average Delta p, in. H ₂ O	0.114	0.113
Tunnel Static Pressure, in. H ₂ O	-0.400	-0.400
Total Time of Test, Min	60	1228

Particulate Sample Parameters - Uncorrected

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	197.092	198.218	197.313	9.592
Average Gas Meter Temperature, °F	63	76	77	64
Total Sample Volume (V _{mstd}), DSCF	205.482	201.503	198.309	9.925
Total Particulates (mn), mg - m _n	0.4	6.2	6.2	1.1
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00003	0.00003	0.00011
Total Particulate Emissions (ET), grams	n/a	37.69	38.30	6.64
Particulate Emission Rate, g/hr	n/a	1.84	1.87	6.64
Emissions Factor, g/kg	n/a	0.61	0.62	n/a
Difference, ET from Average ET, grams	n/a	-0.30	0.30	n/a

Particulate Sample Parameters - Corrected for any negative filter weights

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	197.092	198.218	197.313	9.592
Average Gas Meter Temperature, °F	63	76	77	64
Total Sample Volume (V _{mstd}), DSCF	205.482	201.503	198.309	9.925
Total Particulates (mn), mg - m _n	0.4	6.2	6.2	1.1
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00003	0.00003	0.00011
Total Particulate Emissions (ET), grams	n/a	37.69	38.30	6.64
Particulate Emission Rate, g/hr	n/a	1.84	1.87	6.64
Emissions Factor, g/kg	n/a	0.61	0.62	n/a
Difference, ET from Average ET, grams	n/a	-0.30	0.30	n/a

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Test Methodology Specifications Quality Checks

Parameter	Requirement	Measured / Observed			Complies?
		First Hour	Train 1	Train 2	
Filter Temperature, °F	< 90	64	64	64	✓
Filter face velocity, fpm	< 30	8.78	8.73	8.78	✓
Dryer Exit, °F	< 80	56	51	51	✓
Tunnel Velocity, fpm	>800	1,287	1,281		✓
First Hour Leakage Rate	0.006	0.000			✓
Train A Leakage Rate	0.006		0.000		✓
Train B Leakage Rate	0.006			0.000	✓

Leakage Rate Limits (cfm) are < 4% of average sample rate or < 0.01 cfm, which ever is less

Parameter	Requirement	Measured / Observed			Complies?
Negative Probe Weight	=> 0	0.2	0.1	0	✓
Pro-Rate Variation	< 90 for < 10% of θ	0.00%	0.00%	0.00%	✓
	> 110 for < 10% of θ	0.00%	0.000%	0.00%	✓
	# Readings < 80%	0	0	0	✓
	# Readings > 120%	0	0	0	✓
Room Temp, °F (min)	> 55		57		✓
Room Temp, °F (max)	< 90		68		✓
Dual Train Precision	(1) < 7.5%		0.80%		✓
<i>1 or 2 must conform</i>	(2) < 0.5 g/kg		0.01		
Room Air Velocity	< 50 fpm		37		✓
Preburn Min. Weight	149.1		166.4		✓
Preburn Max. Weight	182.3				✓
Min. Coal Bed Weight	16.6		31.0		✓
Max. Coal Bed Weight	33.1				✓

CSA B415.1-11 Efficiency Results

Manufacturer Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 3
Test Date: 12/4/2024

Efficiency results reported herein are based on a stack-loss method in accordance with CSA B415.1:22 "Performance testing of solid-biofuel-burning heating appliance". OMNI uses the spreadsheet provided by CSA that is to be used in conjunction with the current version of the test standard. The most recent version of the software is version 2.4, dated April 15, 2010. OMNI received confirmation from CSA on October 18, 2023 that this is the current version of the software.

Stack Loss Efficiency

Manufacturer: Central Boiler
Model: Edge 560.1
Date: 12/04/24
Run: 3
Control #: 2495
Test Duration: 1228
Output Category: II

Technicians: T. Tong, R. Tiegs, K. Morgan

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	83.9%	90.0%
Combustion Efficiency	96.9%	96.9%
Heat Transfer Efficiency	87%	92.9%

Output Rate (kJ/h)	48,762	46,256	(Btu/h)
Burn Rate (kg/h)	3.00	6.60	(lb/h)
Input (kJ/h)	58,135	55,148	(Btu/h)

Test Load Weight (dry kg)	61.32	135.14	dry lb
MC wet (%)	18.44		
MC dry (%)	22.61		
Particulate (g)	38		
CO (g)	2,761		
Test Duration (h)	20.47		

Emissions	Particulate	CO
g/MJ Output	0.04	2.77
g/kg Dry Fuel	0.62	45.03
g/h	1.86	134.90
lb/MM Btu Output	0.09	6.43

Air/Fuel Ratio (A/F)	16.83
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VERSION:

2.4

4/15/2010

VERSION: 2.4

4/15/2010

Manufacturer: Central Boiler

Model: Edge 560.1

Date: 12/4/2024

Run: 3

Control #: 2495

Test Duration: 1228

Output Category: II

Appliance Type: Non Cat (Cat, Non

Temp. Units F (F or C)

Weight Units lb (kg or lb)

Fuel Data

Maple

HHV 19,404 kJ/kg

%C 50.3

%H 6.1

%O 42.91

%Ash 0.69

Wood Moisture (% wet): 18.44

Load Weight (lb wet): 165.70

Burn Rate (dry kg/h): 3.00

Total Particulate Emissions: 38 g

Averages

0.59

6.67

#DIV/0!

173.40

63.12

Temp. (°F)

Elapsed
Time (min)Fuel Weight
Remaining (lb)Flue Gas Composition (%)
CO CO₂ O₂Flue
GasRoom
Temp

0	165.70	0.00	14.73		262.0	65.0
2	164.48	0.06	6.74		237.0	65.0
4	163.61	0.07	16.33		260.0	65.0
6	162.61	0.09	16.22		267.0	65.0
8	161.54	0.19	16.36		262.0	65.0
10	160.44	0.32	17.00		263.0	65.0
12	159.62	0.15	16.44		261.0	65.0
14	158.84	0.14	16.49		261.0	66.0
16	157.88	0.25	17.11		263.0	65.0
18	156.86	0.17	16.59		262.0	65.0
20	155.92	0.13	16.42		265.0	66.0
22	154.97	0.04	15.87		266.0	65.0
24	153.95	0.06	15.98		266.0	65.0
26	153.10	0.05	15.85		266.0	65.0
28	152.53	0.06	9.83		266.0	65.0
30	152.40	-0.03	5.68		267.0	64.0
32	152.32	-0.03	3.04		266.0	64.0
34	152.29	-0.03	2.52		268.0	65.0
36	152.21	-0.03	1.73		269.0	64.0
38	152.32	-0.04	0.86		269.0	65.0
40	152.35	-0.02	0.80		270.0	64.0
42	152.32	0.00	0.88		271.0	64.0
44	152.33	0.01	0.99		272.0	64.0
46	152.32	0.02	1.08		272.0	64.0
48	152.37	0.02	1.10		272.0	64.0

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
50	152.37	0.02	1.10		273.0	63.0
52	152.44	0.02	1.05		273.0	63.0
54	152.38	0.01	1.02		269.0	63.0
56	152.37	0.02	1.06		249.0	63.0
58	152.47	0.02	1.03		237.0	64.0
60	152.43	0.01	0.96		228.0	64.0
62	152.44	0.00	0.88		221.0	63.0
64	152.57	0.01	0.96		216.0	63.0
66	152.51	0.00	0.88		211.0	63.0
68	152.59	0.00	0.86		207.0	63.0
70	152.52	0.01	0.89		204.0	64.0
72	152.57	-0.01	0.77		200.0	63.0
74	152.56	0.00	0.82		197.0	63.0
76	152.55	0.00	0.78		193.0	63.0
78	152.55	0.00	0.78		190.0	63.0
80	152.53	-0.01	0.69		186.0	63.0
82	152.66	-0.01	0.63		183.0	63.0
84	152.52	-0.01	0.69		179.0	62.0
86	152.60	-0.01	0.69		176.0	63.0
88	152.65	-0.02	0.56		174.0	63.0
90	152.61	-0.01	0.65		171.0	62.0
92	152.67	-0.01	0.60		168.0	62.0
94	152.74	-0.01	0.59		165.0	63.0
96	152.60	-0.01	0.59		162.0	63.0
98	152.54	0.97	6.32		159	62
100	152.63	0.66	4.47		157	62
102	152.61	0.45	3.23		154	62
104	152.63	0.35	2.62		152	62
106	152.61	0.32	2.42		150	62
108	152.59	0.24	1.95		148	62
110	152.64	0.22	1.88		146	62
112	152.54	0.19	1.7		144	62
114	152.63	0.15	1.44		142	63
116	152.72	0.16	1.49		140	62
118	152.18	0.47	3.6		138	63
120	151.10	3.06	15.58		136	62
122	150.06	0.22	16.94		134	63
124	149.18	0.08	16.19		132	63
126	148.12	0.12	17.13		131	62
128	147.02	0.14	17.41		129	62
130	145.85	0.23	17.8		128	62
132	144.94	0.09	16.91		126	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
134	143.77	0.09	16.92		125	62
136	142.82	0.07	16.72		123	62
138	141.66	0.01	15.47		122	62
140	140.61	0	15.95		121	62
142	139.57	-0.01	15.66		119	62
144	138.59	-0.02	14.91		118	62
146	137.52	-0.01	15.67		117	62
148	136.57	-0.02	14.76		116	62
150	135.70	-0.02	15.28		114	62
152	135.27	-0.05	9.7		113	62
154	135.01	-0.05	8.49		112	62
156	134.91	-0.03	5.85		112	62
158	134.84	-0.02	4.17		111	62
160	134.75	-0.01	2.78		110	62
162	134.68	0	1.6		108	62
164	134.71	0.09	1.96		107	62
166	134.83	0.14	2.23		106	62
168	134.85	0.15	2.26		106	62
170	134.90	0.16	2.36		105	62
172	134.90	0.15	2.28		104	62
174	134.88	0.13	2.05		103	62
176	134.94	0.12	2		102	62
178	135.00	0.1	1.83		101	62
180	134.98	0.08	1.62		101	62
182	135.01	0.08	1.58		100	62
184	135.04	0.08	1.58		99	62
186	134.99	0.07	1.53		99	62
188	134.97	0.06	1.32		98	62
190	135.02	0.05	1.29		98	62
192	135.07	0.05	1.22		97	62
194	135.10	0.04	1.14		158	62
196	135.07	0.03	1.04		140	62
198	135.06	0.03	0.99		129	62
200	135.04	0.02	0.93		121	62
202	135.05	0.01	0.86		116	62
204	135.06	0.01	0.84		112	61
206	135.07	0.01	0.8		109	62
208	135.11	0.01	0.78		107	62
210	135.14	0.01	0.75		104	62
212	135.14	0	0.73		102	62
214	135.15	0	0.67		100	62
216	135.14	0	0.64		99	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
218	135.12	0	0.63		98	62
220	134.96	-0.01	0.6		97	62
222	134.89	0.78	5.11		96	62
224	134.90	0.45	3.24		95	62
226	134.88	0.28	2.24		94	62
228	134.91	0.24	2.04		94	62
230	134.89	0.24	2.07		93	62
232	134.98	0.23	2.02		92	62
234	134.92	0.18	1.68		92	62
236	134.95	0.15	1.52		144	62
238	134.91	0.15	1.46		192	62
240	134.96	0.14	1.44		228	62
242	134.98	0.12	1.31		259	62
244	134.95	0.13	1.38		272	62
246	134.24	1.02	5.11		260	62
248	133.25	3.1	13.69		263	62
250	131.94	0.41	16.26		260	62
252	131.47	0.07	15.14		260	62
254	130.55	-0.01	14.2		261	62
256	129.73	-0.01	14.33		263	62
258	128.66	-0.01	14.89		265	62
260	127.64	0.01	15.71		268	62
262	126.57	0	15.62		268	62
264	125.42	0	15.23		268	62
266	124.47	0.01	15.26		268	61
268	123.71	-0.01	15.29		268	61
270	122.43	-0.01	15.03		268	60
272	121.28	-0.01	15.19		269	59
274	120.32	-0.01	14.79		268	59
276	119.45	-0.02	14.73		273	59
278	118.29	0	15.53		276	58
280	117.55	0	14.55		276	59
282	117.16	0.02	7.06		277	58
284	116.88	0.07	5.53		278	58
286	116.76	0.02	7.38		279	59
288	116.64	0.02	4.97		280	57
290	116.56	0.01	2.87		279	57
292	116.52	0.25	3.25		280	58
294	116.45	0.44	3.99		284	57
296	116.53	0.52	4.28		283	59
298	116.52	0.56	4.41		284	59
300	116.48	0.47	3.82		284	60

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
CO	CO ₂	O ₂				
302	116.51	0.42	3.49		270	60
304	116.57	0.37	3.15		252	60
306	116.50	0.34	2.98		240	61
308	116.64	0.35	3.08		231	60
310	116.60	0.28	2.56		224	60
312	116.53	0.26	2.49		219	60
314	116.58	0.24	2.31		214	60
316	116.57	0.23	2.24		210	60
318	116.54	0.18	1.92		206	60
320	116.62	0.18	1.86		203	59
322	116.65	0.15	1.66		200	60
324	116.65	0.15	1.69		196	58
326	116.71	0.13	1.55		193	57
328	116.62	0.14	1.56		189	58
330	116.61	0.1	1.33		185	57
332	116.61	0.12	1.42		182	58
334	116.66	0.09	1.19		178	58
336	116.67	0.1	1.28		175	58
338	116.65	0.09	1.19		172	58
340	116.69	0.06	0.99		168	58
342	116.71	0.07	1.04		166	58
344	116.82	0.08	1.08		163	58
346	116.73	0.08	1.05		160	59
348	116.94	0.08	1.05		158	59
350	116.52	1.04	6.49		155	60
352	116.44	0.77	4.83		152	60
354	116.45	0.5	3.4		150	60
356	116.49	0.34	2.52		148	60
358	116.52	0.31	2.39		145	61
360	116.49	0.27	2.2		143	61
362	116.57	0.24	2.02		141	61
364	116.42	0.24	2		139	61
366	116.50	0.21	1.85		137	61
368	116.56	0.18	1.63		136	61
370	116.51	0.17	1.56		134	61
372	116.63	0.16	1.55		132	61
374	116.60	0.14	1.4		130	62
376	116.57	0.13	1.32		128	62
378	116.67	0.11	1.23		127	62
380	116.27	0.45	3.49		125	62
382	115.49	3.71	9.08		124	62
384	114.60	1.77	13.98		122	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
386	113.63	1.22	13.86		121	62
388	112.67	0.06	14.43		119	62
390	111.85	0.13	14.97		118	63
392	110.85	0.01	15.08		117	63
394	109.92	0	15.72		116	63
396	108.80	-0.02	15.01		115	63
398	107.54	-0.01	15.09		114	63
400	106.84	-0.01	15.3		112	63
402	105.85	-0.01	15.51		111	63
404	104.90	-0.02	14.87		110	63
406	103.85	-0.03	14.42		110	63
408	102.97	-0.03	14.53		109	63
410	102.00	-0.03	14.53		108	63
412	101.06	-0.03	14.71		107	63
414	100.11	-0.03	14.95		106	63
416	99.63	0.02	8.42		105	64
418	99.29	0.03	7.82		104	64
420	99.12	0.06	10.52		103	63
422	99.01	-0.01	7.67		103	64
424	98.90	-0.01	4.42		102	64
426	98.81	0.48	4.56		101	64
428	98.81	0.88	5.3		101	64
430	98.82	1.04	5.68		100	64
432	98.88	1.09	5.75		99	64
434	98.91	0.92	4.89		99	64
436	98.94	0.83	4.49		98	64
438	98.91	0.77	4.25		97	64
440	98.86	0.78	4.3		143	64
442	98.93	0.66	3.78		153	64
444	98.93	0.62	3.6		141	64
446	98.95	0.62	3.61		132	64
448	98.87	0.54	3.24		125	64
450	98.90	0.52	3.17		120	64
452	98.95	0.45	2.83		117	64
454	98.88	0.38	2.52		113	64
456	98.93	0.35	2.31		111	64
458	98.90	0.41	2.65		109	65
460	98.96	0.37	2.46		108	64
462	98.97	0.34	2.27		106	64
464	99.03	0.36	2.41		104	65
466	98.98	0.28	1.99		103	64
468	99.06	0.39	2.59		102	65

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
470	98.93	0.33	2.27		100	65
472	99.00	0.32	2.24		99	65
474	99.02	0.31	2.19		98	65
476	99.05	0.32	2.26		96	65
478	99.13	0.29	2.1		96	65
480	99.06	0.31	2.23		95	65
482	99.14	0.3	2.18		94	65
484	98.87	0.7	5.69		93	65
486	98.89	0.73	4.75		93	65
488	98.76	0.52	3.67		93	65
490	98.85	0.39	2.95		134	65
492	98.82	0.37	2.83		176	65
494	98.83	0.27	2.24		208	65
496	98.89	0.29	2.44		235	65
498	98.84	0.22	2.02		260	65
500	98.81	0.23	2.11		275	65
502	98.84	0.2	1.93		270	65
504	98.85	0.19	1.88		275	66
506	98.91	0.17	1.76		281	66
508	98.87	0.18	1.86		277	66
510	98.99	0.16	1.72		276	66
512	98.69	0.17	1.83		273	66
514	97.85	3.23	8.47		273	66
516	97.07	1.91	9.9		274	66
518	96.11	0.91	13		276	66
520	95.04	0.08	15.14		279	66
522	94.02	-0.01	14.17		278	66
524	92.99	0	14.67		279	66
526	92.00	0	15.38		280	67
528	91.05	0	15.42		280	66
530	90.27	-0.01	15.68		280	66
532	88.96	-0.03	15.42		281	66
534	88.11	-0.01	15.48		280	66
536	86.91	-0.02	15.38		279	66
538	86.09	-0.04	14.94		281	67
540	85.11	-0.04	14.82		280	67
542	84.06	-0.04	14.5		282	67
544	83.30	-0.05	14.64		281	66
546	82.33	-0.03	14.75		283	67
548	81.60	-0.01	9.98		282	67
550	81.24	0.08	11.97		284	66
552	81.00	0.08	9.57		283	66

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
554	80.99	-0.02	8.49		283	67
556	80.80	0	6.09		285	66
558	80.77	0.13	3.76		284	67
560	80.81	0.65	4.8		270	67
562	80.72	0.93	5.56		254	68
564	80.76	1.02	5.73		242	67
566	80.75	1.02	5.63		234	67
568	80.74	0.97	5.41		228	67
570	80.74	0.89	5.02		222	66
572	80.80	0.86	4.88		217	67
574	80.80	0.87	4.94		212	66
576	80.73	0.83	4.77		209	66
578	80.83	0.75	4.43		206	66
580	80.78	0.7	4.19		204	66
582	80.80	0.66	3.97		200	66
584	80.94	0.56	3.48		197	65
586	80.91	0.61	3.73		194	66
588	80.83	0.58	3.62		190	66
590	80.92	0.55	3.45		187	66
592	80.92	0.49	3.15		183	66
594	80.89	0.48	3.11		180	66
596	80.84	0.46	3.04		177	65
598	80.90	0.48	3.19		174	65
600	80.99	0.41	2.82		171	65
602	80.93	0.41	2.88		168	65
604	80.95	0.41	2.89		165	65
606	81.02	0.39	2.81		163	65
608	80.96	0.38	2.74		160	65
610	80.95	0.4	2.88		158	65
612	80.93	0.37	2.67		155	65
614	80.94	0.38	2.75		153	64
616	80.93	0.36	2.65		151	64
618	80.69	0.49	3.64		149	64
620	80.70	0.34	2.76		147	64
622	80.62	0.29	2.52		145	64
624	80.78	0.26	2.37		143	64
626	80.78	0.23	2.26		141	64
628	80.71	0.23	2.27		139	64
630	80.83	0.23	2.34		137	63
632	80.74	0.24	2.44		135	64
634	80.80	0.21	2.31		133	63
636	80.76	0.21	2.29		131	63

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
638	80.75	0.17	2.1		130	64
640	80.89	0.18	2.15		128	63
642	80.75	0.19	2.31		127	64
644	80.76	0.17	2.12		125	63
646	80.80	0.19	2.29		124	63
648	80.61	0.3	3.76		123	63
650	80.12	0.67	4.21		122	63
652	79.41	1.9	7.22		120	64
654	78.75	2.36	9.48		119	63
656	77.81	1.8	10.64		118	63
658	76.96	0.91	12.06		117	63
660	75.95	0.73	13.08		115	63
662	75.20	0.21	13.93		114	63
664	74.24	0.05	13.84		113	63
666	73.36	0.01	14.03		112	63
668	72.54	0	14.23		111	63
670	71.60	0.03	14.02		110	62
672	70.59	0.01	14.12		109	63
674	69.83	0.02	14.15		108	63
676	68.66	0.03	13.9		107	63
678	67.91	0.06	13.9		106	63
680	66.99	0.06	13.81		105	63
682	66.12	0.08	13.37		105	63
684	65.20	0.25	13.05		104	63
686	64.53	0.08	13.4		103	62
688	64.03	0.05	9.37		102	63
690	63.72	0.01	10.38		101	63
692	63.44	0.55	15.84		101	62
694	63.25	0.1	13.15		100	62
696	63.16	0.2	9.72		99	62
698	63.02	2.67	12.8		143	62
700	62.97	3.71	13.73		153	62
702	63.01	3.73	12.83		141	62
704	62.95	3.65	12.21		132	62
706	62.92	3.74	12.27		125	62
708	62.91	3.62	11.9		120	62
710	62.97	3.35	11.13		117	62
712	62.87	3.11	10.42		113	62
714	62.93	2.76	9.39		111	62
716	62.93	2.88	9.87		109	62
718	62.90	2.8	9.72		107	62
720	62.86	2.46	8.82		106	62

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
722	62.89	2.4	8.66		104	62
724	62.99	2.29	8.35		102	62
726	62.92	2.17	8.02		101	62
728	62.97	2.09	7.8		100	62
730	62.89	1.96	7.44		99	62
732	62.94	2	7.59		98	62
734	62.95	1.79	6.94		98	62
736	62.97	1.77	6.88		96	62
738	63.03	1.77	6.95		95	62
740	62.97	1.69	6.68		94	62
742	62.95	1.61	6.48		94	62
744	62.96	1.55	6.32		93	62
746	63.03	1.56	6.38		92	62
748	63.01	1.5	6.21		91	62
750	63.02	1.58	6.54		91	62
752	63.04	1.41	6.01		89	62
754	62.96	1.39	5.91		88	62
756	62.78	0.84	4.57		89	61
758	62.82	0.57	3.15		88	61
760	62.71	0.48	2.85		138	61
762	62.72	0.46	2.83		182	61
764	62.80	0.4	2.63		207	61
766	62.73	0.4	2.69		230	61
768	62.82	0.38	2.63		251	62
770	62.85	0.39	2.74		265	61
772	62.76	0.37	2.7		273	62
774	62.75	0.34	2.55		281	62
776	62.75	0.34	2.6		278	61
778	62.85	0.34	2.63		275	62
780	62.88	0.3	2.45		275	61
782	62.76	0.31	2.55		273	62
784	62.79	0.32	2.64		274	61
786	62.75	0.3	2.52		276	62
788	62.58	0.37	2.18		278	61
790	62.22	0.38	2.98		277	61
792	61.66	1.37	5.44		278	62
794	61.03	1.8	8.6		278	62
796	60.09	1.67	9.9		278	62
798	59.30	1.64	10.57		278	64
800	58.34	1.4	11.23		278	64
802	57.47	1.1	11.88		278	63
804	56.41	0.17	13.99		279	63

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
806	55.38	0.1	14.06		280	63
808	54.58	0.07	14.06		280	63
810	53.53	0.06	14		281	64
812	52.45	0.04	13.74		282	64
814	51.72	0.07	13.64		283	64
816	50.55	0.05	13.62		284	65
818	49.76	0.07	13.67		285	64
820	48.75	0.07	13.31		286	65
822	47.79	0.13	12.74		286	65
824	47.11	0.1	12.54		287	66
826	46.63	0.09	8.64		288	66
828	46.33	0.01	9.51		281	66
830	46.18	0.28	13.8		260	66
832	45.96	0	11.56		248	65
834	45.81	0.01	8.84		238	65
836	45.82	1.44	9.39		231	65
838	45.68	2.39	10.41		225	65
840	45.65	2.76	10.67		220	65
842	45.69	2.82	10.49		215	65
844	45.62	2.74	9.95		211	65
846	45.68	2.74	9.88		207	65
848	45.62	2.81	10.1		205	65
850	45.67	2.77	9.91		202	65
852	45.59	2.5	9.11		199	64
854	45.59	2.46	8.97		195	65
856	45.70	2.4	8.81		192	65
858	45.57	2.23	8.28		188	64
860	45.70	2.17	8.08		185	65
862	45.61	2.16	8.09		181	64
864	45.57	2.14	8.1		178	64
866	45.69	1.91	7.41		175	65
868	45.67	1.89	7.34		172	65
870	45.63	1.88	7.36		169	65
872	45.62	1.77	6.97		166	65
874	45.67	1.69	6.7		164	65
876	45.72	1.67	6.69		161	64
878	45.69	1.62	6.57		159	66
880	45.63	1.65	6.67		156	65
882	45.70	1.54	6.33		154	65
884	45.75	1.51	6.28		152	65
886	45.68	1.47	6.15		150	64
888	45.74	1.46	6.16		147	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
890	45.72	1.46	6.19		145	64
892	45.71	1.34	5.79		143	65
894	45.50	1.47	6.66		141	65
896	45.46	0.34	2.31		139	65
898	45.46	0.31	2.07		137	65
900	45.52	0.31	2.11		136	64
902	45.55	0.33	2.26		134	64
904	45.53	0.33	2.35		132	65
906	45.54	0.34	2.44		131	64
908	45.58	0.3	2.31		130	64
910	45.53	0.34	2.62		128	64
912	45.58	0.33	2.61		127	64
914	45.55	0.33	2.61		125	64
916	45.54	0.31	2.55		124	64
918	45.56	0.31	2.54		123	64
920	45.64	0.31	2.62		121	64
922	45.60	0.27	2.39		120	63
924	45.55	0.32	2.67		118	64
926	45.24	0.14	1.16		117	63
928	44.87	0.53	2.55		117	63
930	44.29	1.26	6.07		117	63
932	43.38	2.24	9.78		116	63
934	42.44	1.33	12.18		113	63
936	41.52	0.28	13.71		112	63
938	40.62	0.21	13.96		112	63
940	39.72	0.05	14.09		110	62
942	38.72	0.12	13.84		108	63
944	37.88	0.11	14.04		108	62
946	36.83	0.12	14.08		107	62
948	35.83	0.17	14.14		107	62
950	35.06	0.17	13.67		105	62
952	34.09	0.19	13.71		105	62
954	32.91	0.25	13.37		105	62
956	32.09	0.26	13.19		103	62
958	31.17	0.2	13.15		102	62
960	30.42	0.17	13.58		101	62
962	29.92	0.2	8.41		101	62
964	29.69	0.1	9.11		100	62

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
Model : Classic Edge 560.1
Tracking No. : 2495
Project No. : 0117WB043E
Test Date : 12/4/2024
Run No. : 3

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Firebox Volume : 13.720 ft³
Manufacturer's Recommended Loading Density : 13
Ideal Fuel Weight : 178.36 lb.
Minimum Fuel Weight : 160.52 lb.
Maximum Fuel Weight : 196.20 lb.
Fuel Species : Maple

Fuel Piece Data

PC No.	Weight, Lb. (W _i)	Cross-Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	8.8	6.00	3.50	22.00	24.9	23.6	22.8	19.6	19.8	22.1	194.83
2	13.0	7.50	4.00	22.00	21.6	22.8	21.0	19.8	19.6	21.0	272.48
3	10.4	7.50	4.00	22.00	20.6	20.9	21.0	20.1	19.0	20.3	211.33
4	9.4	7.00	3.50	22.00	25.8	23.9	25.9	21.2	19.7	23.3	219.02
5	10.7	7.00	3.50	22.00	23.5	25.6	22.5	23.9	23.0	23.7	253.59
6	13.3	7.50	4.50	22.00	20.8	21.5	21.8	21.8	22.3	21.6	287.81
7	14.1	7.75	4.00	22.00	22.9	27.1	27.2	21.7	22.8	24.3	343.19
8	13.2	7.25	4.00	22.00	20.9	21.2	20.8	26.7	25.2	23.0	303.07
9	14.2	7.50	4.25	22.00	23.8	25.3	24.3	20.9	23.6	23.6	334.84
10	9.5	7.75	3.75	22.00	19.4	21.3	22.1	19.8	22.9	21.1	200.45
11	12.1	7.00	4.00	22.00	25.9	26.1	20.5	21.5	23.1	23.4	283.38
12	13.0	7.50	4.00	22.00	24.2	23.9	21.9	19.2	19.7	21.8	283.14
13	10.3	4.25	4.50	22.00	23.7	23.0	23.6	19.2	19.7	21.8	224.95
14	13.7	6.50	5.00	22.00	25.9	24.9	25.2	23.1	22.9	24.4	334.28
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	165.7										3746.37
Averages	11.84	7.00	4.04	22.00	23.14	23.65	22.90	21.32	21.66	22.53	267.60

Fuel Load Properties

Number of Pieces	Wet Weight, lb.	Dry Weight, lb.	Fuel Loading Density, lb/ft ³ Wet Basis	Fuel Loading Density, lb/ft ³ Dry Basis	Moisture, % dry basis (ΣW _i · MC _i) / ΣW _i	Moisture, % wet Basis
14	165.7	135.14	12.08	9.85	22.61	18.44
Compliance Checks, Loading Density and Moisture						
	Fuel Load, Wet Lb.	Load Density, lb/ft ³ of FB vol	Number of moisture readings > 28%	Number of moisture readings < 18%	Average Fuel Moisture, % DB	
Measured	165.7	12.08	0	0	21.66	
Required	160.5 - 196.2	10 - 15	0	0	19 - 25	
Complies ?	Yes	Yes	Yes	Yes	Yes	
Compliance Checks, Fuel weights and Dimensions						
	Cross Section of Individual Pieces		Minimum Piece Weight, Lb.	Maximum Piece Weight, Lb.		
	Min	Max				
Measured	3.50	7.75	8.8	14.2		
Required	3	12	8.8	26.5		
Complies ?	Yes	Yes	Yes	Yes		

Pre-Burn Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
Model : Classic Edge 560.1
Tracking No. : 2495
Project No. : 0117WB043E
Test Date : 12/4/2024
Run No. : 3

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Average Moisture Content, % Dry Basis : 21.3
Total Mass, lb. : 166.4

[illegible]

Dilution Tunnel Velocity Traverse and Supplementary Data

ASTM E2515-11

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1

Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/4/2024

Dilution Tunnel Velocity Traverse

Pitot Location								
Traverse Point	% of Diameter	Inches into Tunnel	dP in. H ₂ O	Tunnel Temp, °F	dP ^{1/2}	Tunnel Static Pressure	-0.390	in. H ₂ O
X1	4.4	0.53	0.112	70	0.335	Tunnel Moisture	2.00	%
X2	14.6	1.75	0.124	70	0.352	Tunnel Diameter	12.00	inches
X3	29.6	3.55	0.120	70	0.346	Pitot Tube C _p	0.99	inches
X4	70.4	8.45	0.114	70	0.338	Tunnel Molecular Weight	29	(dry)
X5	85.4	10.25	0.100	70	0.316	Tunnel Molecular Weight	28.78	(M _s , wet)
X6	95.6	11.47	0.060	70	0.245	Tunnel Area	0.78539816	ft ²
Y1	4.4	0.53	0.100	70	0.316	K _p	85.49	constant
Y2	14.6	1.75	0.114	70	0.338	P _s =P _{bar} +Tunnel Static	30.2513235	in HG
Y3	29.6	3.55	0.114	70	0.338	$V_{strav} = K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 21.455$		
Y4	70.4	8.45	0.106	70	0.326			
Y5	85.4	10.25	0.106	70	0.326			
Y6	95.6	11.47	0.078	70	0.279	$V_{scent} = K_p C_p \sqrt{\Delta p_{center}} \sqrt{\frac{T_{s,center}}{P_s M_s}} = 22.296$		
Center	50.0	6.00	0.114	70	0.338			

* Probe location must be no closer than 0.50 in to tunnel wall

$$F_p = V_{strav} / V_{scent} = 0.962$$

$$\text{Initial Tunnel Velocity, } V_s = F_p K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 20.650359 \text{ ft/sec}$$

Supplementary Data and Information

Environment	Test Start	Test End	
Time of Day	12:35	9:06	(Following Morning)
Barometric Pressure, in. Hg	30.28	30.38	
Room Air Velocity, fpm	27	37	
Room Air Temperature, °F	65	62	
Room Relative Humidity, %	32.0	31.0	
Platform Scale Audit, lb.	30.0	30.0	

Leak Checks

Pitot and associated tubing, (pass/fail) ¹	Pass	Pass
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See sampling box worksheets for sampling boxes

Dilution Tunnel

Date last cleaned	11/22/2024	
Smoke Capture, % (visual) ²	100	
Draft Inducement, (pass/fail) ³	Pass	
Static Pressure, in. H ₂ O	-0.400	-0.380

¹ Both sides (independently) of the pitot system are brought under a minimum vacuum of 3 in. H₂O and then sealed. Any indication of pressure loss is deemed a fail.

² Create a smoking condition during start of pre-burn activities and using adequate lighting pointed upward and around tunnel hood, visually observe if 100% of visible smoke is being captured by the hood. If not, increase flow tunnel flow and / or re-assess chimney proximity to draft hood as required and repeat until 100% capture is observed.

³ With the appliance installed and the dilution tunnel flow turned-off, observe the flue draft gauge while turning the dilution tunnel on. Any detectable response by the draft gauge associated with activation of the tunnel flow indicates that draft inducement is occurring. Determine the cause (i.e. flue chimney too deep into tunnel?) before continuing.

Preburn Data

ASTM E2618

Run: 3

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/4/24

Final Coal Bed Weight: 31.0 lb.
 Average Heat Output Rate Last One Hour, Btu/hr: 42069.1 Btu/hr.

Beginning Clock Time: 10:35
 Logging Intervqal, Min: 1

NOTE: Stack Temperture, Stack Draft and Room Ambient Temperature were recorded on a separate DAQ which only ran the last 318 minutes of the preburn.

Coal Bed Range **16.6 33.1**
 (lb): (min) (max)

121		Appliance					Load									
Elapsed Time (Min)	Fuel Remaining (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H2O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	ci, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	Room Temp °F
0	58.1	163.2	155.4	7.8	265	-0.054	53.4	163	109.5	2.805	1.0012	8.338	23.39	2563.2	153791	63
1	57.2	163.1	155.3	7.8	267	-0.055	53.4	163	109.3	2.833	1.0012	8.338	23.63	2584.4	155062	63
2	56.5	162.6	155.1	7.5	267	-0.054	53.3	162	108.9	2.733	1.0012	8.338	22.79	2484.9	149094	64
3	55.7	162.6	154.9	7.7	266	-0.053	53.3	162	108.9	2.819	1.0012	8.338	23.51	2562.6	153753	64
4	54.8	162.2	154.4	7.8	297	-0.054	53.3	162	108.4	2.833	1.0012	8.338	23.63	2565.2	153912	63
5	54.2	162.6	154.9	7.7	284	-0.051	53.4	162	108.9	2.805	1.0012	8.338	23.39	2551.1	153065	65
6	53.8	162.6	154.9	7.7	276	-0.05	53.4	162	108.9	2.833	1.0012	8.338	23.63	2575.7	154545	64
7	53.2	162.3	154.6	7.8	277	-0.051	53.4	162	108.5	2.819	1.0012	8.338	23.51	2553.2	153193	64
8	52.7	162.5	154.9	7.7	275	-0.051	53.4	162	108.9	2.819	1.0012	8.338	23.51	2562.8	153766	63
9	52.2	162.3	154.5	7.8	274	-0.051	53.3	162	108.5	2.819	1.0012	8.338	23.51	2554.5	153267	64
10	51.6	162.1	154.4	7.7	274	-0.05	53.3	162	108.4	2.819	1.0012	8.338	23.51	2552.0	153119	64
11	51.2	162.3	154.5	7.8	274	-0.05	53.3	162	108.6	2.819	1.0012	8.338	23.51	2554.8	153289	63
12	50.7	162.0	154.3	7.7	275	-0.049	53.3	162	108.3	2.819	1.0012	8.338	23.51	2549.4	152963	64
13	50.1	161.9	154.6	7.3	274	-0.051	53.3	162	108.3	2.762	1.0012	8.338	23.03	2498.0	149879	64
14	49.7	161.8	154.1	7.7	274	-0.05	53.3	161	108.2	2.791	1.0012	8.338	23.27	2519.6	151178	64
15	49.0	161.7	154.0	7.7	274	-0.051	53.3	161	108.0	2.833	1.0012	8.338	23.63	2554.0	153239	65
16	48.5	161.5	153.9	7.6	274	-0.049	53.3	161	107.9	2.819	1.0012	8.338	23.51	2539.5	152372	64
17	48.0	161.8	154.0	7.7	274	-0.05	53.3	161	108.0	2.819	1.0012	8.338	23.51	2541.5	152492	64
18	47.5	161.6	153.8	7.7	273	-0.049	53.3	161	107.9	2.819	1.0012	8.338	23.51	2538.8	152326	64
19	47.1	161.3	153.7	7.6	273	-0.051	53.3	161	107.6	2.833	1.0012	8.338	23.63	2545.8	152745	64
20	46.5	161.4	153.8	7.6	273	-0.05	53.3	161	107.7	2.819	1.0012	8.338	23.51	2534.3	152057	64
21	46.1	161.2	153.5	7.7	271	-0.049	53.3	161	107.4	2.819	1.0012	8.338	23.51	2528.4	151704	64
22	45.5	161.4	153.7	7.7	272	-0.049	53.4	161	107.7	2.819	1.0012	8.338	23.51	2533.9	152037	64
23	45.0	161.0	153.3	7.7	272	-0.051	53.3	161	107.2	2.819	1.0012	8.338	23.51	2523.7	151421	63
24	44.5	161.3	153.7	7.7	270	-0.049	53.3	161	107.6	2.819	1.0012	8.338	23.51	2531.8	151911	64
25	44.2	161.1	153.7	7.4	271	-0.053	53.3	161	107.5	2.748	1.0012	8.338	22.91	2466.6	147996	64
26	43.7	161.3	153.6	7.7	273	-0.05	53.3	161	107.6	2.791	1.0012	8.338	23.27	2506.1	150369	64
27	43.1	161.2	153.5	7.7	273	-0.052	53.3	161	107.5	2.833	1.0012	8.338	23.63	2543.4	152604	63
28	42.7	161.1	153.4	7.7	273	-0.05	53.3	161	107.3	2.819	1.0012	8.338	23.51	2526.3	151580	64
29	42.2	161.1	153.5	7.6	274	-0.047	53.3	161	107.5	2.819	1.0012	8.338	23.51	2531.2	151869	63
30	41.7	161.3	153.6	7.7	273	-0.05	53.4	161	107.4	2.833	1.0012	8.338	23.63	2541.4	152486	64
31	41.3	161.0	153.4	7.6	273	-0.049	53.5	161	107.2	2.819	1.0012	8.338	23.51	2524.1	151443	63
32	40.8	161.1	153.4	7.7	273	-0.05	53.5	161	107.1	2.833	1.0012	8.338	23.63	2534.3	152061	63
33	40.5	161.0	153.3	7.6	273	-0.049	53.6	161	107.0	2.819	1.0012	8.338	23.51	2518.7	151121	64
34	40.1	161.2	153.5	7.6	273	-0.049	53.6	161	107.2	2.819	1.0012	8.338	23.51	2522.4	151344	64
35	39.6	161.0	153.4	7.6	272	-0.049	53.6	161	107.1	2.833	1.0012	8.338	23.63	2532.4	151944	64
36	39.2	161.3	153.6	7.7	272	-0.048	53.7	161	107.2	2.819	1.0012	8.338	23.51	2523.3	151397	63
37	38.9	161.2	153.6	7.6	272	-0.048	53.7	161	107.2	2.819	1.0012	8.338	23.51	2521.9	151314	64
38	38.5	161.2	153.6	7.6	272	-0.049	53.7	161	107.2	2.833	1.0012	8.338	23.63	2535.3	152116	64
39	38.1	161.1	153.5	7.6	273	-0.048	53.7	161	107.0	2.819	1.0012	8.338	23.51	2519.0	151140	63
40	37.6	161.2	153.5	7.6	272	-0.051	53.7	161	107.1	2.819	1.0012	8.338	23.51	2520.1	151203	64
41	37.3	161.1	153.5	7.7	273	-0.049	53.7	161	107.0	2.819	1.0012	8.338	23.51	2517.2	151031	64
42	36.8	161.2	153.6	7.6	273	-0.05	53.8	161	107.0	2.805	1.0012	8.338	23.39	2505.8	150347	64

121		Appliance					Load										
Elapsed Time (Min)	Fuel Remaining (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H2O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	σi, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	Room Temp °F	
43	36.6	161.2	153.6	7.6	272	-0.048	53.8	161	107.1	2.819	1.0012	8.338	23.51	2520.2	151214	64	
44	36.1	161.1	153.5	7.6	271	-0.049	53.8	161	107.0	2.819	1.0012	8.338	23.51	2518.3	151097	64	
45	35.7	162.9	160.1	2.8	271	-0.047	53.8	162	108.4	1.546	1.0012	8.338	12.89	1399.2	83949.2	64	
46	35.4	164.2	162.0	2.1	270	-0.047	54.0	164	109.7	0.930	1.0012	8.337	7.755	851.9	51116.3	64	
47	34.9	164.8	162.7	2.1	267	-0.044	54.2	165	110.3	0.916	1.0012	8.337	7.636	843.0	50582.5	64	
48	34.5	166.1	164.3	1.8	279	-0.047	54.5	166	111.1	0.830	1.0012	8.337	6.92	769.8	46185.1	64	
49	33.8	167.5	165.6	1.8	274	-0.046	54.6	167	112.4	0.801	1.0012	8.337	6.681	752.1	45126.4	65	
50	33.6	168.4	166.5	1.8	271	-0.046	54.8	168	113.2	0.787	1.0012	8.337	6.562	743.5	44612.1	64	
51	33.1	169.2	167.4	1.9	271	-0.043	55.1	169	113.8	0.801	1.0012	8.337	6.681	760.9	45655.2	65	
52	33.0	169.9	168.1	1.8	248	-0.043	55.3	170	114.4	0.787	1.0012	8.336	6.561	751.4	45081.7	65	
53	32.9	170.3	168.5	1.8	235	-0.042	55.4	170	114.6	0.773	1.0012	8.336	6.442	739.2	44351	65	
54	32.8	170.4	168.6	1.8	226	-0.04	55.6	170	114.6	0.787	1.0012	8.336	6.561	752.9	45173.2	64	
55	32.7	170.5	168.7	1.8	219	-0.04	55.7	170	114.6	0.801	1.0012	8.336	6.68	766.7	46001.4	65	
56	32.7	170.7	168.9	1.8	215	-0.04	55.7	170	114.8	0.787	1.0012	8.336	6.561	753.9	45233.7	64	
57	32.6	170.9	169.6	1.3	210	-0.038	55.8	171	114.9	0.630	1.0012	8.336	5.249	603.7	36224.8	64	
58	32.7	171.0	169.4	1.6	206	-0.038	55.9	171	114.9	0.687	1.0012	8.336	5.726	659.0	39537	64	
59	32.6	170.9	169.1	1.8	202	-0.037	56.0	171	114.7	0.787	1.0012	8.336	6.561	753.7	45222.7	64	
60	32.6	170.9	169.1	1.8	199	-0.035	56.0	171	114.7	0.801	1.0012	8.336	6.68	767.0	46017.3	65	
61	32.7	170.9	169.2	1.7	197	-0.034	56.0	171	114.6	0.758	1.0012	8.336	6.322	725.6	43537.2	64	
62	32.7	170.8	169.1	1.7	194	-0.034	56.1	171	114.5	0.744	1.0012	8.336	6.203	711.2	42673.8	64	
63	32.6	170.8	169.1	1.6	191	-0.033	56.0	171	114.6	0.758	1.0012	8.336	6.322	725.3	43520.3	64	
64	32.6	170.8	169.1	1.7	187	-0.033	56.1	171	114.5	0.744	1.0012	8.336	6.203	711.4	42681.9	64	
65	32.7	170.6	169.0	1.7	184	-0.032	56.1	170	114.4	0.744	1.0012	8.336	6.203	710.4	42625.3	64	
66	32.7	170.6	168.9	1.6	181	-0.031	56.1	170	114.3	0.758	1.0012	8.336	6.322	723.7	43420.4	64	
67	32.7	170.5	168.8	1.6	178	-0.031	56.1	170	114.2	0.744	1.0012	8.336	6.203	709.3	42556.3	64	
68	32.7	170.3	168.7	1.6	175	-0.031	56.1	170	114.1	0.758	1.0012	8.336	6.322	722.2	43331.3	64	
69	32.7	170.2	168.6	1.6	172	-0.029	56.1	170	114.0	0.744	1.0012	8.335	6.203	707.7	42461	64	
70	32.7	170.0	168.4	1.6	169	-0.029	56.1	170	113.8	0.744	1.0012	8.336	6.203	706.9	42412.4	64	
71	32.7	170.0	168.3	1.6	166	-0.029	56.1	170	113.7	0.758	1.0012	8.336	6.322	719.6	43176.3	64	
72	32.7	169.8	168.2	1.7	163	-0.029	56.1	170	113.6	0.758	1.0012	8.336	6.322	718.9	43134.3	64	
73	32.8	169.7	168.0	1.7	161	-0.028	56.1	170	113.4	0.744	1.0012	8.336	6.203	704.4	42264.4	64	
74	32.7	169.5	167.8	1.6	158	-0.027	56.1	169	113.2	0.758	1.0012	8.336	6.322	716.8	43010	64	
75	32.7	169.3	167.7	1.6	156	-0.027	56.1	169	113.1	0.758	1.0012	8.335	6.322	715.6	42937.6	64	
76	32.7	169.2	167.6	1.6	153	-0.027	56.1	169	112.9	0.758	1.0012	8.335	6.322	714.7	42879.9	64	
77	32.8	169.0	167.4	1.6	151	-0.026	56.1	169	112.7	0.744	1.0012	8.335	6.203	700.2	42012.4	64	
78	32.8	168.8	167.2	1.6	149	-0.025	56.1	169	112.6	0.758	1.0012	8.335	6.322	712.5	42749.2	64	
79	32.9	168.7	167.0	1.6	147	-0.025	56.1	168	112.3	0.758	1.0012	8.335	6.322	711.1	42667.1	64	
80	32.8	168.5	166.8	1.6	145	-0.025	56.1	168	112.2	0.744	1.0012	8.336	6.203	697.0	41818.7	64	
81	32.8	168.3	166.7	1.6	143	-0.025	56.2	168	112.0	0.758	1.0012	8.335	6.322	708.8	42529.7	64	
82	32.9	168.1	166.4	1.6	141	-0.024	56.1	168	111.8	0.758	1.0012	8.336	6.322	707.8	42467.8	64	
83	32.8	167.9	166.3	1.6	139	-0.024	56.1	168	111.7	0.773	1.0012	8.335	6.441	720.1	43203.8	64	
84	32.9	167.7	166.1	1.6	137	-0.023	56.1	168	111.4	0.758	1.0012	8.335	6.322	705.4	42324.5	65	
85	32.9	167.5	165.9	1.6	135	-0.024	56.1	167	111.2	0.758	1.0012	8.335	6.322	704.0	42239.4	64	
86	32.9	167.2	165.7	1.5	133	-0.023	56.2	167	110.9	0.758	1.0012	8.335	6.322	702.3	42136.6	64	
87	32.9	167.0	165.4	1.6	132	-0.023	56.2	167	110.7	0.744	1.0012	8.335	6.203	687.7	41264.5	64	
88	32.8	166.8	165.2	1.6	130	-0.022	56.2	167	110.5	0.773	1.0012	8.335	6.441	712.4	42741	64	
89	32.8	166.6	165.0	1.6	128	-0.022	56.2	167	110.3	0.773	1.0012	8.335	6.441	711.4	42683.7	64	
90	32.9	166.4	164.8	1.6	127	-0.022	56.2	166	110.1	0.758	1.0012	8.335	6.322	696.6	41796.9	63	
91	32.9	166.1	164.5	1.6	125	-0.021	56.2	166	109.9	0.773	1.0012	8.335	6.441	708.5	42509.3	64	
92	33.0	165.9	164.3	1.6	124	-0.021	56.2	166	109.6	0.773	1.0012	8.335	6.441	706.8	42406.3	64	
93	33.0	165.7	164.1	1.6	123	-0.02	56.2	166	109.4	0.773	1.0012	8.335	6.441	705.4	42326.7	64	
94	32.9	165.4	163.8	1.6	121	-0.021	56.2	165	109.1	0.773	1.0012	8.335	6.441	703.7	42219	64	
95	33.0	165.2	163.6	1.6	120	-0.021	56.2	165	108.9	0.773	1.0012	8.335	6.441	702.0	42121.3	64	
96	33.0	165.0	163.4	1.6	119	-0.019	56.3	165	108.6	0.773	1.0012	8.335	6.441	700.2	42014.6	64	
97	32.9	164.7	163.2	1.6	117	-0.02	56.3	165	108.4	0.773	1.0012	8.335	6.441	699.0	41938.1	65	
98	33.0	164.5	162.9	1.6	116	-0.019	56.1	164	108.3	0.773	1.0012	8.335	6.441	698.2	41891.9	64	
99	33.0	164.3	162.7	1.6	115	-0.019	55.9	164	108.3	0.773	1.0012	8.336	6.442	698.1	41888.9	64	
100	33.0	164.0	162.5	1.5	114	-0.019	55.7	164	108.2	0.744	1.0012	8.336	6.203	672.1	40327.8	64	
101	33.1	163.8	162.3	1.6	113	-0.019	55.6	164	108.2	0.773	1.0012	8.336	6.442	697.8	41865.7	65	

268

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
Tot / Avg		165.7	198.218	0.161	1.29	75.9	1.87	64.28	50.80	63.35	100.0	68.3	0.113	0.337	21.35
Minimum	0.0	-0.3	0.000	0.153	1.12	68	1.80	61	39	57	95.7	61	0.107	0.327	20.82
Max	165.7	0.9	198.218	0.163	1.32	78	1.91	68	58	68	103.4	82	0.122	0.349	21.91
0	165.7		0.000		1.12	68	1.80	63	44	65		71	0.111	0.333	21.80
1	165.0	0.7	0.153	0.153	1.30	68	1.85	64	39	65	95.7	69	0.113	0.336	21.25
2	164.5	0.5	0.313	0.160	1.29	68	1.86	64	39	65	101.3	73	0.113	0.336	21.36
3	164.0	0.5	0.474	0.161	1.32	68	1.89	64	39	65	102.0	72	0.112	0.335	21.35
4	163.6	0.4	0.636	0.162	1.32	69	1.89	64	39	65	101.4	71	0.122	0.349	21.75
5	163.1	0.5	0.797	0.161	1.31	69	1.88	64	39	65	99.8	71	0.111	0.333	21.69
6	162.6	0.5	0.957	0.160	1.32	69	1.88	64	40	65	99.8	71	0.117	0.342	21.46
7	162.2	0.4	1.118	0.161	1.31	69	1.87	64	40	66	101.1	71	0.110	0.332	21.41
8	161.5	0.7	1.280	0.162	1.31	69	1.87	65	40	65	102.7	72	0.110	0.332	21.09
9	161.1	0.5	1.440	0.160	1.30	69	1.87	65	40	65	101.9	71	0.113	0.336	21.23
10	160.4	0.6	1.600	0.160	1.30	69	1.86	65	40	66	101.2	72	0.113	0.336	21.37
11	160.1	0.3	1.760	0.160	1.30	69	1.87	65	40	65	101.1	72	0.112	0.335	21.34
12	159.6	0.5	1.921	0.161	1.30	69	1.86	65	40	65	101.6	72	0.115	0.339	21.43
13	159.1	0.5	2.082	0.161	1.30	69	1.86	65	41	65	101.0	72	0.115	0.339	21.57
14	158.8	0.3	2.242	0.160	1.30	69	1.87	65	41	65	100.1	72	0.114	0.338	21.53
15	158.4	0.4	2.401	0.159	1.29	69	1.86	65	41	64	99.8	71	0.113	0.336	21.42
16	157.9	0.5	2.561	0.160	1.30	70	1.85	65	41	64	100.2	71	0.117	0.342	21.55
17	157.1	0.7	2.721	0.160	1.30	70	1.85	65	42	65	99.5	71	0.115	0.339	21.65
18	156.9	0.3	2.882	0.161	1.29	70	1.86	65	42	64	99.8	71	0.118	0.344	21.69
19	156.3	0.5	3.042	0.160	1.29	70	1.86	65	42	65	99.1	72	0.116	0.341	21.75
20	155.9	0.4	3.202	0.160	1.29	70	1.85	65	42	64	99.7	72	0.112	0.335	21.48
21	155.4	0.5	3.362	0.160	1.29	70	1.85	65	42	64	100.6	72	0.113	0.336	21.34
22	155.0	0.4	3.522	0.160	1.29	70	1.85	65	42	64	101.0	71	0.111	0.333	21.28
23	154.3	0.7	3.683	0.161	1.29	71	1.85	65	42	64	101.7	72	0.113	0.336	21.28
24	153.9	0.3	3.843	0.160	1.29	71	1.85	65	43	64	100.5	72	0.116	0.341	21.53
25	153.4	0.5	4.002	0.159	1.29	71	1.85	65	43	63	98.9	72	0.116	0.341	21.67
26	153.1	0.3	4.163	0.161	1.29	71	1.86	65	43	63	100.0	72	0.115	0.339	21.62
27	152.8	0.3	4.324	0.161	1.30	71	1.85	65	43	63	100.2	69	0.113	0.336	21.45
28	152.5	0.2	4.484	0.160	1.29	71	1.84	65	43	63	99.4	67	0.117	0.342	21.49
29	152.4	0.1	4.645	0.161	1.29	71	1.84	65	43	64	99.6	69	0.116	0.341	21.63
30	152.4	0.0	4.805	0.160	1.30	71	1.85	64	43	64	98.9	66	0.114	0.338	21.48
31	152.3	0.1	4.965	0.160	1.29	72	1.85	64	43	63	99.4	66	0.112	0.335	21.26
32	152.3	0.0	5.126	0.161	1.30	72	1.84	64	43	63	100.6	66	0.112	0.335	21.17
33	152.4	0.0	5.288	0.162	1.29	72	1.84	64	43	63	101.3	65	0.113	0.336	21.21
34	152.3	0.1	5.449	0.161	1.29	72	1.85	64	43	63	100.5	65	0.112	0.335	21.20
35	152.4	-0.1	5.609	0.160	1.29	72	1.85	64	44	64	99.2	66	0.120	0.346	21.53
36	152.2	0.2	5.769	0.160	1.30	72	1.85	64	44	63	98.6	66	0.111	0.333	21.50
37	152.3	-0.1	5.930	0.161	1.29	72	1.84	64	44	63	99.9	66	0.115	0.339	21.26
38	152.3	0.0	6.092	0.162	1.30	72	1.84	64	44	63	100.5	66	0.116	0.341	21.50
39	152.3	0.0	6.253	0.161	1.29	72	1.85	64	44	63	99.3	66	0.115	0.339	21.50
40	152.4	0.0	6.414	0.161	1.29	72	1.85	64	44	63	100.0	67	0.110	0.332	21.23

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
41	152.3	0.0	6.574	0.160	1.30	73	1.84	64	44	63	100.0	67	0.115	0.339	21.24
42	152.3	0.0	6.735	0.161	1.29	73	1.85	64	44	62	100.0	67	0.115	0.339	21.47
43	152.3	0.0	6.896	0.161	1.30	73	1.84	64	44	63	99.7	67	0.113	0.336	21.38
44	152.3	0.0	7.058	0.162	1.29	73	1.85	64	44	63	100.6	67	0.114	0.338	21.33
45	152.4	0.0	7.219	0.161	1.29	73	1.84	64	44	62	100.1	67	0.113	0.336	21.33
46	152.3	0.0	7.379	0.160	1.29	73	1.84	64	44	62	99.6	67	0.113	0.336	21.28
47	152.4	0.0	7.540	0.161	1.29	73	1.85	64	44	63	100.3	68	0.114	0.338	21.34
48	152.4	0.0	7.701	0.161	1.29	73	1.85	64	44	63	100.0	68	0.115	0.339	21.44
49	152.4	0.0	7.863	0.162	1.30	73	1.85	63	44	62	100.7	68	0.111	0.333	21.30
50	152.4	0.0	8.025	0.162	1.29	73	1.85	63	44	62	100.9	68	0.116	0.341	21.35
51	152.4	0.0	8.186	0.161	1.29	73	1.85	63	44	62	100.2	68	0.111	0.333	21.35
52	152.4	0.0	8.346	0.160	1.30	73	1.85	63	44	62	99.9	68	0.113	0.336	21.21
53	152.5	0.0	8.507	0.161	1.29	73	1.85	63	44	62	100.3	68	0.116	0.341	21.44
54	152.4	0.1	8.669	0.162	1.30	73	1.85	63	44	62	99.7	68	0.119	0.345	21.72
55	152.4	0.0	8.830	0.161	1.30	73	1.85	63	44	62	98.8	68	0.113	0.336	21.58
56	152.4	0.0	8.992	0.162	1.30	73	1.85	63	44	62	100.0	69	0.117	0.342	21.50
57	152.5	-0.1	9.153	0.161	1.29	73	1.84	63	44	63	99.3	68	0.116	0.341	21.64
58	152.5	0.0	9.314	0.161	1.29	74	1.85	63	44	62	98.9	68	0.116	0.341	21.58
59	152.5	-0.1	9.475	0.161	1.29	74	1.85	63	44	63	99.4	69	0.112	0.335	21.41
60	152.4	0.1	9.636	0.161	1.30	74	1.85	63	44	62	100.0	69	0.115	0.339	21.37
61	152.4	0.0	9.798	0.162	1.30	74	1.85	63	44	63	100.4	69	0.115	0.339	21.51
62	152.4	0.0	9.960	0.162	1.30	74	1.86	64	44	63	100.4	69	0.112	0.335	21.37
63	152.5	0.0	10.121	0.161	1.29	74	1.85	64	44	62	100.3	69	0.113	0.336	21.28
64	152.6	-0.1	10.282	0.161	1.29	74	1.85	64	44	62	100.2	69	0.115	0.339	21.42
65	152.5	0.1	10.443	0.161	1.29	74	1.85	64	44	62	99.8	69	0.114	0.338	21.46
66	152.5	0.0	10.604	0.161	1.29	74	1.86	64	44	62	99.9	69	0.113	0.336	21.37
67	152.5	0.0	10.765	0.161	1.30	74	1.86	64	44	62	99.9	69	0.116	0.341	21.46
68	152.6	-0.1	10.928	0.163	1.30	74	1.85	64	44	62	100.7	69	0.115	0.339	21.56
69	152.5	0.1	11.089	0.161	1.30	74	1.85	64	44	62	99.0	69	0.118	0.344	21.65
70	152.5	0.0	11.250	0.161	1.29	74	1.85	64	44	62	98.8	69	0.115	0.339	21.65
71	152.5	0.0	11.411	0.161	1.30	74	1.85	64	44	62	99.4	69	0.112	0.335	21.37
72	152.6	-0.1	11.572	0.161	1.30	74	1.86	64	44	62	100.4	69	0.112	0.335	21.23
73	152.5	0.1	11.733	0.161	1.30	74	1.86	64	44	62	100.9	69	0.111	0.333	21.18
74	152.6	0.0	11.895	0.162	1.30	74	1.85	64	44	62	102.0	69	0.109	0.330	21.04
75	152.6	0.0	12.057	0.162	1.29	74	1.85	64	44	62	101.8	69	0.115	0.339	21.23
76	152.6	0.0	12.218	0.161	1.30	74	1.85	64	44	62	100.2	70	0.115	0.339	21.52
77	152.6	-0.1	12.379	0.161	1.30	74	1.85	64	44	62	99.6	69	0.114	0.338	21.47
78	152.5	0.1	12.540	0.161	1.30	74	1.85	64	44	62	99.5	69	0.116	0.341	21.51
79	152.6	-0.1	12.701	0.161	1.30	74	1.85	64	45	62	99.5	69	0.113	0.336	21.46
80	152.5	0.1	12.863	0.162	1.29	74	1.85	64	44	62	100.3	69	0.116	0.341	21.46
81	152.6	-0.1	13.025	0.162	1.30	74	1.85	64	45	62	100.1	69	0.115	0.339	21.56
82	152.7	0.0	13.186	0.161	1.29	74	1.85	64	45	62	99.5	70	0.114	0.338	21.47
83	152.6	0.1	13.347	0.161	1.30	74	1.85	64	45	62	99.6	69	0.116	0.341	21.52
84	152.5	0.1	13.508	0.161	1.29	74	1.85	64	45	62	99.7	70	0.112	0.335	21.43

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
85	152.6	-0.1	13.670	0.162	1.30	74	1.86	64	45	62	100.7	70	0.115	0.339	21.39
86	152.6	0.0	13.831	0.161	1.30	74	1.86	64	45	62	100.5	69	0.109	0.330	21.24
87	152.6	0.0	13.993	0.162	1.30	74	1.85	64	45	62	101.8	70	0.112	0.335	21.10
88	152.6	-0.1	14.155	0.162	1.29	74	1.85	64	45	62	101.4	69	0.115	0.339	21.38
89	152.7	0.0	14.316	0.161	1.30	74	1.85	64	45	62	99.3	69	0.119	0.345	21.70
90	152.6	0.1	14.477	0.161	1.30	74	1.85	64	45	62	98.8	69	0.113	0.336	21.60
91	152.7	-0.1	14.638	0.161	1.30	74	1.85	64	45	62	99.5	70	0.115	0.339	21.43
92	152.7	0.0	14.799	0.161	1.30	74	1.85	64	45	62	99.9	70	0.114	0.338	21.48
93	152.7	0.0	14.962	0.163	1.30	74	1.85	64	45	62	101.3	70	0.112	0.335	21.34
94	152.7	-0.1	15.123	0.161	1.30	74	1.85	64	45	62	99.8	70	0.120	0.346	21.62
95	152.6	0.1	15.285	0.162	1.29	74	1.86	64	45	62	99.4	70	0.115	0.339	21.76
96	152.6	0.0	15.446	0.161	1.30	74	1.85	64	45	62	99.2	70	0.113	0.336	21.44
97	152.6	0.0	15.607	0.161	1.30	74	1.86	64	45	62	100.3	73	0.114	0.338	21.42
98	152.5	0.0	15.768	0.161	1.30	74	1.86	64	45	62	100.0	71	0.117	0.342	21.62
99	152.5	0.0	15.930	0.162	1.30	74	1.85	64	45	62	100.2	70	0.111	0.333	21.45
100	152.6	-0.1	16.092	0.162	1.30	74	1.85	64	45	62	100.9	70	0.114	0.338	21.30
101	152.6	0.0	16.254	0.162	1.29	74	1.85	64	45	62	101.1	70	0.112	0.335	21.34
102	152.6	0.0	16.415	0.161	1.29	74	1.85	64	45	61	101.0	70	0.109	0.330	21.11
103	152.6	0.0	16.576	0.161	1.30	74	1.85	64	45	62	101.3	70	0.114	0.338	21.20
104	152.6	0.0	16.738	0.162	1.30	74	1.85	64	45	62	100.6	70	0.119	0.345	21.67
105	152.6	0.0	16.899	0.161	1.30	74	1.86	64	45	62	98.8	70	0.115	0.339	21.72
106	152.6	0.0	17.061	0.162	1.29	74	1.86	64	45	62	99.4	70	0.118	0.344	21.67
107	152.5	0.1	17.224	0.163	1.30	74	1.85	64	45	62	100.3	70	0.113	0.336	21.58
108	152.6	-0.1	17.385	0.161	1.29	74	1.85	64	45	62	99.9	70	0.113	0.336	21.34
109	152.6	0.0	17.546	0.161	1.30	74	1.85	64	45	62	100.2	70	0.115	0.339	21.44
110	152.6	0.0	17.707	0.161	1.29	74	1.85	64	45	62	99.1	70	0.121	0.348	21.81
111	152.6	0.0	17.869	0.162	1.30	74	1.85	64	45	62	98.7	70	0.117	0.342	21.90
112	152.5	0.1	18.030	0.161	1.30	74	1.85	64	45	62	98.8	70	0.112	0.335	21.48
113	152.6	-0.1	18.193	0.163	1.30	74	1.85	64	45	62	101.5	71	0.113	0.336	21.31
114	152.6	0.0	18.354	0.161	1.30	74	1.85	64	45	62	100.3	70	0.115	0.339	21.45
115	152.7	0.0	18.516	0.162	1.29	74	1.85	64	45	62	99.9	70	0.119	0.345	21.72
116	152.7	0.0	18.677	0.161	1.30	74	1.85	64	45	62	98.8	70	0.114	0.338	21.67
117	152.5	0.2	18.838	0.161	1.30	74	1.85	64	45	62	99.3	71	0.116	0.341	21.54
118	152.2	0.3	19.000	0.162	1.30	74	1.86	64	45	62	100.6	74	0.113	0.336	21.54
119	151.6	0.5	19.162	0.162	1.30	74	1.86	64	45	62	101.1	75	0.114	0.338	21.48
120	151.1	0.5	19.324	0.162	1.30	74	1.85	64	45	62	101.6	77	0.112	0.335	21.46
121	150.6	0.5	19.485	0.161	1.29	74	1.86	64	45	62	101.3	79	0.114	0.338	21.50
122	150.1	0.6	19.646	0.161	1.30	74	1.86	65	45	62	101.6	80	0.110	0.332	21.44
123	149.6	0.5	19.807	0.161	1.29	74	1.86	65	45	62	101.9	78	0.112	0.335	21.33
124	149.2	0.4	19.968	0.161	1.30	74	1.86	65	45	62	101.9	78	0.111	0.333	21.36
125	148.6	0.6	20.129	0.161	1.29	74	1.86	65	45	62	101.5	78	0.115	0.339	21.50
126	148.1	0.5	20.291	0.162	1.30	74	1.87	65	45	62	101.3	78	0.115	0.339	21.69
127	147.5	0.6	20.452	0.161	1.29	74	1.87	65	45	62	100.6	78	0.112	0.335	21.55
128	147.0	0.5	20.613	0.161	1.29	74	1.87	65	45	62	101.2	78	0.113	0.336	21.46

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 12:35
Test Length: 1228 min
Recording Interval: 1 min

Test Date: 12/4/24
Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
 Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
129	146.5	0.5	20.774	0.161	1.29	74	1.86	65	45	62	100.6	78	0.119	0.345	21.79
130	145.8	0.6	20.935	0.161	1.30	74	1.86	65	45	62	100.0	78	0.112	0.335	21.74
131	145.5	0.4	21.096	0.161	1.29	74	1.86	65	45	62	100.6	78	0.114	0.338	21.50
132	144.9	0.5	21.258	0.162	1.30	74	1.86	65	46	62	101.6	78	0.114	0.338	21.60
133	144.3	0.7	21.419	0.161	1.28	74	1.87	65	46	61	100.1	75	0.118	0.344	21.76
134	143.8	0.5	21.580	0.161	1.29	74	1.86	65	46	61	99.0	72	0.117	0.342	21.84
135	143.2	0.5	21.741	0.161	1.29	74	1.86	65	46	60	99.2	72	0.112	0.335	21.53
136	142.8	0.4	21.902	0.161	1.30	74	1.86	64	46	59	99.8	70	0.117	0.342	21.50
137	142.3	0.5	22.063	0.161	1.30	74	1.86	64	46	59	99.3	70	0.116	0.341	21.67
138	141.7	0.6	22.225	0.162	1.30	74	1.86	64	46	59	99.6	70	0.116	0.341	21.62
139	141.2	0.5	22.386	0.161	1.29	74	1.86	64	46	58	99.4	70	0.113	0.336	21.48
140	140.6	0.6	22.547	0.161	1.30	74	1.85	64	46	59	100.0	70	0.114	0.338	21.39
141	140.2	0.4	22.709	0.162	1.30	74	1.85	63	46	58	100.9	69	0.112	0.335	21.33
142	139.6	0.6	22.870	0.161	1.30	74	1.86	63	46	58	100.2	71	0.116	0.341	21.44
143	139.2	0.3	23.031	0.161	1.30	74	1.85	63	46	59	99.5	72	0.118	0.344	21.75
144	138.6	0.7	23.194	0.163	1.30	74	1.86	63	46	57	99.8	71	0.118	0.344	21.84
145	138.3	0.3	23.355	0.161	1.29	74	1.85	63	46	57	98.1	70	0.120	0.346	21.91
146	137.5	0.8	23.516	0.161	1.30	74	1.86	62	46	58	97.9	68	0.116	0.341	21.79
147	137.1	0.4	23.677	0.161	1.30	74	1.86	62	46	57	99.2	73	0.112	0.335	21.45
148	136.6	0.6	23.838	0.161	1.30	74	1.86	62	46	59	100.9	73	0.111	0.333	21.26
149	136.1	0.5	24.000	0.162	1.30	74	1.86	62	46	59	102.0	74	0.113	0.336	21.32
150	135.7	0.4	24.162	0.162	1.31	74	1.85	62	46	60	101.2	74	0.117	0.342	21.61
151	135.4	0.3	24.324	0.162	1.30	74	1.85	62	46	60	100.5	71	0.111	0.333	21.49
152	135.3	0.2	24.485	0.161	1.30	74	1.86	62	46	60	100.1	71	0.116	0.341	21.41
153	135.1	0.2	24.646	0.161	1.30	74	1.86	62	46	61	100.0	70	0.113	0.336	21.49
154	135.0	0.1	24.808	0.162	1.29	74	1.86	62	46	60	100.2	69	0.117	0.342	21.52
155	135.0	0.0	24.969	0.161	1.31	73	1.85	62	46	60	99.4	69	0.114	0.338	21.56
156	134.9	0.1	25.131	0.162	1.30	73	1.85	62	46	60	100.2	69	0.115	0.339	21.46
157	134.9	0.1	25.293	0.162	1.30	73	1.85	62	46	60	100.5	69	0.114	0.338	21.46
158	134.8	0.0	25.455	0.162	1.30	73	1.85	62	46	60	100.1	69	0.118	0.344	21.60
159	134.9	0.0	25.616	0.161	1.30	73	1.85	62	46	60	98.9	68	0.116	0.341	21.69
160	134.7	0.1	25.778	0.162	1.30	73	1.85	62	46	59	99.3	66	0.116	0.341	21.56
161	134.8	-0.1	25.939	0.161	1.31	73	1.84	62	46	60	98.7	64	0.116	0.341	21.52
162	134.7	0.1	26.101	0.162	1.30	73	1.85	61	46	58	98.9	62	0.118	0.344	21.57
163	134.7	0.0	26.263	0.162	1.30	73	1.85	61	46	57	99.1	63	0.113	0.336	21.42
164	134.7	0.0	26.425	0.162	1.30	73	1.85	61	46	58	99.9	64	0.115	0.339	21.31
165	134.8	-0.1	26.586	0.161	1.29	73	1.85	61	46	57	99.2	64	0.117	0.342	21.50
166	134.8	-0.1	26.748	0.162	1.30	73	1.85	61	46	58	99.3	65	0.116	0.341	21.56
167	134.9	0.0	26.909	0.161	1.30	73	1.84	61	46	58	98.1	65	0.122	0.349	21.80
168	134.8	0.0	27.070	0.161	1.30	73	1.85	61	46	58	97.6	65	0.116	0.341	21.80
169	134.9	0.0	27.232	0.162	1.30	73	1.85	61	46	58	98.6	65	0.118	0.344	21.62
170	134.9	0.0	27.394	0.162	1.30	73	1.85	61	46	58	98.9	65	0.117	0.342	21.66
171	134.8	0.1	27.556	0.162	1.30	73	1.85	61	45	58	99.3	66	0.114	0.338	21.49
172	134.9	-0.1	27.718	0.162	1.29	73	1.85	61	45	58	100.1	67	0.115	0.339	21.41

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
173	134.9	0.0	27.879	0.161	1.30	73	1.85	61	45	59	99.6	67	0.115	0.339	21.47
174	134.9	0.0	28.040	0.161	1.30	73	1.84	61	45	59	99.1	67	0.118	0.344	21.61
175	134.9	0.0	28.201	0.161	1.30	73	1.85	61	45	60	99.0	67	0.113	0.336	21.52
176	134.9	0.0	28.363	0.162	1.29	73	1.84	61	45	60	100.2	68	0.115	0.339	21.39
177	135.0	-0.1	28.525	0.162	1.29	73	1.84	61	45	60	100.7	68	0.112	0.335	21.35
178	135.0	0.0	28.687	0.162	1.30	73	1.85	61	45	60	100.8	69	0.116	0.341	21.41
179	135.0	0.0	28.848	0.161	1.29	73	1.85	61	45	61	100.4	69	0.109	0.330	21.28
180	135.0	0.0	29.009	0.161	1.29	73	1.85	61	45	61	101.1	69	0.113	0.336	21.13
181	135.0	0.0	29.170	0.161	1.30	73	1.85	62	45	61	100.5	69	0.117	0.342	21.51
182	135.0	0.0	29.332	0.162	1.30	73	1.85	62	45	61	99.9	69	0.116	0.341	21.65
183	135.0	0.0	29.493	0.161	1.30	73	1.84	62	45	61	99.3	69	0.114	0.338	21.51
184	135.0	0.0	29.655	0.162	1.30	73	1.84	62	45	61	100.6	69	0.113	0.336	21.37
185	135.0	0.0	29.817	0.162	1.28	73	1.85	62	45	61	101.5	69	0.109	0.330	21.13
186	135.0	0.0	29.977	0.160	1.29	73	1.85	62	45	61	100.8	70	0.113	0.336	21.14
187	135.1	-0.1	30.138	0.161	1.30	73	1.85	62	45	62	101.2	70	0.112	0.335	21.30
188	135.0	0.1	30.300	0.162	1.30	73	1.85	62	45	62	101.5	70	0.113	0.336	21.30
189	135.0	-0.1	30.461	0.161	1.29	73	1.85	62	45	62	100.9	70	0.111	0.333	21.25
190	135.0	0.0	30.623	0.162	1.30	73	1.85	63	45	62	101.8	70	0.112	0.335	21.20
191	135.1	-0.1	30.784	0.161	1.28	73	1.86	63	45	62	100.8	70	0.115	0.339	21.39
192	135.1	0.0	30.945	0.161	1.30	73	1.85	63	45	62	100.7	70	0.109	0.330	21.25
193	135.0	0.0	31.106	0.161	1.30	73	1.85	63	45	62	101.4	70	0.112	0.335	21.11
194	135.1	-0.1	31.267	0.161	1.29	73	1.85	63	45	62	101.4	70	0.112	0.335	21.25
195	135.0	0.1	31.428	0.161	1.29	73	1.85	63	45	63	100.6	70	0.116	0.341	21.44
196	135.1	0.0	31.590	0.162	1.29	73	1.85	63	45	63	101.0	70	0.110	0.332	21.34
197	135.1	-0.1	31.751	0.161	1.29	73	1.85	63	45	63	101.0	70	0.112	0.335	21.15
198	135.1	0.1	31.912	0.161	1.29	73	1.85	63	45	63	101.7	70	0.108	0.329	21.06
199	135.1	0.0	32.073	0.161	1.30	73	1.86	63	45	63	101.8	70	0.113	0.336	21.11
200	135.0	0.0	32.234	0.161	1.29	73	1.86	64	45	63	100.9	70	0.115	0.339	21.44
201	135.1	-0.1	32.395	0.161	1.30	74	1.85	64	45	63	100.3	70	0.111	0.333	21.34
202	135.1	0.1	32.557	0.162	1.29	74	1.86	64	45	63	101.4	70	0.112	0.335	21.20
203	135.1	0.0	32.718	0.161	1.29	74	1.86	64	45	63	101.1	70	0.111	0.333	21.20
204	135.1	0.0	32.879	0.161	1.29	74	1.85	64	45	63	100.9	70	0.114	0.338	21.30
205	135.1	-0.1	33.040	0.161	1.30	74	1.85	64	45	63	100.5	70	0.112	0.335	21.34
206	135.1	0.0	33.201	0.161	1.30	74	1.85	64	45	63	100.5	70	0.113	0.336	21.30
207	135.1	0.0	33.363	0.162	1.29	74	1.86	64	45	63	101.5	70	0.110	0.332	21.20
208	135.1	0.0	33.524	0.161	1.29	74	1.85	64	45	64	101.1	70	0.113	0.336	21.20
209	135.1	0.0	33.686	0.162	1.29	74	1.86	64	45	64	101.4	71	0.113	0.336	21.35
210	135.1	0.0	33.846	0.160	1.29	74	1.85	64	45	63	99.9	70	0.112	0.335	21.31
211	135.1	0.0	34.007	0.161	1.30	74	1.85	64	45	64	100.6	71	0.114	0.338	21.35
212	135.1	0.0	34.168	0.161	1.30	74	1.85	64	45	64	100.8	70	0.109	0.330	21.21
213	135.1	0.1	34.330	0.162	1.29	74	1.86	64	45	64	102.4	70	0.108	0.329	20.91
214	135.2	-0.1	34.492	0.162	1.29	74	1.86	64	45	64	103.4	71	0.107	0.327	20.83
215	135.2	0.0	34.653	0.161	1.29	74	1.86	65	45	64	102.8	70	0.110	0.332	20.92
216	135.1	0.0	34.813	0.160	1.29	74	1.85	65	45	64	101.1	70	0.113	0.336	21.20

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
217	135.1	0.0	34.975	0.162	1.29	75	1.85	65	45	64	101.6	71	0.111	0.333	21.26
218	135.1	0.0	35.136	0.161	1.29	75	1.85	65	45	64	101.2	71	0.109	0.330	21.08
219	135.2	-0.1	35.297	0.161	1.30	75	1.86	65	45	64	101.7	71	0.111	0.333	21.08
220	135.0	0.2	35.459	0.162	1.28	75	1.87	65	45	64	102.4	72	0.109	0.330	21.09
221	134.8	0.1	35.620	0.161	1.29	75	1.86	65	45	64	101.5	72	0.114	0.338	21.24
222	134.9	-0.1	35.781	0.161	1.29	75	1.86	65	45	64	100.5	71	0.114	0.338	21.47
223	134.8	0.1	35.942	0.161	1.30	75	1.85	65	45	64	99.9	71	0.114	0.338	21.46
224	134.9	-0.1	36.103	0.161	1.29	75	1.86	65	45	64	100.2	71	0.111	0.333	21.32
225	134.9	0.0	36.265	0.162	1.29	75	1.86	65	45	64	101.7	71	0.109	0.330	21.08
226	134.9	0.1	36.427	0.162	1.28	75	1.85	65	45	64	102.5	71	0.109	0.330	20.98
227	134.9	0.0	36.588	0.161	1.29	75	1.86	65	45	64	101.9	71	0.111	0.333	21.08
228	134.9	0.0	36.749	0.161	1.29	75	1.85	65	45	64	100.8	70	0.116	0.341	21.40
229	134.9	0.0	36.910	0.161	1.29	75	1.85	65	45	65	100.2	71	0.110	0.332	21.35
230	134.9	0.1	37.071	0.161	1.29	75	1.85	65	45	64	100.3	71	0.116	0.341	21.36
231	134.9	0.0	37.233	0.162	1.29	75	1.86	65	45	64	100.6	71	0.113	0.336	21.50
232	135.0	-0.1	37.395	0.162	1.29	75	1.85	65	45	65	100.5	71	0.114	0.338	21.41
233	134.9	0.0	37.556	0.161	1.29	75	1.85	65	45	64	100.2	71	0.112	0.335	21.36
234	134.9	0.0	37.717	0.161	1.29	76	1.85	65	45	65	100.7	71	0.110	0.332	21.17
235	134.9	0.1	37.879	0.162	1.29	76	1.86	65	45	65	101.5	72	0.114	0.338	21.28
236	134.9	-0.1	38.039	0.160	1.30	76	1.86	65	45	65	100.3	71	0.107	0.327	21.14
237	134.9	0.1	38.201	0.162	1.29	76	1.85	65	45	65	102.2	71	0.111	0.333	20.98
238	134.9	0.0	38.363	0.162	1.29	76	1.85	66	45	65	102.0	71	0.112	0.335	21.22
239	134.9	0.0	38.525	0.162	1.29	76	1.85	66	45	65	101.0	71	0.115	0.339	21.41
240	135.0	0.0	38.686	0.161	1.28	76	1.86	66	45	65	99.7	71	0.114	0.338	21.50
241	134.9	0.1	38.847	0.161	1.28	76	1.86	66	45	65	99.8	71	0.112	0.335	21.36
242	135.0	-0.1	39.008	0.161	1.29	76	1.86	66	45	65	100.7	71	0.109	0.330	21.13
243	134.9	0.1	39.169	0.161	1.29	76	1.86	66	45	65	101.3	71	0.112	0.335	21.13
244	135.0	-0.1	39.331	0.162	1.29	76	1.86	66	45	65	101.4	71	0.113	0.336	21.32
245	134.6	0.3	39.493	0.162	1.29	76	1.87	66	45	65	101.0	73	0.113	0.336	21.38
246	134.2	0.4	39.654	0.161	1.28	76	1.86	66	45	65	100.4	75	0.114	0.338	21.47
247	133.8	0.5	39.815	0.161	1.28	76	1.87	66	45	65	100.5	77	0.113	0.336	21.51
248	133.2	0.5	39.976	0.161	1.29	76	1.86	66	46	65	100.6	78	0.114	0.338	21.54
249	132.7	0.5	40.137	0.161	1.29	76	1.87	66	46	65	100.4	80	0.116	0.341	21.71
250	131.9	0.8	40.298	0.161	1.29	76	1.87	67	46	65	100.3	80	0.113	0.336	21.69
251	131.7	0.3	40.460	0.162	1.29	76	1.87	67	46	65	101.4	79	0.111	0.333	21.44
252	131.5	0.2	40.621	0.161	1.29	76	1.87	67	46	66	101.5	80	0.112	0.335	21.39
253	131.0	0.5	40.782	0.161	1.28	76	1.87	67	46	66	102.0	81	0.109	0.330	21.31
254	130.6	0.4	40.943	0.161	1.28	76	1.86	67	46	66	102.0	80	0.113	0.336	21.36
255	130.1	0.4	41.104	0.161	1.29	76	1.86	67	46	66	101.4	79	0.112	0.335	21.49
256	129.7	0.4	41.265	0.161	1.29	76	1.87	67	46	66	101.4	79	0.110	0.332	21.33
257	129.2	0.5	41.427	0.162	1.28	76	1.87	67	46	66	102.2	79	0.114	0.338	21.43
258	128.7	0.5	41.588	0.161	1.28	77	1.87	67	46	66	100.5	80	0.117	0.342	21.77
259	128.0	0.7	41.749	0.161	1.28	77	1.87	67	46	66	99.8	80	0.113	0.336	21.73
260	127.6	0.4	41.910	0.161	1.28	77	1.88	68	46	66	100.3	80	0.113	0.336	21.54

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
261	127.1	0.6	42.071	0.161	1.29	77	1.87	68	46	66	100.9	80	0.112	0.335	21.50
262	126.6	0.5	42.232	0.161	1.29	77	1.87	68	46	66	100.9	80	0.114	0.338	21.54
263	126.2	0.4	42.394	0.162	1.28	77	1.88	68	46	67	101.3	80	0.113	0.336	21.59
264	125.4	0.8	42.555	0.161	1.28	77	1.87	68	46	66	100.5	80	0.115	0.339	21.64
265	125.0	0.4	42.715	0.160	1.28	77	1.87	68	47	66	100.2	80	0.109	0.330	21.45
266	124.5	0.5	42.876	0.161	1.29	77	1.87	68	47	66	101.5	80	0.113	0.336	21.35
267	124.0	0.5	43.037	0.161	1.29	77	1.87	68	47	66	101.1	81	0.115	0.339	21.65
268	123.7	0.3	43.199	0.162	1.28	77	1.87	68	47	66	101.2	80	0.111	0.333	21.55
269	123.0	0.7	43.360	0.161	1.29	77	1.87	68	47	67	101.1	79	0.111	0.333	21.34
270	122.4	0.6	43.521	0.161	1.28	77	1.88	68	47	67	101.6	78	0.110	0.332	21.27
271	121.8	0.7	43.682	0.161	1.28	77	1.87	68	47	67	101.7	78	0.111	0.333	21.26
272	121.3	0.5	43.842	0.160	1.28	77	1.87	68	47	66	101.2	78	0.109	0.330	21.22
273	120.6	0.6	44.003	0.161	1.29	77	1.87	68	47	67	101.5	77	0.114	0.338	21.35
274	120.3	0.3	44.165	0.162	1.29	77	1.87	68	47	67	101.7	77	0.110	0.332	21.39
275	119.6	0.7	44.327	0.162	1.29	77	1.88	68	47	66	101.8	77	0.112	0.335	21.29
276	119.5	0.2	44.488	0.161	1.28	77	1.88	68	47	66	101.5	76	0.109	0.330	21.23
277	118.9	0.6	44.648	0.160	1.28	77	1.87	68	47	67	100.8	76	0.113	0.336	21.27
278	118.3	0.6	44.809	0.161	1.28	77	1.88	68	47	66	101.1	76	0.111	0.333	21.37
279	117.8	0.5	44.970	0.161	1.28	77	1.87	68	47	67	100.9	76	0.113	0.336	21.37
280	117.6	0.2	45.132	0.162	1.29	77	1.86	68	48	67	101.7	72	0.107	0.327	21.14
281	117.3	0.3	45.294	0.162	1.28	77	1.87	68	48	68	102.1	71	0.111	0.333	20.99
282	117.2	0.1	45.455	0.161	1.28	77	1.87	68	48	67	101.2	69	0.110	0.332	21.11
283	116.9	0.2	45.616	0.161	1.29	77	1.87	67	48	67	100.4	69	0.115	0.339	21.28
284	116.9	0.1	45.777	0.161	1.29	77	1.87	67	48	67	99.4	68	0.115	0.339	21.50
285	116.8	0.1	45.939	0.162	1.29	77	1.87	67	48	66	99.5	67	0.113	0.336	21.39
286	116.8	0.0	46.101	0.162	1.29	77	1.87	67	48	67	100.2	67	0.111	0.333	21.19
287	116.6	0.1	46.263	0.162	1.29	77	1.87	67	48	66	100.9	67	0.111	0.333	21.09
288	116.6	0.0	46.424	0.161	1.28	77	1.87	67	48	66	99.9	66	0.115	0.339	21.27
289	116.7	0.0	46.585	0.161	1.29	78	1.86	67	48	66	99.2	66	0.112	0.335	21.31
290	116.6	0.1	46.747	0.162	1.28	78	1.86	67	48	66	99.8	66	0.114	0.338	21.26
291	116.5	0.0	46.908	0.161	1.29	78	1.86	66	47	66	99.1	65	0.113	0.336	21.30
292	116.5	0.0	47.070	0.162	1.29	78	1.87	66	47	65	99.8	65	0.112	0.335	21.20
293	116.5	0.0	47.232	0.162	1.29	78	1.86	66	47	66	100.1	65	0.112	0.335	21.15
294	116.5	0.0	47.394	0.162	1.29	78	1.86	66	47	66	100.1	65	0.113	0.336	21.20
295	116.5	-0.1	47.555	0.161	1.28	78	1.86	66	47	66	99.5	65	0.111	0.333	21.15
296	116.5	0.0	47.716	0.161	1.29	78	1.87	66	47	66	99.6	65	0.113	0.336	21.15
297	116.6	-0.1	47.878	0.162	1.29	78	1.86	66	47	66	100.1	65	0.112	0.335	21.20
298	116.5	0.1	48.040	0.162	1.29	78	1.87	66	47	65	100.0	65	0.113	0.336	21.20
299	116.5	0.0	48.201	0.161	1.29	78	1.87	66	47	65	99.0	65	0.116	0.341	21.38
300	116.5	0.0	48.364	0.163	1.29	78	1.86	66	47	65	99.8	65	0.113	0.336	21.38
301	116.6	-0.1	48.525	0.161	1.29	78	1.86	65	47	65	98.5	65	0.116	0.341	21.38
302	116.5	0.1	48.687	0.162	1.28	78	1.87	65	47	65	98.9	64	0.115	0.339	21.47
303	116.5	0.0	48.848	0.161	1.29	78	1.86	65	47	65	98.1	64	0.115	0.339	21.41
304	116.6	-0.1	49.010	0.162	1.29	78	1.86	65	47	65	99.0	64	0.114	0.338	21.36

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Test Start Time: 12:35

Test Length: 1228 min

Recording Interval: 1 min

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg

Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
305	116.5	0.1	49.171	0.161	1.29	78	1.86	65	47	65	98.7	64	0.113	0.336	21.27
306	116.5	0.0	49.333	0.162	1.29	78	1.87	65	47	65	99.5	64	0.114	0.338	21.27
307	116.6	-0.1	49.496	0.163	1.28	78	1.86	65	47	64	100.1	64	0.113	0.336	21.27
308	116.6	-0.1	49.657	0.161	1.29	78	1.86	65	47	64	99.0	64	0.113	0.336	21.22
309	116.5	0.1	49.819	0.162	1.28	78	1.86	65	47	64	99.4	64	0.116	0.341	21.36
310	116.6	-0.1	49.980	0.161	1.29	78	1.86	65	47	64	97.9	64	0.118	0.344	21.59
311	116.5	0.1	50.142	0.162	1.29	78	1.86	65	47	64	98.3	64	0.113	0.336	21.46
312	116.5	0.0	50.304	0.162	1.29	78	1.86	65	47	64	99.1	64	0.114	0.338	21.27
313	116.5	0.0	50.465	0.161	1.29	78	1.86	65	47	64	99.0	64	0.112	0.335	21.22
314	116.6	0.0	50.628	0.163	1.29	78	1.86	65	47	64	100.2	64	0.115	0.339	21.27
315	116.6	0.0	50.789	0.161	1.29	78	1.87	65	47	63	98.8	64	0.113	0.336	21.32
316	116.6	0.0	50.951	0.162	1.29	78	1.86	64	47	64	99.5	64	0.113	0.336	21.22
317	116.6	0.0	51.113	0.162	1.29	77	1.86	64	47	63	99.9	64	0.112	0.335	21.18
318	116.5	0.0	51.274	0.161	1.29	77	1.87	64	47	63	99.1	64	0.117	0.342	21.36
319	116.6	0.0	51.436	0.162	1.29	77	1.86	64	47	64	99.4	64	0.111	0.333	21.32
320	116.6	0.0	51.598	0.162	1.30	77	1.86	64	47	63	99.7	64	0.115	0.339	21.22
321	116.6	0.0	51.760	0.162	1.28	77	1.86	64	47	64	99.4	64	0.116	0.341	21.46
322	116.7	-0.1	51.922	0.162	1.29	77	1.86	64	47	63	99.2	63	0.111	0.333	21.26
323	116.7	0.0	52.084	0.162	1.29	77	1.86	64	47	63	99.2	63	0.119	0.345	21.39
324	116.7	0.0	52.245	0.161	1.29	77	1.87	64	47	63	98.3	63	0.111	0.333	21.39
325	116.7	0.0	52.407	0.162	1.29	77	1.86	64	47	63	99.6	63	0.113	0.336	21.11
326	116.7	0.0	52.569	0.162	1.29	77	1.87	64	47	64	99.9	63	0.114	0.338	21.25
327	116.6	0.1	52.730	0.161	1.30	77	1.86	64	47	63	99.0	63	0.113	0.336	21.25
328	116.6	0.0	52.893	0.163	1.28	77	1.86	64	47	63	100.4	63	0.112	0.335	21.16
329	116.6	0.0	53.055	0.162	1.30	77	1.86	64	47	63	100.1	63	0.112	0.335	21.11
330	116.6	0.0	53.217	0.162	1.29	77	1.86	64	47	63	100.1	63	0.113	0.336	21.16
331	116.7	-0.1	53.378	0.161	1.29	77	1.86	64	47	63	99.1	63	0.115	0.339	21.30
332	116.6	0.1	53.540	0.162	1.29	77	1.86	64	47	63	99.1	63	0.115	0.339	21.39
333	116.7	-0.1	53.702	0.162	1.29	77	1.86	64	47	63	99.3	63	0.112	0.335	21.25
334	116.7	0.0	53.863	0.161	1.29	77	1.86	64	47	63	99.3	63	0.112	0.335	21.11
335	116.6	0.0	54.026	0.163	1.30	77	1.86	64	47	62	100.8	63	0.113	0.336	21.16
336	116.7	0.0	54.188	0.162	1.29	77	1.86	63	47	63	100.3	63	0.110	0.332	21.06
337	116.7	0.0	54.350	0.162	1.29	77	1.87	63	47	63	100.6	63	0.112	0.335	21.01
338	116.7	0.0	54.511	0.161	1.28	77	1.86	63	47	63	99.6	63	0.114	0.338	21.20
339	116.7	-0.1	54.673	0.162	1.29	77	1.86	63	47	63	99.9	63	0.111	0.333	21.16
340	116.7	0.1	54.834	0.161	1.30	77	1.86	63	47	63	99.6	63	0.112	0.335	21.06
341	116.7	0.0	54.996	0.162	1.30	77	1.87	63	47	63	100.0	63	0.115	0.339	21.25
342	116.7	0.0	55.159	0.163	1.30	77	1.86	63	47	63	99.7	63	0.117	0.342	21.48
343	116.7	0.0	55.321	0.162	1.29	77	1.86	63	47	62	98.6	63	0.114	0.338	21.44
344	116.8	-0.1	55.483	0.162	1.29	77	1.86	63	47	63	99.3	63	0.112	0.335	21.20
345	116.7	0.1	55.644	0.161	1.29	77	1.86	63	47	63	98.8	63	0.118	0.344	21.39
346	116.7	0.0	55.806	0.162	1.29	77	1.86	63	47	62	98.9	63	0.112	0.335	21.39
347	116.7	0.1	55.967	0.161	1.29	77	1.86	63	47	62	98.4	63	0.117	0.342	21.34
348	116.9	-0.3	56.129	0.162	1.30	77	1.86	63	47	62	98.6	63	0.117	0.342	21.57

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
349	116.5	0.4	56.292	0.163	1.30	77	1.87	63	47	62	98.7	65	0.118	0.344	21.64
350	116.5	0.0	56.454	0.162	1.29	77	1.86	63	47	62	97.9	63	0.118	0.344	21.69
351	116.5	0.0	56.616	0.162	1.29	77	1.87	63	47	62	98.1	63	0.113	0.336	21.44
352	116.4	0.1	56.777	0.161	1.30	77	1.87	63	47	62	98.4	62	0.115	0.339	21.29
353	116.5	-0.1	56.939	0.162	1.29	77	1.86	63	47	62	99.5	62	0.111	0.333	21.18
354	116.4	0.1	57.101	0.162	1.30	77	1.86	63	47	62	99.8	62	0.114	0.338	21.13
355	116.4	0.0	57.262	0.161	1.30	77	1.86	63	47	62	99.2	62	0.112	0.335	21.18
356	116.5	-0.1	57.424	0.162	1.29	77	1.86	63	47	62	99.5	62	0.116	0.341	21.28
357	116.5	0.0	57.587	0.163	1.30	77	1.86	63	47	62	99.8	62	0.113	0.336	21.32
358	116.5	-0.1	57.749	0.162	1.29	77	1.86	63	47	62	99.5	62	0.112	0.335	21.13
359	116.5	0.1	57.911	0.162	1.29	77	1.86	63	47	62	99.7	62	0.115	0.339	21.23
360	116.5	0.0	58.072	0.161	1.30	76	1.85	63	47	62	98.6	62	0.115	0.339	21.37
361	116.6	-0.1	58.234	0.162	1.30	76	1.87	63	47	62	99.1	62	0.114	0.338	21.32
362	116.6	0.0	58.396	0.162	1.30	76	1.86	63	47	62	99.8	62	0.110	0.332	21.09
363	116.5	0.1	58.557	0.161	1.30	76	1.87	63	47	62	99.9	62	0.112	0.335	20.99
364	116.4	0.1	58.720	0.163	1.30	76	1.85	63	46	62	100.8	62	0.115	0.339	21.23
365	116.6	-0.2	58.882	0.162	1.29	76	1.86	63	47	62	99.9	62	0.110	0.332	21.13
366	116.5	0.1	59.044	0.162	1.29	76	1.87	63	47	62	100.3	62	0.113	0.336	21.04
367	116.6	-0.1	59.206	0.162	1.29	76	1.86	63	47	62	100.0	62	0.115	0.339	21.28
368	116.6	0.0	59.367	0.161	1.29	76	1.86	63	47	62	98.5	62	0.116	0.341	21.41
369	116.7	-0.1	59.529	0.162	1.30	76	1.86	63	47	62	99.0	62	0.113	0.336	21.32
370	116.5	0.2	59.691	0.162	1.30	76	1.86	62	46	62	99.5	62	0.114	0.338	21.23
371	116.6	0.0	59.853	0.162	1.30	76	1.86	62	47	62	99.3	62	0.116	0.341	21.37
372	116.6	-0.1	60.015	0.162	1.29	76	1.85	62	46	62	98.7	62	0.117	0.342	21.51
373	116.6	0.0	60.177	0.162	1.29	76	1.86	62	46	62	98.6	62	0.114	0.338	21.41
374	116.6	0.0	60.339	0.162	1.29	76	1.86	62	46	62	98.9	62	0.116	0.341	21.37
375	116.6	0.0	60.500	0.161	1.30	76	1.86	62	46	62	98.5	62	0.113	0.336	21.32
376	116.6	0.0	60.662	0.162	1.30	76	1.86	62	46	62	99.2	62	0.116	0.341	21.32
377	116.6	-0.1	60.824	0.162	1.30	76	1.86	62	46	62	99.0	62	0.115	0.339	21.41
378	116.7	0.0	60.986	0.162	1.29	76	1.86	62	46	61	99.1	62	0.113	0.336	21.28
379	116.5	0.2	61.149	0.163	1.30	76	1.86	62	46	61	100.0	62	0.116	0.341	21.32
380	116.3	0.2	61.310	0.161	1.30	76	1.86	62	46	61	98.2	65	0.119	0.345	21.63
381	115.8	0.5	61.472	0.162	1.29	76	1.86	62	47	61	98.7	67	0.114	0.338	21.59
382	115.5	0.3	61.633	0.161	1.30	76	1.87	63	47	61	98.7	68	0.116	0.341	21.48
383	115.0	0.5	61.794	0.161	1.30	76	1.86	63	46	61	98.8	68	0.116	0.341	21.58
384	114.6	0.4	61.956	0.162	1.30	76	1.87	63	47	62	99.5	70	0.114	0.338	21.51
385	114.0	0.6	62.118	0.162	1.30	76	1.87	63	47	61	100.1	71	0.114	0.338	21.45
386	113.6	0.3	62.280	0.162	1.29	76	1.87	63	47	62	100.4	72	0.114	0.338	21.47
387	113.1	0.5	62.441	0.161	1.29	76	1.86	63	47	62	100.6	72	0.107	0.327	21.15
388	112.7	0.4	62.603	0.162	1.29	76	1.87	63	47	61	102.0	72	0.114	0.338	21.15
389	112.2	0.5	62.764	0.161	1.29	76	1.86	63	47	62	100.4	71	0.115	0.339	21.51
390	111.9	0.3	62.925	0.161	1.29	76	1.87	64	47	61	99.5	71	0.114	0.338	21.50
391	111.2	0.6	63.086	0.161	1.30	76	1.86	64	47	62	99.6	70	0.113	0.336	21.40
392	110.8	0.4	63.249	0.163	1.28	76	1.88	64	47	61	101.1	70	0.113	0.336	21.34

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
393	110.3	0.5	63.410	0.161	1.30	76	1.87	64	47	62	100.0	71	0.114	0.338	21.40
394	109.9	0.4	63.572	0.162	1.29	76	1.87	64	47	61	100.4	71	0.114	0.338	21.46
395	109.3	0.6	63.733	0.161	1.29	76	1.88	64	47	61	99.7	73	0.115	0.339	21.53
396	108.8	0.5	63.894	0.161	1.29	76	1.87	64	47	62	99.8	73	0.113	0.336	21.50
397	108.3	0.5	64.055	0.161	1.30	76	1.87	64	47	62	99.8	72	0.115	0.339	21.49
398	107.5	0.8	64.217	0.162	1.30	76	1.87	64	47	62	100.5	72	0.112	0.335	21.43
399	107.3	0.2	64.379	0.162	1.29	76	1.88	64	47	64	100.1	72	0.120	0.346	21.67
400	106.8	0.5	64.540	0.161	1.29	76	1.87	64	47	64	99.0	72	0.111	0.333	21.62
401	106.4	0.5	64.701	0.161	1.29	76	1.87	64	47	63	99.9	72	0.113	0.336	21.29
402	105.8	0.5	64.862	0.161	1.29	76	1.87	64	47	63	100.2	72	0.115	0.339	21.48
403	105.1	0.8	65.023	0.161	1.30	76	1.88	64	47	63	99.5	72	0.116	0.341	21.62
404	104.9	0.2	65.185	0.162	1.29	76	1.87	64	48	63	100.0	73	0.113	0.336	21.54
405	104.4	0.5	65.347	0.162	1.29	76	1.87	64	48	64	100.5	73	0.114	0.338	21.45
406	103.9	0.5	65.508	0.161	1.29	76	1.87	64	48	64	100.1	74	0.114	0.338	21.51
407	103.6	0.3	65.669	0.161	1.29	76	1.87	65	48	64	99.9	74	0.115	0.339	21.57
408	103.0	0.6	65.830	0.161	1.29	76	1.88	65	48	65	100.0	74	0.112	0.335	21.47
409	102.5	0.5	65.991	0.161	1.29	76	1.87	65	48	64	100.1	74	0.116	0.341	21.52
410	102.0	0.5	66.152	0.161	1.30	76	1.87	65	48	65	100.1	74	0.111	0.333	21.47
411	101.4	0.6	66.314	0.162	1.29	76	1.87	65	48	65	101.6	75	0.110	0.332	21.20
412	101.1	0.3	66.475	0.161	1.29	76	1.87	65	48	66	101.7	75	0.111	0.333	21.21
413	100.5	0.6	66.636	0.161	1.28	76	1.88	65	48	66	101.5	75	0.111	0.333	21.25
414	100.1	0.4	66.798	0.162	1.29	76	1.87	65	48	66	101.9	72	0.110	0.332	21.18
415	99.7	0.4	66.959	0.161	1.29	76	1.86	65	48	66	101.3	70	0.110	0.332	21.08
416	99.6	0.0	67.120	0.161	1.30	76	1.87	65	48	65	101.1	70	0.112	0.335	21.15
417	99.4	0.2	67.282	0.162	1.29	76	1.87	65	48	65	100.9	69	0.115	0.339	21.38
418	99.3	0.2	67.443	0.161	1.30	76	1.87	65	48	65	99.5	68	0.113	0.336	21.41
419	99.1	0.2	67.605	0.162	1.29	76	1.87	65	48	65	100.6	68	0.110	0.332	21.16
420	99.1	0.0	67.766	0.161	1.29	76	1.87	65	48	65	100.0	68	0.118	0.344	21.40
421	99.1	0.1	67.927	0.161	1.29	76	1.87	65	48	65	99.1	68	0.113	0.336	21.54
422	99.0	0.0	68.088	0.161	1.29	76	1.86	65	48	65	99.3	68	0.113	0.336	21.30
423	99.0	0.0	68.250	0.162	1.29	76	1.86	65	48	65	100.4	67	0.113	0.336	21.29
424	98.9	0.1	68.412	0.162	1.29	76	1.87	65	48	65	100.5	67	0.112	0.335	21.24
425	98.9	0.0	68.574	0.162	1.28	76	1.87	65	48	65	100.6	67	0.113	0.336	21.24
426	98.8	0.1	68.734	0.160	1.28	76	1.86	65	48	64	99.4	67	0.112	0.335	21.24
427	98.9	-0.1	68.896	0.162	1.29	76	1.86	65	48	65	100.6	67	0.113	0.336	21.24
428	98.8	0.1	69.057	0.161	1.30	76	1.87	65	48	65	99.3	67	0.118	0.344	21.52
429	98.8	0.0	69.219	0.162	1.30	76	1.87	65	48	64	99.0	67	0.116	0.341	21.66
430	98.8	0.0	69.381	0.162	1.29	76	1.86	65	48	65	98.9	68	0.116	0.341	21.57
431	98.9	0.0	69.542	0.161	1.29	76	1.86	65	48	64	99.0	67	0.111	0.333	21.34
432	98.9	0.0	69.704	0.162	1.29	76	1.87	65	48	64	100.9	67	0.109	0.330	21.00
433	98.9	0.0	69.865	0.161	1.30	76	1.86	65	48	65	100.9	68	0.113	0.336	21.10
434	98.9	-0.1	70.026	0.161	1.30	76	1.87	65	48	65	99.9	67	0.116	0.341	21.43
435	98.8	0.1	70.187	0.161	1.29	76	1.87	65	48	65	99.0	68	0.114	0.338	21.48
436	98.9	-0.1	70.349	0.162	1.29	76	1.87	65	47	65	99.8	68	0.114	0.338	21.40

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
437	98.9	0.1	70.511	0.162	1.30	76	1.87	65	47	65	99.7	67	0.116	0.341	21.48
438	98.9	0.0	70.672	0.161	1.28	76	1.87	65	47	64	99.5	70	0.110	0.332	21.31
439	98.8	0.1	70.833	0.161	1.29	76	1.87	65	47	66	100.3	68	0.113	0.336	21.18
440	98.9	0.0	70.995	0.162	1.29	76	1.86	65	47	65	100.1	67	0.118	0.344	21.53
441	98.9	0.0	71.156	0.161	1.30	76	1.86	65	47	65	98.4	67	0.115	0.339	21.61
442	98.9	0.0	71.318	0.162	1.29	76	1.86	65	47	65	99.6	66	0.110	0.332	21.23
443	98.9	0.0	71.480	0.162	1.29	76	1.87	65	47	64	101.0	66	0.110	0.332	20.98
444	98.9	0.0	71.641	0.161	1.29	76	1.86	65	47	64	100.6	65	0.113	0.336	21.11
445	98.9	0.0	71.803	0.162	1.29	76	1.86	65	47	64	100.8	65	0.110	0.332	21.10
446	98.9	-0.1	71.964	0.161	1.29	76	1.86	65	47	65	100.3	65	0.112	0.335	21.05
447	98.9	0.1	72.125	0.161	1.29	77	1.87	65	47	65	99.9	65	0.114	0.338	21.24
448	98.9	0.0	72.287	0.162	1.30	77	1.87	65	47	65	99.8	65	0.114	0.338	21.34
449	98.9	0.0	72.449	0.162	1.28	77	1.87	64	47	65	99.4	64	0.115	0.339	21.37
450	98.9	0.0	72.611	0.162	1.29	77	1.86	64	47	64	99.8	64	0.109	0.330	21.13
451	98.9	0.0	72.772	0.161	1.29	77	1.86	64	47	64	100.0	64	0.113	0.336	21.03
452	98.9	-0.1	72.933	0.161	1.29	77	1.87	64	47	65	99.8	64	0.112	0.335	21.18
453	99.0	0.0	73.095	0.162	1.29	77	1.86	64	47	64	99.8	64	0.116	0.341	21.32
454	98.9	0.1	73.256	0.161	1.29	77	1.87	64	47	64	98.7	64	0.113	0.336	21.36
455	99.0	-0.1	73.418	0.162	1.30	77	1.86	64	47	64	99.1	64	0.117	0.342	21.41
456	98.9	0.1	73.580	0.162	1.29	77	1.87	64	47	64	99.4	64	0.110	0.332	21.27
457	99.0	-0.1	73.742	0.162	1.29	77	1.86	64	47	64	100.1	64	0.113	0.336	21.08
458	98.9	0.1	73.903	0.161	1.28	77	1.87	64	47	64	99.9	64	0.110	0.332	21.08
459	99.0	-0.1	74.064	0.161	1.29	77	1.86	64	47	64	100.2	64	0.111	0.333	20.99
460	99.0	0.0	74.226	0.162	1.29	77	1.87	64	47	64	101.1	63	0.109	0.330	20.93
461	99.0	0.0	74.388	0.162	1.30	77	1.86	64	47	63	100.8	63	0.114	0.338	21.06
462	99.0	0.0	74.549	0.161	1.30	77	1.87	64	47	64	99.2	63	0.115	0.339	21.34
463	99.0	0.0	74.712	0.163	1.29	77	1.87	64	47	63	100.2	63	0.110	0.332	21.16
464	99.0	-0.1	74.873	0.161	1.29	77	1.86	64	47	63	99.9	63	0.111	0.333	20.97
465	99.0	0.0	75.035	0.162	1.29	77	1.87	64	47	63	100.4	63	0.115	0.339	21.20
466	99.0	0.1	75.196	0.161	1.30	77	1.87	64	47	63	98.8	63	0.115	0.339	21.39
467	99.0	0.0	75.358	0.162	1.30	77	1.87	63	47	63	98.8	63	0.116	0.341	21.44
468	99.1	-0.1	75.519	0.161	1.30	77	1.87	63	47	63	97.9	63	0.117	0.342	21.53
469	99.0	0.1	75.682	0.163	1.31	77	1.88	63	47	63	99.0	63	0.115	0.339	21.48
470	98.9	0.0	75.845	0.163	1.29	77	1.87	63	47	62	99.3	63	0.115	0.339	21.39
471	99.0	-0.1	76.006	0.161	1.30	77	1.86	63	47	63	98.3	62	0.115	0.339	21.38
472	99.0	0.0	76.168	0.162	1.29	77	1.86	63	47	62	98.9	62	0.114	0.338	21.32
473	99.0	0.0	76.329	0.161	1.30	77	1.87	63	47	62	98.4	62	0.115	0.339	21.32
474	99.0	0.0	76.491	0.162	1.29	77	1.87	63	47	62	99.1	64	0.115	0.339	21.39
475	99.0	0.0	76.652	0.161	1.29	77	1.87	63	47	62	98.3	64	0.117	0.342	21.50
476	99.0	0.0	76.814	0.162	1.30	77	1.87	63	47	62	98.7	64	0.114	0.338	21.46
477	99.0	0.0	76.977	0.163	1.29	77	1.86	63	48	62	99.8	63	0.113	0.336	21.26
478	99.1	-0.1	77.138	0.161	1.30	76	1.86	63	47	62	99.0	63	0.114	0.338	21.25
479	99.0	0.1	77.300	0.162	1.29	76	1.87	63	47	62	99.3	63	0.117	0.342	21.44
480	99.1	0.0	77.461	0.161	1.29	76	1.86	63	47	62	98.3	64	0.115	0.339	21.49

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
481	99.1	0.0	77.623	0.162	1.29	76	1.87	63	47	62	99.1	64	0.114	0.338	21.36
482	99.1	-0.1	77.785	0.162	1.30	76	1.87	63	47	62	99.8	64	0.112	0.335	21.22
483	99.0	0.2	77.947	0.162	1.30	76	1.87	63	47	62	100.3	64	0.112	0.335	21.13
484	98.9	0.1	78.109	0.162	1.29	76	1.87	63	48	63	100.5	67	0.114	0.338	21.25
485	98.9	0.0	78.271	0.162	1.30	76	1.87	63	48	62	100.3	65	0.112	0.335	21.26
486	98.9	0.0	78.433	0.162	1.29	76	1.86	63	48	62	99.9	65	0.116	0.341	21.34
487	98.8	0.1	78.594	0.161	1.30	76	1.86	63	48	63	98.9	65	0.114	0.338	21.43
488	98.8	0.0	78.755	0.161	1.29	76	1.87	63	48	63	99.0	65	0.113	0.336	21.29
489	98.8	0.0	78.917	0.162	1.30	76	1.87	63	48	63	100.0	65	0.114	0.338	21.29
490	98.9	0.0	79.079	0.162	1.30	76	1.86	63	48	63	100.4	66	0.110	0.332	21.16
491	98.8	0.0	79.242	0.163	1.29	76	1.86	63	48	63	100.9	66	0.118	0.344	21.36
492	98.8	0.0	79.403	0.161	1.29	76	1.86	63	48	63	99.2	66	0.110	0.332	21.36
493	98.9	0.0	79.565	0.162	1.29	76	1.87	63	48	63	100.4	66	0.113	0.336	21.12
494	98.8	0.0	79.726	0.161	1.29	76	1.86	64	48	64	99.8	66	0.115	0.339	21.36
495	98.8	0.1	79.888	0.162	1.30	76	1.86	64	48	64	100.1	66	0.111	0.333	21.26
496	98.9	-0.1	80.049	0.161	1.30	76	1.86	64	48	64	99.9	66	0.113	0.336	21.17
497	98.8	0.1	80.211	0.162	1.30	76	1.87	64	48	64	100.3	66	0.115	0.339	21.36
498	98.8	-0.1	80.374	0.163	1.29	76	1.86	64	48	64	100.8	66	0.110	0.332	21.22
499	98.8	0.1	80.535	0.161	1.29	76	1.86	64	48	64	100.2	66	0.112	0.335	21.07
500	98.8	0.0	80.697	0.162	1.29	76	1.86	64	48	64	100.7	67	0.115	0.339	21.32
501	98.9	0.0	80.858	0.161	1.29	76	1.86	64	48	64	99.3	67	0.114	0.338	21.42
502	98.8	0.0	81.019	0.161	1.29	76	1.87	64	48	64	99.3	67	0.113	0.336	21.33
503	98.8	0.1	81.181	0.162	1.29	76	1.87	64	48	64	100.6	67	0.110	0.332	21.14
504	98.9	-0.1	81.343	0.162	1.30	76	1.86	64	48	64	101.4	67	0.110	0.332	21.00
505	98.9	0.0	81.505	0.162	1.29	76	1.86	64	48	64	101.6	67	0.111	0.333	21.05
506	98.9	0.0	81.667	0.162	1.29	76	1.86	64	48	64	101.2	67	0.113	0.336	21.19
507	99.0	-0.1	81.828	0.161	1.29	77	1.87	64	48	64	99.8	67	0.114	0.338	21.33
508	98.9	0.1	81.990	0.162	1.29	77	1.86	64	48	64	100.1	68	0.112	0.335	21.29
509	98.9	-0.1	82.151	0.161	1.29	77	1.86	64	48	64	99.5	69	0.116	0.341	21.41
510	99.0	-0.1	82.313	0.162	1.29	77	1.86	64	48	64	99.4	67	0.116	0.341	21.58
511	98.9	0.1	82.475	0.162	1.30	77	1.87	64	48	64	99.3	67	0.112	0.335	21.38
512	98.7	0.2	82.637	0.162	1.29	77	1.87	64	48	64	100.6	68	0.109	0.330	21.06
513	98.2	0.5	82.798	0.161	1.28	77	1.87	64	48	64	100.8	70	0.113	0.336	21.13
514	97.8	0.4	82.959	0.161	1.29	77	1.88	64	48	65	100.2	70	0.114	0.338	21.39
515	97.5	0.4	83.121	0.162	1.29	77	1.87	65	48	65	100.3	71	0.113	0.336	21.40
516	97.1	0.4	83.282	0.161	1.29	77	1.87	65	48	65	99.3	72	0.119	0.345	21.66
517	96.4	0.7	83.443	0.161	1.29	77	1.87	65	48	65	98.7	73	0.114	0.338	21.72
518	96.1	0.3	83.606	0.163	1.30	77	1.87	65	48	65	100.4	74	0.115	0.339	21.56
519	95.6	0.5	83.767	0.161	1.29	77	1.88	65	49	64	99.3	74	0.117	0.342	21.71
520	95.0	0.5	83.928	0.161	1.29	77	1.87	65	49	65	99.2	75	0.113	0.336	21.62
521	94.5	0.5	84.089	0.161	1.29	77	1.88	65	49	65	99.7	73	0.114	0.338	21.47
522	94.0	0.5	84.250	0.161	1.29	77	1.87	65	49	64	100.1	73	0.111	0.333	21.36
523	93.7	0.3	84.411	0.161	1.29	77	1.87	65	49	64	100.5	72	0.112	0.335	21.25
524	93.0	0.7	84.574	0.163	1.29	77	1.87	65	49	64	101.8	73	0.113	0.336	21.35

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
525	92.4	0.6	84.735	0.161	1.29	77	1.88	65	49	64	99.9	72	0.116	0.341	21.54
526	92.0	0.4	84.896	0.161	1.28	77	1.88	65	49	64	99.3	72	0.114	0.338	21.57
527	91.7	0.3	85.057	0.161	1.29	77	1.87	65	49	64	99.8	72	0.110	0.332	21.29
528	91.1	0.6	85.218	0.161	1.29	77	1.87	65	49	64	100.4	72	0.115	0.339	21.34
529	90.6	0.4	85.379	0.161	1.29	77	1.87	65	50	63	99.5	72	0.117	0.342	21.67
530	90.3	0.3	85.541	0.162	1.29	77	1.88	65	50	64	99.8	72	0.111	0.333	21.48
531	89.6	0.7	85.703	0.162	1.29	77	1.88	65	50	63	100.8	72	0.112	0.335	21.24
532	89.0	0.6	85.865	0.162	1.29	77	1.87	65	50	63	100.9	72	0.115	0.339	21.43
533	88.5	0.4	86.025	0.160	1.29	77	1.88	65	50	63	98.8	72	0.116	0.341	21.62
534	88.1	0.4	86.186	0.161	1.29	77	1.87	65	50	63	99.1	72	0.114	0.338	21.57
535	87.5	0.6	86.348	0.162	1.29	77	1.88	65	50	63	99.7	72	0.117	0.342	21.62
536	86.9	0.6	86.509	0.161	1.29	77	1.88	65	50	63	99.1	72	0.113	0.336	21.57
537	86.5	0.4	86.672	0.163	1.29	77	1.87	65	50	63	101.4	72	0.108	0.329	21.15
538	86.1	0.4	86.833	0.161	1.30	77	1.87	65	50	63	101.5	72	0.110	0.332	21.00
539	85.5	0.6	86.994	0.161	1.29	77	1.87	65	50	63	101.6	72	0.110	0.332	21.10
540	85.1	0.4	87.155	0.161	1.29	77	1.87	65	51	63	101.5	72	0.109	0.330	21.05
541	84.5	0.6	87.316	0.161	1.29	77	1.87	65	51	62	101.3	72	0.113	0.336	21.19
542	84.1	0.4	87.477	0.161	1.29	77	1.87	65	51	63	100.3	72	0.115	0.339	21.48
543	83.7	0.4	87.640	0.163	1.30	77	1.88	65	51	63	100.8	72	0.113	0.336	21.48
544	83.3	0.4	87.801	0.161	1.29	77	1.88	65	51	62	99.9	72	0.112	0.335	21.34
545	82.4	0.9	87.962	0.161	1.28	77	1.88	65	51	62	100.5	72	0.111	0.333	21.24
546	82.3	0.0	88.123	0.161	1.28	77	1.87	65	51	62	100.2	72	0.117	0.342	21.48
547	81.8	0.5	88.285	0.162	1.30	76	1.88	65	51	62	99.9	69	0.113	0.336	21.54
548	81.6	0.2	88.446	0.161	1.30	76	1.87	65	51	62	99.1	66	0.114	0.338	21.34
549	81.4	0.2	88.608	0.162	1.30	76	1.87	65	51	62	100.1	65	0.111	0.333	21.21
550	81.2	0.2	88.770	0.162	1.29	76	1.87	64	51	62	100.2	65	0.116	0.341	21.29
551	81.1	0.1	88.932	0.162	1.30	76	1.87	64	51	62	99.7	65	0.113	0.336	21.38
552	81.0	0.1	89.093	0.161	1.28	76	1.87	64	51	62	99.6	64	0.109	0.330	21.04
553	80.9	0.1	89.255	0.162	1.29	76	1.87	64	51	62	101.0	65	0.113	0.336	21.04
554	81.0	-0.1	89.416	0.161	1.30	76	1.87	64	51	62	99.5	64	0.117	0.342	21.42
555	80.8	0.2	89.578	0.162	1.29	76	1.87	64	51	61	98.9	65	0.116	0.341	21.56
556	80.8	0.0	89.740	0.162	1.29	76	1.86	64	51	62	99.0	64	0.113	0.336	21.37
557	80.8	0.0	89.903	0.163	1.29	76	1.87	64	51	62	100.3	63	0.113	0.336	21.21
558	80.8	0.0	90.064	0.161	1.30	76	1.86	64	51	62	99.5	63	0.112	0.335	21.16
559	80.7	0.0	90.225	0.161	1.29	76	1.86	64	51	62	99.8	64	0.112	0.335	21.12
560	80.8	-0.1	90.387	0.162	1.29	76	1.87	64	51	62	100.2	64	0.115	0.339	21.27
561	80.8	0.1	90.548	0.161	1.29	76	1.87	63	51	62	99.4	64	0.111	0.333	21.22
562	80.7	0.0	90.710	0.162	1.30	76	1.87	63	51	62	100.2	64	0.114	0.338	21.18
563	80.7	0.0	90.872	0.162	1.30	76	1.87	63	51	62	100.2	64	0.112	0.335	21.22
564	80.8	-0.1	91.035	0.163	1.29	76	1.87	63	51	63	101.2	65	0.110	0.332	21.04
565	80.7	0.1	91.196	0.161	1.29	76	1.86	63	51	62	100.1	65	0.115	0.339	21.20
566	80.7	-0.1	91.358	0.162	1.30	76	1.87	63	51	63	99.7	65	0.116	0.341	21.48
567	80.7	0.0	91.519	0.161	1.29	76	1.87	63	51	63	98.7	65	0.113	0.336	21.38
568	80.7	0.0	91.681	0.162	1.29	76	1.86	63	51	63	100.0	65	0.112	0.335	21.20

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
569	80.7	0.1	91.842	0.161	1.30	76	1.87	63	51	63	99.6	65	0.115	0.339	21.29
570	80.7	-0.1	92.004	0.162	1.30	76	1.86	63	51	63	100.0	66	0.112	0.335	21.30
571	80.8	0.0	92.167	0.163	1.28	76	1.87	63	51	63	101.0	65	0.112	0.335	21.16
572	80.8	0.0	92.328	0.161	1.29	76	1.86	64	51	63	100.6	66	0.107	0.327	20.92
573	80.8	0.0	92.489	0.161	1.29	76	1.87	64	51	64	100.9	66	0.115	0.339	21.07
574	80.8	0.0	92.651	0.162	1.29	76	1.87	64	51	64	100.4	66	0.114	0.338	21.40
575	80.8	0.0	92.812	0.161	1.29	76	1.87	64	51	64	99.1	66	0.114	0.338	21.36
576	80.7	0.1	92.974	0.162	1.29	76	1.87	64	51	64	99.7	66	0.115	0.339	21.40
577	80.8	-0.1	93.136	0.162	1.30	76	1.87	64	51	64	99.9	66	0.111	0.333	21.26
578	80.8	0.0	93.298	0.162	1.29	76	1.86	64	51	64	100.3	66	0.115	0.339	21.26
579	80.7	0.1	93.459	0.161	1.29	76	1.87	64	51	64	99.7	66	0.111	0.333	21.26
580	80.8	0.0	93.620	0.161	1.29	76	1.87	64	51	64	99.7	66	0.115	0.339	21.26
581	80.8	0.0	93.782	0.162	1.29	76	1.86	64	51	64	99.9	66	0.114	0.338	21.40
582	80.8	0.0	93.943	0.161	1.30	76	1.87	64	51	64	99.3	67	0.113	0.336	21.32
583	80.8	0.0	94.105	0.162	1.29	76	1.86	64	51	64	100.2	67	0.114	0.338	21.33
584	80.9	-0.1	94.267	0.162	1.30	76	1.87	64	51	64	100.4	67	0.111	0.333	21.24
585	80.8	0.2	94.429	0.162	1.29	76	1.87	64	51	64	100.8	67	0.112	0.335	21.14
586	80.9	-0.2	94.590	0.161	1.29	76	1.87	64	51	64	100.1	67	0.114	0.338	21.28
587	80.9	0.0	94.752	0.162	1.29	76	1.86	64	51	64	100.5	67	0.111	0.333	21.24
588	80.8	0.1	94.913	0.161	1.30	76	1.87	64	51	64	100.1	67	0.113	0.336	21.19
589	81.0	-0.1	95.074	0.161	1.29	76	1.87	64	51	64	99.9	67	0.114	0.338	21.33
590	80.9	0.0	95.236	0.162	1.29	76	1.86	64	51	64	100.2	67	0.113	0.336	21.33
591	80.8	0.1	95.399	0.163	1.29	76	1.87	64	51	64	101.0	67	0.112	0.335	21.24
592	80.9	-0.1	95.560	0.161	1.29	76	1.87	64	51	65	100.1	69	0.113	0.336	21.26
593	80.9	0.1	95.721	0.161	1.29	76	1.87	64	51	65	100.3	67	0.110	0.332	21.16
594	80.9	0.0	95.883	0.162	1.29	76	1.87	64	51	64	100.8	66	0.114	0.338	21.18
595	80.9	0.0	96.044	0.161	1.30	76	1.86	64	51	64	100.0	66	0.111	0.333	21.22
596	80.8	0.0	96.205	0.161	1.30	76	1.87	64	51	64	100.0	65	0.112	0.335	21.11
597	81.0	-0.1	96.368	0.163	1.29	76	1.86	64	51	64	101.5	65	0.111	0.333	21.10
598	80.9	0.1	96.529	0.161	1.29	76	1.87	64	51	64	100.3	65	0.111	0.333	21.05
599	81.0	0.0	96.691	0.162	1.29	76	1.87	64	51	64	100.7	65	0.114	0.338	21.20
600	81.0	0.0	96.852	0.161	1.29	76	1.86	64	51	64	99.7	64	0.111	0.333	21.19
601	80.8	0.2	97.014	0.162	1.29	76	1.87	64	51	64	100.7	64	0.110	0.332	20.99
602	80.9	-0.1	97.175	0.161	1.30	76	1.87	64	51	64	100.5	64	0.112	0.335	21.03
603	80.9	0.1	97.337	0.162	1.29	77	1.87	64	51	64	100.6	64	0.113	0.336	21.18
604	81.0	-0.1	97.499	0.162	1.29	77	1.86	64	51	64	99.8	64	0.115	0.339	21.32
605	80.9	0.1	97.661	0.162	1.29	77	1.87	64	51	64	99.4	64	0.114	0.338	21.36
606	81.0	-0.2	97.822	0.161	1.29	77	1.86	64	51	64	99.0	64	0.112	0.335	21.22
607	80.9	0.1	97.984	0.162	1.29	77	1.87	64	51	64	99.8	63	0.114	0.338	21.21
608	81.0	0.0	98.145	0.161	1.30	77	1.87	64	51	64	98.8	63	0.115	0.339	21.34
609	80.8	0.1	98.307	0.162	1.30	77	1.86	64	51	64	99.3	63	0.113	0.336	21.30
610	80.9	-0.1	98.469	0.162	1.30	77	1.86	64	51	63	99.3	63	0.116	0.341	21.34
611	80.9	0.0	98.631	0.162	1.29	77	1.87	64	51	63	99.1	63	0.113	0.336	21.34
612	80.9	0.0	98.792	0.161	1.29	77	1.87	64	51	63	98.9	63	0.113	0.336	21.20

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
613	81.0	-0.1	98.954	0.162	1.29	77	1.86	64	51	63	99.7	63	0.114	0.338	21.25
614	80.9	0.1	99.115	0.161	1.29	77	1.87	64	51	63	98.8	63	0.115	0.339	21.34
615	80.9	0.0	99.277	0.162	1.30	77	1.87	64	51	63	99.1	63	0.114	0.338	21.34
616	80.9	0.0	99.438	0.161	1.30	77	1.87	63	51	63	99.1	63	0.110	0.332	21.11
617	80.7	0.2	99.600	0.162	1.30	77	1.86	63	51	63	100.5	64	0.112	0.335	21.02
618	80.7	0.0	99.763	0.163	1.30	77	1.86	63	51	63	101.0	63	0.113	0.336	21.17
619	80.7	0.0	99.924	0.161	1.29	77	1.87	63	51	63	99.3	63	0.113	0.336	21.20
620	80.7	0.0	100.086	0.162	1.29	77	1.87	63	51	63	99.8	62	0.112	0.335	21.14
621	80.7	0.0	100.247	0.161	1.29	77	1.87	63	51	62	99.1	62	0.115	0.339	21.23
622	80.6	0.1	100.409	0.162	1.30	77	1.86	63	51	62	99.4	62	0.113	0.336	21.28
623	80.7	0.0	100.571	0.162	1.30	76	1.86	63	51	62	99.8	62	0.111	0.333	21.09
624	80.8	-0.1	100.733	0.162	1.30	76	1.87	63	51	62	100.0	62	0.116	0.341	21.23
625	80.8	0.0	100.895	0.162	1.29	76	1.86	63	51	62	99.0	62	0.117	0.342	21.51
626	80.8	0.0	101.057	0.162	1.30	76	1.87	63	51	62	98.8	62	0.112	0.335	21.32
627	80.8	0.0	101.219	0.162	1.29	76	1.87	63	51	62	99.5	62	0.115	0.339	21.23
628	80.7	0.1	101.380	0.161	1.30	76	1.86	63	51	62	99.1	62	0.112	0.335	21.23
629	80.7	0.0	101.542	0.162	1.30	76	1.87	63	51	62	99.7	62	0.115	0.339	21.23
630	80.8	-0.2	101.704	0.162	1.30	76	1.86	63	51	62	99.7	62	0.112	0.335	21.23
631	80.7	0.1	101.866	0.162	1.30	76	1.87	63	51	62	99.8	62	0.114	0.338	21.18
632	80.7	0.0	102.028	0.162	1.29	76	1.86	63	51	62	99.6	62	0.115	0.339	21.32
633	80.8	-0.1	102.190	0.162	1.30	76	1.86	62	51	62	99.0	62	0.116	0.341	21.41
634	80.8	0.0	102.352	0.162	1.29	76	1.87	62	51	61	99.0	64	0.115	0.339	21.44
635	80.8	0.0	102.513	0.161	1.30	76	1.86	62	51	61	98.7	63	0.113	0.336	21.31
636	80.8	0.1	102.675	0.162	1.30	76	1.86	62	51	61	99.6	62	0.114	0.338	21.24
637	80.8	0.0	102.837	0.162	1.30	76	1.87	62	51	61	99.4	63	0.116	0.341	21.38
638	80.8	0.0	102.998	0.161	1.30	76	1.87	62	51	62	98.4	62	0.115	0.339	21.42
639	80.8	-0.1	103.161	0.163	1.30	76	1.86	62	51	62	99.6	63	0.115	0.339	21.38
640	80.9	-0.1	103.323	0.162	1.30	76	1.87	62	51	62	99.0	63	0.116	0.341	21.44
641	80.8	0.1	103.485	0.162	1.29	76	1.86	62	51	62	99.0	63	0.114	0.338	21.39
642	80.8	0.0	103.646	0.161	1.30	76	1.86	62	51	62	98.3	63	0.118	0.344	21.48
643	80.8	-0.1	103.808	0.162	1.30	76	1.87	62	51	62	98.1	63	0.120	0.346	21.76
644	80.8	0.1	103.969	0.161	1.30	76	1.86	62	51	62	96.7	64	0.120	0.346	21.86
645	80.7	0.0	104.131	0.162	1.30	76	1.87	62	51	62	97.2	64	0.119	0.345	21.82
646	80.8	-0.1	104.294	0.163	1.30	76	1.87	62	51	62	98.8	64	0.112	0.335	21.46
647	80.7	0.1	104.456	0.162	1.29	76	1.87	63	51	62	99.5	65	0.115	0.339	21.28
648	80.6	0.1	104.617	0.161	1.30	76	1.86	63	51	63	99.2	65	0.114	0.338	21.38
649	80.3	0.3	104.779	0.162	1.29	76	1.88	63	51	63	99.8	66	0.113	0.336	21.30
650	80.1	0.2	104.940	0.161	1.30	76	1.87	63	51	63	99.6	69	0.115	0.339	21.39
651	79.8	0.3	105.102	0.162	1.30	76	1.88	63	51	63	100.3	70	0.113	0.336	21.43
652	79.4	0.4	105.263	0.161	1.29	76	1.87	63	51	63	99.9	71	0.113	0.336	21.35
653	79.2	0.2	105.425	0.162	1.29	76	1.87	63	51	63	100.6	72	0.115	0.339	21.47
654	78.8	0.4	105.587	0.162	1.29	76	1.88	64	52	64	100.7	73	0.111	0.333	21.39
655	78.3	0.4	105.748	0.161	1.29	76	1.87	64	52	64	100.4	74	0.115	0.339	21.41
656	77.8	0.5	105.909	0.161	1.29	76	1.87	64	52	64	100.4	75	0.112	0.335	21.48

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 12:35
Test Length: 1228 min
Recording Interval: 1 min

Test Date: 12/4/24
Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
Pre-test 0 cfm @ 17.1 in. Hg
Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
657	77.4	0.4	106.070	0.161	1.30	76	1.87	64	52	64	100.6	76	0.113	0.336	21.41
658	77.0	0.5	106.232	0.162	1.30	76	1.88	64	52	64	101.2	77	0.115	0.339	21.57
659	76.6	0.4	106.394	0.162	1.30	76	1.87	65	52	64	100.9	77	0.113	0.336	21.58
660	75.9	0.6	106.555	0.161	1.29	76	1.88	65	52	64	100.5	77	0.113	0.336	21.48
661	75.6	0.4	106.717	0.162	1.29	76	1.87	65	52	64	100.7	77	0.119	0.345	21.77
662	75.2	0.4	106.877	0.160	1.29	76	1.87	65	52	64	98.7	76	0.113	0.336	21.76
663	74.9	0.3	107.038	0.161	1.29	76	1.88	65	52	64	99.7	76	0.115	0.339	21.56
664	74.2	0.7	107.200	0.162	1.30	76	1.87	65	52	64	100.7	76	0.114	0.338	21.61
665	73.9	0.4	107.361	0.161	1.29	76	1.87	65	52	64	100.4	76	0.111	0.333	21.42
666	73.4	0.5	107.523	0.162	1.29	76	1.87	65	52	65	101.5	77	0.114	0.338	21.43
667	72.9	0.4	107.684	0.161	1.29	76	1.87	65	52	65	100.6	76	0.113	0.336	21.52
668	72.5	0.4	107.845	0.161	1.29	76	1.88	66	52	65	100.7	76	0.111	0.333	21.37
669	71.9	0.6	108.006	0.161	1.29	76	1.88	66	52	65	100.9	76	0.114	0.338	21.42
670	71.6	0.3	108.167	0.161	1.29	76	1.88	66	53	65	100.7	76	0.112	0.335	21.46
671	71.0	0.6	108.329	0.162	1.30	76	1.88	66	53	65	101.2	76	0.114	0.338	21.46
672	70.6	0.5	108.491	0.162	1.29	76	1.88	66	53	65	101.3	76	0.111	0.333	21.42
673	70.1	0.5	108.652	0.161	1.29	76	1.88	66	53	65	101.1	76	0.112	0.335	21.32
674	69.8	0.2	108.812	0.160	1.29	76	1.88	66	53	65	100.4	77	0.114	0.338	21.47
675	69.3	0.5	108.973	0.161	1.29	76	1.88	66	53	65	100.4	76	0.114	0.338	21.57
676	68.7	0.7	109.135	0.162	1.29	76	1.88	66	53	65	101.2	77	0.111	0.333	21.43
677	68.3	0.4	109.296	0.161	1.29	76	1.88	66	53	65	101.0	79	0.115	0.339	21.50
678	67.9	0.4	109.458	0.162	1.29	76	1.88	66	53	65	101.1	77	0.114	0.338	21.65
679	67.5	0.4	109.619	0.161	1.29	76	1.88	66	53	65	99.9	76	0.115	0.339	21.62
680	67.0	0.5	109.779	0.160	1.29	76	1.88	66	53	65	99.8	76	0.109	0.330	21.37
681	66.5	0.5	109.941	0.162	1.29	76	1.88	66	53	65	101.7	75	0.114	0.338	21.31
682	66.1	0.4	110.102	0.161	1.29	76	1.88	66	53	65	100.7	75	0.113	0.336	21.49
683	65.7	0.4	110.263	0.161	1.29	76	1.89	66	53	65	100.6	76	0.112	0.335	21.41
684	65.2	0.5	110.425	0.162	1.29	76	1.88	66	53	66	102.0	75	0.108	0.329	21.17
685	64.9	0.3	110.586	0.161	1.29	77	1.88	66	53	65	101.4	75	0.115	0.339	21.30
686	64.5	0.3	110.747	0.161	1.28	77	1.88	66	53	66	100.5	70	0.109	0.330	21.30
687	64.3	0.2	110.908	0.161	1.28	77	1.88	66	53	65	100.3	69	0.113	0.336	21.14
688	64.0	0.3	111.069	0.161	1.29	77	1.87	66	53	65	100.4	68	0.110	0.332	21.17
689	64.0	0.1	111.231	0.162	1.30	77	1.88	66	53	65	101.5	69	0.109	0.330	20.98
690	63.7	0.3	111.393	0.162	1.29	77	1.87	66	53	64	101.5	66	0.112	0.335	21.06
691	63.6	0.2	111.554	0.161	1.29	77	1.87	66	53	64	99.6	66	0.117	0.342	21.40
692	63.4	0.1	111.715	0.161	1.29	77	1.88	65	53	64	98.6	66	0.114	0.338	21.50
693	63.3	0.2	111.876	0.161	1.29	77	1.88	65	53	64	98.7	66	0.114	0.338	21.36
694	63.2	0.0	112.038	0.162	1.29	77	1.88	65	53	64	99.3	66	0.117	0.342	21.50
695	63.2	0.1	112.199	0.161	1.30	77	1.88	65	53	64	98.5	65	0.112	0.335	21.39
696	63.2	0.0	112.361	0.162	1.29	77	1.88	65	53	64	99.5	65	0.115	0.339	21.29
697	63.1	0.0	112.523	0.162	1.29	77	1.88	65	53	64	100.0	66	0.111	0.333	21.25
698	63.0	0.1	112.685	0.162	1.28	77	1.87	65	53	64	100.6	66	0.111	0.333	21.07
699	63.0	0.0	112.846	0.161	1.29	77	1.87	65	53	64	100.1	66	0.113	0.336	21.17
700	63.0	0.1	113.007	0.161	1.29	77	1.88	65	53	64	99.8	66	0.112	0.335	21.22

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
701	63.0	0.0	113.168	0.161	1.29	77	1.87	65	53	64	99.5	66	0.115	0.339	21.31
702	63.0	0.0	113.330	0.162	1.30	77	1.88	65	53	64	100.0	66	0.111	0.333	21.26
703	62.9	0.1	113.493	0.163	1.29	77	1.88	65	53	64	101.3	66	0.110	0.332	21.03
704	63.0	0.0	113.654	0.161	1.29	77	1.87	65	53	64	100.4	67	0.113	0.336	21.13
705	62.9	0.1	113.815	0.161	1.29	77	1.88	65	53	64	100.1	67	0.111	0.333	21.19
706	62.9	0.0	113.977	0.162	1.29	77	1.87	65	53	64	100.3	67	0.116	0.341	21.33
707	62.9	0.0	114.138	0.161	1.30	77	1.87	65	53	64	98.9	67	0.115	0.339	21.52
708	62.9	0.0	114.299	0.161	1.29	77	1.88	65	53	64	98.9	67	0.112	0.335	21.33
709	62.9	0.1	114.461	0.162	1.30	77	1.88	65	53	64	100.3	67	0.112	0.335	21.19
710	63.0	-0.1	114.624	0.163	1.29	77	1.88	65	53	64	100.8	67	0.116	0.341	21.38
711	62.9	0.0	114.785	0.161	1.29	77	1.87	65	53	64	98.7	67	0.116	0.341	21.56
712	62.9	0.1	114.946	0.161	1.29	77	1.87	65	53	64	98.2	67	0.117	0.342	21.61
713	62.9	0.0	115.108	0.162	1.29	77	1.87	65	53	64	99.3	67	0.110	0.332	21.33
714	62.9	-0.1	115.269	0.161	1.29	77	1.87	65	53	64	99.9	67	0.112	0.335	21.09
715	62.9	0.0	115.430	0.161	1.29	77	1.88	65	53	64	100.5	67	0.110	0.332	21.09
716	62.9	0.0	115.593	0.163	1.29	77	1.87	65	53	64	101.3	67	0.116	0.341	21.28
717	62.9	0.0	115.755	0.162	1.29	77	1.87	65	53	65	99.8	68	0.114	0.338	21.48
718	62.9	0.0	115.916	0.161	1.29	77	1.87	65	53	64	99.0	68	0.114	0.338	21.40
719	63.0	-0.1	116.077	0.161	1.29	77	1.88	65	53	64	99.2	68	0.114	0.338	21.40
720	62.9	0.1	116.238	0.161	1.29	77	1.87	65	53	64	99.1	68	0.115	0.339	21.44
721	62.9	-0.1	116.400	0.162	1.30	77	1.88	65	53	65	100.3	68	0.108	0.329	21.16
722	62.9	0.0	116.562	0.162	1.30	77	1.88	65	53	65	101.2	67	0.112	0.335	21.01
723	62.9	0.0	116.724	0.162	1.29	77	1.87	65	53	64	101.1	68	0.112	0.335	21.20
724	63.0	-0.1	116.885	0.161	1.30	77	1.87	65	53	65	100.4	67	0.109	0.330	21.06
725	62.9	0.1	117.047	0.162	1.29	77	1.88	65	53	64	101.2	68	0.113	0.336	21.10
726	62.9	0.0	117.208	0.161	1.29	77	1.87	65	53	64	99.9	68	0.115	0.339	21.40
727	63.0	0.0	117.369	0.161	1.29	77	1.87	65	53	65	99.1	68	0.114	0.338	21.44
728	63.0	0.0	117.531	0.162	1.29	77	1.87	65	53	65	100.0	68	0.112	0.335	21.30
729	63.0	0.0	117.693	0.162	1.29	77	1.87	65	53	64	100.4	68	0.113	0.336	21.26
730	62.9	0.1	117.855	0.162	1.29	77	1.88	65	53	64	100.7	68	0.110	0.332	21.16
731	62.9	0.0	118.016	0.161	1.29	77	1.87	65	53	65	100.3	68	0.113	0.336	21.16
732	62.9	0.0	118.177	0.161	1.29	77	1.87	65	53	65	100.2	68	0.111	0.333	21.21
733	63.0	-0.1	118.339	0.162	1.30	77	1.87	65	53	64	100.6	68	0.114	0.338	21.26
734	62.9	0.0	118.500	0.161	1.29	77	1.87	65	53	65	99.8	68	0.112	0.335	21.30
735	63.0	-0.1	118.662	0.162	1.29	77	1.87	65	53	65	100.4	68	0.113	0.336	21.26
736	63.0	0.0	118.824	0.162	1.29	77	1.87	65	53	65	100.0	68	0.117	0.342	21.49
737	62.9	0.0	118.986	0.162	1.30	77	1.87	65	53	65	99.0	68	0.117	0.342	21.68
738	63.0	-0.1	119.147	0.161	1.28	77	1.87	65	53	65	98.2	68	0.115	0.339	21.58
739	63.0	0.0	119.308	0.161	1.29	77	1.88	65	53	65	98.8	68	0.113	0.336	21.40
740	63.0	0.1	119.469	0.161	1.29	77	1.88	65	53	65	99.4	68	0.113	0.336	21.30
741	63.0	-0.1	119.631	0.162	1.29	77	1.87	65	53	65	100.3	68	0.113	0.336	21.30
742	62.9	0.1	119.793	0.162	1.29	77	1.88	65	53	64	100.3	68	0.113	0.336	21.30
743	63.1	-0.1	119.955	0.162	1.29	77	1.88	65	53	65	100.5	68	0.111	0.333	21.21
744	63.0	0.1	120.117	0.162	1.29	77	1.88	65	53	65	101.3	68	0.108	0.329	20.97

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 12:35

Test Length: 1228 min

Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg

Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
745	62.9	0.0	120.278	0.161	1.28	77	1.88	65	53	65	101.3	71	0.112	0.335	21.05
746	63.0	-0.1	120.439	0.161	1.29	77	1.88	65	53	65	100.5	69	0.114	0.338	21.34
747	63.0	0.0	120.600	0.161	1.29	77	1.88	65	53	65	99.3	68	0.115	0.339	21.45
748	63.0	0.0	120.762	0.162	1.28	77	1.88	65	53	65	99.6	67	0.113	0.336	21.39
749	63.0	0.0	120.924	0.162	1.30	77	1.88	65	53	65	99.9	66	0.113	0.336	21.27
750	63.0	0.0	121.086	0.162	1.29	77	1.87	65	53	65	100.1	66	0.113	0.336	21.26
751	63.0	0.0	121.247	0.161	1.29	77	1.87	65	53	64	99.8	66	0.110	0.332	21.12
752	63.0	0.0	121.409	0.162	1.28	77	1.88	65	53	64	100.7	65	0.113	0.336	21.11
753	63.0	0.0	121.570	0.161	1.29	77	1.87	65	53	64	99.6	65	0.114	0.338	21.29
754	63.0	0.1	121.732	0.162	1.29	77	1.87	65	53	65	100.3	65	0.108	0.329	21.05
755	62.9	0.1	121.893	0.161	1.29	77	1.88	65	53	65	100.9	68	0.110	0.332	20.89
756	62.8	0.1	122.055	0.162	1.28	77	1.87	65	53	65	101.3	65	0.114	0.338	21.18
757	62.7	0.1	122.217	0.162	1.29	77	1.87	65	53	65	100.1	64	0.112	0.335	21.23
758	62.8	-0.1	122.378	0.161	1.29	77	1.86	65	53	64	99.3	64	0.114	0.338	21.22
759	62.8	0.0	122.540	0.162	1.29	77	1.88	65	53	64	99.8	64	0.113	0.336	21.27
760	62.7	0.1	122.701	0.161	1.29	77	1.87	64	53	64	99.1	64	0.114	0.338	21.27
761	62.8	-0.1	122.863	0.162	1.30	77	1.87	64	53	64	99.7	64	0.113	0.336	21.27
762	62.7	0.1	123.025	0.162	1.30	77	1.87	64	53	64	99.7	64	0.114	0.338	21.27
763	62.8	-0.1	123.187	0.162	1.29	77	1.87	64	53	64	99.5	64	0.115	0.339	21.36
764	62.8	0.0	123.349	0.162	1.30	77	1.87	64	53	64	99.5	64	0.112	0.335	21.27
765	62.7	0.1	123.510	0.161	1.29	77	1.87	64	53	64	99.0	63	0.115	0.339	21.26
766	62.7	0.0	123.672	0.162	1.29	77	1.87	64	53	64	99.2	63	0.115	0.339	21.39
767	62.8	-0.1	123.833	0.161	1.29	77	1.87	64	53	64	98.4	63	0.114	0.338	21.34
768	62.8	0.0	123.995	0.162	1.29	77	1.87	64	53	64	98.7	63	0.119	0.345	21.53
769	62.8	0.1	124.157	0.162	1.30	77	1.87	64	53	64	98.3	63	0.114	0.338	21.53
770	62.8	-0.1	124.319	0.162	1.28	77	1.87	64	53	63	99.0	63	0.112	0.335	21.20
771	62.8	0.0	124.480	0.161	1.30	77	1.87	64	53	63	99.2	63	0.114	0.338	21.20
772	62.8	0.1	124.642	0.162	1.29	77	1.87	64	53	62	99.7	63	0.113	0.336	21.25
773	62.8	-0.1	124.803	0.161	1.29	77	1.87	64	53	63	99.5	63	0.109	0.330	21.01
774	62.8	0.1	124.965	0.162	1.30	77	1.87	64	53	63	101.2	63	0.109	0.330	20.82
775	62.7	0.0	125.126	0.161	1.29	77	1.87	64	53	63	100.4	63	0.114	0.338	21.06
776	62.8	0.0	125.289	0.163	1.30	77	1.87	63	53	63	100.6	62	0.113	0.336	21.24
777	62.8	0.0	125.451	0.162	1.29	77	1.87	63	53	62	99.6	62	0.113	0.336	21.18
778	62.9	-0.1	125.613	0.162	1.29	77	1.86	63	53	63	99.6	62	0.114	0.338	21.23
779	62.8	0.1	125.774	0.161	1.29	77	1.87	63	54	63	99.2	62	0.110	0.332	21.09
780	62.9	-0.1	125.936	0.162	1.29	77	1.87	63	54	63	100.0	62	0.115	0.339	21.13
781	62.8	0.0	126.097	0.161	1.30	77	1.86	63	54	62	98.7	62	0.116	0.341	21.41
782	62.8	0.1	126.259	0.162	1.29	77	1.87	63	54	62	98.8	62	0.113	0.336	21.32
783	62.8	0.0	126.421	0.162	1.30	77	1.87	63	54	62	99.3	62	0.114	0.338	21.23
784	62.8	0.0	126.584	0.163	1.29	77	1.87	63	54	62	99.9	62	0.115	0.339	21.32
785	62.8	0.0	126.745	0.161	1.29	77	1.86	63	54	62	98.6	62	0.113	0.336	21.28
786	62.7	0.0	126.907	0.162	1.29	77	1.87	63	54	62	99.6	65	0.114	0.338	21.26
787	62.6	0.1	127.068	0.161	1.29	77	1.87	63	54	62	98.9	62	0.114	0.338	21.31
788	62.6	0.0	127.230	0.162	1.30	77	1.87	63	54	62	99.1	62	0.115	0.339	21.32

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
789	62.5	0.1	127.392	0.162	1.29	77	1.88	63	54	62	99.3	64	0.113	0.336	21.30
790	62.2	0.3	127.554	0.162	1.30	77	1.88	63	54	62	99.8	66	0.114	0.338	21.29
791	62.0	0.2	127.716	0.162	1.29	77	1.87	63	54	62	99.8	67	0.115	0.339	21.41
792	61.7	0.3	127.877	0.161	1.29	77	1.88	63	54	62	99.0	68	0.114	0.338	21.43
793	61.3	0.3	128.039	0.162	1.29	76	1.88	63	54	62	100.0	69	0.113	0.336	21.36
794	61.0	0.3	128.200	0.161	1.29	76	1.87	63	54	62	99.9	69	0.113	0.336	21.32
795	60.5	0.5	128.361	0.161	1.30	76	1.87	63	54	62	99.8	70	0.115	0.339	21.43
796	60.1	0.4	128.523	0.162	1.29	76	1.88	63	54	62	100.1	71	0.115	0.339	21.54
797	59.7	0.3	128.685	0.162	1.30	76	1.88	63	54	62	100.0	71	0.114	0.338	21.50
798	59.3	0.4	128.847	0.162	1.29	76	1.87	64	54	61	100.5	73	0.113	0.336	21.43
799	58.8	0.5	129.009	0.162	1.29	76	1.88	64	54	61	101.0	74	0.113	0.336	21.41
800	58.3	0.5	129.170	0.161	1.29	76	1.88	64	54	61	100.4	73	0.113	0.336	21.41
801	57.9	0.4	129.331	0.161	1.29	76	1.87	64	54	61	100.4	74	0.113	0.336	21.41
802	57.5	0.5	129.492	0.161	1.30	76	1.87	64	54	62	100.2	75	0.116	0.341	21.58
803	57.0	0.5	129.654	0.162	1.29	76	1.88	64	54	62	101.0	75	0.108	0.329	21.35
804	56.4	0.5	129.816	0.162	1.29	76	1.88	64	54	61	101.9	75	0.113	0.336	21.21
805	55.9	0.5	129.977	0.161	1.29	76	1.87	64	54	62	100.8	75	0.115	0.339	21.54
806	55.4	0.5	130.138	0.161	1.28	76	1.87	64	54	62	99.5	75	0.118	0.344	21.77
807	54.9	0.5	130.299	0.161	1.29	76	1.88	64	54	62	99.2	76	0.114	0.338	21.74
808	54.6	0.3	130.460	0.161	1.30	76	1.87	65	54	62	100.0	76	0.112	0.335	21.46
809	53.9	0.6	130.621	0.161	1.29	76	1.87	65	54	63	100.7	76	0.113	0.336	21.42
810	53.5	0.4	130.784	0.163	1.29	76	1.87	65	54	63	101.9	75	0.113	0.336	21.45
811	53.0	0.6	130.945	0.161	1.29	76	1.88	65	55	64	100.2	75	0.116	0.341	21.59
812	52.4	0.5	131.106	0.161	1.29	76	1.88	65	55	64	100.1	74	0.110	0.332	21.43
813	51.9	0.6	131.267	0.161	1.29	76	1.89	65	55	64	100.5	76	0.116	0.341	21.44
814	51.7	0.1	131.428	0.161	1.29	76	1.88	65	55	64	100.2	75	0.113	0.336	21.60
815	51.1	0.6	131.589	0.161	1.29	76	1.88	65	55	64	99.9	75	0.115	0.339	21.54
816	50.5	0.5	131.751	0.162	1.29	76	1.88	65	55	64	101.0	75	0.110	0.332	21.40
817	50.2	0.4	131.912	0.161	1.29	76	1.88	65	55	64	101.2	77	0.112	0.335	21.27
818	49.8	0.4	132.073	0.161	1.29	76	1.88	65	55	64	101.0	76	0.115	0.339	21.52
819	49.2	0.6	132.234	0.161	1.29	76	1.88	65	55	64	100.1	76	0.114	0.338	21.61
820	48.7	0.4	132.395	0.161	1.29	76	1.88	65	55	65	99.5	76	0.119	0.345	21.79
821	48.3	0.5	132.556	0.161	1.29	76	1.88	66	55	65	99.5	76	0.110	0.332	21.61
822	47.8	0.5	132.718	0.162	1.29	76	1.88	66	55	65	100.9	76	0.116	0.341	21.46
823	47.5	0.3	132.879	0.161	1.28	76	1.88	66	55	65	100.5	76	0.111	0.333	21.51
824	47.1	0.4	133.040	0.161	1.29	76	1.88	66	55	65	100.1	72	0.116	0.341	21.47
825	47.0	0.1	133.201	0.161	1.29	76	1.88	65	55	66	99.8	71	0.111	0.333	21.42
826	46.6	0.3	133.362	0.161	1.29	76	1.88	65	55	65	100.4	70	0.111	0.333	21.16
827	46.4	0.2	133.523	0.161	1.29	76	1.87	65	55	65	100.7	70	0.113	0.336	21.25
828	46.3	0.1	133.685	0.162	1.29	76	1.87	65	55	65	100.7	68	0.113	0.336	21.32
829	46.2	0.1	133.847	0.162	1.29	76	1.88	65	55	64	100.8	68	0.110	0.332	21.16
830	46.2	0.0	134.008	0.161	1.29	76	1.87	65	55	65	100.0	68	0.118	0.344	21.40
831	46.0	0.2	134.169	0.161	1.28	76	1.88	65	55	64	98.8	68	0.116	0.341	21.68
832	46.0	0.0	134.330	0.161	1.29	76	1.88	65	55	64	98.9	68	0.111	0.333	21.35

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
833	45.8	0.1	134.491	0.161	1.29	76	1.88	65	55	65	100.1	67	0.111	0.333	21.10
834	45.8	0.0	134.653	0.162	1.29	76	1.88	65	55	64	100.8	67	0.115	0.339	21.28
835	45.8	0.0	134.814	0.161	1.29	76	1.87	65	55	64	99.4	67	0.114	0.338	21.42
836	45.8	0.0	134.976	0.162	1.29	76	1.87	65	55	64	100.3	67	0.110	0.332	21.19
837	45.8	0.1	135.137	0.161	1.29	76	1.88	65	55	64	100.3	67	0.113	0.336	21.14
838	45.7	0.1	135.298	0.161	1.29	76	1.87	65	55	64	100.0	67	0.114	0.338	21.33
839	45.6	0.1	135.459	0.161	1.30	76	1.87	65	55	64	99.9	67	0.110	0.332	21.19
840	45.7	0.0	135.621	0.162	1.29	76	1.87	65	55	64	100.4	67	0.118	0.344	21.38
841	45.7	0.0	135.783	0.162	1.28	76	1.87	65	55	64	99.7	67	0.112	0.335	21.47
842	45.7	0.0	135.944	0.161	1.29	76	1.87	65	55	64	99.9	67	0.109	0.330	21.05
843	45.7	0.0	136.105	0.161	1.29	76	1.88	65	55	64	101.1	67	0.110	0.332	20.95
844	45.6	0.0	136.266	0.161	1.29	76	1.87	65	55	64	100.8	67	0.114	0.338	21.19
845	45.7	-0.1	136.428	0.162	1.29	76	1.88	65	55	64	100.5	67	0.113	0.336	21.33
846	45.7	0.0	136.589	0.161	1.29	76	1.87	65	55	64	99.2	67	0.117	0.342	21.47
847	45.7	0.0	136.752	0.163	1.29	76	1.88	65	55	64	99.9	67	0.115	0.339	21.56
848	45.6	0.0	136.913	0.161	1.29	76	1.87	65	55	64	98.8	67	0.114	0.338	21.42
849	45.6	0.0	137.074	0.161	1.29	76	1.88	65	55	64	99.0	67	0.116	0.341	21.47
850	45.7	-0.1	137.235	0.161	1.29	76	1.87	65	55	64	99.1	68	0.113	0.336	21.43
851	45.6	0.1	137.396	0.161	1.30	76	1.88	65	55	64	99.3	67	0.115	0.339	21.39
852	45.6	0.0	137.558	0.162	1.29	76	1.87	65	55	64	100.1	67	0.111	0.333	21.28
853	45.6	0.0	137.720	0.162	1.29	76	1.87	65	55	64	100.5	67	0.114	0.338	21.24
854	45.6	0.0	137.881	0.161	1.29	76	1.87	65	55	65	99.3	67	0.117	0.342	21.52
855	45.6	0.0	138.043	0.162	1.28	77	1.87	65	55	64	99.6	68	0.111	0.333	21.39
856	45.7	-0.1	138.204	0.161	1.29	77	1.88	65	55	64	99.8	67	0.111	0.333	21.10
857	45.7	0.0	138.365	0.161	1.29	77	1.88	65	55	64	99.8	68	0.117	0.342	21.39
858	45.6	0.1	138.526	0.161	1.29	77	1.87	65	55	64	98.8	68	0.115	0.339	21.58
859	45.6	0.0	138.688	0.162	1.30	77	1.87	65	55	64	99.1	68	0.116	0.341	21.54
860	45.7	-0.1	138.850	0.162	1.29	77	1.87	65	55	64	99.4	68	0.113	0.336	21.44
861	45.7	0.0	139.011	0.161	1.29	77	1.88	65	55	64	99.6	67	0.110	0.332	21.15
862	45.6	0.0	139.173	0.162	1.29	77	1.88	65	54	64	100.9	68	0.113	0.336	21.15
863	45.6	0.0	139.334	0.161	1.29	77	1.88	65	54	64	99.7	68	0.116	0.341	21.44
864	45.6	0.1	139.495	0.161	1.29	77	1.88	65	55	65	98.9	70	0.115	0.339	21.56
865	45.6	0.0	139.656	0.161	1.29	77	1.88	65	55	65	98.7	68	0.116	0.341	21.56
866	45.7	-0.1	139.819	0.163	1.29	77	1.88	65	55	64	100.5	67	0.108	0.329	21.20
867	45.7	0.0	139.980	0.161	1.29	77	1.88	65	55	64	100.0	66	0.115	0.339	21.13
868	45.7	0.0	140.142	0.162	1.29	77	1.88	65	55	64	100.5	66	0.110	0.332	21.22
869	45.7	0.0	140.303	0.161	1.28	77	1.88	65	55	64	99.6	65	0.115	0.339	21.21
870	45.6	0.0	140.464	0.161	1.29	77	1.88	65	55	64	99.2	65	0.113	0.336	21.34
871	45.7	-0.1	140.625	0.161	1.29	77	1.88	64	55	64	99.1	65	0.114	0.338	21.29
872	45.6	0.1	140.787	0.162	1.30	77	1.87	64	55	64	99.5	64	0.115	0.339	21.37
873	45.6	0.0	140.949	0.162	1.29	77	1.88	64	55	64	98.9	64	0.117	0.342	21.50
874	45.7	0.0	141.111	0.162	1.29	77	1.88	64	55	64	98.9	64	0.112	0.335	21.36
875	45.7	0.0	141.272	0.161	1.29	77	1.87	64	55	64	98.7	64	0.116	0.341	21.32
876	45.7	0.0	141.433	0.161	1.29	77	1.87	64	55	64	99.0	64	0.111	0.333	21.27

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 12:35
Test Length: 1228 min
Recording Interval: 1 min

Test Date: 12/4/24
Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
 Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
877	45.7	0.0	141.594	0.161	1.30	77	1.87	64	55	64	99.1	64	0.116	0.341	21.27
878	45.7	0.0	141.756	0.162	1.29	77	1.87	64	55	64	99.6	64	0.112	0.335	21.32
879	45.7	0.0	141.918	0.162	1.30	77	1.87	64	55	64	99.9	64	0.112	0.335	21.13
880	45.6	0.0	142.080	0.162	1.29	77	1.87	64	55	64	99.9	63	0.115	0.339	21.26
881	45.7	-0.1	142.241	0.161	1.29	77	1.87	64	55	64	99.2	63	0.110	0.332	21.16
882	45.7	0.0	142.402	0.161	1.29	77	1.88	64	55	63	99.2	63	0.117	0.342	21.25
883	45.7	0.0	142.564	0.162	1.30	77	1.87	64	55	64	99.5	63	0.111	0.333	21.30
884	45.7	0.0	142.725	0.161	1.30	77	1.87	64	55	64	98.9	63	0.116	0.341	21.25
885	45.7	0.0	142.887	0.162	1.30	77	1.87	64	55	63	99.0	63	0.116	0.341	21.48
886	45.7	0.1	143.049	0.162	1.29	77	1.88	64	55	63	99.0	63	0.111	0.333	21.25
887	45.7	0.0	143.211	0.162	1.29	77	1.87	64	55	63	100.0	63	0.112	0.335	21.06
888	45.7	-0.1	143.372	0.161	1.29	77	1.87	64	55	63	99.7	62	0.112	0.335	21.10
889	45.7	0.0	143.533	0.161	1.29	77	1.87	63	55	63	99.0	62	0.117	0.342	21.32
890	45.7	0.0	143.695	0.162	1.30	77	1.87	63	55	62	99.2	62	0.111	0.333	21.28
891	45.7	0.0	143.856	0.161	1.30	77	1.88	63	55	62	99.3	62	0.111	0.333	20.99
892	45.7	0.0	144.019	0.163	1.30	77	1.87	63	55	62	100.8	62	0.115	0.339	21.18
893	45.6	0.1	144.181	0.162	1.28	77	1.88	63	55	62	99.6	65	0.114	0.338	21.35
894	45.5	0.1	144.342	0.161	1.29	77	1.87	63	55	62	98.8	63	0.114	0.338	21.32
895	45.5	0.0	144.503	0.161	1.29	77	1.87	63	55	62	99.1	62	0.110	0.332	21.10
896	45.5	0.0	144.665	0.162	1.30	77	1.87	63	55	62	100.1	62	0.114	0.338	21.09
897	45.5	-0.1	144.826	0.161	1.30	77	1.87	63	55	62	99.4	65	0.113	0.336	21.26
898	45.5	0.0	144.988	0.162	1.30	77	1.87	63	55	62	99.9	63	0.112	0.335	21.18
899	45.5	0.0	145.151	0.163	1.30	77	1.87	63	55	62	99.9	62	0.119	0.345	21.42
900	45.5	0.0	145.313	0.162	1.29	77	1.87	63	55	62	98.5	62	0.113	0.336	21.46
901	45.5	0.0	145.474	0.161	1.29	76	1.87	63	55	62	98.9	63	0.110	0.332	21.05
902	45.6	0.0	145.636	0.162	1.29	76	1.87	63	55	62	100.5	63	0.115	0.339	21.16
903	45.6	0.0	145.797	0.161	1.29	76	1.87	63	55	62	98.9	63	0.116	0.341	21.44
904	45.5	0.0	145.959	0.162	1.29	76	1.87	63	55	62	98.6	63	0.118	0.344	21.57
905	45.5	0.0	146.120	0.161	1.30	76	1.88	63	55	62	97.5	63	0.118	0.344	21.67
906	45.5	-0.1	146.283	0.163	1.30	76	1.87	63	55	62	99.1	64	0.113	0.336	21.45
907	45.5	0.0	146.445	0.162	1.30	76	1.87	63	55	62	99.0	64	0.118	0.344	21.46
908	45.6	0.0	146.607	0.162	1.29	76	1.87	63	55	62	98.6	64	0.117	0.342	21.64
909	45.6	0.0	146.768	0.161	1.30	76	1.88	63	55	62	98.4	64	0.110	0.332	21.27
910	45.5	0.0	146.930	0.162	1.29	76	1.87	63	55	63	100.6	65	0.111	0.333	21.00
911	45.5	0.0	147.091	0.161	1.30	76	1.88	63	55	62	100.1	65	0.115	0.339	21.24
912	45.6	-0.1	147.252	0.161	1.29	76	1.87	63	55	63	99.6	65	0.111	0.333	21.24
913	45.6	0.0	147.415	0.163	1.30	76	1.87	63	55	62	101.3	65	0.111	0.333	21.05
914	45.6	0.0	147.577	0.162	1.30	76	1.87	63	55	62	101.0	65	0.112	0.335	21.10
915	45.6	0.0	147.738	0.161	1.29	76	1.87	63	55	62	100.2	65	0.111	0.333	21.10
916	45.5	0.0	147.899	0.161	1.30	76	1.87	63	55	63	100.8	66	0.108	0.329	20.92
917	45.7	-0.1	148.061	0.162	1.29	76	1.87	63	55	63	101.3	66	0.116	0.341	21.17
918	45.6	0.1	148.222	0.161	1.30	76	1.87	63	55	63	99.3	66	0.115	0.339	21.50
919	45.6	-0.1	148.384	0.162	1.29	76	1.87	63	55	63	99.7	66	0.111	0.333	21.26
920	45.6	0.0	148.546	0.162	1.30	76	1.87	63	55	63	100.8	66	0.110	0.332	21.03

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 12:35
Test Length: 1228 min
Recording Interval: 1 min

Test Date: 12/4/24
Meter Box Y Regression Offset: 1.015
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.015
Sampling Box ID: 335
Sample Train Leak Checks
 Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
921	45.6	0.1	148.708	0.162	1.29	76	1.88	63	55	63	101.5	66	0.110	0.332	20.98
922	45.6	0.0	148.870	0.162	1.29	76	1.87	63	55	63	101.4	66	0.112	0.335	21.07
923	45.5	0.1	149.031	0.161	1.29	76	1.86	63	55	63	100.3	66	0.112	0.335	21.17
924	45.5	0.0	149.192	0.161	1.29	76	1.88	63	55	64	100.3	69	0.112	0.335	21.20
925	45.3	0.2	149.354	0.162	1.29	76	1.87	64	55	64	101.4	70	0.110	0.332	21.14
926	45.2	0.1	149.515	0.161	1.29	76	1.88	64	55	64	100.6	70	0.115	0.339	21.30
927	45.1	0.1	149.677	0.162	1.29	76	1.87	64	55	64	100.4	71	0.115	0.339	21.54
928	44.9	0.3	149.839	0.162	1.28	76	1.88	64	55	64	100.4	71	0.110	0.332	21.32
929	44.6	0.2	150.000	0.161	1.29	76	1.87	64	55	64	100.6	72	0.113	0.336	21.23
930	44.3	0.3	150.161	0.161	1.29	76	1.87	64	55	64	100.9	73	0.111	0.333	21.30
931	43.8	0.5	150.322	0.161	1.29	76	1.88	64	55	64	100.5	73	0.116	0.341	21.45
932	43.4	0.4	150.483	0.161	1.29	76	1.87	64	55	64	99.9	74	0.113	0.336	21.56
933	42.9	0.4	150.646	0.163	1.29	76	1.87	65	55	64	101.4	75	0.113	0.336	21.43
934	42.4	0.5	150.807	0.161	1.28	76	1.87	65	55	64	100.9	76	0.110	0.332	21.31
935	42.0	0.4	150.968	0.161	1.29	76	1.87	65	55	64	101.5	77	0.112	0.335	21.28
936	41.5	0.5	151.129	0.161	1.29	76	1.87	65	55	64	101.4	77	0.112	0.335	21.39
937	41.0	0.5	151.289	0.160	1.29	76	1.87	65	55	64	100.6	78	0.112	0.335	21.40
938	40.6	0.4	151.451	0.162	1.29	76	1.89	65	55	64	101.8	78	0.113	0.336	21.46
939	40.1	0.5	151.613	0.162	1.29	76	1.87	66	55	64	101.4	76	0.113	0.336	21.48
940	39.7	0.4	151.774	0.161	1.28	76	1.89	66	55	65	100.8	77	0.111	0.333	21.38
941	39.3	0.4	151.934	0.160	1.29	76	1.88	66	55	65	100.4	76	0.114	0.338	21.43
942	38.7	0.6	152.095	0.161	1.29	76	1.89	66	55	65	100.0	76	0.118	0.344	21.75
943	38.3	0.4	152.256	0.161	1.29	77	1.88	66	56	65	99.1	77	0.116	0.341	21.85
944	37.9	0.4	152.417	0.161	1.29	76	1.88	66	56	65	99.4	76	0.113	0.336	21.62
945	37.4	0.5	152.579	0.162	1.29	76	1.89	66	56	65	100.7	77	0.115	0.339	21.57
946	36.8	0.6	152.740	0.161	1.28	77	1.89	66	56	65	100.3	77	0.112	0.335	21.53
947	36.4	0.4	152.901	0.161	1.29	77	1.88	66	56	65	100.2	78	0.116	0.341	21.59
948	35.8	0.6	153.062	0.161	1.29	77	1.88	66	56	65	100.1	77	0.112	0.335	21.59
949	35.4	0.4	153.223	0.161	1.29	77	1.89	66	56	65	100.8	77	0.109	0.330	21.24
950	35.1	0.3	153.384	0.161	1.29	77	1.88	66	56	65	101.7	78	0.112	0.335	21.25
951	34.5	0.6	153.546	0.162	1.28	77	1.89	66	56	65	102.0	77	0.112	0.335	21.40
952	34.1	0.4	153.707	0.161	1.28	77	1.89	66	56	65	101.0	77	0.111	0.333	21.34
953	33.6	0.5	153.867	0.160	1.28	77	1.89	67	56	65	100.7	78	0.111	0.333	21.30
954	32.9	0.6	154.028	0.161	1.29	77	1.89	67	56	65	101.5	79	0.112	0.335	21.37
955	32.6	0.3	154.189	0.161	1.29	77	1.88	67	56	65	101.0	78	0.114	0.338	21.51
956	32.1	0.6	154.350	0.161	1.29	77	1.89	67	56	65	100.4	78	0.114	0.338	21.60
957	31.7	0.4	154.512	0.162	1.29	77	1.89	67	56	65	101.1	79	0.112	0.335	21.51
958	31.2	0.5	154.673	0.161	1.28	77	1.88	67	56	65	100.6	79	0.115	0.339	21.57
959	30.7	0.4	154.833	0.160	1.28	77	1.89	67	56	65	99.8	79	0.112	0.335	21.57
960	30.4	0.3	154.994	0.161	1.29	77	1.89	67	56	66	100.5	75	0.112	0.335	21.39
961	30.2	0.2	155.155	0.161	1.29	77	1.88	67	57	66	100.0	72	0.116	0.341	21.51
962	29.9	0.3	155.317	0.162	1.29	77	1.88	67	57	66	100.1	72	0.112	0.335	21.48
963	29.8	0.1	155.478	0.161	1.29	77	1.88	66	57	66	100.2	71	0.110	0.332	21.18
964	29.7	0.1	155.640	0.162	1.28	77	1.88	66	57	65	101.7	72	0.110	0.332	21.09

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
965	29.6	0.1	155.800	0.160	1.28	77	1.88	66	57	65	100.3	70	0.113	0.336	21.22
966	29.5	0.1	155.961	0.161	1.29	77	1.88	66	57	65	100.7	69	0.107	0.327	21.05
967	29.4	0.1	156.123	0.162	1.29	77	1.88	66	57	65	102.0	68	0.110	0.332	20.88
968	29.3	0.1	156.285	0.162	1.29	77	1.88	66	57	65	101.7	67	0.112	0.335	21.10
969	29.3	0.0	156.446	0.161	1.29	77	1.88	66	56	64	99.9	66	0.114	0.338	21.27
970	29.3	0.0	156.607	0.161	1.28	77	1.88	66	56	65	99.6	66	0.111	0.333	21.22
971	29.2	0.1	156.768	0.161	1.28	77	1.88	66	56	64	100.1	66	0.110	0.332	21.03
972	29.2	0.0	156.929	0.161	1.29	77	1.87	66	56	64	100.6	65	0.110	0.332	20.97
973	29.2	0.0	157.091	0.162	1.29	77	1.88	65	56	64	100.8	65	0.115	0.339	21.20
974	29.2	0.0	157.252	0.161	1.29	77	1.88	65	56	64	98.8	65	0.117	0.342	21.52
975	29.1	0.0	157.415	0.163	1.29	77	1.88	65	56	64	99.7	64	0.111	0.333	21.33
976	29.2	0.0	157.576	0.161	1.29	77	1.88	65	56	65	99.5	64	0.111	0.333	21.03
977	29.2	-0.1	157.737	0.161	1.28	77	1.87	65	56	64	100.2	64	0.111	0.333	21.03
978	29.2	0.1	157.898	0.161	1.29	77	1.88	65	56	64	99.5	64	0.117	0.342	21.32
979	29.2	0.0	158.059	0.161	1.29	77	1.87	65	56	64	98.8	64	0.111	0.333	21.32
980	29.2	0.0	158.221	0.162	1.29	77	1.87	65	56	64	99.6	64	0.116	0.341	21.27
981	29.2	-0.1	158.383	0.162	1.28	77	1.88	65	56	64	99.1	64	0.116	0.341	21.50
982	29.1	0.1	158.544	0.161	1.29	77	1.87	65	56	64	98.6	64	0.110	0.332	21.22
983	29.1	0.0	158.705	0.161	1.28	77	1.88	64	56	64	99.7	64	0.112	0.335	21.03
984	29.2	0.0	158.867	0.162	1.29	77	1.88	64	56	64	100.5	63	0.112	0.335	21.12
985	29.1	0.1	159.028	0.161	1.30	77	1.88	64	56	63	99.1	63	0.117	0.342	21.34
986	29.2	-0.1	159.189	0.161	1.29	77	1.87	64	56	63	98.3	63	0.114	0.338	21.44
987	29.2	0.0	159.351	0.162	1.29	77	1.88	64	56	63	98.9	63	0.115	0.339	21.34
988	29.1	0.1	159.513	0.162	1.29	77	1.87	64	56	63	98.9	63	0.116	0.341	21.44
989	29.2	0.0	159.674	0.161	1.29	77	1.88	64	56	63	98.6	63	0.110	0.332	21.20
990	29.1	0.0	159.835	0.161	1.29	77	1.87	64	56	63	99.9	63	0.110	0.332	20.92
991	29.2	0.0	159.997	0.162	1.29	77	1.88	64	56	63	100.6	63	0.115	0.339	21.16
992	29.2	0.0	160.158	0.161	1.29	77	1.88	64	56	62	99.0	63	0.114	0.338	21.34
993	29.2	0.0	160.320	0.162	1.30	77	1.87	64	56	63	99.3	63	0.114	0.338	21.30
994	29.2	0.1	160.482	0.162	1.29	77	1.87	64	56	63	99.0	63	0.117	0.342	21.44
995	29.2	-0.1	160.643	0.161	1.30	77	1.88	63	56	62	98.4	64	0.112	0.335	21.35
996	29.2	0.0	160.805	0.162	1.29	77	1.87	64	56	62	100.0	63	0.110	0.332	21.02
997	29.2	0.0	160.966	0.161	1.29	77	1.88	63	56	62	99.8	63	0.114	0.338	21.11
998	29.3	-0.1	161.127	0.161	1.30	77	1.88	63	56	62	99.4	63	0.112	0.335	21.20
999	29.2	0.1	161.289	0.162	1.29	77	1.88	63	56	62	100.0	63	0.112	0.335	21.11
1000	29.3	-0.1	161.451	0.162	1.29	77	1.88	63	56	62	100.5	63	0.110	0.332	21.01
1001	29.2	0.0	161.613	0.162	1.29	76	1.88	63	56	62	101.0	63	0.110	0.332	20.92
1002	29.2	0.0	161.774	0.161	1.29	76	1.88	63	56	63	100.2	63	0.115	0.339	21.16
1003	29.3	-0.1	161.935	0.161	1.29	76	1.88	63	56	62	99.0	64	0.116	0.341	21.45
1004	29.3	0.0	162.097	0.162	1.30	76	1.88	63	56	62	99.2	64	0.113	0.336	21.36
1005	29.3	0.0	162.258	0.161	1.30	76	1.87	63	56	62	99.5	64	0.110	0.332	21.08
1006	29.4	-0.1	162.420	0.162	1.29	76	1.88	63	56	62	100.5	65	0.116	0.341	21.23
1007	29.3	0.1	162.582	0.162	1.29	76	1.88	63	56	62	99.6	65	0.116	0.341	21.52
1008	29.3	0.0	162.744	0.162	1.29	76	1.88	63	56	63	99.3	65	0.112	0.335	21.34

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1009	29.3	0.0	162.905	0.161	1.29	76	1.87	63	56	63	99.6	65	0.112	0.335	21.15
1010	29.3	0.0	163.066	0.161	1.29	76	1.88	63	56	62	99.9	65	0.113	0.336	21.20
1011	29.4	0.0	163.227	0.161	1.29	76	1.87	63	56	63	100.0	66	0.111	0.333	21.16
1012	29.4	0.0	163.389	0.162	1.29	76	1.88	63	56	63	100.8	65	0.112	0.335	21.11
1013	29.4	0.0	163.551	0.162	1.30	76	1.88	63	56	63	100.8	66	0.112	0.335	21.16
1014	29.3	0.1	163.713	0.162	1.29	76	1.87	63	56	63	100.6	66	0.113	0.336	21.22
1015	29.3	0.0	163.874	0.161	1.29	76	1.88	63	56	63	100.2	66	0.109	0.330	21.07
1016	29.3	0.0	164.035	0.161	1.29	76	1.87	63	56	63	100.6	66	0.113	0.336	21.07
1017	29.4	-0.1	164.197	0.162	1.29	76	1.88	63	56	63	100.6	66	0.114	0.338	21.31
1018	29.4	0.0	164.358	0.161	1.29	76	1.87	63	56	63	99.5	66	0.112	0.335	21.26
1019	29.4	0.0	164.519	0.161	1.29	76	1.88	64	56	63	100.2	66	0.109	0.330	21.03
1020	29.4	0.0	164.681	0.162	1.29	76	1.87	64	56	64	101.6	66	0.110	0.332	20.93
1021	29.4	0.0	164.843	0.162	1.29	76	1.87	64	56	64	101.4	66	0.113	0.336	21.12
1022	29.4	0.0	165.004	0.161	1.28	76	1.88	64	56	64	99.7	66	0.116	0.341	21.40
1023	29.4	0.0	165.165	0.161	1.29	76	1.88	64	56	64	98.8	66	0.115	0.339	21.50
1024	29.4	0.0	165.326	0.161	1.30	76	1.88	64	56	64	98.6	66	0.116	0.341	21.50
1025	29.4	0.0	165.488	0.162	1.29	76	1.88	64	56	64	99.6	66	0.111	0.333	21.31
1026	29.4	0.0	165.649	0.161	1.29	76	1.88	64	56	64	99.7	67	0.114	0.338	21.23
1027	29.4	0.0	165.811	0.162	1.29	76	1.87	64	56	64	100.4	67	0.113	0.336	21.33
1028	29.5	-0.1	165.972	0.161	1.29	76	1.88	64	56	64	99.5	67	0.114	0.338	21.33
1029	29.5	0.0	166.133	0.161	1.29	76	1.87	64	56	64	99.3	67	0.115	0.339	21.42
1030	29.3	0.2	166.294	0.161	1.29	76	1.88	64	56	64	98.9	69	0.117	0.342	21.58
1031	29.3	-0.1	166.456	0.162	1.29	76	1.88	64	56	64	99.5	67	0.112	0.335	21.44
1032	29.2	0.1	166.617	0.161	1.30	76	1.87	64	56	64	99.5	67	0.113	0.336	21.24
1033	29.3	0.0	166.779	0.162	1.28	76	1.88	64	56	65	100.7	68	0.112	0.335	21.25
1034	29.3	0.0	166.940	0.161	1.29	76	1.88	64	56	63	100.5	69	0.110	0.332	21.12
1035	29.2	0.1	167.101	0.161	1.28	76	1.88	64	56	64	100.8	67	0.111	0.333	21.07
1036	29.4	-0.2	167.262	0.161	1.29	77	1.87	64	56	64	100.4	66	0.112	0.335	21.13
1037	29.2	0.1	167.424	0.162	1.30	77	1.88	64	56	64	100.2	65	0.115	0.339	21.30
1038	29.3	0.0	167.585	0.161	1.29	77	1.88	64	56	64	98.8	65	0.115	0.339	21.43
1039	29.3	-0.1	167.748	0.163	1.29	77	1.87	64	56	64	100.0	65	0.113	0.336	21.34
1040	29.3	0.0	167.909	0.161	1.30	77	1.88	64	56	64	99.3	64	0.111	0.333	21.14
1041	29.2	0.1	168.070	0.161	1.29	77	1.88	64	56	64	99.6	64	0.114	0.338	21.18
1042	29.2	0.0	168.231	0.161	1.29	77	1.88	64	56	64	99.4	64	0.112	0.335	21.22
1043	29.3	-0.1	168.392	0.161	1.30	77	1.88	64	56	64	99.7	64	0.110	0.332	21.03
1044	29.3	0.0	168.554	0.162	1.29	77	1.88	64	56	63	100.9	66	0.112	0.335	21.05
1045	29.3	0.0	168.716	0.162	1.30	77	1.88	64	56	63	100.3	65	0.116	0.341	21.35
1046	29.3	-0.1	168.877	0.161	1.29	77	1.88	64	56	64	98.3	64	0.117	0.342	21.56
1047	29.3	0.0	169.039	0.162	1.29	77	1.88	64	56	63	98.8	64	0.112	0.335	21.36
1048	29.3	0.1	169.200	0.161	1.29	77	1.88	64	56	63	98.7	64	0.116	0.341	21.32
1049	29.2	0.0	169.361	0.161	1.30	77	1.88	64	56	63	98.3	64	0.117	0.342	21.55
1050	29.3	0.0	169.522	0.161	1.29	77	1.88	64	56	63	98.1	64	0.113	0.336	21.41
1051	29.3	0.0	169.684	0.162	1.30	77	1.87	64	56	63	99.1	65	0.117	0.342	21.42
1052	29.3	0.0	169.846	0.162	1.29	77	1.88	64	56	64	99.1	65	0.113	0.336	21.43

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1053	29.3	0.0	170.007	0.161	1.29	77	1.88	64	56	63	99.2	65	0.111	0.333	21.15
1054	29.3	0.0	170.168	0.161	1.29	77	1.88	64	56	63	99.6	66	0.116	0.341	21.30
1055	29.3	0.0	170.330	0.162	1.29	77	1.88	64	56	64	99.8	66	0.112	0.335	21.36
1056	29.2	0.1	170.491	0.161	1.29	77	1.88	64	56	64	99.4	69	0.115	0.339	21.34
1057	29.1	0.1	170.652	0.161	1.29	77	1.88	64	56	64	99.5	70	0.114	0.338	21.47
1058	28.9	0.2	170.814	0.162	1.28	77	1.88	64	56	64	100.1	70	0.113	0.336	21.39
1059	28.7	0.2	170.975	0.161	1.29	77	1.88	64	56	64	99.8	71	0.113	0.336	21.35
1060	28.5	0.2	171.137	0.162	1.28	77	1.88	64	56	64	101.1	72	0.109	0.330	21.18
1061	28.2	0.3	171.298	0.161	1.29	77	1.88	65	56	64	101.3	73	0.111	0.333	21.11
1062	27.7	0.5	171.459	0.161	1.29	77	1.88	65	56	64	100.8	73	0.115	0.339	21.40
1063	27.3	0.3	171.620	0.161	1.29	77	1.88	65	56	64	100.0	74	0.113	0.336	21.51
1064	27.0	0.4	171.782	0.162	1.29	77	1.89	65	56	64	100.6	75	0.114	0.338	21.48
1065	26.6	0.4	171.943	0.161	1.29	77	1.88	65	56	64	100.3	76	0.112	0.335	21.45
1066	26.2	0.3	172.104	0.161	1.28	77	1.88	65	56	64	100.7	77	0.112	0.335	21.38
1067	25.7	0.6	172.265	0.161	1.29	77	1.88	65	56	64	100.6	77	0.115	0.339	21.53
1068	25.3	0.4	172.426	0.161	1.29	77	1.88	65	56	64	99.8	77	0.116	0.341	21.72
1069	24.8	0.5	172.587	0.161	1.29	77	1.89	66	56	65	99.6	78	0.114	0.338	21.68
1070	24.2	0.5	172.749	0.162	1.28	77	1.88	66	56	65	100.7	78	0.113	0.336	21.55
1071	23.8	0.5	172.910	0.161	1.29	77	1.89	66	56	65	100.5	79	0.114	0.338	21.56
1072	23.3	0.4	173.071	0.161	1.28	77	1.89	66	57	65	100.4	79	0.114	0.338	21.62
1073	22.9	0.4	173.232	0.161	1.29	77	1.89	66	57	65	100.6	79	0.111	0.333	21.48
1074	22.4	0.6	173.393	0.161	1.29	77	1.89	66	57	65	101.3	80	0.111	0.333	21.34
1075	21.9	0.5	173.553	0.160	1.29	77	1.89	66	57	65	101.1	79	0.110	0.332	21.29
1076	21.3	0.6	173.715	0.162	1.28	77	1.89	66	57	64	102.0	79	0.115	0.339	21.48
1077	21.1	0.3	173.876	0.161	1.28	77	1.89	67	57	64	100.7	82	0.114	0.338	21.70
1078	20.6	0.5	174.037	0.161	1.29	77	1.89	67	57	64	100.1	79	0.116	0.341	21.74
1079	19.9	0.6	174.198	0.161	1.28	77	1.89	67	57	65	99.5	78	0.116	0.341	21.80
1080	19.6	0.3	174.358	0.160	1.29	77	1.90	67	57	65	99.1	78	0.112	0.335	21.60
1081	19.2	0.4	174.520	0.162	1.29	77	1.89	67	57	65	101.1	78	0.113	0.336	21.46
1082	18.6	0.6	174.681	0.161	1.29	77	1.89	67	57	65	100.6	78	0.114	0.338	21.55
1083	18.4	0.3	174.842	0.161	1.28	77	1.89	67	57	65	100.2	77	0.114	0.338	21.59
1084	17.8	0.6	175.002	0.160	1.28	77	1.89	67	57	66	99.6	77	0.112	0.335	21.48
1085	17.3	0.5	175.163	0.161	1.29	77	1.89	67	57	65	100.2	77	0.117	0.342	21.63
1086	16.8	0.4	175.324	0.161	1.29	77	1.90	67	57	65	99.7	77	0.113	0.336	21.67
1087	16.6	0.3	175.486	0.162	1.29	77	1.89	67	57	64	101.0	77	0.110	0.332	21.34
1088	16.1	0.5	175.647	0.161	1.29	77	1.89	67	58	65	100.8	77	0.116	0.341	21.48
1089	15.5	0.6	175.808	0.161	1.27	77	1.90	67	58	64	100.2	77	0.113	0.336	21.63
1090	15.3	0.3	175.968	0.160	1.28	77	1.90	67	58	64	99.3	77	0.115	0.339	21.58
1091	15.0	0.3	176.129	0.161	1.29	77	1.89	67	58	65	99.5	70	0.114	0.338	21.56
1092	14.7	0.3	176.290	0.161	1.29	77	1.89	66	58	65	99.7	69	0.108	0.329	21.14
1093	14.5	0.1	176.452	0.162	1.29	77	1.89	66	58	64	101.5	67	0.111	0.333	20.97
1094	14.4	0.1	176.613	0.161	1.28	77	1.89	66	58	65	100.5	67	0.113	0.336	21.19
1095	14.3	0.1	176.775	0.162	1.28	77	1.88	66	58	64	100.3	66	0.113	0.336	21.27
1096	14.3	0.0	176.936	0.161	1.29	77	1.89	66	58	64	99.5	65	0.112	0.335	21.21

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1097	14.2	0.0	177.096	0.160	1.29	77	1.89	66	58	63	98.8	65	0.114	0.338	21.24
1098	14.1	0.1	177.258	0.162	1.29	77	1.88	65	58	63	99.4	65	0.117	0.342	21.48
1099	14.1	0.1	177.420	0.162	1.29	77	1.89	65	58	63	99.1	64	0.112	0.335	21.37
1100	14.0	0.0	177.581	0.161	1.29	77	1.88	65	58	63	99.0	64	0.113	0.336	21.18
1101	14.0	0.0	177.742	0.161	1.28	77	1.89	65	57	63	99.2	63	0.114	0.338	21.26
1102	13.9	0.1	177.903	0.161	1.28	77	1.88	65	57	63	98.9	63	0.113	0.336	21.25
1103	13.9	0.0	178.064	0.161	1.29	77	1.89	65	57	63	98.9	63	0.115	0.339	21.30
1104	13.9	0.0	178.226	0.162	1.29	77	1.89	65	57	63	99.3	63	0.114	0.338	21.34
1105	13.9	0.0	178.388	0.162	1.30	77	1.88	64	57	63	99.5	63	0.112	0.335	21.20
1106	13.8	0.1	178.549	0.161	1.29	77	1.89	64	57	63	99.5	63	0.111	0.333	21.06
1107	13.9	-0.1	178.711	0.162	1.28	77	1.89	64	57	63	99.7	63	0.119	0.345	21.39
1108	13.9	-0.1	178.871	0.160	1.29	77	1.89	64	57	62	97.4	63	0.114	0.338	21.53
1109	13.8	0.1	179.033	0.162	1.29	77	1.88	64	57	63	98.9	63	0.113	0.336	21.25
1110	13.9	-0.1	179.194	0.161	1.29	77	1.89	64	57	62	99.1	63	0.113	0.336	21.20
1111	13.9	0.0	179.356	0.162	1.29	77	1.89	64	57	62	99.5	63	0.116	0.341	21.34
1112	13.9	0.0	179.518	0.162	1.28	77	1.88	64	57	62	99.3	63	0.112	0.335	21.30
1113	13.9	0.0	179.679	0.161	1.28	77	1.89	64	57	62	99.0	62	0.113	0.336	21.14
1114	13.9	0.0	179.840	0.161	1.29	77	1.88	63	57	62	99.2	62	0.113	0.336	21.18
1115	13.8	0.1	180.001	0.161	1.29	77	1.89	63	57	62	99.0	62	0.114	0.338	21.23
1116	14.0	-0.1	180.162	0.161	1.29	76	1.88	63	57	62	98.8	62	0.115	0.339	21.32
1117	14.0	0.0	180.324	0.162	1.29	76	1.88	63	57	62	99.1	62	0.115	0.339	21.37
1118	14.0	0.0	180.486	0.162	1.30	76	1.88	63	57	62	99.1	62	0.114	0.338	21.32
1119	13.9	0.1	180.647	0.161	1.29	76	1.89	63	57	62	98.6	62	0.115	0.339	21.32
1120	13.9	0.0	180.809	0.162	1.29	76	1.88	63	57	62	99.2	62	0.114	0.338	21.32
1121	13.9	0.0	180.970	0.161	1.29	76	1.88	63	57	62	98.7	62	0.114	0.338	21.28
1122	13.9	0.0	181.131	0.161	1.29	76	1.88	63	57	62	99.0	62	0.113	0.336	21.23
1123	13.9	0.0	181.292	0.161	1.30	76	1.88	63	57	62	99.1	62	0.114	0.338	21.23
1124	14.0	0.0	181.454	0.162	1.30	76	1.88	63	57	61	99.6	62	0.114	0.338	21.28
1125	13.9	0.0	181.616	0.162	1.29	76	1.89	63	57	62	99.6	62	0.113	0.336	21.23
1126	14.0	-0.1	181.778	0.162	1.29	76	1.88	62	57	61	99.9	62	0.112	0.335	21.13
1127	13.9	0.1	181.938	0.160	1.29	76	1.88	62	57	61	98.3	62	0.118	0.344	21.37
1128	14.1	-0.1	182.100	0.162	1.30	76	1.88	62	57	61	98.5	62	0.117	0.342	21.60
1129	13.8	0.2	182.261	0.161	1.29	76	1.89	62	57	61	98.3	61	0.108	0.329	21.12
1130	13.9	-0.1	182.423	0.162	1.30	76	1.88	62	57	61	100.3	64	0.116	0.341	21.10
1131	14.1	-0.1	182.585	0.162	1.30	76	1.88	62	57	61	99.8	63	0.115	0.339	21.45
1132	14.0	0.0	182.746	0.161	1.30	76	1.89	62	57	61	98.7	63	0.112	0.335	21.25
1133	14.1	0.0	182.908	0.162	1.29	76	1.88	62	57	61	100.2	63	0.111	0.333	21.06
1134	14.1	0.0	183.069	0.161	1.29	76	1.88	62	56	61	99.6	62	0.115	0.339	21.19
1135	14.0	0.0	183.230	0.161	1.30	76	1.88	62	56	61	99.0	63	0.114	0.338	21.33
1136	14.1	0.0	183.392	0.162	1.30	76	1.89	62	56	61	99.1	63	0.117	0.342	21.44
1137	14.1	0.0	183.554	0.162	1.30	76	1.89	62	56	61	99.0	63	0.113	0.336	21.39
1138	14.1	0.0	183.716	0.162	1.30	76	1.88	62	56	61	99.2	64	0.117	0.342	21.40
1139	14.1	0.0	183.877	0.161	1.29	75	1.88	62	56	61	99.0	64	0.110	0.332	21.27
1140	14.1	0.0	184.038	0.161	1.29	75	1.88	62	56	62	99.7	64	0.115	0.339	21.18

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1141	14.1	0.0	184.199	0.161	1.30	75	1.88	62	56	62	99.5	64	0.113	0.336	21.32
1142	14.1	0.1	184.361	0.162	1.29	75	1.89	62	56	62	99.6	64	0.117	0.342	21.41
1143	14.1	-0.1	184.522	0.161	1.29	75	1.88	62	56	62	98.8	64	0.113	0.336	21.41
1144	14.1	0.0	184.684	0.162	1.30	75	1.88	62	56	62	99.7	64	0.114	0.338	21.27
1145	14.1	0.0	184.845	0.161	1.29	75	1.88	62	56	62	99.3	65	0.115	0.339	21.37
1146	14.2	0.0	185.007	0.162	1.29	75	1.88	62	56	62	100.0	65	0.112	0.335	21.29
1147	14.1	0.0	185.168	0.161	1.29	75	1.88	62	56	62	99.6	65	0.114	0.338	21.24
1148	14.2	-0.1	185.329	0.161	1.30	75	1.88	62	56	62	99.5	65	0.114	0.338	21.34
1149	14.2	0.0	185.490	0.161	1.29	75	1.89	62	56	62	99.3	65	0.114	0.338	21.34
1150	14.2	0.0	185.652	0.162	1.29	75	1.89	62	56	62	99.7	65	0.116	0.341	21.43
1151	14.2	0.0	185.813	0.161	1.29	75	1.89	62	56	62	98.8	65	0.115	0.339	21.48
1152	14.3	-0.1	185.975	0.162	1.29	75	1.88	62	56	62	99.3	65	0.116	0.341	21.48
1153	14.2	0.1	186.136	0.161	1.29	75	1.88	62	56	63	99.1	65	0.111	0.333	21.29
1154	14.2	0.0	186.297	0.161	1.29	75	1.88	63	56	62	100.3	65	0.109	0.330	20.96
1155	14.3	-0.1	186.458	0.161	1.29	75	1.89	63	56	63	101.1	65	0.111	0.333	20.96
1156	14.3	0.0	186.620	0.162	1.30	75	1.89	63	56	63	101.3	66	0.113	0.336	21.16
1157	14.2	0.1	186.781	0.161	1.29	75	1.88	63	56	63	100.5	66	0.109	0.330	21.07
1158	14.3	-0.1	186.942	0.161	1.29	75	1.88	63	56	63	100.6	66	0.114	0.338	21.12
1159	14.3	0.0	187.103	0.161	1.29	75	1.88	63	56	63	100.0	65	0.113	0.336	21.30
1160	14.3	0.0	187.264	0.161	1.29	75	1.89	63	56	63	100.1	68	0.111	0.333	21.18
1161	14.2	0.1	187.425	0.161	1.30	75	1.88	63	56	63	100.4	67	0.114	0.338	21.25
1162	14.2	0.0	187.587	0.162	1.29	75	1.88	63	56	63	100.5	66	0.113	0.336	21.32
1163	14.2	0.0	187.749	0.162	1.29	75	1.89	63	56	63	100.0	66	0.116	0.341	21.40
1164	14.1	0.1	187.910	0.161	1.29	75	1.88	63	56	63	98.9	66	0.116	0.341	21.54
1165	14.2	-0.2	188.071	0.161	1.29	76	1.89	63	56	63	98.7	66	0.114	0.338	21.45
1166	14.1	0.1	188.231	0.160	1.30	76	1.89	63	56	63	98.3	66	0.115	0.339	21.40
1167	14.2	-0.1	188.393	0.162	1.29	76	1.89	63	56	63	99.9	66	0.111	0.333	21.26
1168	14.1	0.1	188.555	0.162	1.30	76	1.88	63	56	63	100.8	66	0.110	0.332	21.03
1169	14.1	0.0	188.716	0.161	1.29	76	1.89	63	56	63	100.3	66	0.115	0.339	21.22
1170	14.2	-0.1	188.877	0.161	1.29	76	1.89	63	56	63	99.7	66	0.112	0.335	21.31
1171	14.1	0.0	189.038	0.161	1.29	76	1.89	63	56	63	99.4	67	0.116	0.341	21.37
1172	14.2	-0.1	189.199	0.161	1.29	76	1.89	63	56	63	99.6	67	0.110	0.332	21.28
1173	14.2	0.0	189.360	0.161	1.29	76	1.89	63	56	64	100.0	66	0.113	0.336	21.13
1174	14.2	0.0	189.522	0.162	1.29	76	1.89	63	56	63	100.9	66	0.110	0.332	21.12
1175	14.3	-0.1	189.684	0.162	1.29	76	1.88	64	56	64	100.9	67	0.114	0.338	21.18
1176	14.2	0.0	189.845	0.161	1.29	76	1.88	64	56	63	99.7	67	0.115	0.339	21.42
1177	14.3	0.0	190.006	0.161	1.29	76	1.88	64	56	64	99.2	66	0.112	0.335	21.32
1178	14.1	0.1	190.167	0.161	1.29	76	1.88	64	56	64	99.6	67	0.114	0.338	21.27
1179	14.1	0.0	190.328	0.161	1.29	76	1.88	64	56	64	99.7	67	0.113	0.336	21.33
1180	14.2	0.0	190.489	0.161	1.29	76	1.88	64	56	64	99.0	67	0.119	0.345	21.56
1181	14.3	-0.1	190.652	0.163	1.29	76	1.88	64	56	63	99.7	67	0.113	0.336	21.56
1182	14.3	0.0	190.813	0.161	1.29	76	1.88	64	57	64	99.0	67	0.114	0.338	21.33
1183	14.4	-0.1	190.973	0.160	1.29	76	1.88	64	56	64	98.4	67	0.118	0.344	21.56
1184	14.2	0.1	191.134	0.161	1.29	76	1.89	64	56	64	98.5	70	0.116	0.341	21.69

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 3
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 12:35
 Test Length: 1228 min
 Recording Interval: 1 min

Test Date: 12/4/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.1 in. Hg
 Post-Test 0 cfm @ 9.11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1185	14.1	0.1	191.296	0.162	1.29	76	1.89	64	57	64	99.5	71	0.114	0.338	21.54
1186	13.9	0.2	191.457	0.161	1.29	76	1.89	64	57	64	99.7	72	0.113	0.336	21.42
1187	13.7	0.1	191.619	0.162	1.29	76	1.88	64	57	64	101.0	72	0.111	0.333	21.29
1188	13.5	0.3	191.780	0.161	1.28	76	1.89	64	57	64	100.6	73	0.114	0.338	21.35
1189	13.2	0.3	191.940	0.160	1.29	76	1.88	65	57	64	99.8	74	0.113	0.336	21.46
1190	12.9	0.3	192.101	0.161	1.28	76	1.89	65	57	64	100.1	74	0.115	0.339	21.52
1191	12.6	0.3	192.263	0.162	1.29	76	1.89	65	57	64	100.2	74	0.117	0.342	21.71
1192	12.3	0.3	192.424	0.161	1.29	76	1.88	65	57	65	99.9	75	0.108	0.329	21.39
1193	11.9	0.4	192.586	0.162	1.29	76	1.89	65	57	64	102.1	76	0.111	0.333	21.12
1194	11.7	0.2	192.747	0.161	1.28	76	1.90	65	57	64	101.6	76	0.113	0.336	21.37
1195	11.2	0.4	192.907	0.160	1.29	76	1.90	66	57	64	100.0	77	0.115	0.339	21.57
1196	10.9	0.3	193.068	0.161	1.29	76	1.90	66	57	64	100.3	77	0.113	0.336	21.58
1197	10.5	0.4	193.229	0.161	1.29	76	1.90	66	57	64	100.9	77	0.109	0.330	21.29
1198	10.1	0.5	193.390	0.161	1.29	76	1.89	66	57	65	101.7	78	0.113	0.336	21.30
1199	9.7	0.4	193.552	0.162	1.30	76	1.90	66	57	64	102.0	78	0.112	0.335	21.46
1200	9.3	0.4	193.713	0.161	1.28	76	1.89	66	57	65	101.0	78	0.113	0.336	21.46
1201	8.9	0.4	193.873	0.160	1.29	76	1.90	66	57	65	100.3	79	0.113	0.336	21.51
1202	8.5	0.5	194.034	0.161	1.29	76	1.90	66	57	65	100.8	79	0.114	0.338	21.57
1203	8.1	0.4	194.194	0.160	1.29	76	1.90	66	57	65	100.0	79	0.113	0.336	21.57
1204	7.8	0.3	194.356	0.162	1.29	76	1.90	67	57	65	101.5	79	0.112	0.335	21.48
1205	7.2	0.6	194.517	0.161	1.29	76	1.90	67	57	65	101.2	80	0.113	0.336	21.49
1206	6.9	0.4	194.678	0.161	1.29	76	1.90	67	57	64	101.0	80	0.114	0.338	21.59
1207	6.5	0.4	194.838	0.160	1.29	76	1.90	67	57	65	100.1	80	0.113	0.336	21.59
1208	6.0	0.5	194.999	0.161	1.29	76	1.90	67	58	65	100.9	82	0.114	0.338	21.61
1209	5.6	0.4	195.160	0.161	1.29	77	1.90	67	58	65	101.2	81	0.110	0.332	21.48
1210	5.2	0.3	195.322	0.162	1.29	77	1.90	67	58	65	101.9	80	0.114	0.338	21.46
1211	4.6	0.6	195.483	0.161	1.28	77	1.90	67	58	65	100.8	80	0.114	0.338	21.64
1212	4.2	0.4	195.643	0.160	1.29	77	1.90	67	58	65	99.7	80	0.114	0.338	21.64
1213	3.8	0.4	195.803	0.160	1.29	77	1.90	67	58	64	99.8	79	0.113	0.336	21.58
1214	3.3	0.4	195.964	0.161	1.29	77	1.90	67	58	65	100.7	79	0.112	0.335	21.48
1215	2.9	0.4	196.125	0.161	1.29	77	1.90	67	58	65	100.9	79	0.113	0.336	21.48
1216	2.5	0.4	196.286	0.161	1.29	77	1.91	67	58	65	100.8	79	0.113	0.336	21.52
1217	2.1	0.4	196.447	0.161	1.29	77	1.90	67	58	65	100.5	78	0.114	0.338	21.56
1218	1.7	0.4	196.607	0.160	1.29	77	1.90	67	58	65	100.2	78	0.109	0.330	21.36
1219	1.4	0.3	196.768	0.161	1.28	77	1.90	67	58	64	101.7	78	0.110	0.332	21.17
1220	1.2	0.2	196.929	0.161	1.29	77	1.89	67	58	66	101.2	71	0.113	0.336	21.29
1221	1.0	0.2	197.091	0.162	1.28	77	1.90	67	58	66	100.5	69	0.114	0.338	21.39
1222	0.8	0.2	197.252	0.161	1.28	77	1.90	67	58	65	99.9	68	0.109	0.330	21.17
1223	0.8	0.1	197.412	0.160	1.28	77	1.90	66	58	65	99.7	67	0.113	0.336	21.10
1224	0.6	0.1	197.573	0.161	1.29	77	1.90	66	58	64	100.0	66	0.112	0.335	21.23
1225	0.7	-0.1	197.734	0.161	1.28	77	1.89	66	58	64	99.8	66	0.112	0.335	21.17
1226	0.6	0.1	197.896	0.162	1.28	77	1.89	66	58	64	100.5	65	0.112	0.335	21.16
1227	0.0	0.6	198.057	0.161	1.29	77	1.89	66	58	63	99.7	65	0.113	0.336	21.20
1228	0.0	0.0	198.218	0.161	1.27	77	1.90	66	58	64	99.7	65	0.111	0.333	21.15

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	197.313	0.161	0.98	76.8	2.14	64.03	51.35	100.0
Minimum	0.000	0.147	0.92	68	2.10	61	39	92.5
Max	197.313	0.164	1.01	79	2.20	67	58	103.4
0	0.000		0.92	68	2.10	63	43	
1	0.147	0.147	1.00	68	2.20	64	39	92.5
2	0.306	0.159	0.99	68	2.20	64	39	101.3
3	0.467	0.161	1.00	68	2.10	64	39	102.6
4	0.626	0.159	0.99	68	2.10	64	39	100.3
5	0.785	0.159	0.99	68	2.10	64	39	99.4
6	0.945	0.160	0.98	68	2.10	64	39	100.7
7	1.104	0.159	0.98	68	2.10	64	39	100.7
8	1.263	0.159	0.98	69	2.10	64	40	101.6
9	1.422	0.159	0.98	69	2.10	64	40	101.9
10	1.581	0.159	1.01	69	2.20	64	40	101.2
11	1.742	0.161	1.00	69	2.20	64	40	102.3
12	1.903	0.161	1.00	69	2.20	64	40	102.2
13	2.063	0.160	1.00	69	2.20	64	40	101.0
14	2.223	0.160	1.00	69	2.20	64	40	100.8
15	2.384	0.161	0.99	69	2.20	64	41	101.7
16	2.544	0.160	0.99	70	2.20	64	41	100.8
17	2.704	0.160	1.00	70	2.20	64	41	100.2
18	2.865	0.161	1.00	70	2.20	65	41	100.5
19	3.025	0.160	0.99	70	2.20	65	41	99.7
20	3.185	0.160	0.99	70	2.20	65	42	100.3
21	3.345	0.160	1.00	70	2.20	64	42	101.3
22	3.506	0.161	0.99	71	2.20	65	42	102.2
23	3.666	0.160	0.99	71	2.20	65	42	101.6
24	3.827	0.161	1.00	71	2.20	65	42	101.7
25	3.988	0.161	0.99	71	2.20	65	42	100.8
26	4.148	0.160	1.00	71	2.20	64	43	100.0
27	4.309	0.161	1.00	71	2.10	64	43	100.8
28	4.470	0.161	1.00	72	2.10	64	43	100.5
29	4.631	0.161	0.99	72	2.10	64	43	100.0
30	4.791	0.160	1.00	72	2.10	64	43	99.3
31	4.953	0.162	1.00	72	2.20	64	43	101.2
32	5.114	0.161	1.00	72	2.10	64	43	101.3
33	5.275	0.161	1.00	72	2.10	64	43	101.3
34	5.436	0.161	1.00	72	2.10	64	43	101.1
35	5.598	0.162	1.00	72	2.10	64	43	101.1
36	5.759	0.161	0.99	73	2.10	64	43	99.8
37	5.920	0.161	1.00	73	2.10	64	44	100.3
38	6.081	0.161	1.00	73	2.10	64	44	100.3
39	6.243	0.162	1.00	73	2.10	64	44	100.4
40	6.404	0.161	1.00	73	2.10	64	44	100.5

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
41	6.565	0.161	1.00	73	2.10	63	44	101.2
42	6.727	0.162	1.01	73	2.10	63	44	101.2
43	6.889	0.162	1.00	73	2.10	63	44	100.9
44	7.050	0.161	1.00	73	2.10	63	44	100.6
45	7.211	0.161	1.00	74	2.10	63	44	100.6
46	7.373	0.162	1.01	74	2.10	63	44	101.3
47	7.535	0.162	1.00	74	2.10	63	44	101.3
48	7.696	0.161	1.00	74	2.10	63	44	100.4
49	7.858	0.162	1.01	74	2.10	63	45	101.2
50	8.020	0.162	1.00	74	2.10	63	45	101.4
51	8.182	0.162	1.00	74	2.10	63	45	101.3
52	8.343	0.161	1.00	74	2.10	63	45	101.0
53	8.505	0.162	1.01	74	2.10	63	45	101.4
54	8.667	0.162	1.00	74	2.10	63	45	100.2
55	8.829	0.162	1.00	74	2.10	63	45	99.8
56	8.990	0.161	1.00	74	2.10	63	45	99.8
57	9.151	0.161	1.00	74	2.10	63	45	99.7
58	9.314	0.163	1.00	74	2.20	63	45	100.7
59	9.475	0.161	1.00	75	2.10	63	45	100.0
60	9.637	0.162	1.01	75	2.10	63	45	101.1
61	9.798	0.161	1.01	75	2.10	63	45	100.2
62	9.962	0.164	1.00	75	2.10	63	45	102.1
63	10.123	0.161	1.00	75	2.10	63	45	100.8
64	10.285	0.162	1.01	75	2.10	63	45	101.3
65	10.447	0.162	1.01	75	2.10	63	45	100.8
66	10.609	0.162	1.01	75	2.10	63	45	100.9
67	10.771	0.162	1.01	75	2.10	63	45	100.9
68	10.933	0.162	1.01	75	2.10	63	45	100.5
69	11.095	0.162	1.01	75	2.10	63	45	100.1
70	11.257	0.162	1.01	75	2.10	63	45	99.9
71	11.420	0.163	1.00	75	2.10	63	45	101.1
72	11.581	0.161	1.01	75	2.10	63	45	100.9
73	11.743	0.162	1.01	75	2.10	63	45	102.0
74	11.906	0.163	1.01	75	2.10	63	45	103.0
75	12.068	0.162	1.01	75	2.10	63	45	102.3
76	12.229	0.161	1.01	75	2.10	63	45	100.6
77	12.391	0.162	1.01	75	2.10	63	45	100.7
78	12.554	0.163	1.01	75	2.10	63	45	101.2
79	12.716	0.162	1.00	75	2.10	63	45	100.6
80	12.878	0.162	1.01	75	2.10	63	45	100.7
81	13.040	0.162	1.01	75	2.10	63	45	100.5
82	13.202	0.162	1.01	75	2.10	63	45	100.6
83	13.365	0.163	1.01	75	2.10	63	45	101.3
84	13.526	0.161	1.00	76	2.10	63	45	100.1

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
85	13.688	0.162	1.01	76	2.10	63	45	101.0
86	13.850	0.162	1.01	76	2.10	63	45	101.3
87	14.013	0.163	1.01	76	2.10	63	46	102.7
88	14.174	0.161	1.01	76	2.10	63	46	101.1
89	14.336	0.162	1.00	76	2.10	63	46	100.2
90	14.498	0.162	1.01	76	2.10	63	46	99.7
91	14.661	0.163	1.01	76	2.10	63	46	101.0
92	14.823	0.162	1.00	76	2.10	63	46	100.8
93	14.985	0.162	1.01	76	2.10	63	46	101.0
94	15.147	0.162	1.01	76	2.10	63	46	100.6
95	15.310	0.163	1.00	76	2.10	63	46	100.3
96	15.472	0.162	1.00	76	2.10	63	46	100.1
97	15.633	0.161	1.01	76	2.10	63	46	100.6
98	15.796	0.163	1.01	76	2.10	63	46	101.5
99	15.958	0.162	1.01	76	2.10	63	46	100.5
100	16.121	0.163	1.01	76	2.10	63	46	101.8
101	16.282	0.161	1.01	76	2.10	63	46	100.8
102	16.444	0.162	1.01	76	2.10	63	46	101.9
103	16.607	0.163	1.01	76	2.10	63	46	102.8
104	16.770	0.163	1.01	76	2.10	63	46	101.5
105	16.931	0.161	1.01	76	2.10	63	46	99.0
106	17.094	0.163	1.01	76	2.10	63	46	100.3
107	17.256	0.162	1.01	76	2.10	63	46	100.0
108	17.419	0.163	1.00	76	2.10	63	46	101.4
109	17.581	0.162	1.00	76	2.10	63	46	101.1
110	17.743	0.162	1.01	76	2.10	63	46	100.0
111	17.905	0.162	1.01	76	2.10	63	46	98.9
112	18.068	0.163	1.00	76	2.10	63	46	100.3
113	18.230	0.162	1.00	76	2.10	63	46	101.1
114	18.392	0.162	1.01	76	2.10	63	46	101.2
115	18.554	0.162	1.01	76	2.10	63	46	100.2
116	18.717	0.163	1.01	76	2.10	63	46	100.3
117	18.880	0.163	1.01	76	2.10	63	46	100.8
118	19.042	0.162	1.00	76	2.20	63	46	100.9
119	19.203	0.161	1.01	76	2.10	63	46	100.7
120	19.365	0.162	1.01	76	2.20	63	46	101.8
121	19.529	0.164	1.01	76	2.20	63	46	103.4
122	19.690	0.161	1.01	76	2.20	63	46	101.9
123	19.852	0.162	1.01	76	2.20	64	46	102.8
124	20.013	0.161	1.00	76	2.10	64	46	102.2
125	20.176	0.163	1.00	76	2.10	64	46	103.0
126	20.337	0.161	1.00	76	2.10	64	46	101.0
127	20.498	0.161	1.00	76	2.10	64	46	100.9
128	20.659	0.161	1.00	76	2.10	64	46	101.4

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
129	20.821	0.162	1.00	76	2.10	64	46	101.5
130	20.982	0.161	1.00	76	2.10	64	46	100.2
131	21.144	0.162	1.00	76	2.10	64	46	101.5
132	21.305	0.161	1.00	76	2.20	64	46	101.2
133	21.467	0.162	0.99	76	2.10	64	46	101.0
134	21.628	0.161	1.00	76	2.10	64	46	99.2
135	21.789	0.161	1.00	76	2.10	64	46	99.5
136	21.952	0.163	0.99	76	2.10	64	47	101.3
137	22.112	0.160	0.99	76	2.10	64	47	98.9
138	22.273	0.161	0.99	76	2.10	63	47	99.3
139	22.434	0.161	0.99	76	2.10	63	47	99.7
140	22.595	0.161	0.99	76	2.10	63	47	100.2
141	22.756	0.161	0.99	76	2.10	63	47	100.5
142	22.917	0.161	1.00	76	2.10	63	47	100.5
143	23.079	0.162	0.99	76	2.10	63	47	100.4
144	23.239	0.160	0.99	76	2.10	63	47	98.3
145	23.400	0.161	0.99	76	2.10	62	47	98.3
146	23.561	0.161	1.00	76	2.10	62	47	98.1
147	23.723	0.162	1.00	76	2.10	62	47	100.1
148	23.884	0.161	0.99	76	2.10	62	47	101.2
149	24.045	0.161	1.00	75	2.10	62	47	101.7
150	24.207	0.162	0.99	75	2.10	62	47	101.7
151	24.368	0.161	0.99	75	2.10	62	47	100.4
152	24.529	0.161	0.99	75	2.10	62	47	100.6
153	24.690	0.161	1.00	75	2.10	62	47	100.4
154	24.852	0.162	0.99	75	2.10	62	47	100.6
155	25.013	0.161	0.99	75	2.10	62	47	99.8
156	25.173	0.160	1.00	75	2.10	62	47	99.3
157	25.335	0.162	1.00	75	2.10	62	47	100.7
158	25.497	0.162	0.99	75	2.10	62	47	100.4
159	25.657	0.160	0.99	75	2.10	62	47	98.6
160	25.819	0.162	0.99	75	2.10	62	47	99.6
161	25.981	0.162	0.99	75	2.10	61	47	99.6
162	26.142	0.161	0.99	75	2.10	61	47	98.6
163	26.302	0.160	0.99	75	2.10	61	47	98.1
164	26.464	0.162	0.99	75	2.10	61	47	100.1
165	26.626	0.162	0.99	75	2.10	61	47	100.1
166	26.787	0.161	0.99	75	2.10	61	47	98.9
167	26.948	0.161	1.00	75	2.10	61	47	98.4
168	27.109	0.161	1.00	75	2.10	61	47	97.8
169	27.271	0.162	0.99	75	2.10	61	47	98.8
170	27.432	0.161	1.00	75	2.10	61	47	98.5
171	27.593	0.161	1.00	74	2.10	61	47	99.0
172	27.755	0.162	1.00	74	2.10	61	47	100.5

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
173	27.916	0.161	0.99	74	2.10	61	46	100.0
174	28.077	0.161	0.99	74	2.10	61	46	99.6
175	28.238	0.161	0.99	74	2.10	61	46	99.5
176	28.400	0.162	0.99	74	2.10	61	46	100.7
177	28.560	0.160	0.99	74	2.10	61	46	99.9
178	28.721	0.161	0.99	74	2.10	61	46	100.6
179	28.883	0.162	0.99	74	2.10	61	46	101.5
180	29.044	0.161	0.98	74	2.10	61	46	101.5
181	29.205	0.161	0.99	74	2.10	61	46	101.0
182	29.366	0.161	0.99	74	2.10	61	46	99.7
183	29.527	0.161	0.99	74	2.10	61	46	99.7
184	29.687	0.160	0.99	74	2.10	61	46	99.8
185	29.848	0.161	0.99	74	2.10	61	46	101.3
186	30.010	0.162	0.99	74	2.10	62	46	102.6
187	30.171	0.161	0.99	74	2.10	62	46	101.6
188	30.331	0.160	0.99	74	2.10	62	46	100.6
189	30.492	0.161	0.99	74	2.10	62	46	101.4
190	30.653	0.161	0.99	74	2.10	62	46	101.6
191	30.814	0.161	0.99	74	2.10	62	46	101.3
192	30.975	0.161	0.99	74	2.10	62	46	101.2
193	31.136	0.161	0.99	74	2.10	62	46	101.8
194	31.296	0.160	0.98	75	2.10	62	46	101.1
195	31.456	0.160	0.99	75	2.10	62	46	100.2
196	31.618	0.162	0.99	75	2.10	63	46	101.3
197	31.779	0.161	0.98	75	2.10	63	46	101.3
198	31.939	0.160	0.99	75	2.10	63	46	101.4
199	32.099	0.160	0.99	75	2.10	63	46	101.5
200	32.261	0.162	0.99	75	2.10	63	46	101.8
201	32.421	0.160	0.98	75	2.10	63	46	100.0
202	32.581	0.160	0.98	75	2.10	63	46	100.6
203	32.743	0.162	0.98	75	2.10	63	46	102.2
204	32.903	0.160	0.98	75	2.10	63	46	100.7
205	33.063	0.160	0.99	75	2.10	63	46	100.3
206	33.224	0.161	0.98	75	2.10	64	46	101.0
207	33.385	0.161	0.98	75	2.10	64	46	101.3
208	33.545	0.160	0.98	75	2.10	64	46	100.9
209	33.705	0.160	0.99	75	2.10	64	46	100.6
210	33.866	0.161	0.99	75	2.10	64	46	101.0
211	34.027	0.161	0.99	75	2.10	64	46	101.0
212	34.187	0.160	0.99	75	2.10	64	46	100.6
213	34.349	0.162	0.99	75	2.10	64	46	102.8
214	34.509	0.160	0.99	76	2.10	64	46	102.5
215	34.669	0.160	0.98	76	2.10	64	46	102.4
216	34.830	0.161	0.99	76	2.10	64	46	102.0

Train B - Particulate Sampling

ASTM E2515

Run: 3Test Date: 12/4/24Manufacturer: Central BoilerModel: Classic Edge 560.1Tracking No.: 2495Project No.: 0117WB043EMeter Box Y Regression Offset: 1.006Meter Box Y Regression Slope: 0Meter Box Dynamic Y: 1.006Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. HgPost-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
217	34.991	0.161	0.98	76	2.10	64	46	101.3
218	35.151	0.160	0.98	76	2.10	64	46	101.1
219	35.312	0.161	0.99	76	2.10	64	46	102.1
220	35.473	0.161	0.98	76	2.10	64	46	102.2
221	35.633	0.160	0.99	76	2.10	64	46	101.3
222	35.794	0.161	0.99	76	2.10	64	46	100.9
223	35.955	0.161	0.99	76	2.10	65	46	100.3
224	36.115	0.160	0.99	76	2.10	65	46	100.0
225	36.276	0.161	0.99	76	2.10	65	46	101.6
226	36.437	0.161	0.99	76	2.10	65	46	102.4
227	36.598	0.161	0.98	76	2.10	65	46	102.4
228	36.758	0.160	0.98	76	2.10	65	46	100.6
229	36.919	0.161	0.99	76	2.10	65	46	100.6
230	37.080	0.161	0.98	76	2.10	65	46	100.8
231	37.240	0.160	0.98	76	2.10	65	46	99.8
232	37.401	0.161	0.99	77	2.10	65	46	100.2
233	37.562	0.161	0.98	77	2.10	65	46	100.5
234	37.722	0.160	0.98	77	2.10	65	46	100.4
235	37.883	0.161	0.98	77	2.10	65	46	101.3
236	38.044	0.161	0.99	77	2.10	65	46	101.4
237	38.205	0.161	0.98	77	2.10	65	46	102.0
238	38.365	0.160	0.98	77	2.10	65	46	101.2
239	38.525	0.160	0.98	77	2.10	65	46	100.2
240	38.687	0.162	0.98	77	2.10	65	46	100.8
241	38.847	0.160	0.98	77	2.10	65	46	99.6
242	39.007	0.160	0.98	77	2.10	65	46	100.5
243	39.169	0.162	0.98	77	2.10	65	46	102.3
244	39.329	0.160	0.98	77	2.10	65	46	100.6
245	39.489	0.160	0.98	77	2.10	65	46	100.2
246	39.650	0.161	0.98	77	2.10	65	46	100.8
247	39.811	0.161	0.98	77	2.10	65	46	100.9
248	39.971	0.160	0.98	77	2.10	66	47	100.4
249	40.131	0.160	0.98	77	2.10	66	47	100.2
250	40.292	0.161	0.98	77	2.10	66	47	100.7
251	40.452	0.160	0.98	77	2.10	66	47	100.6
252	40.612	0.160	0.98	77	2.10	66	47	101.3
253	40.773	0.161	0.98	77	2.10	66	47	102.4
254	40.933	0.160	0.98	77	2.10	66	47	101.9
255	41.094	0.161	0.98	77	2.10	66	47	101.9
256	41.255	0.161	0.98	77	2.10	66	47	101.9
257	41.414	0.159	0.98	77	2.10	66	47	100.7
258	41.575	0.161	0.98	78	2.10	67	47	101.0
259	41.736	0.161	0.98	78	2.10	67	47	100.3
260	41.896	0.160	0.98	78	2.10	67	47	100.2

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
261	42.055	0.159	0.98	78	2.20	67	47	100.1
262	42.216	0.161	0.98	78	2.20	67	47	101.4
263	42.376	0.160	0.97	78	2.20	67	47	100.5
264	42.536	0.160	0.98	78	2.20	67	47	100.3
265	42.696	0.160	0.98	78	2.20	67	47	100.6
266	42.857	0.161	0.98	78	2.20	67	47	101.9
267	43.016	0.159	0.98	78	2.20	67	47	100.3
268	43.177	0.161	0.98	78	2.20	67	48	101.1
269	43.338	0.161	0.97	78	2.20	67	48	101.6
270	43.497	0.159	0.98	78	2.10	67	48	100.8
271	43.657	0.160	0.98	78	2.20	67	48	101.5
272	43.819	0.162	0.98	78	2.20	67	48	102.9
273	43.978	0.159	0.98	78	2.10	67	48	100.7
274	44.138	0.160	0.98	78	2.10	67	48	100.9
275	44.299	0.161	0.98	78	2.20	67	48	101.6
276	44.459	0.160	0.98	78	2.20	67	48	101.3
277	44.619	0.160	0.98	78	2.20	67	48	101.2
278	44.780	0.161	0.98	78	2.10	67	48	101.5
279	44.940	0.160	0.98	78	2.10	67	48	100.7
280	45.100	0.160	0.98	78	2.10	67	48	100.9
281	45.261	0.161	0.98	78	2.10	67	48	101.9
282	45.422	0.161	0.97	78	2.10	67	48	101.7
283	45.582	0.160	0.98	78	2.10	67	48	100.2
284	45.743	0.161	0.98	78	2.10	67	48	99.8
285	45.904	0.161	0.97	78	2.10	67	48	99.4
286	46.064	0.160	0.98	78	2.10	67	48	99.4
287	46.224	0.160	0.98	78	2.10	67	48	100.1
288	46.386	0.162	0.98	78	2.10	66	48	101.0
289	46.546	0.160	0.98	78	2.10	66	48	99.2
290	46.707	0.161	0.98	78	2.10	66	48	99.8
291	46.868	0.161	0.98	79	2.10	66	48	99.6
292	47.029	0.161	0.98	79	2.10	66	48	99.6
293	47.189	0.160	0.98	79	2.10	66	48	99.4
294	47.350	0.161	0.98	79	2.10	66	48	100.0
295	47.512	0.162	0.98	79	2.10	66	48	100.6
296	47.672	0.160	0.98	79	2.10	66	48	99.5
297	47.833	0.161	0.99	79	2.10	66	48	100.0
298	47.994	0.161	0.98	79	2.10	66	48	99.9
299	48.155	0.161	0.98	79	2.10	66	48	99.4
300	48.315	0.160	0.99	79	2.10	65	48	98.4
301	48.476	0.161	0.99	79	2.10	65	48	99.0
302	48.638	0.162	0.98	79	2.10	65	48	99.3
303	48.798	0.160	0.99	79	2.10	65	48	97.9
304	48.959	0.161	0.99	79	2.10	65	48	98.8

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
305	49.121	0.162	0.99	79	2.10	65	48	99.7
306	49.281	0.160	0.98	79	2.10	65	48	98.7
307	49.441	0.160	0.99	79	2.10	65	48	98.7
308	49.603	0.162	0.99	79	2.10	65	48	100.1
309	49.764	0.161	0.98	78	2.10	65	48	99.3
310	49.925	0.161	0.99	78	2.10	65	48	98.5
311	50.086	0.161	0.98	78	2.10	65	48	98.3
312	50.247	0.161	0.99	78	2.10	65	48	99.1
313	50.408	0.161	0.99	78	2.10	65	48	99.6
314	50.568	0.160	0.99	78	2.10	65	48	99.0
315	50.730	0.162	0.99	78	2.10	65	48	100.0
316	50.891	0.161	0.98	78	2.10	64	48	99.5
317	51.052	0.161	0.99	78	2.10	64	48	99.8
318	51.212	0.160	0.99	78	2.10	64	48	98.9
319	51.374	0.162	0.98	78	2.10	64	48	99.8
320	51.535	0.161	0.99	78	2.10	64	48	99.5
321	51.696	0.161	0.99	78	2.10	64	48	99.2
322	51.857	0.161	0.99	78	2.10	64	48	99.0
323	52.018	0.161	0.98	78	2.10	64	48	99.1
324	52.179	0.161	0.98	78	2.10	64	48	98.8
325	52.340	0.161	0.99	78	2.10	64	48	99.4
326	52.502	0.162	0.99	78	2.10	64	48	100.4
327	52.663	0.161	0.99	78	2.10	64	48	99.4
328	52.823	0.160	0.99	78	2.10	64	48	99.0
329	52.985	0.162	0.99	78	2.10	64	48	100.6
330	53.146	0.161	0.99	78	2.10	64	48	100.0
331	53.307	0.161	0.99	78	2.10	64	48	99.5
332	53.468	0.161	0.99	78	2.10	64	48	99.0
333	53.630	0.162	0.98	78	2.10	64	48	99.7
334	53.790	0.160	0.98	78	2.10	64	48	99.1
335	53.951	0.161	0.99	78	2.10	64	48	100.0
336	54.112	0.161	0.99	78	2.10	64	48	100.1
337	54.274	0.162	0.99	78	2.10	64	48	101.0
338	54.434	0.160	0.99	78	2.10	64	48	99.5
339	54.596	0.162	0.99	78	2.10	64	48	100.4
340	54.757	0.161	0.99	78	2.10	63	48	100.1
341	54.918	0.161	0.98	78	2.10	63	48	99.9
342	55.079	0.161	0.99	78	2.10	63	48	98.9
343	55.240	0.161	0.99	78	2.10	63	48	98.4
344	55.402	0.162	0.99	78	2.10	63	48	99.7
345	55.563	0.161	0.99	78	2.10	63	48	99.2
346	55.724	0.161	0.99	78	2.10	63	48	98.8
347	55.885	0.161	0.99	78	2.10	63	48	98.9
348	56.047	0.162	0.99	78	2.10	63	48	99.1

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
349	56.207	0.160	0.99	78	2.10	63	48	97.3
350	56.368	0.161	0.99	78	2.10	63	48	97.7
351	56.530	0.162	0.99	78	2.10	63	48	98.6
352	56.691	0.161	0.99	78	2.10	63	48	98.8
353	56.852	0.161	0.99	78	2.10	63	48	99.3
354	57.013	0.161	0.99	78	2.10	63	48	99.6
355	57.175	0.162	0.99	78	2.10	63	48	100.3
356	57.335	0.160	0.99	78	2.10	63	48	98.7
357	57.497	0.162	0.99	78	2.10	63	48	99.6
358	57.659	0.162	0.99	78	2.10	63	48	99.9
359	57.820	0.161	0.99	78	2.10	63	48	99.5
360	57.980	0.160	0.99	78	2.10	63	48	98.4
361	58.141	0.161	0.99	78	2.10	63	48	98.8
362	58.303	0.162	0.99	78	2.10	63	48	100.0
363	58.464	0.161	0.99	78	2.10	63	48	100.2
364	58.625	0.161	0.99	78	2.10	63	48	99.9
365	58.787	0.162	0.99	78	2.10	63	48	100.2
366	58.948	0.161	0.99	78	2.10	63	48	100.0
367	59.109	0.161	0.99	78	2.10	63	48	99.7
368	59.270	0.161	0.99	77	2.10	63	48	98.9
369	59.432	0.162	0.99	77	2.10	63	48	99.5
370	59.592	0.160	0.99	77	2.10	63	48	98.7
371	59.753	0.161	0.99	77	2.10	63	48	99.2
372	59.915	0.162	0.99	77	2.10	63	48	99.1
373	60.076	0.161	0.99	77	2.10	63	48	98.4
374	60.237	0.161	0.99	77	2.10	63	48	98.7
375	60.398	0.161	0.99	77	2.10	63	48	99.0
376	60.560	0.162	0.99	77	2.10	63	48	99.7
377	60.721	0.161	0.99	77	2.10	63	48	98.9
378	60.882	0.161	0.99	77	2.10	63	48	99.0
379	61.043	0.161	0.99	77	2.10	63	48	99.2
380	61.205	0.162	0.99	77	2.10	63	48	99.3
381	61.365	0.160	0.99	77	2.10	63	48	97.9
382	61.526	0.161	0.99	77	2.10	63	48	99.1
383	61.688	0.162	0.99	77	2.10	63	48	99.8
384	61.849	0.161	0.99	77	2.10	63	48	99.3
385	62.009	0.160	0.99	77	2.10	63	48	99.3
386	62.170	0.161	0.99	77	2.10	63	48	100.2
387	62.331	0.161	0.99	77	2.10	63	48	101.0
388	62.492	0.161	0.99	77	2.10	63	48	101.8
389	62.652	0.160	0.99	77	2.10	63	48	100.2
390	62.814	0.162	0.99	77	2.10	63	48	100.5
391	62.974	0.160	0.98	77	2.10	63	48	99.4
392	63.135	0.161	0.99	77	2.10	63	48	100.4

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
393	63.296	0.161	0.99	77	2.10	63	48	100.4
394	63.457	0.161	0.98	77	2.10	63	48	100.3
395	63.617	0.160	0.99	77	2.10	63	48	99.5
396	63.778	0.161	0.99	77	2.10	64	48	100.3
397	63.939	0.161	0.98	77	2.20	64	48	100.3
398	64.099	0.160	0.99	77	2.20	64	48	99.7
399	64.260	0.161	0.99	77	2.20	64	48	99.9
400	64.421	0.161	0.99	77	2.10	64	48	99.5
401	64.582	0.161	0.98	77	2.20	64	48	100.3
402	64.742	0.160	0.99	77	2.10	64	48	100.1
403	64.903	0.161	0.99	77	2.20	64	48	99.9
404	65.064	0.161	0.98	77	2.20	64	48	99.9
405	65.224	0.160	0.98	77	2.10	64	48	99.7
406	65.385	0.161	0.99	77	2.20	64	48	100.5
407	65.546	0.161	0.98	77	2.10	64	48	100.3
408	65.706	0.160	0.99	77	2.20	64	48	99.8
409	65.867	0.161	0.99	77	2.20	64	48	100.5
410	66.028	0.161	0.99	77	2.10	64	48	100.5
411	66.188	0.160	0.98	77	2.10	64	49	100.8
412	66.348	0.160	0.99	77	2.20	64	48	101.5
413	66.509	0.161	0.99	77	2.20	64	48	102.0
414	66.670	0.161	0.98	77	2.10	65	49	101.8
415	66.830	0.160	0.98	77	2.10	64	49	101.1
416	66.991	0.161	0.99	77	2.10	64	49	101.6
417	67.153	0.162	0.98	77	2.10	64	49	101.4
418	67.313	0.160	0.98	77	2.10	64	49	99.3
419	67.473	0.160	0.99	77	2.10	65	49	99.8
420	67.635	0.162	0.99	77	2.10	65	49	101.0
421	67.795	0.160	0.98	77	2.10	64	49	98.9
422	67.956	0.161	0.99	77	2.10	64	49	99.7
423	68.116	0.160	0.99	77	2.10	65	49	99.6
424	68.278	0.162	0.98	77	2.10	64	49	100.9
425	68.438	0.160	0.98	77	2.10	64	49	99.8
426	68.599	0.161	0.98	77	2.10	64	49	100.4
427	68.761	0.162	0.98	77	2.10	65	49	101.0
428	68.921	0.160	0.98	77	2.10	64	49	99.1
429	69.081	0.160	0.99	77	2.10	64	49	98.2
430	69.242	0.161	0.98	77	2.10	64	49	98.8
431	69.403	0.161	0.98	77	2.10	65	49	99.5
432	69.564	0.161	0.98	77	2.10	65	49	100.7
433	69.724	0.160	0.98	77	2.10	65	48	100.8
434	69.886	0.162	0.98	77	2.10	64	48	101.0
435	70.046	0.160	0.99	77	2.10	65	48	98.9
436	70.207	0.161	0.99	77	2.10	65	48	99.7

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
437	70.368	0.161	0.99	77	2.10	65	48	99.6
438	70.529	0.161	0.98	77	2.10	65	48	100.0
439	70.689	0.160	0.98	77	2.10	65	48	100.1
440	70.850	0.161	0.99	77	2.10	65	48	100.0
441	71.011	0.161	0.98	77	2.10	65	48	98.9
442	71.172	0.161	0.98	77	2.10	65	48	99.5
443	71.333	0.161	0.99	77	2.10	65	48	100.9
444	71.494	0.161	0.99	78	2.10	65	48	101.0
445	71.654	0.160	0.98	78	2.10	65	48	99.8
446	71.815	0.161	0.99	78	2.10	65	48	100.6
447	71.976	0.161	0.98	78	2.10	65	48	100.3
448	72.137	0.161	0.99	78	2.10	64	48	99.6
449	72.298	0.161	0.98	78	2.10	64	48	99.2
450	72.458	0.160	0.98	78	2.10	64	48	99.0
451	72.620	0.162	0.99	78	2.10	64	48	101.0
452	72.780	0.160	0.99	78	2.10	64	48	99.7
453	72.941	0.161	0.99	78	2.10	64	48	99.6
454	73.102	0.161	0.99	78	2.10	64	48	99.2
455	73.263	0.161	0.98	78	2.10	64	48	99.0
456	73.423	0.160	0.98	78	2.10	64	48	98.6
457	73.584	0.161	0.99	78	2.10	64	48	100.0
458	73.746	0.162	0.98	78	2.10	64	48	101.0
459	73.906	0.160	0.99	78	2.10	64	48	100.0
460	74.067	0.161	0.99	78	2.10	64	48	100.9
461	74.229	0.162	0.98	78	2.10	64	48	101.2
462	74.390	0.161	0.98	78	2.10	64	48	99.6
463	74.550	0.160	0.99	78	2.10	64	48	98.8
464	74.711	0.161	0.99	78	2.10	64	48	100.3
465	74.873	0.162	0.99	78	2.10	64	48	100.8
466	75.033	0.160	0.99	78	2.10	64	48	98.6
467	75.194	0.161	0.99	78	2.10	64	48	98.7
468	75.356	0.162	0.99	78	2.10	64	48	98.9
469	75.516	0.160	0.99	78	2.10	63	48	97.6
470	75.677	0.161	0.99	78	2.10	63	48	98.5
471	75.838	0.161	0.99	78	2.10	63	48	98.7
472	75.999	0.161	0.99	78	2.10	63	48	98.8
473	76.160	0.161	0.99	78	2.10	63	48	98.9
474	76.321	0.161	0.99	78	2.10	63	48	98.9
475	76.483	0.162	0.99	78	2.10	63	48	99.3
476	76.644	0.161	0.99	78	2.10	63	48	98.5
477	76.804	0.160	0.99	78	2.10	63	48	98.4
478	76.965	0.161	0.99	77	2.10	63	48	99.5
479	77.127	0.162	0.99	77	2.10	63	48	99.8
480	77.287	0.160	0.99	77	2.10	63	48	98.1

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
481	77.448	0.161	0.99	77	2.10	63	48	99.0
482	77.610	0.162	0.99	77	2.10	63	48	100.2
483	77.771	0.161	0.98	77	2.10	63	48	100.1
484	77.931	0.160	0.99	77	2.10	63	48	99.7
485	78.093	0.162	0.99	77	2.10	63	48	100.8
486	78.254	0.161	0.99	77	2.10	63	49	99.7
487	78.415	0.161	0.99	77	2.10	63	48	99.4
488	78.576	0.161	0.99	77	2.10	63	48	99.5
489	78.738	0.162	0.99	77	2.10	63	48	100.4
490	78.899	0.161	0.98	77	2.10	63	49	100.2
491	79.059	0.160	0.99	77	2.10	63	48	99.5
492	79.220	0.161	0.99	77	2.10	63	49	99.7
493	79.382	0.162	0.99	77	2.10	63	49	100.8
494	79.542	0.160	0.99	77	2.10	63	49	99.6
495	79.703	0.161	0.99	77	2.10	63	49	99.9
496	79.865	0.162	0.98	77	2.10	63	49	101.0
497	80.025	0.160	0.98	77	2.10	63	49	99.5
498	80.186	0.161	0.99	77	2.10	64	49	100.0
499	80.347	0.161	0.99	77	2.10	64	49	100.7
500	80.508	0.161	0.99	77	2.10	64	49	100.5
501	80.669	0.161	0.99	77	2.10	64	49	99.8
502	80.830	0.161	0.99	77	2.10	64	49	99.8
503	80.991	0.161	0.99	77	2.10	64	49	100.4
504	81.152	0.161	0.98	77	2.10	64	49	101.2
505	81.312	0.160	0.99	77	2.10	64	49	100.8
506	81.473	0.161	0.99	77	2.10	64	49	101.0
507	81.635	0.162	0.99	78	2.10	64	49	100.8
508	81.795	0.160	0.98	78	2.10	64	49	99.4
509	81.956	0.161	0.99	78	2.10	64	49	100.0
510	82.118	0.162	0.99	78	2.10	64	49	99.8
511	82.278	0.160	0.98	78	2.10	64	49	98.5
512	82.439	0.161	0.98	78	2.10	64	49	100.4
513	82.600	0.161	0.99	78	2.20	64	49	101.3
514	82.761	0.161	0.98	78	2.10	64	49	100.7
515	82.921	0.160	0.99	78	2.10	64	49	99.5
516	83.082	0.161	0.99	78	2.10	64	49	99.7
517	83.243	0.161	0.99	78	2.10	64	49	99.2
518	83.403	0.160	0.98	78	2.20	65	49	99.0
519	83.564	0.161	0.99	78	2.20	65	49	99.7
520	83.725	0.161	0.98	78	2.10	65	49	99.7
521	83.885	0.160	0.98	78	2.20	65	49	99.5
522	84.045	0.160	0.99	78	2.10	65	49	99.9
523	84.207	0.162	0.98	78	2.20	65	49	101.6
524	84.368	0.161	0.98	78	2.20	65	50	101.0

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
525	84.528	0.160	0.98	78	2.10	65	50	99.7
526	84.688	0.160	0.98	78	2.10	65	50	99.1
527	84.850	0.162	0.98	78	2.20	65	50	100.9
528	85.009	0.159	0.98	78	2.20	65	50	99.6
529	85.170	0.161	0.98	78	2.10	65	50	99.9
530	85.332	0.162	0.98	78	2.20	65	50	100.2
531	85.492	0.160	0.99	78	2.20	65	50	100.0
532	85.652	0.160	0.99	78	2.10	65	50	100.1
533	85.813	0.161	0.98	78	2.10	65	50	99.8
534	85.974	0.161	0.98	78	2.20	65	50	99.5
535	86.134	0.160	0.98	78	2.10	65	51	98.9
536	86.294	0.160	0.99	78	2.20	65	51	98.9
537	86.456	0.162	0.98	78	2.20	65	51	101.2
538	86.616	0.160	0.99	78	2.20	65	51	101.3
539	86.777	0.161	0.99	78	2.20	65	51	102.1
540	86.938	0.161	0.98	78	2.10	65	51	102.0
541	87.098	0.160	0.98	78	2.20	65	51	101.1
542	87.258	0.160	0.98	78	2.20	65	51	100.1
543	87.420	0.162	0.99	78	2.20	65	51	100.7
544	87.581	0.161	0.98	78	2.20	65	51	100.4
545	87.741	0.160	0.98	78	2.20	65	51	100.3
546	87.901	0.160	0.98	78	2.20	65	51	100.0
547	88.062	0.161	0.99	77	2.10	65	51	99.7
548	88.223	0.161	0.98	77	2.10	65	51	99.6
549	88.384	0.161	0.99	77	2.10	64	51	100.0
550	88.545	0.161	0.98	77	2.10	64	52	100.0
551	88.706	0.161	0.98	77	2.10	64	52	99.6
552	88.866	0.160	0.99	77	2.10	64	52	99.4
553	89.027	0.161	0.99	77	2.10	64	52	100.9
554	89.189	0.162	0.98	77	2.10	64	52	100.6
555	89.349	0.160	0.99	77	2.10	64	52	98.2
556	89.510	0.161	0.99	77	2.10	64	52	98.9
557	89.672	0.162	0.99	77	2.10	64	52	100.1
558	89.832	0.160	0.99	77	2.10	64	52	99.3
559	89.993	0.161	0.99	77	2.10	64	52	100.2
560	90.154	0.161	0.99	77	2.10	64	52	100.0
561	90.315	0.161	0.98	77	2.10	64	52	99.8
562	90.476	0.161	0.99	77	2.10	64	52	100.0
563	90.637	0.161	0.98	77	2.10	64	52	100.0
564	90.799	0.162	0.98	77	2.10	64	52	101.1
565	90.959	0.160	0.98	77	2.10	64	52	100.0
566	91.119	0.160	0.98	77	2.10	64	52	99.0
567	91.281	0.162	0.99	77	2.10	64	52	99.8
568	91.442	0.161	0.98	77	2.10	64	52	99.8

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
569	91.602	0.160	0.98	77	2.10	64	52	99.4
570	91.763	0.161	0.99	77	2.10	64	52	99.9
571	91.925	0.162	0.98	77	2.10	64	51	100.8
572	92.085	0.160	0.98	77	2.10	64	51	100.4
573	92.246	0.161	0.99	77	2.10	64	51	101.4
574	92.407	0.161	0.99	77	2.10	64	51	100.2
575	92.568	0.161	0.98	77	2.10	64	51	99.6
576	92.728	0.160	0.98	77	2.10	64	51	98.9
577	92.889	0.161	0.98	77	2.10	64	51	99.8
578	93.050	0.161	0.98	77	2.10	64	51	100.1
579	93.211	0.161	0.98	77	2.10	64	51	100.1
580	93.371	0.160	0.99	77	2.10	64	51	99.5
581	93.533	0.162	0.99	77	2.10	64	51	100.4
582	93.693	0.160	0.98	77	2.10	64	51	99.1
583	93.854	0.161	0.98	77	2.10	64	51	100.0
584	94.015	0.161	0.99	77	2.10	64	51	100.2
585	94.176	0.161	0.98	77	2.10	64	51	100.6
586	94.336	0.160	0.98	77	2.10	64	51	99.9
587	94.497	0.161	0.99	77	2.10	64	51	100.3
588	94.659	0.162	0.98	77	2.10	64	51	101.2
589	94.819	0.160	0.98	77	2.10	64	51	99.7
590	94.979	0.160	0.98	77	2.10	64	51	99.4
591	95.141	0.162	0.99	77	2.10	64	51	100.8
592	95.302	0.161	0.98	77	2.10	64	51	100.6
593	95.462	0.160	0.98	77	2.10	64	51	100.1
594	95.623	0.161	0.99	77	2.10	64	51	100.6
595	95.785	0.162	0.98	77	2.10	64	51	101.0
596	95.945	0.160	0.98	77	2.10	64	51	99.9
597	96.105	0.160	0.98	77	2.10	64	51	100.0
598	96.267	0.162	0.98	77	2.10	64	51	101.4
599	96.427	0.160	0.98	77	2.10	64	51	99.9
600	96.588	0.161	0.99	77	2.10	64	51	100.2
601	96.749	0.161	0.99	77	2.10	64	51	100.6
602	96.910	0.161	0.99	77	2.10	64	51	100.9
603	97.070	0.160	0.98	77	2.10	64	51	99.8
604	97.231	0.161	0.99	77	2.10	64	52	99.8
605	97.393	0.162	0.98	77	2.10	64	51	100.0
606	97.553	0.160	0.98	77	2.10	64	52	99.0
607	97.714	0.161	0.99	77	2.10	64	52	99.8
608	97.875	0.161	0.99	78	2.10	64	52	99.4
609	98.036	0.161	0.98	77	2.10	64	52	99.2
610	98.197	0.161	0.99	78	2.10	64	52	99.2
611	98.357	0.160	0.99	78	2.10	64	52	98.4
612	98.519	0.162	0.98	78	2.10	64	52	99.9

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
613	98.679	0.160	0.99	78	2.10	64	52	98.9
614	98.840	0.161	0.99	78	2.10	64	52	99.2
615	99.002	0.162	0.99	78	2.10	64	52	99.6
616	99.162	0.160	0.98	78	2.10	63	52	98.9
617	99.323	0.161	0.99	77	2.10	63	52	100.5
618	99.483	0.160	0.99	78	2.10	63	52	99.7
619	99.645	0.162	0.99	77	2.10	63	52	100.4
620	99.805	0.160	0.99	77	2.10	63	52	99.2
621	99.966	0.161	0.99	77	2.10	63	52	99.7
622	100.128	0.162	0.99	77	2.10	63	52	100.0
623	100.289	0.161	0.98	77	2.10	63	52	99.7
624	100.449	0.160	0.99	77	2.10	63	52	99.2
625	100.610	0.161	0.99	77	2.10	63	52	98.9
626	100.772	0.162	0.99	77	2.10	63	52	99.3
627	100.932	0.160	0.99	77	2.10	63	52	98.7
628	101.093	0.161	0.99	77	2.10	63	52	99.5
629	101.255	0.162	0.99	77	2.10	63	52	100.1
630	101.416	0.161	0.99	77	2.10	63	52	99.5
631	101.577	0.161	0.99	77	2.10	63	52	99.6
632	101.738	0.161	0.99	77	2.10	63	52	99.4
633	101.899	0.161	0.99	77	2.10	63	52	98.9
634	102.060	0.161	0.99	77	2.10	63	52	98.8
635	102.221	0.161	0.99	77	2.10	63	52	99.1
636	102.382	0.161	0.99	77	2.10	63	52	99.4
637	102.543	0.161	0.98	77	2.10	63	52	99.2
638	102.704	0.161	0.99	77	2.10	63	52	98.8
639	102.865	0.161	0.99	77	2.10	63	52	98.8
640	103.027	0.162	0.99	77	2.10	63	52	99.5
641	103.187	0.160	0.99	77	2.10	63	52	98.2
642	103.348	0.161	0.99	77	2.10	63	52	98.7
643	103.510	0.162	0.99	77	2.10	63	52	98.5
644	103.671	0.161	0.98	77	2.10	63	52	97.1
645	103.831	0.160	0.99	77	2.10	63	52	96.5
646	103.992	0.161	0.99	77	2.10	63	52	98.0
647	104.154	0.162	0.99	77	2.10	63	52	99.9
648	104.314	0.160	0.99	77	2.10	63	52	99.0
649	104.475	0.161	0.99	77	2.10	63	52	99.6
650	104.637	0.162	0.98	77	2.10	63	52	100.6
651	104.797	0.160	0.98	77	2.20	63	52	99.5
652	104.958	0.161	0.98	77	2.20	63	52	100.4
653	105.118	0.160	0.99	77	2.10	63	52	99.8
654	105.280	0.162	0.98	77	2.10	63	52	101.2
655	105.440	0.160	0.99	77	2.10	63	52	100.2
656	105.600	0.160	0.99	77	2.10	64	52	100.2

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
657	105.762	0.162	0.99	77	2.20	64	52	101.7
658	105.922	0.160	0.98	77	2.10	64	52	100.4
659	106.082	0.160	0.99	77	2.20	64	52	100.1
660	106.243	0.161	0.98	77	2.10	64	52	100.9
661	106.404	0.161	0.98	77	2.20	64	52	100.5
662	106.564	0.160	0.99	77	2.20	64	52	99.1
663	106.724	0.160	0.98	77	2.20	64	52	99.5
664	106.885	0.161	0.98	77	2.20	64	53	100.5
665	107.045	0.160	0.98	77	2.20	64	53	100.2
666	107.205	0.160	0.98	77	2.20	65	53	100.7
667	107.367	0.162	0.98	77	2.20	65	53	101.7
668	107.527	0.160	0.98	77	2.20	65	53	100.5
669	107.687	0.160	0.98	77	2.20	65	53	100.8
670	107.848	0.161	0.98	77	2.20	65	53	101.2
671	108.008	0.160	0.98	77	2.20	65	53	100.4
672	108.168	0.160	0.98	77	2.20	65	53	100.5
673	108.329	0.161	0.98	77	2.20	65	53	101.5
674	108.490	0.161	0.97	77	2.20	65	53	101.5
675	108.649	0.159	0.98	77	2.20	65	53	99.6
676	108.810	0.161	0.98	77	2.20	65	53	101.0
677	108.971	0.161	0.98	77	2.20	66	53	101.4
678	109.131	0.160	0.98	77	2.20	66	53	100.3
679	109.291	0.160	0.98	77	2.20	66	53	99.7
680	109.452	0.161	0.98	77	2.20	66	53	100.9
681	109.612	0.160	0.98	77	2.20	66	53	100.9
682	109.772	0.160	0.98	77	2.20	66	53	100.5
683	109.933	0.161	0.98	77	2.20	66	53	101.0
684	110.093	0.160	0.98	77	2.20	66	54	101.2
685	110.253	0.160	0.98	77	2.20	66	54	101.3
686	110.415	0.162	0.98	77	2.10	66	54	101.8
687	110.574	0.159	0.98	77	2.20	66	54	99.7
688	110.735	0.161	0.98	77	2.10	66	54	101.1
689	110.896	0.161	0.98	78	2.10	66	54	101.4
690	111.056	0.160	0.97	78	2.20	65	54	100.7
691	111.216	0.160	0.98	78	2.20	65	54	99.5
692	111.377	0.161	0.98	78	2.10	65	54	99.0
693	111.538	0.161	0.98	78	2.20	65	54	99.2
694	111.698	0.160	0.98	78	2.20	65	54	98.5
695	111.858	0.160	0.98	78	2.10	65	54	98.4
696	112.020	0.162	0.98	78	2.10	65	54	100.0
697	112.180	0.160	0.98	78	2.10	65	54	99.2
698	112.340	0.160	0.98	78	2.10	65	54	99.8
699	112.502	0.162	0.98	78	2.10	65	54	101.2
700	112.662	0.160	0.98	78	2.10	65	54	99.6

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
701	112.822	0.160	0.98	78	2.10	65	54	99.3
702	112.983	0.161	0.98	78	2.20	65	54	99.8
703	113.144	0.161	0.98	78	2.10	65	54	100.5
704	113.304	0.160	0.98	78	2.10	65	54	100.3
705	113.464	0.160	0.98	78	2.10	65	54	100.0
706	113.626	0.162	0.98	78	2.10	65	54	100.7
707	113.786	0.160	0.98	78	2.10	65	54	98.7
708	113.947	0.161	0.98	78	2.10	65	54	99.4
709	114.108	0.161	0.98	78	2.10	65	54	100.1
710	114.268	0.160	0.98	78	2.10	65	54	99.4
711	114.428	0.160	0.98	78	2.20	65	54	98.5
712	114.590	0.162	0.98	78	2.20	65	54	99.2
713	114.751	0.161	0.98	78	2.10	64	54	99.1
714	114.911	0.160	0.98	78	2.10	64	54	99.7
715	115.071	0.160	0.98	78	2.20	65	54	100.3
716	115.233	0.162	0.98	78	2.20	65	54	101.1
717	115.393	0.160	0.98	78	2.20	65	54	99.0
718	115.553	0.160	0.98	78	2.10	64	54	98.9
719	115.715	0.162	0.98	78	2.10	65	54	100.3
720	115.875	0.160	0.97	78	2.10	65	54	98.9
721	116.035	0.160	0.98	78	2.10	65	54	99.5
722	116.196	0.161	0.98	78	2.10	65	54	101.0
723	116.357	0.161	0.97	78	2.10	65	54	101.0
724	116.517	0.160	0.98	78	2.10	65	54	100.2
725	116.678	0.161	0.98	78	2.10	65	54	101.1
726	116.839	0.161	0.98	78	2.10	65	54	100.4
727	116.999	0.160	0.98	78	2.10	65	54	98.9
728	117.160	0.161	0.98	78	2.10	65	54	99.8
729	117.321	0.161	0.98	78	2.10	65	54	100.2
730	117.481	0.160	0.98	78	2.20	65	54	99.9
731	117.641	0.160	0.98	78	2.10	65	54	100.2
732	117.802	0.161	0.98	78	2.10	65	54	100.7
733	117.963	0.161	0.98	78	2.20	65	54	100.4
734	118.123	0.160	0.98	78	2.10	65	54	99.6
735	118.284	0.161	0.98	78	2.10	65	54	100.2
736	118.445	0.161	0.98	78	2.10	65	54	99.8
737	118.605	0.160	0.98	78	2.20	65	54	98.2
738	118.766	0.161	0.98	78	2.10	65	54	98.6
739	118.927	0.161	0.98	78	2.10	65	54	99.2
740	119.087	0.160	0.98	78	2.10	65	54	99.3
741	119.247	0.160	0.99	78	2.10	65	54	99.5
742	119.409	0.162	0.98	78	2.10	65	54	100.7
743	119.569	0.160	0.98	78	2.20	65	54	99.7
744	119.729	0.160	0.98	78	2.10	65	54	100.5

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
745	119.890	0.161	0.98	78	2.10	65	54	101.8
746	120.051	0.161	0.98	78	2.10	65	54	101.0
747	120.211	0.160	0.98	78	2.10	65	54	99.1
748	120.372	0.161	0.98	78	2.10	65	54	99.5
749	120.533	0.161	0.98	78	2.20	65	54	99.7
750	120.693	0.160	0.98	78	2.10	65	54	99.3
751	120.853	0.160	0.98	78	2.10	65	54	99.6
752	121.015	0.162	0.98	78	2.10	65	54	101.1
753	121.175	0.160	0.98	78	2.20	65	54	99.4
754	121.335	0.160	0.98	78	2.10	65	54	99.5
755	121.496	0.161	0.98	78	2.20	65	54	101.4
756	121.657	0.161	0.98	78	2.10	65	54	101.1
757	121.817	0.160	0.98	78	2.10	65	54	99.3
758	121.978	0.161	0.98	78	2.10	65	54	99.7
759	122.139	0.161	0.98	78	2.10	64	54	99.6
760	122.299	0.160	0.98	78	2.10	64	54	98.9
761	122.460	0.161	0.99	78	2.10	64	54	99.5
762	122.622	0.162	0.99	78	2.10	64	54	100.1
763	122.782	0.160	0.97	78	2.10	64	54	98.7
764	122.942	0.160	0.98	78	2.10	64	54	98.7
765	123.103	0.161	0.99	78	2.10	64	54	99.4
766	123.265	0.162	0.98	78	2.10	64	54	99.7
767	123.425	0.160	0.98	78	2.10	64	54	98.3
768	123.586	0.161	0.98	78	2.10	64	54	98.6
769	123.748	0.162	0.98	78	2.10	64	54	98.7
770	123.908	0.160	0.98	78	2.10	64	54	98.3
771	124.068	0.160	0.99	78	2.10	64	54	99.0
772	124.230	0.162	0.99	78	2.10	64	54	100.1
773	124.391	0.161	0.98	78	2.10	64	54	100.0
774	124.551	0.160	0.99	78	2.10	64	54	100.4
775	124.712	0.161	0.99	78	2.10	64	54	100.9
776	124.874	0.162	0.99	78	2.10	64	54	100.4
777	125.034	0.160	0.99	78	2.10	64	54	98.8
778	125.195	0.161	0.99	78	2.10	63	54	99.4
779	125.356	0.161	0.98	78	2.10	63	54	99.6
780	125.517	0.161	0.98	78	2.10	63	54	99.9
781	125.678	0.161	0.98	78	2.10	63	54	99.1
782	125.839	0.161	0.99	78	2.10	63	54	98.7
783	126.001	0.162	0.98	78	2.10	63	54	99.7
784	126.161	0.160	0.98	78	2.10	63	54	98.5
785	126.322	0.161	0.99	78	2.10	63	54	99.0
786	126.483	0.161	0.99	78	2.10	63	54	99.4
787	126.644	0.161	0.98	78	2.10	63	54	99.4
788	126.805	0.161	0.98	78	2.10	63	54	98.9

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
789	126.966	0.161	0.98	78	2.20	63	54	99.1
790	127.127	0.161	0.98	78	2.20	63	54	99.6
791	127.287	0.160	0.98	77	2.20	63	54	99.1
792	127.448	0.161	0.99	77	2.10	63	54	99.6
793	127.610	0.162	0.99	77	2.10	63	54	100.6
794	127.770	0.160	0.98	77	2.10	63	54	99.7
795	127.930	0.160	0.99	77	2.10	63	54	99.6
796	128.091	0.161	0.99	77	2.20	63	54	99.9
797	128.253	0.162	0.98	77	2.20	63	54	100.5
798	128.413	0.160	0.98	77	2.10	63	54	99.7
799	128.573	0.160	0.98	77	2.20	63	54	100.2
800	128.735	0.162	0.98	77	2.20	64	54	101.4
801	128.895	0.160	0.98	77	2.20	64	54	100.2
802	129.055	0.160	0.98	77	2.20	64	54	100.0
803	129.216	0.161	0.98	77	2.20	64	54	100.9
804	129.377	0.161	0.98	77	2.20	64	54	101.7
805	129.537	0.160	0.99	77	2.20	64	54	100.7
806	129.697	0.160	0.99	77	2.20	64	55	99.3
807	129.858	0.161	0.98	77	2.20	64	55	99.6
808	130.018	0.160	0.98	77	2.20	64	55	99.8
809	130.178	0.160	0.98	77	2.20	64	55	100.5
810	130.340	0.162	0.98	77	2.20	64	55	101.7
811	130.499	0.159	0.98	77	2.20	64	55	99.4
812	130.660	0.161	0.98	77	2.20	64	55	100.6
813	130.821	0.161	0.98	77	2.20	64	55	101.0
814	130.980	0.159	0.98	77	2.20	64	55	99.4
815	131.141	0.161	0.98	77	2.20	64	55	100.4
816	131.302	0.161	0.98	77	2.20	64	55	100.8
817	131.462	0.160	0.97	77	2.20	65	55	101.0
818	131.622	0.160	0.98	77	2.20	65	55	100.8
819	131.783	0.161	0.98	77	2.20	65	55	100.6
820	131.943	0.160	0.97	77	2.20	65	55	99.3
821	132.102	0.159	0.98	77	2.20	65	55	98.7
822	132.263	0.161	0.98	77	2.20	65	55	100.7
823	132.423	0.160	0.98	77	2.20	65	55	100.3
824	132.583	0.160	0.98	77	2.20	65	55	99.9
825	132.744	0.161	0.98	77	2.20	65	55	100.3
826	132.905	0.161	0.98	77	2.20	65	55	100.8
827	133.064	0.159	0.98	77	2.10	65	55	99.9
828	133.224	0.160	0.98	77	2.20	65	55	99.9
829	133.386	0.162	0.98	77	2.20	65	55	101.2
830	133.545	0.159	0.98	77	2.20	65	55	99.2
831	133.706	0.161	0.98	77	2.10	65	55	99.2
832	133.867	0.161	0.98	77	2.10	65	55	99.3

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
833	134.027	0.160	0.98	77	2.10	65	55	99.9
834	134.187	0.160	0.98	77	2.10	65	55	100.0
835	134.348	0.161	0.98	77	2.20	65	55	99.9
836	134.508	0.160	0.97	77	2.10	65	55	99.5
837	134.668	0.160	0.98	77	2.10	65	55	100.1
838	134.829	0.161	0.98	77	2.10	65	55	100.4
839	134.990	0.161	0.98	77	2.10	65	55	100.3
840	135.150	0.160	0.98	77	2.10	65	55	99.6
841	135.310	0.160	0.98	77	2.20	65	55	98.9
842	135.471	0.161	0.98	77	2.20	65	55	100.3
843	135.631	0.160	0.98	77	2.20	65	55	100.9
844	135.791	0.160	0.98	77	2.10	65	55	100.6
845	135.953	0.162	0.98	77	2.20	65	55	100.9
846	136.112	0.159	0.98	77	2.20	65	55	98.4
847	136.273	0.161	0.98	77	2.10	65	55	99.1
848	136.434	0.161	0.98	77	2.10	65	55	99.2
849	136.594	0.160	0.98	77	2.20	65	55	98.8
850	136.754	0.160	0.98	77	2.20	65	55	98.9
851	136.915	0.161	0.98	77	2.20	65	55	99.7
852	137.075	0.160	0.97	77	2.20	65	55	99.3
853	137.235	0.160	0.98	77	2.10	65	55	99.7
854	137.396	0.161	0.98	77	2.10	65	55	99.8
855	137.557	0.161	0.98	77	2.10	65	55	99.5
856	137.717	0.160	0.98	77	2.10	65	55	99.8
857	137.877	0.160	0.98	77	2.10	65	55	99.8
858	138.038	0.161	0.98	77	2.10	65	55	99.4
859	138.198	0.160	0.98	77	2.20	65	55	98.5
860	138.358	0.160	0.98	77	2.20	65	55	98.8
861	138.520	0.162	0.98	77	2.20	65	55	100.8
862	138.680	0.160	0.98	77	2.10	65	55	100.3
863	138.840	0.160	0.98	77	2.10	65	55	99.7
864	139.001	0.161	0.99	78	2.20	65	55	99.5
865	139.161	0.160	0.98	78	2.10	65	55	98.5
866	139.321	0.160	0.98	78	2.10	65	55	99.0
867	139.482	0.161	0.98	78	2.20	65	55	100.5
868	139.642	0.160	0.97	78	2.20	65	55	99.7
869	139.802	0.160	0.98	78	2.20	65	55	99.4
870	139.963	0.161	0.98	78	2.20	64	55	99.7
871	140.124	0.161	0.98	78	2.10	64	55	99.5
872	140.284	0.160	0.98	78	2.10	64	55	98.7
873	140.444	0.160	0.98	78	2.20	64	55	98.1
874	140.606	0.162	0.98	78	2.20	64	55	99.4
875	140.765	0.159	0.98	78	2.10	64	55	97.9
876	140.926	0.161	0.98	78	2.10	64	55	99.4

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
877	141.087	0.161	0.98	78	2.20	64	55	99.5
878	141.247	0.160	0.98	78	2.10	64	55	98.8
879	141.407	0.160	0.98	78	2.20	64	55	99.1
880	141.568	0.161	0.98	78	2.10	64	55	99.8
881	141.729	0.161	0.98	78	2.10	64	55	99.6
882	141.889	0.160	0.98	78	2.20	64	55	99.0
883	142.049	0.160	0.98	78	2.10	64	55	98.7
884	142.211	0.162	0.98	78	2.10	64	55	99.9
885	142.371	0.160	0.98	78	2.10	64	55	98.3
886	142.531	0.160	0.98	78	2.10	64	55	98.3
887	142.693	0.162	0.98	78	2.20	64	55	100.5
888	142.853	0.160	0.98	78	2.20	64	55	99.5
889	143.013	0.160	0.98	78	2.10	63	55	98.8
890	143.174	0.161	0.98	78	2.10	63	55	99.0
891	143.335	0.161	0.98	78	2.10	63	55	99.8
892	143.495	0.160	0.98	78	2.10	63	55	99.4
893	143.655	0.160	0.98	77	2.20	63	55	98.9
894	143.817	0.162	0.98	78	2.20	63	55	99.9
895	143.977	0.160	0.98	78	2.10	63	55	98.9
896	144.138	0.161	0.98	77	2.10	63	55	100.1
897	144.299	0.161	0.98	77	2.10	63	55	100.0
898	144.460	0.161	0.98	77	2.10	63	55	99.9
899	144.620	0.160	0.98	77	2.10	63	55	98.6
900	144.781	0.161	0.98	77	2.10	63	55	98.5
901	144.942	0.161	0.98	77	2.10	63	55	99.5
902	145.102	0.160	0.98	77	2.10	63	55	99.7
903	145.263	0.161	0.98	77	2.10	63	55	99.4
904	145.425	0.162	0.99	77	2.10	63	55	99.0
905	145.585	0.160	0.98	77	2.10	63	55	97.3
906	145.745	0.160	0.99	77	2.10	63	55	97.7
907	145.907	0.162	0.99	77	2.10	63	55	99.5
908	146.068	0.161	0.98	77	2.10	63	55	98.4
909	146.227	0.159	0.98	77	2.20	63	55	97.6
910	146.388	0.161	0.98	77	2.10	63	55	100.4
911	146.549	0.161	0.98	77	2.10	63	55	100.6
912	146.710	0.161	0.98	77	2.10	63	55	100.0
913	146.870	0.160	0.98	77	2.10	63	55	99.8
914	147.032	0.162	0.98	77	2.10	63	55	101.4
915	147.192	0.160	0.98	77	2.10	63	55	100.1
916	147.352	0.160	0.98	77	2.10	63	55	100.6
917	147.514	0.162	0.98	77	2.10	63	55	101.8
918	147.674	0.160	0.97	77	2.20	63	55	99.2
919	147.834	0.160	0.98	77	2.10	63	55	98.9
920	147.995	0.161	0.98	77	2.10	63	55	100.7

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
921	148.156	0.161	0.98	77	2.10	63	55	101.3
922	148.316	0.160	0.98	77	2.20	63	55	100.6
923	148.477	0.161	0.98	77	2.10	63	55	100.8
924	148.638	0.161	0.98	77	2.20	63	55	100.8
925	148.798	0.160	0.98	77	2.20	63	55	100.6
926	148.958	0.160	0.98	77	2.10	63	55	100.4
927	149.120	0.162	0.98	77	2.20	63	55	100.8
928	149.280	0.160	0.97	77	2.20	64	55	99.7
929	149.440	0.160	0.98	77	2.10	64	55	100.5
930	149.601	0.161	0.98	77	2.10	64	55	101.3
931	149.761	0.160	0.97	77	2.20	64	55	100.3
932	149.921	0.160	0.98	77	2.20	64	55	99.8
933	150.081	0.160	0.98	77	2.20	64	55	100.0
934	150.242	0.161	0.98	77	2.20	64	55	101.4
935	150.402	0.160	0.98	77	2.20	64	55	101.3
936	150.562	0.160	0.98	77	2.20	64	55	101.2
937	150.723	0.161	0.98	77	2.20	65	55	101.7
938	150.883	0.160	0.98	77	2.20	65	55	101.0
939	151.043	0.160	0.98	77	2.20	65	56	100.6
940	151.204	0.161	0.98	77	2.20	65	56	101.3
941	151.363	0.159	0.98	77	2.20	65	56	100.2
942	151.523	0.160	0.98	77	2.20	65	56	99.9
943	151.684	0.161	0.98	77	2.20	65	56	99.6
944	151.844	0.160	0.98	77	2.20	65	56	99.3
945	152.004	0.160	0.98	77	2.20	65	56	99.9
946	152.165	0.161	0.98	77	2.20	65	56	100.8
947	152.324	0.159	0.98	77	2.20	65	56	99.6
948	152.484	0.160	0.98	77	2.20	65	56	100.1
949	152.645	0.161	0.98	77	2.20	66	56	101.5
950	152.804	0.159	0.97	77	2.20	66	56	101.1
951	152.964	0.160	0.98	77	2.20	66	56	101.4
952	153.125	0.161	0.98	77	2.20	66	56	101.7
953	153.284	0.159	0.97	77	2.20	66	56	100.7
954	153.444	0.160	0.98	77	2.20	66	56	101.5
955	153.605	0.161	0.98	77	2.20	66	56	101.6
956	153.765	0.160	0.97	77	2.20	66	56	100.4
957	153.924	0.159	0.98	77	2.20	66	56	99.8
958	154.084	0.160	0.97	77	2.20	66	56	100.6
959	154.244	0.160	0.97	77	2.20	66	56	100.5
960	154.404	0.160	0.98	77	2.20	66	56	100.5
961	154.564	0.160	0.98	77	2.20	66	56	100.0
962	154.725	0.161	0.97	78	2.20	66	57	100.1
963	154.884	0.159	0.97	78	2.20	66	57	99.4
964	155.045	0.161	0.98	77	2.20	66	57	101.7

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
965	155.205	0.160	0.97	78	2.20	66	57	100.8
966	155.365	0.160	0.98	78	2.20	66	57	100.6
967	155.525	0.160	0.98	78	2.20	66	57	101.2
968	155.686	0.161	0.97	78	2.20	66	57	101.5
969	155.846	0.160	0.97	78	2.20	66	57	99.7
970	156.006	0.160	0.97	78	2.20	66	57	99.4
971	156.167	0.161	0.98	78	2.20	66	57	100.6
972	156.326	0.159	0.98	78	2.20	66	57	99.8
973	156.487	0.161	0.98	78	2.20	65	57	100.6
974	156.648	0.161	0.97	78	2.20	65	57	99.3
975	156.807	0.159	0.98	78	2.20	65	57	97.7
976	156.967	0.160	0.98	78	2.20	65	57	99.3
977	157.129	0.162	0.98	78	2.20	65	57	101.2
978	157.289	0.160	0.98	78	2.20	65	57	99.3
979	157.448	0.159	0.98	78	2.20	65	56	98.1
980	157.609	0.161	0.98	78	2.20	65	56	99.4
981	157.770	0.161	0.97	78	2.20	65	56	99.0
982	157.929	0.159	0.98	78	2.20	65	56	97.8
983	158.090	0.161	0.98	78	2.20	65	56	100.2
984	158.251	0.161	0.98	78	2.20	64	56	100.3
985	158.411	0.160	0.98	78	2.20	64	56	98.9
986	158.571	0.160	0.98	78	2.20	64	56	98.2
987	158.732	0.161	0.97	78	2.20	64	56	98.8
988	158.892	0.160	0.98	78	2.20	64	56	98.2
989	159.052	0.160	0.98	78	2.20	64	56	98.5
990	159.213	0.161	0.98	78	2.20	64	56	100.3
991	159.373	0.160	0.98	78	2.20	64	56	99.8
992	159.533	0.160	0.98	78	2.20	64	56	98.8
993	159.695	0.162	0.98	78	2.10	64	56	99.7
994	159.854	0.159	0.98	77	2.20	64	56	97.7
995	160.014	0.160	0.98	77	2.20	64	56	98.4
996	160.176	0.162	0.98	78	2.20	64	56	100.5
997	160.336	0.160	0.97	77	2.20	63	56	99.7
998	160.496	0.160	0.98	77	2.20	63	56	99.4
999	160.657	0.161	0.98	77	2.20	63	56	100.0
1000	160.818	0.161	0.98	77	2.20	63	56	100.5
1001	160.978	0.160	0.98	77	2.20	63	56	100.3
1002	161.138	0.160	0.98	77	2.20	63	56	100.0
1003	161.300	0.162	0.98	77	2.20	63	56	100.1
1004	161.459	0.159	0.98	77	2.20	63	56	97.8
1005	161.620	0.161	0.98	77	2.20	63	56	99.9
1006	161.781	0.161	0.97	77	2.20	63	56	100.3
1007	161.941	0.160	0.98	77	2.20	63	56	98.8
1008	162.101	0.160	0.98	77	2.20	63	56	98.5

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1009	162.262	0.161	0.98	77	2.20	63	56	100.0
1010	162.423	0.161	0.98	77	2.20	63	56	100.3
1011	162.583	0.160	0.98	77	2.20	63	56	99.8
1012	162.743	0.160	0.98	77	2.20	63	56	100.0
1013	162.904	0.161	0.97	77	2.20	63	56	100.6
1014	163.064	0.160	0.98	77	2.20	63	56	99.8
1015	163.224	0.160	0.98	77	2.20	63	56	100.0
1016	163.385	0.161	0.98	77	2.10	63	56	101.0
1017	163.545	0.160	0.98	77	2.20	63	56	99.8
1018	163.705	0.160	0.98	77	2.20	63	56	99.4
1019	163.866	0.161	0.98	77	2.20	63	56	100.7
1020	164.026	0.160	0.98	77	2.20	63	56	100.8
1021	164.186	0.160	0.98	77	2.20	63	56	100.6
1022	164.347	0.161	0.98	77	2.20	64	56	100.1
1023	164.507	0.160	0.98	77	2.20	64	56	98.6
1024	164.667	0.160	0.98	77	2.20	64	56	98.4
1025	164.828	0.161	0.98	77	2.20	64	56	99.4
1026	164.988	0.160	0.97	77	2.20	64	56	99.6
1027	165.148	0.160	0.98	77	2.20	64	56	99.6
1028	165.309	0.161	0.97	77	2.20	64	56	100.0
1029	165.469	0.160	0.98	77	2.10	64	56	99.1
1030	165.629	0.160	0.98	77	2.20	64	56	98.7
1031	165.789	0.160	0.98	77	2.20	64	56	98.7
1032	165.950	0.161	0.98	77	2.20	64	56	99.9
1033	166.110	0.160	0.98	77	2.20	64	56	99.9
1034	166.270	0.160	0.98	77	2.20	64	56	100.3
1035	166.431	0.161	0.98	77	2.20	64	56	101.3
1036	166.590	0.159	0.98	77	2.20	64	56	99.7
1037	166.751	0.161	0.98	77	2.20	64	56	100.2
1038	166.912	0.161	0.98	77	2.20	64	56	99.4
1039	167.071	0.159	0.98	77	2.20	64	56	98.1
1040	167.232	0.161	0.98	77	2.20	64	56	99.9
1041	167.393	0.161	0.97	77	2.20	64	56	100.2
1042	167.553	0.160	0.98	77	2.20	64	56	99.4
1043	167.712	0.159	0.98	77	2.20	64	56	99.1
1044	167.873	0.161	0.97	77	2.20	64	56	101.0
1045	168.034	0.161	0.97	77	2.20	64	56	100.3
1046	168.193	0.159	0.98	77	2.20	64	56	97.7
1047	168.354	0.161	0.98	77	2.20	64	56	98.8
1048	168.515	0.161	0.97	77	2.20	64	56	99.4
1049	168.675	0.160	0.98	77	2.20	64	56	98.3
1050	168.835	0.160	0.98	77	2.20	64	56	98.1
1051	168.996	0.161	0.98	77	2.20	64	56	99.1
1052	169.155	0.159	0.98	77	2.10	64	56	97.9

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1053	169.316	0.161	0.98	77	2.10	64	56	99.8
1054	169.477	0.161	0.98	77	2.20	64	56	100.2
1055	169.636	0.159	0.97	77	2.20	64	56	98.6
1056	169.796	0.160	0.98	77	2.20	64	56	99.4
1057	169.957	0.161	0.97	77	2.20	64	56	100.1
1058	170.117	0.160	0.98	77	2.20	64	56	99.4
1059	170.277	0.160	0.98	77	2.20	64	56	99.8
1060	170.438	0.161	0.97	77	2.20	64	56	101.1
1061	170.597	0.159	0.98	77	2.20	64	56	100.6
1062	170.757	0.160	0.98	77	2.20	64	56	100.8
1063	170.918	0.161	0.98	77	2.20	64	56	100.6
1064	171.078	0.160	0.97	77	2.20	64	56	100.0
1065	171.237	0.159	0.98	77	2.20	64	56	99.7
1066	171.398	0.161	0.97	77	2.20	65	56	101.4
1067	171.558	0.160	0.97	77	2.20	65	56	100.7
1068	171.717	0.159	0.97	77	2.20	65	56	99.2
1069	171.878	0.161	0.98	77	2.20	65	57	100.2
1070	172.038	0.160	0.97	77	2.20	65	57	100.1
1071	172.197	0.159	0.98	77	2.20	65	57	99.8
1072	172.357	0.160	0.98	77	2.20	65	57	100.4
1073	172.517	0.160	0.97	77	2.20	65	57	100.6
1074	172.677	0.160	0.97	77	2.20	65	57	101.3
1075	172.837	0.160	0.97	77	2.20	65	57	101.8
1076	172.997	0.160	0.97	77	2.20	66	57	101.4
1077	173.156	0.159	0.97	77	2.20	66	57	100.1
1078	173.316	0.160	0.98	77	2.20	66	57	100.1
1079	173.476	0.160	0.97	78	2.20	66	57	99.4
1080	173.635	0.159	0.98	78	2.20	66	57	98.9
1081	173.796	0.161	0.97	78	2.20	66	57	100.9
1082	173.955	0.159	0.97	78	2.20	66	57	99.8
1083	174.115	0.160	0.97	78	2.20	66	57	100.0
1084	174.275	0.160	0.97	78	2.20	66	57	100.1
1085	174.434	0.159	0.97	78	2.20	66	57	99.4
1086	174.594	0.160	0.98	78	2.20	66	57	99.6
1087	174.754	0.160	0.97	78	2.20	66	57	100.2
1088	174.914	0.160	0.97	78	2.20	66	57	100.7
1089	175.073	0.159	0.97	78	2.20	66	57	99.4
1090	175.234	0.161	0.98	78	2.20	66	57	100.4
1091	175.393	0.159	0.97	78	2.20	66	58	98.7
1092	175.553	0.160	0.97	78	2.20	66	58	99.6
1093	175.714	0.161	0.97	78	2.20	66	58	101.3
1094	175.873	0.159	0.97	78	2.20	66	58	99.7
1095	176.033	0.160	0.98	78	2.20	65	58	99.5
1096	176.194	0.161	0.97	78	2.20	65	58	99.9

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1097	176.353	0.159	0.97	78	2.20	65	58	98.7
1098	176.513	0.160	0.98	78	2.20	65	58	98.7
1099	176.674	0.161	0.97	78	2.20	65	58	98.9
1100	176.834	0.160	0.97	78	2.20	65	58	98.9
1101	176.993	0.159	0.98	78	2.20	65	58	98.4
1102	177.154	0.161	0.98	78	2.20	65	58	99.4
1103	177.314	0.160	0.97	77	2.20	64	58	98.8
1104	177.474	0.160	0.98	77	2.20	64	58	98.7
1105	177.634	0.160	0.98	77	2.20	64	58	98.9
1106	177.795	0.161	0.97	77	2.20	64	58	100.2
1107	177.955	0.160	0.97	77	2.20	64	58	99.1
1108	178.115	0.160	0.98	77	2.20	64	58	98.0
1109	178.275	0.160	0.98	77	2.20	64	57	98.3
1110	178.435	0.160	0.97	77	2.20	64	57	99.1
1111	178.595	0.160	0.98	77	2.20	64	57	98.9
1112	178.756	0.161	0.97	77	2.20	64	57	99.3
1113	178.916	0.160	0.97	77	2.20	63	57	99.0
1114	179.076	0.160	0.98	77	2.20	63	57	99.2
1115	179.237	0.161	0.98	77	2.20	63	57	99.6
1116	179.396	0.159	0.98	77	2.20	63	57	98.1
1117	179.557	0.161	0.98	77	2.20	63	57	99.0
1118	179.718	0.161	0.98	77	2.20	63	57	99.0
1119	179.877	0.159	0.97	77	2.20	63	57	97.8
1120	180.037	0.160	0.98	77	2.20	63	57	98.5
1121	180.198	0.161	0.98	77	2.20	63	57	99.2
1122	180.358	0.160	0.98	77	2.20	63	57	98.8
1123	180.518	0.160	0.98	77	2.20	63	57	98.9
1124	180.679	0.161	0.98	77	2.20	63	57	99.4
1125	180.839	0.160	0.97	77	2.20	63	57	98.8
1126	180.999	0.160	0.98	77	2.20	63	57	99.1
1127	181.160	0.161	0.98	77	2.20	62	57	99.4
1128	181.320	0.160	0.98	77	2.20	62	57	97.7
1129	181.480	0.160	0.98	77	2.20	62	57	98.2
1130	181.640	0.160	0.98	77	2.20	62	57	99.5
1131	181.801	0.161	0.98	77	2.20	62	57	99.6
1132	181.961	0.160	0.98	77	2.20	62	57	98.5
1133	182.121	0.160	0.98	77	2.20	62	57	99.4
1134	182.282	0.161	0.98	77	2.20	62	57	100.1
1135	182.442	0.160	0.98	77	2.20	62	57	98.8
1136	182.602	0.160	0.98	77	2.20	62	57	98.4
1137	182.763	0.161	0.98	77	2.20	62	57	98.8
1138	182.923	0.160	0.98	77	2.20	62	57	98.4
1139	183.083	0.160	0.98	76	2.20	62	57	98.9
1140	183.244	0.161	0.97	76	2.20	62	57	100.1

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1141	183.404	0.160	0.98	76	2.20	62	57	99.4
1142	183.564	0.160	0.98	76	2.20	62	57	98.8
1143	183.725	0.161	0.98	76	2.20	62	57	99.2
1144	183.885	0.160	0.97	76	2.20	62	57	98.9
1145	184.045	0.160	0.98	76	2.20	62	57	99.1
1146	184.205	0.160	0.98	76	2.20	62	57	99.2
1147	184.366	0.161	0.98	76	2.20	62	57	100.1
1148	184.525	0.159	0.98	76	2.20	62	57	98.7
1149	184.685	0.160	0.98	76	2.20	62	57	99.1
1150	184.846	0.161	0.98	76	2.20	62	57	99.5
1151	185.006	0.160	0.97	76	2.20	62	57	98.6
1152	185.166	0.160	0.98	76	2.20	62	57	98.5
1153	185.327	0.161	0.98	76	2.20	62	57	99.5
1154	185.486	0.159	0.98	76	2.20	62	57	99.5
1155	185.646	0.160	0.98	76	2.20	62	57	100.9
1156	185.807	0.161	0.98	76	2.20	62	56	101.2
1157	185.966	0.159	0.97	76	2.20	63	57	99.7
1158	186.126	0.160	0.98	76	2.20	63	57	100.4
1159	186.287	0.161	0.98	76	2.20	63	57	100.4
1160	186.446	0.159	0.97	76	2.20	63	57	99.3
1161	186.606	0.160	0.98	76	2.20	63	57	100.2
1162	186.767	0.161	0.97	76	2.20	63	57	100.3
1163	186.926	0.159	0.98	76	2.20	63	57	98.6
1164	187.086	0.160	0.98	76	2.20	63	57	98.7
1165	187.247	0.161	0.98	76	2.20	63	57	99.2
1166	187.406	0.159	0.98	76	2.20	63	57	98.3
1167	187.567	0.161	0.98	76	2.20	63	57	100.0
1168	187.727	0.160	0.97	76	2.20	63	57	100.2
1169	187.887	0.160	0.98	76	2.20	63	57	100.3
1170	188.047	0.160	0.98	77	2.20	63	57	99.6
1171	188.208	0.161	0.98	77	2.20	63	57	99.8
1172	188.367	0.159	0.97	77	2.20	63	57	98.8
1173	188.527	0.160	0.98	77	2.20	63	57	99.8
1174	188.688	0.161	0.98	77	2.20	63	57	100.8
1175	188.847	0.159	0.97	77	2.20	63	57	99.5
1176	189.007	0.160	0.98	77	2.20	63	57	99.5
1177	189.168	0.161	0.98	77	2.20	63	57	99.7
1178	189.328	0.160	0.98	77	2.20	63	57	99.4
1179	189.487	0.159	0.98	77	2.20	63	57	98.9
1180	189.648	0.161	0.98	77	2.20	63	57	99.4
1181	189.808	0.160	0.97	77	2.20	63	57	98.3
1182	189.967	0.159	0.97	77	2.20	64	57	98.2
1183	190.127	0.160	0.98	77	2.20	64	57	98.8
1184	190.287	0.160	0.97	77	2.20	64	57	98.3

Train B - Particulate Sampling

ASTM E2515

Run: 3

Test Date: 12/4/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.14 in. Hg

Post-Test 0 cfm @ 9.56 in. Hg

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1185	190.447	0.160	0.98	77	2.20	64	57	98.7
1186	190.607	0.160	0.98	77	2.20	64	57	99.5
1187	190.767	0.160	0.97	77	2.20	64	57	100.2
1188	190.926	0.159	0.97	77	2.20	64	57	99.8
1189	191.087	0.161	0.97	77	2.20	64	57	100.9
1190	191.246	0.159	0.96	77	2.20	64	57	99.3
1191	191.405	0.159	0.97	77	2.20	64	57	98.7
1192	191.566	0.161	0.97	77	2.20	64	57	100.4
1193	191.726	0.160	0.97	77	2.20	64	57	101.3
1194	191.885	0.159	0.97	77	2.20	65	57	100.8
1195	192.045	0.160	0.97	77	2.20	65	57	100.5
1196	192.205	0.160	0.97	77	2.20	65	57	100.1
1197	192.364	0.159	0.97	77	2.20	65	57	100.1
1198	192.524	0.160	0.97	77	2.20	65	57	101.5
1199	192.683	0.159	0.97	77	2.20	65	57	100.6
1200	192.843	0.160	0.97	77	2.20	65	57	100.8
1201	193.003	0.160	0.98	77	2.20	65	57	100.8
1202	193.162	0.159	0.97	77	2.20	65	57	100.0
1203	193.322	0.160	0.97	77	2.20	65	57	100.5
1204	193.482	0.160	0.97	77	2.20	66	57	100.7
1205	193.641	0.159	0.97	77	2.20	66	57	100.4
1206	193.800	0.159	0.97	77	2.20	66	57	100.2
1207	193.961	0.161	0.97	77	2.20	66	57	101.2
1208	194.119	0.158	0.97	77	2.20	66	57	99.5
1209	194.279	0.160	0.97	77	2.20	66	57	101.1
1210	194.439	0.160	0.97	77	2.20	66	57	101.2
1211	194.598	0.159	0.97	77	2.20	66	57	100.1
1212	194.757	0.159	0.97	77	2.20	66	58	99.7
1213	194.918	0.161	0.97	77	2.20	66	58	101.0
1214	195.077	0.159	0.97	77	2.20	66	58	100.1
1215	195.236	0.159	0.97	77	2.20	66	58	100.3
1216	195.397	0.161	0.97	77	2.20	66	58	101.4
1217	195.556	0.159	0.97	77	2.20	66	58	99.9
1218	195.715	0.159	0.97	78	2.20	66	58	100.1
1219	195.875	0.160	0.97	78	2.20	66	58	101.6
1220	196.034	0.159	0.97	77	2.20	66	58	100.5
1221	196.195	0.161	0.97	78	2.20	66	58	100.4
1222	196.354	0.159	0.97	78	2.20	66	58	99.1
1223	196.513	0.159	0.97	78	2.20	66	58	99.5
1224	196.674	0.161	0.97	78	2.20	66	58	100.5
1225	196.834	0.160	0.97	78	2.20	66	58	99.6
1226	196.993	0.159	0.97	78	2.20	66	58	99.0
1227	197.153	0.160	0.97	78	2.20	65	58	99.5
1228	197.313	0.160	0.97	78	2.20	65	58	99.5

Train C - First Hour Particulate Sampling

Run:	3	Test Date:	12/4/24
Manufacturer:	Central Boiler	Meter Box Y Regression Offset:	1.01
Model:	Classic Edge 560.1	Meter Box Y Regression Factor:	0
Tracking No.:	2495	Meter Box Dynamic Y:	1.010
Project No.:	0117WB043E	Sample Box ID:	371
Start Time:	12:35	Sample Train Leak Checks	
Total Sampling Time:	60 min	Pre-test	0 cfm @ 22.05 in. Hg
Recording Interval:	1 min	Post-Test	0 cfm @ 5.08 in. Hg

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	9.592	0.160	2.15	64.1	1.66	63.4	55.7	100.1
Minimum	0.000	0.149	1.39	64	1.38	63	53	93.0
Max	9.592	0.164	3.30	65	2.72	64	57	102.4
0	0.000		2.22	64	1.59	62	56	
1	0.149	0.149	3.30	64	2.72	63	54	93.0
2	0.310	0.161	2.23	64	1.59	63	54	101.7
3	0.470	0.160	2.22	64	1.81	63	53	101.1
4	0.628	0.158	2.22	64	1.69	63	53	98.8
5	0.786	0.158	2.17	64	1.85	63	53	97.9
6	0.943	0.157	2.19	64	1.63	64	53	97.9
7	1.101	0.158	2.18	64	1.54	64	53	99.2
8	1.259	0.158	2.17	64	1.44	64	53	100.1
9	1.415	0.156	2.16	64	1.80	64	53	99.3
10	1.570	0.155	2.04	64	1.38	64	53	98.1
11	1.728	0.158	2.25	64	1.86	64	53	99.8
12	1.887	0.159	2.22	64	1.76	64	54	100.4
13	2.047	0.160	2.23	64	1.53	64	54	100.4
14	2.206	0.159	2.22	64	1.78	64	54	99.6
15	2.365	0.159	2.20	64	1.87	64	54	99.8
16	2.523	0.158	2.19	64	1.54	64	54	99.0
17	2.682	0.159	2.19	64	1.86	64	54	99.1
18	2.840	0.158	2.21	64	1.82	64	55	98.2
19	3.003	0.163	2.35	64	1.66	64	55	101.1
20	3.167	0.164	2.34	64	1.69	64	55	102.4
21	3.329	0.162	2.25	64	1.73	64	55	102.1
22	3.489	0.160	2.24	64	1.52	64	55	101.2
23	3.649	0.160	2.24	64	1.47	64	55	101.3
24	3.809	0.160	2.24	64	1.43	64	56	100.9
25	3.969	0.160	2.25	64	1.51	64	56	100.0
26	4.130	0.161	2.24	64	1.52	64	56	100.4
27	4.290	0.160	2.25	64	1.40	64	56	100.0
28	4.451	0.161	2.26	65	1.41	63	56	100.3
29	4.611	0.160	2.25	64	1.86	63	56	99.2
30	4.772	0.161	2.27	64	1.81	63	56	99.9
31	4.933	0.161	2.24	65	1.42	63	57	100.4
32	5.093	0.160	2.26	65	1.81	63	57	100.4

Train C - First Hour Particulate Sampling

Run:	3	Test Date:	12/4/24
Manufacturer:	Central Boiler	Meter Box Y Regression Offset:	1.01
Model:	Classic Edge 560.1	Meter Box Y Regression Factor:	0
Tracking No.:	2495	Meter Box Dynamic Y:	1.010
Project No.:	0117WB043E	Sample Box ID:	371
Start Time:	12:35	Sample Train Leak Checks	
Total Sampling Time:	60 min	Pre-test	0 cfm @ 22.05 in. Hg
Recording Interval:	1 min	Post-Test	0 cfm @ 5.08 in. Hg

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
33	5.254	0.161	2.23	65	1.41	63	57	101.0
34	5.415	0.161	2.25	65	1.88	63	57	100.9
35	5.576	0.161	2.25	64	1.68	63	57	100.3
36	5.736	0.160	2.26	64	1.85	63	57	99.2
37	5.898	0.162	2.25	64	1.40	63	57	101.1
38	6.058	0.160	2.25	64	1.85	63	57	99.8
39	6.219	0.161	2.25	64	1.41	63	57	99.9
40	6.380	0.161	2.25	64	1.48	63	57	100.6
41	6.540	0.160	2.26	64	1.84	63	57	100.7
42	6.701	0.161	2.25	64	1.88	63	57	100.7
43	6.861	0.160	2.26	64	1.49	63	57	99.7
44	7.022	0.161	2.23	64	1.76	63	57	100.7
45	7.182	0.160	2.24	64	1.88	63	57	100.2
46	7.343	0.161	2.23	64	1.52	63	57	100.9
47	7.503	0.160	2.25	64	1.54	63	57	100.4
48	7.664	0.161	2.25	64	1.45	63	57	100.7
49	7.824	0.160	2.26	64	1.42	63	57	100.2
50	7.986	0.162	1.89	64	1.89	63	57	101.6
51	8.146	0.160	1.71	64	1.71	63	57	100.3
52	8.307	0.161	1.45	64	1.45	63	57	101.3
53	8.468	0.161	1.86	64	1.86	63	57	101.1
54	8.628	0.160	1.39	64	1.39	63	57	99.3
55	8.789	0.161	1.61	64	1.61	63	57	99.6
56	8.949	0.160	1.80	64	1.80	63	57	99.5
57	9.110	0.161	1.87	64	1.87	63	57	100.0
58	9.270	0.160	1.56	64	1.56	63	57	99.1
59	9.432	0.162	1.58	64	1.58	63	57	101.0
60	9.592	0.160	1.52	64	1.52	63	57	100.3

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
Tot / Avg	197.092	0.160	1.55	63.3	1.20	176.70	-0.034	965.7	0.59	6.66
Minimum	0.000	0.159	1.30	57	1.10	88.00	-0.058	182.4	-0.05	0.55
Max	197.092	0.161	1.59	68	1.20	318.00	-0.016	1040.0	4.29	18.01
0	0.000		1.30	65	1.10	262	-0.040	728.9	0.00	14.73
1	0.160	0.160	1.55	65	1.20	237	-0.040	1040.0	0.05	4.38
2	0.321	0.161	1.54	65	1.20	260	-0.048	1030.5	0.06	6.74
3	0.481	0.160	1.54	65	1.20	267	-0.045	1040.0	0.23	17.89
4	0.642	0.161	1.55	65	1.20	262	-0.045	1040.0	0.07	16.33
5	0.803	0.161	1.54	65	1.20	263	-0.046	1040.0	0.20	17.32
6	0.963	0.160	1.54	65	1.20	261	-0.046	1040.0	0.09	16.22
7	1.123	0.160	1.54	66	1.20	261	-0.045	1040.0	0.39	18.01
8	1.284	0.161	1.55	65	1.20	263	-0.047	1040.0	0.19	16.36
9	1.445	0.161	1.55	65	1.20	262	-0.046	1040.0	0.44	17.44
10	1.605	0.160	1.54	66	1.20	265	-0.046	1040.0	0.32	17.00
11	1.765	0.160	1.54	65	1.20	266	-0.047	1040.0	0.28	16.85
12	1.926	0.161	1.55	65	1.20	266	-0.047	1040.0	0.15	16.44
13	2.087	0.161	1.54	65	1.20	266	-0.048	1040.0	0.10	16.24
14	2.248	0.161	1.54	65	1.20	266	-0.047	1040.0	0.14	16.49
15	2.407	0.159	1.55	64	1.20	267	-0.047	1040.0	0.25	17.10
16	2.568	0.161	1.55	64	1.20	266	-0.047	1040.0	0.25	17.11
17	2.728	0.160	1.54	65	1.20	268	-0.047	1040.0	0.20	16.74
18	2.889	0.161	1.54	64	1.20	269	-0.046	1040.0	0.17	16.59
19	3.049	0.160	1.55	65	1.20	269	-0.046	1040.0	0.15	16.46
20	3.210	0.161	1.55	64	1.20	270	-0.048	1040.0	0.13	16.42
21	3.371	0.161	1.54	64	1.20	271	-0.048	1040.0	0.08	16.11
22	3.531	0.160	1.54	64	1.20	272	-0.047	1040.0	0.04	15.87
23	3.691	0.160	1.55	64	1.20	272	-0.048	1040.0	0.05	15.82
24	3.852	0.161	1.55	64	1.20	272	-0.048	1040.0	0.06	15.98
25	4.013	0.161	1.55	63	1.20	273	-0.049	1040.0	0.05	15.90
26	4.173	0.160	1.54	63	1.20	273	-0.049	1040.0	0.05	15.85
27	4.333	0.160	1.55	63	1.20	269	-0.046	1040.0	0.03	15.94
28	4.494	0.161	1.54	63	1.20	249	-0.044	1040.0	0.06	9.83
29	4.655	0.161	1.54	64	1.20	237	-0.044	750.9	0.00	6.51
30	4.816	0.161	1.55	64	1.20	228	-0.043	490.0	-0.03	5.68
31	4.975	0.159	1.55	63	1.20	221	-0.042	265.4	-0.03	5.67
32	5.136	0.161	1.55	63	1.20	216	-0.041	415.2	-0.03	3.04

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
33	5.296	0.160	1.55	63	1.20	211	-0.040	392.3	-0.03	3.14
34	5.457	0.161	1.54	63	1.20	207	-0.039	382.5	-0.03	2.52
35	5.617	0.160	1.55	64	1.20	204	-0.038	391.9	-0.03	2.02
36	5.778	0.161	1.54	63	1.20	200	-0.036	446.3	-0.03	1.73
37	5.939	0.161	1.55	63	1.20	197	-0.035	396.4	-0.03	1.29
38	6.099	0.160	1.55	63	1.20	193	-0.034	296.5	-0.04	0.86
39	6.259	0.160	1.55	63	1.20	190	-0.033	365.1	-0.03	0.80
40	6.420	0.161	1.55	63	1.20	186	-0.033	467.4	-0.02	0.80
41	6.581	0.161	1.54	63	1.20	183	-0.033	621.1	-0.01	0.90
42	6.741	0.160	1.54	62	1.20	179	-0.031	694.9	0.00	0.88
43	6.901	0.160	1.55	63	1.20	176	-0.031	762.9	0.01	0.95
44	7.062	0.161	1.55	63	1.20	174	-0.031	811.1	0.01	0.99
45	7.223	0.161	1.55	62	1.20	171	-0.030	965.7	0.03	1.17
46	7.384	0.161	1.55	62	1.20	168	-0.029	862.3	0.02	1.08
47	7.543	0.159	1.55	63	1.20	165	-0.029	932.7	0.01	1.05
48	7.704	0.161	1.55	63	1.20	162	-0.029	899.9	0.02	1.10
49	7.864	0.160	1.54	62	1.20	159	-0.028	897.3	0.02	1.14
50	8.025	0.161	1.54	62	1.20	157	-0.028	899.5	0.02	1.10
51	8.185	0.160	1.55	62	1.20	154	-0.027	1008.5	0.03	1.16
52	8.346	0.161	1.55	62	1.20	152	-0.027	909.3	0.02	1.05
53	8.507	0.161	1.54	62	1.20	150	-0.026	885.4	0.01	1.01
54	8.667	0.160	1.55	62	1.20	148	-0.026	857.8	0.01	1.02
55	8.827	0.160	1.55	62	1.20	146	-0.026	841.9	0.01	0.98
56	8.988	0.161	1.55	62	1.20	144	-0.025	902.1	0.02	1.06
57	9.149	0.161	1.54	63	1.20	142	-0.025	872.6	0.01	0.96
58	9.309	0.160	1.54	62	1.20	140	-0.024	871.4	0.02	1.03
59	9.469	0.160	1.55	63	1.20	138	-0.024	808.9	0.01	0.93
60	9.630	0.161	1.55	62	1.20	136	-0.023	840.6	0.01	0.96
61	9.791	0.161	1.54	63	1.20	134	-0.023	834.8	0.01	1.00
62	9.952	0.161	1.55	63	1.20	132	-0.023	774.3	0.00	0.88
63	10.111	0.159	1.55	62	1.20	131	-0.023	769.7	0.01	0.93
64	10.272	0.161	1.55	62	1.20	129	-0.023	828.9	0.01	0.96
65	10.432	0.160	1.54	62	1.20	128	-0.022	757.4	0.00	0.84
66	10.593	0.161	1.55	62	1.20	126	-0.022	804.0	0.00	0.88
67	10.753	0.160	1.54	62	1.20	125	-0.022	798.2	0.01	0.93
68	10.914	0.161	1.54	62	1.20	123	-0.022	721.1	0.00	0.86

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
69	11.075	0.161	1.55	62	1.20	122	-0.021	790.7	0.01	0.95
70	11.235	0.160	1.55	62	1.20	121	-0.021	720.1	0.01	0.89
71	11.395	0.160	1.55	62	1.20	119	-0.021	721.8	0.00	0.82
72	11.556	0.161	1.55	62	1.20	118	-0.021	711.1	-0.01	0.77
73	11.717	0.161	1.54	62	1.20	117	-0.023	718.3	0.00	0.85
74	11.877	0.160	1.55	62	1.20	116	-0.021	732.5	0.00	0.82
75	12.037	0.160	1.55	62	1.20	114	-0.021	637.9	0.00	0.76
76	12.198	0.161	1.54	62	1.20	113	-0.020	683.6	0.00	0.78
77	12.359	0.161	1.55	62	1.20	112	-0.020	718.8	0.00	0.78
78	12.520	0.161	1.55	62	1.20	112	-0.020	698.4	0.00	0.78
79	12.679	0.159	1.54	62	1.20	111	-0.019	713.2	0.00	0.83
80	12.840	0.161	1.54	62	1.20	110	-0.019	622.1	-0.01	0.69
81	13.000	0.160	1.55	62	1.20	108	-0.019	626.3	-0.01	0.66
82	13.161	0.161	1.55	62	1.20	107	-0.019	586.3	-0.01	0.63
83	13.321	0.160	1.55	62	1.20	106	-0.019	633.1	-0.01	0.69
84	13.482	0.161	1.55	62	1.20	106	-0.019	615.9	-0.01	0.69
85	13.643	0.161	1.55	62	1.20	105	-0.018	600.1	-0.01	0.62
86	13.803	0.160	1.55	62	1.20	104	-0.019	636.9	-0.01	0.69
87	13.963	0.160	1.55	62	1.20	103	-0.020	611.4	-0.02	0.60
88	14.124	0.161	1.55	62	1.20	102	-0.018	554.4	-0.02	0.56
89	14.285	0.161	1.55	62	1.20	101	-0.018	625.6	-0.01	0.65
90	14.445	0.160	1.55	62	1.20	101	-0.018	615.6	-0.01	0.65
91	14.605	0.160	1.55	62	1.20	100	-0.017	588.7	-0.02	0.58
92	14.766	0.161	1.55	62	1.20	99	-0.018	576.8	-0.01	0.60
93	14.927	0.161	1.55	62	1.20	99	-0.017	590.8	-0.01	0.63
94	15.088	0.161	1.55	62	1.20	98	-0.017	577.8	-0.01	0.59
95	15.247	0.159	1.55	62	1.20	98	-0.017	543.8	-0.02	0.55
96	15.408	0.161	1.55	62	1.20	97	-0.017	567.1	-0.01	0.59
97	15.568	0.160	1.55	62	1.20	158	-0.024	1040.0	0.61	5.46
98	15.729	0.161	1.54	62	1.20	140	-0.023	1040.0	0.97	6.32
99	15.889	0.160	1.55	62	1.20	129	-0.022	1040.0	0.82	5.43
100	16.050	0.161	1.55	62	1.20	121	-0.021	1040.0	0.66	4.47
101	16.211	0.161	1.54	62	1.20	116	-0.020	1040.0	0.54	3.77
102	16.371	0.160	1.55	61	1.20	112	-0.020	1040.0	0.45	3.23
103	16.531	0.160	1.55	62	1.20	109	-0.019	1040.0	0.43	3.14
104	16.692	0.161	1.55	62	1.20	107	-0.019	1040.0	0.35	2.62

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
105	16.853	0.161	1.55	62	1.20	104	-0.019	1040.0	0.34	2.59
106	17.013	0.160	1.55	62	1.20	102	-0.019	1040.0	0.32	2.42
107	17.173	0.160	1.55	62	1.20	100	-0.019	1040.0	0.26	2.07
108	17.334	0.161	1.55	62	1.20	99	-0.018	1040.0	0.24	1.95
109	17.495	0.161	1.55	62	1.20	98	-0.018	1040.0	0.25	2.05
110	17.656	0.161	1.55	62	1.20	97	-0.018	1040.0	0.22	1.88
111	17.815	0.159	1.55	62	1.20	96	-0.017	1040.0	0.21	1.77
112	17.976	0.161	1.55	62	1.20	95	-0.017	1040.0	0.19	1.70
113	18.136	0.160	1.56	62	1.20	94	-0.017	1040.0	0.17	1.56
114	18.297	0.161	1.56	62	1.20	94	-0.017	1040.0	0.15	1.44
115	18.457	0.160	1.56	62	1.20	93	-0.017	1040.0	0.14	1.36
116	18.618	0.161	1.56	62	1.20	92	-0.016	1040.0	0.16	1.49
117	18.779	0.161	1.57	62	1.20	92	-0.016	1040.0	0.16	1.52
118	18.939	0.160	1.57	62	1.20	144	-0.036	1040.0	0.47	3.60
119	19.099	0.160	1.56	62	1.20	192	-0.038	1040.0	3.07	11.43
120	19.260	0.161	1.56	62	1.20	228	-0.041	1040.0	3.06	15.58
121	19.421	0.161	1.56	62	1.20	259	-0.045	1040.0	0.50	17.13
122	19.581	0.160	1.59	62	1.20	272	-0.046	1040.0	0.22	16.94
123	19.741	0.160	1.55	62	1.20	260	-0.044	1040.0	0.07	16.65
124	19.902	0.161	1.56	62	1.20	263	-0.045	1040.0	0.08	16.19
125	20.063	0.161	1.56	62	1.20	260	-0.046	1040.0	0.13	17.17
126	20.224	0.161	1.55	62	1.20	260	-0.046	1040.0	0.12	17.13
127	20.383	0.159	1.56	62	1.20	261	-0.046	1040.0	0.15	17.25
128	20.544	0.161	1.56	62	1.20	263	-0.047	1040.0	0.14	17.41
129	20.704	0.160	1.56	62	1.20	265	-0.048	1040.0	0.19	17.59
130	20.865	0.161	1.56	62	1.20	268	-0.049	1040.0	0.23	17.80
131	21.025	0.160	1.55	62	1.20	268	-0.048	1040.0	0.10	17.12
132	21.186	0.161	1.55	62	1.20	268	-0.048	1040.0	0.09	16.91
133	21.347	0.161	1.56	61	1.20	268	-0.048	1040.0	0.10	16.99
134	21.507	0.160	1.56	61	1.20	268	-0.049	1040.0	0.09	16.92
135	21.667	0.160	1.56	60	1.20	268	-0.050	1040.0	0.12	17.09
136	21.828	0.161	1.55	59	1.20	269	-0.050	1040.0	0.07	16.72
137	21.989	0.161	1.56	59	1.20	268	-0.051	1040.0	0.07	16.84
138	22.149	0.160	1.56	59	1.20	273	-0.053	1040.0	0.01	15.47
139	22.309	0.160	1.56	58	1.20	276	-0.053	904.6	0.00	15.82
140	22.470	0.161	1.56	59	1.20	276	-0.053	742.8	0.00	15.95

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
141	22.631	0.161	1.55	58	1.20	277	-0.054	701.0	-0.01	15.73
142	22.792	0.161	1.56	58	1.20	278	-0.053	689.3	-0.01	15.66
143	22.951	0.159	1.56	59	1.20	279	-0.053	666.7	-0.01	15.60
144	23.112	0.161	1.56	57	1.20	280	-0.053	567.1	-0.02	14.91
145	23.272	0.160	1.56	57	1.20	279	-0.054	620.7	-0.02	15.51
146	23.433	0.161	1.55	58	1.20	280	-0.053	657.6	-0.01	15.67
147	23.593	0.160	1.56	57	1.20	284	-0.053	657.7	-0.01	15.62
148	23.754	0.161	1.56	59	1.20	283	-0.053	510.9	-0.02	14.76
149	23.915	0.161	1.56	59	1.20	284	-0.052	540.2	-0.02	14.61
150	24.075	0.160	1.56	60	1.20	284	-0.052	594.8	-0.02	15.28
151	24.235	0.160	1.55	60	1.20	270	-0.048	516.2	-0.02	14.62
152	24.396	0.161	1.56	60	1.20	252	-0.047	269.3	-0.05	9.70
153	24.557	0.161	1.56	61	1.20	240	-0.047	292.5	-0.04	7.91
154	24.717	0.160	1.56	60	1.20	231	-0.046	262.1	-0.05	8.49
155	24.877	0.160	1.56	60	1.20	224	-0.045	341.1	-0.03	6.57
156	25.038	0.161	1.56	60	1.20	219	-0.044	454.4	-0.03	5.85
157	25.199	0.161	1.55	60	1.20	214	-0.043	426.9	-0.03	5.29
158	25.360	0.161	1.56	60	1.20	210	-0.042	530.8	-0.02	4.17
159	25.519	0.159	1.56	60	1.20	206	-0.042	579.3	-0.01	3.46
160	25.680	0.161	1.55	59	1.20	203	-0.040	582.2	-0.01	2.78
161	25.840	0.160	1.56	60	1.20	200	-0.039	429.7	-0.03	1.87
162	26.001	0.161	1.55	58	1.20	196	-0.038	646.3	0.00	1.60
163	26.161	0.160	1.55	57	1.20	193	-0.037	1040.0	0.06	1.89
164	26.322	0.161	1.56	58	1.20	189	-0.036	1040.0	0.09	1.96
165	26.483	0.161	1.55	57	1.20	185	-0.035	1040.0	0.13	2.21
166	26.643	0.160	1.55	58	1.20	182	-0.035	1040.0	0.14	2.23
167	26.803	0.160	1.56	58	1.20	178	-0.035	1040.0	0.15	2.27
168	26.964	0.161	1.56	58	1.20	175	-0.034	1040.0	0.15	2.26
169	27.125	0.161	1.56	58	1.20	172	-0.033	1040.0	0.16	2.36
170	27.285	0.160	1.56	58	1.20	168	-0.032	1040.0	0.16	2.36
171	27.445	0.160	1.55	58	1.20	166	-0.032	1040.0	0.13	2.11
172	27.606	0.161	1.55	58	1.20	163	-0.031	1040.0	0.15	2.28
173	27.767	0.161	1.56	59	1.20	160	-0.031	1040.0	0.13	2.09
174	27.928	0.161	1.56	59	1.20	158	-0.030	1040.0	0.13	2.05
175	28.087	0.159	1.56	60	1.20	155	-0.029	1040.0	0.12	1.95
176	28.248	0.161	1.56	60	1.20	152	-0.028	1040.0	0.12	2.00

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
177	28.408	0.160	1.56	60	1.20	150	-0.028	1040.0	0.11	1.89
178	28.569	0.161	1.56	60	1.20	148	-0.028	1040.0	0.10	1.83
179	28.729	0.160	1.56	61	1.20	145	-0.027	1040.0	0.10	1.77
180	28.890	0.161	1.56	61	1.20	143	-0.027	1040.0	0.08	1.62
181	29.051	0.161	1.56	61	1.20	141	-0.026	1040.0	0.09	1.69
182	29.211	0.160	1.55	61	1.20	139	-0.026	1040.0	0.08	1.58
183	29.371	0.160	1.55	61	1.20	137	-0.025	1040.0	0.08	1.62
184	29.532	0.161	1.56	61	1.20	136	-0.025	1040.0	0.08	1.58
185	29.693	0.161	1.55	61	1.20	134	-0.024	1040.0	0.07	1.45
186	29.853	0.160	1.56	61	1.20	132	-0.024	1040.0	0.07	1.53
187	30.013	0.160	1.55	62	1.20	130	-0.024	1040.0	0.07	1.42
188	30.174	0.161	1.55	62	1.20	128	-0.023	1040.0	0.06	1.32
189	30.335	0.161	1.56	62	1.20	127	-0.023	1040.0	0.05	1.30
190	30.496	0.161	1.55	62	1.20	125	-0.023	1040.0	0.05	1.29
191	30.655	0.159	1.56	62	1.20	124	-0.022	1040.0	0.04	1.17
192	30.816	0.161	1.55	62	1.20	122	-0.022	1040.0	0.05	1.22
193	30.976	0.160	1.55	62	1.20	121	-0.022	1040.0	0.04	1.18
194	31.137	0.161	1.56	62	1.20	119	-0.022	1040.0	0.04	1.14
195	31.297	0.160	1.56	63	1.20	118	-0.021	1012.1	0.03	1.03
196	31.458	0.161	1.56	63	1.20	117	-0.021	997.9	0.03	1.04
197	31.619	0.161	1.56	63	1.20	116	-0.021	934.1	0.02	0.97
198	31.779	0.160	1.55	63	1.20	115	-0.020	930.2	0.03	0.99
199	31.939	0.160	1.56	63	1.20	114	-0.021	928.3	0.03	1.00
200	32.100	0.161	1.56	63	1.20	112	-0.020	896.9	0.02	0.93
201	32.261	0.161	1.56	63	1.20	111	-0.020	873.9	0.02	0.91
202	32.421	0.160	1.56	63	1.20	110	-0.019	859.0	0.01	0.86
203	32.581	0.160	1.55	63	1.20	110	-0.019	881.7	0.02	0.94
204	32.742	0.161	1.56	63	1.20	109	-0.019	822.4	0.01	0.84
205	32.903	0.161	1.56	63	1.20	108	-0.019	765.4	0.01	0.80
206	33.064	0.161	1.55	63	1.20	107	-0.019	790.7	0.01	0.80
207	33.223	0.159	1.30	63	1.20	106	-0.018	799.5	0.01	0.79
208	33.384	0.161	1.55	64	1.20	105	-0.018	780.0	0.01	0.78
209	33.544	0.160	1.54	64	1.20	104	-0.018	683.8	0.00	0.70
210	33.705	0.161	1.54	63	1.20	103	-0.018	717.8	0.01	0.75
211	33.865	0.160	1.55	64	1.20	103	-0.018	731.1	0.00	0.74
212	34.026	0.161	1.54	64	1.20	102	-0.018	721.4	0.00	0.73

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
213	34.187	0.161	1.54	64	1.20	101	-0.018	667.0	0.00	0.64
214	34.347	0.160	1.54	64	1.20	101	-0.017	687.2	0.00	0.67
215	34.507	0.160	1.55	64	1.20	100	-0.017	684.8	0.00	0.68
216	34.668	0.161	1.55	64	1.20	99	-0.018	653.8	0.00	0.64
217	34.829	0.161	1.54	64	1.20	99	-0.017	654.4	0.00	0.67
218	34.989	0.160	1.54	64	1.20	98	-0.017	635.6	0.00	0.63
219	35.149	0.160	1.55	64	1.20	97	-0.017	645.3	0.00	0.67
220	35.310	0.161	1.54	64	1.20	143	-0.042	653.1	-0.01	0.60
221	35.471	0.161	1.54	64	1.20	153	-0.029	1040.0	0.73	5.43
222	35.632	0.161	1.55	64	1.20	141	-0.026	1040.0	0.78	5.11
223	35.791	0.159	1.55	64	1.20	132	-0.025	1040.0	0.61	4.15
224	35.952	0.161	1.54	64	1.20	125	-0.023	1040.0	0.45	3.24
225	36.112	0.160	1.54	64	1.20	120	-0.022	1040.0	0.40	2.97
226	36.273	0.161	1.55	64	1.20	117	-0.022	1040.0	0.28	2.24
227	36.433	0.160	1.55	64	1.20	113	-0.021	1040.0	0.23	1.91
228	36.594	0.161	1.54	64	1.20	111	-0.020	1040.0	0.24	2.04
229	36.755	0.161	1.54	65	1.20	109	-0.020	1040.0	0.24	2.07
230	36.915	0.160	1.55	64	1.20	108	-0.020	1040.0	0.24	2.07
231	37.075	0.160	1.55	64	1.20	106	-0.019	1040.0	0.25	2.12
232	37.236	0.161	1.55	65	1.20	104	-0.018	1040.0	0.23	2.02
233	37.397	0.161	1.54	64	1.20	103	-0.018	1040.0	0.18	1.75
234	37.557	0.160	1.55	65	1.20	102	-0.019	1040.0	0.18	1.68
235	37.717	0.160	1.54	65	1.20	100	-0.018	1040.0	0.19	1.73
236	37.878	0.161	1.54	65	1.20	99	-0.018	1040.0	0.15	1.52
237	38.039	0.161	1.55	65	1.20	98	-0.017	1040.0	0.15	1.47
238	38.200	0.161	1.55	65	1.20	96	-0.017	1040.0	0.15	1.46
239	38.359	0.159	1.55	65	1.20	96	-0.017	1040.0	0.14	1.43
240	38.520	0.161	1.55	65	1.20	95	-0.017	1040.0	0.14	1.44
241	38.680	0.160	1.54	65	1.20	94	-0.017	1040.0	0.12	1.31
242	38.841	0.161	1.55	65	1.20	93	-0.016	1040.0	0.12	1.31
243	39.001	0.160	1.54	65	1.20	93	-0.017	1040.0	0.13	1.38
244	39.162	0.161	1.55	65	1.20	93	-0.016	1040.0	0.13	1.38
245	39.323	0.161	1.55	65	1.20	134	-0.037	1040.0	0.11	1.26
246	39.483	0.160	1.55	65	1.20	176	-0.038	1040.0	1.02	5.11
247	39.643	0.160	1.55	65	1.20	208	-0.039	1040.0	3.34	9.33
248	39.804	0.161	1.54	65	1.20	235	-0.043	1040.0	3.10	13.69

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
249	39.965	0.161	1.54	65	1.20	260	-0.046	1040.0	1.55	15.04
250	40.125	0.160	1.55	65	1.20	275	-0.047	1040.0	0.41	16.26
251	40.285	0.160	1.55	65	1.20	270	-0.047	1040.0	0.10	15.60
252	40.446	0.161	1.55	66	1.20	275	-0.046	1040.0	0.07	15.14
253	40.607	0.161	1.55	66	1.20	281	-0.046	797.2	0.03	14.39
254	40.768	0.161	1.55	66	1.20	277	-0.049	688.4	-0.01	14.20
255	40.927	0.159	1.55	66	1.20	276	-0.048	1019.0	0.01	15.27
256	41.088	0.161	1.54	66	1.20	273	-0.048	541.8	-0.01	14.33
257	41.248	0.160	1.54	66	1.20	273	-0.047	622.7	-0.01	14.54
258	41.409	0.161	1.55	66	1.20	274	-0.049	635.0	-0.01	14.89
259	41.569	0.160	1.55	66	1.20	276	-0.049	662.5	0.00	15.32
260	41.730	0.161	1.54	66	1.20	279	-0.050	768.4	0.01	15.71
261	41.891	0.161	1.55	66	1.20	278	-0.049	793.4	0.01	16.31
262	42.051	0.160	1.55	66	1.20	279	-0.051	638.9	0.00	15.62
263	42.211	0.160	1.55	67	1.20	280	-0.049	614.7	-0.01	15.16
264	42.372	0.161	1.54	66	1.20	280	-0.051	683.3	0.00	15.23
265	42.533	0.161	1.54	66	1.20	280	-0.050	727.6	0.00	15.21
266	42.693	0.160	1.55	66	1.20	281	-0.050	803.7	0.01	15.26
267	42.853	0.160	1.55	66	1.20	280	-0.049	712.7	0.00	15.37
268	43.014	0.161	1.54	66	1.20	279	-0.050	593.6	-0.01	15.29
269	43.175	0.161	1.55	67	1.20	281	-0.051	852.0	0.02	16.03
270	43.336	0.161	1.55	67	1.20	280	-0.051	644.8	-0.01	15.03
271	43.495	0.159	1.55	67	1.20	282	-0.050	792.0	0.02	15.94
272	43.656	0.161	1.54	66	1.20	281	-0.051	625.6	-0.01	15.19
273	43.816	0.160	1.55	67	1.20	283	-0.051	781.0	0.02	15.74
274	43.977	0.161	1.54	67	1.20	282	-0.051	599.5	-0.01	14.79
275	44.137	0.160	1.54	66	1.20	284	-0.051	686.5	0.01	15.64
276	44.298	0.161	1.55	66	1.20	283	-0.051	531.2	-0.02	14.73
277	44.459	0.161	1.55	67	1.20	283	-0.051	561.3	-0.01	14.67
278	44.619	0.160	1.55	66	1.20	285	-0.051	644.3	0.00	15.53
279	44.779	0.160	1.55	67	1.20	284	-0.051	473.2	-0.02	14.34
280	44.940	0.161	1.54	67	1.20	270	-0.047	542.3	0.00	14.55
281	45.101	0.161	1.55	68	1.20	254	-0.047	725.0	0.00	8.06
282	45.261	0.160	1.55	67	1.20	242	-0.046	857.2	0.02	7.06
283	45.421	0.160	1.54	67	1.20	234	-0.045	846.5	0.02	7.08
284	45.582	0.161	1.55	67	1.20	228	-0.044	1040.0	0.07	5.53

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
285	45.743	0.161	1.55	66	1.20	222	-0.044	1040.0	0.05	7.80
286	45.904	0.161	1.54	67	1.20	217	-0.043	864.0	0.02	7.38
287	46.063	0.159	1.54	66	1.20	212	-0.042	887.6	0.02	5.93
288	46.224	0.161	1.55	66	1.20	209	-0.041	909.3	0.02	4.97
289	46.384	0.160	1.55	66	1.20	206	-0.039	894.7	0.02	4.12
290	46.545	0.161	1.55	66	1.20	204	-0.037	703.7	0.01	2.87
291	46.705	0.160	1.55	66	1.20	200	-0.037	1040.0	0.11	2.81
292	46.866	0.161	1.55	65	1.20	197	-0.037	1040.0	0.25	3.25
293	47.027	0.161	1.55	66	1.20	194	-0.036	1040.0	0.36	3.67
294	47.187	0.160	1.55	66	1.20	190	-0.036	1040.0	0.44	3.99
295	47.347	0.160	1.55	66	1.20	187	-0.035	1040.0	0.47	4.03
296	47.508	0.161	1.55	66	1.20	183	-0.034	1040.0	0.52	4.28
297	47.669	0.161	1.55	66	1.20	180	-0.034	1040.0	0.48	3.97
298	47.829	0.160	1.55	65	1.20	177	-0.033	1040.0	0.56	4.41
299	47.989	0.160	1.55	65	1.20	174	-0.033	1040.0	0.52	4.17
300	48.150	0.161	1.55	65	1.20	171	-0.032	1040.0	0.47	3.82
301	48.311	0.161	1.55	65	1.20	168	-0.032	1040.0	0.43	3.59
302	48.472	0.161	1.55	65	1.20	165	-0.031	1040.0	0.42	3.49
303	48.631	0.159	1.55	65	1.20	163	-0.030	1040.0	0.42	3.51
304	48.792	0.161	1.55	65	1.20	160	-0.030	1040.0	0.37	3.15
305	48.952	0.160	1.54	65	1.20	158	-0.030	1040.0	0.38	3.22
306	49.113	0.161	1.55	65	1.20	155	-0.029	1040.0	0.34	2.98
307	49.273	0.160	1.55	64	1.20	153	-0.029	1040.0	0.33	2.87
308	49.434	0.161	1.54	64	1.20	151	-0.028	1040.0	0.35	3.08
309	49.595	0.161	1.55	64	1.20	149	-0.028	1040.0	0.35	3.08
310	49.755	0.160	1.55	64	1.20	147	-0.027	1040.0	0.28	2.56
311	49.915	0.160	1.55	64	1.20	145	-0.027	1040.0	0.30	2.71
312	50.076	0.161	1.55	64	1.20	143	-0.026	1040.0	0.26	2.49
313	50.237	0.161	1.55	64	1.20	141	-0.026	1040.0	0.24	2.35
314	50.397	0.160	1.55	64	1.20	139	-0.026	1040.0	0.24	2.31
315	50.557	0.160	1.55	63	1.20	137	-0.026	1040.0	0.21	2.10
316	50.718	0.161	1.55	64	1.20	135	-0.025	1040.0	0.23	2.24
317	50.879	0.161	1.55	63	1.20	133	-0.025	1040.0	0.24	2.30
318	51.040	0.161	1.55	63	1.20	131	-0.024	1040.0	0.18	1.92
319	51.199	0.159	1.55	64	1.20	130	-0.024	1040.0	0.20	2.01
320	51.360	0.161	1.56	63	1.20	128	-0.024	1040.0	0.18	1.86

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
321	51.520	0.160	1.56	64	1.20	127	-0.023	1040.0	0.16	1.71
322	51.681	0.161	1.56	63	1.20	125	-0.023	1040.0	0.15	1.66
323	51.841	0.160	1.56	63	1.20	124	-0.023	1040.0	0.17	1.82
324	52.002	0.161	1.57	63	1.20	123	-0.023	1040.0	0.15	1.69
325	52.163	0.161	1.57	63	1.20	122	-0.023	1040.0	0.16	1.73
326	52.323	0.160	1.56	64	1.20	120	-0.022	1040.0	0.13	1.55
327	52.483	0.160	1.56	63	1.20	119	-0.022	1040.0	0.13	1.53
328	52.644	0.161	1.56	63	1.20	118	-0.022	1040.0	0.14	1.56
329	52.805	0.161	1.59	63	1.20	117	-0.021	1040.0	0.12	1.44
330	52.965	0.160	1.55	63	1.20	115	-0.021	1040.0	0.10	1.33
331	53.125	0.160	1.56	63	1.20	114	-0.021	1040.0	0.11	1.36
332	53.286	0.161	1.56	63	1.20	113	-0.021	1040.0	0.12	1.42
333	53.447	0.161	1.55	63	1.20	112	-0.021	1040.0	0.11	1.36
334	53.608	0.161	1.56	63	1.20	111	-0.021	1040.0	0.09	1.19
335	53.767	0.159	1.56	62	1.20	110	-0.020	1040.0	0.10	1.25
336	53.928	0.161	1.56	63	1.20	109	-0.020	1040.0	0.10	1.28
337	54.088	0.160	1.56	63	1.20	108	-0.020	1040.0	0.09	1.18
338	54.249	0.161	1.55	63	1.20	107	-0.020	1040.0	0.09	1.19
339	54.409	0.160	1.55	63	1.20	106	-0.020	1040.0	0.09	1.23
340	54.570	0.161	1.56	63	1.20	105	-0.020	1040.0	0.06	0.99
341	54.731	0.161	1.56	63	1.20	105	-0.019	1040.0	0.07	1.03
342	54.891	0.160	1.56	63	1.20	104	-0.019	1040.0	0.07	1.04
343	55.051	0.160	1.55	62	1.20	103	-0.019	1040.0	0.08	1.07
344	55.212	0.161	1.56	63	1.20	102	-0.019	1040.0	0.08	1.08
345	55.373	0.161	1.56	63	1.20	101	-0.019	1040.0	0.06	0.98
346	55.533	0.160	1.56	62	1.20	101	-0.019	1040.0	0.08	1.05
347	55.693	0.160	1.56	62	1.20	100	-0.018	1040.0	0.05	0.88
348	55.854	0.161	1.55	62	1.20	99	-0.018	1040.0	0.08	1.05
349	56.015	0.161	1.56	62	1.20	143	-0.042	1040.0	0.06	0.94
350	56.176	0.161	1.56	62	1.20	153	-0.029	1040.0	1.04	6.49
351	56.335	0.159	1.56	62	1.20	141	-0.027	1040.0	0.97	5.83
352	56.496	0.161	1.56	62	1.20	132	-0.025	1040.0	0.77	4.83
353	56.656	0.160	1.55	62	1.20	125	-0.024	1040.0	0.67	4.37
354	56.817	0.161	1.56	62	1.20	120	-0.023	1040.0	0.50	3.40
355	56.977	0.160	1.56	62	1.20	117	-0.023	1040.0	0.39	2.85
356	57.138	0.161	1.56	62	1.20	113	-0.022	1040.0	0.34	2.52

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
357	57.299	0.161	1.56	62	1.20	111	-0.022	1040.0	0.35	2.62
358	57.459	0.160	1.55	62	1.20	109	-0.021	1040.0	0.31	2.39
359	57.619	0.160	1.56	62	1.20	107	-0.021	1040.0	0.28	2.23
360	57.780	0.161	1.56	62	1.20	106	-0.021	1040.0	0.27	2.20
361	57.941	0.161	1.56	62	1.20	104	-0.020	1040.0	0.27	2.16
362	58.101	0.160	1.56	62	1.20	102	-0.020	1040.0	0.24	2.02
363	58.261	0.160	1.56	62	1.20	101	-0.020	1040.0	0.23	1.95
364	58.422	0.161	1.55	62	1.20	100	-0.019	1040.0	0.24	2.00
365	58.583	0.161	1.56	62	1.20	99	-0.019	1040.0	0.21	1.83
366	58.744	0.161	1.56	62	1.20	98	-0.019	1040.0	0.21	1.85
367	58.903	0.159	1.55	62	1.20	98	-0.018	1040.0	0.20	1.75
368	59.064	0.161	1.56	62	1.20	96	-0.018	1040.0	0.18	1.63
369	59.224	0.160	1.55	62	1.20	95	-0.018	1040.0	0.20	1.75
370	59.385	0.161	1.55	62	1.20	94	-0.018	1040.0	0.17	1.56
371	59.545	0.160	1.56	62	1.20	94	-0.018	1040.0	0.17	1.56
372	59.706	0.161	1.55	62	1.20	93	-0.017	1040.0	0.16	1.55
373	59.867	0.161	1.55	62	1.20	92	-0.017	1040.0	0.16	1.55
374	60.027	0.160	1.56	62	1.20	91	-0.017	1040.0	0.14	1.40
375	60.187	0.160	1.56	62	1.20	91	-0.017	1040.0	0.16	1.51
376	60.348	0.161	1.56	62	1.20	89	-0.017	1040.0	0.13	1.32
377	60.509	0.161	1.56	62	1.20	88	-0.017	1040.0	0.12	1.27
378	60.669	0.160	1.55	61	1.20	89	-0.017	1040.0	0.11	1.23
379	60.829	0.160	1.55	61	1.20	88	-0.016	1040.0	0.11	1.19
380	60.990	0.161	1.56	61	1.20	138	-0.038	1040.0	0.45	3.49
381	61.151	0.161	1.56	61	1.20	182	-0.040	1040.0	1.60	5.24
382	61.312	0.161	1.56	61	1.20	207	-0.041	1040.0	3.71	9.08
383	61.471	0.159	1.56	61	1.20	230	-0.044	1040.0	4.29	11.86
384	61.632	0.161	1.56	62	1.20	251	-0.047	1040.0	1.77	13.98
385	61.792	0.160	1.56	61	1.20	265	-0.047	1040.0	1.45	13.97
386	61.953	0.161	1.56	62	1.20	273	-0.049	1040.0	1.22	13.86
387	62.113	0.160	1.56	62	1.20	281	-0.050	1040.0	0.40	15.25
388	62.274	0.161	1.56	61	1.20	278	-0.050	1040.0	0.06	14.43
389	62.435	0.161	1.55	62	1.20	275	-0.051	1040.0	0.15	14.73
390	62.595	0.160	1.55	61	1.20	275	-0.049	1040.0	0.13	14.97
391	62.755	0.160	1.56	62	1.20	273	-0.050	814.4	0.01	14.47
392	62.916	0.161	1.55	61	1.20	274	-0.051	836.5	0.01	15.08

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
393	63.077	0.161	1.56	62	1.20	276	-0.051	947.1	0.02	15.57
394	63.237	0.160	1.55	61	1.20	278	-0.052	768.7	0.00	15.72
395	63.397	0.160	1.55	61	1.20	277	-0.050	618.4	-0.02	14.99
396	63.558	0.161	1.56	62	1.20	278	-0.052	601.4	-0.02	15.01
397	63.719	0.161	1.55	62	1.20	278	-0.052	635.5	-0.02	14.86
398	63.880	0.161	1.56	62	1.20	278	-0.051	811.8	-0.01	15.09
399	64.039	0.159	1.55	64	1.20	278	-0.052	639.9	-0.02	14.89
400	64.200	0.161	1.55	64	1.20	278	-0.051	691.8	-0.01	15.30
401	64.360	0.160	1.56	63	1.20	278	-0.052	684.3	0.00	15.48
402	64.521	0.161	1.56	63	1.20	279	-0.052	559.7	-0.01	15.51
403	64.681	0.160	1.56	63	1.20	280	-0.052	496.0	-0.01	15.27
404	64.842	0.161	1.56	63	1.20	280	-0.051	414.3	-0.02	14.87
405	65.003	0.161	1.55	64	1.20	281	-0.052	463.5	-0.02	15.20
406	65.163	0.160	1.56	64	1.20	282	-0.051	439.5	-0.03	14.42
407	65.323	0.160	1.56	64	1.20	283	-0.051	423.1	-0.03	14.69
408	65.484	0.161	1.56	65	1.20	284	-0.051	398.7	-0.03	14.53
409	65.645	0.161	1.56	64	1.20	285	-0.052	439.4	-0.02	14.91
410	65.805	0.160	1.55	65	1.20	286	-0.052	395.2	-0.03	14.53
411	65.965	0.160	1.56	65	1.20	286	-0.052	424.0	-0.03	14.56
412	66.126	0.161	1.56	66	1.20	287	-0.051	396.8	-0.03	14.71
413	66.287	0.161	1.55	66	1.20	288	-0.053	479.4	-0.02	15.03
414	66.448	0.161	1.30	66	1.20	281	-0.048	459.6	-0.03	14.95
415	66.607	0.159	1.55	66	1.20	260	-0.049	887.8	0.02	8.81
416	66.768	0.161	1.54	65	1.20	248	-0.047	895.3	0.02	8.42
417	66.928	0.160	1.54	65	1.20	238	-0.046	649.3	-0.01	9.07
418	67.089	0.161	1.55	65	1.20	231	-0.045	918.3	0.03	7.82
419	67.249	0.160	1.54	65	1.20	225	-0.045	1040.0	0.11	9.61
420	67.410	0.161	1.54	65	1.20	220	-0.045	1040.0	0.06	10.52
421	67.571	0.161	1.54	65	1.20	215	-0.043	746.5	0.00	8.95
422	67.731	0.160	1.55	65	1.20	211	-0.043	564.8	-0.01	7.67
423	67.891	0.160	1.55	65	1.20	207	-0.040	689.1	0.00	6.50
424	68.052	0.161	1.54	65	1.20	205	-0.039	649.9	-0.01	4.42
425	68.213	0.161	1.54	65	1.20	202	-0.039	1040.0	0.20	4.20
426	68.373	0.160	1.55	64	1.20	199	-0.038	1040.0	0.48	4.56
427	68.533	0.160	1.54	65	1.20	195	-0.038	1040.0	0.70	4.86
428	68.694	0.161	1.54	65	1.20	192	-0.037	1040.0	0.88	5.30

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
429	68.855	0.161	1.55	64	1.20	188	-0.037	1040.0	0.96	5.44
430	69.016	0.161	1.55	65	1.20	185	-0.036	1040.0	1.04	5.68
431	69.175	0.159	1.54	64	1.20	181	-0.036	1040.0	1.09	5.79
432	69.336	0.161	1.54	64	1.20	178	-0.035	1040.0	1.09	5.75
433	69.496	0.160	1.55	65	1.20	175	-0.034	1040.0	1.00	5.33
434	69.657	0.161	1.55	65	1.20	172	-0.034	1040.0	0.92	4.89
435	69.817	0.160	1.54	65	1.20	169	-0.033	1040.0	0.98	5.18
436	69.978	0.161	1.54	65	1.20	166	-0.032	1040.0	0.83	4.49
437	70.139	0.161	1.55	65	1.20	164	-0.032	1040.0	0.87	4.69
438	70.299	0.160	1.55	64	1.20	161	-0.030	1040.0	0.77	4.25
439	70.459	0.160	1.55	66	1.20	159	-0.030	1040.0	0.73	4.06
440	70.620	0.161	1.54	65	1.20	156	-0.030	1040.0	0.78	4.30
441	70.781	0.161	1.55	65	1.20	154	-0.029	1040.0	0.67	3.79
442	70.941	0.160	1.54	65	1.20	152	-0.029	1040.0	0.66	3.78
443	71.101	0.160	1.54	64	1.20	150	-0.029	1040.0	0.61	3.56
444	71.262	0.161	1.55	64	1.20	147	-0.028	1040.0	0.62	3.60
445	71.423	0.161	1.55	64	1.20	145	-0.028	1040.0	0.61	3.58
446	71.584	0.161	1.55	65	1.20	143	-0.027	1040.0	0.62	3.61
447	71.743	0.159	1.55	65	1.20	141	-0.027	1040.0	0.55	3.32
448	71.904	0.161	1.54	65	1.20	139	-0.027	1040.0	0.54	3.24
449	72.064	0.160	1.55	65	1.20	137	-0.026	1040.0	0.55	3.30
450	72.225	0.161	1.54	64	1.20	136	-0.026	1040.0	0.52	3.17
451	72.385	0.160	1.55	64	1.20	134	-0.026	1040.0	0.45	2.83
452	72.546	0.161	1.55	65	1.20	132	-0.025	1040.0	0.45	2.83
453	72.707	0.161	1.55	64	1.20	131	-0.025	1040.0	0.43	2.76
454	72.867	0.160	1.55	64	1.20	130	-0.025	1040.0	0.38	2.52
455	73.027	0.160	1.54	64	1.20	128	-0.024	1040.0	0.41	2.66
456	73.188	0.161	1.54	64	1.20	127	-0.024	1040.0	0.35	2.31
457	73.349	0.161	1.55	64	1.20	125	-0.024	1040.0	0.36	2.41
458	73.509	0.160	1.55	64	1.20	124	-0.023	1040.0	0.41	2.65
459	73.669	0.160	1.55	64	1.20	123	-0.023	1040.0	0.38	2.54
460	73.830	0.161	1.55	64	1.20	121	-0.023	1040.0	0.37	2.46
461	73.991	0.161	1.55	63	1.20	120	-0.023	1040.0	0.34	2.29
462	74.152	0.161	1.55	64	1.20	118	-0.023	1040.0	0.34	2.27
463	74.311	0.159	1.54	63	1.20	117	-0.023	1040.0	0.39	2.59
464	74.472	0.161	1.54	63	1.20	117	-0.023	1040.0	0.36	2.41

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
465	74.632	0.160	1.55	63	1.20	117	-0.023	182.4	0.04	0.60
466	74.793	0.161	1.55	63	1.20	116	-0.022	1040.0	0.28	1.99
467	74.953	0.160	1.54	63	1.20	113	-0.022	1040.0	0.39	2.63
468	75.114	0.161	1.55	63	1.20	112	-0.022	1040.0	0.39	2.59
469	75.275	0.161	1.55	63	1.20	112	-0.021	1040.0	0.35	2.42
470	75.435	0.160	1.55	62	1.20	110	-0.021	1040.0	0.33	2.27
471	75.595	0.160	1.54	63	1.20	108	-0.021	1040.0	0.32	2.25
472	75.756	0.161	1.54	62	1.20	108	-0.021	1040.0	0.32	2.24
473	75.917	0.161	1.55	62	1.20	107	-0.021	1040.0	0.31	2.17
474	76.077	0.160	1.55	62	1.20	107	-0.020	1040.0	0.31	2.19
475	76.237	0.160	1.54	62	1.20	105	-0.020	1040.0	0.32	2.27
476	76.398	0.161	1.55	62	1.20	105	-0.020	1040.0	0.32	2.26
477	76.559	0.161	1.55	62	1.20	105	-0.020	1040.0	0.31	2.22
478	76.720	0.161	1.55	62	1.20	103	-0.021	1040.0	0.29	2.10
479	76.879	0.159	1.54	62	1.20	102	-0.020	1040.0	0.30	2.17
480	77.040	0.161	1.55	62	1.20	101	-0.019	1040.0	0.31	2.23
481	77.200	0.160	1.54	62	1.20	101	-0.020	1040.0	0.31	2.21
482	77.361	0.161	1.54	62	1.20	100	-0.019	1040.0	0.30	2.18
483	77.521	0.160	1.55	62	1.20	106	-0.030	1040.0	0.30	2.16
484	77.682	0.161	1.55	63	1.20	155	-0.030	1040.0	0.70	5.69
485	77.843	0.161	1.55	62	1.20	143	-0.028	1040.0	0.92	5.74
486	78.003	0.160	1.55	62	1.20	134	-0.026	1040.0	0.73	4.75
487	78.163	0.160	1.54	63	1.20	128	-0.026	1040.0	0.59	4.01
488	78.324	0.161	1.55	63	1.20	123	-0.024	1040.0	0.52	3.67
489	78.485	0.161	1.55	63	1.20	119	-0.023	1040.0	0.42	3.13
490	78.645	0.160	1.54	63	1.20	116	-0.023	1040.0	0.39	2.95
491	78.805	0.160	1.55	63	1.20	114	-0.023	1040.0	0.32	2.55
492	78.966	0.161	1.55	63	1.20	111	-0.022	1040.0	0.37	2.83
493	79.127	0.161	1.54	63	1.20	110	-0.022	1040.0	0.29	2.37
494	79.288	0.161	1.54	64	1.20	108	-0.021	1040.0	0.27	2.24
495	79.447	0.159	1.55	64	1.20	106	-0.021	1040.0	0.27	2.30
496	79.608	0.161	1.55	64	1.20	105	-0.020	1040.0	0.29	2.44
497	79.768	0.160	1.55	64	1.20	104	-0.020	1040.0	0.25	2.20
498	79.929	0.161	1.55	64	1.20	102	-0.020	1040.0	0.22	2.02
499	80.089	0.160	1.55	64	1.20	102	-0.019	1040.0	0.23	2.08
500	80.250	0.161	1.55	64	1.20	102	-0.019	1040.0	0.23	2.11

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
501	80.411	0.161	1.55	64	1.20	101	-0.018	1040.0	0.19	1.86
502	80.571	0.160	1.55	64	1.20	101	-0.019	1040.0	0.20	1.93
503	80.731	0.160	1.55	64	1.20	99	-0.018	1040.0	0.19	1.85
504	80.892	0.161	1.55	64	1.20	98	-0.018	1040.0	0.19	1.88
505	81.053	0.161	1.55	64	1.20	98	-0.018	1040.0	0.18	1.84
506	81.213	0.160	1.55	64	1.20	98	-0.018	1040.0	0.17	1.76
507	81.373	0.160	1.55	64	1.20	97	-0.018	1040.0	0.16	1.73
508	81.534	0.161	1.55	64	1.20	95	-0.017	1040.0	0.18	1.86
509	81.695	0.161	1.55	64	1.20	95	-0.017	1040.0	0.14	1.59
510	81.856	0.161	1.55	64	1.20	94	-0.017	1040.0	0.16	1.72
511	82.015	0.159	1.55	64	1.20	92	-0.017	1040.0	0.16	1.73
512	82.176	0.161	1.54	64	1.20	135	-0.038	1040.0	0.17	1.83
513	82.336	0.160	1.55	64	1.20	171	-0.038	1040.0	1.29	5.63
514	82.497	0.161	1.55	65	1.20	199	-0.040	1040.0	3.23	8.47
515	82.657	0.160	1.54	65	1.20	213	-0.040	1040.0	3.91	9.72
516	82.818	0.161	1.55	65	1.20	229	-0.044	1040.0	1.91	9.90
517	82.979	0.161	1.55	65	1.20	245	-0.047	1040.0	1.27	11.73
518	83.139	0.160	1.55	65	1.20	261	-0.048	1040.0	0.91	13.00
519	83.299	0.160	1.55	64	1.20	275	-0.050	1040.0	0.61	14.14
520	83.460	0.161	1.55	65	1.20	284	-0.052	1040.0	0.08	15.14
521	83.621	0.161	1.55	65	1.20	278	-0.049	1040.0	0.03	15.19
522	83.781	0.160	1.55	64	1.20	280	-0.049	577.8	-0.01	14.17
523	83.941	0.160	1.55	64	1.20	273	-0.050	653.7	-0.01	14.60
524	84.102	0.161	1.55	64	1.20	276	-0.050	654.8	0.00	14.67
525	84.263	0.161	1.55	64	1.20	273	-0.050	781.8	0.00	15.01
526	84.424	0.161	1.55	64	1.20	274	-0.050	772.3	0.00	15.38
527	84.583	0.159	1.56	64	1.20	275	-0.050	727.6	0.00	15.43
528	84.744	0.161	1.56	64	1.20	276	-0.052	672.6	0.00	15.42
529	84.904	0.160	1.56	63	1.20	277	-0.050	616.3	-0.01	15.55
530	85.065	0.161	1.56	64	1.20	279	-0.052	598.2	-0.01	15.68
531	85.225	0.160	1.57	63	1.20	281	-0.052	590.4	-0.01	15.81
532	85.386	0.161	1.57	63	1.20	280	-0.052	519.5	-0.03	15.42
533	85.547	0.161	1.56	63	1.20	280	-0.052	463.9	-0.03	15.05
534	85.707	0.160	1.56	63	1.20	282	-0.052	571.3	-0.01	15.48
535	85.867	0.160	1.56	63	1.20	281	-0.052	442.1	-0.03	14.88
536	86.028	0.161	1.59	63	1.20	283	-0.052	541.9	-0.02	15.38

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
537	86.189	0.161	1.55	63	1.20	283	-0.050	424.3	-0.03	14.95
538	86.349	0.160	1.56	63	1.20	282	-0.052	325.9	-0.04	14.94
539	86.509	0.160	1.56	63	1.20	284	-0.053	331.7	-0.04	14.79
540	86.670	0.161	1.55	63	1.20	283	-0.052	353.2	-0.04	14.82
541	86.831	0.161	1.56	62	1.20	284	-0.051	319.8	-0.04	14.67
542	86.992	0.161	1.56	63	1.20	285	-0.055	282.9	-0.04	14.50
543	87.151	0.159	1.56	63	1.20	285	-0.053	269.9	-0.05	14.40
544	87.312	0.161	1.56	62	1.20	284	-0.054	258.9	-0.05	14.64
545	87.472	0.160	1.55	62	1.20	284	-0.052	322.0	-0.04	14.86
546	87.633	0.161	1.55	62	1.20	284	-0.054	440.4	-0.03	14.75
547	87.793	0.160	1.56	62	1.20	279	-0.048	485.9	-0.02	14.35
548	87.954	0.161	1.56	62	1.20	257	-0.049	684.6	-0.01	9.98
549	88.115	0.161	1.56	62	1.20	244	-0.048	396.7	-0.03	10.10
550	88.275	0.160	1.55	62	1.20	235	-0.047	1040.0	0.08	11.97
551	88.435	0.160	1.56	62	1.20	228	-0.046	1040.0	0.04	11.05
552	88.596	0.161	1.56	62	1.20	222	-0.046	1040.0	0.08	9.57
553	88.757	0.161	1.56	62	1.20	217	-0.044	1040.0	0.05	10.06
554	88.917	0.160	1.56	62	1.20	212	-0.044	548.3	-0.02	8.49
555	89.077	0.160	1.55	61	1.20	208	-0.044	481.6	-0.02	7.12
556	89.238	0.161	1.56	62	1.20	205	-0.041	633.1	0.00	6.09
557	89.399	0.161	1.56	62	1.20	203	-0.040	655.8	-0.01	4.52
558	89.560	0.161	1.56	62	1.20	200	-0.039	1040.0	0.13	3.76
559	89.719	0.159	1.56	62	1.20	197	-0.039	1040.0	0.41	4.27
560	89.880	0.161	1.55	62	1.20	193	-0.039	1040.0	0.65	4.80
561	90.040	0.160	1.56	62	1.20	189	-0.038	1040.0	0.81	5.21
562	90.201	0.161	1.56	62	1.20	186	-0.037	1040.0	0.93	5.56
563	90.361	0.160	1.56	62	1.20	182	-0.036	1040.0	0.98	5.65
564	90.522	0.161	1.56	63	1.20	179	-0.036	1040.0	1.02	5.73
565	90.683	0.161	1.55	62	1.20	176	-0.035	1040.0	1.03	5.72
566	90.843	0.160	1.56	63	1.20	173	-0.034	1040.0	1.02	5.63
567	91.003	0.160	1.56	63	1.20	170	-0.034	1040.0	1.03	5.67
568	91.164	0.161	1.56	63	1.20	167	-0.034	1040.0	0.97	5.41
569	91.325	0.161	1.56	63	1.20	164	-0.033	1040.0	1.05	5.83
570	91.485	0.160	1.56	63	1.20	162	-0.032	1040.0	0.89	5.02
571	91.645	0.160	1.55	63	1.20	159	-0.032	1040.0	0.86	4.86
572	91.806	0.161	1.56	63	1.20	157	-0.031	1040.0	0.86	4.88

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
573	91.967	0.161	1.56	64	1.20	154	-0.031	1040.0	0.85	4.86
574	92.128	0.161	1.55	64	1.20	152	-0.030	1040.0	0.87	4.94
575	92.287	0.159	1.56	64	1.20	150	-0.030	1040.0	0.81	4.64
576	92.448	0.161	1.55	64	1.20	148	-0.029	1040.0	0.83	4.77
577	92.608	0.160	1.55	64	1.20	146	-0.029	1040.0	0.73	4.29
578	92.769	0.161	1.56	64	1.20	144	-0.028	1040.0	0.75	4.43
579	92.929	0.160	1.55	64	1.20	142	-0.028	1040.0	0.70	4.16
580	93.090	0.161	1.55	64	1.20	140	-0.028	1040.0	0.70	4.19
581	93.251	0.161	1.56	64	1.20	138	-0.027	1040.0	0.68	4.08
582	93.411	0.160	1.56	64	1.20	136	-0.027	1040.0	0.66	3.97
583	93.571	0.160	1.56	64	1.20	134	-0.027	1040.0	0.60	3.66
584	93.732	0.161	1.56	64	1.20	133	-0.027	1040.0	0.56	3.48
585	93.893	0.161	1.55	64	1.20	131	-0.026	1040.0	0.58	3.61
586	94.053	0.160	1.55	64	1.20	130	-0.026	1040.0	0.61	3.73
587	94.213	0.160	1.56	64	1.20	128	-0.026	1040.0	0.56	3.51
588	94.374	0.161	1.56	64	1.20	127	-0.025	1040.0	0.58	3.62
589	94.535	0.161	1.56	64	1.20	125	-0.024	1040.0	0.51	3.26
590	94.696	0.161	1.56	64	1.20	124	-0.025	1040.0	0.55	3.45
591	94.855	0.159	1.56	64	1.20	123	-0.024	1040.0	0.52	3.30
592	95.016	0.161	1.56	65	1.20	122	-0.023	1040.0	0.49	3.15
593	95.176	0.160	1.56	65	1.20	120	-0.023	1040.0	0.48	3.15
594	95.337	0.161	1.56	64	1.20	119	-0.023	1040.0	0.48	3.11
595	95.497	0.160	1.56	64	1.20	118	-0.023	1040.0	0.51	3.28
596	95.658	0.161	1.55	64	1.20	117	-0.023	1040.0	0.46	3.04
597	95.819	0.161	1.55	64	1.20	116	-0.022	1040.0	0.50	3.32
598	95.979	0.160	1.56	64	1.20	115	-0.022	1040.0	0.48	3.19
599	96.139	0.160	1.55	64	1.20	113	-0.022	1040.0	0.44	3.02
600	96.300	0.161	1.56	64	1.20	113	-0.022	1040.0	0.41	2.82
601	96.461	0.161	1.55	64	1.20	112	-0.022	1040.0	0.39	2.78
602	96.621	0.160	1.55	64	1.20	111	-0.022	1040.0	0.41	2.88
603	96.781	0.160	1.56	64	1.20	110	-0.021	1040.0	0.43	3.01
604	96.942	0.161	1.55	64	1.20	109	-0.021	1040.0	0.41	2.89
605	97.103	0.161	1.56	64	1.20	109	-0.021	1040.0	0.45	3.14
606	97.264	0.161	1.55	64	1.20	108	-0.021	1040.0	0.39	2.81
607	97.423	0.159	1.55	64	1.20	107	-0.021	1040.0	0.38	2.76
608	97.584	0.161	1.56	64	1.20	107	-0.021	1040.0	0.38	2.74

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
609	97.744	0.160	1.56	64	1.20	106	-0.021	1040.0	0.43	3.02
610	97.905	0.161	1.56	63	1.20	104	-0.020	1040.0	0.40	2.88
611	98.065	0.160	1.56	63	1.20	104	-0.020	1040.0	0.39	2.79
612	98.226	0.161	1.55	63	1.20	103	-0.020	1040.0	0.37	2.67
613	98.387	0.161	1.56	63	1.20	103	-0.020	1040.0	0.39	2.83
614	98.547	0.160	1.56	63	1.20	102	-0.020	1040.0	0.38	2.75
615	98.707	0.160	1.56	63	1.20	101	-0.020	1040.0	0.37	2.72
616	98.868	0.161	1.56	63	1.20	111	-0.031	1040.0	0.36	2.65
617	99.029	0.161	1.55	63	1.20	152	-0.032	1040.0	0.75	5.26
618	99.189	0.160	1.56	63	1.20	141	-0.029	1040.0	0.49	3.64
619	99.349	0.160	1.56	63	1.20	133	-0.027	1040.0	0.41	3.14
620	99.510	0.161	1.55	63	1.20	127	-0.026	1040.0	0.34	2.76
621	99.671	0.161	1.30	62	1.20	122	-0.025	1040.0	0.34	2.80
622	99.832	0.161	1.55	62	1.20	119	-0.025	1040.0	0.29	2.52
623	99.991	0.159	1.54	62	1.20	116	-0.024	1040.0	0.24	2.24
624	100.152	0.161	1.54	62	1.20	115	-0.023	1040.0	0.26	2.37
625	100.312	0.160	1.55	62	1.20	113	-0.023	1040.0	0.24	2.26
626	100.473	0.161	1.54	62	1.20	112	-0.023	1040.0	0.23	2.26
627	100.633	0.160	1.54	62	1.20	109	-0.022	1040.0	0.24	2.34
628	100.794	0.161	1.54	62	1.20	108	-0.022	1040.0	0.23	2.27
629	100.955	0.161	1.55	62	1.20	107	-0.022	1040.0	0.21	2.17
630	101.115	0.160	1.55	62	1.20	106	-0.022	1040.0	0.23	2.34
631	101.275	0.160	1.54	62	1.20	106	-0.021	1040.0	0.22	2.27
632	101.436	0.161	1.54	62	1.20	106	-0.021	1040.0	0.24	2.44
633	101.597	0.161	1.55	62	1.20	105	-0.021	1040.0	0.22	2.36
634	101.757	0.160	1.54	61	1.20	104	-0.020	1040.0	0.21	2.31
635	101.917	0.160	1.54	61	1.20	104	-0.020	1040.0	0.21	2.30
636	102.078	0.161	1.55	61	1.20	103	-0.020	1040.0	0.21	2.29
637	102.239	0.161	1.55	61	1.20	102	-0.020	1040.0	0.20	2.24
638	102.400	0.161	1.54	62	1.20	102	-0.020	1040.0	0.17	2.10
639	102.559	0.159	1.54	62	1.20	101	-0.019	1040.0	0.18	2.13
640	102.720	0.161	1.55	62	1.20	101	-0.020	1040.0	0.18	2.15
641	102.880	0.160	1.55	62	1.20	101	-0.019	1040.0	0.20	2.37
642	103.041	0.161	1.54	62	1.20	99	-0.019	1040.0	0.19	2.31
643	103.201	0.160	1.54	62	1.20	98	-0.020	1040.0	0.21	2.44
644	103.362	0.161	1.55	62	1.20	98	-0.019	1040.0	0.17	2.12

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
645	103.523	0.161	1.55	62	1.20	98	-0.019	1040.0	0.18	2.26
646	103.683	0.160	1.55	62	1.20	98	-0.018	1040.0	0.19	2.29
647	103.843	0.160	1.54	62	1.20	132	-0.036	1040.0	0.17	2.17
648	104.004	0.161	1.55	63	1.20	129	-0.028	1040.0	0.30	3.76
649	104.165	0.161	1.54	63	1.20	136	-0.038	1040.0	0.39	3.16
650	104.325	0.160	1.54	63	1.20	173	-0.039	1040.0	0.67	4.21
651	104.485	0.160	1.55	63	1.20	193	-0.040	1040.0	1.43	5.41
652	104.646	0.161	1.55	63	1.20	209	-0.042	1040.0	1.90	7.22
653	104.807	0.161	1.55	63	1.20	221	-0.043	1040.0	2.19	8.42
654	104.968	0.161	1.55	64	1.20	233	-0.045	1040.0	2.36	9.48
655	105.127	0.159	1.54	64	1.20	244	-0.047	1040.0	1.99	10.03
656	105.288	0.161	1.55	64	1.20	256	-0.048	1040.0	1.80	10.64
657	105.448	0.160	1.54	64	1.20	266	-0.049	1040.0	1.05	11.89
658	105.609	0.161	1.55	64	1.20	275	-0.051	1040.0	0.91	12.06
659	105.769	0.160	1.55	64	1.20	281	-0.051	1040.0	1.07	12.77
660	105.930	0.161	1.55	64	1.20	285	-0.052	1040.0	0.73	13.08
661	106.091	0.161	1.55	64	1.20	290	-0.052	1040.0	0.48	13.22
662	106.251	0.160	1.54	64	1.20	288	-0.050	1040.0	0.21	13.93
663	106.411	0.160	1.54	64	1.20	288	-0.051	1040.0	0.07	13.61
664	106.572	0.161	1.55	64	1.20	287	-0.051	1040.0	0.05	13.84
665	106.733	0.161	1.55	64	1.20	282	-0.049	1040.0	0.06	14.10
666	106.893	0.160	1.55	65	1.20	284	-0.053	839.3	0.01	14.03
667	107.053	0.160	1.55	65	1.20	285	-0.052	878.8	0.02	14.23
668	107.214	0.161	1.55	65	1.20	283	-0.050	847.8	0.00	14.23
669	107.375	0.161	1.55	65	1.20	286	-0.051	648.0	-0.01	14.04
670	107.536	0.161	1.54	65	1.20	283	-0.051	1040.0	0.03	14.02
671	107.695	0.159	1.54	65	1.20	286	-0.052	772.9	0.01	14.08
672	107.856	0.161	1.55	65	1.20	284	-0.050	900.3	0.01	14.12
673	108.016	0.160	1.55	65	1.20	286	-0.051	784.3	0.01	14.04
674	108.177	0.161	1.54	65	1.20	285	-0.050	1040.0	0.02	14.15
675	108.337	0.160	1.55	65	1.20	285	-0.052	956.5	0.03	14.03
676	108.498	0.161	1.55	65	1.20	286	-0.051	995.4	0.03	13.90
677	108.659	0.161	1.55	65	1.20	286	-0.051	1006.1	0.03	13.84
678	108.819	0.160	1.54	65	1.20	286	-0.052	1040.0	0.06	13.90
679	108.979	0.160	1.54	65	1.20	287	-0.052	1040.0	0.06	13.80
680	109.140	0.161	1.55	65	1.20	288	-0.052	1040.0	0.06	13.81

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
681	109.301	0.161	1.55	65	1.20	288	-0.052	1040.0	0.05	13.63
682	109.461	0.160	1.54	65	1.20	288	-0.051	1040.0	0.08	13.37
683	109.621	0.160	1.55	65	1.20	291	-0.055	1040.0	0.13	13.13
684	109.782	0.161	1.55	66	1.20	290	-0.052	1040.0	0.25	13.05
685	109.943	0.161	1.55	65	1.20	294	-0.052	1040.0	0.12	12.96
686	110.104	0.161	1.54	66	1.20	269	-0.048	1040.0	0.08	13.40
687	110.263	0.159	1.55	65	1.20	254	-0.049	1040.0	0.09	8.29
688	110.424	0.161	1.54	65	1.20	244	-0.048	1040.0	0.05	9.37
689	110.584	0.160	1.54	65	1.20	236	-0.047	643.2	-0.01	10.84
690	110.745	0.161	1.55	64	1.20	230	-0.047	733.4	0.01	10.38
691	110.905	0.160	1.55	64	1.20	224	-0.046	1040.0	0.69	15.00
692	111.066	0.161	1.55	64	1.20	219	-0.046	1040.0	0.55	15.84
693	111.227	0.161	1.55	64	1.20	215	-0.045	1040.0	0.24	14.49
694	111.387	0.160	1.54	64	1.20	211	-0.044	1040.0	0.10	13.15
695	111.547	0.160	1.55	64	1.20	209	-0.042	1040.0	0.03	11.81
696	111.708	0.161	1.55	64	1.20	206	-0.043	1040.0	0.20	9.72
697	111.869	0.161	1.54	64	1.20	203	-0.043	1040.0	1.54	11.23
698	112.029	0.160	1.55	64	1.20	200	-0.042	1040.0	2.67	12.80
699	112.189	0.160	1.55	64	1.20	196	-0.042	1040.0	3.29	13.29
700	112.350	0.161	1.54	64	1.20	192	-0.042	1040.0	3.71	13.73
701	112.511	0.161	1.54	64	1.20	189	-0.041	1040.0	3.58	12.76
702	112.672	0.161	1.55	64	1.20	185	-0.040	1040.0	3.73	12.83
703	112.831	0.159	1.55	64	1.20	182	-0.039	1040.0	3.82	12.83
704	112.992	0.161	1.55	64	1.20	179	-0.038	1040.0	3.65	12.21
705	113.152	0.160	1.55	64	1.20	176	-0.037	1040.0	3.77	12.44
706	113.313	0.161	1.55	64	1.20	173	-0.037	1040.0	3.74	12.27
707	113.473	0.160	1.55	64	1.20	170	-0.036	1040.0	3.54	11.66
708	113.634	0.161	1.55	64	1.20	167	-0.036	1040.0	3.62	11.90
709	113.795	0.161	1.55	64	1.20	165	-0.035	1040.0	3.36	11.12
710	113.955	0.160	1.55	64	1.20	162	-0.035	1040.0	3.35	11.13
711	114.115	0.160	1.55	64	1.20	160	-0.034	1040.0	3.12	10.43
712	114.276	0.161	1.55	64	1.20	158	-0.034	1040.0	3.11	10.42
713	114.437	0.161	1.55	64	1.20	155	-0.034	1040.0	2.95	9.95
714	114.597	0.160	1.55	64	1.20	153	-0.032	1040.0	2.76	9.39
715	114.757	0.160	1.55	64	1.20	151	-0.032	1040.0	2.71	9.27
716	114.918	0.161	1.55	64	1.20	149	-0.032	1040.0	2.88	9.87

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
717	115.079	0.161	1.55	65	1.20	148	-0.031	1040.0	2.73	9.46
718	115.240	0.161	1.55	64	1.20	145	-0.030	1040.0	2.80	9.72
719	115.399	0.159	1.54	64	1.20	143	-0.030	1040.0	2.49	8.86
720	115.560	0.161	1.55	64	1.20	142	-0.030	1040.0	2.46	8.82
721	115.721	0.161	1.55	65	1.20	142	-0.029	1040.0	2.30	8.26
722	115.881	0.160	1.54	65	1.20	139	-0.029	1040.0	2.40	8.66
723	116.041	0.160	1.55	64	1.20	139	-0.029	1040.0	2.25	8.19
724	116.202	0.161	1.55	65	1.20	137	-0.029	1040.0	2.29	8.35
725	116.363	0.161	1.55	64	1.20	135	-0.028	1040.0	2.21	8.10
726	116.524	0.161	1.55	64	1.20	134	-0.028	1040.0	2.17	8.02
727	116.683	0.159	1.55	65	1.20	133	-0.027	1040.0	2.10	7.82
728	116.844	0.161	1.55	65	1.20	132	-0.027	1040.0	2.09	7.80
729	117.004	0.160	1.55	64	1.20	131	-0.027	1040.0	2.09	7.82
730	117.165	0.161	1.55	64	1.20	131	-0.026	1040.0	1.96	7.44
731	117.325	0.160	1.55	65	1.20	129	-0.026	1040.0	2.01	7.63
732	117.486	0.161	1.55	65	1.20	128	-0.027	1040.0	2.00	7.59
733	117.647	0.161	1.55	64	1.20	128	-0.026	1040.0	1.86	7.15
734	117.807	0.160	1.56	65	1.20	127	-0.026	1040.0	1.79	6.94
735	117.967	0.160	1.56	65	1.20	126	-0.025	1040.0	1.91	7.35
736	118.128	0.161	1.56	65	1.20	125	-0.025	1040.0	1.77	6.88
737	118.289	0.161	1.56	65	1.20	124	-0.025	1040.0	1.82	7.07
738	118.449	0.160	1.57	65	1.20	124	-0.024	1040.0	1.77	6.95
739	118.609	0.160	1.57	65	1.20	123	-0.025	1040.0	1.83	7.18
740	118.770	0.161	1.56	65	1.20	124	-0.025	1040.0	1.69	6.68
741	118.931	0.161	1.56	65	1.20	121	-0.024	1040.0	1.75	6.91
742	119.092	0.161	1.56	64	1.20	120	-0.024	1040.0	1.61	6.48
743	119.251	0.159	1.59	65	1.20	122	-0.024	1040.0	1.64	6.61
744	119.410	0.159	1.55	65	1.20	121	-0.024	1040.0	1.55	6.32
745	119.571	0.161	1.56	65	1.20	120	-0.023	1040.0	1.57	6.39
746	119.732	0.161	1.56	65	1.20	119	-0.024	1040.0	1.56	6.38
747	119.892	0.160	1.55	65	1.20	119	-0.023	1040.0	1.47	6.11
748	120.052	0.160	1.56	65	1.20	116	-0.023	1040.0	1.50	6.21
749	120.213	0.161	1.56	65	1.20	117	-0.023	1040.0	1.47	6.15
750	120.374	0.161	1.56	65	1.20	118	-0.023	1040.0	1.58	6.54
751	120.535	0.161	1.56	64	1.20	116	-0.023	1040.0	1.45	6.15
752	120.694	0.159	1.55	64	1.20	114	-0.023	1040.0	1.41	6.01

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
753	120.855	0.161	1.55	64	1.20	117	-0.023	1040.0	1.38	5.91
754	121.015	0.160	1.56	65	1.20	115	-0.022	1040.0	1.39	5.91
755	121.176	0.161	1.56	65	1.20	140	-0.041	1040.0	1.34	5.80
756	121.336	0.160	1.56	65	1.20	140	-0.032	1040.0	0.84	4.57
757	121.497	0.161	1.55	65	1.20	135	-0.030	1040.0	0.67	3.58
758	121.658	0.161	1.56	64	1.20	131	-0.028	1040.0	0.57	3.15
759	121.818	0.160	1.56	64	1.20	127	-0.027	1040.0	0.53	3.04
760	121.978	0.160	1.56	64	1.20	123	-0.027	1040.0	0.48	2.85
761	122.139	0.161	1.56	64	1.20	122	-0.026	1040.0	0.44	2.72
762	122.300	0.161	1.55	64	1.20	120	-0.026	1040.0	0.46	2.83
763	122.460	0.160	1.56	64	1.20	117	-0.025	1040.0	0.42	2.72
764	122.620	0.160	1.56	64	1.20	117	-0.025	1040.0	0.40	2.63
765	122.781	0.161	1.56	64	1.20	116	-0.024	1040.0	0.40	2.61
766	122.942	0.161	1.56	64	1.20	115	-0.024	1040.0	0.40	2.69
767	123.103	0.161	1.55	64	1.20	114	-0.024	1040.0	0.39	2.65
768	123.262	0.159	1.56	64	1.20	114	-0.024	1040.0	0.38	2.63
769	123.422	0.160	1.56	64	1.20	113	-0.023	1040.0	0.39	2.70
770	123.583	0.161	1.56	63	1.20	112	-0.023	1040.0	0.39	2.74
771	123.744	0.161	1.56	63	1.20	111	-0.023	1040.0	0.37	2.67
772	123.905	0.161	1.55	62	1.20	111	-0.023	1040.0	0.37	2.70
773	124.064	0.159	1.56	63	1.20	108	-0.022	1040.0	0.36	2.69
774	124.225	0.161	1.56	63	1.20	109	-0.022	1040.0	0.34	2.55
775	124.386	0.161	1.56	63	1.20	108	-0.022	1040.0	0.33	2.52
776	124.546	0.160	1.56	63	1.20	108	-0.022	1040.0	0.34	2.60
777	124.706	0.160	1.56	62	1.20	107	-0.022	1040.0	0.33	2.56
778	124.867	0.161	1.55	63	1.20	106	-0.022	1040.0	0.34	2.63
779	125.028	0.161	1.56	63	1.20	106	-0.021	1040.0	0.33	2.64
780	125.189	0.161	1.56	63	1.20	106	-0.021	1040.0	0.30	2.45
781	125.348	0.159	1.55	62	1.20	106	-0.021	1040.0	0.31	2.55
782	125.509	0.161	1.56	62	1.20	104	-0.021	1040.0	0.31	2.55
783	125.669	0.160	1.55	62	1.20	105	-0.021	1040.0	0.33	2.67
784	125.830	0.161	1.55	62	1.20	105	-0.021	1040.0	0.32	2.64
785	125.990	0.160	1.56	62	1.20	104	-0.020	1040.0	0.31	2.56
786	126.151	0.161	1.55	62	1.20	129	-0.037	1040.0	0.30	2.52
787	126.312	0.161	1.55	62	1.20	125	-0.028	1040.0	0.40	2.67
788	126.472	0.160	1.56	62	1.20	122	-0.027	1040.0	0.37	2.18

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time: 1228 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
789	126.632	0.160	1.56	62	1.20	136	-0.038	1040.0	0.30	1.91
790	126.793	0.161	1.56	62	1.20	168	-0.038	1040.0	0.38	2.98
791	126.954	0.161	1.56	62	1.20	185	-0.039	1040.0	1.08	3.78
792	127.114	0.160	1.55	62	1.20	201	-0.040	1040.0	1.37	5.44
793	127.274	0.160	1.55	62	1.20	215	-0.043	1040.0	1.82	7.28
794	127.435	0.161	1.56	62	1.20	227	-0.045	1040.0	1.80	8.60
795	127.596	0.161	1.56	62	1.20	238	-0.047	1040.0	1.88	9.25
796	127.757	0.161	1.56	62	1.20	249	-0.049	1040.0	1.67	9.90
797	127.916	0.159	1.56	62	1.20	254	-0.049	1040.0	1.72	10.65
798	128.075	0.159	1.56	61	1.20	262	-0.050	1040.0	1.64	10.57
799	128.236	0.161	1.56	61	1.20	269	-0.051	1040.0	1.42	11.00
800	128.397	0.161	1.56	61	1.20	274	-0.052	1040.0	1.40	11.23
801	128.557	0.160	1.56	61	1.20	279	-0.052	1040.0	1.36	11.21
802	128.717	0.160	1.56	62	1.20	286	-0.054	1040.0	1.10	11.88
803	128.878	0.161	1.55	62	1.20	293	-0.055	1040.0	0.78	12.79
804	129.039	0.161	1.55	61	1.20	297	-0.054	1040.0	0.17	13.99
805	129.200	0.161	1.56	62	1.20	298	-0.055	1040.0	0.12	13.94
806	129.359	0.159	1.55	62	1.20	300	-0.056	1040.0	0.10	14.06
807	129.520	0.161	1.56	62	1.20	298	-0.055	1040.0	0.09	13.99
808	129.680	0.160	1.55	62	1.20	297	-0.055	1040.0	0.07	14.06
809	129.841	0.161	1.55	63	1.20	296	-0.053	1040.0	0.05	14.00
810	130.001	0.160	1.56	63	1.20	294	-0.053	1040.0	0.06	14.00
811	130.162	0.161	1.55	64	1.20	289	-0.047	1040.0	0.05	13.89
812	130.323	0.161	1.56	64	1.20	290	-0.052	1040.0	0.04	13.74
813	130.483	0.160	1.55	64	1.20	292	-0.054	1040.0	0.04	13.60
814	130.643	0.160	1.55	64	1.20	291	-0.054	1040.0	0.07	13.64
815	130.804	0.161	1.56	64	1.20	290	-0.054	1040.0	0.06	13.51
816	130.965	0.161	1.56	64	1.20	289	-0.054	1040.0	0.05	13.62
817	131.125	0.160	1.56	64	1.20	293	-0.055	1040.0	0.05	13.50
818	131.285	0.160	1.56	64	1.20	291	-0.054	1040.0	0.07	13.67
819	131.446	0.161	1.55	64	1.20	292	-0.056	1040.0	0.07	13.34
820	131.607	0.161	1.56	65	1.20	292	-0.054	1040.0	0.07	13.31
821	131.768	0.161	1.56	65	1.20	293	-0.052	1040.0	0.08	12.95
822	131.929	0.161	1.56	65	1.20	295	-0.056	1040.0	0.13	12.74
823	132.090	0.161	1.56	65	1.20	296	-0.054	1040.0	0.12	12.70
824	132.251	0.161	1.55	65	1.20	278	-0.050	1040.0	0.10	12.54

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
825	132.410	0.159	1.56	66	1.20	260	-0.049	1040.0	0.35	7.15
826	132.569	0.159	1.56	65	1.20	248	-0.048	1040.0	0.09	8.64
827	132.730	0.161	1.55	65	1.20	239	-0.047	918.0	-0.01	9.97
828	132.891	0.161	1.30	65	1.20	233	-0.047	671.6	0.01	9.51
829	133.051	0.160	1.55	64	1.20	227	-0.047	1040.0	0.15	10.11
830	133.211	0.160	1.54	65	1.20	221	-0.046	1040.0	0.28	13.80
831	133.372	0.161	1.54	64	1.20	217	-0.045	1040.0	0.08	12.73
832	133.533	0.161	1.55	64	1.20	212	-0.044	869.4	0.00	11.56
833	133.694	0.161	1.54	65	1.20	211	-0.043	634.4	-0.01	10.86
834	133.853	0.159	1.54	64	1.20	209	-0.043	754.2	0.01	8.84
835	134.014	0.161	1.54	64	1.20	206	-0.042	1040.0	0.63	8.66
836	134.174	0.160	1.55	64	1.20	202	-0.042	1040.0	1.44	9.39
837	134.335	0.161	1.55	64	1.20	199	-0.042	1040.0	1.97	9.80
838	134.495	0.160	1.54	64	1.20	195	-0.042	1040.0	2.39	10.41
839	134.656	0.161	1.54	64	1.20	191	-0.041	1040.0	2.58	10.48
840	134.817	0.161	1.55	64	1.20	188	-0.040	1040.0	2.76	10.67
841	134.977	0.160	1.54	64	1.20	184	-0.040	1040.0	2.90	10.88
842	135.137	0.160	1.54	64	1.20	181	-0.039	1040.0	2.82	10.49
843	135.298	0.161	1.55	64	1.20	178	-0.038	1040.0	2.91	10.63
844	135.459	0.161	1.55	64	1.20	175	-0.037	1040.0	2.74	9.95
845	135.619	0.160	1.54	64	1.20	172	-0.037	1040.0	2.90	10.45
846	135.779	0.160	1.54	64	1.20	170	-0.037	1040.0	2.74	9.88
847	135.940	0.161	1.55	64	1.20	167	-0.036	1040.0	2.81	10.08
848	136.101	0.161	1.55	64	1.20	165	-0.036	1040.0	2.81	10.10
849	136.262	0.161	1.54	64	1.20	162	-0.035	1040.0	2.83	10.16
850	136.423	0.161	1.54	64	1.20	160	-0.035	1040.0	2.77	9.91
851	136.584	0.161	1.55	64	1.20	157	-0.034	1040.0	2.68	9.63
852	136.745	0.161	1.55	64	1.20	155	-0.033	1040.0	2.50	9.11
853	136.904	0.159	1.55	64	1.20	153	-0.033	1040.0	2.42	8.83
854	137.063	0.159	1.54	65	1.20	151	-0.033	1040.0	2.46	8.97
855	137.224	0.161	1.55	64	1.20	149	-0.031	1040.0	2.49	9.09
856	137.385	0.161	1.54	64	1.20	147	-0.032	1040.0	2.40	8.81
857	137.545	0.160	1.54	64	1.20	145	-0.031	1040.0	2.27	8.39
858	137.705	0.160	1.55	64	1.20	144	-0.031	1040.0	2.23	8.28
859	137.866	0.161	1.55	64	1.20	143	-0.031	1040.0	2.14	7.98
860	138.027	0.161	1.55	64	1.20	141	-0.030	1040.0	2.17	8.08

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
861	138.188	0.161	1.55	64	1.20	141	-0.030	1040.0	2.10	7.90
862	138.347	0.159	1.54	64	1.20	139	-0.029	1040.0	2.16	8.09
863	138.508	0.161	1.55	64	1.20	137	-0.029	1040.0	2.15	8.11
864	138.668	0.160	1.54	65	1.20	135	-0.027	1040.0	2.14	8.10
865	138.829	0.161	1.55	65	1.20	134	-0.028	1040.0	1.94	7.51
866	138.989	0.160	1.55	64	1.20	134	-0.028	1040.0	1.91	7.41
867	139.150	0.161	1.55	64	1.20	133	-0.028	1040.0	1.98	7.62
868	139.311	0.161	1.55	64	1.20	131	-0.028	1040.0	1.89	7.34
869	139.471	0.160	1.54	64	1.20	132	-0.027	1040.0	1.89	7.39
870	139.631	0.160	1.54	64	1.20	131	-0.027	1040.0	1.88	7.36
871	139.792	0.161	1.55	64	1.20	130	-0.027	1040.0	1.79	7.05
872	139.953	0.161	1.55	64	1.20	127	-0.026	1040.0	1.77	6.97
873	140.113	0.160	1.55	64	1.20	127	-0.026	1040.0	1.76	6.93
874	140.273	0.160	1.55	64	1.20	128	-0.026	1040.0	1.69	6.70
875	140.434	0.161	1.55	64	1.20	125	-0.026	1040.0	1.67	6.66
876	140.595	0.161	1.55	64	1.20	126	-0.026	1040.0	1.67	6.69
877	140.756	0.161	1.54	64	1.20	125	-0.025	1040.0	1.72	6.92
878	140.917	0.161	1.54	64	1.20	125	-0.025	1040.0	1.62	6.57
879	141.078	0.161	1.55	64	1.20	124	-0.025	1040.0	1.61	6.55
880	141.239	0.161	1.55	64	1.20	122	-0.025	1040.0	1.65	6.67
881	141.398	0.159	1.54	64	1.20	122	-0.025	1040.0	1.54	6.33
882	141.557	0.159	1.55	63	1.20	121	-0.024	1040.0	1.54	6.33
883	141.718	0.161	1.55	64	1.20	121	-0.024	1040.0	1.56	6.41
884	141.879	0.161	1.55	64	1.20	120	-0.024	1040.0	1.51	6.28
885	142.039	0.160	1.54	63	1.20	119	-0.024	1040.0	1.48	6.18
886	142.199	0.160	1.54	63	1.20	121	-0.024	1040.0	1.47	6.15
887	142.360	0.161	1.55	63	1.20	120	-0.024	1040.0	1.51	6.32
888	142.521	0.161	1.55	63	1.20	118	-0.024	1040.0	1.46	6.16
889	142.682	0.161	1.54	63	1.20	119	-0.024	1040.0	1.44	6.09
890	142.841	0.159	1.55	62	1.20	120	-0.023	1040.0	1.46	6.19
891	143.002	0.161	1.55	62	1.20	116	-0.023	1040.0	1.43	6.08
892	143.162	0.160	1.55	62	1.20	115	-0.023	1040.0	1.34	5.79
893	143.323	0.161	1.54	62	1.20	142	-0.042	1040.0	1.34	5.78
894	143.483	0.160	1.55	62	1.20	137	-0.033	1040.0	1.47	6.66
895	143.644	0.161	1.54	62	1.20	132	-0.031	1040.0	0.42	2.83
896	143.805	0.161	1.54	62	1.20	129	-0.029	1040.0	0.34	2.31

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
897	143.965	0.160	1.55	62	1.20	127	-0.028	1040.0	0.32	2.14
898	144.125	0.160	1.55	62	1.20	124	-0.028	1040.0	0.31	2.07
899	144.286	0.161	1.55	62	1.20	122	-0.027	1040.0	0.32	2.12
900	144.447	0.161	1.55	62	1.20	121	-0.026	1040.0	0.31	2.11
901	144.607	0.160	1.54	62	1.20	119	-0.026	1040.0	0.31	2.13
902	144.767	0.160	1.55	62	1.20	119	-0.026	1040.0	0.33	2.26
903	144.928	0.161	1.55	62	1.20	118	-0.025	1040.0	0.33	2.31
904	145.089	0.161	1.54	62	1.20	116	-0.024	1040.0	0.33	2.35
905	145.250	0.161	1.55	62	1.20	115	-0.024	1040.0	0.34	2.46
906	145.410	0.160	1.55	62	1.20	116	-0.024	1040.0	0.34	2.44
907	145.571	0.161	1.54	62	1.20	114	-0.024	269.9	0.08	0.91
908	145.732	0.161	1.54	62	1.20	113	-0.023	1040.0	0.30	2.31
909	145.893	0.161	1.55	62	1.20	112	-0.023	1040.0	0.37	2.80
910	146.052	0.159	1.55	63	1.20	112	-0.023	1040.0	0.34	2.62
911	146.213	0.161	1.55	62	1.20	112	-0.023	1040.0	0.32	2.54
912	146.373	0.160	1.55	63	1.20	109	-0.022	1040.0	0.33	2.61
913	146.534	0.161	1.55	62	1.20	109	-0.022	1040.0	0.31	2.47
914	146.694	0.160	1.55	62	1.20	108	-0.021	1040.0	0.33	2.61
915	146.855	0.161	1.55	62	1.20	108	-0.022	1040.0	0.30	2.45
916	147.016	0.161	1.55	63	1.20	108	-0.021	1040.0	0.31	2.55
917	147.176	0.160	1.55	63	1.20	109	-0.021	1040.0	0.29	2.40
918	147.336	0.160	1.55	63	1.20	107	-0.021	1040.0	0.31	2.54
919	147.497	0.161	1.55	63	1.20	107	-0.021	1040.0	0.30	2.50
920	147.658	0.161	1.55	63	1.20	106	-0.021	1040.0	0.31	2.62
921	147.818	0.160	1.55	63	1.20	105	-0.021	1040.0	0.32	2.67
922	147.978	0.160	1.55	63	1.20	105	-0.022	1040.0	0.27	2.39
923	148.139	0.161	1.55	63	1.20	105	-0.021	1040.0	0.33	2.73
924	148.300	0.161	1.55	64	1.20	132	-0.038	1040.0	0.32	2.67
925	148.461	0.161	1.55	64	1.20	137	-0.037	1040.0	0.17	2.01
926	148.620	0.159	1.54	64	1.20	161	-0.036	1040.0	0.14	1.16
927	148.781	0.161	1.55	64	1.20	171	-0.037	1040.0	0.36	1.72
928	148.941	0.160	1.55	64	1.20	182	-0.038	1040.0	0.53	2.55
929	149.102	0.161	1.54	64	1.20	193	-0.039	1040.0	0.82	4.09
930	149.262	0.160	1.55	64	1.20	206	-0.041	1040.0	1.26	6.07
931	149.423	0.161	1.55	64	1.20	219	-0.043	1040.0	1.71	8.17
932	149.584	0.161	1.55	64	1.20	233	-0.046	1040.0	2.24	9.78

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
933	149.744	0.160	1.55	64	1.20	247	-0.047	1040.0	2.25	11.12
934	149.904	0.160	1.55	64	1.20	263	-0.049	1040.0	1.33	12.18
935	150.065	0.161	1.55	64	1.20	273	-0.050	1040.0	0.55	13.02
936	150.226	0.161	1.55	64	1.20	279	-0.050	1040.0	0.28	13.71
937	150.386	0.160	1.55	64	1.20	284	-0.053	1040.0	0.25	13.43
938	150.546	0.160	1.55	64	1.20	290	-0.052	1040.0	0.21	13.96
939	150.707	0.161	1.55	64	1.20	286	-0.052	1040.0	0.13	15.12
940	150.868	0.161	1.55	65	1.20	284	-0.049	1040.0	0.05	14.09
941	151.029	0.161	1.56	65	1.20	283	-0.051	1040.0	0.13	13.90
942	151.188	0.159	1.56	65	1.20	284	-0.052	1040.0	0.12	13.84
943	151.349	0.161	1.56	65	1.20	285	-0.053	1040.0	0.10	13.94
944	151.509	0.160	1.56	65	1.20	283	-0.051	1040.0	0.11	14.04
945	151.670	0.161	1.57	65	1.20	284	-0.052	1040.0	0.10	14.03
946	151.830	0.160	1.57	65	1.20	287	-0.053	1040.0	0.12	14.08
947	151.991	0.161	1.56	65	1.20	288	-0.051	1040.0	0.16	14.37
948	152.152	0.161	1.56	65	1.20	288	-0.052	1040.0	0.17	14.14
949	152.312	0.160	1.56	65	1.20	289	-0.053	1040.0	0.18	13.75
950	152.472	0.160	1.59	65	1.20	291	-0.053	1040.0	0.17	13.67
951	152.633	0.161	1.55	65	1.20	288	-0.052	1040.0	0.20	14.10
952	152.794	0.161	1.56	65	1.20	289	-0.054	1040.0	0.19	13.71
953	152.954	0.160	1.56	65	1.20	291	-0.053	1040.0	0.24	13.43
954	153.114	0.160	1.55	65	1.20	295	-0.053	1040.0	0.25	13.37
955	153.275	0.161	1.56	65	1.20	295	-0.052	1040.0	0.24	13.82
956	153.436	0.161	1.56	65	1.20	295	-0.055	1040.0	0.26	13.19
957	153.597	0.161	1.56	65	1.20	298	-0.057	1040.0	0.26	12.79
958	153.756	0.159	1.56	65	1.20	301	-0.055	1040.0	0.20	13.15
959	153.917	0.161	1.55	65	1.20	298	-0.056	1040.0	0.18	13.77
960	154.077	0.160	1.55	66	1.20	289	-0.050	1040.0	0.17	13.58
961	154.238	0.161	1.56	66	1.20	266	-0.049	1040.0	0.22	12.07
962	154.398	0.160	1.56	66	1.20	252	-0.048	1040.0	0.20	8.41
963	154.559	0.161	1.56	66	1.20	242	-0.048	1040.0	0.14	8.55
964	154.720	0.161	1.55	65	1.20	234	-0.045	1040.0	0.10	9.11
965	154.880	0.160	1.56	65	1.20	228	-0.046	1040.0	0.19	7.52
966	155.040	0.160	1.56	65	1.20	223	-0.045	1040.0	0.19	11.00
967	155.201	0.161	1.56	65	1.20	218	-0.045	1040.0	0.09	10.17
968	155.362	0.161	1.56	65	1.20	213	-0.043	1040.0	0.11	8.29

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
969	155.522	0.160	1.55	64	1.20	210	-0.041	1040.0	0.15	7.04
970	155.682	0.160	1.56	65	1.20	209	-0.041	1040.0	0.16	5.70
971	155.843	0.161	1.56	64	1.20	207	-0.040	1040.0	0.14	4.16
972	156.004	0.161	1.56	64	1.20	203	-0.040	1040.0	0.46	4.36
973	156.165	0.161	1.56	64	1.20	200	-0.039	1040.0	0.79	4.86
974	156.324	0.159	1.55	64	1.20	197	-0.039	1040.0	1.04	5.27
975	156.485	0.161	1.56	64	1.20	193	-0.038	1040.0	1.22	5.61
976	156.645	0.160	1.56	65	1.20	190	-0.037	1040.0	1.30	5.69
977	156.806	0.161	1.56	64	1.20	186	-0.037	1040.0	1.37	5.80
978	156.966	0.160	1.56	64	1.20	183	-0.036	1040.0	1.38	5.74
979	157.127	0.161	1.55	64	1.20	180	-0.036	1040.0	1.37	5.63
980	157.288	0.161	1.56	64	1.20	177	-0.035	1040.0	1.44	5.82
981	157.448	0.160	1.56	64	1.20	174	-0.034	1040.0	1.36	5.53
982	157.608	0.160	1.56	64	1.20	171	-0.034	1040.0	1.39	5.63
983	157.769	0.161	1.56	64	1.20	168	-0.034	1040.0	1.37	5.54
984	157.930	0.161	1.56	64	1.20	165	-0.033	1040.0	1.42	5.71
985	158.090	0.160	1.55	63	1.20	162	-0.032	1040.0	1.30	5.24
986	158.250	0.160	1.56	63	1.20	161	-0.032	1040.0	1.31	5.24
987	158.411	0.161	1.56	63	1.20	157	-0.032	1040.0	1.31	5.25
988	158.572	0.161	1.55	63	1.20	155	-0.032	1040.0	1.22	4.94
989	158.733	0.161	1.56	63	1.20	153	-0.031	1040.0	1.23	4.94
990	158.892	0.159	1.55	63	1.20	151	-0.031	1040.0	1.20	4.84
991	159.053	0.161	1.55	63	1.20	149	-0.031	1040.0	1.28	5.09
992	159.213	0.160	1.56	62	1.20	146	-0.030	1040.0	1.23	4.91
993	159.374	0.161	1.55	63	1.20	145	-0.030	1040.0	1.13	4.59
994	159.534	0.160	1.55	63	1.20	143	-0.029	1040.0	1.27	5.05
995	159.695	0.161	1.56	62	1.20	141	-0.028	1040.0	1.26	5.00
996	159.856	0.161	1.56	62	1.20	139	-0.029	1040.0	1.21	4.83
997	160.016	0.160	1.56	62	1.20	138	-0.028	1040.0	1.15	4.60
998	160.176	0.160	1.56	62	1.20	135	-0.028	1040.0	1.17	4.65
999	160.337	0.161	1.55	62	1.20	134	-0.028	1040.0	1.11	4.43
1000	160.498	0.161	1.55	62	1.20	133	-0.027	1040.0	1.15	4.57
1001	160.658	0.160	1.56	62	1.20	131	-0.027	1040.0	1.02	4.13
1002	160.818	0.160	1.56	63	1.20	130	-0.027	1040.0	1.10	4.40
1003	160.979	0.161	1.56	62	1.20	128	-0.027	1040.0	1.08	4.32
1004	161.140	0.161	1.56	62	1.20	127	-0.026	1040.0	1.00	4.03

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1005	161.301	0.161	1.56	62	1.20	126	-0.026	1040.0	1.11	4.39
1006	161.460	0.159	1.56	62	1.20	124	-0.026	1040.0	1.06	4.25
1007	161.621	0.161	1.56	62	1.20	122	-0.025	1040.0	1.06	4.22
1008	161.781	0.160	1.56	63	1.20	120	-0.025	1040.0	0.98	3.92
1009	161.942	0.161	1.56	63	1.20	120	-0.024	1040.0	1.00	3.99
1010	162.102	0.160	1.55	62	1.20	120	-0.024	1040.0	0.98	3.95
1011	162.263	0.161	1.55	63	1.20	118	-0.024	1040.0	0.98	3.91
1012	162.424	0.161	1.56	63	1.20	116	-0.024	1040.0	0.96	3.83
1013	162.584	0.160	1.55	63	1.20	116	-0.024	1040.0	0.93	3.71
1014	162.744	0.160	1.56	63	1.20	116	-0.023	1040.0	0.93	3.73
1015	162.905	0.161	1.55	63	1.20	114	-0.023	1040.0	0.92	3.66
1016	163.066	0.161	1.55	63	1.20	112	-0.023	1040.0	1.02	4.04
1017	163.226	0.160	1.56	63	1.20	113	-0.023	1040.0	0.98	3.89
1018	163.386	0.160	1.55	63	1.20	111	-0.023	1040.0	0.90	3.60
1019	163.547	0.161	1.56	63	1.20	111	-0.022	1040.0	0.90	3.60
1020	163.708	0.161	1.55	64	1.20	110	-0.023	1040.0	0.91	3.63
1021	163.869	0.161	1.55	64	1.20	109	-0.022	1040.0	0.91	3.62
1022	164.028	0.159	1.56	64	1.20	109	-0.022	1040.0	0.89	3.55
1023	164.189	0.161	1.56	64	1.20	108	-0.022	1040.0	0.89	3.52
1024	164.349	0.160	1.56	64	1.20	107	-0.022	1040.0	0.91	3.61
1025	164.510	0.161	1.56	64	1.20	106	-0.021	1040.0	0.85	3.38
1026	164.670	0.160	1.55	64	1.20	105	-0.021	1040.0	0.85	3.39
1027	164.831	0.161	1.56	64	1.20	106	-0.022	1040.0	0.85	3.36
1028	164.992	0.161	1.56	64	1.20	105	-0.021	1040.0	0.84	3.33
1029	165.152	0.160	1.56	64	1.20	104	-0.020	1040.0	0.84	3.34
1030	165.312	0.160	1.56	64	1.20	143	-0.033	1040.0	0.99	3.86
1031	165.473	0.161	1.55	64	1.20	136	-0.029	1040.0	0.60	2.89
1032	165.634	0.161	1.56	64	1.20	130	-0.027	1040.0	0.42	2.24
1033	165.794	0.160	1.56	65	1.20	126	-0.026	1040.0	0.35	1.90
1034	165.954	0.160	1.55	63	1.20	122	-0.025	1040.0	0.35	1.88
1035	166.115	0.161	1.30	64	1.20	119	-0.025	1040.0	0.36	1.93
1036	166.276	0.161	1.55	64	1.20	117	-0.024	1040.0	0.34	1.83
1037	166.437	0.161	1.54	64	1.20	114	-0.024	1040.0	0.33	1.79
1038	166.596	0.159	1.54	64	1.20	113	-0.023	1040.0	0.30	1.68
1039	166.757	0.161	1.55	64	1.20	112	-0.023	1040.0	0.29	1.65
1040	166.917	0.160	1.54	64	1.20	110	-0.023	1040.0	0.29	1.64

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1041	167.078	0.161	1.54	64	1.20	109	-0.023	1040.0	0.29	1.65
1042	167.238	0.160	1.54	64	1.20	109	-0.022	1040.0	0.27	1.56
1043	167.399	0.161	1.55	64	1.20	107	-0.022	1040.0	0.28	1.62
1044	167.560	0.161	1.55	63	1.20	107	-0.022	1040.0	0.26	1.56
1045	167.720	0.160	1.54	63	1.20	106	-0.022	1040.0	0.27	1.62
1046	167.880	0.160	1.54	64	1.20	105	-0.021	1040.0	0.25	1.53
1047	168.041	0.161	1.55	63	1.20	104	-0.022	1040.0	0.26	1.57
1048	168.202	0.161	1.54	63	1.20	103	-0.021	1040.0	0.24	1.51
1049	168.362	0.160	1.54	63	1.20	103	-0.021	1040.0	0.24	1.52
1050	168.522	0.160	1.55	63	1.20	103	-0.021	1040.0	0.24	1.53
1051	168.683	0.161	1.55	63	1.20	102	-0.020	1040.0	0.23	1.46
1052	168.844	0.161	1.54	64	1.20	101	-0.020	1040.0	0.23	1.47
1053	169.005	0.161	1.54	63	1.20	100	-0.020	1040.0	0.23	1.51
1054	169.164	0.159	1.55	63	1.20	100	-0.020	1040.0	0.22	1.44
1055	169.325	0.161	1.55	64	1.20	127	-0.035	1040.0	0.24	1.53
1056	169.485	0.160	1.54	64	1.20	140	-0.036	1040.0	0.40	2.70
1057	169.646	0.161	1.54	64	1.20	162	-0.036	1040.0	0.05	0.88
1058	169.806	0.160	1.55	64	1.20	173	-0.036	1040.0	0.25	1.29
1059	169.967	0.161	1.55	64	1.20	185	-0.039	1040.0	0.67	2.34
1060	170.128	0.161	1.55	64	1.20	200	-0.040	1040.0	1.61	4.21
1061	170.288	0.160	1.54	64	1.20	214	-0.042	1040.0	2.17	6.71
1062	170.448	0.160	1.55	64	1.20	226	-0.044	1040.0	2.66	8.29
1063	170.609	0.161	1.54	64	1.20	236	-0.045	1040.0	2.35	10.07
1064	170.770	0.161	1.54	64	1.20	246	-0.047	1040.0	1.98	10.51
1065	170.930	0.160	1.55	64	1.20	256	-0.049	1040.0	1.81	11.06
1066	171.090	0.160	1.55	64	1.20	264	-0.049	1040.0	1.72	11.41
1067	171.251	0.161	1.55	64	1.20	273	-0.052	1040.0	1.44	11.93
1068	171.412	0.161	1.55	64	1.20	280	-0.052	1040.0	1.02	12.76
1069	171.573	0.161	1.54	65	1.20	286	-0.052	1040.0	0.70	13.03
1070	171.732	0.159	1.55	65	1.20	289	-0.052	1040.0	0.47	13.45
1071	171.893	0.161	1.54	65	1.20	293	-0.052	1040.0	0.26	14.07
1072	172.053	0.160	1.55	65	1.20	297	-0.055	1040.0	0.26	13.94
1073	172.214	0.161	1.55	65	1.20	300	-0.053	1040.0	0.21	13.95
1074	172.374	0.160	1.55	65	1.20	302	-0.053	1040.0	0.22	13.81
1075	172.535	0.161	1.55	65	1.20	302	-0.056	1040.0	0.19	13.80
1076	172.696	0.161	1.54	64	1.20	304	-0.055	1040.0	0.14	13.69

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1077	172.856	0.160	1.54	64	1.20	302	-0.054	1040.0	0.08	14.15
1078	173.016	0.160	1.55	64	1.20	300	-0.055	1040.0	0.07	13.93
1079	173.177	0.161	1.55	65	1.20	301	-0.052	1040.0	0.10	13.12
1080	173.338	0.161	1.55	65	1.20	303	-0.055	1040.0	0.11	13.02
1081	173.498	0.160	1.55	65	1.20	304	-0.056	1040.0	0.12	13.71
1082	173.658	0.160	1.55	65	1.20	304	-0.055	1040.0	0.09	13.44
1083	173.819	0.161	1.55	65	1.20	304	-0.057	1040.0	0.15	13.20
1084	173.980	0.161	1.54	66	1.20	307	-0.055	1040.0	0.17	13.15
1085	174.141	0.161	1.54	65	1.20	305	-0.056	1040.0	0.17	13.22
1086	174.300	0.159	1.55	65	1.20	306	-0.056	1040.0	0.14	13.33
1087	174.461	0.161	1.55	64	1.20	308	-0.056	1040.0	0.25	13.01
1088	174.621	0.160	1.54	65	1.20	307	-0.057	1040.0	0.29	12.84
1089	174.782	0.161	1.55	64	1.20	311	-0.056	1040.0	0.28	12.75
1090	174.942	0.160	1.55	64	1.20	310	-0.056	1040.0	0.30	12.57
1091	175.103	0.161	1.55	65	1.20	291	-0.050	1040.0	0.26	12.67
1092	175.264	0.161	1.54	65	1.20	268	-0.050	1040.0	0.03	6.98
1093	175.424	0.160	1.54	64	1.20	255	-0.048	1040.0	0.05	7.78
1094	175.584	0.160	1.55	65	1.20	244	-0.047	826.8	0.01	8.95
1095	175.745	0.161	1.55	64	1.20	238	-0.047	981.0	0.03	8.06
1096	175.906	0.161	1.54	64	1.20	232	-0.046	1040.0	0.17	9.56
1097	176.066	0.160	1.55	63	1.20	226	-0.047	1040.0	0.15	10.59
1098	176.226	0.160	1.55	63	1.20	221	-0.045	1040.0	0.07	9.31
1099	176.387	0.161	1.55	63	1.20	217	-0.045	1040.0	0.03	8.14
1100	176.548	0.161	1.54	63	1.20	215	-0.043	909.9	0.02	7.20
1101	176.709	0.161	1.55	63	1.20	214	-0.042	801.5	0.01	5.38
1102	176.868	0.159	1.54	63	1.20	211	-0.042	1040.0	0.35	5.27
1103	177.029	0.161	1.54	63	1.20	208	-0.042	1040.0	0.84	5.79
1104	177.189	0.160	1.55	63	1.20	204	-0.042	1040.0	1.15	6.18
1105	177.350	0.161	1.55	63	1.20	200	-0.041	1040.0	1.39	6.52
1106	177.510	0.160	1.55	63	1.20	197	-0.040	1040.0	1.61	6.95
1107	177.671	0.161	1.55	63	1.20	193	-0.040	1040.0	1.62	6.80
1108	177.832	0.161	1.54	62	1.20	190	-0.039	1040.0	1.70	6.91
1109	177.992	0.160	1.55	63	1.20	186	-0.039	1040.0	1.62	6.56
1110	178.152	0.160	1.55	62	1.20	183	-0.038	1040.0	1.74	6.95
1111	178.313	0.161	1.54	62	1.20	180	-0.037	1040.0	1.69	6.71
1112	178.474	0.161	1.55	62	1.20	176	-0.037	1040.0	1.74	6.88

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1113	178.634	0.160	1.55	62	1.20	173	-0.036	1040.0	1.71	6.73
1114	178.794	0.160	1.54	62	1.20	170	-0.036	1040.0	1.61	6.38
1115	178.955	0.161	1.54	62	1.20	168	-0.035	1040.0	1.63	6.39
1116	179.116	0.161	1.55	62	1.20	165	-0.035	1040.0	1.62	6.37
1117	179.277	0.161	1.55	62	1.20	163	-0.034	1040.0	1.63	6.41
1118	179.436	0.159	1.55	62	1.20	160	-0.034	1040.0	1.59	6.24
1119	179.597	0.161	1.55	62	1.20	157	-0.033	1040.0	1.62	6.31
1120	179.757	0.160	1.55	62	1.20	155	-0.033	1040.0	1.50	5.87
1121	179.918	0.161	1.55	62	1.20	153	-0.033	1040.0	1.54	6.00
1122	180.078	0.160	1.55	62	1.20	151	-0.032	1040.0	1.47	5.74
1123	180.239	0.161	1.55	62	1.20	148	-0.032	1040.0	1.51	5.84
1124	180.400	0.161	1.55	61	1.20	146	-0.031	1040.0	1.37	5.38
1125	180.560	0.160	1.55	62	1.20	144	-0.031	1040.0	1.34	5.21
1126	180.720	0.160	1.55	61	1.20	142	-0.031	1040.0	1.39	5.41
1127	180.881	0.161	1.55	61	1.20	141	-0.030	1040.0	1.33	5.22
1128	181.042	0.161	1.55	61	1.20	139	-0.030	1040.0	1.32	5.13
1129	181.202	0.160	1.55	61	1.20	137	-0.030	1040.0	1.37	5.28
1130	181.362	0.160	1.55	61	1.20	135	-0.029	1040.0	1.37	5.29
1131	181.523	0.161	1.55	61	1.20	134	-0.029	1040.0	1.35	5.22
1132	181.684	0.161	1.55	61	1.20	132	-0.029	1040.0	1.20	4.71
1133	181.845	0.161	1.54	61	1.20	131	-0.028	1040.0	1.35	5.18
1134	182.004	0.159	1.55	61	1.20	129	-0.029	1040.0	1.33	5.11
1135	182.165	0.161	1.55	61	1.20	129	-0.028	1040.0	1.20	4.71
1136	182.325	0.160	1.54	61	1.20	125	-0.028	1040.0	1.29	4.97
1137	182.486	0.161	1.55	61	1.20	125	-0.027	1040.0	1.27	4.92
1138	182.646	0.160	1.55	61	1.20	125	-0.027	1040.0	1.26	4.90
1139	182.807	0.161	1.55	61	1.20	123	-0.026	1040.0	1.17	4.62
1140	182.968	0.161	1.55	62	1.20	121	-0.026	1040.0	1.18	4.64
1141	183.128	0.160	1.55	62	1.20	121	-0.026	1040.0	1.19	4.65
1142	183.288	0.160	1.55	62	1.20	121	-0.026	1040.0	1.32	5.08
1143	183.449	0.161	1.55	62	1.20	118	-0.025	1040.0	1.19	4.69
1144	183.610	0.161	1.55	62	1.20	117	-0.025	1040.0	1.22	4.79
1145	183.770	0.160	1.55	62	1.20	117	-0.024	1040.0	1.11	4.40
1146	183.930	0.160	1.55	62	1.20	115	-0.024	1040.0	1.11	4.38
1147	184.091	0.161	1.55	62	1.20	115	-0.024	1040.0	1.12	4.43
1148	184.252	0.161	1.56	62	1.20	113	-0.025	1040.0	1.15	4.53

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1149	184.413	0.161	1.56	62	1.20	113	-0.024	1040.0	1.05	4.19
1150	184.572	0.159	1.56	62	1.20	112	-0.023	1040.0	1.15	4.56
1151	184.733	0.161	1.56	62	1.20	111	-0.023	1040.0	1.12	4.43
1152	184.893	0.160	1.57	62	1.20	111	-0.023	1040.0	1.09	4.36
1153	185.054	0.161	1.57	63	1.20	110	-0.023	1040.0	1.06	4.26
1154	185.214	0.160	1.56	62	1.20	111	-0.023	1040.0	1.08	4.33
1155	185.375	0.161	1.56	63	1.20	109	-0.023	1040.0	1.11	4.43
1156	185.536	0.161	1.56	63	1.20	108	-0.022	1040.0	1.07	4.31
1157	185.696	0.160	1.59	63	1.20	108	-0.022	1040.0	1.10	4.44
1158	185.856	0.160	1.55	63	1.20	107	-0.022	1040.0	1.04	4.23
1159	186.017	0.161	1.56	63	1.20	107	-0.022	1040.0	1.05	4.27
1160	186.178	0.161	1.56	63	1.20	137	-0.041	1040.0	1.06	4.28
1161	186.338	0.160	1.55	63	1.20	136	-0.030	1040.0	1.14	5.14
1162	186.498	0.160	1.56	63	1.20	130	-0.028	1040.0	0.43	2.60
1163	186.659	0.161	1.56	63	1.20	126	-0.027	1040.0	0.36	2.22
1164	186.820	0.161	1.56	63	1.20	121	-0.026	1040.0	0.37	2.20
1165	186.981	0.161	1.56	63	1.20	119	-0.025	1040.0	0.35	2.13
1166	187.140	0.159	1.55	63	1.20	117	-0.025	1040.0	0.33	2.01
1167	187.301	0.161	1.55	63	1.20	114	-0.024	1040.0	0.34	2.08
1168	187.461	0.160	1.56	63	1.20	112	-0.024	1040.0	0.34	2.08
1169	187.622	0.161	1.56	63	1.20	112	-0.023	1040.0	0.31	1.97
1170	187.782	0.160	1.56	63	1.20	110	-0.023	1040.0	0.33	2.07
1171	187.943	0.161	1.55	63	1.20	109	-0.022	1040.0	0.34	2.13
1172	188.104	0.161	1.56	63	1.20	108	-0.022	1040.0	0.32	2.06
1173	188.264	0.160	1.56	64	1.20	107	-0.022	1040.0	0.32	2.04
1174	188.424	0.160	1.56	63	1.20	105	-0.022	1040.0	0.33	2.19
1175	188.585	0.161	1.56	64	1.20	105	-0.022	1040.0	0.30	2.07
1176	188.746	0.161	1.55	63	1.20	103	-0.021	1040.0	0.34	2.27
1177	188.906	0.160	1.56	64	1.20	104	-0.021	1040.0	0.30	2.07
1178	189.066	0.160	1.56	64	1.20	103	-0.021	1040.0	0.29	2.07
1179	189.227	0.161	1.56	64	1.20	102	-0.021	1040.0	0.30	2.16
1180	189.388	0.161	1.56	64	1.20	101	-0.021	1040.0	0.27	1.98
1181	189.549	0.161	1.55	63	1.20	100	-0.020	1040.0	0.26	1.96
1182	189.708	0.159	1.56	64	1.20	101	-0.020	1040.0	0.27	2.00
1183	189.869	0.161	1.56	64	1.20	99	-0.019	1040.0	0.26	1.99
1184	190.029	0.160	1.56	64	1.20	132	-0.036	1040.0	0.60	4.22

Train D - Ambient Background and Flue Gas Data

Run: 3

Test Date: 12/4/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 12:35

Total Sampling Time 1228 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1185	190.190	0.161	1.56	64	1.20	162	-0.035	1040.0	0.24	1.90
1186	190.350	0.160	1.55	64	1.20	175	-0.037	1040.0	0.41	2.05
1187	190.511	0.161	1.56	64	1.20	186	-0.039	1040.0	0.69	2.79
1188	190.672	0.161	1.56	64	1.20	199	-0.040	1040.0	1.26	4.21
1189	190.832	0.160	1.56	64	1.20	212	-0.041	1040.0	1.81	6.17
1190	190.992	0.160	1.56	64	1.20	221	-0.042	1040.0	2.23	7.56
1191	191.153	0.161	1.56	64	1.20	230	-0.044	1040.0	2.05	8.44
1192	191.314	0.161	1.55	65	1.20	238	-0.045	1040.0	1.53	9.38
1193	191.474	0.160	1.56	64	1.20	244	-0.046	1040.0	1.56	9.25
1194	191.634	0.160	1.56	64	1.20	250	-0.047	1040.0	1.96	9.63
1195	191.795	0.161	1.55	64	1.20	259	-0.048	1040.0	2.28	9.77
1196	191.956	0.161	1.56	64	1.20	267	-0.049	1040.0	1.74	10.95
1197	192.117	0.161	1.55	64	1.20	273	-0.051	1040.0	1.46	11.82
1198	192.276	0.159	1.55	65	1.20	279	-0.051	1040.0	1.73	11.69
1199	192.437	0.161	1.56	64	1.20	284	-0.053	1040.0	1.45	12.16
1200	192.597	0.160	1.55	65	1.20	292	-0.052	1040.0	1.13	12.83
1201	192.758	0.161	1.55	65	1.20	295	-0.053	1040.0	0.27	14.26
1202	192.918	0.160	1.56	65	1.20	297	-0.054	1040.0	0.22	13.78
1203	193.079	0.161	1.56	65	1.20	298	-0.054	1040.0	0.40	13.24
1204	193.240	0.161	1.56	65	1.20	299	-0.054	1040.0	0.43	12.93
1205	193.400	0.160	1.56	65	1.20	300	-0.055	1040.0	0.47	12.81
1206	193.560	0.160	1.55	64	1.20	301	-0.055	1040.0	0.47	12.58
1207	193.721	0.161	1.55	65	1.20	303	-0.055	1040.0	0.42	12.36
1208	193.882	0.161	1.56	65	1.20	303	-0.054	1040.0	0.40	12.31
1209	194.042	0.160	1.56	65	1.20	305	-0.055	1040.0	0.36	12.35
1210	194.202	0.160	1.56	65	1.20	307	-0.055	1040.0	0.50	12.62
1211	194.363	0.161	1.56	65	1.20	308	-0.058	1040.0	0.48	12.29
1212	194.524	0.161	1.56	65	1.20	311	-0.057	1040.0	0.55	12.51
1213	194.685	0.161	1.56	64	1.20	313	-0.058	1040.0	0.50	12.47
1214	194.844	0.159	1.56	65	1.20	314	-0.057	1040.0	0.40	12.70
1215	195.005	0.161	1.56	65	1.20	318	-0.056	1040.0	0.43	12.33
1216	195.165	0.160	1.56	65	1.20	316	-0.057	1001.8	0.04	13.71
1217	195.326	0.161	1.55	65	1.20	316	-0.058	1040.0	0.14	12.89
1218	195.486	0.160	1.55	65	1.20	315	-0.055	1040.0	0.13	12.71
1219	195.647	0.161	1.56	64	1.20	316	-0.058	1040.0	0.15	12.50
1220	195.808	0.161	1.55	66	1.20	288	-0.051	1040.0	0.15	12.35

Train D - Ambient Background and Flue Gas Data

Run:	<u>3</u>	Test Date:	<u>12/4/2024</u>
Manufacturer:	<u>Central Boiler</u>	Meter Box Y Regression Offset:	<u>1.016</u>
Model:	<u>Classic Edge 560.1</u>	Meter Box Y Regression Factor:	<u>0</u>
Tracking No.:	<u>2495</u>	Meter Box Dynamic Y:	<u>1.016</u>
Project No.:	<u>0117WB043E</u>	Sample Box ID:	<u>372</u>
Test Start Time:	<u>12:35</u>		
Total Sampling Time	<u>1228</u> min		
Recording Interval	<u>1</u> min		

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1221	195.968	0.160	1.56	66	1.20	268	-0.050	1040.0	0.16	6.27
1222	196.128	0.160	1.55	65	1.20	254	-0.047	1040.0	0.14	6.73
1223	196.289	0.161	1.55	65	1.20	244	-0.046	1040.0	0.08	7.30
1224	196.450	0.161	1.56	64	1.20	238	-0.046	1040.0	0.10	6.35
1225	196.610	0.160	1.55	64	1.20	233	-0.046	1040.0	0.05	8.42
1226	196.770	0.160	1.56	64	1.20	227	-0.045	823.4	0.01	8.85
1227	196.931	0.161	1.55	63	1.20	222	-0.045	832.6	0.02	7.82
1228	197.092	0.161	1.55	64	1.20	218	-0.044	973.4	0.03	7.02

Water Flow Data

ASTM E2618-13

Run: 3
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E

Test Date: 12/4/2024

Boiler Dry Weight, Lb. 1822.5
Boiler Water Weight, Lb. 1663

Test Start Time: 12:35
Total Sampling Time 1228 min
Recording Interval 1 min

T_{avg} - Initial Average Boiler Temp, °F 161.45
 T_{Favg} - Final Average Boiler Temp, °F 181.60

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
Tot / Avg	169.9	171.5	1.61	55.3	171.3	116.03	0.719	1.0012	8.336	5.993	853656.1
Minimum	156.8	158.5	1.27	53.5	158.3	102.80	0.658	1.0012	8.335	5.487	590.490
Max	180.9	182.6	1.92	56.9	182.5	128.24	0.859	1.0012	8.338	7.157	782.979
0	160.6	162.3	1.63	54.6	162.0	107.36	0.801	1.0012	8.337	6.68	718.2
1	160.7	162.3	1.62	54.6	162.2	107.55	0.801	1.0012	8.337	6.68	719.4
2	161.2	162.9	1.71	54.6	162.5	107.83	0.787	1.0012	8.337	6.56	708.4
3	161.9	163.6	1.68	54.6	163.3	108.67	0.787	1.0012	8.337	6.56	714.0
4	162.7	164.3	1.59	54.6	163.9	109.33	0.787	1.0012	8.337	6.56	718.3
5	163.3	165.0	1.69	54.6	164.7	110.06	0.758	1.0012	8.337	6.32	696.8
6	163.9	165.6	1.73	54.6	165.3	110.70	0.801	1.0012	8.337	6.68	740.5
7	164.7	166.3	1.62	54.5	165.9	111.37	0.773	1.0012	8.337	6.44	718.4
8	165.2	167.0	1.74	54.5	166.6	112.11	0.758	1.0012	8.337	6.32	709.8
9	165.9	167.7	1.80	54.5	167.3	112.82	0.801	1.0012	8.337	6.68	754.7
10	166.6	168.4	1.79	54.5	168.1	113.59	0.787	1.0012	8.337	6.56	746.3
11	167.5	169.1	1.67	54.5	168.8	114.32	0.758	1.0012	8.337	6.32	723.8
12	168.1	169.9	1.75	54.5	169.5	115.03	0.773	1.0012	8.337	6.44	742.0
13	168.9	170.6	1.73	54.5	170.2	115.77	0.758	1.0012	8.337	6.32	732.9
14	169.6	171.4	1.80	54.5	171.0	116.53	0.773	1.0012	8.337	6.44	751.7
15	170.3	172.1	1.79	54.5	171.8	117.29	0.773	1.0012	8.337	6.44	756.6
16	171.1	172.9	1.74	54.5	172.5	118.01	0.744	1.0012	8.337	6.20	733.0
17	171.9	173.7	1.75	54.5	173.3	118.79	0.744	1.0012	8.337	6.20	737.9
18	172.6	174.4	1.75	54.5	174.0	119.50	0.744	1.0012	8.337	6.20	742.3
19	173.4	175.1	1.74	54.5	174.8	120.28	0.730	1.0012	8.337	6.08	732.7
20	174.0	175.8	1.77	54.5	175.5	120.94	0.730	1.0012	8.337	6.08	736.8
21	174.9	176.6	1.70	54.5	176.2	121.70	0.716	1.0012	8.337	5.97	726.9
22	175.6	177.4	1.82	54.5	177.0	122.52	0.730	1.0012	8.337	6.08	746.4
23	176.3	178.1	1.84	54.5	177.8	123.29	0.730	1.0012	8.337	6.08	751.1
24	177.0	178.8	1.85	54.5	178.5	123.95	0.744	1.0012	8.337	6.20	769.9
25	177.6	179.5	1.87	54.5	179.2	124.67	0.730	1.0012	8.337	6.08	759.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
26	178.3	180.2	1.92	54.5	179.8	125.34	0.730	1.0012	8.337	6.08	763.6
27	178.9	180.8	1.92	54.5	180.6	126.05	0.744	1.0012	8.337	6.20	783.0
28	179.2	181.1	1.84	54.5	180.8	126.33	0.716	1.0012	8.337	5.97	754.5
29	179.4	181.2	1.83	54.5	181.0	126.54	0.701	1.0012	8.337	5.85	740.6
30	179.4	181.2	1.83	54.6	181.1	126.53	0.716	1.0012	8.337	5.97	755.7
31	179.4	181.2	1.81	54.7	181.1	126.31	0.716	1.0012	8.337	5.97	754.4
32	179.3	181.1	1.79	54.9	181.0	126.06	0.701	1.0012	8.337	5.85	737.8
33	179.3	181.1	1.79	55.1	180.9	125.83	0.716	1.0012	8.337	5.97	751.5
34	179.2	181.0	1.71	55.2	180.8	125.60	0.687	1.0012	8.336	5.73	720.1
35	179.3	181.0	1.68	55.3	180.8	125.49	0.673	1.0012	8.336	5.61	704.5
36	179.2	180.8	1.67	55.4	180.7	125.27	0.673	1.0012	8.336	5.61	703.2
37	179.0	180.7	1.68	55.5	180.5	125.04	0.673	1.0012	8.336	5.61	701.9
38	178.9	180.6	1.66	55.6	180.5	124.87	0.673	1.0012	8.336	5.61	701.0
39	178.8	180.4	1.67	55.7	180.3	124.61	0.658	1.0012	8.336	5.49	684.6
40	178.7	180.3	1.61	55.8	180.2	124.39	0.673	1.0012	8.336	5.61	698.3
41	178.5	180.1	1.63	55.8	180.0	124.13	0.673	1.0012	8.336	5.61	696.8
42	178.3	180.0	1.60	55.9	179.8	123.90	0.673	1.0012	8.336	5.61	695.5
43	178.2	179.8	1.60	56.0	179.6	123.65	0.658	1.0012	8.336	5.49	679.3
44	178.0	179.6	1.59	56.1	179.5	123.46	0.673	1.0012	8.336	5.61	693.0
45	177.8	179.4	1.59	56.1	179.3	123.16	0.658	1.0012	8.336	5.49	676.6
46	177.7	179.2	1.56	56.1	179.1	122.98	0.673	1.0012	8.335	5.61	690.3
47	177.5	179.0	1.55	56.2	178.9	122.74	0.658	1.0012	8.335	5.49	674.3
48	177.2	178.8	1.59	56.2	178.7	122.49	0.673	1.0012	8.335	5.61	687.6
49	177.0	178.6	1.58	56.2	178.5	122.26	0.687	1.0012	8.335	5.73	700.9
50	176.8	178.4	1.61	56.3	178.3	122.00	0.687	1.0012	8.335	5.73	699.4
51	176.6	178.2	1.59	56.3	178.1	121.81	0.687	1.0012	8.335	5.73	698.3
52	176.4	178.0	1.59	56.3	177.9	121.54	0.673	1.0012	8.335	5.61	682.2
53	176.1	177.7	1.58	56.3	177.6	121.32	0.687	1.0012	8.335	5.73	695.5
54	175.9	177.5	1.61	56.3	177.4	121.06	0.687	1.0012	8.335	5.73	694.0
55	175.8	177.3	1.54	56.3	177.2	120.83	0.687	1.0012	8.335	5.73	692.6
56	175.5	177.1	1.51	56.4	176.9	120.58	0.658	1.0012	8.335	5.49	662.4
57	175.2	176.8	1.60	56.4	176.7	120.31	0.701	1.0012	8.335	5.84	704.0
58	175.0	176.6	1.58	56.4	176.5	120.09	0.701	1.0012	8.335	5.84	702.8
59	174.7	176.3	1.58	56.4	176.2	119.81	0.687	1.0012	8.335	5.73	686.8
60	174.5	176.1	1.57	56.4	176.0	119.57	0.701	1.0012	8.335	5.84	699.7
61	174.3	175.9	1.57	56.4	175.7	119.29	0.687	1.0012	8.335	5.73	683.8
62	174.0	175.6	1.56	56.4	175.5	119.11	0.701	1.0012	8.335	5.84	697.0
63	173.8	175.3	1.53	56.4	175.2	118.79	0.687	1.0012	8.335	5.73	681.0
64	173.5	175.1	1.57	56.4	175.0	118.54	0.687	1.0012	8.335	5.73	679.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
65	173.2	174.8	1.55	56.4	174.7	118.26	0.701	1.0012	8.335	5.84	692.0
66	173.0	174.6	1.55	56.4	174.5	118.02	0.687	1.0012	8.335	5.73	676.6
67	172.8	174.3	1.52	56.4	174.2	117.82	0.701	1.0012	8.335	5.84	689.5
68	172.5	174.1	1.54	56.4	173.9	117.50	0.687	1.0012	8.335	5.73	673.6
69	172.4	173.9	1.49	56.5	173.8	117.30	0.687	1.0012	8.335	5.73	672.4
70	172.0	173.5	1.56	56.5	173.4	116.94	0.701	1.0012	8.335	5.84	684.3
71	171.7	173.3	1.55	56.6	173.2	116.62	0.701	1.0012	8.335	5.84	682.4
72	171.5	173.0	1.56	56.6	172.9	116.34	0.716	1.0012	8.335	5.96	694.7
73	171.2	172.7	1.56	56.6	172.6	116.04	0.701	1.0012	8.335	5.84	679.0
74	171.0	172.5	1.54	56.6	172.4	115.84	0.701	1.0012	8.335	5.84	677.8
75	170.7	172.2	1.52	56.6	172.1	115.53	0.716	1.0012	8.335	5.96	689.9
76	170.4	171.9	1.52	56.6	171.8	115.21	0.701	1.0012	8.335	5.84	674.2
77	170.2	171.7	1.52	56.6	171.6	114.97	0.701	1.0012	8.335	5.84	672.7
78	169.9	171.4	1.49	56.6	171.3	114.61	0.701	1.0012	8.335	5.84	670.7
79	169.6	171.1	1.51	56.6	171.0	114.36	0.701	1.0012	8.335	5.84	669.2
80	169.3	170.9	1.51	56.6	170.7	114.09	0.716	1.0012	8.335	5.96	681.3
81	169.1	170.6	1.50	56.6	170.5	113.87	0.701	1.0012	8.335	5.84	666.3
82	168.8	170.3	1.50	56.7	170.2	113.57	0.701	1.0012	8.335	5.84	664.6
83	168.6	170.1	1.49	56.7	169.9	113.25	0.716	1.0012	8.335	5.96	676.2
84	168.3	169.8	1.49	56.7	169.7	113.01	0.701	1.0012	8.335	5.84	661.3
85	168.0	169.5	1.50	56.7	169.4	112.70	0.701	1.0012	8.335	5.84	659.5
86	167.8	169.2	1.48	56.7	169.1	112.39	0.716	1.0012	8.335	5.96	671.1
87	167.5	169.0	1.48	56.8	168.9	112.14	0.716	1.0012	8.335	5.96	669.6
88	167.1	168.6	1.57	56.7	168.5	111.78	0.730	1.0012	8.335	6.08	680.8
89	166.8	168.3	1.58	56.7	168.3	111.51	0.758	1.0012	8.335	6.32	705.8
90	166.5	168.1	1.56	56.7	168.0	111.25	0.744	1.0012	8.335	6.20	690.9
91	166.2	167.8	1.56	56.7	167.7	110.99	0.744	1.0012	8.335	6.20	689.2
92	165.9	167.4	1.56	56.7	167.3	110.64	0.744	1.0012	8.335	6.20	687.1
93	165.6	167.2	1.57	56.7	167.1	110.35	0.744	1.0012	8.335	6.20	685.2
94	165.4	166.9	1.55	56.6	166.8	110.17	0.744	1.0012	8.335	6.20	684.1
95	165.1	166.6	1.52	56.6	166.5	109.89	0.744	1.0012	8.335	6.20	682.4
96	164.8	166.3	1.53	56.6	166.2	109.60	0.730	1.0012	8.335	6.08	667.5
97	164.6	166.1	1.54	56.6	166.0	109.36	0.744	1.0012	8.335	6.20	679.1
98	164.2	165.8	1.52	56.6	165.7	109.07	0.744	1.0012	8.335	6.20	677.3
99	164.0	165.5	1.52	56.7	165.4	108.73	0.758	1.0012	8.335	6.32	688.2
100	163.7	165.2	1.52	56.6	165.1	108.53	0.744	1.0012	8.335	6.20	674.0
101	163.5	165.0	1.50	56.6	164.9	108.33	0.730	1.0012	8.335	6.08	659.8
102	163.2	164.7	1.46	56.6	164.6	108.01	0.730	1.0012	8.335	6.08	657.8
103	162.9	164.4	1.49	56.6	164.3	107.69	0.744	1.0012	8.335	6.20	668.8

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
104	162.7	164.2	1.50	56.6	164.1	107.42	0.758	1.0012	8.335	6.32	679.9
105	162.3	163.8	1.53	56.7	163.7	107.06	0.758	1.0012	8.335	6.32	677.6
106	161.9	163.5	1.57	56.6	163.4	106.80	0.773	1.0012	8.335	6.44	688.7
107	161.7	163.2	1.55	56.6	163.1	106.57	0.773	1.0012	8.335	6.44	687.2
108	161.4	163.0	1.59	56.6	162.9	106.30	0.787	1.0012	8.335	6.56	698.2
109	161.1	162.7	1.59	56.5	162.6	106.02	0.787	1.0012	8.335	6.56	696.4
110	160.8	162.3	1.56	56.6	162.3	105.70	0.801	1.0012	8.335	6.68	706.9
111	160.4	162.0	1.56	56.7	161.9	105.22	0.787	1.0012	8.335	6.56	691.1
112	160.1	161.7	1.56	56.5	161.6	105.13	0.787	1.0012	8.335	6.56	690.5
113	159.8	161.3	1.57	56.5	161.2	104.68	0.787	1.0012	8.335	6.56	687.6
114	159.5	161.0	1.55	56.4	160.9	104.50	0.801	1.0012	8.335	6.68	698.9
115	159.1	160.7	1.60	56.5	160.7	104.17	0.801	1.0012	8.335	6.68	696.7
116	158.8	160.4	1.60	56.5	160.3	103.79	0.816	1.0012	8.335	6.80	706.5
117	158.5	160.1	1.60	56.5	160.0	103.51	0.801	1.0012	8.335	6.68	692.2
118	158.3	159.8	1.53	56.5	159.7	103.15	0.787	1.0012	8.335	6.56	677.5
119	158.0	159.7	1.71	56.5	159.6	103.11	0.830	1.0012	8.335	6.92	714.2
120	158.2	159.9	1.73	56.6	159.7	103.08	0.859	1.0012	8.335	7.16	738.6
121	158.7	160.5	1.75	56.5	160.2	103.70	0.844	1.0012	8.335	7.04	730.6
122	159.3	161.0	1.70	56.5	160.7	104.25	0.830	1.0012	8.335	6.92	722.1
123	159.7	161.5	1.74	56.4	161.2	104.79	0.830	1.0012	8.335	6.92	725.8
124	160.3	162.1	1.75	56.5	161.7	105.28	0.844	1.0012	8.335	7.04	741.8
125	160.9	162.7	1.76	56.4	162.3	105.93	0.830	1.0012	8.335	6.92	733.7
126	161.5	163.2	1.67	56.5	162.9	106.41	0.801	1.0012	8.335	6.68	711.6
127	162.0	163.7	1.78	56.4	163.4	107.02	0.816	1.0012	8.335	6.80	728.5
128	162.6	164.4	1.81	56.5	164.0	107.57	0.830	1.0012	8.335	6.92	745.1
129	163.3	165.0	1.71	56.5	164.7	108.20	0.787	1.0012	8.335	6.56	710.7
130	163.9	165.7	1.78	56.5	165.4	108.89	0.816	1.0012	8.335	6.80	741.3
131	164.5	166.3	1.81	56.5	166.0	109.53	0.801	1.0012	8.335	6.68	732.5
132	165.2	167.0	1.83	56.6	166.6	110.06	0.816	1.0012	8.335	6.80	749.2
133	165.9	167.7	1.81	56.5	167.4	110.90	0.816	1.0012	8.335	6.80	754.9
134	166.6	168.4	1.85	56.5	168.0	111.52	0.816	1.0012	8.335	6.80	759.1
135	167.4	169.1	1.73	56.3	168.7	112.42	0.787	1.0012	8.335	6.56	738.4
136	168.2	169.9	1.68	56.2	169.5	113.30	0.744	1.0012	8.335	6.20	703.6
137	168.9	170.7	1.79	56.2	170.3	114.12	0.787	1.0012	8.335	6.56	749.6
138	169.6	171.4	1.75	56.2	171.0	114.81	0.758	1.0012	8.335	6.32	726.7
139	170.3	172.1	1.75	56.1	171.7	115.60	0.758	1.0012	8.335	6.32	731.7
140	171.0	172.8	1.77	56.1	172.4	116.25	0.744	1.0012	8.335	6.20	722.0
141	171.8	173.5	1.77	56.2	173.1	116.95	0.758	1.0012	8.335	6.32	740.2
142	172.5	174.3	1.78	56.1	173.9	117.77	0.744	1.0012	8.335	6.20	731.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
143	173.2	175.0	1.79	56.1	174.7	118.52	0.758	1.0012	8.335	6.32	750.2
144	173.9	175.7	1.84	56.1	175.4	119.21	0.744	1.0012	8.335	6.20	740.3
145	174.8	176.5	1.69	56.1	176.1	119.98	0.716	1.0012	8.335	5.96	716.5
146	175.7	177.4	1.70	56.1	176.9	120.81	0.716	1.0012	8.335	5.96	721.4
147	176.4	178.1	1.65	56.1	177.7	121.57	0.687	1.0012	8.335	5.73	696.9
148	177.3	178.9	1.66	56.2	178.5	122.34	0.673	1.0012	8.335	5.61	686.7
149	178.0	179.7	1.67	56.2	179.3	123.11	0.687	1.0012	8.335	5.73	705.7
150	178.8	180.5	1.70	56.3	180.1	123.85	0.687	1.0012	8.335	5.73	710.0
151	179.4	181.1	1.70	56.3	180.8	124.41	0.673	1.0012	8.335	5.61	698.3
152	179.7	181.3	1.58	56.4	181.0	124.63	0.658	1.0012	8.335	5.49	684.7
153	179.8	181.5	1.68	56.5	181.3	124.82	0.658	1.0012	8.335	5.49	685.7
154	179.9	181.6	1.70	56.5	181.4	124.89	0.673	1.0012	8.335	5.61	701.0
155	180.0	181.7	1.70	56.6	181.5	124.96	0.673	1.0012	8.335	5.61	701.4
156	180.0	181.7	1.70	56.6	181.5	124.97	0.673	1.0012	8.335	5.61	701.5
157	180.0	181.7	1.71	56.6	181.5	124.93	0.687	1.0012	8.335	5.73	716.2
158	180.0	181.7	1.69	56.6	181.5	124.89	0.673	1.0012	8.335	5.61	701.0
159	180.0	181.7	1.69	56.6	181.5	124.89	0.658	1.0012	8.335	5.49	686.1
160	179.9	181.6	1.69	56.6	181.4	124.83	0.687	1.0012	8.335	5.73	715.6
161	179.9	181.5	1.67	56.6	181.4	124.82	0.673	1.0012	8.335	5.61	700.6
162	179.7	181.4	1.69	56.5	181.3	124.75	0.673	1.0012	8.335	5.61	700.2
163	179.7	181.4	1.68	56.5	181.2	124.72	0.673	1.0012	8.335	5.61	700.1
164	179.6	181.2	1.66	56.4	181.1	124.67	0.673	1.0012	8.335	5.61	699.8
165	179.5	181.2	1.67	56.4	181.0	124.58	0.673	1.0012	8.335	5.61	699.3
166	179.3	180.9	1.69	56.4	180.8	124.38	0.673	1.0012	8.335	5.61	698.1
167	179.0	180.8	1.81	56.4	180.7	124.26	0.716	1.0012	8.335	5.96	742.0
168	178.8	180.6	1.77	56.4	180.5	124.08	0.716	1.0012	8.335	5.96	740.9
169	178.5	180.3	1.79	56.4	180.2	123.84	0.716	1.0012	8.335	5.96	739.5
170	178.4	180.2	1.77	56.4	180.0	123.67	0.730	1.0012	8.335	6.08	753.3
171	178.3	180.0	1.76	56.3	179.9	123.55	0.701	1.0012	8.335	5.84	723.0
172	178.1	179.9	1.73	56.3	179.7	123.42	0.716	1.0012	8.335	5.96	737.0
173	177.9	179.7	1.73	56.3	179.5	123.20	0.701	1.0012	8.335	5.84	721.0
174	177.7	179.5	1.73	56.3	179.3	123.01	0.716	1.0012	8.335	5.96	734.6
175	177.5	179.2	1.71	56.3	179.1	122.76	0.716	1.0012	8.335	5.96	733.1
176	177.3	179.0	1.72	56.3	178.9	122.56	0.701	1.0012	8.335	5.84	717.2
177	177.1	178.8	1.68	56.4	178.7	122.32	0.716	1.0012	8.335	5.96	730.4
178	176.9	178.6	1.71	56.4	178.5	122.07	0.701	1.0012	8.335	5.84	714.3
179	176.7	178.4	1.69	56.4	178.2	121.80	0.716	1.0012	8.335	5.96	727.3
180	176.4	178.1	1.68	56.5	178.0	121.55	0.716	1.0012	8.335	5.96	725.8
181	176.3	177.9	1.64	56.5	177.8	121.33	0.701	1.0012	8.335	5.84	710.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
182	176.0	177.7	1.66	56.5	177.6	121.07	0.716	1.0012	8.335	5.96	722.9
183	175.8	177.4	1.65	56.6	177.3	120.77	0.701	1.0012	8.335	5.84	706.7
184	175.5	177.2	1.67	56.6	177.1	120.51	0.716	1.0012	8.335	5.96	719.6
185	175.4	177.0	1.60	56.6	176.9	120.34	0.687	1.0012	8.335	5.73	689.8
186	175.1	176.7	1.64	56.6	176.6	120.01	0.716	1.0012	8.335	5.96	716.6
187	174.8	176.5	1.65	56.7	176.4	119.70	0.701	1.0012	8.335	5.84	700.5
188	174.6	176.3	1.63	56.7	176.2	119.49	0.716	1.0012	8.335	5.96	713.5
189	174.4	176.0	1.62	56.7	175.9	119.20	0.716	1.0012	8.335	5.96	711.7
190	174.1	175.8	1.63	56.7	175.6	118.92	0.701	1.0012	8.335	5.84	695.9
191	173.9	175.5	1.62	56.7	175.4	118.66	0.716	1.0012	8.335	5.96	708.5
192	173.6	175.2	1.62	56.8	175.1	118.27	0.716	1.0012	8.335	5.96	706.2
193	173.3	175.0	1.62	56.7	174.9	118.13	0.716	1.0012	8.335	5.96	705.3
194	173.1	174.7	1.60	56.7	174.6	117.90	0.701	1.0012	8.335	5.84	689.9
195	173.0	174.5	1.54	56.7	174.4	117.66	0.687	1.0012	8.335	5.73	674.4
196	172.6	174.2	1.57	56.8	174.1	117.35	0.701	1.0012	8.335	5.84	686.7
197	172.5	174.0	1.51	56.8	173.9	117.09	0.687	1.0012	8.335	5.73	671.2
198	172.0	173.7	1.68	56.8	173.6	116.81	0.730	1.0012	8.335	6.08	711.4
199	171.7	173.4	1.66	56.8	173.3	116.46	0.744	1.0012	8.335	6.20	723.2
200	171.5	173.1	1.65	56.8	173.0	116.19	0.730	1.0012	8.335	6.08	707.7
201	171.2	172.9	1.65	56.8	172.8	115.94	0.730	1.0012	8.335	6.08	706.1
202	170.9	172.5	1.64	56.8	172.4	115.65	0.744	1.0012	8.335	6.20	718.2
203	170.6	172.3	1.65	56.8	172.1	115.33	0.730	1.0012	8.335	6.08	702.4
204	170.4	172.0	1.62	56.8	171.9	115.10	0.744	1.0012	8.335	6.20	714.8
205	170.1	171.7	1.63	56.9	171.6	114.72	0.744	1.0012	8.335	6.20	712.4
206	169.9	171.5	1.63	56.8	171.4	114.62	0.730	1.0012	8.335	6.08	698.1
207	169.5	171.1	1.67	56.7	171.1	114.35	0.744	1.0012	8.335	6.20	710.1
208	169.2	170.8	1.65	56.7	170.7	113.99	0.758	1.0012	8.335	6.32	721.5
209	168.9	170.6	1.64	56.8	170.5	113.69	0.758	1.0012	8.335	6.32	719.6
210	168.6	170.3	1.64	56.8	170.2	113.41	0.758	1.0012	8.335	6.32	717.8
211	168.3	169.9	1.65	56.7	169.8	113.12	0.744	1.0012	8.335	6.20	702.5
212	168.2	169.7	1.54	56.8	169.6	112.80	0.744	1.0012	8.335	6.20	700.5
213	167.8	169.5	1.65	56.8	169.4	112.59	0.744	1.0012	8.335	6.20	699.2
214	167.4	169.1	1.65	56.8	169.0	112.18	0.758	1.0012	8.335	6.32	710.0
215	167.1	168.8	1.66	56.8	168.7	111.87	0.773	1.0012	8.335	6.44	721.4
216	166.8	168.5	1.65	56.9	168.3	111.47	0.773	1.0012	8.335	6.44	718.8
217	166.5	168.2	1.66	56.8	168.1	111.31	0.773	1.0012	8.335	6.44	717.8
218	166.3	168.0	1.63	56.8	167.9	111.11	0.758	1.0012	8.335	6.32	703.2
219	166.0	167.6	1.65	56.8	167.5	110.79	0.773	1.0012	8.335	6.44	714.5
220	165.6	167.3	1.62	56.8	167.2	110.38	0.773	1.0012	8.335	6.44	711.8

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
221	165.3	167.0	1.63	56.8	166.9	110.07	0.758	1.0012	8.335	6.32	696.6
222	165.0	166.7	1.63	56.8	166.6	109.75	0.787	1.0012	8.335	6.56	720.9
223	164.7	166.4	1.64	56.7	166.3	109.57	0.773	1.0012	8.335	6.44	706.6
224	164.5	166.1	1.61	56.7	166.0	109.30	0.773	1.0012	8.335	6.44	704.8
225	164.2	165.8	1.62	56.7	165.7	109.01	0.773	1.0012	8.335	6.44	703.0
226	164.0	165.6	1.61	56.7	165.5	108.74	0.773	1.0012	8.335	6.44	701.2
227	163.7	165.3	1.59	56.7	165.2	108.51	0.773	1.0012	8.335	6.44	699.7
228	163.5	165.1	1.61	56.7	165.0	108.33	0.773	1.0012	8.335	6.44	698.6
229	163.2	164.8	1.60	56.6	164.7	108.05	0.787	1.0012	8.335	6.56	709.7
230	162.8	164.4	1.59	56.8	164.3	107.56	0.773	1.0012	8.335	6.44	693.6
231	162.5	164.1	1.61	56.6	164.0	107.42	0.787	1.0012	8.335	6.56	705.6
232	162.2	163.8	1.62	56.5	163.7	107.17	0.801	1.0012	8.335	6.68	716.8
233	161.8	163.4	1.67	56.5	163.4	106.82	0.816	1.0012	8.335	6.80	727.1
234	161.5	163.2	1.69	56.6	163.1	106.47	0.816	1.0012	8.335	6.80	724.7
235	161.1	162.8	1.65	56.5	162.7	106.22	0.816	1.0012	8.335	6.80	723.1
236	160.8	162.5	1.67	56.5	162.4	105.90	0.816	1.0012	8.335	6.80	720.9
237	160.5	162.1	1.66	56.4	162.1	105.63	0.816	1.0012	8.335	6.80	719.0
238	160.2	161.8	1.65	56.4	161.7	105.29	0.816	1.0012	8.335	6.80	716.7
239	159.9	161.5	1.65	56.6	161.4	104.86	0.816	1.0012	8.335	6.80	713.8
240	159.6	161.2	1.63	56.5	161.1	104.63	0.816	1.0012	8.335	6.80	712.2
241	159.3	161.0	1.63	56.4	160.9	104.42	0.816	1.0012	8.335	6.80	710.8
242	159.0	160.6	1.62	56.4	160.6	104.20	0.816	1.0012	8.335	6.80	709.3
243	158.7	160.4	1.64	56.5	160.3	103.76	0.816	1.0012	8.335	6.80	706.3
244	158.4	160.0	1.60	56.4	159.9	103.47	0.816	1.0012	8.335	6.80	704.3
245	158.0	159.6	1.60	56.6	159.5	102.99	0.830	1.0012	8.335	6.92	713.4
246	157.9	159.5	1.61	56.5	159.3	102.80	0.816	1.0012	8.335	6.80	699.8
247	157.8	159.4	1.62	56.4	159.2	102.83	0.816	1.0012	8.335	6.80	700.0
248	157.9	159.5	1.64	56.4	159.3	102.86	0.816	1.0012	8.335	6.80	700.2
249	158.2	159.9	1.66	56.5	159.6	103.12	0.830	1.0012	8.335	6.92	714.3
250	158.7	160.4	1.69	56.4	160.1	103.66	0.830	1.0012	8.335	6.92	718.0
251	159.2	160.9	1.69	56.4	160.6	104.17	0.830	1.0012	8.335	6.92	721.6
252	159.6	161.3	1.69	56.5	161.1	104.60	0.830	1.0012	8.335	6.92	724.5
253	160.2	161.9	1.71	56.4	161.6	105.16	0.816	1.0012	8.335	6.80	715.8
254	160.7	162.5	1.75	56.4	162.1	105.69	0.830	1.0012	8.335	6.92	732.1
255	161.2	163.0	1.74	56.4	162.7	106.25	0.816	1.0012	8.335	6.80	723.3
256	161.8	163.5	1.75	56.6	163.2	106.65	0.830	1.0012	8.335	6.92	738.7
257	162.3	164.1	1.77	56.4	163.8	107.39	0.816	1.0012	8.335	6.80	731.0
258	162.9	164.7	1.78	56.4	164.4	107.93	0.830	1.0012	8.335	6.92	747.6
259	163.6	165.4	1.78	56.5	165.0	108.57	0.816	1.0012	8.335	6.80	739.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
260	164.3	166.2	1.82	56.4	165.8	109.36	0.816	1.0012	8.335	6.80	744.4
261	165.0	166.8	1.81	56.4	166.5	110.07	0.801	1.0012	8.335	6.68	736.1
262	165.7	167.5	1.81	56.5	167.2	110.67	0.816	1.0012	8.335	6.80	753.3
263	166.6	168.3	1.71	56.6	167.9	111.32	0.787	1.0012	8.335	6.56	731.2
264	167.4	169.1	1.67	56.5	168.7	112.20	0.744	1.0012	8.335	6.20	696.8
265	168.0	169.7	1.68	56.6	169.3	112.79	0.744	1.0012	8.335	6.20	700.4
266	168.8	170.5	1.69	56.6	170.1	113.48	0.744	1.0012	8.335	6.20	704.7
267	169.6	171.3	1.70	56.7	170.9	114.22	0.744	1.0012	8.335	6.20	709.3
268	170.4	172.1	1.69	56.7	171.7	115.06	0.744	1.0012	8.335	6.20	714.5
269	171.1	172.8	1.73	56.5	172.4	115.93	0.758	1.0012	8.335	6.32	733.8
270	171.8	173.5	1.73	56.2	173.2	116.95	0.744	1.0012	8.335	6.20	726.3
271	172.5	174.2	1.78	56.1	173.9	117.78	0.744	1.0012	8.336	6.20	731.5
272	173.2	174.9	1.77	56.0	174.6	118.64	0.730	1.0012	8.336	6.08	722.7
273	173.9	175.7	1.79	55.9	175.3	119.48	0.744	1.0012	8.336	6.20	742.0
274	174.6	176.4	1.78	55.8	176.1	120.32	0.730	1.0012	8.336	6.08	732.9
275	175.4	177.2	1.76	55.7	176.8	121.10	0.730	1.0012	8.336	6.08	737.6
276	176.1	177.9	1.79	55.7	177.6	121.91	0.730	1.0012	8.336	6.08	742.6
277	176.8	178.6	1.71	55.6	178.2	122.60	0.701	1.0012	8.336	5.85	717.5
278	177.7	179.4	1.72	55.6	179.0	123.48	0.701	1.0012	8.336	5.85	722.7
279	178.3	180.1	1.78	55.5	179.7	124.24	0.687	1.0012	8.336	5.73	712.3
280	178.8	180.6	1.78	55.5	180.3	124.88	0.701	1.0012	8.336	5.85	730.8
281	179.1	180.9	1.77	55.4	180.7	125.24	0.701	1.0012	8.336	5.85	733.0
282	179.3	181.1	1.79	55.4	180.9	125.53	0.701	1.0012	8.336	5.85	734.7
283	179.4	181.2	1.78	55.3	181.0	125.68	0.687	1.0012	8.336	5.73	720.5
284	179.5	181.3	1.80	55.3	181.1	125.82	0.701	1.0012	8.336	5.85	736.4
285	179.6	181.4	1.81	55.3	181.2	125.89	0.701	1.0012	8.336	5.85	736.8
286	179.7	181.4	1.71	55.2	181.3	126.01	0.687	1.0012	8.336	5.73	722.4
287	179.7	181.4	1.72	55.2	181.2	126.00	0.673	1.0012	8.336	5.61	707.3
288	179.6	181.3	1.70	55.2	181.2	125.99	0.673	1.0012	8.336	5.61	707.3
289	179.7	181.4	1.71	55.2	181.2	126.02	0.673	1.0012	8.336	5.61	707.4
290	179.6	181.3	1.70	55.1	181.1	125.98	0.673	1.0012	8.336	5.61	707.2
291	179.4	181.1	1.71	55.1	181.0	125.91	0.673	1.0012	8.336	5.61	706.8
292	179.4	181.1	1.68	55.1	180.9	125.82	0.673	1.0012	8.336	5.61	706.4
293	179.3	180.9	1.68	55.0	180.8	125.77	0.673	1.0012	8.337	5.61	706.1
294	179.1	180.8	1.68	55.0	180.7	125.63	0.673	1.0012	8.337	5.61	705.3
295	179.0	180.7	1.68	55.0	180.5	125.52	0.687	1.0012	8.337	5.73	719.7
296	178.9	180.6	1.67	55.0	180.4	125.45	0.673	1.0012	8.337	5.61	704.3
297	178.8	180.4	1.68	55.0	180.3	125.34	0.673	1.0012	8.337	5.61	703.7
298	178.6	180.3	1.69	54.9	180.2	125.23	0.673	1.0012	8.337	5.61	703.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
299	178.5	180.1	1.66	54.9	180.0	125.09	0.673	1.0012	8.337	5.61	702.3
300	178.3	180.0	1.65	54.9	179.8	124.93	0.673	1.0012	8.337	5.61	701.4
301	178.2	179.8	1.63	54.9	179.7	124.79	0.673	1.0012	8.337	5.61	700.6
302	178.0	179.6	1.64	54.9	179.5	124.61	0.673	1.0012	8.337	5.61	699.6
303	177.8	179.4	1.64	54.8	179.3	124.48	0.673	1.0012	8.337	5.61	698.8
304	177.6	179.3	1.63	54.8	179.1	124.32	0.687	1.0012	8.337	5.73	712.8
305	177.5	179.1	1.62	54.8	179.0	124.14	0.673	1.0012	8.337	5.61	696.9
306	177.3	178.9	1.58	54.8	178.8	123.97	0.673	1.0012	8.337	5.61	696.0
307	177.0	178.7	1.62	54.8	178.5	123.75	0.673	1.0012	8.337	5.61	694.7
308	176.9	178.5	1.60	54.8	178.4	123.59	0.673	1.0012	8.337	5.61	693.9
309	176.6	178.2	1.62	54.8	178.1	123.31	0.673	1.0012	8.337	5.61	692.3
310	176.4	178.0	1.62	54.8	177.9	123.10	0.687	1.0012	8.337	5.73	705.8
311	176.2	177.8	1.62	54.8	177.7	122.95	0.687	1.0012	8.337	5.73	705.0
312	176.0	177.6	1.62	54.8	177.5	122.75	0.687	1.0012	8.337	5.73	703.8
313	175.7	177.3	1.60	54.7	177.2	122.50	0.673	1.0012	8.337	5.61	687.7
314	175.5	177.1	1.59	54.7	177.0	122.29	0.687	1.0012	8.337	5.73	701.2
315	175.3	176.9	1.62	54.7	176.8	122.10	0.687	1.0012	8.337	5.73	700.1
316	175.1	176.7	1.59	54.7	176.6	121.85	0.687	1.0012	8.337	5.73	698.7
317	174.9	176.5	1.59	54.7	176.4	121.63	0.687	1.0012	8.337	5.73	697.4
318	174.6	176.2	1.59	54.7	176.1	121.37	0.687	1.0012	8.337	5.73	695.9
319	174.4	176.0	1.57	54.7	175.9	121.20	0.687	1.0012	8.337	5.73	694.9
320	174.2	175.8	1.57	54.7	175.7	120.95	0.687	1.0012	8.337	5.73	693.5
321	174.0	175.6	1.57	54.7	175.4	120.76	0.687	1.0012	8.337	5.73	692.4
322	173.7	175.3	1.58	54.7	175.2	120.52	0.687	1.0012	8.337	5.73	691.0
323	173.5	175.0	1.57	54.6	174.9	120.27	0.687	1.0012	8.337	5.73	689.6
324	173.2	174.7	1.57	54.6	174.6	120.00	0.687	1.0012	8.337	5.73	688.0
325	172.9	174.5	1.57	54.6	174.4	119.75	0.687	1.0012	8.337	5.73	686.6
326	172.7	174.3	1.56	54.6	174.1	119.52	0.687	1.0012	8.337	5.73	685.3
327	172.4	174.0	1.56	54.6	173.9	119.26	0.687	1.0012	8.337	5.73	683.8
328	172.2	173.8	1.53	54.6	173.7	119.06	0.687	1.0012	8.337	5.73	682.7
329	172.0	173.5	1.54	54.6	173.4	118.82	0.687	1.0012	8.337	5.73	681.3
330	171.7	173.2	1.53	54.6	173.1	118.53	0.687	1.0012	8.337	5.73	679.6
331	171.4	173.0	1.53	54.6	172.9	118.26	0.687	1.0012	8.337	5.73	678.1
332	171.2	172.7	1.54	54.6	172.6	118.02	0.687	1.0012	8.337	5.73	676.7
333	170.9	172.5	1.53	54.6	172.4	117.78	0.687	1.0012	8.337	5.73	675.3
334	170.7	172.3	1.53	54.6	172.2	117.57	0.687	1.0012	8.337	5.73	674.1
335	170.4	171.9	1.51	54.6	171.8	117.27	0.687	1.0012	8.337	5.73	672.4
336	170.2	171.7	1.51	54.6	171.6	117.07	0.701	1.0012	8.337	5.85	685.2
337	169.9	171.4	1.50	54.6	171.3	116.79	0.687	1.0012	8.337	5.73	669.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
338	169.6	171.1	1.51	54.6	171.1	116.50	0.687	1.0012	8.337	5.73	668.0
339	169.4	170.9	1.51	54.6	170.8	116.22	0.687	1.0012	8.337	5.73	666.4
340	169.1	170.6	1.50	54.5	170.5	115.96	0.687	1.0012	8.337	5.73	664.9
341	168.8	170.3	1.50	54.5	170.2	115.64	0.701	1.0012	8.337	5.85	676.9
342	168.6	170.1	1.49	54.5	170.0	115.44	0.687	1.0012	8.337	5.73	661.9
343	168.3	169.8	1.48	54.5	169.7	115.17	0.687	1.0012	8.337	5.73	660.4
344	168.1	169.5	1.47	54.5	169.5	114.95	0.701	1.0012	8.337	5.85	672.8
345	167.9	169.3	1.47	54.5	169.2	114.70	0.687	1.0012	8.337	5.73	657.7
346	167.5	168.9	1.45	54.5	168.9	114.38	0.687	1.0012	8.337	5.73	655.8
347	167.2	168.7	1.47	54.5	168.6	114.09	0.687	1.0012	8.337	5.73	654.2
348	167.0	168.5	1.45	54.5	168.4	113.87	0.701	1.0012	8.337	5.85	666.5
349	166.7	168.2	1.45	54.5	168.1	113.59	0.687	1.0012	8.337	5.73	651.3
350	166.5	167.9	1.43	54.5	167.8	113.34	0.701	1.0012	8.337	5.85	663.4
351	166.3	167.7	1.44	54.5	167.6	113.07	0.687	1.0012	8.337	5.73	648.3
352	166.0	167.4	1.43	54.5	167.3	112.85	0.687	1.0012	8.337	5.73	647.1
353	165.7	167.2	1.43	54.5	167.1	112.59	0.701	1.0012	8.337	5.85	659.0
354	165.6	167.0	1.44	54.5	166.9	112.38	0.687	1.0012	8.337	5.73	644.4
355	165.3	166.7	1.41	54.5	166.6	112.13	0.687	1.0012	8.337	5.73	643.0
356	165.0	166.4	1.41	54.5	166.3	111.84	0.701	1.0012	8.337	5.85	654.6
357	164.7	166.1	1.41	54.5	166.0	111.57	0.687	1.0012	8.337	5.73	639.7
358	164.5	165.9	1.40	54.5	165.8	111.33	0.687	1.0012	8.337	5.73	638.4
359	164.3	165.7	1.39	54.5	165.6	111.11	0.701	1.0012	8.337	5.85	650.3
360	164.0	165.4	1.40	54.5	165.3	110.82	0.687	1.0012	8.337	5.73	635.4
361	163.7	165.1	1.39	54.4	165.0	110.56	0.701	1.0012	8.337	5.85	647.1
362	163.5	164.9	1.39	54.4	164.7	110.30	0.687	1.0012	8.337	5.73	632.4
363	163.2	164.6	1.38	54.4	164.5	110.04	0.687	1.0012	8.337	5.73	630.9
364	162.9	164.3	1.37	54.4	164.2	109.78	0.701	1.0012	8.337	5.85	642.6
365	162.7	164.0	1.38	54.4	163.9	109.48	0.687	1.0012	8.337	5.73	627.7
366	162.3	163.7	1.44	54.4	163.6	109.20	0.716	1.0012	8.337	5.97	652.2
367	162.0	163.5	1.44	54.4	163.4	108.95	0.716	1.0012	8.337	5.97	650.7
368	161.8	163.2	1.43	54.4	163.1	108.68	0.716	1.0012	8.337	5.97	649.1
369	161.5	162.9	1.43	54.4	162.8	108.40	0.716	1.0012	8.337	5.97	647.4
370	161.3	162.7	1.43	54.4	162.6	108.17	0.730	1.0012	8.337	6.08	659.0
371	161.0	162.4	1.41	54.4	162.3	107.88	0.716	1.0012	8.337	5.97	644.4
372	160.6	162.0	1.40	54.4	162.0	107.58	0.730	1.0012	8.337	6.08	655.4
373	160.4	161.8	1.40	54.4	161.7	107.34	0.716	1.0012	8.337	5.97	641.1
374	160.1	161.5	1.41	54.4	161.4	107.05	0.730	1.0012	8.337	6.08	652.2
375	159.8	161.2	1.40	54.3	161.1	106.80	0.730	1.0012	8.337	6.08	650.7
376	159.6	160.9	1.39	54.3	160.9	106.53	0.716	1.0012	8.337	5.97	636.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
377	159.3	160.7	1.38	54.3	160.6	106.23	0.716	1.0012	8.337	5.97	634.5
378	159.0	160.4	1.38	54.3	160.3	105.97	0.730	1.0012	8.337	6.08	645.6
379	158.9	160.2	1.32	54.3	160.1	105.74	0.701	1.0012	8.337	5.85	618.9
380	158.5	159.8	1.38	54.3	159.7	105.42	0.730	1.0012	8.337	6.08	642.3
381	158.3	159.7	1.39	54.3	159.6	105.25	0.730	1.0012	8.337	6.08	641.2
382	158.4	159.7	1.38	54.3	159.6	105.23	0.716	1.0012	8.337	5.97	628.5
383	158.4	159.8	1.39	54.3	159.6	105.24	0.730	1.0012	8.337	6.08	641.2
384	158.7	160.1	1.40	54.3	159.8	105.49	0.716	1.0012	8.337	5.97	630.1
385	159.1	160.5	1.42	54.3	160.2	105.87	0.730	1.0012	8.337	6.08	645.0
386	159.5	160.9	1.43	54.3	160.6	106.30	0.730	1.0012	8.337	6.08	647.6
387	160.1	161.5	1.43	54.3	161.2	106.89	0.716	1.0012	8.337	5.97	638.4
388	160.5	162.0	1.47	54.3	161.7	107.37	0.730	1.0012	8.337	6.08	654.1
389	161.1	162.5	1.45	54.3	162.2	107.88	0.716	1.0012	8.337	5.97	644.3
390	161.7	163.1	1.46	54.3	162.8	108.45	0.730	1.0012	8.337	6.08	660.7
391	162.2	163.7	1.49	54.3	163.4	109.01	0.716	1.0012	8.337	5.97	651.1
392	163.0	164.4	1.41	54.3	164.0	109.69	0.687	1.0012	8.337	5.73	629.0
393	163.6	165.1	1.55	54.3	164.7	110.38	0.716	1.0012	8.337	5.97	659.3
394	164.4	165.9	1.54	54.3	165.5	111.18	0.716	1.0012	8.337	5.97	664.1
395	165.0	166.5	1.55	54.4	166.2	111.82	0.730	1.0012	8.337	6.08	681.2
396	165.6	167.2	1.58	54.4	166.8	112.47	0.716	1.0012	8.337	5.97	671.8
397	166.3	167.9	1.57	54.4	167.5	113.09	0.730	1.0012	8.337	6.08	689.0
398	167.1	168.6	1.58	54.6	168.3	113.69	0.716	1.0012	8.337	5.97	679.0
399	167.8	169.4	1.61	54.7	169.0	114.29	0.716	1.0012	8.337	5.97	682.6
400	168.5	170.2	1.63	54.8	169.7	114.94	0.716	1.0012	8.337	5.97	686.5
401	169.3	170.9	1.64	54.9	170.5	115.59	0.716	1.0012	8.337	5.97	690.4
402	170.0	171.6	1.63	55.0	171.3	116.22	0.730	1.0012	8.337	6.08	708.0
403	170.8	172.4	1.65	55.1	172.0	116.94	0.716	1.0012	8.336	5.97	698.4
404	171.5	173.2	1.66	55.2	172.8	117.59	0.716	1.0012	8.336	5.96	702.2
405	172.2	173.8	1.68	55.3	173.5	118.20	0.716	1.0012	8.336	5.96	705.9
406	172.9	174.6	1.69	55.4	174.3	118.86	0.716	1.0012	8.336	5.96	709.8
407	173.6	175.3	1.71	55.5	175.0	119.51	0.716	1.0012	8.336	5.96	713.7
408	174.4	176.1	1.71	55.6	175.7	120.19	0.716	1.0012	8.336	5.96	717.8
409	175.1	176.9	1.73	55.6	176.5	120.85	0.716	1.0012	8.336	5.96	721.7
410	175.9	177.7	1.75	55.7	177.3	121.63	0.701	1.0012	8.336	5.85	711.8
411	176.7	178.4	1.76	55.8	178.1	122.30	0.716	1.0012	8.336	5.96	730.4
412	177.4	179.2	1.78	55.8	178.8	123.03	0.716	1.0012	8.336	5.96	734.7
413	178.2	180.0	1.82	55.8	179.6	123.76	0.716	1.0012	8.336	5.96	739.1
414	178.8	180.7	1.82	55.9	180.4	124.51	0.701	1.0012	8.336	5.85	728.7
415	179.1	181.0	1.81	55.9	180.8	124.84	0.716	1.0012	8.336	5.96	745.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
416	179.4	181.2	1.83	55.9	181.0	125.05	0.701	1.0012	8.336	5.85	731.8
417	179.5	181.4	1.82	56.0	181.2	125.20	0.716	1.0012	8.336	5.96	747.6
418	179.7	181.5	1.84	56.0	181.3	125.33	0.701	1.0012	8.336	5.85	733.5
419	179.8	181.6	1.83	56.0	181.4	125.42	0.701	1.0012	8.336	5.85	734.0
420	179.8	181.6	1.81	56.0	181.5	125.44	0.716	1.0012	8.336	5.96	749.1
421	179.8	181.6	1.83	56.1	181.4	125.40	0.701	1.0012	8.336	5.85	733.8
422	179.8	181.6	1.82	56.1	181.5	125.39	0.716	1.0012	8.336	5.96	748.8
423	179.7	181.6	1.83	56.1	181.4	125.31	0.701	1.0012	8.336	5.85	733.3
424	179.6	181.5	1.82	56.1	181.3	125.25	0.701	1.0012	8.336	5.85	733.0
425	179.5	181.3	1.82	56.1	181.2	125.07	0.716	1.0012	8.335	5.96	746.8
426	179.5	181.3	1.81	56.1	181.1	124.99	0.701	1.0012	8.335	5.85	731.4
427	179.4	181.1	1.79	56.1	181.0	124.90	0.716	1.0012	8.336	5.96	745.8
428	179.2	181.0	1.80	56.1	180.9	124.78	0.701	1.0012	8.335	5.85	730.2
429	179.1	180.9	1.79	56.2	180.8	124.68	0.716	1.0012	8.335	5.96	744.5
430	179.0	180.8	1.79	56.2	180.6	124.46	0.701	1.0012	8.335	5.84	728.4
431	178.8	180.6	1.78	56.1	180.5	124.34	0.701	1.0012	8.335	5.85	727.6
432	178.7	180.5	1.77	56.1	180.4	124.22	0.716	1.0012	8.335	5.96	741.8
433	178.5	180.3	1.76	56.2	180.2	124.00	0.701	1.0012	8.335	5.84	725.7
434	178.4	180.1	1.76	56.1	180.0	123.86	0.701	1.0012	8.335	5.84	724.8
435	178.2	180.0	1.76	56.2	179.8	123.65	0.716	1.0012	8.335	5.96	738.4
436	178.0	179.8	1.75	56.2	179.7	123.45	0.701	1.0012	8.335	5.84	722.4
437	177.9	179.6	1.73	56.2	179.5	123.27	0.716	1.0012	8.335	5.96	736.1
438	177.6	179.4	1.72	56.2	179.3	123.08	0.701	1.0012	8.335	5.84	720.3
439	177.5	179.2	1.72	56.2	179.1	122.93	0.716	1.0012	8.335	5.96	734.1
440	177.3	179.0	1.71	56.0	178.9	122.89	0.701	1.0012	8.336	5.85	719.2
441	177.1	178.8	1.71	55.8	178.7	122.91	0.701	1.0012	8.336	5.85	719.3
442	176.9	178.6	1.70	55.6	178.5	122.92	0.716	1.0012	8.336	5.96	734.1
443	176.7	178.4	1.69	55.4	178.2	122.79	0.716	1.0012	8.336	5.96	733.3
444	176.5	178.2	1.68	55.3	178.0	122.73	0.701	1.0012	8.336	5.85	718.3
445	176.2	177.9	1.70	55.2	177.8	122.59	0.716	1.0012	8.336	5.96	732.1
446	176.0	177.7	1.69	55.2	177.6	122.42	0.716	1.0012	8.336	5.96	731.1
447	175.8	177.5	1.70	55.1	177.4	122.28	0.701	1.0012	8.336	5.85	715.7
448	175.6	177.3	1.69	55.0	177.2	122.12	0.716	1.0012	8.337	5.97	729.4
449	175.3	177.0	1.68	55.0	176.9	121.90	0.716	1.0012	8.337	5.97	728.0
450	175.1	176.7	1.65	54.9	176.7	121.75	0.701	1.0012	8.337	5.85	712.6
451	174.8	176.5	1.68	54.9	176.4	121.52	0.716	1.0012	8.337	5.97	725.7
452	174.6	176.3	1.68	54.8	176.2	121.34	0.701	1.0012	8.337	5.85	710.2
453	174.4	176.0	1.66	54.8	175.9	121.17	0.716	1.0012	8.337	5.97	723.7
454	174.2	175.8	1.65	54.7	175.7	120.98	0.716	1.0012	8.337	5.97	722.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
455	173.9	175.5	1.65	54.7	175.4	120.76	0.701	1.0012	8.337	5.85	706.8
456	173.6	175.3	1.64	54.6	175.2	120.56	0.716	1.0012	8.337	5.97	720.1
457	173.3	175.0	1.65	54.6	174.9	120.32	0.701	1.0012	8.337	5.85	704.2
458	173.1	174.7	1.64	54.5	174.6	120.07	0.716	1.0012	8.337	5.97	717.1
459	172.9	174.5	1.65	54.5	174.4	119.92	0.716	1.0012	8.337	5.97	716.2
460	172.6	174.2	1.63	54.5	174.1	119.63	0.716	1.0012	8.337	5.97	714.5
461	172.4	174.0	1.64	54.5	173.9	119.43	0.701	1.0012	8.337	5.85	699.0
462	172.1	173.7	1.64	54.4	173.6	119.19	0.716	1.0012	8.337	5.97	711.9
463	171.8	173.4	1.62	54.4	173.3	118.93	0.716	1.0012	8.337	5.97	710.4
464	171.6	173.2	1.62	54.4	173.1	118.71	0.701	1.0012	8.337	5.85	694.8
465	171.3	172.9	1.63	54.4	172.8	118.43	0.716	1.0012	8.337	5.97	707.4
466	171.1	172.7	1.60	54.4	172.6	118.23	0.716	1.0012	8.337	5.97	706.1
467	170.8	172.4	1.60	54.4	172.3	117.98	0.701	1.0012	8.337	5.85	690.6
468	170.6	172.2	1.60	54.4	172.1	117.70	0.716	1.0012	8.337	5.97	703.0
469	170.2	171.8	1.58	54.3	171.7	117.40	0.701	1.0012	8.337	5.85	687.2
470	170.0	171.6	1.59	54.3	171.5	117.14	0.716	1.0012	8.337	5.97	699.6
471	169.8	171.4	1.58	54.3	171.3	116.94	0.716	1.0012	8.337	5.97	698.5
472	169.5	171.1	1.56	54.3	171.0	116.66	0.716	1.0012	8.337	5.97	696.8
473	169.2	170.8	1.57	54.3	170.7	116.39	0.716	1.0012	8.337	5.97	695.2
474	169.0	170.5	1.57	54.3	170.4	116.09	0.701	1.0012	8.337	5.85	679.5
475	168.7	170.2	1.54	54.3	170.1	115.81	0.716	1.0012	8.337	5.97	691.7
476	168.4	170.0	1.56	54.4	169.8	115.42	0.716	1.0012	8.337	5.97	689.4
477	168.2	169.7	1.54	54.6	169.6	115.03	0.716	1.0012	8.337	5.97	687.1
478	167.9	169.4	1.53	54.7	169.3	114.61	0.716	1.0012	8.337	5.97	684.5
479	167.6	169.1	1.52	54.8	169.0	114.18	0.716	1.0012	8.337	5.97	681.9
480	167.3	168.9	1.53	54.9	168.8	113.84	0.716	1.0012	8.337	5.97	679.9
481	167.1	168.6	1.51	55.0	168.5	113.48	0.701	1.0012	8.337	5.85	664.2
482	166.8	168.3	1.53	55.1	168.2	113.10	0.716	1.0012	8.336	5.96	675.5
483	166.6	168.1	1.50	55.2	168.0	112.80	0.716	1.0012	8.336	5.96	673.7
484	166.3	167.8	1.49	55.3	167.7	112.38	0.716	1.0012	8.336	5.96	671.1
485	166.0	167.5	1.50	55.4	167.4	111.99	0.716	1.0012	8.336	5.96	668.8
486	165.8	167.3	1.50	55.4	167.1	111.70	0.716	1.0012	8.336	5.96	667.1
487	165.5	167.0	1.49	55.5	166.9	111.35	0.701	1.0012	8.336	5.85	651.7
488	165.3	166.7	1.46	55.6	166.7	111.09	0.716	1.0012	8.336	5.96	663.4
489	165.0	166.5	1.46	55.6	166.4	110.72	0.716	1.0012	8.336	5.96	661.2
490	164.7	166.1	1.42	55.7	166.1	110.35	0.701	1.0012	8.336	5.85	645.8
491	164.3	165.9	1.55	55.7	165.8	110.04	0.716	1.0012	8.336	5.96	657.1
492	164.1	165.6	1.55	55.8	165.5	109.70	0.744	1.0012	8.336	6.20	681.3
493	163.8	165.3	1.54	55.9	165.2	109.37	0.744	1.0012	8.336	6.20	679.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
494	163.5	165.0	1.52	55.8	164.9	109.10	0.744	1.0012	8.336	6.20	677.6
495	163.1	164.7	1.53	55.8	164.6	108.80	0.744	1.0012	8.336	6.20	675.7
496	162.9	164.4	1.53	55.8	164.3	108.50	0.744	1.0012	8.336	6.20	673.8
497	162.6	164.1	1.50	55.8	164.0	108.23	0.744	1.0012	8.336	6.20	672.1
498	162.4	163.9	1.51	55.8	163.8	108.01	0.744	1.0012	8.336	6.20	670.8
499	162.1	163.7	1.55	55.9	163.6	107.70	0.758	1.0012	8.336	6.32	681.7
500	161.9	163.5	1.56	55.9	163.3	107.47	0.758	1.0012	8.336	6.32	680.3
501	161.5	163.0	1.54	55.8	163.0	107.18	0.773	1.0012	8.336	6.44	691.2
502	161.2	162.7	1.55	55.8	162.6	106.80	0.758	1.0012	8.336	6.32	676.0
503	160.9	162.4	1.54	55.8	162.3	106.50	0.758	1.0012	8.336	6.32	674.1
504	160.6	162.1	1.53	55.8	162.0	106.19	0.773	1.0012	8.336	6.44	684.9
505	160.3	161.8	1.52	55.9	161.7	105.87	0.758	1.0012	8.336	6.32	670.2
506	160.0	161.5	1.51	55.9	161.5	105.59	0.773	1.0012	8.336	6.44	681.0
507	159.8	161.3	1.51	56.0	161.2	105.22	0.758	1.0012	8.336	6.32	666.0
508	159.5	161.0	1.50	55.9	160.9	104.99	0.773	1.0012	8.336	6.44	677.1
509	159.2	160.7	1.49	55.9	160.6	104.69	0.758	1.0012	8.336	6.32	662.7
510	158.9	160.4	1.50	55.8	160.3	104.52	0.773	1.0012	8.336	6.44	674.1
511	158.6	160.1	1.49	55.6	160.0	104.45	0.758	1.0012	8.336	6.32	661.2
512	158.4	159.9	1.49	55.4	159.7	104.33	0.773	1.0012	8.336	6.44	672.9
513	158.0	159.5	1.49	55.3	159.4	104.18	0.758	1.0012	8.336	6.32	659.5
514	157.9	159.4	1.50	55.1	159.3	104.13	0.773	1.0012	8.336	6.44	671.6
515	157.9	159.4	1.50	55.1	159.2	104.16	0.773	1.0012	8.337	6.44	671.8
516	158.0	159.5	1.49	55.0	159.3	104.29	0.758	1.0012	8.337	6.32	660.2
517	158.1	159.6	1.52	54.9	159.4	104.45	0.773	1.0012	8.337	6.44	673.7
518	158.4	160.0	1.54	54.9	159.7	104.81	0.773	1.0012	8.337	6.44	676.0
519	158.8	160.4	1.54	54.8	160.0	105.22	0.758	1.0012	8.337	6.32	666.1
520	159.5	161.1	1.58	54.8	160.7	105.92	0.773	1.0012	8.337	6.44	683.2
521	160.1	161.7	1.58	54.7	161.4	106.70	0.773	1.0012	8.337	6.44	688.3
522	160.7	162.3	1.60	54.7	161.9	107.29	0.758	1.0012	8.337	6.32	679.3
523	161.3	162.9	1.61	54.6	162.6	107.96	0.773	1.0012	8.337	6.44	696.4
524	161.9	163.5	1.63	54.6	163.2	108.61	0.758	1.0012	8.337	6.32	687.6
525	162.5	164.1	1.65	54.5	163.8	109.27	0.773	1.0012	8.337	6.44	704.9
526	163.2	164.8	1.66	54.5	164.5	110.00	0.758	1.0012	8.337	6.32	696.4
527	163.8	165.5	1.69	54.4	165.1	110.68	0.773	1.0012	8.337	6.44	713.9
528	164.5	166.2	1.70	54.4	165.8	111.43	0.773	1.0012	8.337	6.44	718.8
529	165.3	167.0	1.72	54.4	166.6	112.20	0.758	1.0012	8.337	6.32	710.4
530	166.0	167.7	1.73	54.3	167.4	113.01	0.773	1.0012	8.337	6.44	729.0
531	166.7	168.5	1.72	54.3	168.1	113.78	0.758	1.0012	8.337	6.32	720.4
532	167.6	169.3	1.74	54.3	168.9	114.62	0.758	1.0012	8.337	6.32	725.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
533	168.3	170.1	1.75	54.3	169.7	115.41	0.758	1.0012	8.337	6.32	730.7
534	169.1	170.8	1.79	54.3	170.5	116.22	0.744	1.0012	8.337	6.20	721.9
535	169.8	171.5	1.77	54.2	171.2	116.96	0.758	1.0012	8.337	6.32	740.5
536	170.6	172.4	1.80	54.2	172.0	117.74	0.758	1.0012	8.337	6.32	745.4
537	171.3	173.1	1.80	54.2	172.8	118.55	0.758	1.0012	8.337	6.32	750.6
538	172.1	173.9	1.84	54.2	173.5	119.33	0.758	1.0012	8.337	6.32	755.5
539	172.8	174.7	1.85	54.2	174.3	120.12	0.744	1.0012	8.337	6.20	746.1
540	173.5	175.3	1.86	54.2	175.0	120.81	0.758	1.0012	8.337	6.32	764.9
541	174.2	176.1	1.86	54.2	175.7	121.59	0.758	1.0012	8.337	6.32	769.8
542	175.0	176.9	1.89	54.2	176.5	122.32	0.744	1.0012	8.337	6.20	759.8
543	175.7	177.6	1.89	54.1	177.3	123.11	0.744	1.0012	8.337	6.20	764.8
544	176.6	178.3	1.75	54.1	178.0	123.81	0.730	1.0012	8.337	6.08	754.3
545	177.4	179.2	1.76	54.2	178.8	124.65	0.701	1.0012	8.337	5.85	729.6
546	178.1	179.9	1.79	54.2	179.5	125.36	0.701	1.0012	8.337	5.85	733.8
547	178.8	180.6	1.79	54.2	180.3	126.09	0.687	1.0012	8.337	5.73	723.0
548	179.0	180.8	1.78	54.2	180.6	126.40	0.701	1.0012	8.337	5.85	739.8
549	179.3	181.1	1.80	54.2	180.8	126.65	0.701	1.0012	8.337	5.85	741.3
550	179.4	181.2	1.81	54.2	181.0	126.78	0.687	1.0012	8.337	5.73	727.0
551	179.5	181.3	1.80	54.2	181.1	126.93	0.701	1.0012	8.337	5.85	742.9
552	179.5	181.3	1.81	54.2	181.1	126.96	0.687	1.0012	8.337	5.73	728.0
553	179.6	181.4	1.79	54.2	181.2	127.01	0.701	1.0012	8.337	5.85	743.4
554	179.6	181.4	1.80	54.2	181.2	127.05	0.701	1.0012	8.337	5.85	743.7
555	179.6	181.4	1.81	54.3	181.2	126.92	0.687	1.0012	8.337	5.73	727.8
556	179.5	181.3	1.79	54.4	181.2	126.74	0.701	1.0012	8.337	5.85	741.9
557	179.5	181.3	1.77	54.6	181.1	126.56	0.687	1.0012	8.337	5.73	725.7
558	179.4	181.2	1.76	54.7	181.0	126.38	0.701	1.0012	8.337	5.85	739.7
559	179.3	181.0	1.75	54.8	180.9	126.15	0.687	1.0012	8.337	5.73	723.3
560	179.2	180.9	1.77	54.9	180.8	125.90	0.701	1.0012	8.337	5.85	736.9
561	179.1	180.9	1.75	55.0	180.7	125.74	0.701	1.0012	8.337	5.85	735.9
562	179.0	180.7	1.77	55.1	180.6	125.50	0.687	1.0012	8.337	5.73	719.5
563	178.8	180.6	1.75	55.2	180.5	125.27	0.687	1.0012	8.336	5.73	718.2
564	178.7	180.5	1.73	55.3	180.3	125.04	0.701	1.0012	8.336	5.85	731.8
565	178.6	180.3	1.73	55.4	180.2	124.81	0.687	1.0012	8.336	5.73	715.6
566	178.5	180.2	1.73	55.4	180.1	124.66	0.701	1.0012	8.336	5.85	729.6
567	178.3	180.0	1.71	55.5	179.9	124.36	0.687	1.0012	8.336	5.73	713.0
568	178.1	179.8	1.71	55.6	179.7	124.14	0.701	1.0012	8.336	5.85	726.5
569	177.9	179.6	1.71	55.6	179.5	123.93	0.687	1.0012	8.336	5.73	710.5
570	177.8	179.5	1.70	55.6	179.4	123.74	0.701	1.0012	8.336	5.85	724.2
571	177.6	179.3	1.66	55.7	179.2	123.50	0.687	1.0012	8.336	5.73	708.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
572	177.5	179.1	1.67	55.7	179.0	123.26	0.687	1.0012	8.336	5.73	706.6
573	177.3	179.0	1.68	55.8	178.8	123.05	0.701	1.0012	8.336	5.85	720.1
574	177.1	178.8	1.66	55.8	178.6	122.83	0.687	1.0012	8.336	5.73	704.2
575	176.9	178.5	1.65	55.8	178.4	122.63	0.701	1.0012	8.336	5.85	717.7
576	176.6	178.3	1.66	55.8	178.2	122.39	0.687	1.0012	8.336	5.73	701.7
577	176.5	178.1	1.66	55.9	178.0	122.17	0.701	1.0012	8.336	5.85	714.9
578	176.3	177.9	1.63	55.9	177.8	121.98	0.687	1.0012	8.336	5.73	699.3
579	176.1	177.7	1.63	55.9	177.6	121.73	0.701	1.0012	8.336	5.85	712.4
580	175.8	177.5	1.63	55.9	177.4	121.46	0.687	1.0012	8.336	5.73	696.3
581	175.6	177.2	1.62	55.9	177.1	121.20	0.701	1.0012	8.336	5.85	709.3
582	175.4	177.0	1.62	55.9	176.9	121.01	0.687	1.0012	8.336	5.73	693.7
583	175.2	176.8	1.61	55.9	176.7	120.81	0.701	1.0012	8.336	5.85	707.0
584	175.0	176.6	1.61	56.0	176.5	120.52	0.687	1.0012	8.336	5.73	690.9
585	174.7	176.3	1.61	56.0	176.2	120.22	0.701	1.0012	8.336	5.85	703.5
586	174.5	176.1	1.59	56.0	176.0	120.03	0.687	1.0012	8.336	5.73	688.1
587	174.3	175.9	1.59	56.0	175.8	119.77	0.701	1.0012	8.336	5.85	700.9
588	174.1	175.7	1.59	56.0	175.5	119.54	0.687	1.0012	8.336	5.73	685.3
589	173.8	175.4	1.60	56.0	175.3	119.30	0.701	1.0012	8.336	5.85	698.2
590	173.5	175.1	1.57	56.0	175.0	119.04	0.701	1.0012	8.336	5.85	696.7
591	173.4	174.9	1.57	56.0	174.8	118.81	0.687	1.0012	8.336	5.73	681.1
592	173.1	174.6	1.58	56.0	174.6	118.54	0.701	1.0012	8.336	5.85	693.7
593	172.9	174.4	1.57	55.9	174.3	118.43	0.687	1.0012	8.336	5.73	678.9
594	172.7	174.2	1.54	55.7	174.1	118.36	0.687	1.0012	8.336	5.73	678.6
595	172.4	174.0	1.56	55.5	173.9	118.35	0.701	1.0012	8.336	5.85	692.6
596	172.2	173.7	1.56	55.4	173.6	118.24	0.701	1.0012	8.336	5.85	692.0
597	171.9	173.4	1.56	55.2	173.3	118.10	0.701	1.0012	8.336	5.85	691.2
598	171.6	173.2	1.56	55.1	173.1	117.95	0.687	1.0012	8.336	5.73	676.2
599	171.4	172.9	1.57	55.0	172.8	117.77	0.701	1.0012	8.337	5.85	689.3
600	171.1	172.7	1.56	55.0	172.6	117.60	0.701	1.0012	8.337	5.85	688.3
601	170.9	172.4	1.55	54.9	172.3	117.43	0.687	1.0012	8.337	5.73	673.3
602	170.6	172.1	1.54	54.9	172.1	117.20	0.701	1.0012	8.337	5.85	686.0
603	170.3	171.9	1.54	54.8	171.8	116.99	0.701	1.0012	8.337	5.85	684.7
604	170.1	171.6	1.53	54.7	171.5	116.81	0.701	1.0012	8.337	5.85	683.7
605	169.9	171.4	1.52	54.7	171.3	116.61	0.687	1.0012	8.337	5.73	668.6
606	169.6	171.1	1.54	54.6	171.0	116.38	0.701	1.0012	8.337	5.85	681.2
607	169.3	170.8	1.53	54.5	170.8	116.21	0.701	1.0012	8.337	5.85	680.2
608	169.1	170.6	1.51	54.5	170.5	116.01	0.701	1.0012	8.337	5.85	679.0
609	168.8	170.3	1.51	54.5	170.3	115.80	0.687	1.0012	8.337	5.73	664.0
610	168.5	170.1	1.53	54.4	169.9	115.53	0.701	1.0012	8.337	5.85	676.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
611	168.3	169.8	1.50	54.4	169.7	115.29	0.701	1.0012	8.337	5.85	674.8
612	168.0	169.5	1.49	54.3	169.4	115.08	0.701	1.0012	8.337	5.85	673.6
613	167.7	169.3	1.50	54.3	169.1	114.83	0.687	1.0012	8.337	5.73	658.4
614	167.5	169.0	1.50	54.3	168.9	114.60	0.701	1.0012	8.337	5.85	670.8
615	167.3	168.8	1.49	54.3	168.7	114.42	0.701	1.0012	8.337	5.85	669.7
616	167.0	168.4	1.48	54.2	168.4	114.14	0.701	1.0012	8.337	5.85	668.1
617	166.6	168.1	1.47	54.2	168.0	113.83	0.701	1.0012	8.337	5.85	666.3
618	166.4	167.9	1.46	54.2	167.8	113.58	0.701	1.0012	8.337	5.85	664.9
619	166.1	167.6	1.47	54.2	167.5	113.36	0.701	1.0012	8.337	5.85	663.5
620	165.8	167.3	1.46	54.2	167.2	113.00	0.701	1.0012	8.337	5.85	661.5
621	165.6	167.1	1.46	54.1	166.9	112.80	0.701	1.0012	8.337	5.85	660.3
622	165.3	166.8	1.46	54.1	166.7	112.58	0.701	1.0012	8.337	5.85	659.0
623	165.1	166.5	1.44	54.1	166.4	112.28	0.701	1.0012	8.337	5.85	657.2
624	164.8	166.3	1.46	54.1	166.2	112.04	0.701	1.0012	8.337	5.85	655.8
625	164.5	166.0	1.44	54.1	165.9	111.75	0.701	1.0012	8.337	5.85	654.1
626	164.3	165.7	1.43	54.1	165.6	111.55	0.687	1.0012	8.337	5.73	639.6
627	164.0	165.5	1.43	54.1	165.4	111.29	0.701	1.0012	8.337	5.85	651.4
628	163.8	165.2	1.42	54.1	165.1	111.00	0.701	1.0012	8.337	5.85	649.7
629	163.5	164.9	1.42	54.1	164.8	110.73	0.701	1.0012	8.337	5.85	648.1
630	163.2	164.6	1.41	54.1	164.5	110.48	0.701	1.0012	8.337	5.85	646.7
631	163.0	164.4	1.41	54.1	164.3	110.21	0.716	1.0012	8.337	5.97	658.3
632	162.7	164.1	1.40	54.0	164.0	109.97	0.701	1.0012	8.337	5.85	643.7
633	162.5	163.9	1.41	54.0	163.8	109.77	0.701	1.0012	8.338	5.85	642.5
634	162.2	163.6	1.40	54.0	163.5	109.48	0.701	1.0012	8.337	5.85	640.8
635	162.0	163.3	1.39	54.1	163.2	109.16	0.701	1.0012	8.337	5.85	639.0
636	161.6	163.0	1.39	54.2	162.9	108.76	0.701	1.0012	8.337	5.85	636.6
637	161.4	162.8	1.37	54.3	162.7	108.34	0.701	1.0012	8.337	5.85	634.1
638	161.1	162.5	1.37	54.4	162.4	107.96	0.701	1.0012	8.337	5.85	631.9
639	160.9	162.2	1.35	54.6	162.2	107.61	0.701	1.0012	8.337	5.85	629.8
640	160.6	162.0	1.35	54.7	161.9	107.23	0.701	1.0012	8.337	5.85	627.6
641	160.4	161.7	1.35	54.8	161.6	106.86	0.701	1.0012	8.337	5.85	625.4
642	160.2	161.5	1.35	54.9	161.4	106.51	0.701	1.0012	8.337	5.85	623.4
643	159.8	161.2	1.34	55.0	161.1	106.12	0.701	1.0012	8.337	5.85	621.1
644	159.6	160.9	1.33	55.0	160.8	105.74	0.716	1.0012	8.337	5.97	631.5
645	159.5	160.8	1.33	55.1	160.7	105.53	0.701	1.0012	8.336	5.85	617.6
646	159.2	160.5	1.33	55.2	160.4	105.20	0.701	1.0012	8.336	5.85	615.7
647	158.9	160.2	1.31	55.3	160.1	104.83	0.701	1.0012	8.336	5.85	613.5
648	158.6	159.9	1.29	55.3	159.8	104.44	0.701	1.0012	8.336	5.85	611.3
649	158.3	159.6	1.28	55.4	159.5	104.11	0.701	1.0012	8.336	5.85	609.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
650	158.1	159.4	1.28	55.5	159.2	103.77	0.701	1.0012	8.336	5.85	607.3
651	157.9	159.2	1.32	55.5	159.1	103.59	0.716	1.0012	8.336	5.96	618.6
652	157.9	159.2	1.30	55.5	159.0	103.52	0.701	1.0012	8.336	5.85	605.8
653	157.9	159.2	1.31	55.5	159.0	103.42	0.701	1.0012	8.336	5.85	605.3
654	157.9	159.2	1.30	55.6	159.0	103.40	0.701	1.0012	8.336	5.85	605.2
655	158.0	159.3	1.31	55.6	159.1	103.49	0.701	1.0012	8.336	5.85	605.7
656	158.3	159.6	1.32	55.6	159.3	103.69	0.701	1.0012	8.336	5.85	606.8
657	158.7	160.0	1.34	55.7	159.7	104.07	0.701	1.0012	8.336	5.85	609.0
658	159.3	160.6	1.37	55.7	160.3	104.57	0.716	1.0012	8.336	5.96	624.5
659	159.9	161.3	1.38	55.7	160.9	105.21	0.701	1.0012	8.336	5.85	615.7
660	160.6	162.0	1.40	55.7	161.6	105.88	0.701	1.0012	8.336	5.85	619.6
661	161.3	162.7	1.40	55.8	162.3	106.57	0.701	1.0012	8.336	5.85	623.7
662	162.0	163.5	1.42	55.7	163.1	107.38	0.701	1.0012	8.336	5.85	628.4
663	162.8	164.2	1.43	55.8	163.8	108.07	0.701	1.0012	8.336	5.85	632.4
664	163.5	165.0	1.46	55.8	164.6	108.77	0.701	1.0012	8.336	5.85	636.6
665	164.3	165.8	1.47	55.8	165.4	109.55	0.701	1.0012	8.336	5.85	641.1
666	165.1	166.6	1.48	55.8	166.2	110.34	0.701	1.0012	8.336	5.85	645.7
667	165.8	167.3	1.48	55.9	166.9	111.07	0.701	1.0012	8.336	5.85	650.0
668	166.6	168.1	1.49	55.9	167.7	111.80	0.701	1.0012	8.336	5.85	654.3
669	167.3	168.8	1.53	55.9	168.4	112.55	0.701	1.0012	8.336	5.85	658.6
670	168.0	169.6	1.53	55.9	169.2	113.31	0.701	1.0012	8.336	5.85	663.1
671	168.8	170.3	1.54	55.9	169.9	114.03	0.701	1.0012	8.336	5.85	667.3
672	169.5	171.1	1.57	55.9	170.7	114.80	0.687	1.0012	8.336	5.73	658.1
673	170.3	171.9	1.59	55.9	171.5	115.54	0.701	1.0012	8.336	5.85	676.2
674	171.0	172.6	1.60	55.9	172.3	116.34	0.701	1.0012	8.336	5.85	680.8
675	171.7	173.4	1.61	55.9	173.0	117.04	0.701	1.0012	8.336	5.85	684.9
676	172.5	174.2	1.64	55.9	173.7	117.79	0.701	1.0012	8.336	5.85	689.3
677	173.3	174.9	1.64	56.0	174.5	118.52	0.687	1.0012	8.336	5.73	679.5
678	174.0	175.6	1.63	55.9	175.3	119.46	0.701	1.0012	8.336	5.85	699.1
679	174.6	176.3	1.67	55.7	175.9	120.24	0.701	1.0012	8.336	5.85	703.7
680	175.4	177.1	1.70	55.4	176.7	121.22	0.687	1.0012	8.336	5.73	695.0
681	176.1	177.8	1.68	55.3	177.5	122.16	0.701	1.0012	8.336	5.85	715.0
682	176.7	178.5	1.73	55.2	178.1	122.97	0.701	1.0012	8.336	5.85	719.7
683	177.5	179.3	1.76	55.1	178.9	123.78	0.687	1.0012	8.337	5.73	709.7
684	178.2	180.0	1.75	55.0	179.6	124.62	0.701	1.0012	8.337	5.85	729.4
685	178.8	180.6	1.80	54.9	180.3	125.34	0.687	1.0012	8.337	5.73	718.7
686	179.2	180.9	1.76	54.9	180.7	125.84	0.701	1.0012	8.337	5.85	736.6
687	179.4	181.2	1.78	54.8	181.0	126.17	0.687	1.0012	8.337	5.73	723.4
688	179.6	181.4	1.79	54.7	181.2	126.45	0.687	1.0012	8.337	5.73	725.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
689	179.8	181.6	1.80	54.7	181.3	126.66	0.701	1.0012	8.337	5.85	741.3
690	179.9	181.7	1.81	54.7	181.5	126.78	0.687	1.0012	8.337	5.73	726.9
691	180.0	181.8	1.80	54.9	181.6	126.79	0.687	1.0012	8.337	5.73	726.9
692	180.1	181.9	1.83	55.0	181.7	126.73	0.701	1.0012	8.337	5.85	741.7
693	180.1	181.9	1.80	55.1	181.7	126.62	0.687	1.0012	8.336	5.73	725.9
694	180.1	181.9	1.80	55.2	181.7	126.58	0.687	1.0012	8.336	5.73	725.7
695	180.1	181.9	1.78	55.2	181.7	126.47	0.701	1.0012	8.336	5.85	740.2
696	180.0	181.8	1.78	55.3	181.7	126.41	0.687	1.0012	8.336	5.73	724.7
697	179.9	181.7	1.78	55.4	181.6	126.21	0.687	1.0012	8.336	5.73	723.6
698	179.9	181.7	1.76	55.4	181.5	126.09	0.687	1.0012	8.336	5.73	722.9
699	179.7	181.5	1.77	55.5	181.4	125.89	0.701	1.0012	8.336	5.85	736.8
700	179.7	181.4	1.76	55.5	181.3	125.74	0.687	1.0012	8.336	5.73	720.8
701	179.6	181.3	1.75	55.6	181.2	125.60	0.687	1.0012	8.336	5.73	720.1
702	179.4	181.1	1.75	55.6	181.0	125.39	0.701	1.0012	8.336	5.85	733.9
703	179.3	181.1	1.76	55.7	180.9	125.23	0.687	1.0012	8.336	5.73	717.9
704	179.2	180.9	1.74	55.7	180.8	125.04	0.687	1.0012	8.336	5.73	716.9
705	179.0	180.7	1.73	55.8	180.6	124.82	0.687	1.0012	8.336	5.73	715.6
706	178.9	180.6	1.70	55.8	180.4	124.65	0.701	1.0012	8.336	5.85	729.5
707	178.7	180.4	1.71	55.8	180.2	124.43	0.687	1.0012	8.336	5.73	713.4
708	178.6	180.3	1.69	55.8	180.1	124.29	0.687	1.0012	8.336	5.73	712.5
709	178.3	180.0	1.70	55.9	179.9	124.03	0.687	1.0012	8.336	5.73	711.0
710	178.1	179.8	1.69	55.9	179.7	123.81	0.687	1.0012	8.336	5.73	709.8
711	178.0	179.7	1.68	55.9	179.6	123.64	0.701	1.0012	8.336	5.85	723.6
712	177.8	179.5	1.67	55.9	179.3	123.42	0.687	1.0012	8.336	5.73	707.6
713	177.6	179.3	1.67	55.9	179.1	123.21	0.687	1.0012	8.336	5.73	706.3
714	177.4	179.1	1.66	56.0	179.0	123.01	0.687	1.0012	8.336	5.73	705.2
715	177.2	178.9	1.67	56.0	178.8	122.81	0.701	1.0012	8.336	5.85	718.7
716	177.0	178.7	1.64	56.0	178.6	122.58	0.687	1.0012	8.336	5.73	702.7
717	176.8	178.5	1.63	56.0	178.4	122.38	0.687	1.0012	8.336	5.73	701.6
718	176.6	178.3	1.64	56.0	178.2	122.16	0.687	1.0012	8.336	5.73	700.3
719	176.4	178.1	1.64	56.0	177.9	121.94	0.687	1.0012	8.336	5.73	699.1
720	176.2	177.8	1.63	56.0	177.7	121.72	0.701	1.0012	8.336	5.85	712.3
721	176.0	177.6	1.61	56.0	177.5	121.50	0.687	1.0012	8.336	5.73	696.5
722	175.7	177.4	1.62	56.0	177.2	121.21	0.701	1.0012	8.336	5.85	709.3
723	175.5	177.1	1.60	56.0	177.0	120.96	0.687	1.0012	8.336	5.73	693.4
724	175.3	176.9	1.61	56.0	176.8	120.79	0.701	1.0012	8.336	5.85	706.9
725	175.0	176.7	1.61	56.0	176.6	120.55	0.687	1.0012	8.336	5.73	691.1
726	174.8	176.4	1.59	56.0	176.3	120.30	0.701	1.0012	8.336	5.85	704.0
727	174.6	176.2	1.58	56.0	176.1	120.08	0.687	1.0012	8.336	5.73	688.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
728	174.4	176.0	1.60	56.0	175.9	119.83	0.687	1.0012	8.336	5.73	687.0
729	174.1	175.7	1.58	56.0	175.6	119.55	0.701	1.0012	8.336	5.85	699.6
730	173.9	175.5	1.59	56.0	175.4	119.35	0.687	1.0012	8.336	5.73	684.2
731	173.7	175.2	1.58	56.1	175.1	119.08	0.687	1.0012	8.336	5.73	682.7
732	173.5	175.0	1.57	56.1	174.9	118.84	0.701	1.0012	8.336	5.85	695.5
733	173.2	174.8	1.56	56.1	174.7	118.59	0.687	1.0012	8.336	5.73	679.8
734	172.9	174.5	1.57	56.1	174.4	118.33	0.687	1.0012	8.336	5.73	678.4
735	172.7	174.2	1.56	56.1	174.2	118.09	0.701	1.0012	8.336	5.85	691.1
736	172.4	174.0	1.55	56.1	173.9	117.81	0.687	1.0012	8.336	5.73	675.3
737	172.1	173.7	1.56	56.1	173.6	117.50	0.687	1.0012	8.336	5.73	673.6
738	171.9	173.4	1.56	56.1	173.4	117.26	0.701	1.0012	8.336	5.85	686.2
739	171.7	173.2	1.53	56.1	173.1	117.00	0.687	1.0012	8.336	5.73	670.7
740	171.4	172.9	1.53	56.1	172.8	116.72	0.701	1.0012	8.336	5.85	683.0
741	171.2	172.8	1.54	56.1	172.6	116.52	0.701	1.0012	8.336	5.85	681.9
742	171.0	172.5	1.52	56.1	172.4	116.30	0.687	1.0012	8.336	5.73	666.7
743	170.7	172.2	1.52	56.1	172.1	115.98	0.701	1.0012	8.336	5.85	678.7
744	170.4	172.0	1.53	56.1	171.9	115.75	0.687	1.0012	8.336	5.73	663.6
745	170.2	171.7	1.51	56.1	171.6	115.49	0.701	1.0012	8.335	5.85	675.9
746	170.0	171.5	1.49	56.1	171.4	115.27	0.687	1.0012	8.336	5.73	660.8
747	169.7	171.2	1.50	55.9	171.1	115.15	0.701	1.0012	8.336	5.85	673.9
748	169.4	170.9	1.51	55.7	170.8	115.14	0.687	1.0012	8.336	5.73	660.1
749	169.1	170.6	1.52	55.5	170.5	115.05	0.701	1.0012	8.336	5.85	673.4
750	168.9	170.4	1.50	55.3	170.2	114.93	0.701	1.0012	8.336	5.85	672.6
751	168.6	170.1	1.50	55.2	170.0	114.82	0.687	1.0012	8.336	5.73	658.3
752	168.4	169.9	1.49	55.1	169.8	114.72	0.701	1.0012	8.337	5.85	671.4
753	168.1	169.5	1.48	55.0	169.5	114.44	0.701	1.0012	8.337	5.85	669.8
754	167.8	169.3	1.48	54.9	169.2	114.26	0.701	1.0012	8.337	5.85	668.7
755	167.5	169.0	1.47	54.9	168.9	114.05	0.701	1.0012	8.337	5.85	667.5
756	167.2	168.7	1.47	54.8	168.6	113.81	0.701	1.0012	8.337	5.85	666.1
757	167.0	168.5	1.47	54.7	168.4	113.65	0.701	1.0012	8.337	5.85	665.2
758	166.7	168.2	1.48	54.7	168.1	113.47	0.701	1.0012	8.337	5.85	664.2
759	166.5	167.9	1.48	54.6	167.9	113.25	0.701	1.0012	8.337	5.85	662.9
760	166.2	167.7	1.48	54.5	167.5	112.99	0.701	1.0012	8.337	5.85	661.4
761	165.9	167.4	1.45	54.5	167.3	112.80	0.701	1.0012	8.337	5.85	660.3
762	165.7	167.1	1.46	54.4	167.0	112.56	0.701	1.0012	8.337	5.85	658.8
763	165.4	166.9	1.46	54.4	166.8	112.38	0.701	1.0012	8.337	5.85	657.8
764	165.2	166.6	1.46	54.4	166.5	112.19	0.701	1.0012	8.337	5.85	656.7
765	164.9	166.3	1.44	54.3	166.3	111.94	0.701	1.0012	8.337	5.85	655.2
766	164.6	166.0	1.44	54.3	165.9	111.69	0.701	1.0012	8.337	5.85	653.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
767	164.3	165.8	1.43	54.2	165.7	111.45	0.701	1.0012	8.337	5.85	652.3
768	164.1	165.5	1.43	54.2	165.4	111.22	0.701	1.0012	8.337	5.85	651.0
769	163.8	165.3	1.44	54.2	165.2	111.00	0.701	1.0012	8.337	5.85	649.7
770	163.6	165.0	1.42	54.1	164.9	110.74	0.716	1.0012	8.337	5.97	661.4
771	163.3	164.7	1.41	54.1	164.6	110.53	0.701	1.0012	8.337	5.85	647.0
772	163.1	164.5	1.41	54.1	164.4	110.27	0.701	1.0012	8.337	5.85	645.5
773	162.8	164.2	1.41	54.1	164.1	109.99	0.701	1.0012	8.337	5.85	643.8
774	162.5	163.9	1.40	54.1	163.8	109.75	0.701	1.0012	8.337	5.85	642.4
775	162.3	163.7	1.40	54.0	163.6	109.52	0.701	1.0012	8.338	5.85	641.1
776	162.0	163.4	1.40	54.0	163.3	109.27	0.701	1.0012	8.338	5.85	639.6
777	161.7	163.1	1.39	54.0	163.0	108.98	0.716	1.0012	8.338	5.97	650.9
778	161.5	162.9	1.40	54.0	162.8	108.79	0.701	1.0012	8.338	5.85	636.8
779	161.2	162.6	1.38	54.0	162.5	108.50	0.701	1.0012	8.338	5.85	635.1
780	160.9	162.3	1.38	54.0	162.2	108.22	0.701	1.0012	8.338	5.85	633.5
781	160.7	162.0	1.37	54.0	161.9	107.95	0.701	1.0012	8.338	5.85	631.9
782	160.4	161.8	1.36	54.0	161.7	107.73	0.701	1.0012	8.338	5.85	630.6
783	160.2	161.6	1.31	54.0	161.4	107.49	0.673	1.0012	8.338	5.61	603.5
784	159.9	161.3	1.36	53.9	161.2	107.26	0.701	1.0012	8.338	5.85	627.8
785	159.7	161.0	1.35	53.9	160.9	106.97	0.716	1.0012	8.338	5.97	639.0
786	159.3	160.7	1.35	53.9	160.6	106.71	0.701	1.0012	8.338	5.85	624.7
787	159.0	160.4	1.34	53.9	160.3	106.39	0.701	1.0012	8.338	5.85	622.8
788	158.8	160.1	1.33	53.9	160.0	106.15	0.716	1.0012	8.338	5.97	634.0
789	158.5	159.9	1.33	53.9	159.8	105.88	0.701	1.0012	8.338	5.85	619.8
790	158.3	159.6	1.32	53.9	159.5	105.61	0.701	1.0012	8.338	5.85	618.2
791	158.2	159.5	1.33	53.9	159.4	105.48	0.716	1.0012	8.338	5.97	630.1
792	158.1	159.4	1.33	53.9	159.3	105.40	0.701	1.0012	8.338	5.85	617.0
793	158.0	159.3	1.34	53.9	159.2	105.31	0.701	1.0012	8.338	5.85	616.5
794	158.1	159.5	1.35	53.8	159.2	105.40	0.701	1.0012	8.338	5.85	617.0
795	158.3	159.7	1.36	53.9	159.5	105.60	0.716	1.0012	8.338	5.97	630.8
796	158.5	159.9	1.36	53.9	159.7	105.80	0.701	1.0012	8.338	5.85	619.3
797	158.9	160.3	1.38	53.9	160.0	106.11	0.701	1.0012	8.338	5.85	621.1
798	159.3	160.7	1.41	53.9	160.4	106.49	0.701	1.0012	8.338	5.85	623.3
799	159.9	161.3	1.40	53.9	160.9	107.06	0.716	1.0012	8.338	5.97	639.5
800	160.6	162.0	1.41	54.0	161.7	107.67	0.701	1.0012	8.338	5.85	630.2
801	161.4	162.8	1.43	54.1	162.4	108.28	0.701	1.0012	8.337	5.85	633.8
802	162.1	163.5	1.45	54.3	163.1	108.86	0.701	1.0012	8.337	5.85	637.2
803	162.9	164.4	1.47	54.4	164.0	109.59	0.701	1.0012	8.337	5.85	641.4
804	163.9	165.3	1.47	54.5	164.9	110.40	0.701	1.0012	8.337	5.85	646.2
805	164.7	166.2	1.51	54.6	165.8	111.17	0.701	1.0012	8.337	5.85	650.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
806	165.6	167.1	1.50	54.7	166.7	111.97	0.701	1.0012	8.337	5.85	655.4
807	166.5	168.0	1.55	54.8	167.6	112.74	0.701	1.0012	8.337	5.85	659.9
808	167.4	169.0	1.53	54.9	168.5	113.62	0.701	1.0012	8.337	5.85	665.0
809	168.2	169.7	1.57	55.0	169.3	114.29	0.701	1.0012	8.337	5.85	668.9
810	168.9	170.5	1.57	55.1	170.1	115.07	0.687	1.0012	8.337	5.73	659.7
811	169.8	171.4	1.60	55.1	170.9	115.78	0.701	1.0012	8.336	5.85	677.6
812	170.6	172.2	1.61	55.2	171.7	116.50	0.701	1.0012	8.336	5.85	681.9
813	171.3	172.9	1.61	55.3	172.5	117.22	0.687	1.0012	8.336	5.73	672.0
814	172.0	173.7	1.63	55.3	173.3	117.93	0.701	1.0012	8.336	5.85	690.2
815	173.0	174.5	1.53	55.4	174.1	118.66	0.673	1.0012	8.336	5.61	666.1
816	173.5	175.2	1.66	55.4	174.8	119.37	0.701	1.0012	8.336	5.85	698.6
817	174.3	176.0	1.67	55.5	175.6	120.06	0.701	1.0012	8.336	5.85	702.7
818	175.1	176.7	1.67	55.5	176.4	120.84	0.687	1.0012	8.336	5.73	692.8
819	175.7	177.5	1.70	55.5	177.1	121.54	0.701	1.0012	8.336	5.85	711.3
820	176.4	178.1	1.68	55.6	177.7	122.19	0.687	1.0012	8.336	5.73	700.5
821	177.2	179.0	1.73	55.6	178.6	122.95	0.687	1.0012	8.336	5.73	704.9
822	178.0	179.8	1.75	55.6	179.3	123.70	0.701	1.0012	8.336	5.85	724.0
823	178.7	180.5	1.77	55.6	180.1	124.46	0.687	1.0012	8.336	5.73	713.5
824	179.2	180.9	1.75	55.6	180.6	124.99	0.687	1.0012	8.336	5.73	716.6
825	179.3	181.1	1.75	55.6	180.8	125.20	0.701	1.0012	8.336	5.85	732.7
826	179.5	181.3	1.77	55.6	181.1	125.41	0.687	1.0012	8.336	5.73	719.0
827	179.6	181.4	1.78	55.7	181.2	125.54	0.687	1.0012	8.336	5.73	719.7
828	179.7	181.5	1.78	55.7	181.3	125.63	0.701	1.0012	8.336	5.85	735.3
829	179.8	181.6	1.80	55.7	181.4	125.70	0.687	1.0012	8.336	5.73	720.6
830	179.9	181.7	1.77	55.7	181.5	125.79	0.687	1.0012	8.336	5.73	721.1
831	179.9	181.6	1.76	55.7	181.5	125.73	0.687	1.0012	8.336	5.73	720.8
832	179.8	181.6	1.77	55.7	181.4	125.70	0.701	1.0012	8.336	5.85	735.7
833	179.8	181.6	1.77	55.8	181.4	125.68	0.687	1.0012	8.336	5.73	720.5
834	179.7	181.5	1.76	55.8	181.3	125.57	0.687	1.0012	8.336	5.73	719.9
835	179.6	181.3	1.76	55.8	181.2	125.47	0.687	1.0012	8.336	5.73	719.3
836	179.5	181.3	1.74	55.8	181.1	125.35	0.687	1.0012	8.336	5.73	718.6
837	179.4	181.2	1.75	55.8	181.0	125.21	0.687	1.0012	8.336	5.73	717.8
838	179.3	181.0	1.74	55.8	180.9	125.08	0.687	1.0012	8.336	5.73	717.1
839	179.2	180.9	1.72	55.8	180.8	124.96	0.687	1.0012	8.336	5.73	716.4
840	179.0	180.8	1.74	55.8	180.6	124.83	0.701	1.0012	8.336	5.85	730.5
841	178.9	180.6	1.74	55.8	180.5	124.63	0.673	1.0012	8.336	5.61	699.6
842	178.7	180.4	1.72	55.9	180.3	124.45	0.701	1.0012	8.336	5.85	728.3
843	178.5	180.2	1.71	55.9	180.1	124.26	0.687	1.0012	8.336	5.73	712.4
844	178.4	180.1	1.70	55.9	180.0	124.09	0.687	1.0012	8.336	5.73	711.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
845	178.3	179.9	1.69	55.9	179.8	123.94	0.673	1.0012	8.336	5.61	695.7
846	178.1	179.8	1.69	55.9	179.6	123.74	0.687	1.0012	8.336	5.73	709.4
847	177.9	179.6	1.70	55.9	179.5	123.61	0.687	1.0012	8.336	5.73	708.6
848	177.7	179.4	1.67	55.9	179.3	123.39	0.687	1.0012	8.336	5.73	707.4
849	177.5	179.2	1.68	55.9	179.1	123.21	0.701	1.0012	8.336	5.85	721.1
850	177.3	179.0	1.68	55.9	178.9	122.98	0.687	1.0012	8.336	5.73	705.0
851	177.2	178.8	1.66	55.9	178.7	122.80	0.687	1.0012	8.336	5.73	704.0
852	177.0	178.6	1.63	55.9	178.5	122.59	0.687	1.0012	8.336	5.73	702.8
853	176.8	178.4	1.64	55.9	178.3	122.35	0.701	1.0012	8.336	5.85	716.0
854	176.5	178.2	1.64	55.9	178.0	122.11	0.687	1.0012	8.336	5.73	700.0
855	176.3	177.9	1.64	55.9	177.8	121.89	0.701	1.0012	8.336	5.85	713.3
856	176.1	177.7	1.62	55.9	177.6	121.67	0.687	1.0012	8.336	5.73	697.5
857	175.9	177.5	1.61	55.9	177.4	121.48	0.701	1.0012	8.336	5.85	711.0
858	175.7	177.3	1.61	55.9	177.2	121.26	0.687	1.0012	8.336	5.73	695.2
859	175.4	177.0	1.60	55.9	177.0	121.06	0.687	1.0012	8.336	5.73	694.0
860	175.2	176.8	1.60	55.9	176.7	120.75	0.701	1.0012	8.336	5.85	706.7
861	175.0	176.6	1.59	55.9	176.5	120.51	0.687	1.0012	8.336	5.73	690.9
862	174.7	176.3	1.60	55.9	176.3	120.32	0.687	1.0012	8.336	5.73	689.8
863	174.5	176.1	1.60	55.9	176.0	120.05	0.701	1.0012	8.336	5.85	702.5
864	174.2	175.8	1.59	55.9	175.7	119.77	0.687	1.0012	8.336	5.73	686.6
865	174.0	175.6	1.59	55.8	175.5	119.66	0.687	1.0012	8.336	5.73	686.0
866	173.8	175.4	1.59	55.6	175.2	119.60	0.701	1.0012	8.336	5.85	700.0
867	173.5	175.1	1.59	55.4	175.0	119.58	0.687	1.0012	8.336	5.73	685.5
868	173.3	174.9	1.58	55.2	174.8	119.52	0.687	1.0012	8.336	5.73	685.2
869	173.0	174.6	1.59	55.1	174.5	119.41	0.701	1.0012	8.337	5.85	698.9
870	172.7	174.3	1.58	55.0	174.2	119.25	0.701	1.0012	8.337	5.85	697.9
871	172.6	174.1	1.57	54.9	174.0	119.15	0.687	1.0012	8.337	5.73	683.2
872	172.3	173.8	1.60	54.8	173.7	118.94	0.701	1.0012	8.337	5.85	696.1
873	172.0	173.6	1.58	54.7	173.5	118.73	0.701	1.0012	8.337	5.85	694.9
874	171.7	173.3	1.57	54.7	173.2	118.50	0.687	1.0012	8.337	5.73	679.4
875	171.6	173.1	1.56	54.6	173.0	118.42	0.701	1.0012	8.337	5.85	693.1
876	171.2	172.8	1.56	54.5	172.7	118.16	0.687	1.0012	8.337	5.73	677.5
877	171.0	172.6	1.55	54.5	172.4	117.96	0.701	1.0012	8.337	5.85	690.5
878	170.7	172.3	1.55	54.4	172.2	117.75	0.701	1.0012	8.337	5.85	689.2
879	170.4	172.0	1.55	54.4	171.9	117.51	0.701	1.0012	8.337	5.85	687.8
880	170.2	171.8	1.55	54.3	171.7	117.33	0.687	1.0012	8.337	5.73	672.7
881	170.0	171.5	1.52	54.3	171.4	117.13	0.701	1.0012	8.337	5.85	685.6
882	169.7	171.2	1.54	54.2	171.1	116.91	0.701	1.0012	8.337	5.85	684.3
883	169.4	170.9	1.54	54.2	170.8	116.64	0.701	1.0012	8.337	5.85	682.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
884	169.2	170.7	1.52	54.1	170.6	116.43	0.701	1.0012	8.337	5.85	681.5
885	168.9	170.5	1.54	54.1	170.4	116.29	0.687	1.0012	8.337	5.73	666.8
886	168.6	170.1	1.52	54.1	170.0	115.97	0.701	1.0012	8.337	5.85	678.9
887	168.4	169.9	1.50	54.0	169.8	115.76	0.701	1.0012	8.338	5.85	677.6
888	168.1	169.7	1.52	54.0	169.5	115.55	0.701	1.0012	8.338	5.85	676.4
889	167.8	169.4	1.51	54.0	169.3	115.31	0.701	1.0012	8.338	5.85	675.0
890	167.6	169.1	1.50	53.9	169.0	115.09	0.687	1.0012	8.338	5.73	659.9
891	167.3	168.8	1.50	53.9	168.7	114.78	0.701	1.0012	8.338	5.85	671.9
892	167.0	168.5	1.51	53.9	168.4	114.51	0.701	1.0012	8.338	5.85	670.3
893	166.7	168.2	1.50	53.9	168.1	114.24	0.701	1.0012	8.338	5.85	668.7
894	166.5	168.0	1.48	53.9	167.9	114.02	0.701	1.0012	8.338	5.85	667.4
895	166.2	167.7	1.49	53.8	167.6	113.78	0.701	1.0012	8.338	5.85	666.0
896	166.0	167.4	1.47	53.8	167.4	113.54	0.701	1.0012	8.338	5.85	664.6
897	165.6	167.1	1.46	53.8	167.0	113.20	0.701	1.0012	8.338	5.85	662.7
898	165.4	166.8	1.46	53.8	166.7	112.92	0.716	1.0012	8.338	5.97	674.5
899	165.1	166.6	1.46	54.0	166.4	112.44	0.701	1.0012	8.338	5.85	658.2
900	164.8	166.3	1.44	54.1	166.2	112.07	0.701	1.0012	8.337	5.85	656.0
901	164.5	166.0	1.44	54.3	165.9	111.63	0.701	1.0012	8.337	5.85	653.4
902	164.3	165.7	1.43	54.4	165.6	111.27	0.701	1.0012	8.337	5.85	651.3
903	164.1	165.6	1.42	54.5	165.4	110.95	0.701	1.0012	8.337	5.85	649.4
904	163.9	165.3	1.38	54.6	165.2	110.60	0.687	1.0012	8.337	5.73	634.1
905	163.8	165.1	1.33	54.7	164.9	110.28	0.658	1.0012	8.337	5.49	605.9
906	163.4	164.8	1.42	54.8	164.7	109.95	0.701	1.0012	8.337	5.85	643.5
907	163.1	164.5	1.41	54.9	164.4	109.52	0.716	1.0012	8.337	5.97	654.1
908	162.8	164.2	1.38	54.9	164.1	109.14	0.687	1.0012	8.337	5.73	625.7
909	162.5	163.9	1.39	55.0	163.8	108.74	0.716	1.0012	8.337	5.97	649.4
910	162.3	163.7	1.39	55.1	163.6	108.47	0.701	1.0012	8.336	5.85	634.9
911	162.0	163.4	1.38	55.2	163.3	108.15	0.701	1.0012	8.336	5.85	633.0
912	161.7	163.1	1.37	55.2	163.0	107.79	0.701	1.0012	8.336	5.85	630.8
913	161.4	162.8	1.36	55.3	162.7	107.44	0.701	1.0012	8.336	5.85	628.8
914	161.2	162.5	1.36	55.3	162.4	107.14	0.701	1.0012	8.336	5.85	627.0
915	160.9	162.2	1.36	55.3	162.1	106.81	0.701	1.0012	8.336	5.85	625.1
916	160.7	162.0	1.36	55.4	161.9	106.51	0.701	1.0012	8.336	5.85	623.4
917	160.4	161.7	1.33	55.4	161.6	106.23	0.701	1.0012	8.336	5.85	621.7
918	160.2	161.5	1.33	55.4	161.4	105.97	0.701	1.0012	8.336	5.85	620.2
919	159.9	161.3	1.33	55.5	161.2	105.70	0.701	1.0012	8.336	5.85	618.6
920	159.6	161.0	1.33	55.5	160.9	105.38	0.701	1.0012	8.336	5.85	616.7
921	159.4	160.7	1.33	55.5	160.6	105.11	0.701	1.0012	8.336	5.85	615.2
922	159.1	160.4	1.32	55.6	160.3	104.77	0.701	1.0012	8.336	5.85	613.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
923	158.8	160.1	1.30	55.6	160.0	104.46	0.701	1.0012	8.336	5.85	611.4
924	158.6	159.9	1.29	55.6	159.8	104.21	0.701	1.0012	8.336	5.85	609.9
925	158.3	159.6	1.30	55.6	159.5	103.86	0.701	1.0012	8.336	5.85	607.9
926	158.1	159.4	1.30	55.6	159.3	103.66	0.701	1.0012	8.336	5.85	606.7
927	157.9	159.2	1.28	55.6	159.1	103.47	0.701	1.0012	8.336	5.85	605.5
928	157.8	159.1	1.27	55.6	159.0	103.31	0.716	1.0012	8.336	5.96	616.9
929	157.6	158.9	1.27	55.7	158.8	103.11	0.701	1.0012	8.336	5.85	603.5
930	157.6	158.8	1.29	55.7	158.7	103.00	0.687	1.0012	8.336	5.73	590.5
931	157.5	158.8	1.30	55.7	158.7	102.98	0.701	1.0012	8.336	5.85	602.7
932	157.8	159.1	1.31	55.7	158.8	103.11	0.701	1.0012	8.336	5.85	603.4
933	158.0	159.4	1.32	55.7	159.1	103.38	0.716	1.0012	8.336	5.96	617.3
934	158.5	159.9	1.34	55.8	159.5	103.78	0.701	1.0012	8.336	5.85	607.3
935	159.0	160.3	1.35	55.8	160.0	104.26	0.701	1.0012	8.336	5.85	610.2
936	159.7	161.1	1.36	55.8	160.7	104.96	0.701	1.0012	8.336	5.85	614.3
937	160.6	161.9	1.31	55.8	161.4	105.67	0.673	1.0012	8.336	5.61	593.2
938	161.3	162.8	1.44	55.8	162.3	106.55	0.701	1.0012	8.336	5.85	623.6
939	162.2	163.6	1.43	55.8	163.2	107.40	0.701	1.0012	8.336	5.85	628.5
940	163.0	164.4	1.44	55.8	164.0	108.23	0.701	1.0012	8.336	5.85	633.4
941	163.8	165.3	1.46	55.8	164.9	109.09	0.701	1.0012	8.336	5.85	638.4
942	164.7	166.2	1.47	55.8	165.8	109.99	0.701	1.0012	8.336	5.85	643.7
943	165.5	167.0	1.50	55.8	166.6	110.81	0.701	1.0012	8.336	5.85	648.5
944	166.3	167.8	1.51	55.8	167.4	111.64	0.701	1.0012	8.336	5.85	653.4
945	167.2	168.7	1.52	55.8	168.3	112.56	0.701	1.0012	8.336	5.85	658.7
946	168.0	169.6	1.54	55.8	169.2	113.38	0.701	1.0012	8.336	5.85	663.5
947	168.8	170.4	1.56	55.8	170.0	114.18	0.701	1.0012	8.336	5.85	668.2
948	169.6	171.1	1.55	55.8	170.7	114.97	0.701	1.0012	8.336	5.85	672.8
949	170.5	172.0	1.58	55.8	171.6	115.87	0.701	1.0012	8.336	5.85	678.1
950	171.3	172.9	1.61	55.8	172.5	116.73	0.687	1.0012	8.336	5.73	669.2
951	172.0	173.6	1.60	55.8	173.3	117.49	0.701	1.0012	8.336	5.85	687.6
952	173.0	174.6	1.65	55.8	174.2	118.40	0.701	1.0012	8.336	5.85	692.9
953	173.8	175.4	1.63	55.8	175.0	119.20	0.687	1.0012	8.336	5.73	683.3
954	174.5	176.2	1.67	55.8	175.8	119.98	0.701	1.0012	8.336	5.85	702.1
955	175.4	177.0	1.67	55.8	176.7	120.85	0.701	1.0012	8.336	5.85	707.2
956	176.2	177.9	1.69	55.8	177.4	121.62	0.687	1.0012	8.336	5.73	697.2
957	177.1	178.8	1.70	55.8	178.4	122.51	0.687	1.0012	8.336	5.73	702.3
958	177.9	179.7	1.74	55.8	179.2	123.39	0.701	1.0012	8.336	5.85	722.1
959	178.7	180.5	1.79	55.9	180.0	124.17	0.687	1.0012	8.336	5.73	711.9
960	179.4	181.1	1.77	55.9	180.8	124.95	0.687	1.0012	8.336	5.73	716.3
961	179.7	181.4	1.77	55.9	181.2	125.31	0.701	1.0012	8.336	5.85	733.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
962	179.9	181.7	1.76	55.9	181.4	125.53	0.687	1.0012	8.336	5.73	719.6
963	180.1	181.9	1.78	55.9	181.6	125.71	0.687	1.0012	8.336	5.73	720.6
964	180.1	181.9	1.77	55.9	181.7	125.76	0.687	1.0012	8.336	5.73	721.0
965	180.2	182.0	1.78	55.9	181.7	125.89	0.701	1.0012	8.336	5.85	736.7
966	180.2	181.9	1.79	55.7	181.8	126.09	0.687	1.0012	8.336	5.73	722.9
967	180.1	181.9	1.80	55.4	181.7	126.30	0.701	1.0012	8.336	5.85	739.2
968	180.1	181.8	1.77	55.3	181.7	126.44	0.687	1.0012	8.336	5.73	724.9
969	179.9	181.7	1.80	55.1	181.6	126.46	0.687	1.0012	8.336	5.73	725.1
970	179.9	181.6	1.78	55.0	181.5	126.50	0.687	1.0012	8.337	5.73	725.3
971	179.7	181.5	1.80	54.9	181.4	126.48	0.687	1.0012	8.337	5.73	725.2
972	179.6	181.4	1.78	54.8	181.2	126.45	0.687	1.0012	8.337	5.73	725.0
973	179.5	181.2	1.77	54.7	181.1	126.39	0.701	1.0012	8.337	5.85	739.8
974	179.3	181.1	1.77	54.6	180.9	126.28	0.687	1.0012	8.337	5.73	724.1
975	179.2	181.0	1.75	54.6	180.9	126.29	0.687	1.0012	8.337	5.73	724.1
976	179.2	180.9	1.66	54.5	180.7	126.19	0.673	1.0012	8.337	5.61	708.4
977	179.0	180.7	1.73	54.5	180.6	126.12	0.673	1.0012	8.337	5.61	708.1
978	178.7	180.4	1.74	54.4	180.4	125.95	0.701	1.0012	8.337	5.85	737.2
979	178.5	180.3	1.73	54.3	180.2	125.82	0.687	1.0012	8.337	5.73	721.4
980	178.3	180.1	1.73	54.3	179.9	125.64	0.701	1.0012	8.337	5.85	735.4
981	178.2	179.9	1.73	54.2	179.8	125.53	0.687	1.0012	8.337	5.73	719.8
982	178.0	179.7	1.71	54.2	179.6	125.40	0.687	1.0012	8.337	5.73	719.0
983	177.7	179.4	1.71	54.1	179.3	125.18	0.687	1.0012	8.337	5.73	717.8
984	177.6	179.3	1.70	54.1	179.2	125.10	0.701	1.0012	8.337	5.85	732.3
985	177.4	179.1	1.70	54.0	178.9	124.92	0.687	1.0012	8.338	5.73	716.3
986	177.1	178.8	1.67	54.0	178.7	124.74	0.687	1.0012	8.338	5.73	715.3
987	176.9	178.6	1.68	53.9	178.4	124.50	0.701	1.0012	8.338	5.85	728.8
988	176.7	178.3	1.67	53.9	178.2	124.29	0.687	1.0012	8.338	5.73	712.7
989	176.5	178.1	1.66	53.9	178.0	124.11	0.701	1.0012	8.338	5.85	726.5
990	176.2	177.9	1.67	53.9	177.8	123.89	0.687	1.0012	8.338	5.73	710.4
991	176.0	177.7	1.67	53.9	177.5	123.68	0.687	1.0012	8.338	5.73	709.2
992	175.8	177.4	1.65	53.9	177.3	123.46	0.701	1.0012	8.338	5.85	722.7
993	175.5	177.2	1.66	53.8	177.1	123.24	0.687	1.0012	8.338	5.73	706.7
994	175.3	176.9	1.65	53.8	176.8	122.99	0.701	1.0012	8.338	5.85	720.0
995	175.0	176.6	1.64	53.8	176.5	122.72	0.687	1.0012	8.338	5.73	703.7
996	174.9	176.4	1.54	53.8	176.3	122.47	0.658	1.0012	8.338	5.49	673.0
997	174.5	176.1	1.61	54.0	176.1	122.08	0.687	1.0012	8.338	5.73	700.0
998	174.3	175.9	1.62	54.1	175.8	121.65	0.701	1.0012	8.337	5.85	712.1
999	174.1	175.7	1.61	54.3	175.6	121.31	0.701	1.0012	8.337	5.85	710.1
1000	173.8	175.4	1.61	54.4	175.3	120.93	0.687	1.0012	8.337	5.73	693.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1001	173.5	175.2	1.60	54.5	175.0	120.55	0.701	1.0012	8.337	5.85	705.6
1002	173.3	174.9	1.58	54.6	174.8	120.19	0.687	1.0012	8.337	5.73	689.1
1003	173.1	174.6	1.59	54.7	174.5	119.81	0.701	1.0012	8.337	5.85	701.2
1004	172.8	174.4	1.59	54.8	174.3	119.50	0.687	1.0012	8.337	5.73	685.1
1005	172.5	174.1	1.57	54.9	174.0	119.10	0.687	1.0012	8.337	5.73	682.8
1006	172.2	173.8	1.56	55.0	173.7	118.72	0.701	1.0012	8.337	5.85	694.8
1007	172.0	173.5	1.56	55.1	173.4	118.36	0.687	1.0012	8.337	5.73	678.6
1008	171.7	173.3	1.58	55.1	173.2	118.00	0.701	1.0012	8.336	5.85	690.6
1009	171.5	173.0	1.56	55.2	172.9	117.71	0.687	1.0012	8.336	5.73	674.8
1010	171.2	172.8	1.56	55.3	172.7	117.42	0.701	1.0012	8.336	5.85	687.2
1011	170.9	172.5	1.53	55.3	172.4	117.06	0.701	1.0012	8.336	5.85	685.1
1012	170.7	172.2	1.54	55.4	172.1	116.76	0.701	1.0012	8.336	5.85	683.4
1013	170.4	171.9	1.53	55.4	171.8	116.45	0.701	1.0012	8.336	5.85	681.5
1014	170.1	171.6	1.52	55.4	171.5	116.10	0.687	1.0012	8.336	5.73	665.6
1015	169.9	171.4	1.52	55.4	171.3	115.89	0.701	1.0012	8.336	5.85	678.3
1016	169.6	171.2	1.53	55.4	171.0	115.59	0.701	1.0012	8.336	5.85	676.5
1017	169.3	170.8	1.52	55.5	170.7	115.27	0.687	1.0012	8.336	5.73	660.9
1018	169.1	170.6	1.50	55.5	170.5	115.01	0.701	1.0012	8.336	5.85	673.1
1019	168.9	170.4	1.51	55.5	170.3	114.74	0.701	1.0012	8.336	5.85	671.5
1020	168.6	170.0	1.49	55.5	169.9	114.43	0.701	1.0012	8.336	5.85	669.7
1021	168.3	169.8	1.47	55.5	169.7	114.15	0.687	1.0012	8.336	5.73	654.4
1022	168.0	169.5	1.48	55.5	169.4	113.87	0.701	1.0012	8.336	5.85	666.4
1023	167.7	169.2	1.47	55.6	169.1	113.57	0.701	1.0012	8.336	5.85	664.6
1024	167.4	168.9	1.54	55.6	168.8	113.26	0.716	1.0012	8.336	5.96	676.4
1025	167.1	168.6	1.52	55.7	168.5	112.85	0.716	1.0012	8.336	5.96	673.9
1026	166.8	168.3	1.53	55.6	168.2	112.69	0.716	1.0012	8.336	5.96	673.0
1027	166.5	168.0	1.53	55.6	167.9	112.33	0.716	1.0012	8.336	5.96	670.8
1028	166.2	167.8	1.53	55.6	167.7	112.07	0.730	1.0012	8.336	6.08	682.7
1029	165.9	167.4	1.50	55.6	167.4	111.78	0.716	1.0012	8.336	5.96	667.5
1030	165.6	167.2	1.52	55.6	167.0	111.45	0.730	1.0012	8.336	6.08	678.9
1031	165.2	166.8	1.54	55.6	166.7	111.10	0.730	1.0012	8.336	6.08	676.8
1032	164.9	166.5	1.53	55.6	166.4	110.81	0.744	1.0012	8.336	6.20	688.2
1033	164.7	166.3	1.55	55.6	166.2	110.57	0.744	1.0012	8.336	6.20	686.7
1034	164.4	166.0	1.54	55.5	165.9	110.33	0.730	1.0012	8.336	6.08	672.1
1035	164.2	165.7	1.55	55.4	165.6	110.23	0.744	1.0012	8.336	6.20	684.6
1036	163.8	165.3	1.53	55.2	165.3	110.08	0.744	1.0012	8.336	6.20	683.7
1037	163.6	165.1	1.53	54.9	165.0	110.05	0.730	1.0012	8.337	6.08	670.4
1038	163.2	164.8	1.53	54.8	164.7	109.92	0.744	1.0012	8.337	6.20	682.8
1039	162.9	164.5	1.52	54.6	164.4	109.73	0.744	1.0012	8.337	6.20	681.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1040	162.6	164.2	1.54	54.5	164.1	109.55	0.744	1.0012	8.337	6.20	680.5
1041	162.4	163.9	1.51	54.4	163.8	109.36	0.744	1.0012	8.337	6.20	679.3
1042	162.1	163.6	1.53	54.4	163.5	109.12	0.744	1.0012	8.337	6.20	677.8
1043	161.8	163.4	1.52	54.3	163.2	108.93	0.744	1.0012	8.337	6.20	676.7
1044	161.5	163.0	1.53	54.2	162.9	108.69	0.758	1.0012	8.337	6.32	688.2
1045	161.2	162.7	1.55	54.2	162.6	108.38	0.758	1.0012	8.337	6.32	686.1
1046	160.8	162.4	1.56	54.4	162.3	107.91	0.758	1.0012	8.337	6.32	683.2
1047	160.5	162.1	1.54	54.5	162.0	107.52	0.758	1.0012	8.337	6.32	680.7
1048	160.2	161.8	1.54	54.5	161.7	107.12	0.773	1.0012	8.337	6.44	690.9
1049	159.9	161.5	1.55	54.6	161.4	106.76	0.773	1.0012	8.337	6.44	688.7
1050	159.6	161.1	1.53	54.7	161.1	106.41	0.758	1.0012	8.337	6.32	673.7
1051	159.3	160.9	1.53	54.7	160.8	106.04	0.773	1.0012	8.337	6.44	684.0
1052	159.0	160.5	1.53	54.8	160.4	105.65	0.773	1.0012	8.337	6.44	681.5
1053	158.7	160.2	1.51	54.9	160.1	105.28	0.758	1.0012	8.337	6.32	666.5
1054	158.4	159.9	1.50	55.0	159.8	104.87	0.758	1.0012	8.337	6.32	663.9
1055	158.1	159.6	1.51	54.9	159.5	104.57	0.773	1.0012	8.337	6.44	674.5
1056	157.7	159.2	1.53	55.0	159.2	104.11	0.773	1.0012	8.337	6.44	671.5
1057	157.4	159.0	1.54	55.0	158.9	103.86	0.787	1.0012	8.337	6.56	682.3
1058	157.4	158.9	1.46	55.1	158.7	103.66	0.744	1.0012	8.337	6.20	643.8
1059	157.2	158.7	1.54	55.1	158.6	103.50	0.787	1.0012	8.336	6.56	679.9
1060	157.0	158.6	1.55	55.1	158.5	103.34	0.773	1.0012	8.336	6.44	666.5
1061	157.0	158.5	1.53	55.2	158.4	103.22	0.787	1.0012	8.336	6.56	678.1
1062	156.8	158.5	1.67	55.2	158.3	103.13	0.830	1.0012	8.336	6.92	714.4
1063	156.8	158.5	1.68	55.2	158.3	103.10	0.830	1.0012	8.336	6.92	714.2
1064	157.0	158.7	1.70	55.2	158.5	103.29	0.830	1.0012	8.336	6.92	715.6
1065	157.3	159.0	1.72	55.2	158.8	103.58	0.844	1.0012	8.336	7.04	730.0
1066	157.7	159.4	1.74	55.1	159.2	104.04	0.830	1.0012	8.336	6.92	720.7
1067	158.3	160.0	1.74	55.2	159.7	104.47	0.830	1.0012	8.336	6.92	723.7
1068	158.9	160.7	1.76	55.2	160.3	105.16	0.844	1.0012	8.336	7.04	741.1
1069	159.7	161.5	1.79	55.2	161.1	105.93	0.830	1.0012	8.336	6.92	733.9
1070	160.5	162.3	1.81	55.1	162.0	106.83	0.830	1.0012	8.336	6.92	740.1
1071	161.4	163.2	1.82	55.2	162.8	107.59	0.830	1.0012	8.336	6.92	745.3
1072	162.3	164.1	1.85	55.3	163.7	108.47	0.830	1.0012	8.336	6.92	751.4
1073	163.2	165.0	1.87	55.2	164.7	109.50	0.830	1.0012	8.336	6.92	758.6
1074	164.1	166.0	1.90	55.2	165.7	110.44	0.830	1.0012	8.336	6.92	765.1
1075	165.0	166.9	1.90	55.3	166.5	111.28	0.830	1.0012	8.336	6.92	770.9
1076	165.9	167.8	1.92	55.3	167.4	112.12	0.830	1.0012	8.336	6.92	776.8
1077	166.8	168.7	1.92	55.3	168.3	113.06	0.816	1.0012	8.336	6.80	769.7
1078	167.9	169.7	1.74	55.2	169.3	114.09	0.773	1.0012	8.336	6.44	735.9

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1079	168.8	170.6	1.74	55.0	170.2	115.15	0.744	1.0012	8.337	6.20	715.2
1080	169.9	171.6	1.74	54.9	171.2	116.33	0.744	1.0012	8.337	6.20	722.6
1081	170.7	172.4	1.77	54.7	172.0	117.27	0.758	1.0012	8.337	6.32	742.4
1082	171.6	173.4	1.79	54.7	173.0	118.33	0.744	1.0012	8.337	6.20	735.0
1083	172.5	174.3	1.81	54.6	173.9	119.33	0.744	1.0012	8.337	6.20	741.2
1084	173.4	175.2	1.84	54.5	174.8	120.25	0.744	1.0012	8.337	6.20	746.9
1085	174.3	176.1	1.87	54.5	175.7	121.24	0.744	1.0012	8.337	6.20	753.1
1086	175.2	177.1	1.83	54.5	176.6	122.16	0.730	1.0012	8.337	6.08	744.2
1087	176.2	178.0	1.72	54.4	177.5	123.08	0.701	1.0012	8.337	5.85	720.4
1088	177.2	178.9	1.76	54.4	178.5	124.08	0.687	1.0012	8.337	5.73	711.4
1089	178.1	179.9	1.77	54.4	179.4	125.02	0.701	1.0012	8.337	5.85	731.8
1090	179.0	180.8	1.80	54.4	180.3	125.98	0.687	1.0012	8.337	5.73	722.3
1091	179.5	181.3	1.80	54.3	181.0	126.70	0.687	1.0012	8.337	5.73	726.5
1092	179.7	181.5	1.80	54.3	181.3	127.04	0.687	1.0012	8.337	5.73	728.4
1093	180.0	181.8	1.80	54.2	181.5	127.31	0.687	1.0012	8.337	5.73	730.0
1094	180.1	181.9	1.80	54.2	181.7	127.52	0.687	1.0012	8.337	5.73	731.2
1095	180.2	182.1	1.83	54.1	181.8	127.70	0.701	1.0012	8.337	5.85	747.5
1096	180.2	182.1	1.81	54.1	181.8	127.78	0.687	1.0012	8.337	5.73	732.7
1097	180.2	182.0	1.82	54.0	181.9	127.85	0.687	1.0012	8.338	5.73	733.1
1098	180.2	182.0	1.80	54.0	181.8	127.82	0.687	1.0012	8.338	5.73	732.9
1099	180.1	181.9	1.80	53.9	181.7	127.79	0.701	1.0012	8.338	5.85	748.0
1100	180.0	181.8	1.79	53.9	181.7	127.75	0.687	1.0012	8.338	5.73	732.5
1101	179.9	181.7	1.79	53.9	181.5	127.68	0.687	1.0012	8.338	5.73	732.1
1102	179.8	181.5	1.78	53.8	181.4	127.60	0.687	1.0012	8.338	5.73	731.7
1103	179.6	181.4	1.78	53.8	181.3	127.44	0.687	1.0012	8.338	5.73	730.8
1104	179.4	181.2	1.77	53.8	181.1	127.28	0.701	1.0012	8.338	5.85	745.1
1105	179.3	181.1	1.74	53.8	180.9	127.19	0.687	1.0012	8.338	5.73	729.3
1106	179.1	180.9	1.77	53.7	180.8	127.01	0.687	1.0012	8.338	5.73	728.3
1107	179.0	180.8	1.78	53.7	180.6	126.88	0.687	1.0012	8.338	5.73	727.6
1108	178.8	180.6	1.75	53.7	180.4	126.73	0.687	1.0012	8.338	5.73	726.7
1109	178.7	180.4	1.74	53.7	180.3	126.60	0.687	1.0012	8.338	5.73	726.0
1110	178.5	180.2	1.71	53.7	180.1	126.42	0.701	1.0012	8.338	5.85	740.0
1111	178.3	180.0	1.74	53.6	179.9	126.23	0.687	1.0012	8.338	5.73	723.8
1112	178.1	179.8	1.73	53.6	179.7	126.05	0.701	1.0012	8.338	5.85	737.8
1113	177.9	179.6	1.72	53.6	179.5	125.84	0.687	1.0012	8.338	5.73	721.6
1114	177.7	179.4	1.72	53.6	179.3	125.66	0.687	1.0012	8.338	5.73	720.6
1115	177.4	179.1	1.71	53.6	179.0	125.45	0.687	1.0012	8.338	5.73	719.4
1116	177.3	179.0	1.70	53.6	178.8	125.26	0.701	1.0012	8.338	5.85	733.3
1117	177.1	178.8	1.67	53.6	178.6	125.06	0.687	1.0012	8.338	5.73	717.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1118	176.9	178.6	1.68	53.6	178.4	124.87	0.687	1.0012	8.338	5.73	716.0
1119	176.7	178.4	1.67	53.6	178.2	124.65	0.687	1.0012	8.338	5.73	714.8
1120	176.4	178.1	1.65	53.5	178.0	124.43	0.701	1.0012	8.338	5.85	728.4
1121	176.2	177.8	1.66	53.5	177.8	124.20	0.687	1.0012	8.338	5.73	712.2
1122	176.0	177.6	1.66	53.5	177.5	123.96	0.687	1.0012	8.338	5.73	710.9
1123	175.8	177.4	1.65	53.5	177.3	123.77	0.701	1.0012	8.338	5.85	724.5
1124	175.5	177.1	1.66	53.5	177.0	123.50	0.701	1.0012	8.338	5.85	722.9
1125	175.2	176.8	1.66	53.5	176.7	123.24	0.687	1.0012	8.338	5.73	706.7
1126	175.0	176.7	1.65	53.5	176.5	123.05	0.687	1.0012	8.338	5.73	705.6
1127	174.8	176.4	1.63	53.5	176.3	122.79	0.701	1.0012	8.338	5.85	718.8
1128	174.5	176.1	1.61	53.5	176.1	122.58	0.687	1.0012	8.338	5.73	702.9
1129	174.3	175.9	1.61	53.5	175.8	122.34	0.701	1.0012	8.338	5.85	716.2
1130	174.0	175.6	1.62	53.5	175.5	122.07	0.687	1.0012	8.338	5.73	700.0
1131	173.8	175.4	1.59	53.5	175.3	121.78	0.701	1.0012	8.338	5.85	712.9
1132	173.5	175.1	1.62	53.6	175.0	121.36	0.687	1.0012	8.338	5.73	695.9
1133	173.3	174.9	1.58	53.8	174.8	120.94	0.701	1.0012	8.338	5.85	707.9
1134	172.9	174.5	1.61	54.0	174.4	120.47	0.687	1.0012	8.338	5.73	690.8
1135	172.7	174.3	1.58	54.1	174.2	120.12	0.701	1.0012	8.337	5.85	703.1
1136	172.5	174.1	1.59	54.2	174.0	119.75	0.687	1.0012	8.337	5.73	686.6
1137	172.2	173.8	1.58	54.3	173.7	119.41	0.687	1.0012	8.337	5.73	684.7
1138	172.0	173.6	1.57	54.4	173.4	119.02	0.701	1.0012	8.337	5.85	696.7
1139	171.7	173.3	1.57	54.5	173.2	118.66	0.687	1.0012	8.337	5.73	680.4
1140	171.4	173.0	1.59	54.6	172.9	118.35	0.716	1.0012	8.337	5.97	706.8
1141	171.1	172.7	1.59	54.7	172.6	117.95	0.701	1.0012	8.337	5.85	690.4
1142	170.8	172.4	1.59	54.7	172.3	117.63	0.701	1.0012	8.337	5.85	688.5
1143	170.6	172.1	1.59	54.8	172.1	117.29	0.716	1.0012	8.337	5.97	700.5
1144	170.2	171.9	1.67	54.8	171.8	117.00	0.730	1.0012	8.337	6.08	712.8
1145	169.9	171.5	1.67	54.8	171.5	116.63	0.744	1.0012	8.337	6.20	724.4
1146	169.6	171.3	1.67	54.8	171.2	116.32	0.744	1.0012	8.337	6.20	722.5
1147	169.3	171.0	1.67	54.9	170.9	116.00	0.744	1.0012	8.337	6.20	720.5
1148	169.0	170.6	1.66	54.9	170.6	115.67	0.744	1.0012	8.337	6.20	718.5
1149	168.7	170.4	1.64	54.9	170.3	115.35	0.730	1.0012	8.337	6.08	702.7
1150	168.5	170.1	1.66	54.9	170.0	115.09	0.744	1.0012	8.337	6.20	714.8
1151	168.2	169.8	1.64	55.0	169.7	114.71	0.744	1.0012	8.337	6.20	712.5
1152	167.8	169.5	1.64	55.0	169.4	114.39	0.744	1.0012	8.337	6.20	710.5
1153	167.5	169.2	1.68	55.0	169.1	114.09	0.758	1.0012	8.337	6.32	722.3
1154	167.2	168.9	1.66	55.0	168.8	113.76	0.758	1.0012	8.337	6.32	720.2
1155	166.9	168.6	1.64	55.0	168.5	113.46	0.744	1.0012	8.337	6.20	704.7
1156	166.7	168.3	1.62	55.1	168.2	113.15	0.758	1.0012	8.337	6.32	716.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1157	166.3	167.9	1.63	55.1	167.8	112.78	0.758	1.0012	8.337	6.32	714.0
1158	166.0	167.7	1.64	55.1	167.6	112.44	0.758	1.0012	8.336	6.32	711.8
1159	165.7	167.3	1.65	55.1	167.3	112.18	0.758	1.0012	8.337	6.32	710.2
1160	165.4	167.0	1.63	55.1	166.9	111.86	0.758	1.0012	8.337	6.32	708.2
1161	165.1	166.7	1.62	55.1	166.6	111.53	0.758	1.0012	8.336	6.32	706.1
1162	164.8	166.4	1.61	55.1	166.3	111.20	0.758	1.0012	8.336	6.32	703.9
1163	164.5	166.1	1.61	55.1	166.1	110.93	0.758	1.0012	8.336	6.32	702.2
1164	164.3	165.9	1.61	55.1	165.8	110.62	0.758	1.0012	8.336	6.32	700.3
1165	164.0	165.6	1.60	55.2	165.5	110.31	0.758	1.0012	8.336	6.32	698.3
1166	163.6	165.2	1.60	55.2	165.1	109.97	0.758	1.0012	8.336	6.32	696.2
1167	163.4	165.0	1.59	55.2	164.9	109.68	0.758	1.0012	8.336	6.32	694.3
1168	163.0	164.6	1.61	55.3	164.6	109.28	0.773	1.0012	8.336	6.44	704.9
1169	162.7	164.3	1.63	55.2	164.2	109.03	0.773	1.0012	8.336	6.44	703.2
1170	162.4	164.1	1.64	55.2	163.9	108.77	0.787	1.0012	8.336	6.56	714.5
1171	162.1	163.7	1.63	55.2	163.6	108.44	0.773	1.0012	8.336	6.44	699.4
1172	161.8	163.4	1.61	55.2	163.3	108.14	0.787	1.0012	8.336	6.56	710.4
1173	161.6	163.2	1.62	55.2	163.1	107.86	0.787	1.0012	8.336	6.56	708.5
1174	161.2	162.8	1.61	55.2	162.7	107.52	0.773	1.0012	8.336	6.44	693.5
1175	160.9	162.5	1.60	55.2	162.4	107.19	0.787	1.0012	8.336	6.56	704.2
1176	160.5	162.2	1.61	55.2	162.1	106.84	0.801	1.0012	8.336	6.68	714.6
1177	160.2	161.9	1.63	55.2	161.8	106.57	0.801	1.0012	8.336	6.68	712.8
1178	159.8	161.5	1.64	55.2	161.4	106.16	0.801	1.0012	8.336	6.68	710.1
1179	159.5	161.2	1.68	55.2	161.1	105.85	0.816	1.0012	8.336	6.80	720.7
1180	159.2	160.9	1.67	55.2	160.7	105.54	0.816	1.0012	8.336	6.80	718.5
1181	159.0	160.5	1.58	55.3	160.4	105.16	0.801	1.0012	8.336	6.68	703.4
1182	158.5	160.2	1.69	55.2	160.1	104.92	0.816	1.0012	8.336	6.80	714.3
1183	158.2	159.9	1.70	55.2	159.7	104.58	0.844	1.0012	8.336	7.04	737.0
1184	157.8	159.5	1.69	55.2	159.5	104.28	0.830	1.0012	8.336	6.92	722.4
1185	157.6	159.3	1.67	55.2	159.2	103.91	0.844	1.0012	8.336	7.04	732.3
1186	157.4	159.0	1.68	55.1	159.0	103.82	0.844	1.0012	8.336	7.04	731.6
1187	157.1	158.8	1.69	55.1	158.7	103.54	0.830	1.0012	8.336	6.92	717.3
1188	157.0	158.7	1.66	55.2	158.5	103.36	0.830	1.0012	8.336	6.92	716.0
1189	157.0	158.6	1.67	55.1	158.5	103.33	0.844	1.0012	8.336	7.04	728.2
1190	157.0	158.7	1.67	55.2	158.5	103.36	0.830	1.0012	8.336	6.92	716.1
1191	157.1	158.8	1.69	55.2	158.6	103.39	0.830	1.0012	8.336	6.92	716.2
1192	157.4	159.0	1.68	55.2	158.8	103.58	0.830	1.0012	8.336	6.92	717.5
1193	157.6	159.3	1.69	55.2	159.1	103.92	0.830	1.0012	8.336	6.92	719.9
1194	157.9	159.6	1.72	55.2	159.4	104.19	0.830	1.0012	8.336	6.92	721.8
1195	158.3	160.0	1.72	55.3	159.7	104.48	0.830	1.0012	8.336	6.92	723.8

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1196	158.8	160.5	1.76	55.2	160.2	105.02	0.816	1.0012	8.336	6.80	715.0
1197	159.4	161.1	1.74	55.2	160.8	105.57	0.830	1.0012	8.336	6.92	731.4
1198	160.0	161.8	1.75	55.2	161.4	106.19	0.830	1.0012	8.336	6.92	735.7
1199	160.7	162.5	1.79	55.3	162.1	106.85	0.830	1.0012	8.336	6.92	740.2
1200	161.6	163.4	1.79	55.3	163.0	107.72	0.830	1.0012	8.336	6.92	746.3
1201	162.5	164.3	1.83	55.4	163.9	108.54	0.830	1.0012	8.336	6.92	751.9
1202	163.4	165.2	1.84	55.3	164.8	109.54	0.830	1.0012	8.336	6.92	758.8
1203	164.1	166.0	1.84	55.3	165.6	110.34	0.816	1.0012	8.336	6.80	751.2
1204	165.1	166.9	1.78	55.4	166.5	111.14	0.787	1.0012	8.336	6.56	730.1
1205	166.0	167.8	1.79	55.3	167.4	112.17	0.787	1.0012	8.336	6.56	736.8
1206	166.9	168.7	1.80	55.4	168.3	112.90	0.787	1.0012	8.336	6.56	741.6
1207	167.8	169.7	1.82	55.4	169.2	113.86	0.773	1.0012	8.336	6.44	734.4
1208	168.8	170.6	1.78	55.4	170.1	114.76	0.773	1.0012	8.336	6.44	740.2
1209	169.7	171.5	1.76	55.4	171.1	115.62	0.773	1.0012	8.336	6.44	745.7
1210	170.7	172.4	1.67	55.2	172.0	116.75	0.716	1.0012	8.336	5.96	697.3
1211	171.7	173.3	1.68	55.1	172.9	117.78	0.716	1.0012	8.336	5.97	703.4
1212	172.8	174.4	1.60	55.0	173.9	118.92	0.673	1.0012	8.337	5.61	667.6
1213	173.7	175.4	1.75	54.9	174.9	120.04	0.716	1.0012	8.337	5.97	716.9
1214	174.7	176.5	1.75	54.8	176.0	121.22	0.701	1.0012	8.337	5.85	709.5
1215	176.0	177.7	1.74	54.7	177.2	122.50	0.716	1.0012	8.337	5.97	731.6
1216	177.0	178.7	1.80	54.7	178.3	123.62	0.716	1.0012	8.337	5.97	738.3
1217	177.9	179.7	1.80	54.6	179.3	124.63	0.701	1.0012	8.337	5.85	729.5
1218	178.8	180.6	1.79	54.6	180.2	125.59	0.687	1.0012	8.337	5.73	720.1
1219	179.7	181.5	1.82	54.5	181.1	126.56	0.701	1.0012	8.337	5.85	740.8
1220	180.2	182.0	1.73	54.5	181.7	127.17	0.658	1.0012	8.337	5.49	698.8
1221	180.5	182.2	1.73	54.4	182.0	127.55	0.658	1.0012	8.337	5.49	700.9
1222	180.7	182.5	1.76	54.4	182.2	127.85	0.658	1.0012	8.337	5.49	702.5
1223	180.8	182.5	1.77	54.3	182.3	127.98	0.673	1.0012	8.337	5.61	718.5
1224	180.9	182.6	1.76	54.3	182.5	128.17	0.658	1.0012	8.337	5.49	704.3
1225	180.9	182.6	1.79	54.2	182.5	128.22	0.687	1.0012	8.337	5.73	735.2
1226	180.8	182.6	1.81	54.2	182.4	128.24	0.673	1.0012	8.337	5.61	720.0
1227	180.9	182.6	1.70	54.2	182.4	128.19	0.658	1.0012	8.337	5.49	704.4
1228	180.7	182.5	1.80	54.1	182.4	128.23	0.673	1.0012	8.337	5.61	719.9

Gravimetric Lab Data

ASTM E2515

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Run No.: 3
 Test Date: 12/4/24

OMNI Eq. ID Numbers
 Analytical Scale _____
 Audit Weight Set: _____
 Analytical Scale _____
 Hydrometer _____
 Filters are weighed In Pairs

Train A

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	12/05/24 @ 9:30	Filter	F487/A	242.7	237.4	5.3	5.3
Probe catch*	12/05/24 @ 9:30	Probe	71	117766.2	117766.1	0.1	0.1
filter seals catch*	12/05/24 @ 9:30	Seals	S904	3295.0	3294.2	0.8	0.8
				Total Particulate, mg:		6.2	6.2

Train B

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	12/05/24 @ 9:30	Filter	F488/A	242.2	237.5	4.7	4.7
Probe catch*	12/05/24 @ 9:30	Probe	74	117664.6	117664.6	0.0	0.0
filter seals catch*	12/05/24 @ 9:30	Seals	S907	4147.9	4146.4	1.5	1.5
Sub-Total				Total Particulate, mg:		6.2	6.2

Train C - First Hour

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
FilterPairs	12/04/24 @ 13:40	Filter	F489/A	238.5	238.3	0.2	0.2
Probe catch*	12/04/24 @ 13:40	Probe	78	117460.4	117460.2	0.2	0.2
filter seals catch*	12/04/24 @ 13:40	Seals	S908	3333.3	3332.6	0.7	0.7
				Total Particulate, mg:		1.1	1.1

Train D - Ambient Background

Sample Component Date / Time in Desiccator		Reagent	Filter # or	Weights			
				Final, mg	Tare, mg	Particulate, mg	
Filter catch*	12/05/24 @ 9:30	Filter	F417	125.9	125.5	0.4	
				Total Particulate, mg:		0.4	

$$\text{Final (mg)} - \text{Tare (mg)} = \text{Particulate (mg)}$$

NOTE: The Uncorrected values are those where any negative filter weights are taken as a negative value. This can possibly occur when filter matter adheres the O-ring seals and thereby transfers some mass to the O-ring. The Corrected values reflect where any negative filter weights are taken as ZERO, thus not accounting for any transfer of mass and resultingly over-reporting. Corrected values were added to this analysis to report the "Corrected" results in this report in response to a request by the US EPA. In cases where the Final weight minus the Tare weight of the Ambient filter occurs, it is taken as a ZERO. Any negative probe weights are evaluated pursuant to clause of ASTM E25215 (or appropriately associated test standard as defined in the introduction of this report).

Technician Signature: _____

Reviewed By: _____

Run 3 - Run Notes

Manufacturer Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 3
Test Date: 12/4/2024

This supplemental section of miscellaneous run notes is comprised of the following:

- Appliance Operation Notes
- Velocity Traverse / Supplemental Run Notes
- Test Fuel Notes
- Gravimetric Analysis Notes

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 0117WB043E Run Number: 3
Model: 560.1 Tracking Number: 2495 Date: 12/04/24
Test Crew: T. Tong, K. Morgan, R. Tiegs

Primary Air Control Settings

Automatic

Secondary: FIXED

Tertiary/Pilot: N/A

Fan: Auto

Preburn Notes

Time	Notes
7:36	Started to record Preburn
12:35	Start Sampling
9:03	(Following Day) Test Ended.

Sampling Portion Notes

Sketch test fuel configuration:

SEE Photos

Start up procedures & Timeline:

Bypass: Not Used

Fuel loaded by: 65 sec

Door closed at: 76 sec

Primary air: Auto

Notes: NONE

Time	Notes
12:35	Started to sample and loaded 165.7 lbs
13:35	First hour sampling ended

Technician Signature: R. Morgan

Date: 12/05/24

CENTRAL Boiler 560.1

12-04-24

RUN 3

PRE-BOILER NOTES

<u>TIME</u>	<u>Scale</u>	<u>NOTE</u>
6:37	Ø	Scaled ZEROED with empty Firebox 30.0 lb. = 30.0 lb. Audit wt.
6:41	19.0	ADDED 19.0 lb. Coals
6:49	14.5	ADDED 33.5 lb
	48.0	(52.5 lb total)
7:18	31.0	ADDED 32.0 lb
	63.0	(84.5 lb. total)
8:22	31.0	ADDED 34.5 lb
	65.5	(119.0 total)
9:19	35.0	Added 34.0 lbs
	69.0	(153.0 lb. total)
10:33	35.0	Added 23.5 lb
	58.5	(176.5 lb total)
11:23	STIR	
12:34	End Preburn	
	Loaded by 65 sec	
	Door Closed at 76 sec	

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 0117WB043E Run Number: 3
 Model: 560.1 Tracking Number: 2495 Date: 12/04/24
 Test Crew: T. Tong, K. Morgan, R. Ties

Supplemental Data

Test Booth No. 3 Sampling Start Time: 12:35 Sampling End Time: 9:03 9:06 (12/05/24)
 Tunnel Cleaned Date 11/22/24 % Smoke Capture 100 Induced Draft 0.000 in. H₂O

Systems Leak Checks			
System	Pre-Test	Post-Test	Sampling Probe Change-out
Pitot	0.000@	0.000@ 3"	
Train A	0.000@ 17.10	0.000@ 9.57"	
Train B	0.000@ 19.14	0.000@ 9.56"	
Train C	0.000@ 22.05	0.000@ 5.08"	

Velocity Traverse, 6-inch tunnel			
Location	Microtector (in. H ₂ O)	Δp (in. H ₂ O)	Tunnel Temp., °F
Center	.057	.114	70
1	.056	.112	70
2	.062	.124	70
3	.060	.120	70
4	.057	.114	70
5	.050	.100	70
6	.030	.060	70
7			
8			
Tunnel Static (in. H ₂ O)		Pre-Test -0.40	Post-Test -0.38

	Microt.	Δp	Temp
1	.050	.100	70
2	.057	.114	70
3	.057	.114	70
4	.053	.106	70
5	.053	.106	70
6	.039	.078	70

Miscellaneous Parameters			
Item	Initial	Final	Equipment No.
Room Air Velocity, ft/min.	27	37	00721
Scale Audit, lb. (20-80 % of fuel load)	30.0 = 30.0	30.0	00255, 00274, 00132
Room Relative Humidity, %	32	31	00715
Barometric Pressure, in. Hg	30.29	30.38	00715
Room Temperature, °F	65	62	00335, 00336

Flue Gas Continuous Analyzer						
Analyzer ID		Response Time, sec.		Leak Check Performed?	✓	
Bias Checks	Concentration:		Pre-Test Response	60 sec	Post-Test Response	60 sec
Concentration	Bottle No.	Value, %	Pre-Test Response		Post-Test Response	
			Zero	Span	Zero	Span
CO ₂ % Span	CC738144	16.88	0.00	16.88	0.00	16.97
CO % Span	CC738144	4.05	0.00	4.04	0.00	4.06
CO ppm Span	CC325741	500	0.0	496.9	493.4	496.5
Zero	3AA 2400	0.00				

Technician Signature: 16/1/24Date: 12/05/24

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler

Model : 560.1

Tracking No. : 2495

Project No. : 0117WB043E

Test Date : 12-04-24

Run No. : 3

11:00

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Firebox Volume : 13.720 ft³

Manufacturer's Recommended Loading Density 12

Ideal Fuel Weight : 164.64 lb.

Minimum Fuel Weight : 148.18 lb.

Maximum Fuel Weight : 181.10 lb.

Fuel Species : Maple

Fuel Piece Data

PC No.	Weight, Lb. (W _p)	Cross-Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	8.8	6	3.5	22	24.9	23.6	22.8	19.6	19.8		
2	1.3	7.5	4.0	22	21.6	22.8	21.0	19.8	19.6		
3	12.4	7.5	4.0	22	20.6	20.9	21.0	20.1	19.0		
4	9.4	7.0	3.5	22	25.8	23.9	25.9	21.2	19.7		
5	10.7	7.0	3.5	22	23.5	23.6	22.5	22.9	23.0		
6	13.3	7.5	4.5	22	20.8	21.5	21.8	21.8	22.3		
7	14.1	7.75	4.0	22	22.9	27.1	27.2	21.7	22.8		
8	13.2	7.25	4.0	22	20.9	21.2	20.8	20.7	25.2		
9	14.2	7.50	4.25	22	23.8	25.3	24.3	20.9	23.6		
10	9.5	7.15	3.75	22	19.4	21.3	22.1	19.0	22.9		
11	12.1	7.0	4.0	22	25.9	26.1	20.5	21.5	23.1		
12	13.0	7.5	4.0	22	24.2	23.9	21.9	19.2	19.7		
13	10.3	4.25	4.5	22	23.7	23.0	23.0	19.2	19.7		
14	13.7	6.5	5.0	22	25.9	24.9	25.2	23.1	22.9		
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	0.0										0.00
Averages	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

165.7

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 0117WB043E Run Number: 3
 Model: 560.1 Tracking Number: 2495 Date: 12/04/24
 Test Crew: T. Tong, K. Morgan, R. Tiegs

Gravimetric Analysis Sheet

Assembled By:

T. Tong

Date/Time in Desiccator:

12/05/24, 9:30 A, B, BG
12/04/24, 13:40 C

Weighing's				
Date/Time: 12-09-24 08:14	Date/Time: 12-10-24 07:20	Date/Time:	Date/Time:	Date/Time:
R/H %: 17.1	R/H %: 15.0	R/H %:	R/H %:	R/H %:
Temp: 67.9	Temp: 67.2	Temp:	Temp:	Temp:
100 mg Audit: 100.0	100 mg Audit: 100.0	100 mg Audit:	100 mg Audit:	100 mg Audit:
200 mg Audit: 200.0	200 mg Audit: 200.0	200 mg Audit:	200 mg Audit:	200 mg Audit:
2 g Audit: 2000.2	2 g Audit: 2000.2	2 g Audit:	2 g Audit:	2 g Audit:
100 g Audit: 99997.9	100 g Audit: 99997.9	100 g Audit:	100 g Audit:	100 g Audit:
Initials: K	Initials: K	Initials:	Initials:	Initials:

Train	Element	ID #	Tare (mg)	v	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)
A	Filter Pair	F487/487A	237.4	✓	242.7	242.7	—		
	Probe	71	117766.1	✓	117766.2	117766.2	—		
	O-Ring Set	S904	3294.2	✓	3295.0	3295.0	—		
B	Front Filter	F488/488A	237.5	✓	242.2	242.0	—		
	Probe	74	117664.6	✓	117664.6	117664.6	—		
	O-Ring Set	S907	4146.4	✓	4147.9	4147.9	—		
C (1 st hr)	Front Filter	F489/489A	238.3	✓	238.4	238.5	—		
	Probe	78	117460.2	✓	117460.5	117460.4	—		
	O-Ring Set	S908	3332.6	✓	3333.2	3333.3	—		
BG	Filter	F417	125.5	✓	125.9	125.7	—		

Technician Signature: K. MorganDate: 12-10-24

Equations and Calculations – ASTM E2618 & ASTM E2515



Manufacturer Central Boiler
 Model: Classic Edge 560.1
 Project Number: 0117WB043E
 Run Number: 3

Summary of INPUT values necessary for calculations

Global Input Parameters for Equations	Value	Source
MC_{Ave} - Average Fuel Load Moisture Content, % dry basis	22.61	Fuel Properties Work Sheet
W_{fuel} - Fuel charge weight (wet), pounds	165.7	Fuel Properties Work Sheet
HHV - Higher Heating Value of Fuel, Btu/lb.	8348	ISO Lab Report ¹
LHV - Lower Heating Value of Fuel, Btu/lb.	7789.6	CSA B415.1:22 ²
W_{app} - Mass of dry boiler, lb.	1822.5	Measured
W_{water} - Mass of Water within Boiler, lb.	1663	Measured
V_{SCENT} - Average gas velocity at the center of the dilution tunnel calculated after the Pitot tube traverse, ft/sec	22.30	Traverse Worksheet
V_{STRAV} - Average gas velocity calculated after the multipoint Pitot traverse	21.46	Traverse Worksheet
θ - Duration of test, min	1228	Train A Worksheet
P_{bar} - Barometric pressure (average) at the testing site, in. Hg	30.33	Traverse Worksheet
P_g - Tunnel Static Pressure	-0.39	Traverse Worksheet

¹ From an Ultimate Analysis performed on a sample of the fuel lot that was used.

² CSA B415 only accepts input for the HHV and calculates the LHV from that data. This differs from the LHV reported in the ultimate analysis, however the CSA value was used for consistency in comparing SLM and delivered efficiencies.

Sample Train Input Parameters for Equations	Train A	Train B	Train C	Train D
V_m - Volume of gas sample measured at the dry gas meter, dcf	198.218	197.313	9.592	197.092
Y Dry gas meter calibration factor	1.015	1.006	1.010	1.016
ΔH - Average pressure differential across the orifice meter, in. H ₂ O	1.29	0.98	2.15	1.55
T_m - Temperature of Dry Gas Meter, °F	75.9	76.8	64.1	63.3

Uncorrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.1	0.0	0.2	n/a
m_f - mass of particulate matter from filters, mg	5.3	4.7	0.2	0.4
m_g - mass of particulate matter from seals, mg	0.8	1.5	0.7	n/a

Corrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.1	0.0	0.2	n/a
m_f - mass of particulate matter from filters, mg	5.3	4.7	0.2	n/a
m_g - mass of particulate matter from seals, mg	0.8	1.5	0.7	n/a

TI_{avg} - Average Temperature of Appliance and Water at Start of Test, °F - ASTM E2618 equation (1)

$$TI_{avg} = (T1 + T2)/2 \quad \text{At beginning of Test}$$

Where,

	Value
<i>T1</i> = Temperature at inlet of supply side of exchanger, °F	162.3
<i>T2</i> = Temperature at outlet of supply side of exchanger, °F	160.6

$$Ti_{avg} = (162.27 + 160.64) / 2 = 161.5$$

TF_{avg} - Average Temperature of Appliance and Water at End of Test, °F - ASTM E2618 equation (2)

$$TF_{avg} = (T1 + T2)/2 \quad \text{At end of test}$$

Where,

	Value
<i>T1</i> = Temperature at inlet of load side of heat exchanger, °F	182.5
<i>T2</i> = Temperature at outlet of load side of heat exchanger, °F	180.7

$$TF_{avg} = (182.5 + 180.7) / 2 = 181.6$$

MC_{Ave} - Average Fuel Load Moisture Content, dry basis, % - ASTM E2618 equation (3)

$$MC_{Ave} = (\sum W_i \cdot MC_i) / \sum W_i$$

Where,

W_i = Weight of individual pieces
MC_i = Average moisture content of individual fuel pieces, dry basis

$\sum(W_i \cdot MC_i)$	3746.4	Taken from fuel properties sheet
$\sum w_i$	165.7	Taken from fuel properties sheet

$$MC_{Ave} = (3746.4 / 165.7) = 22.61 \quad \%, \text{ dry basis}$$

Q_{in} - Heat Input, Btu (HHV) - ASTM E2618 equation (4)

$$Q_{in} = (W_{fuel} / (1 + (MC_{Ave} / 100))) \times HHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	165.7
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	22.61
HHV =	Higher Heating Value of Fuel, Btu/lb.	8348

$$Q_{in} = (165.7 / (1 + (22.61 / 100))) \times 8348 = 1128187.767 \quad \text{Btu}$$

Q_{in LHV} - Heat Input, Btu (LHV) - ASTM E2618 equation (5)

$$Q_{in LHV} = (W_{fuel} / (1 + (MC_{Ave} / 100))) \times LHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	165.7
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	22.61
LHV =	Higher Heating Value of Fuel, Btu/lb.	7789.6

$$Q_{in LHV} = (165.7 / (1 + (22.61 / 100))) \times 7789.6 = 1052722.979 \quad \text{Btu}$$

BR - Dry Burn-Rate, kg/hr

$$BR = [(W_{fuel} / (1 + (MC_{Ave} / 100))) / 2.2046] / \theta$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	165.7
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	22.61
2.2046 =	Conversion kg -> lb.	2.2046
θ =	Duration of Test, hours	20.467

$$BR = 165.7 / (1 + (22.61 / 100)) / 2.2046 / 20.47 = 3.00 \quad \text{kg/hr}$$

Q_{out} - Heat Output, Btu - ASTM E2618 equation (7)

$$Q_{out} = \left[\sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) \right] + (W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg})$$

Where,

		<u>Value</u>
C_{pi}	Specific heat of water during interval (i), Btu/lb °F	Varies
ΔT_i	Temperature difference between water entering and exiting heat exchanger (load), °F	Varies
M_i	Mass flow-rate of water through heat exchanger during interval (i), lb./min	Varies
t_i	Data sampling interval, min	<u>Varies</u>
W_{app}	Weight of empty appliance, lb.	1822.5
C_{steel}	Specific heat of steel, Btu/lb.°F	0.1
C_{pa}	Specific heat of water at average appliance temperature, Btu/lb °F	1.0008
W_{water}	Weight of water in supply side of system, lb.	1663
TF_{avg}	Average temperature of appliance and water at end of test	181.60
TI_{avg}	Average temperature of appliance and water at start of test	161.45

$$\begin{aligned} \sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) & \text{ from Water Data sheet} = 853656.1341 \quad 41709.5831 \\ C_{pa} &= 1.0014 + (-0.000003485 \cdot (TI_{avg} + TF_{avg}) / 2) = 1.0008 \\ (W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg}) &= 37212.82 \\ Q_{OUT} &= 853656.134 + 1.0008 \times 37212.815 = 890868.95 \quad \text{Btu} \end{aligned}$$

Heat Output Rate, Btu/hr - ASTM E2618 equation (15)

$$\text{Heat Output Rate} = Q_{OUT} / \theta$$

Where,	<u>Value</u>
Q_{OUT} = Heat Output	890868.9
Θ = Duration of test, hr	20.4667

$$\text{Heat Output Rate} = 43527.8 \quad \text{Btu/hr}$$

V_S – Average gas velocity in the dilution tunnel, ft/sec - ASTM E2515 equation (9)

$$V_S = F_P \times K_P \times C_P \times (\sqrt{\Delta P})_{avg} \times \sqrt{\frac{T_{S(avg)}}{P_S \times M_S}}$$

Where

 F_P = Adjustment factor for center of tunnel pitot tube placement, where

$$F_P = V_{STRAV} / V_{SCENT}$$

 V_{SCENT} = Dilution tunnel velocity, at the center, ft/sec V_{STRAV} = Dilution tunnel velocity, multi-point pitot traverse, ft/sec K_P = Pitot tube constant, 85.49 C_P = Pitot tube coefficient: 0.99, unitless $\Delta P^{1/2}_{AVG}$ = Velocity pressure in the dilution tunnel, in H_2O $T_{S(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R P_S = Absolute average gas static pressure in tunnel, = Pbar + Pg, where

Pbar = Barometric Pressure, in. Hg,

Pg = Static pressure in tunnel, Hg (in H_2O / 13.6) M_S = The dilution tunnel wet molecular weight; $M_S = 28.78$ assuming a dry weight of 29 lb/lb-mole

(Duration of Test)

$$F_P = 0.9623$$

$$\Delta P^{1/2}_{AVG} = 0.3367$$

$$T_{S(avg)} = 528.3483$$

$$P_{bar} = 30.3300$$

$$P_g = -0.3900$$

$$P_S = 30.3013$$

$$V_S = 0.962 \times 85.49 \times 0.99 \times 0.337 \times \sqrt{[(528 / (30.3 \times 28.78))]}$$

$$V_S = \mathbf{21.344} \quad \text{ft/sec}$$

(First Hour of Test)

$$F_P = 0.9623$$

$$\Delta P^{1/2}_{AVG} = 0.3377$$

$$T_{S(avg)} = 529.1475$$

$$P_{bar} = 30.2800$$

$$P_g = -0.3900$$

$$P_S = 30.2513$$

$$V_S = 0.962 \times 85.49 \times 0.99 \times 0.338 \times \sqrt{[(529 / (30.25 \times 28.78))]}$$

$$V_S = \mathbf{21.445} \quad \text{ft/sec}$$

Q_{std} – Average gas flow rate in dilution tunnel, dscf/hr - ASTM E2515 equation (3)

$$Q_{std} = 3600 \times (1 - B_{ws}) \times v_s \times A \times \frac{T_{std}}{T_{s(avg)}} \times \frac{P_s}{P_{std}}$$

Where:

3600 = Conversion from seconds to hours (ASTM method uses 60 to convert in minutes)

B_{ws} = Water vapor in gas stream, proportion by volume; assume 2%

A = Cross sectional area of dilution tunnel, ft²

T_{std} = solute temperature, 528 °R

P_s = Absolute average gas static pressure in dilution tunnel, = Pbar + Pg , in Hg

$T_{s(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)

P_{std} = Standard absolute pressure, 29.92 in Hg

(Full Duration of Test):

$$\begin{aligned} B_{ws} &= 0.02 \\ A &= 0.78540 \\ P_s &= 30.30 \\ T_{s(avg)} &= 528 \\ V_S &= 21.34 \end{aligned}$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.344 \times 0.7854 \times (528 / 528) \times (30.3 / 29.92)$$

$$Q_{std} = \mathbf{59857.0} \quad \text{dscf/hr}$$

(First Hour):

$$\begin{aligned} B_{ws} &= 0.02 \\ A &= 0.78540 \\ P_s &= 30.25 \\ T_{s(avg)} &= 529 \\ V_S &= 21.445 \end{aligned}$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.445 \times 0.7854 \times (528 / 529) \times (30.25 / 29.92)$$

$$Q_{std} = \mathbf{59948.0} \quad \text{dscf/hr}$$

V_{m(std)} – Volume of Gas Sampled (Corrected), dscf - ASTM E2515 equation (6)

$$V_{m(std)} = K_1 V_m Y \frac{P_{bar} + \left(\frac{\Delta H}{13.6} \right)}{T_m}$$

Where:

K_1	=	17.64 °R/in. Hg
V_m	=	Volume of gas sample measured at the dry gas meter, dcf
Y	=	Dry gas meter calibration factor, dimensionless
P_{bar}	=	Barometric pressure at the testing site, in. Hg
ΔH	=	Average pressure differential across the orifice meter, in. H ₂ O
T_m	=	Absolute average dry gas meter temperature, °R

Train A

$$V_{m(std)} = 17.64 \times 198.218 \times 1.015 \times \frac{(30.33 + \frac{1.29}{13.6})}{(75.9 + 460)}$$

$$V_{m(std)} = \mathbf{201.503} \text{ dscf}$$

Train B

$$V_{m(std)} = 17.64 \times 197.313 \times 1.006 \times \frac{(30.33 + \frac{0.98}{13.6})}{(77 + 460)}$$

$$V_{m(std)} = \mathbf{198.309} \text{ dscf}$$

Train C (1st Hour)

$$V_{m(std)} = 17.64 \times 9.59 \times 1.010 \times \frac{(30.28 + \frac{2.15}{13.6})}{(64.1 + 460)}$$

$$V_{m(std)} = \mathbf{9.925} \text{ dscf}$$

Train D (Background)

$$V_{m(std)} = 17.64 \times 197.09 \times 1.016 \times \frac{(30.33 + \frac{1.55}{13.6})}{(63.3 + 460)}$$

$$V_{m(std)} = \mathbf{205.482} \text{ dscf}$$

mn – Total Particulate Matter Collected, mg - ASTM E2515 Equation (12)

$$m_n = m_p + m_f + m_g$$

Where:

- m_p = mass of particulate matter from probe, mg
- m_f = mass of particulate matter from filters, mg
- m_g = mass of particulate matter from filter seals, mg

Uncorrected:

Train A

$$m_n = 0.1 + 5.3 + 0.8$$
$$m_n = 6.2 \text{ mg}$$

Train B

$$m_n = 0.0 + 4.7 + 1.5$$
$$m_n = 6.2 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.2 + 0.2 + 0.7$$
$$m_n = 1.1 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.4$$
$$m_n = 0.4 \text{ mg}$$

Corrected:

Train A

$$m_n = 0.1 + 5.3 + 0.8$$
$$m_n = 6.2 \text{ mg}$$

Train B

$$m_n = 0.0 + 4.7 + 1.5$$
$$m_n = 6.2 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.2 + 0.2 + 0.7$$
$$m_n = 1.1 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.4$$
$$m_n = 0.4 \text{ mg}$$

**C_s - Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions
g/dscf - ASTM E2515 equation (13)**

$$C_s = K_2 \times \frac{m_n}{V_{m(std)}}$$

Where:

K₂ = Constant, 0.001 g/mg

m_n = Total mass of particulate matter collected in the sampling train, mg

V_{m(std)} = Volume of gas sampled corrected to dry standard conditions, dscf

Uncorrected:

Train A	C _s =	0.001 x	$\frac{6.2}{201.50}$
---------	------------------	---------	----------------------

C_s = **0.000031** g/dscf

Train B	C _s =	0.001 x	$\frac{6.2}{198.31}$
---------	------------------	---------	----------------------

C_s = **0.0000313** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{1.1}{9.93}$
--------------------	------------------	---------	--------------------

C_s = **0.000111** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.4}{205.48}$
----------------------	------------------	---------	----------------------

C_r = **0.000000** g/dscf

Corrected:

Train A	C _s =	0.001 x	$\frac{6.2}{201.50}$
---------	------------------	---------	----------------------

C_s = **0.000031** g/dscf

Train B	C _s =	0.001 x	$\frac{6.2}{198.31}$
---------	------------------	---------	----------------------

C_s = **0.0000313** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{1.1}{9.93}$
--------------------	------------------	---------	--------------------

C_s = **0.000111** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.4}{205.48}$
----------------------	------------------	---------	----------------------

C_r = **0.000000** g/dscf

ET – Total Particulate Emissions, g - ASTM E2515 equation (15)

$$E_T = (c_s - c_r) \times Q_{std} \times \theta$$

Where:

C_s	=	Concentration of particulate matter in tunnel gas, g/dscf
C_r	=	Concentration particulate matter room air, g/dscf
Q_{std}	=	Average dilution tunnel gas flow rate, dscf/hr
θ	=	Total time of test run, minutes

Uncorrected:

Train A

$$E_T = (0.000031 - 0.000000) \times 59857.0 \times 1228 / 60$$

$$E_T = 37.69 \text{ g}$$

Train B

$$E_T = (0.000031 - 0.000000) \times 59857.0 \times 1228 / 60$$

$$E_T = 38.30 \text{ g}$$

First Hour

$$E_T = (0.000111 - 0.000000) \times 59948.0 \times 60 / 60$$

$$E_T = 6.64 \text{ g}$$

Trains A and B Average

$$E_T = 38.00 \text{ g}$$

Corrected:

Train A

$$E_T = (0.000031 - 0.000000) \times 59857.0 \times 1228 / 60$$

$$E_T = 37.69 \text{ g}$$

Train B

$$E_T = (0.000031 - 0.000000) \times 59857.0 \times 1228 / 60$$

$$E_T = 38.30 \text{ g}$$

First Hour

$$E_T = (0.000111 - 0.000000) \times 59948.0 \times 60 / 60$$

$$E_T = 6.64 \text{ g}$$

Trains A and B Average

$$E_T = 38.00 \text{ g}$$

PM_R – Particulate emissions for test run, g/hr - ASTM E2780 equation (6)

$$PM_R = 60(E_T/\theta)$$

Where,

 E_T = Total particulate emissions, grams θ = Total length of full integrated test run, min**Uncorrected:**

Train A

$$E_T = 37.69 \text{ g}$$

$$\theta = 1228 \text{ min}$$

$$PM_R = 60 \times (37.69 / \text{###})$$

$$PM_R = \mathbf{1.84 \text{ g/hr}}$$

Train B

$$E_T = 38.30 \text{ g}$$

$$\theta = 1228 \text{ min}$$

$$PM_R = 60 \times (38.30 / \text{###})$$

$$PM_R = \mathbf{1.87 \text{ g/hr}}$$

A and B Average

$$PM_R = \mathbf{1.86 \text{ g/hr}}$$

First Hour

$$E_T = 6.64 \text{ g}$$

$$\theta = 60 \text{ min}$$

$$PM_R = 60 \times (6.64 / 60)$$

$$PM_R = \mathbf{6.64 \text{ g/hr}}$$

Corrected:

Train A

$$E_T = 37.69 \text{ g}$$

$$\theta = 1228 \text{ min}$$

$$PM_R = 60 \times (37.69 / \text{###})$$

$$PM_R = \mathbf{1.84 \text{ g/hr}}$$

Train B

$$E_T = 38.30 \text{ g}$$

$$\theta = 1228 \text{ min}$$

$$PM_R = 60 \times (38.30 / \text{###})$$

$$PM_R = \mathbf{1.87 \text{ g/hr}}$$

A and B Average

$$E_T = \mathbf{1.86 \text{ g}}$$

First Hour

$$E_T = 6.64 \text{ g}$$

$$\theta = 60 \text{ min}$$

$$PM_R = 60 \times (6.64 / 60)$$

$$PM_R = \mathbf{6.64 \text{ g/hr}}$$

E_{g/kg} - Particulate emission factor for test run, g/dry kg of fuel burned - ASTM E2618 equation (18)

$$E_{g/kg} = E_T / (W_{fuel} / (1 + MC/100))$$

Uncorrected:

Train A	E _T =	37.69	g
	W _{fuel} =	75.16	kg
	MC =	22.61	
	E _{g/kg} =	0.615	/kg

Train B	E _T =	38.30	g
	W _{fuel} =	75.16	kg
	MC =	22.61	
	E _{g/kg} =	0.625	/kg

Corrected:

Train A	E _T =	37.69	g
	W _{fuel} =	75.16	kg
	MC =	22.61	
	E _{g/kg} =	0.615	/kg

Train B	E _T =	38.30	g
	W _{fuel} =	75.16	kg
	MC =	22.61	
	E _{g/kg} =	0.625	/kg

PR - Proportional Rate Variation - ASTM E2515 equation (16)

$$PR = \left[\frac{\theta \times V_{mi} \times V_s \times T_m \times T_{si}}{\theta_i \times V_m \times V_{si} \times T_{mi} \times T_s} \right] \times 100$$

Where:

	Train A	Train B	Train C
θ = Total sampling time, min	1228	1228	60
θ_i = Length of recording interval, min	1	1	1
V_{mi} = Volume of gas sample measured by the dry gas meter during the "ith" time interval, dcf	0.16	0.159	0.161
V_m = Volume of gas sample as measured by dry gas meter, dcf	198.218	197.313	9.592
V_{si} = Average gas velocity in the dilution tunnel during the "ith" time interval, ft/sec	21.306	21.306	21.306
V_s = Average gas velocity in the dilution tunnel, ft/sec	21.345	21.345	21.435
T_{mi} = Absolute average dry gas meter temperature during the "ith" time interval, °R	528.0	528.0	524.0
T_m = Absolute average dry gas meter temperature, °R	535.9	536.8	524.1
T_{si} = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, °R	531.0	531.0	531.0
T_s = Absolute average gas temperature in the dilution tunnel, °R	528.3	528.3	529.1

NOTE: These calculations are for the Second interval of each train)

$$\text{Train A PR} = \left(\frac{1228 \times 0.16 \times 21.345 \times 536 \times 531}{1 \times 198.218 \times 21.306 \times 528 \times 528} \right) \times 100 = 101.3 \%$$

$$\text{Train B PR} = \left(\frac{1228 \times 0.159 \times 21.345 \times 537 \times 531}{1 \times 197.313 \times 21.306 \times 528 \times 528} \right) \times 100 = 101.3 \%$$

$$\text{Train C PR} = \left(\frac{60 \times 0.161 \times 21.435 \times 524 \times 531}{1 \times 9.592 \times 21.306 \times 524 \times 529} \right) \times 100 = 101.7 \%$$

Emission Rates and Factors - ASTM E2618 equations 16, 17, 18 and 19

Uncorrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 38 / (890868.9 \times 0.001055) = 0.0404$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (38 / 453.59) / (890868.9 \times 10^{-6}) = 0.0940$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 38 / \left((165.7 / (1 + 22.61 / 100)) / 2.2046 \right) = 0.620$$

Corrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 38 / (890868.9 \times 0.001055) = 0.0404$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (38 / 453.59) / (890868.9 \times 10^{-6}) = 0.0940$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 38 / \left((165.7 / (1 + 22.61 / 100)) / 2.2046 \right) = 0.620$$

Run 4 Test Data

Test Date: 12/5/2024
Manufacturer: Central Boiler
Model Classic Edge 560.1

Contents, in the following order:

- Emissions Test Results
- CSA B415 Results and Data
- Test Fuel Properties
- Velocity Traverse / Supplemental Data Worksheet
- Test Pre-Burn Data
- Sample Train A / Dilution Tunnel Data
- Sample Train B Data
- Sample Train C (First Hour) Data
- Sample Train D (Background) / Flue Gas Data
- Water Flow Data
- Gravimetric Lab Analysis
- Test Lab Notes
 - Appliance Operation Notes
 - Velocity Traverse / Supplemental Data Notes
 - Test Fuel Notes
 - Gravimetric Analysis Notes
- Equations and Calculations

Particulate Emissions and Delivered Efficiency Test Results

ASTM E2618 / ASTM E2515



Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Project No.: 0117WB043E
 Tracking No.: 2495
 Run: 4
 Test Date: 12/05/24

Quick View Summary	
lb./MMBtu	0.076
Delivered Efficiency %	80.1
PM 2.5 Emission Rate, g/hr.	0.85
PM 2.5 Emission Factor, g/kg	0.51

Particulate Emissions and Heat Output

Heat Input, Q_{IN} Btu	Heat Output Q_{OUT} Btu	Delivered Efficiency %	Uncorrected ¹		Corrected ²	
			ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)	ASTM E2515 Emissions (g/hr)	Emissions Rate, Lb./MMBtu Output)
1158643	928391	80.1	0.85	0.076	0.85	0.076

Burn Rate, dry kg/hr	1.67
Emission Rate, E_g /MJ	0.033
Load Heat Output Rate, Btu/hr	24564

	Avg. of Trains A and B		First Hour	
	Uncorrected	Corrected	Uncorrected	Corrected
Total Emissions - E_T , g	32.19	32.19	7.99	7.99
Emission Rate, g/hr	0.85	0.85	7.99	7.99
Emissions Factor, g/kg	0.51	0.51	n/a	n/a

Fuel and Appliance Parameters

Wet Fuel Mass	168.8	lb.
Duration of test	2262	min
Higher Heating Value (HHV) of Fuel	8348	Btu
Lower Heating Value (LHV) of Fuel	7789.6	Btu
TI_{avg} - Average Temperature of Appliance at Start of Test:	165.1	°F
TF_{avg} - Average Temperature of Appliance at End of Test:	166.4	°F
MC_{Ave} - Average Moisture of Fuel, dry-basis:	21.62	%

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Dilution Tunnel Flow Parameters

	First Hour	Duration of Test
Average Tunnel Temperature, °F	66.2	65.9
Average Tunnel Gas Velocity (vs), feet/second	21.204	21.095
Average Tunnel Gas Flow Rate(Qsd)	DSCF/hr	59760.5
	DSCF/min	996.0
Average Delta p, in. H ₂ O	0.115	0.114
Tunnel Static Pressure, in. H ₂ O	-0.400	-0.400
Total Time of Test, Min	60	2262

Particulate Sample Parameters - Uncorrected

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	362.385	365.324	364.807	9.384
Average Gas Meter Temperature, °F	66	76	77	65
Total Sample Volume (V _{mstd}), DSCF	374.659	370.035	365.325	9.722
Total Particulates (mn), mg - m _n	0.1	5.2	5.4	1.3
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00001	0.00001	0.00013
Total Particulate Emissions (ET), grams	n/a	31.38	33.01	7.99
Particulate Emission Rate, g/hr	n/a	0.83	0.88	7.99
Emissions Factor, g/kg	n/a	0.50	0.52	n/a
Difference, ET from Average ET, grams	n/a	-0.81	0.81	n/a

Particulate Sample Parameters - Corrected for any negative filter weights

	Ambient	Train A	Train B	First Hour
Total Sample Volume (V _m), ft ³	362.385	365.324	364.807	9.384
Average Gas Meter Temperature, °F	66	76	77	65
Total Sample Volume (V _{mstd}), DSCF	374.659	370.035	365.325	9.722
Total Particulates (mn), mg - m _n	0.1	5.2	5.4	1.3
Particulate Concentration (C _s - C _r), g/DSCF	0.00000	0.00001	0.00001	0.00013
Total Particulate Emissions (ET), grams	n/a	31.38	33.01	7.99
Particulate Emission Rate, g/hr	n/a	0.83	0.88	7.99
Emissions Factor, g/kg	n/a	0.50	0.52	n/a
Difference, ET from Average ET, grams	n/a	-0.81	0.81	n/a

Particulate Emissions Test Results - Continued

ASTM E2618 / ASTM E2515

Test Methodology Specifications Quality Checks

Parameter	Requirement	Measured / Observed			Complies?
		First Hour	Train 1	Train 2	
Filter Temperature, °F	< 90	64	64	64	✓
Filter face velocity, fpm	< 30	8.57	8.78	8.73	✓
Dryer Exit, °F	< 80	60	47	48	✓
Tunnel Velocity, fpm	>800	1,272	1,266		✓
First Hour Leakage Rate	0.006	0.001			✓
Train A Leakage Rate	0.006		0.002		✓
Train B Leakage Rate	0.006			0.001	✓

Leakage Rate Limits (cfm) are < 4% of average sample rate or < 0.01 cfm, which ever is less

Parameter	Requirement	Measured / Observed			Complies?
Negative Probe Weight	=> 0	0	0.1	0.1	✓
Pro-Rate Variation	< 90 for < 10% of θ	1.67%	0.00%	0.00%	✓
	> 110 for < 10% of θ	0.00%	0.000%	0.00%	✓
	# Readings < 80%	0	0	0	✓
	# Readings > 120%	0	0	0	✓
Room Temp, °F (min)	> 55		59		✓
Room Temp, °F (max)	< 90		67		✓
Dual Train Precision	(1) < 7.5%		2.53%		✓
<i>1 or 2 must conform</i>	(2) < 0.5 g/kg		0.03		
Room Air Velocity	< 50 fpm		25		✓
Preburn Min. Weight	151.9		185.4		✓
Preburn Max. Weight	185.7				✓
Min. Coal Bed Weight	16.9		28.9		✓
Max. Coal Bed Weight	33.8				✓

CSA B415.1-11 Efficiency Results

Manufacturer Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 4
Test Date: 12/5/2024

Efficiency results reported herein are based on a stack-loss method in accordance with CSA B415.1:22 "Performance testing of solid-biofuel-burning heating appliance". OMNI uses the spreadsheet provided by CSA that is to be used in conjunction with the current version of the test standard. The most recent version of the software is version 2.4, dated April 15, 2010. OMNI received confirmation from CSA on October 18, 2023 that this is the current version of the software.

Stack Loss Efficiency

Manufacturer: Central Boiler
Model: Edge 560.1
Date: 12/05/24
Run: 4
Control #: 2495
Test Duration: 2262
Output Category: I

Technicians: T. Tong, R. Tiegs, K. Morgan

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	80.5%	86.4%
Combustion Efficiency	97.7%	97.7%
Heat Transfer Efficiency	82%	88.4%

Output Rate (kJ/h)	26,094	24,753	(Btu/h)
Burn Rate (kg/h)	1.67	3.68	(lb/h)
Input (kJ/h)	32,411	30,746	(Btu/h)

Test Load Weight (dry kg)	62.97	138.79	dry lb
MC wet (%)	17.78		
MC dry (%)	21.62		
Particulate (g)	32.19		
CO (g)	2,490		
Test Duration (h)	37.70		

Emissions	Particulate	CO
g/MJ Output	0.03	2.53
g/kg Dry Fuel	0.51	39.55
g/h	0.85	66.06
lb/MM Btu Output	0.08	5.88

Air/Fuel Ratio (A/F)	26.12
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VERSION:

2.4

4/15/2010

VERSION: 2.4

4/15/2010

Manufacturer: Central Boiler

Model: Edge 560.1

Date: 12/5/2024

Run: 4

Control #: 2495

Test Duration: 2262

Output Category: I

Appliance Type: Non Cat (Cat, Non

Temp. Units F (F or C)

Weight Units lb (kg or lb)

Fuel Data

Maple

HHV 19,404 kJ/kg

%C 50.3

%H 6.1

%O 42.91

%Ash 0.69

Wood Moisture (% wet): 17.78

Load Weight (lb wet): 168.80

Burn Rate (dry kg/h): 1.67

Total Particulate Emissions: 32.19 g

Averages

0.48

4.20

#DIV/0!

146.12

63.26

Temp. (°F)

Elapsed
Time (min)Fuel Weight
Remaining (lb)Flue Gas Composition (%)
CO CO₂ O₂Flue
GasRoom
Temp

0	168.80	0.04	15.77		275.0	64.0
3	166.93	0.02	17.64		282.0	64.0
6	165.35	0.00	15.53		283.0	63.0
9	163.99	0.00	15.53		284.0	64.0
12	162.48	0.00	15.13		288.0	63.0
15	161.02	0.06	15.09		288.0	63.0
18	159.74	0.06	14.64		289.0	63.0
21	159.31	0.10	3.32		237.0	63.0
24	159.35	0.06	2.85		219.0	63.0
27	159.25	0.06	2.24		206.0	63.0
30	159.39	0.05	0.88		196.0	63.0
33	159.28	0.06	0.88		185.0	63.0
36	159.40	0.03	1.22		176.0	62.0
39	159.37	0.05	1.40		167.0	62.0
42	159.43	0.06	1.43		159.0	63.0
45	159.42	0.10	1.87		152.0	62.0
48	159.37	0.06	1.45		145.0	62.0
51	159.41	0.09	1.74		139.0	62.0
54	159.38	0.10	1.82		133.0	62.0
57	159.53	0.10	1.77		128.0	62.0
60	159.47	0.12	1.92		124.0	62.0
63	159.44	0.10	1.68		120.0	62.0
66	159.44	0.08	1.43		116.0	62.0
69	159.55	0.09	1.55		112.0	62.0
72	159.46	0.12	1.73		109.0	62.0

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
75	159.54	0.09	1.44		106.0	62.0
78	159.57	0.09	1.41		104.0	62.0
81	159.51	0.10	1.46		101.0	62.0
84	159.54	0.10	1.43		99.0	62.0
87	159.60	0.10	1.45		97.0	62.0
90	159.53	0.79	4.77		129.0	62.0
93	159.39	0.37	2.50		111.0	62.0
96	159.43	0.26	1.89		103.0	62.0
99	159.54	0.20	1.63		99.0	61.0
102	159.46	0.14	1.26		97.0	62.0
105	159.49	0.17	1.49		94.0	61.0
108	159.48	0.11	1.17		92.0	61.0
111	159.53	0.13	1.32		91.0	61.0
114	159.48	0.13	1.32		90.0	61.0
117	159.52	0.15	1.54		89.0	61.0
120	159.45	1.01	5.48		131.0	62.0
123	159.39	0.52	2.93		109.0	62.0
126	159.46	0.35	2.17		101.0	62.0
129	159.51	0.19	1.40		95.0	62.0
132	159.50	0.16	1.26		92.0	63.0
135	159.39	0.12	1.05		89.0	63.0
138	159.42	0.09	0.91		87.0	63.0
141	159.38	0.08	0.92		86.0	64.0
144	159.39	0.07	0.84		84.0	64.0
147	159.50	0.09	1.03		84	65
150	159.32	0.45	5.49		138	64
153	159.23	0.52	3.6		112	65
156	159.16	0.32	2.36		101	65
159	159.29	0.2	1.67		95	65
162	159.33	0.15	1.42		91	65
165	159.24	0.09	1.06		89	65
168	159.21	0.1	1.17		87	65
171	159.26	0.06	0.97		85	65
174	159.26	0.06	0.98		84	65
177	159.22	0.05	0.94		83	65
180	159.18	0.05	0.91		88	65
183	159.01	0.52	4.18		113	65
186	159.00	0.26	2.29		102	64
189	159.00	0.17	1.74		96	64
192	158.91	0.32	2.85		129	64
195	157.42	0.94	15.41		250	64
198	155.58	0.13	17.89		282	63

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
201	153.97	0.01	16.72		292	63
204	152.33	0.02	16.27		292	63
207	150.76	0.02	16.22		289	63
210	149.09	0.03	16.32		292	62
213	147.54	0.02	15.84		295	63
216	146.00	0.03	15.52		297	62
219	144.78	0.02	8.21		264	62
222	144.41	0.18	4.17		233	62
225	144.19	0.09	3.75		216	62
228	144.32	0.05	1.93		207	62
231	144.28	0.06	1.62		197	62
234	144.17	0.11	1.98		186	62
237	144.29	0.14	2.34		176	62
240	144.20	0.18	2.79		167	62
243	144.34	0.17	2.72		159	61
246	144.25	0.16	2.67		152	61
249	144.33	0.17	2.74		145	61
252	144.32	0.13	2.31		139	61
255	144.35	0.17	2.7		133	61
258	144.41	0.16	2.59		128	61
261	144.39	0.17	2.65		124	61
264	144.38	0.14	2.35		120	62
267	144.34	0.12	2.13		116	62
270	144.46	0.13	2.22		113	62
273	144.45	0.13	2.18		109	63
276	144.41	0.09	1.81		106	63
279	144.43	0.13	2.19		104	63
282	144.47	0.1	1.86		102	63
285	144.43	0.12	2.05		100	64
288	144.25	0.39	3.48		151	64
291	144.20	0.27	2.4		128	65
294	144.15	0.15	1.8		119	64
297	144.14	0.13	1.79		113	65
300	144.11	0.11	1.7		109	65
303	144.19	0.11	1.7		107	65
306	144.16	0.1	1.66		105	66
309	144.17	0.08	1.55		101	65
312	144.08	0.07	1.46		102	65
315	144.12	0.08	1.6		99	64
318	144.08	0.07	1.47		143	64
321	143.95	0.09	1.33		122	64
324	143.90	0.05	1.06		115	63

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
327	143.91	0.04	1.07		110	63
330	143.91	0.04	1.16		106	63
333	144.05	0.04	1.15		104	62
336	144.02	0.04	1.21		103	62
339	144.03	0.04	1.22		100	62
342	143.88	0.04	1.23		99	62
345	144.00	0.03	1.15		98	62
348	143.90	0.03	1.18		96	61
351	143.80	0.06286	0.85		119	62
354	143.82	0.04062	0.56		111	61
357	143.84	0.04307	0.54		106	61
360	143.73	0.05609	0.7		103	61
363	143.74	0	0.79		101	61
366	143.80	0	0.8		97	62
369	143.88	0.02	0.99		95	62
372	143.78	0.02	0.95		94	63
375	143.85	0.02	1.03		93	62
378	143.82	0.03	1.12		93	63
381	143.73	0.03	1.36		120	63
384	143.72	0.05751	0.75		110	64
387	143.61	0.04949	0.63		104	64
390	143.59	0.04975	0.58		101	64
393	143.64	0	0.73		98	64
396	143.60	0.01	0.88		96	64
399	143.64	0.03	1		94	64
402	143.58	0.2	2.86		120	64
405	142.96	1.11	3.7		170	65
408	141.75	2.77	13.37		236	65
411	140.27	0.58	15.11		281	65
414	138.55	0.14	15.79		291	65
417	136.67	0.05	15.98		290	66
420	135.35	0	15.62		288	66
423	133.55	0	15.81		292	66
426	132.10	0	15.91		297	66
429	130.43	0	15.38		298	66
432	128.58	0.06667	15.55		301	66
435	127.25	0.04	9.18		263	65
438	126.74	0.31	6.03		234	65
441	126.47	0.21	5.78		217	65
444	126.35	0.08	2.55		208	65
447	126.39	0.34	2.74		198	64
450	126.38	0.48	3.17		188	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
453	126.40	0.48	3.06		178	63
456	126.41	0.53	3.26		169	63
459	126.36	0.51	3.19		161	63
462	126.36	0.47	2.98		154	62
465	126.32	0.46	2.91		147	62
468	126.37	0.51	3.21		141	62
471	126.39	0.4	2.67		135	62
474	126.36	0.37	2.48		130	62
477	126.46	0.34	2.36		126	63
480	126.43	0.43	2.84		122	63
483	126.47	0.35	2.37		118	63
486	126.44	0.29	2.04		114	63
489	126.45	0.27	1.94		111	64
492	126.43	0.29	2.01		109	64
495	126.54	0.26	1.9		105	64
498	126.46	0.25	1.86		104	64
501	126.53	0.24	1.78		101	64
504	126.32	0.49	3.71		149	64
507	126.18	0.33	2.64		129	65
510	126.12	0.18	1.75		119	65
513	126.26	0.15	1.55		113	65
516	126.19	0.13	1.42		108	65
519	126.20	0.13	1.42		106	64
522	126.23	0.11	1.25		102	64
525	126.27	0.09	1.14		98	64
528	126.17	0.08	1.06		97	64
531	126.26	0.08	1.05		96	63
534	126.26	0.07	0.99		140	62
537	126.09	0.09	1.18		122	63
540	126.04	0.05	0.9		114	62
543	126.01	0.03	0.79		110	62
546	126.06	0.03	0.78		105	62
549	126.15	0.01	0.67		102	62
552	126.20	0.01	0.67		99	62
555	126.10	0.01	0.69		96	62
558	126.09	0	0.63		94	61
561	126.16	0	0.58		93	62
564	126.14	0	0.62		91	62
567	125.96	0.05641	0.64		118	62
570	125.97	0.04252	0.48		109	62
573	126.04	0.03864	0.45		105	62
576	126.02	0.03456	0.4		101	63

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
579	125.93	0.03813	0.44		98	62
582	125.97	0.03537	0.41		95	63
585	126.06	0.03735	0.42		93	63
588	126.05	0.03864	0.4		91	63
591	126.00	0.03884	0.42		90	63
594	126.02	0.04071	0.43		88	64
597	126.04	0	0.84		117	64
600	125.89	0.04434	0.52		107	64
603	125.96	0.03524	0.41		103	64
606	125.64	0.29	1.68		158	64
609	124.88	2.23	6.43		204	65
612	123.59	1.97	10.23		244	65
615	122.18	0.36	13.89		283	65
618	120.44	0.03	15.54		304	65
621	118.81	0.02	15.07		294	65
624	117.09	0.01	15.23		291	65
627	115.52	0.01	15.45		294	66
630	113.80	0.05765	15.7		296	66
633	112.36	0.04865	15.2		297	65
636	110.78	0.0468	14.79		300	65
639	109.66	0	9.55		249	66
642	109.17	0.18	10.17		227	65
645	108.92	0.09	7.72		212	65
648	108.78	0.31	4.48		206	64
651	108.85	0.94	5.65		195	63
654	108.73	1.02	5.59		185	64
657	108.79	1.16	6.09		175	63
660	108.82	1.13	5.96		167	63
663	108.79	0.95	5.18		159	62
666	108.77	0.93	5.12		152	62
669	108.92	0.78	4.47		145	62
672	108.85	0.71	4.23		140	62
675	108.83	0.72	4.3		135	61
678	108.79	0.66	4.05		130	61
681	108.86	0.63	3.91		125	62
684	108.83	0.51	3.3		121	62
687	108.85	0.49	3.19		118	62
690	108.96	0.48	3.14		114	62
693	108.91	0.44	2.94		111	62
696	108.93	0.35	2.48		108	63
699	108.93	0.39	2.67		105	63
702	108.88	0.37	2.55		104	63

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
705	108.95	0.36	2.47		103	63
708	108.63	0.66	3.7		140	63
711	108.69	0.49	2.94		126	63
714	108.64	0.4	2.55		119	63
717	108.76	0.34	2.32		114	63
720	108.70	0.32	2.24		110	64
723	108.68	0.27	1.97		106	64
726	108.71	0.24	1.83		104	64
729	108.81	0.2	1.65		102	64
732	108.78	0.2	1.62		101	64
735	108.73	0.18	1.55		99	64
738	108.54	0.33	2.5		131	64
741	108.45	0.28	1.96		120	64
744	108.47	0.23	1.88		113	64
747	108.50	0.18	1.78		109	64
750	108.60	0.15	1.63		106	64
753	108.51	0.13	1.53		104	64
756	108.53	0.13	1.53		102	65
759	108.49	0.11	1.39		101	65
762	108.54	0.11	1.43		99	64
765	108.53	0.11	1.38		97	64
768	108.53	0.09	1.27		129	63
771	108.38	0.14	1.21		116	63
774	108.33	0.1	1.06		110	62
777	108.32	0.09	1.11		106	62
780	108.41	0.08	1.11		104	62
783	108.44	0.08	1.17		101	62
786	108.35	0.07	1.16		99	62
789	108.35	0.08	1.23		99	61
792	108.40	0.07	1.23		97	61
795	108.51	0.07	1.17		96	61
798	108.47	0.07	1.23		95	61
801	108.34	0.01	0.97		115	61
804	108.30	0.06425	0.74		108	62
807	108.10	0.49	2.76		138	62
810	107.27	1.07	8.54		218	62
813	105.99	0.65	13.24		270	62
816	104.40	0.09	14.61		291	63
819	102.70	0.02	16.54		295	63
822	100.95	0.09	14.71		298	63
825	99.34	0.06	14.73		301	64
828	97.90	0.1	14.78		301	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
831	96.41	0.12	14.05		304	64
834	94.66	0.17	13.77		306	64
837	93.60	0.32	7.82		261	65
840	92.98	0.31	5.31		233	64
843	92.82	0.24	5.63		217	64
846	92.79	0.13	2.7		210	64
849	92.67	0.48	2.96		200	64
852	92.67	0.66	3.56		189	64
855	92.76	0.64	3.53		180	64
858	92.84	0.61	3.5		171	64
861	92.76	0.62	3.58		163	64
864	92.73	0.58	3.43		156	64
867	92.71	0.6	3.56		149	64
870	92.78	0.51	3.17		143	64
873	92.75	0.46	2.91		137	64
876	92.84	0.44	2.84		133	64
879	92.80	0.32	2.21		128	64
882	92.78	0.36	2.37		123	63
885	92.81	0.25	1.78		119	63
888	92.77	0.28	1.91		115	63
891	92.79	0.27	1.81		113	63
894	92.91	0.24	1.58		110	64
897	92.94	0.21	1.44		108	63
900	92.86	0.23	1.47		105	63
903	92.80	0.11	0.92		105	64
906	92.66	0.54	3.22		148	64
909	92.57	0.42	2.55		128	64
912	92.63	0.27	1.74		118	63
915	92.66	0.23	1.56		112	63
918	92.69	0.18	1.32		108	63
921	92.59	0.17	1.26		104	63
924	92.70	0.12	1		101	62
927	92.69	0.11	0.93		97	62
930	92.59	0.09	0.84		96	63
933	92.63	0.08	0.78		92	63
936	92.62	0.54	3		132	63
939	92.53	0.08	0.95		118	63
942	92.61	0.05	0.75		111	63
945	92.54	0.03	0.6		106	63
948	92.61	0.02	0.56		102	63
951	92.57	0.02	0.54		99	64
954	92.66	0.01	0.51		95	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
957	92.68	0	0.47		93	64
960	92.63	0.01	0.47		93	64
963	92.72	0.06687	0.42		90	64
966	92.73	0	0.46		88	64
969	92.55	0.067	0.58		115	64
972	92.55	0.04586	0.39		107	64
975	92.50	0.04139	0.35		103	64
978	92.56	0.03677	0.31		99	64
981	92.54	0.03874	0.32		96	64
984	92.58	0.03456	0.29		95	64
987	92.61	0.03466	0.28		92	65
990	92.58	0.03311	0.28		90	64
993	92.60	0.03349	0.27		88	64
996	92.58	0.03602	0.28		86	64
999	92.58	0.06379	0.54		113	63
1002	92.29	0.39	1.42		155	63
1005	91.84	1.11	4.03		196	63
1008	90.77	1.51	11.15		241	61
1011	89.38	0.01	15.1		286	60
1014	87.69	0	15.2		300	60
1017	86.03	0.02	14.31		302	60
1020	84.50	0.06	14.45		304	62
1023	83.03	0.07	14.42		307	62
1026	81.22	0.09	14.19		307	62
1029	79.71	0.14	13.96		306	63
1032	78.52	0.18	7.96		264	64
1035	77.99	0.32	4.85		234	63
1038	77.77	0.28	4.75		218	63
1041	77.80	0.12	2.03		210	64
1044	77.65	0.38	2.4		200	64
1047	77.68	0.43	2.44		189	64
1050	77.77	0.48	2.63		179	64
1053	77.75	0.54	2.85		170	63
1056	77.69	0.51	2.72		162	63
1059	77.75	0.53	2.8		155	63
1062	77.67	0.55	2.87		148	64
1065	77.79	0.38	2.12		143	63
1068	77.72	0.39	2.14		136	64
1071	77.86	0.41	2.19		131	64
1074	77.84	0.37	2.02		127	64
1077	77.77	0.33	1.81		123	64
1080	77.79	0.31	1.72		119	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
1083	77.81	0.31	1.71		115	64
1086	77.80	0.26	1.48		112	65
1089	77.86	0.29	1.58		109	64
1092	77.80	0.24	1.34		107	65
1095	77.78	0.25	1.38		105	65
1098	77.79	0.26	1.44		102	65
1101	77.60	0.59	3.28		149	64
1104	77.45	0.43	2.52		130	64
1107	77.50	0.27	1.73		119	64
1110	77.59	0.23	1.51		115	64
1113	77.59	0.18	1.27		111	64
1116	77.55	0.18	1.26		104	63
1119	77.59	0.15	1.13		103	63
1122	77.56	0.12	0.96		100	63
1125	77.53	0.14	1.07		97	63
1128	77.56	0.13	1.02		95	63
1131	77.49	0.25	1.6		135	63
1134	77.43	0.11	1.12		120	62
1137	77.42	0.07	0.85		113	62
1140	77.44	0.06	0.79		108	63
1143	77.42	0.03	0.63		105	63
1146	77.39	0.02	0.59		102	62
1149	77.38	0.03	0.62		97	62
1152	77.39	0.03	0.62		97	62
1155	77.43	0.01	0.53		93	63
1158	77.46	0.01	0.54		92	62
1161	77.49	0	0.47		92	62
1164	77.37	0.04	0.8		116	62
1167	77.32	0.01	0.6		109	62
1170	77.33	0	0.56		103	62
1173	77.35	0.0601	0.47		100	62
1176	77.36	0.05878	0.47		97	62
1179	77.27	0.06366	0.51		95	62
1182	77.40	0.06406	0.49		93	63
1185	77.42	0.05891	0.49		92	62
1188	77.33	0.06677	0.51		91	62
1191	77.35	0.06522	0.52		88	63
1194	77.39	0.06	1.02		114	63
1197	77.00	0.38	1.89		166	64
1200	76.19	2.05	9.37		224	64
1203	74.84	0.45	13.52		269	64
1206	73.18	0.06	14.61		293	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
1209	71.51	0.04	17.18		298	65
1212	69.72	0.02	15.68		295	64
1215	68.20	0.03	15.01		299	64
1218	66.54	0.06	14.16		306	64
1221	64.88	0.02	14.08		308	64
1224	63.41	0.06	14.1		309	64
1227	62.15	0.07	10.34		263	65
1230	61.51	0.2	8.55		236	64
1233	61.20	0.11	9.57		219	64
1236	61.17	0.33	5.68		211	63
1239	61.01	1.76	7.26		201	62
1242	60.99	2.23	7.7		190	63
1245	60.98	2.4	7.87		180	63
1248	60.96	2.45	7.84		172	65
1251	60.90	2.44	7.67		164	63
1254	60.91	2.54	7.9		156	65
1257	60.79	2.11	6.61		151	64
1260	60.90	2.12	6.61		143	64
1263	60.79	1.9	5.96		138	64
1266	60.77	1.78	5.57		132	64
1269	60.69	1.7	5.33		133	64
1272	60.73	1.63	5.12		126	63
1275	60.72	1.43	4.55		123	63
1278	60.76	1.51	4.79		121	63
1281	60.70	1.43	4.56		117	63
1284	60.85	1.33	4.28		116	64
1287	60.72	1.26	4.08		114	64
1290	60.80	0.71	2.44		115	64
1293	60.76	1.16	3.78		113	64
1296	60.58	0.57	2.89		138	64
1299	60.41	0.56	2.67		126	64
1302	60.46	0.44	2.16		121	63
1305	60.43	0.39	1.97		116	63
1308	60.48	0.31	1.62		112	63
1311	60.48	0.3	1.59		109	62
1314	60.51	0.29	1.53		105	63
1317	60.49	0.24	1.33		105	63
1320	60.51	0.24	1.38		104	63
1323	60.50	0.21	1.23		101	63
1326	60.53	0.73	3.5		130	64
1329	60.39	0.07	0.77		118	64
1332	60.36	0.07	0.73		112	64

Elapsed Time (min)	Fuel Weight Remaining (lb)	Flue Gas Composition (%)			Flue Gas	Room Temp
		CO	CO ₂	O ₂		
1335	60.34	0.06	0.67		108	64
1338	60.36	0.06	0.67		105	65
1341	60.38	0.05	0.65		102	64
1344	60.46	0.04	0.62		100	64
1347	60.41	0.06	0.71		99	63
1350	60.43	0.05	0.68		96	63
1353	60.39	0.05	0.67		94	63
1356	60.49	0.04	0.65		93	63
1359	60.39	0.01	0.6		116	62
1362	60.33	0.06046	0.46		108	62
1365	60.30	0.05638	0.4		104	63
1368	60.44	0.05506	0.4		101	63
1371	60.44	0.05629	0.42		98	63
1374	60.34	0.06412	0.44		96	63
1377	60.43	0.0625	0.44		94	63
1380	60.31	0.06088	0.42		91	63
1383	60.41	0.06292	0.44		91	63
1386	60.49	0.06366	0.42		90	63
1389	60.35	0.05926	0.46		112	63
1392	60.39	0.03553	0.32		105	62
1395	60.26	0.02903	0.27		100	62
1398	60.38	0.03178	0.27		97	62
1401	60.21	0.1	0.59		136	62
1404	59.83	0.65	3.22		182	62
1407	59.01	1.33	11.55		235	63
1410	57.71	0.13	14.19		278	62
1413	56.04	0.02	14.54		297	62
1416	54.48	0.02	14.5		306	63
1419	52.88	0.01	15.44		302	64
1422	51.23	0.16	13.8		308	64
1425	49.61	0.36	13.42		308	64
1428	47.90	0.18	13.67		301	65
1431	46.37	0.11	14.16		305	65
1434	45.56	0.18	9.36		252	66
1437	44.98	0.39	14.04		230	65
1440	44.75	0.13	10.82		215	64
1443	44.46	1.42	8.62		210	63
1446	44.43	3.45	11.49		199	65

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler
Model : Classic Edge 560.1
Tracking No. : 2495
Project No. : 0117WB043E
Test Date : 12/5/2024
Run No. : 4

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Firebox Volume : 13.720 ft³
Manufacturer's Recommended Loading Density : 13
Ideal Fuel Weight : 178.36 lb.
Minimum Fuel Weight : 160.52 lb.
Maximum Fuel Weight : 196.20 lb.
Fuel Species : Maple

Fuel Piece Data

PC No.	Weight, Lb. (W _i)	Cross- Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	11.3	5.00	4.75	22.00	24.2	25.3	22.0	25.3	24.3	24.2	273.69
2	11.4	5.50	4.50	22.00	24.0	23.6	21.8	24.9	24.9	23.8	271.78
3	9.8	5.00	4.50	22.00	21.8	22.8	22.0	21.6	20.5	21.7	213.05
4	10.6	5.50	4.75	22.00	20.0	24.0	23.6	20.1	23.0	22.1	234.68
5	12.0	8.00	5.00	22.00	18.0	20.4	18.9	20.5	19.2	19.4	232.80
6	9.7	5.50	5.50	22.00	22.0	21.8	24.2	23.1	18.6	21.9	212.82
7	12.9	7.25	4.00	22.00	25.9	24.9	22.8	23.8	23.0	24.1	310.63
8	11.2	6.50	4.50	22.00	22.9	21.5	19.4	21.0	19.4	20.8	233.41
9	10.8	7.00	3.50	22.00	25.6	26.1	19.8	22.9	22.0	23.3	251.42
10	12.0	6.50	4.50	22.00	19.0	19.4	19.4	22.9	24.9	21.1	253.44
11	11.6	7.00	6.00	22.00	24.9	23.5	18.4	23.1	21.4	22.3	258.22
12	9.6	7.00	3.75	22.00	23.7	21.5	20.2	21.6	18.6	21.1	202.75
13	10.8	6.50	4.50	22.00	19.8	19.6	20.9	19.4	19.0	19.7	213.19
14	13.5	8.00	5.00	22.00	19.3	19.4	19.6	19.4	19.8	19.5	263.25
15	11.6	6.00	4.50	22.00	19.8	20.4	19.5	18.0	19.0	19.3	224.34
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	168.8										3649.47
Averages	11.25	6.42	4.62	22.00	22.06	22.28	20.83	21.84	21.17	21.64	243.30

Fuel Load Properties

Number of Pieces	Wet Weight, lb.	Dry Weight, lb.	Fuel Loading Density, lb/ft ³ Wet Basis	Fuel Loading Density, lb/ft ³ Dry Basis	Moisture, % dry basis (Σw _i · MC _i) / Σw _i	Moisture, % wet Basis
15	168.8	138.79	12.30	10.12	21.62	17.78

Compliance Checks, Loading Density and Moisture

	Fuel Load, Wet Lb.	Load Density, lb/ft ³ of FB vol	Number of moisture readings > 28%	Number of moisture readings < 18%	Average Fuel Moisture, % DB	
Measured	168.8	12.30	0	0	21.17	
Required	160.5 - 196.2	10 - 15	0	0	19 - 25	
Complies ?	Yes	Yes	Yes	Yes	Yes	

Compliance Checks, Fuel weights and Dimensions

	Cross Section of Individual Pieces		Minimum Piece Weight, Lb.	Maximum Piece Weight, Lb.
	Min	Max		
Measured	3.50	8.00	9.6	13.5
Required	3	12	8.8	26.5
Complies ?	Yes	Yes	Yes	Yes

Dilution Tunnel Velocity Traverse and Supplementary Data

ASTM E2515-11

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1

Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/5/2024

Dilution Tunnel Velocity Traverse

Pitot Location								
Traverse Point	% of Diameter	Inches into Tunnel	dP in. H ₂ O	Tunnel Temp, °F	dP ^{1/2}	Tunnel Static Pressure	-0.400	in. H ₂ O
X1	4.4	0.53	0.104	70	0.322	Tunnel Moisture	2.00	%
X2	14.6	1.75	0.114	70	0.338	Tunnel Diameter	12.00	inches
X3	29.6	3.55	0.112	70	0.335	Pitot Tube C _p	0.99	inches
X4	70.4	8.45	0.110	70	0.332	Tunnel Molecular Weight	29	(dry)
X5	85.4	10.25	0.098	70	0.313	Tunnel Molecular Weight	28.78	(M _s , wet)
X6	95.6	11.47	0.058	70	0.241	Tunnel Area	0.78539816	ft ²
Y1	4.4	0.53	0.102	70	0.319	K _p	85.49	constant
Y2	14.6	1.75	0.112	70	0.335	P _s =P _{bar} +Tunnel Static	30.3305882	in HG
Y3	29.6	3.55	0.116	70	0.341	$V_{strav} = K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 21.167$ $V_{scent} = K_p C_p \sqrt{\Delta p_{center}} \sqrt{\frac{T_{s,center}}{P_s M_s}} = 22.267$ $F_p = V_{strav} / V_{scent} = 0.951$		
Y4	70.4	8.45	0.112	70	0.335			
Y5	85.4	10.25	0.110	70	0.332			
Y6	95.6	11.47	0.092	70	0.303			
Center	50.0	6.00	0.114	70	0.338			

* Probe location must be no closer than 0.50 in to tunnel wall

$$\text{Initial Tunnel Velocity, } V_s = F_p K_p C_p \sqrt{\Delta p_{avg}} \sqrt{\frac{T_{s,avg}}{P_s M_s}} = 20.182435 \text{ ft/sec}$$

Supplementary Data and Information

Environment		Test Start	Test End	(of 12/07/24)
Time of Day		17:03	6:46	
Barometric Pressure, in. Hg		30.36	30.10	
Room Air Velocity, fpm		25	17	
Room Air Temperature, °F		64	62	
Room Relative Humidity, %		33.0	34.0	
Platform Scale Audit, lb.		30.0	30.0	
Leak Checks				
Pitot and associated tubing, (pass/fail) ¹		Pass	Pass	
See sampling box worksheets for sampling boxes				
Dilution Tunnel				
Date last cleaned		11/22/2024		
Smoke Capture, % (visual) ²		100		
Draft Inducement, (pass/fail) ³		Pass		
Static Pressure, in. H ₂ O		-0.400	-0.400	

4

2 Create a smoking condition during start of pre-burn activities and using adequate lighting pointed upward and around tunnel hood, visually observe if 100% of visible smoke is being captured by the hood. If not, increase flow tunnel flow and / or re-assess chimney proximity to draft hood as required and repeat until 100% capture is observed.

3 With the appliance installed and the dilution tunnel flow turned-off, observe the flue draft gauge while turning the dilution tunnel on. Any detectible response by the draft gauge associated with activation of the tunnel flow indicates that draft inducement is occurring. Determine the cause (i.e. flue chimney too deep into tunnel?) before continuing.

Preburn Data

ASTM E2618

Run: 4

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Date: 12/5/24

Final Coal Bed Weight: 28.9 lb.
 Average Heat Output Rate Last One Hour, Btu/hr: 24568.6 Btu/hr.

Beginning Clock Time: 15:03Logging Intervqal, Min: 1

NOTE: None

Coal Bed Range	16.9	33.8
(lb):	(min)	(max)

120		Appliance						Load								Room Temp °F
Elapsed Time (Min)	Fuel Remainin g (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H2O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	σi, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	
0	31.1	169.2	168.2	0.9	216	-0.04	56.7	169	112.1	0.571	1.0012	8.335	4.755	533.9	32035.3	65
1	31.1	169.4	168.5	0.9	210	-0.04	56.8	169	112.3	0.571	1.0012	8.335	4.755	534.7	32082	65
2	31.1	169.6	168.7	0.9	203	-0.04	56.9	169	112.4	0.571	1.0012	8.335	4.755	535.3	32120	63
3	31.1	169.9	169.0	0.9	198	-0.039	57.0	170	112.6	0.571	1.0012	8.335	4.755	536.1	32163.1	63
4	31.1	170.0	169.1	0.9	195	-0.038	57.1	170	112.7	0.571	1.0012	8.335	4.755	536.4	32185.2	62
5	31.2	170.2	169.4	0.8	192	-0.037	57.1	170	112.8	0.537	1.0012	8.334	4.475	505.3	30315.7	62
6	31.1	170.4	169.6	0.8	189	-0.036	57.2	170	112.9	0.503	1.0012	8.334	4.196	474.2	28453.7	62
7	31.1	170.5	169.8	0.8	185	-0.034	57.2	170	113.0	0.487	1.0012	8.334	4.056	459.0	27540.7	62
8	31.1	170.7	169.9	0.8	180	-0.033	57.3	170	113.1	0.470	1.0012	8.334	3.916	443.5	26611.5	62
9	31.1	170.7	170.0	0.8	176	-0.032	57.3	170	113.1	0.487	1.0012	8.334	4.056	459.4	27566.9	62
10	31.1	170.8	170.0	0.8	172	-0.032	57.4	171	113.1	0.487	1.0012	8.334	4.056	459.4	27566.1	63
11	31.2	170.9	170.1	0.8	169	-0.031	57.5	171	113.2	0.470	1.0012	8.334	3.916	443.7	26619.2	62
12	31.2	170.9	170.2	0.8	166	-0.031	57.5	171	113.2	0.487	1.0012	8.334	4.056	459.7	27584.3	62
13	31.1	171.0	170.2	0.8	163	-0.03	57.5	171	113.2	0.470	1.0012	8.334	3.916	443.9	26635.1	62
14	31.1	171.1	170.4	0.7	160	-0.03	57.5	171	113.3	0.470	1.0012	8.334	3.916	444.2	26653.6	62
15	31.2	171.1	170.5	0.7	158	-0.029	57.6	171	113.3	0.453	1.0012	8.334	3.776	428.5	25707.7	62
16	31.2	171.2	170.5	0.7	155	-0.028	57.6	171	113.4	0.436	1.0012	8.334	3.636	412.7	24763	62
17	31.1	171.3	170.6	0.7	152	-0.028	57.6	171	113.4	0.453	1.0012	8.334	3.776	428.7	25722.1	62
18	31.3	171.3	170.6	0.7	150	-0.027	57.7	171	113.4	0.453	1.0012	8.334	3.776	428.7	25720.5	62
19	31.2	171.3	170.6	0.7	147	-0.026	57.8	171	113.3	0.436	1.0012	8.334	3.636	412.6	24757.7	62
20	31.3	171.3	170.6	0.7	145	-0.026	57.8	171	113.3	0.453	1.0012	8.334	3.776	428.2	25690.2	63
21	31.2	171.4	170.7	0.7	143	-0.026	57.9	171	113.2	0.436	1.0012	8.334	3.636	412.2	24732.2	63
22	31.4	171.3	170.6	0.7	141	-0.025	58.0	171	113.1	0.453	1.0012	8.334	3.776	427.7	25663	63
23	31.3	171.3	170.7	0.7	139	-0.026	58.0	171	113.1	0.436	1.0012	8.334	3.636	411.8	24705.3	63
24	31.3	171.4	170.7	0.7	137	-0.024	58.1	171	113.1	0.453	1.0012	8.334	3.776	427.5	25648.9	63
25	31.3	171.3	170.6	0.7	135	-0.024	58.1	171	113.0	0.436	1.0012	8.334	3.636	411.4	24682.2	63
26	31.3	171.3	170.6	0.7	133	-0.024	58.1	171	113.0	0.436	1.0012	8.333	3.636	411.2	24673	63
27	31.5	171.4	170.7	0.7	132	-0.023	58.2	171	113.0	0.436	1.0012	8.333	3.636	411.2	24674.2	64
28	31.3	171.3	170.6	0.7	130	-0.023	58.2	171	112.9	0.436	1.0012	8.333	3.636	411.0	24662.9	64
29	31.3	171.3	170.7	0.7	128	-0.023	58.3	171	112.9	0.436	1.0012	8.333	3.636	410.8	24649.8	64
30	31.4	171.3	170.7	0.7	127	-0.023	58.3	171	112.8	0.436	1.0012	8.333	3.636	410.7	24639.1	64
31	31.4	171.3	170.6	0.7	125	-0.022	58.3	171	112.7	0.436	1.0012	8.333	3.636	410.4	24624.4	64
32	31.3	171.2	170.6	0.7	124	-0.022	58.4	171	112.6	0.420	1.0012	8.333	3.496	394.3	23655.7	64
33	31.3	171.2	170.6	0.6	122	-0.022	58.4	171	112.6	0.420	1.0012	8.333	3.496	394.2	23651.5	64
34	31.3	171.2	170.6	0.6	121	-0.022	58.4	171	112.6	0.403	1.0012	8.333	3.356	378.3	22698.5	64
35	31.4	171.2	170.5	0.6	119	-0.021	58.4	171	112.5	0.420	1.0012	8.333	3.496	393.8	23630.1	64
36	31.4	171.1	170.5	0.6	118	-0.022	58.5	171	112.4	0.436	1.0012	8.333	3.636	409.3	24558.9	64
37	31.4	171.1	170.3	0.7	117	-0.021	58.5	171	112.4	0.453	1.0012	8.333	3.776	424.8	25490.1	65
38	31.4	171.0	170.2	0.7	116	-0.02	58.5	171	112.3	0.470	1.0012	8.333	3.915	440.2	26409	64
39	31.5	170.9	170.2	0.7	114	-0.021	58.5	171	112.2	0.453	1.0012	8.333	3.776	424.2	25454.7	64
40	31.4	170.8	170.1	0.7	113	-0.02	58.5	171	112.2	0.470	1.0012	8.333	3.915	439.7	26383.9	65
41	31.4	170.8	170.1	0.7	112	-0.019	58.4	171	112.1	0.470	1.0012	8.333	3.915	439.6	26373.5	65
42	31.5	170.7	170.1	0.6	111	-0.02	58.4	171	112.1	0.436	1.0012	8.333	3.636	408.0	24481.6	65

120		Appliance					Load										
Elapsed Time (Min)	Fuel Remaining (lb.)	T1 Supply Temp °F	T2 Return Temp °F	ΔT °F	Stack Temp °F	Stack Draft (in H2O)	T3 IN °F	OUT °F	ΔTi °F	Vfi Flow GPM	Cpi	oi, lb/min	Mi Flow lb/min	Heat Out Btu/min	Heat output rate Btu/hr	Room Temp °F	
43	31.5	170.7	170.0	0.7	110	-0.019	58.4	170	112.1	0.453	1.0012	8.333	3.776	423.7	25419.1	65	
44	31.5	170.6	169.9	0.7	109	-0.02	58.4	170	112.0	0.470	1.0012	8.333	3.915	439.1	26347.9	65	
45	31.5	170.5	169.8	0.7	108	-0.02	58.4	170	111.9	0.453	1.0012	8.333	3.776	423.0	25381.8	65	
46	31.4	170.4	169.7	0.7	107	-0.019	58.3	170	111.9	0.470	1.0012	8.333	3.915	438.5	26310.7	65	
47	31.5	170.3	169.6	0.7	106	-0.019	58.3	170	111.8	0.453	1.0012	8.333	3.776	422.6	25358.8	65	
48	31.5	170.2	169.5	0.7	106	-0.019	58.3	170	111.7	0.470	1.0012	8.333	3.916	437.9	26274.3	65	
49	31.4	170.1	169.5	0.7	105	-0.018	58.3	170	111.7	0.453	1.0012	8.333	3.776	422.1	25329	65	
50	31.4	170.0	169.4	0.7	103	-0.018	58.3	170	111.6	0.453	1.0012	8.333	3.776	421.9	25315.9	65	
51	31.5	169.9	169.3	0.7	103	-0.018	58.3	170	111.5	0.470	1.0012	8.333	3.916	437.2	26230.6	65	
52	31.5	169.8	169.2	0.7	102	-0.018	58.2	170	111.5	0.453	1.0012	8.333	3.776	421.4	25282.3	66	
53	31.5	169.7	169.0	0.7	101	-0.018	58.2	170	111.3	0.470	1.0012	8.333	3.916	436.5	26190.4	65	
54	31.4	169.6	168.9	0.7	101	-0.018	58.2	169	111.2	0.453	1.0012	8.333	3.776	420.5	25229.6	65	
55	31.6	169.5	168.8	0.7	100	-0.017	58.2	169	111.1	0.453	1.0012	8.333	3.776	420.1	25203.8	66	
56	31.5	169.4	168.8	0.7	99	-0.017	58.2	169	111.0	0.453	1.0012	8.333	3.776	419.8	25186.7	65	
57	31.5	169.4	168.7	0.7	98	-0.017	58.2	169	111.0	0.453	1.0012	8.333	3.776	419.4	25165.7	65	
58	31.5	169.3	168.6	0.7	98	-0.017	58.3	169	110.8	0.453	1.0012	8.333	3.776	419.0	25137.1	65	
59	31.6	169.1	168.5	0.7	97	-0.017	58.3	169	110.7	0.470	1.0012	8.333	3.916	433.9	26036.9	65	
60	31.5	169.0	168.4	0.7	96	-0.018	58.3	169	110.6	0.453	1.0012	8.333	3.776	418.0	25077.9	66	
61	31.5	168.9	168.3	0.7	96	-0.017	58.3	169	110.4	0.470	1.0012	8.333	3.915	433.0	25978.7	66	
62	31.5	168.8	168.2	0.7	95	-0.017	58.4	169	110.3	0.453	1.0012	8.333	3.776	416.9	25012.7	66	
63	31.6	168.7	168.0	0.7	94	-0.017	58.4	169	110.1	0.453	1.0012	8.333	3.776	416.2	24969.3	66	
64	31.6	168.6	167.9	0.7	94	-0.017	58.5	168	109.9	0.470	1.0012	8.333	3.915	430.9	25856.2	66	
65	31.5	168.6	167.9	0.6	93	-0.015	58.5	168	109.8	0.420	1.0012	8.333	3.496	384.4	23061	66	
66	31.5	168.4	167.7	0.7	93	-0.016	58.6	168	109.7	0.470	1.0012	8.333	3.915	429.9	25794.8	67	
67	31.5	168.4	167.8	0.7	140	-0.037	58.5	168	109.8	0.453	1.0012	8.333	3.776	414.9	24892.5	66	
68	31.5	168.3	167.6	0.7	141	-0.022	58.2	168	110.0	0.453	1.0012	8.333	3.776	415.7	24942.3	66	
69	31.5	168.2	167.6	0.7	128	-0.021	58.0	168	110.1	0.470	1.0012	8.334	3.916	431.6	25895.1	65	
70	31.5	168.1	167.5	0.7	120	-0.02	57.8	168	110.2	0.453	1.0012	8.334	3.776	416.7	25000.7	65	
71	31.4	168.0	167.4	0.6	114	-0.02	57.6	168	110.3	0.453	1.0012	8.334	3.776	416.8	25010.9	66	
72	31.5	167.9	167.3	0.6	109	-0.02	57.4	168	110.3	0.453	1.0012	8.334	3.776	417.0	25017.5	66	
73	31.5	167.8	167.2	0.6	106	-0.019	57.3	168	110.3	0.453	1.0012	8.334	3.776	417.2	25030.7	65	
74	31.5	167.7	167.1	0.6	103	-0.019	57.2	168	110.3	0.453	1.0012	8.334	3.776	417.2	25031.4	65	
75	31.6	167.6	166.9	0.6	101	-0.018	57.1	167	110.3	0.436	1.0012	8.335	3.636	401.7	24104.8	66	
76	31.6	167.5	166.9	0.6	100	-0.018	57.0	167	110.3	0.453	1.0012	8.335	3.776	417.1	25025.7	65	
77	31.5	167.3	166.7	0.6	97	-0.018	56.9	167	110.3	0.453	1.0012	8.335	3.776	416.9	25014.1	66	
78	31.6	167.3	166.6	0.6	96	-0.018	56.8	167	110.3	0.453	1.0012	8.335	3.776	416.9	25013.2	65	
79	31.5	167.1	166.5	0.6	95	-0.017	56.7	167	110.2	0.453	1.0012	8.335	3.776	416.8	25006	66	
80	31.5	167.0	166.3	0.6	95	-0.017	56.6	167	110.2	0.436	1.0012	8.335	3.637	401.2	24071.8	66	
81	31.6	166.8	166.2	0.6	94	-0.017	56.5	167	110.2	0.453	1.0012	8.335	3.776	416.5	24992.5	66	
82	31.6	166.8	166.1	0.6	94	-0.017	56.5	167	110.1	0.453	1.0012	8.335	3.777	416.4	24983	66	
83	31.6	166.6	166.0	0.6	93	-0.017	56.4	166	110.1	0.436	1.0012	8.335	3.637	400.9	24051.5	66	
84	31.5	166.5	166.0	0.5	93	-0.017	56.3	166	110.1	0.403	1.0012	8.335	3.357	369.9	22193	66	
85	31.5	166.4	165.8	0.6	92	-0.017	56.2	166	110.0	0.453	1.0012	8.335	3.777	416.0	24957.5	66	
86	31.5	166.3	165.7	0.6	92	-0.017	56.2	166	110.0	0.453	1.0012	8.335	3.777	415.8	24946.3	65	
87	31.4	166.1	165.5	0.6	91	-0.017	56.1	166	109.9	0.453	1.0012	8.336	3.777	415.6	24938.9	65	
88	31.6	166.0	165.4	0.6	91	-0.017	56.0	166	109.8	0.436	1.0012	8.336	3.637	400.0	23999	66	
89	31.5	165.8	165.2	0.6	91	-0.016	55.9	166	109.7	0.453	1.0012	8.336	3.777	415.0	24898.1	66	
90	31.6	165.7	165.1	0.6	89	-0.016	55.8	166	109.7	0.453	1.0012	8.336	3.777	414.9	24891.6	65	
91	31.6	165.6	165.0	0.6	89	-0.016	55.8	165	109.7	0.453	1.0012	8.336	3.777	414.7	24879.8	66	
92	31.5	165.5	164.9	0.6	89	-0.016	55.7	165	109.6	0.436	1.0012	8.336	3.637	399.1	23945.3	65	
93	31.5	165.4	164.8	0.6	88	-0.016	55.7	165	109.5	0.453	1.0012	8.336	3.777	414.2	24849.3	65	
94	31.5	165.2	164.6	0.6	88	-0.016	55.6	165	109.4	0.453	1.0012	8.336	3.777	413.9	24831.9	64	
95	31.6	165.1	164.5	0.6	88	-0.016	55.6	165	109.4	0.453	1.0012	8.336	3.777	413.7	24819.7	64	
96	31.5	165.0	164.4	0.6	87	-0.016	55.5	165	109.3	0.436	1.0012	8.336	3.637	398.0	23881.9	64	
97	31.4	164.9	164.2	0.6	87	-0.016	55.5	165	109.2	0.453	1.0012	8.336	3.777	413.0	24782.8	64	
98	31.5	164.8	164.2	0.6	139	-0.035	55.4	165	109.2	0.453	1.0012	8.336	3.777	412.8	24768.8	64	
99	31.4	164.7	164.1	0.6	132	-0.02	55.4	165	109.1	0.436	1.0012	8.336	3.637	397.4	23842.8	64	
100	31.4	164.5	163.9	0.6	119	-0.019	55.4	164	109.0	0.453	1.0012	8.336	3.777	412.3	24737.1	65	
101	31.4	164.4	163.8	0.6	111	-0.019	55.3	164	108.9	0.453	1.0012	8.336	3.777	411.9	24714.3	65	

[illegible]

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 17:03

Test Length: 2262 min

Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg

Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
Tot / Avg		168.8	365.324	0.162	1.29	76.0	1.87	63.68	47.28	63.27	100.0	65.9	0.114	0.337	21.10
Minimum	0.0	-0.2	0.000	0.156	1.00	69	1.84	62	38	59	96.3	61	0.103	0.321	20.53
Max	168.8	0.9	365.324	0.164	1.33	77	1.89	67	57	67	103.0	81	0.122	0.349	21.84
0	168.8		0.000		1.00	69	1.84	64	42	64		71	0.117	0.342	21.84
1	168.0	0.8	0.156	0.156	1.33	69	1.88	64	38	64	96.3	69	0.114	0.338	21.35
2	167.5	0.5	0.318	0.162	1.31	69	1.88	64	38	64	101.6	73	0.115	0.339	21.28
3	166.9	0.6	0.480	0.162	1.33	69	1.88	64	38	64	101.5	72	0.118	0.344	21.49
4	166.5	0.4	0.641	0.161	1.33	69	1.88	64	38	63	100.2	72	0.116	0.341	21.53
5	166.0	0.5	0.802	0.161	1.32	69	1.88	64	38	63	100.5	72	0.114	0.338	21.35
6	165.4	0.7	0.963	0.161	1.32	69	1.88	65	38	63	101.2	73	0.115	0.339	21.31
7	164.9	0.5	1.124	0.161	1.31	69	1.87	65	38	64	101.0	73	0.117	0.342	21.46
8	164.3	0.6	1.285	0.161	1.31	69	1.87	65	38	64	101.0	73	0.112	0.335	21.32
9	164.0	0.3	1.446	0.161	1.30	69	1.87	65	39	64	101.5	73	0.115	0.339	21.23
10	163.6	0.4	1.607	0.161	1.31	69	1.86	65	39	64	101.0	73	0.119	0.345	21.55
11	163.1	0.5	1.766	0.159	1.30	69	1.87	65	39	64	98.9	73	0.116	0.341	21.60
12	162.5	0.6	1.926	0.160	1.30	69	1.86	65	39	63	99.7	73	0.116	0.341	21.46
13	162.1	0.4	2.087	0.161	1.30	70	1.86	65	39	64	100.3	72	0.118	0.344	21.54
14	161.5	0.6	2.248	0.161	1.30	70	1.87	65	39	64	100.3	73	0.113	0.336	21.40
15	161.0	0.5	2.408	0.160	1.29	70	1.86	65	39	63	100.4	73	0.115	0.339	21.27
16	160.6	0.4	2.567	0.159	1.30	70	1.86	65	40	63	99.8	72	0.115	0.339	21.36
17	160.4	0.2	2.728	0.161	1.30	70	1.86	65	40	64	100.8	73	0.115	0.339	21.36
18	159.7	0.7	2.888	0.160	1.30	70	1.86	65	40	63	100.2	73	0.116	0.341	21.41
19	159.6	0.2	3.049	0.161	1.31	70	1.85	65	40	64	100.3	68	0.115	0.339	21.36
20	159.5	0.1	3.210	0.161	1.29	70	1.85	65	40	63	100.2	67	0.114	0.338	21.21
21	159.3	0.2	3.370	0.160	1.29	70	1.85	65	40	63	99.5	66	0.118	0.344	21.33
22	159.4	-0.1	3.530	0.160	1.30	71	1.85	65	40	65	98.9	66	0.115	0.339	21.36
23	159.3	0.1	3.691	0.161	1.30	71	1.85	65	40	63	99.9	65	0.113	0.336	21.12
24	159.4	-0.1	3.853	0.162	1.30	71	1.85	65	40	63	101.1	64	0.113	0.336	21.01
25	159.4	0.0	4.013	0.160	1.29	71	1.86	65	40	63	99.9	64	0.115	0.339	21.09
26	159.3	0.0	4.174	0.161	1.30	71	1.86	65	40	63	100.5	64	0.111	0.333	21.00
27	159.2	0.1	4.334	0.160	1.30	71	1.85	64	40	63	100.7	64	0.110	0.332	20.77
28	159.3	-0.1	4.495	0.161	1.30	72	1.85	64	41	63	101.1	63	0.116	0.341	20.99
29	159.2	0.1	4.656	0.161	1.31	72	1.85	64	41	63	100.2	64	0.113	0.336	21.13
30	159.4	-0.1	4.818	0.162	1.30	72	1.86	64	41	63	100.8	63	0.113	0.336	20.99
31	159.3	0.1	4.979	0.161	1.30	72	1.85	64	41	63	100.3	63	0.114	0.338	21.03
32	159.3	0.0	5.139	0.160	1.30	72	1.85	64	41	63	99.4	63	0.115	0.339	21.12
33	159.3	0.0	5.300	0.161	1.30	72	1.86	64	41	63	99.2	63	0.119	0.345	21.35
34	159.3	-0.1	5.461	0.161	1.30	72	1.85	64	41	63	98.6	63	0.116	0.341	21.39
35	159.3	0.0	5.623	0.162	1.30	72	1.85	64	41	63	99.5	63	0.115	0.339	21.21
36	159.4	-0.1	5.784	0.161	1.31	72	1.85	64	41	62	98.9	63	0.120	0.346	21.39
37	159.4	0.0	5.945	0.161	1.30	73	1.85	64	41	63	98.6	63	0.113	0.336	21.30
38	159.3	0.1	6.105	0.160	1.29	73	1.85	64	41	63	98.5	63	0.116	0.341	21.12
39	159.4	-0.1	6.266	0.161	1.31	73	1.85	64	41	62	99.1	63	0.118	0.344	21.35
40	159.3	0.1	6.427	0.161	1.30	73	1.85	64	41	62	98.9	63	0.112	0.335	21.16

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
41	159.3	0.0	6.589	0.162	1.30	73	1.85	64	41	63	100.3	63	0.115	0.339	21.03
42	159.4	-0.1	6.751	0.162	1.30	73	1.85	64	41	63	100.2	63	0.116	0.341	21.21
43	159.3	0.1	6.912	0.161	1.29	73	1.86	64	41	62	98.8	63	0.118	0.344	21.35
44	159.4	0.0	7.073	0.161	1.30	73	1.85	64	41	62	98.6	63	0.115	0.339	21.30
45	159.4	-0.1	7.234	0.161	1.31	73	1.85	64	41	62	99.4	63	0.112	0.335	21.03
46	159.3	0.1	7.395	0.161	1.30	73	1.86	64	41	62	99.8	63	0.117	0.342	21.12
47	159.4	-0.1	7.557	0.162	1.30	74	1.86	64	41	62	99.5	63	0.118	0.344	21.39
48	159.4	0.0	7.719	0.162	1.30	74	1.85	64	41	62	98.7	63	0.117	0.342	21.39
49	159.5	-0.1	7.880	0.161	1.30	74	1.85	64	41	62	98.6	63	0.114	0.338	21.21
50	159.3	0.2	8.041	0.161	1.30	74	1.86	64	41	62	99.4	63	0.113	0.336	21.03
51	159.4	-0.1	8.202	0.161	1.30	74	1.86	63	41	62	99.5	63	0.117	0.342	21.16
52	159.4	0.0	8.364	0.162	1.30	74	1.85	63	41	62	99.5	62	0.115	0.339	21.25
53	159.4	0.0	8.525	0.161	1.31	74	1.85	63	42	62	99.1	63	0.113	0.336	21.06
54	159.4	0.0	8.688	0.163	1.30	74	1.85	63	42	62	100.8	63	0.116	0.341	21.12
55	159.4	0.0	8.849	0.161	1.30	74	1.85	63	42	62	99.5	63	0.112	0.335	21.07
56	159.4	0.0	9.010	0.161	1.30	74	1.85	63	42	62	99.3	62	0.118	0.344	21.15
57	159.5	-0.1	9.172	0.162	1.31	74	1.86	63	42	62	99.2	62	0.117	0.342	21.37
58	159.5	0.0	9.333	0.161	1.31	74	1.86	63	42	62	98.6	62	0.113	0.336	21.14
59	159.5	0.0	9.494	0.161	1.31	74	1.86	63	42	62	99.3	63	0.116	0.341	21.11
60	159.5	0.0	9.657	0.163	1.31	74	1.86	63	42	62	100.2	63	0.117	0.342	21.30
61	159.5	0.0	9.819	0.162	1.31	74	1.86	63	42	62	99.5	63	0.113	0.336	21.16
62	159.5	0.0	9.980	0.161	1.31	75	1.85	63	42	62	99.1	62	0.116	0.341	21.11
63	159.4	0.0	10.142	0.162	1.30	75	1.85	63	42	62	99.3	62	0.117	0.342	21.28
64	159.4	0.0	10.303	0.161	1.31	75	1.85	63	42	62	98.3	62	0.116	0.341	21.28
65	159.4	0.0	10.465	0.162	1.31	75	1.86	63	42	62	99.4	62	0.112	0.335	21.05
66	159.4	0.0	10.627	0.162	1.31	75	1.85	63	42	62	99.9	62	0.117	0.342	21.10
67	159.5	-0.1	10.789	0.162	1.31	75	1.86	63	42	62	99.7	62	0.112	0.335	21.10
68	159.5	0.0	10.951	0.162	1.31	75	1.86	63	42	62	99.9	62	0.116	0.341	21.05
69	159.6	0.0	11.113	0.162	1.30	75	1.85	63	42	62	99.6	62	0.115	0.339	21.19
70	159.5	0.0	11.274	0.161	1.31	75	1.85	63	42	62	98.9	62	0.114	0.338	21.10
71	159.5	0.1	11.436	0.162	1.31	75	1.85	63	42	62	99.4	62	0.118	0.344	21.24
72	159.5	0.0	11.597	0.161	1.31	75	1.86	63	42	62	98.4	62	0.115	0.339	21.28
73	159.5	0.0	11.759	0.162	1.31	75	1.85	63	42	61	99.2	62	0.115	0.339	21.14
74	159.5	0.0	11.922	0.163	1.31	75	1.86	63	42	62	100.1	62	0.115	0.339	21.14
75	159.5	-0.1	12.084	0.162	1.30	75	1.86	63	42	62	100.3	62	0.108	0.329	20.82
76	159.5	0.1	12.246	0.162	1.30	75	1.86	63	42	62	101.0	62	0.116	0.341	20.87
77	159.5	0.0	12.407	0.161	1.31	75	1.86	63	42	62	99.6	62	0.114	0.338	21.14
78	159.6	-0.1	12.569	0.162	1.31	75	1.86	63	42	62	99.7	62	0.114	0.338	21.05
79	159.5	0.0	12.731	0.162	1.31	75	1.86	63	42	62	100.1	62	0.113	0.336	21.01
80	159.5	0.0	12.893	0.162	1.31	75	1.85	63	42	62	100.3	62	0.113	0.336	20.96
81	159.5	0.0	13.055	0.162	1.31	75	1.85	63	42	62	100.3	62	0.114	0.338	21.01
82	159.5	0.0	13.217	0.162	1.31	75	1.85	63	42	62	99.9	62	0.116	0.341	21.14
83	159.5	0.0	13.379	0.162	1.30	75	1.85	63	42	62	99.3	62	0.116	0.341	21.24
84	159.5	-0.1	13.541	0.162	1.31	75	1.86	63	42	62	98.6	62	0.121	0.348	21.46

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
85	159.5	0.0	13.702	0.161	1.31	75	1.85	63	42	62	97.5	62	0.115	0.339	21.42
86	159.5	0.0	13.865	0.163	1.31	75	1.86	63	42	62	99.7	62	0.113	0.336	21.05
87	159.6	-0.1	14.026	0.161	1.31	75	1.85	63	42	62	99.5	62	0.114	0.338	21.01
88	159.5	0.1	14.188	0.162	1.31	75	1.86	63	42	61	100.2	65	0.115	0.339	21.13
89	159.4	0.1	14.351	0.163	1.30	75	1.85	63	42	61	100.3	62	0.116	0.341	21.22
90	159.5	-0.1	14.513	0.162	1.31	75	1.86	63	42	62	99.0	62	0.117	0.342	21.28
91	159.4	0.1	14.675	0.162	1.30	75	1.86	63	42	62	98.8	62	0.117	0.342	21.33
92	159.4	0.0	14.837	0.162	1.30	75	1.85	63	42	62	99.0	62	0.114	0.338	21.19
93	159.4	0.1	14.998	0.161	1.31	75	1.85	63	42	62	99.0	62	0.114	0.338	21.05
94	159.4	0.0	15.160	0.162	1.31	75	1.86	63	42	62	99.6	62	0.117	0.342	21.19
95	159.4	-0.1	15.322	0.162	1.31	75	1.85	63	42	61	99.0	62	0.117	0.342	21.33
96	159.4	0.0	15.484	0.162	1.31	75	1.85	63	42	62	99.0	62	0.114	0.338	21.19
97	159.4	0.0	15.647	0.163	1.31	75	1.85	63	42	62	100.1	62	0.115	0.339	21.10
98	159.5	-0.1	15.809	0.162	1.31	75	1.86	63	42	62	99.9	61	0.112	0.335	21.00
99	159.5	0.0	15.971	0.162	1.30	75	1.86	62	42	61	99.8	61	0.117	0.342	21.08
100	159.5	0.1	16.133	0.162	1.31	75	1.85	62	42	61	98.9	61	0.119	0.345	21.40
101	159.5	-0.1	16.295	0.162	1.30	75	1.85	62	42	61	98.6	61	0.113	0.336	21.22
102	159.5	0.1	16.456	0.161	1.31	75	1.85	62	42	62	98.7	61	0.116	0.341	21.08
103	159.5	0.0	16.618	0.162	1.31	75	1.86	62	42	61	99.2	61	0.117	0.342	21.26
104	159.4	0.1	16.781	0.163	1.31	75	1.85	62	42	61	99.5	61	0.115	0.339	21.22
105	159.5	0.0	16.943	0.162	1.31	75	1.85	62	42	61	99.2	61	0.115	0.339	21.12
106	159.5	0.0	17.105	0.162	1.31	75	1.86	62	42	61	99.0	61	0.119	0.345	21.31
107	159.5	0.0	17.267	0.162	1.30	75	1.85	62	42	61	98.6	61	0.115	0.339	21.31
108	159.5	0.0	17.429	0.162	1.30	75	1.85	62	42	61	98.9	61	0.116	0.341	21.17
109	159.6	-0.1	17.591	0.162	1.31	75	1.85	62	42	61	99.5	61	0.112	0.335	21.03
110	159.5	0.1	17.753	0.162	1.31	75	1.86	62	42	61	100.5	61	0.110	0.332	20.75
111	159.5	0.0	17.915	0.162	1.31	75	1.85	62	42	61	100.6	61	0.117	0.342	20.99
112	159.5	0.0	18.078	0.163	1.31	75	1.85	62	42	61	100.2	61	0.115	0.339	21.22
113	159.6	0.0	18.240	0.162	1.31	75	1.85	62	42	61	99.2	62	0.116	0.341	21.18
114	159.5	0.1	18.402	0.162	1.30	75	1.86	62	42	61	99.2	62	0.116	0.341	21.24
115	159.5	0.0	18.563	0.161	1.31	75	1.85	62	42	61	99.0	63	0.112	0.335	21.06
116	159.6	-0.1	18.725	0.162	1.30	75	1.85	62	42	61	99.8	63	0.119	0.345	21.21
117	159.5	0.1	18.887	0.162	1.31	75	1.85	62	42	61	99.2	62	0.113	0.336	21.25
118	159.5	0.0	19.049	0.162	1.31	75	1.86	62	42	61	99.7	62	0.113	0.336	20.96
119	159.5	0.1	19.211	0.162	1.31	75	1.85	62	42	62	100.7	65	0.112	0.335	20.94
120	159.4	0.0	19.374	0.163	1.31	75	1.85	62	42	62	101.5	63	0.113	0.336	20.95
121	159.5	0.0	19.536	0.162	1.31	75	1.85	62	42	62	100.3	63	0.115	0.339	21.07
122	159.4	0.1	19.698	0.162	1.30	75	1.85	62	42	62	99.8	64	0.116	0.341	21.22
123	159.4	0.0	19.860	0.162	1.31	75	1.85	62	42	62	99.3	63	0.116	0.341	21.27
124	159.5	-0.1	20.022	0.162	1.31	75	1.86	62	42	62	99.6	64	0.113	0.336	21.13
125	159.5	0.0	20.183	0.161	1.31	75	1.85	62	42	62	99.6	64	0.114	0.338	21.05
126	159.5	0.0	20.345	0.162	1.31	75	1.86	62	42	62	100.4	64	0.113	0.336	21.05
127	159.4	0.0	20.508	0.163	1.31	75	1.85	62	42	63	101.0	64	0.114	0.338	21.05
128	159.5	0.0	20.671	0.163	1.31	75	1.85	63	42	62	101.0	64	0.113	0.336	21.05

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
129	159.5	-0.1	20.832	0.161	1.29	75	1.86	63	42	62	99.9	64	0.113	0.336	21.00
130	159.4	0.1	20.994	0.162	1.30	75	1.86	63	42	62	100.4	65	0.115	0.339	21.10
131	159.4	0.0	21.156	0.162	1.30	75	1.85	63	42	63	99.3	65	0.122	0.349	21.52
132	159.5	-0.1	21.317	0.161	1.31	75	1.85	63	42	63	97.5	65	0.117	0.342	21.62
133	159.4	0.1	21.479	0.162	1.31	75	1.86	63	42	63	98.5	65	0.116	0.341	21.34
134	159.4	0.0	21.641	0.162	1.31	75	1.85	63	42	63	99.3	65	0.116	0.341	21.30
135	159.4	0.0	21.804	0.163	1.30	75	1.86	63	42	63	100.1	65	0.115	0.339	21.25
136	159.5	-0.1	21.966	0.162	1.30	75	1.86	63	42	63	99.4	65	0.118	0.344	21.34
137	159.4	0.1	22.128	0.162	1.29	75	1.86	63	42	63	99.0	66	0.117	0.342	21.44
138	159.4	0.0	22.289	0.161	1.31	75	1.85	63	42	63	98.5	66	0.116	0.341	21.36
139	159.4	0.0	22.451	0.162	1.30	75	1.85	63	42	64	99.8	66	0.112	0.335	21.13
140	159.4	0.0	22.613	0.162	1.31	75	1.85	63	42	64	100.6	66	0.114	0.338	21.04
141	159.4	0.0	22.775	0.162	1.31	75	1.86	63	42	64	100.7	66	0.113	0.336	21.09
142	159.4	0.0	22.938	0.163	1.31	75	1.85	63	42	64	101.6	66	0.110	0.332	20.90
143	159.5	-0.1	23.100	0.162	1.30	75	1.85	63	42	64	101.0	66	0.117	0.342	21.09
144	159.4	0.1	23.262	0.162	1.30	75	1.85	64	42	64	99.9	66	0.116	0.341	21.36
145	159.4	0.0	23.423	0.161	1.30	75	1.86	64	42	64	99.1	66	0.113	0.336	21.18
146	159.4	0.0	23.585	0.162	1.30	75	1.85	64	42	64	100.5	66	0.113	0.336	21.04
147	159.5	-0.1	23.747	0.162	1.30	76	1.86	64	42	65	100.6	66	0.114	0.338	21.09
148	159.4	0.1	23.909	0.162	1.31	76	1.86	64	42	64	100.0	66	0.116	0.341	21.22
149	159.4	0.0	24.071	0.162	1.31	76	1.85	64	42	64	100.0	66	0.111	0.333	21.09
150	159.3	0.1	24.234	0.163	1.30	76	1.85	64	42	64	101.1	69	0.117	0.342	21.16
151	159.2	0.1	24.395	0.161	1.31	76	1.86	64	42	64	99.5	67	0.113	0.336	21.27
152	159.3	0.0	24.557	0.162	1.30	76	1.86	64	42	64	99.8	67	0.117	0.342	21.24
153	159.2	0.0	24.719	0.162	1.30	76	1.85	64	42	65	99.4	67	0.117	0.342	21.43
154	159.2	0.0	24.881	0.162	1.31	76	1.85	64	42	65	98.9	67	0.118	0.344	21.47
155	159.2	0.0	25.043	0.162	1.31	76	1.86	64	42	64	99.0	67	0.115	0.339	21.38
156	159.2	0.1	25.204	0.161	1.31	76	1.86	64	42	65	98.9	67	0.115	0.339	21.24
157	159.2	-0.1	25.367	0.163	1.31	76	1.85	64	42	64	100.3	67	0.116	0.341	21.29
158	159.2	0.0	25.529	0.162	1.30	76	1.86	64	42	65	99.5	67	0.116	0.341	21.34
159	159.3	0.0	25.691	0.162	1.31	76	1.85	64	42	65	99.4	67	0.116	0.341	21.34
160	159.3	0.0	25.853	0.162	1.30	76	1.86	64	42	65	99.7	67	0.113	0.336	21.20
161	159.3	0.0	26.014	0.161	1.30	76	1.85	64	42	65	99.3	67	0.117	0.342	21.24
162	159.3	0.0	26.176	0.162	1.30	76	1.86	64	42	65	99.6	67	0.115	0.339	21.34
163	159.2	0.1	26.338	0.162	1.30	76	1.86	64	42	65	99.8	67	0.113	0.336	21.15
164	159.3	0.0	26.500	0.162	1.30	76	1.86	64	42	65	100.2	67	0.115	0.339	21.15
165	159.2	0.0	26.663	0.163	1.30	76	1.86	64	42	65	100.3	67	0.118	0.344	21.38
166	159.2	0.0	26.825	0.162	1.30	76	1.86	64	42	64	99.1	68	0.116	0.341	21.44
167	159.3	-0.1	26.987	0.162	1.30	76	1.86	64	42	65	99.1	68	0.118	0.344	21.45
168	159.2	0.1	27.148	0.161	1.30	76	1.86	65	42	65	98.5	68	0.115	0.339	21.40
169	159.2	0.0	27.310	0.162	1.30	76	1.86	65	42	65	99.7	69	0.115	0.339	21.28
170	159.3	0.0	27.472	0.162	1.31	76	1.86	65	43	65	100.2	68	0.113	0.336	21.18
171	159.3	0.0	27.634	0.162	1.31	76	1.85	65	42	65	100.7	67	0.111	0.333	20.98
172	159.2	0.1	27.797	0.163	1.30	76	1.85	65	43	65	101.9	67	0.112	0.335	20.92

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
173	159.2	0.0	27.959	0.162	1.31	76	1.86	65	43	65	101.4	66	0.110	0.332	20.86
174	159.3	0.0	28.121	0.162	1.30	76	1.86	65	43	65	101.1	66	0.115	0.339	20.99
175	159.3	0.0	28.282	0.161	1.30	76	1.86	65	42	65	99.8	65	0.113	0.336	21.12
176	159.3	0.0	28.444	0.162	1.30	76	1.86	65	43	65	100.4	65	0.112	0.335	20.97
177	159.2	0.1	28.606	0.162	1.31	77	1.86	65	43	65	100.4	65	0.115	0.339	21.07
178	159.2	0.1	28.768	0.162	1.30	77	1.85	65	43	65	100.2	65	0.111	0.333	21.02
179	159.3	-0.1	28.930	0.162	1.31	77	1.85	65	43	65	100.4	64	0.114	0.338	20.96
180	159.2	0.1	29.093	0.163	1.31	77	1.86	64	43	65	100.7	64	0.114	0.338	21.09
181	159.0	0.2	29.255	0.162	1.31	77	1.86	65	43	65	99.8	65	0.114	0.338	21.10
182	159.2	-0.2	29.417	0.162	1.30	77	1.86	64	43	65	99.8	64	0.114	0.338	21.10
183	159.0	0.2	29.578	0.161	1.31	77	1.86	64	43	65	98.9	64	0.116	0.341	21.18
184	159.0	0.0	29.740	0.162	1.30	77	1.86	64	43	65	99.3	64	0.114	0.338	21.18
185	159.1	-0.1	29.902	0.162	1.31	77	1.86	64	43	64	99.2	64	0.117	0.342	21.23
186	159.0	0.1	30.064	0.162	1.31	77	1.85	64	43	64	99.0	64	0.115	0.339	21.28
187	159.0	0.0	30.227	0.163	1.31	77	1.86	64	43	64	99.6	64	0.116	0.341	21.23
188	159.1	-0.1	30.390	0.163	1.31	77	1.86	64	43	64	99.8	63	0.114	0.338	21.17
189	159.0	0.1	30.552	0.162	1.31	77	1.85	64	43	64	99.4	63	0.114	0.338	21.07
190	159.0	0.0	30.714	0.162	1.30	77	1.87	64	43	64	99.6	63	0.115	0.339	21.12
191	159.0	0.0	30.875	0.161	1.30	77	1.85	64	43	64	98.6	63	0.116	0.341	21.21
192	158.9	0.1	31.038	0.163	1.30	77	1.87	64	43	64	99.9	66	0.115	0.339	21.24
193	158.5	0.4	31.199	0.161	1.31	77	1.86	64	43	64	98.8	68	0.117	0.342	21.34
194	158.0	0.5	31.361	0.162	1.31	77	1.87	64	43	64	99.5	69	0.114	0.338	21.32
195	157.4	0.6	31.524	0.163	1.31	77	1.86	64	43	64	100.7	71	0.114	0.338	21.21
196	156.8	0.6	31.686	0.162	1.31	77	1.87	64	43	63	100.3	73	0.117	0.342	21.39
197	156.2	0.6	31.848	0.162	1.30	77	1.86	65	43	63	100.1	74	0.114	0.338	21.42
198	155.6	0.6	32.009	0.161	1.30	77	1.86	65	43	63	99.4	72	0.116	0.341	21.37
199	155.0	0.6	32.171	0.162	1.31	77	1.86	65	43	63	100.3	73	0.112	0.335	21.26
200	154.4	0.6	32.332	0.161	1.31	77	1.87	65	43	63	100.3	73	0.114	0.338	21.18
201	154.0	0.5	32.494	0.162	1.31	77	1.87	65	43	63	100.4	73	0.118	0.344	21.46
202	153.4	0.5	32.657	0.163	1.31	77	1.87	65	43	63	100.2	73	0.116	0.341	21.55
203	152.8	0.7	32.819	0.162	1.30	77	1.87	65	43	63	99.6	72	0.115	0.339	21.40
204	152.3	0.4	32.981	0.162	1.31	77	1.87	65	43	63	100.1	73	0.114	0.338	21.31
205	151.7	0.7	33.142	0.161	1.29	77	1.86	65	43	63	100.1	72	0.112	0.335	21.17
206	151.2	0.4	33.304	0.162	1.30	77	1.86	65	43	62	101.2	72	0.112	0.335	21.07
207	150.8	0.5	33.465	0.161	1.30	77	1.86	65	44	63	100.8	72	0.112	0.335	21.07
208	150.2	0.6	33.627	0.162	1.30	77	1.86	65	44	63	100.7	72	0.119	0.345	21.39
209	149.6	0.6	33.789	0.162	1.31	77	1.87	65	44	62	99.2	72	0.118	0.344	21.67
210	149.1	0.5	33.952	0.163	1.30	77	1.87	65	44	62	99.7	72	0.114	0.338	21.44
211	148.8	0.3	34.113	0.161	1.30	77	1.87	65	44	63	99.8	72	0.111	0.333	21.11
212	148.0	0.8	34.275	0.162	1.30	77	1.87	65	44	62	101.1	72	0.115	0.339	21.16
213	147.5	0.5	34.437	0.162	1.30	77	1.87	65	44	63	100.7	73	0.114	0.338	21.31
214	147.0	0.5	34.598	0.161	1.31	77	1.87	65	44	62	99.9	73	0.114	0.338	21.27
215	146.4	0.6	34.760	0.162	1.30	77	1.87	65	44	62	100.5	72	0.115	0.339	21.31
216	146.0	0.4	34.922	0.162	1.31	77	1.87	65	44	62	100.3	73	0.115	0.339	21.36

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
217	145.5	0.5	35.084	0.162	1.30	77	1.88	65	44	62	100.1	73	0.116	0.341	21.41
218	145.0	0.5	35.246	0.162	1.30	77	1.87	65	44	62	99.8	69	0.114	0.338	21.33
219	144.8	0.2	35.408	0.162	1.30	77	1.86	65	44	62	99.6	67	0.116	0.341	21.27
220	144.6	0.2	35.570	0.162	1.31	77	1.86	65	44	62	99.7	66	0.112	0.335	21.14
221	144.4	0.1	35.732	0.162	1.31	77	1.87	65	44	62	100.1	66	0.115	0.339	21.09
222	144.4	0.0	35.894	0.162	1.32	77	1.86	65	44	62	99.6	64	0.116	0.341	21.25
223	144.3	0.1	36.055	0.161	1.30	77	1.86	64	44	62	98.3	64	0.117	0.342	21.32
224	144.3	0.0	36.218	0.163	1.31	77	1.86	64	44	62	98.9	64	0.120	0.346	21.50
225	144.2	0.1	36.381	0.163	1.31	77	1.86	64	44	62	98.7	64	0.115	0.339	21.41
226	144.3	-0.1	36.543	0.162	1.30	77	1.87	64	44	62	98.7	63	0.115	0.339	21.17
227	144.2	0.1	36.705	0.162	1.30	76	1.86	64	44	62	99.9	63	0.110	0.332	20.93
228	144.3	-0.1	36.867	0.162	1.31	76	1.86	64	44	62	100.6	62	0.114	0.338	20.88
229	144.2	0.2	37.029	0.162	1.31	76	1.86	64	44	62	100.0	62	0.116	0.341	21.14
230	144.2	0.0	37.191	0.162	1.31	76	1.86	64	44	62	99.1	62	0.116	0.341	21.24
231	144.3	-0.1	37.353	0.162	1.31	76	1.86	64	44	62	99.1	62	0.114	0.338	21.14
232	144.2	0.1	37.515	0.162	1.30	76	1.86	64	44	62	99.4	62	0.115	0.339	21.10
233	144.2	0.0	37.678	0.163	1.30	76	1.87	63	44	62	100.2	62	0.114	0.338	21.10
234	144.2	0.0	37.840	0.162	1.30	76	1.86	63	44	62	99.7	62	0.114	0.338	21.05
235	144.2	-0.1	38.002	0.162	1.30	76	1.86	63	44	62	99.8	62	0.114	0.338	21.05
236	144.3	0.0	38.164	0.162	1.31	76	1.86	63	44	62	99.8	62	0.114	0.338	21.05
237	144.3	0.0	38.326	0.162	1.30	76	1.86	63	44	62	99.4	62	0.117	0.342	21.19
238	144.3	0.0	38.488	0.162	1.31	76	1.86	63	44	62	98.7	62	0.118	0.344	21.37
239	144.3	0.0	38.650	0.162	1.31	76	1.87	63	44	62	98.7	62	0.113	0.336	21.19
240	144.2	0.1	38.813	0.163	1.31	76	1.86	63	44	62	100.2	62	0.114	0.338	21.01
241	144.2	0.0	38.975	0.162	1.31	76	1.86	63	44	62	99.8	62	0.115	0.339	21.10
242	144.2	0.1	39.137	0.162	1.31	76	1.86	63	44	61	99.7	62	0.113	0.336	21.05
243	144.3	-0.2	39.299	0.162	1.30	76	1.86	63	44	61	100.1	62	0.112	0.335	20.91
244	144.3	0.1	39.461	0.162	1.31	76	1.86	63	44	61	99.9	62	0.118	0.344	21.14
245	144.2	0.0	39.623	0.162	1.31	76	1.86	63	44	61	98.9	62	0.116	0.341	21.33
246	144.2	0.0	39.785	0.162	1.31	76	1.87	63	44	61	99.1	62	0.112	0.335	21.05
247	144.3	0.0	39.947	0.162	1.31	76	1.86	63	44	61	99.8	62	0.116	0.341	21.05
248	144.3	0.0	40.110	0.163	1.31	76	1.86	63	44	61	99.7	62	0.118	0.344	21.33
249	144.3	0.0	40.273	0.163	1.30	76	1.86	63	44	61	99.5	62	0.112	0.335	21.14
250	144.3	0.0	40.435	0.162	1.31	76	1.86	63	44	61	99.7	62	0.115	0.339	21.01
251	144.3	0.1	40.597	0.162	1.31	76	1.86	63	44	61	99.7	61	0.114	0.338	21.09
252	144.3	-0.1	40.758	0.161	1.30	76	1.86	63	44	61	98.9	62	0.115	0.339	21.09
253	144.3	0.0	40.920	0.162	1.32	76	1.86	62	44	61	99.2	61	0.117	0.342	21.23
254	144.3	0.1	41.083	0.163	1.31	76	1.86	63	44	61	99.8	63	0.113	0.336	21.14
255	144.4	-0.1	41.245	0.162	1.31	76	1.86	63	44	61	99.6	63	0.116	0.341	21.12
256	144.3	0.0	41.407	0.162	1.31	76	1.86	63	44	61	99.1	62	0.117	0.342	21.29
257	144.3	0.0	41.570	0.163	1.31	76	1.86	62	43	61	99.6	63	0.114	0.338	21.20
258	144.4	-0.1	41.732	0.162	1.30	76	1.87	62	43	61	99.4	62	0.115	0.339	21.11
259	144.4	0.0	41.894	0.162	1.31	76	1.87	62	43	61	99.9	62	0.111	0.333	20.96
260	144.3	0.0	42.056	0.162	1.31	76	1.86	62	43	61	100.7	62	0.111	0.333	20.77

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24
 Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335
 Sample Train Leak Checks
 Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
261	144.4	-0.1	42.217	0.161	1.31	76	1.86	62	43	61	99.8	63	0.118	0.344	21.11
262	144.4	0.0	42.380	0.163	1.31	76	1.86	62	43	62	100.0	63	0.114	0.338	21.26
263	144.4	0.0	42.542	0.162	1.31	76	1.86	62	43	62	98.8	63	0.120	0.346	21.35
264	144.4	0.0	42.705	0.163	1.30	76	1.86	62	43	62	99.4	64	0.113	0.336	21.31
265	144.4	0.0	42.867	0.162	1.31	76	1.87	62	43	62	99.2	64	0.117	0.342	21.18
266	144.4	0.0	43.029	0.162	1.30	75	1.86	62	43	62	99.6	64	0.113	0.336	21.18
267	144.3	0.0	43.191	0.162	1.31	75	1.87	62	43	62	99.9	64	0.115	0.339	21.09
268	144.4	0.0	43.353	0.162	1.31	75	1.86	63	43	62	99.7	64	0.117	0.342	21.28
269	144.4	-0.1	43.514	0.161	1.31	75	1.86	63	43	62	98.8	64	0.114	0.338	21.23
270	144.5	0.0	43.677	0.163	1.31	75	1.86	63	43	62	100.2	64	0.116	0.341	21.18
271	144.4	0.1	43.839	0.162	1.31	75	1.86	63	43	62	99.8	65	0.114	0.338	21.19
272	144.5	-0.1	44.001	0.162	1.31	75	1.87	63	43	63	100.2	65	0.113	0.336	21.07
273	144.5	0.0	44.163	0.162	1.31	75	1.87	63	43	63	100.7	65	0.112	0.335	20.97
274	144.4	0.1	44.325	0.162	1.30	75	1.87	63	43	63	100.4	65	0.118	0.344	21.20
275	144.4	0.0	44.487	0.162	1.30	75	1.87	63	43	63	99.6	65	0.114	0.338	21.30
276	144.4	0.0	44.649	0.162	1.30	75	1.86	63	43	63	99.9	65	0.113	0.336	21.07
277	144.3	0.1	44.811	0.162	1.31	75	1.87	63	43	63	100.4	65	0.115	0.339	21.11
278	144.4	-0.1	44.973	0.162	1.30	76	1.87	63	43	63	100.4	66	0.111	0.333	21.03
279	144.4	0.0	45.135	0.162	1.31	75	1.86	63	43	63	100.9	65	0.113	0.336	20.94
280	144.4	0.1	45.298	0.163	1.31	76	1.86	63	43	63	100.8	66	0.119	0.345	21.31
281	144.4	-0.1	45.459	0.161	1.31	76	1.86	63	43	63	98.6	66	0.114	0.338	21.36
282	144.5	0.0	45.621	0.162	1.30	76	1.86	63	43	63	99.2	65	0.117	0.342	21.26
283	144.5	0.0	45.783	0.162	1.30	76	1.86	63	43	63	99.3	66	0.115	0.339	21.31
284	144.5	0.0	45.945	0.162	1.30	76	1.86	63	43	64	99.4	66	0.116	0.341	21.27
285	144.4	0.1	46.107	0.162	1.31	76	1.86	63	43	64	99.6	66	0.114	0.338	21.22
286	144.4	0.1	46.269	0.162	1.31	76	1.86	63	43	63	99.8	66	0.115	0.339	21.18
287	144.4	-0.1	46.431	0.162	1.30	76	1.87	64	43	64	100.1	67	0.113	0.336	21.14
288	144.2	0.2	46.593	0.162	1.30	76	1.86	64	43	64	100.3	67	0.115	0.339	21.15
289	144.2	0.1	46.755	0.162	1.30	76	1.86	64	43	64	99.5	66	0.119	0.345	21.42
290	144.1	0.1	46.916	0.161	1.30	76	1.87	64	43	64	98.4	67	0.114	0.338	21.37
291	144.2	-0.1	47.078	0.162	1.31	76	1.87	64	43	65	99.6	66	0.115	0.339	21.19
292	144.1	0.1	47.240	0.162	1.31	76	1.87	64	43	64	100.2	67	0.112	0.335	21.10
293	144.1	0.0	47.402	0.162	1.31	76	1.86	64	43	64	100.5	66	0.114	0.338	21.05
294	144.2	0.0	47.565	0.163	1.31	76	1.86	64	43	64	101.2	67	0.113	0.336	21.10
295	144.2	0.0	47.727	0.162	1.30	76	1.87	64	43	65	100.0	66	0.118	0.344	21.28
296	144.1	0.1	47.889	0.162	1.30	76	1.86	64	43	64	99.5	66	0.113	0.336	21.27
297	144.1	0.0	48.050	0.161	1.30	76	1.86	64	43	65	99.2	67	0.116	0.341	21.19
298	144.1	0.0	48.212	0.162	1.30	76	1.86	64	43	64	99.6	67	0.117	0.342	21.38
299	144.1	0.0	48.374	0.162	1.31	76	1.86	64	43	64	99.1	67	0.117	0.342	21.43
300	144.1	0.0	48.536	0.162	1.30	76	1.86	64	43	65	99.2	69	0.116	0.341	21.40
301	144.2	-0.1	48.698	0.162	1.31	76	1.86	64	43	65	99.7	69	0.114	0.338	21.29
302	144.2	0.0	48.861	0.163	1.30	76	1.86	64	43	65	100.6	67	0.115	0.339	21.22
303	144.2	0.0	49.022	0.161	1.30	76	1.86	64	43	65	99.2	66	0.115	0.339	21.23
304	144.2	0.0	49.184	0.162	1.30	76	1.86	64	43	65	99.6	66	0.116	0.341	21.27

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
305	144.1	0.0	49.346	0.162	1.30	76	1.87	64	43	65	100.0	65	0.110	0.332	21.03
306	144.2	0.0	49.507	0.161	1.31	76	1.86	64	43	66	100.0	65	0.115	0.339	20.97
307	144.2	0.0	49.669	0.162	1.31	76	1.86	64	43	65	100.2	65	0.115	0.339	21.20
308	144.1	0.0	49.831	0.162	1.31	76	1.86	64	43	65	99.2	64	0.118	0.344	21.33
309	144.2	0.0	49.994	0.163	1.30	76	1.86	64	43	65	99.7	64	0.113	0.336	21.23
310	144.1	0.0	50.156	0.162	1.31	76	1.86	64	43	65	99.7	64	0.114	0.338	21.05
311	144.2	0.0	50.318	0.162	1.30	76	1.86	64	43	64	100.2	64	0.113	0.336	21.05
312	144.1	0.1	50.480	0.162	1.30	76	1.87	64	43	65	100.3	64	0.113	0.336	21.00
313	144.1	0.0	50.642	0.162	1.30	76	1.86	64	43	65	100.4	64	0.113	0.336	21.00
314	144.1	0.0	50.803	0.161	1.30	76	1.86	64	43	64	100.0	64	0.111	0.333	20.91
315	144.1	0.0	50.966	0.163	1.30	76	1.87	64	43	64	101.3	63	0.114	0.338	20.94
316	144.1	0.0	51.128	0.162	1.31	76	1.87	64	43	64	99.8	63	0.117	0.342	21.21
317	144.1	0.0	51.290	0.162	1.30	76	1.86	64	43	64	99.3	63	0.113	0.336	21.16
318	144.1	0.0	51.452	0.162	1.30	76	1.87	64	43	64	100.1	65	0.112	0.335	20.95
319	144.0	0.1	51.614	0.162	1.30	76	1.86	64	43	64	100.6	64	0.114	0.338	21.01
320	143.9	0.0	51.776	0.162	1.30	76	1.86	64	43	64	100.0	63	0.115	0.339	21.13
321	144.0	0.0	51.938	0.162	1.30	76	1.86	64	43	64	99.6	63	0.114	0.338	21.12
322	143.9	0.1	52.100	0.162	1.30	76	1.86	64	43	64	99.3	63	0.118	0.344	21.26
323	144.0	-0.1	52.262	0.162	1.31	76	1.86	64	43	64	98.7	63	0.117	0.342	21.39
324	143.9	0.1	52.424	0.162	1.31	76	1.86	63	44	63	98.4	63	0.118	0.344	21.39
325	143.9	0.0	52.587	0.163	1.30	76	1.87	63	44	63	99.0	63	0.117	0.342	21.39
326	143.9	0.0	52.749	0.162	1.31	76	1.86	63	44	63	98.6	62	0.115	0.339	21.25
327	143.9	0.0	52.911	0.162	1.30	76	1.87	63	44	63	99.1	62	0.115	0.339	21.14
328	143.9	0.0	53.073	0.162	1.30	76	1.86	63	44	63	99.1	62	0.117	0.342	21.24
329	143.9	0.0	53.235	0.162	1.31	76	1.87	63	44	63	99.1	62	0.113	0.336	21.14
330	143.9	0.0	53.397	0.162	1.31	76	1.86	63	44	63	99.1	62	0.119	0.345	21.24
331	144.0	-0.1	53.559	0.162	1.30	76	1.86	63	44	63	98.4	62	0.118	0.344	21.46
332	144.0	0.0	53.721	0.162	1.31	76	1.86	63	44	62	98.1	62	0.117	0.342	21.37
333	144.0	-0.1	53.884	0.163	1.30	76	1.86	63	44	62	99.0	62	0.117	0.342	21.33
334	143.9	0.2	54.046	0.162	1.30	76	1.86	63	44	62	98.6	62	0.116	0.341	21.28
335	143.9	0.0	54.208	0.162	1.30	76	1.86	63	44	62	98.8	62	0.116	0.341	21.24
336	144.0	-0.1	54.370	0.162	1.31	76	1.86	63	44	62	99.0	62	0.115	0.339	21.19
337	143.9	0.2	54.532	0.162	1.31	76	1.86	63	44	62	99.2	62	0.115	0.339	21.14
338	143.9	-0.1	54.694	0.162	1.31	76	1.86	63	44	62	99.9	62	0.110	0.332	20.91
339	144.0	-0.1	54.856	0.162	1.31	76	1.86	63	44	62	100.3	62	0.116	0.341	20.96
340	143.9	0.2	55.019	0.163	1.31	76	1.86	63	44	62	100.3	62	0.115	0.339	21.19
341	143.8	0.0	55.182	0.163	1.31	76	1.86	63	44	62	100.5	62	0.109	0.330	20.87
342	143.9	0.0	55.343	0.161	1.30	76	1.86	63	44	62	99.6	62	0.119	0.345	21.05
343	143.9	0.0	55.506	0.163	1.30	76	1.86	63	44	62	99.6	62	0.116	0.341	21.37
344	144.0	0.0	55.667	0.161	1.31	76	1.86	63	44	62	98.0	61	0.115	0.339	21.18
345	144.0	0.0	55.829	0.162	1.31	76	1.85	63	44	62	99.4	62	0.113	0.336	21.04
346	144.0	0.0	55.991	0.162	1.30	76	1.86	63	44	62	99.6	61	0.116	0.341	21.09
347	144.0	0.0	56.153	0.162	1.30	76	1.86	63	44	62	99.9	61	0.109	0.330	20.89
348	143.9	0.1	56.316	0.163	1.30	76	1.85	63	44	61	100.8	61	0.117	0.342	20.94

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
349	144.0	-0.1	56.479	0.163	1.30	76	1.87	63	44	62	100.2	64	0.116	0.341	21.29
350	143.8	0.2	56.641	0.162	1.30	76	1.86	63	44	61	98.6	62	0.119	0.345	21.39
351	143.8	0.0	56.803	0.162	1.30	76	1.86	63	44	62	98.1	62	0.117	0.342	21.42
352	143.8	0.0	56.964	0.161	1.30	76	1.86	62	44	61	97.8	61	0.115	0.339	21.23
353	143.9	0.0	57.126	0.162	1.30	76	1.86	62	44	61	98.7	61	0.118	0.344	21.26
354	143.8	0.0	57.288	0.162	1.31	76	1.86	62	44	61	98.4	61	0.117	0.342	21.35
355	143.8	0.0	57.451	0.163	1.31	76	1.86	62	44	61	98.9	61	0.117	0.342	21.31
356	143.8	0.0	57.613	0.162	1.31	76	1.85	62	44	62	98.8	61	0.113	0.336	21.12
357	143.8	-0.1	57.776	0.163	1.30	76	1.86	62	44	61	100.1	62	0.115	0.339	21.04
358	143.7	0.1	57.938	0.162	1.31	76	1.85	62	44	61	99.8	62	0.113	0.336	21.05
359	143.8	0.0	58.100	0.162	1.29	76	1.86	62	44	61	99.7	62	0.116	0.341	21.10
360	143.7	0.1	58.262	0.162	1.30	76	1.86	62	44	61	99.7	63	0.112	0.335	21.06
361	143.8	-0.1	58.423	0.161	1.30	76	1.85	62	44	61	99.3	62	0.115	0.339	21.02
362	143.8	0.0	58.586	0.163	1.30	76	1.86	62	44	62	100.3	62	0.115	0.339	21.14
363	143.7	0.1	58.748	0.162	1.30	76	1.86	62	44	61	99.7	63	0.112	0.335	21.02
364	143.9	-0.1	58.911	0.163	1.31	76	1.86	62	44	61	100.6	63	0.116	0.341	21.07
365	143.9	0.0	59.073	0.162	1.31	76	1.86	62	43	61	99.8	63	0.113	0.336	21.12
366	143.8	0.1	59.235	0.162	1.31	76	1.86	62	43	62	100.0	63	0.113	0.336	20.98
367	143.8	0.0	59.397	0.162	1.31	76	1.86	62	43	62	100.3	64	0.114	0.338	21.04
368	143.9	-0.1	59.559	0.162	1.30	76	1.87	62	44	62	100.2	64	0.113	0.336	21.05
369	143.9	0.0	59.721	0.162	1.31	76	1.86	62	43	62	100.2	64	0.114	0.338	21.05
370	143.9	0.0	59.883	0.162	1.31	76	1.86	62	43	62	100.1	64	0.114	0.338	21.09
371	143.8	0.0	60.045	0.162	1.31	76	1.86	62	43	62	100.0	64	0.114	0.338	21.09
372	143.8	0.1	60.208	0.163	1.30	76	1.85	62	43	63	100.7	64	0.113	0.336	21.05
373	143.8	-0.1	60.370	0.162	1.31	76	1.86	62	43	62	100.3	64	0.113	0.336	21.00
374	143.8	0.0	60.532	0.162	1.30	76	1.87	63	43	62	100.5	65	0.113	0.336	21.01
375	143.9	0.0	60.694	0.162	1.30	76	1.86	63	43	62	100.0	65	0.118	0.344	21.25
376	143.8	0.0	60.856	0.162	1.30	76	1.86	63	43	63	99.4	65	0.113	0.336	21.25
377	143.9	0.0	61.017	0.161	1.31	76	1.86	63	43	63	98.9	65	0.117	0.342	21.20
378	143.8	0.1	61.180	0.163	1.31	76	1.86	63	43	63	99.7	65	0.118	0.344	21.43
379	143.8	0.1	61.342	0.162	1.31	76	1.86	63	43	63	98.3	65	0.119	0.345	21.52
380	143.9	-0.1	61.504	0.162	1.29	76	1.86	63	43	64	98.3	67	0.118	0.344	21.55
381	143.7	0.1	61.666	0.162	1.30	76	1.86	63	43	63	98.6	66	0.116	0.341	21.42
382	143.7	0.0	61.828	0.162	1.30	76	1.85	63	43	64	99.2	66	0.115	0.339	21.27
383	143.7	0.0	61.990	0.162	1.31	76	1.86	63	43	64	99.4	65	0.116	0.341	21.26
384	143.7	0.0	62.152	0.162	1.30	76	1.85	63	43	64	99.6	66	0.114	0.338	21.21
385	143.7	0.1	62.313	0.161	1.30	76	1.86	63	43	64	98.9	66	0.118	0.344	21.32
386	143.7	0.0	62.475	0.162	1.31	76	1.86	63	43	64	99.7	66	0.110	0.332	21.13
387	143.6	0.1	62.638	0.163	1.30	76	1.87	63	43	64	101.1	66	0.115	0.339	20.99
388	143.7	-0.1	62.800	0.162	1.30	76	1.86	63	43	64	100.0	66	0.117	0.342	21.32
389	143.7	0.0	62.962	0.162	1.29	76	1.85	63	43	64	99.5	66	0.113	0.336	21.22
390	143.6	0.1	63.124	0.162	1.30	76	1.86	63	43	64	99.7	66	0.117	0.342	21.22
391	143.7	-0.1	63.286	0.162	1.31	76	1.85	63	43	64	99.5	66	0.115	0.339	21.32
392	143.7	0.0	63.447	0.161	1.30	76	1.86	64	43	64	98.8	66	0.116	0.341	21.27

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
393	143.6	0.1	63.609	0.162	1.30	76	1.86	64	43	64	99.5	66	0.115	0.339	21.27
394	143.7	0.0	63.771	0.162	1.31	76	1.86	64	43	64	99.6	66	0.115	0.339	21.22
395	143.6	0.1	63.934	0.163	1.30	76	1.86	64	43	64	100.3	67	0.116	0.341	21.28
396	143.6	0.0	64.096	0.162	1.31	76	1.86	64	43	64	99.5	66	0.115	0.339	21.28
397	143.7	-0.1	64.258	0.162	1.29	76	1.86	64	44	64	99.7	67	0.115	0.339	21.23
398	143.7	0.0	64.419	0.161	1.30	76	1.86	64	43	64	99.4	67	0.113	0.336	21.15
399	143.6	0.0	64.581	0.162	1.30	76	1.87	64	43	64	100.2	67	0.115	0.339	21.15
400	143.6	0.0	64.743	0.162	1.30	76	1.86	64	44	64	100.1	67	0.114	0.338	21.20
401	143.6	0.0	64.905	0.162	1.31	76	1.86	64	44	64	100.3	67	0.113	0.336	21.11
402	143.6	0.0	65.067	0.162	1.31	76	1.87	64	44	64	101.1	70	0.110	0.332	20.95
403	143.5	0.1	65.230	0.163	1.30	76	1.87	64	43	64	102.1	70	0.115	0.339	21.07
404	143.3	0.2	65.391	0.161	1.30	76	1.86	64	44	65	100.4	71	0.112	0.335	21.18
405	143.0	0.3	65.553	0.162	1.30	76	1.87	64	44	65	100.5	71	0.118	0.344	21.33
406	142.6	0.3	65.714	0.161	1.31	76	1.87	64	44	65	99.8	72	0.111	0.333	21.29
407	142.3	0.3	65.876	0.162	1.30	76	1.87	65	44	65	100.9	74	0.116	0.341	21.23
408	141.7	0.6	66.037	0.161	1.30	76	1.87	65	44	65	100.3	74	0.113	0.336	21.34
409	141.3	0.5	66.200	0.163	1.31	76	1.87	65	44	65	101.7	76	0.114	0.338	21.27
410	140.7	0.6	66.362	0.162	1.30	76	1.87	65	44	65	101.2	77	0.115	0.339	21.39
411	140.3	0.5	66.523	0.161	1.29	76	1.87	65	44	65	100.3	77	0.115	0.339	21.45
412	139.7	0.6	66.684	0.161	1.30	76	1.87	65	44	65	99.8	78	0.119	0.345	21.64
413	139.1	0.6	66.846	0.162	1.31	76	1.87	66	44	65	100.1	79	0.115	0.339	21.66
414	138.5	0.6	67.007	0.161	1.30	76	1.87	66	44	65	100.0	77	0.113	0.336	21.37
415	138.1	0.4	67.168	0.161	1.30	76	1.87	66	44	66	100.6	77	0.114	0.338	21.31
416	137.6	0.5	67.331	0.163	1.29	76	1.87	66	44	66	102.4	77	0.110	0.332	21.16
417	136.7	0.9	67.492	0.161	1.30	76	1.87	66	44	66	101.7	77	0.112	0.335	21.07
418	136.4	0.3	67.653	0.161	1.30	76	1.87	66	44	66	102.0	77	0.109	0.330	21.02
419	135.9	0.6	67.815	0.162	1.29	77	1.87	66	44	66	102.5	77	0.114	0.338	21.12
420	135.3	0.5	67.976	0.161	1.30	77	1.87	66	44	66	101.2	77	0.112	0.335	21.26
421	134.8	0.5	68.137	0.161	1.30	77	1.87	66	44	66	101.0	79	0.114	0.338	21.28
422	134.3	0.5	68.299	0.162	1.30	77	1.87	66	44	65	100.8	78	0.119	0.345	21.62
423	133.6	0.7	68.461	0.162	1.30	77	1.88	66	44	66	100.2	77	0.111	0.333	21.46
424	133.2	0.3	68.623	0.162	1.30	77	1.87	66	44	66	100.9	77	0.116	0.341	21.31
425	132.6	0.7	68.783	0.160	1.30	77	1.88	67	44	66	99.9	76	0.111	0.333	21.30
426	132.1	0.5	68.945	0.162	1.29	77	1.88	67	45	66	101.9	76	0.109	0.330	20.95
427	131.4	0.7	69.106	0.161	1.30	77	1.87	67	45	66	101.9	76	0.113	0.336	21.05
428	130.9	0.5	69.267	0.161	1.30	77	1.88	67	45	67	100.9	75	0.115	0.339	21.32
429	130.4	0.5	69.430	0.163	1.29	77	1.88	67	45	66	101.3	75	0.114	0.338	21.36
430	129.8	0.6	69.591	0.161	1.30	77	1.88	67	45	66	100.2	75	0.113	0.336	21.27
431	129.0	0.8	69.752	0.161	1.30	77	1.88	67	45	66	100.3	75	0.115	0.339	21.31
432	128.6	0.4	69.913	0.161	1.30	77	1.88	67	45	66	100.4	75	0.111	0.333	21.22
433	128.0	0.5	70.075	0.162	1.30	77	1.87	67	45	66	101.4	75	0.114	0.338	21.17
434	127.6	0.4	70.236	0.161	1.30	77	1.88	67	45	66	100.0	70	0.116	0.341	21.36
435	127.2	0.4	70.399	0.163	1.30	77	1.88	66	45	65	100.1	69	0.116	0.341	21.39
436	127.1	0.2	70.561	0.162	1.29	77	1.88	66	45	65	99.5	68	0.114	0.338	21.28

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24
 Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335
 Sample Train Leak Checks
 Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
437	126.8	0.2	70.722	0.161	1.30	77	1.87	66	45	65	99.0	67	0.116	0.341	21.25
438	126.7	0.1	70.883	0.161	1.30	77	1.87	66	45	65	99.0	66	0.113	0.336	21.19
439	126.6	0.2	71.045	0.162	1.30	77	1.87	66	45	65	99.8	65	0.115	0.339	21.12
440	126.6	0.0	71.207	0.162	1.30	77	1.87	66	45	65	100.0	65	0.112	0.335	21.07
441	126.5	0.1	71.369	0.162	1.30	77	1.87	66	45	65	100.0	65	0.116	0.341	21.11
442	126.4	0.1	71.531	0.162	1.31	77	1.87	65	45	65	99.7	65	0.114	0.338	21.20
443	126.5	-0.1	71.694	0.163	1.29	77	1.86	65	45	65	100.2	64	0.114	0.338	21.10
444	126.3	0.2	71.855	0.161	1.30	77	1.87	65	45	65	99.1	64	0.114	0.338	21.09
445	126.3	0.0	72.017	0.162	1.30	77	1.87	65	45	65	99.9	64	0.113	0.336	21.05
446	126.4	0.0	72.179	0.162	1.29	77	1.87	65	45	64	99.9	64	0.115	0.339	21.09
447	126.4	0.0	72.340	0.161	1.30	77	1.86	65	45	64	98.9	63	0.115	0.339	21.17
448	126.3	0.1	72.503	0.163	1.30	77	1.86	65	45	64	99.7	63	0.116	0.341	21.21
449	126.4	0.0	72.665	0.162	1.30	77	1.87	65	45	64	99.0	63	0.115	0.339	21.21
450	126.4	0.0	72.827	0.162	1.31	77	1.86	64	45	64	99.1	63	0.115	0.339	21.16
451	126.3	0.1	72.990	0.163	1.29	77	1.86	64	45	64	100.0	63	0.114	0.338	21.12
452	126.3	0.0	73.151	0.161	1.29	77	1.87	64	45	64	98.7	63	0.116	0.341	21.16
453	126.4	-0.1	73.313	0.162	1.30	77	1.87	64	45	63	99.4	63	0.113	0.336	21.12
454	126.3	0.1	73.475	0.162	1.30	77	1.87	64	45	63	99.8	63	0.113	0.336	20.98
455	126.4	0.0	73.637	0.162	1.31	77	1.87	64	45	63	99.8	63	0.116	0.341	21.12
456	126.4	-0.1	73.799	0.162	1.30	77	1.86	64	45	63	99.6	63	0.112	0.335	21.07
457	126.3	0.1	73.961	0.162	1.30	77	1.87	64	45	62	100.0	63	0.113	0.336	20.93
458	126.4	0.0	74.124	0.163	1.30	77	1.87	64	45	62	100.9	63	0.113	0.336	20.98
459	126.4	0.0	74.285	0.161	1.30	77	1.87	64	45	63	99.3	63	0.115	0.339	21.07
460	126.3	0.0	74.447	0.162	1.30	77	1.87	64	45	63	99.8	62	0.111	0.333	20.97
461	126.4	-0.1	74.609	0.162	1.30	77	1.86	63	45	62	99.9	62	0.116	0.341	21.01
462	126.4	0.0	74.771	0.162	1.30	77	1.86	63	45	62	100.0	62	0.109	0.330	20.91
463	126.4	0.0	74.933	0.162	1.31	77	1.86	63	45	62	100.6	62	0.113	0.336	20.77
464	126.4	0.0	75.095	0.162	1.31	77	1.86	63	45	62	100.3	62	0.115	0.339	21.05
465	126.3	0.1	75.258	0.163	1.30	77	1.86	63	44	62	100.3	63	0.113	0.336	21.06
466	126.5	-0.2	75.420	0.162	1.30	77	1.87	63	44	61	99.5	63	0.117	0.342	21.16
467	126.3	0.1	75.582	0.162	1.30	77	1.87	63	44	62	99.2	64	0.114	0.338	21.22
468	126.4	0.0	75.744	0.162	1.29	77	1.87	63	44	62	99.0	63	0.118	0.344	21.27
469	126.3	0.0	75.906	0.162	1.30	76	1.87	63	44	62	98.7	63	0.116	0.341	21.35
470	126.4	-0.1	76.067	0.161	1.31	76	1.86	63	44	62	98.2	63	0.116	0.341	21.26
471	126.4	0.0	76.230	0.163	1.30	76	1.86	63	44	62	99.9	63	0.113	0.336	21.12
472	126.4	0.0	76.392	0.162	1.31	76	1.87	63	44	62	99.8	63	0.115	0.339	21.07
473	126.5	0.0	76.555	0.163	1.30	76	1.86	63	44	62	100.4	63	0.114	0.338	21.12
474	126.4	0.1	76.717	0.162	1.31	76	1.86	63	44	62	99.5	64	0.117	0.342	21.22
475	126.4	0.0	76.879	0.162	1.30	76	1.86	63	44	63	98.9	64	0.118	0.344	21.41
476	126.4	0.0	77.040	0.161	1.30	76	1.87	63	44	63	98.2	64	0.114	0.338	21.28
477	126.5	0.0	77.202	0.162	1.31	76	1.87	63	44	63	99.5	64	0.114	0.338	21.09
478	126.5	0.0	77.364	0.162	1.31	76	1.87	63	44	63	99.4	64	0.119	0.345	21.32
479	126.5	-0.1	77.526	0.162	1.30	76	1.87	63	44	63	98.9	65	0.115	0.339	21.38
480	126.4	0.1	77.689	0.163	1.30	76	1.87	63	44	63	99.8	65	0.115	0.339	21.20

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
481	126.4	0.0	77.851	0.162	1.30	76	1.87	63	44	63	99.8	65	0.113	0.336	21.11
482	126.5	-0.1	78.013	0.162	1.31	76	1.87	63	44	63	100.2	65	0.114	0.338	21.07
483	126.5	0.0	78.175	0.162	1.30	76	1.87	63	44	63	100.2	65	0.114	0.338	21.11
484	126.4	0.1	78.337	0.162	1.31	76	1.87	63	44	63	99.8	65	0.116	0.341	21.20
485	126.5	-0.1	78.499	0.162	1.31	76	1.86	63	44	63	99.7	65	0.113	0.336	21.16
486	126.4	0.1	78.661	0.162	1.31	76	1.86	63	44	63	99.8	65	0.116	0.341	21.16
487	126.4	0.0	78.823	0.162	1.30	76	1.87	63	44	63	99.7	65	0.114	0.338	21.20
488	126.5	0.0	78.985	0.162	1.31	76	1.87	63	44	64	99.8	66	0.115	0.339	21.17
489	126.4	0.0	79.148	0.163	1.30	76	1.87	63	44	64	100.8	66	0.112	0.335	21.09
490	126.5	-0.1	79.310	0.162	1.29	76	1.87	63	44	63	100.8	66	0.111	0.333	20.90
491	126.5	0.0	79.471	0.161	1.30	76	1.87	63	44	64	100.1	66	0.117	0.342	21.13
492	126.4	0.1	79.633	0.162	1.30	76	1.86	64	44	64	100.2	66	0.111	0.333	21.13
493	126.5	-0.1	79.795	0.162	1.30	76	1.86	64	44	64	100.6	66	0.113	0.336	20.95
494	126.5	0.0	79.957	0.162	1.30	76	1.86	64	44	64	100.6	66	0.115	0.339	21.13
495	126.5	0.0	80.119	0.162	1.31	76	1.86	64	44	64	100.4	66	0.111	0.333	21.04
496	126.5	0.0	80.282	0.163	1.30	76	1.86	64	44	64	101.3	66	0.114	0.338	20.99
497	126.4	0.1	80.444	0.162	1.31	76	1.87	64	44	64	101.3	66	0.107	0.327	20.81
498	126.5	0.0	80.606	0.162	1.30	76	1.86	64	44	64	101.7	66	0.114	0.338	20.81
499	126.5	0.0	80.767	0.161	1.30	76	1.87	64	44	64	100.8	66	0.110	0.332	20.95
500	126.5	0.0	80.929	0.162	1.30	76	1.87	64	44	64	100.8	66	0.116	0.341	21.04
501	126.5	0.0	81.091	0.162	1.31	76	1.86	64	44	64	100.2	66	0.114	0.338	21.22
502	126.4	0.1	81.253	0.162	1.31	76	1.87	64	44	64	100.1	67	0.113	0.336	21.10
503	126.5	-0.1	81.415	0.162	1.30	76	1.88	64	44	64	101.0	69	0.111	0.333	20.99
504	126.3	0.2	81.578	0.163	1.30	76	1.86	64	44	64	102.0	67	0.112	0.335	20.94
505	126.2	0.1	81.739	0.161	1.30	76	1.86	64	44	64	100.4	67	0.114	0.338	21.06
506	126.2	0.0	81.901	0.162	1.30	76	1.87	64	44	65	100.6	67	0.113	0.336	21.11
507	126.2	0.0	82.063	0.162	1.31	76	1.87	64	44	65	100.6	69	0.114	0.338	21.13
508	126.2	0.0	82.224	0.161	1.30	76	1.87	64	44	65	100.1	67	0.112	0.335	21.08
509	126.3	-0.1	82.387	0.163	1.31	76	1.87	64	44	65	101.1	66	0.115	0.339	21.10
510	126.1	0.2	82.549	0.162	1.31	76	1.86	64	44	65	100.0	66	0.115	0.339	21.22
511	126.2	-0.1	82.711	0.162	1.29	76	1.87	64	44	65	100.3	65	0.109	0.330	20.94
512	126.3	-0.1	82.873	0.162	1.30	76	1.87	64	44	65	100.8	65	0.116	0.341	20.97
513	126.3	0.0	83.035	0.162	1.30	76	1.86	64	44	65	100.6	65	0.110	0.332	21.02
514	126.2	0.0	83.197	0.162	1.30	77	1.86	64	44	65	100.3	64	0.116	0.341	21.01
515	126.2	0.0	83.359	0.162	1.31	77	1.87	64	44	65	99.6	64	0.115	0.339	21.23
516	126.2	0.0	83.521	0.162	1.30	77	1.87	64	44	65	99.6	64	0.112	0.335	21.05
517	126.2	0.0	83.683	0.162	1.31	77	1.87	64	44	64	100.2	64	0.113	0.336	20.95
518	126.2	0.0	83.845	0.162	1.31	77	1.86	64	44	64	100.1	64	0.115	0.339	21.09
519	126.2	0.0	84.008	0.163	1.30	77	1.87	64	44	64	100.6	64	0.111	0.333	21.00
520	126.2	-0.1	84.170	0.162	1.31	77	1.87	64	44	65	100.6	64	0.112	0.335	20.86
521	126.2	0.1	84.332	0.162	1.30	77	1.87	64	44	65	100.6	63	0.113	0.336	20.94
522	126.2	-0.1	84.493	0.161	1.30	77	1.86	64	44	64	99.4	63	0.115	0.339	21.07
523	126.3	0.0	84.655	0.162	1.30	77	1.86	64	44	64	99.7	63	0.113	0.336	21.07
524	126.2	0.0	84.817	0.162	1.30	77	1.87	64	44	64	99.6	63	0.116	0.341	21.12

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24
 Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335
 Sample Train Leak Checks
 Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
525	126.3	0.0	84.979	0.162	1.30	77	1.87	64	44	64	99.0	63	0.117	0.342	21.30
526	126.2	0.1	85.142	0.163	1.31	77	1.87	64	44	64	99.6	63	0.112	0.335	21.12
527	126.3	-0.1	85.304	0.162	1.30	77	1.87	64	44	63	99.4	63	0.118	0.344	21.16
528	126.2	0.1	85.466	0.162	1.30	77	1.87	63	44	64	98.8	63	0.116	0.341	21.35
529	126.3	-0.1	85.628	0.162	1.30	77	1.86	63	44	63	98.7	63	0.115	0.339	21.21
530	126.3	0.0	85.790	0.162	1.30	77	1.86	63	44	63	99.4	62	0.112	0.335	21.02
531	126.3	0.0	85.952	0.162	1.31	77	1.86	63	44	63	100.0	63	0.114	0.338	20.97
532	126.3	0.0	86.114	0.162	1.31	77	1.87	63	44	63	100.1	62	0.112	0.335	20.97
533	126.2	0.0	86.276	0.162	1.31	77	1.86	63	44	63	99.7	62	0.117	0.342	21.10
534	126.3	0.0	86.439	0.163	1.31	77	1.86	63	44	62	100.5	64	0.109	0.330	20.98
535	126.1	0.1	86.601	0.162	1.31	77	1.86	63	44	63	100.1	63	0.118	0.344	21.04
536	126.1	0.0	86.763	0.162	1.30	77	1.86	63	44	63	99.3	62	0.114	0.338	21.25
537	126.1	0.1	86.925	0.162	1.30	77	1.86	63	44	63	98.6	62	0.119	0.345	21.28
538	126.0	0.1	87.087	0.162	1.30	77	1.86	63	44	63	98.6	62	0.113	0.336	21.24
539	126.0	0.0	87.249	0.162	1.31	76	1.87	63	44	62	99.6	62	0.112	0.335	20.91
540	126.0	0.0	87.411	0.162	1.31	76	1.87	63	44	62	100.4	62	0.113	0.336	20.91
541	126.1	-0.1	87.574	0.163	1.31	77	1.87	63	44	62	100.5	62	0.116	0.341	21.10
542	126.0	0.1	87.736	0.162	1.30	77	1.87	63	44	62	99.2	62	0.115	0.339	21.19
543	126.0	0.0	87.899	0.163	1.30	76	1.87	63	44	62	99.9	62	0.114	0.338	21.10
544	126.0	0.0	88.061	0.162	1.30	76	1.87	63	44	62	99.7	62	0.114	0.338	21.05
545	126.1	-0.1	88.223	0.162	1.30	76	1.87	63	44	62	99.7	62	0.115	0.339	21.10
546	126.1	0.1	88.385	0.162	1.30	76	1.87	63	44	62	99.6	62	0.114	0.338	21.10
547	126.1	-0.1	88.547	0.162	1.31	76	1.86	63	44	62	99.6	62	0.115	0.339	21.10
548	126.1	0.1	88.709	0.162	1.31	76	1.87	63	44	62	99.3	61	0.116	0.341	21.18
549	126.1	-0.1	88.871	0.162	1.31	76	1.86	63	44	62	99.0	61	0.115	0.339	21.17
550	126.1	0.1	89.034	0.163	1.31	76	1.86	63	44	62	99.9	62	0.114	0.338	21.09
551	126.1	0.0	89.197	0.163	1.30	76	1.86	63	44	62	100.5	62	0.112	0.335	20.96
552	126.2	-0.1	89.359	0.162	1.31	76	1.86	62	44	62	100.0	61	0.115	0.339	21.00
553	126.1	0.1	89.521	0.162	1.30	76	1.86	62	44	62	99.8	61	0.113	0.336	21.03
554	126.1	0.0	89.683	0.162	1.31	76	1.86	62	44	62	99.7	61	0.115	0.339	21.03
555	126.1	0.0	89.845	0.162	1.31	76	1.87	62	44	62	99.4	62	0.116	0.341	21.18
556	126.0	0.1	90.007	0.162	1.31	76	1.86	62	44	61	99.0	62	0.116	0.341	21.24
557	126.1	-0.1	90.169	0.162	1.30	76	1.86	62	44	61	99.2	63	0.114	0.338	21.15
558	126.1	0.0	90.332	0.163	1.31	76	1.86	62	44	61	100.1	62	0.115	0.339	21.11
559	126.1	0.0	90.495	0.163	1.30	76	1.86	62	44	61	100.0	63	0.116	0.341	21.20
560	126.1	0.0	90.657	0.162	1.30	76	1.87	62	44	62	99.3	62	0.114	0.338	21.15
561	126.2	0.0	90.819	0.162	1.30	76	1.87	62	44	62	100.1	62	0.109	0.330	20.82
562	126.1	0.0	90.981	0.162	1.31	76	1.86	62	44	62	101.1	63	0.113	0.336	20.78
563	126.3	-0.1	91.143	0.162	1.31	76	1.87	62	44	62	100.7	63	0.114	0.338	21.03
564	126.1	0.1	91.305	0.162	1.30	76	1.86	62	44	62	100.4	63	0.110	0.332	20.89
565	126.1	0.0	91.467	0.162	1.31	76	1.88	62	44	62	100.9	66	0.115	0.339	20.96
566	126.2	0.0	91.629	0.162	1.31	76	1.87	62	44	62	100.4	64	0.113	0.336	21.11
567	126.0	0.2	91.792	0.163	1.31	76	1.87	62	44	62	100.4	64	0.116	0.341	21.14
568	126.0	0.0	91.954	0.162	1.30	76	1.86	62	44	62	99.7	64	0.113	0.336	21.14

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
569	125.9	0.0	92.116	0.162	1.30	76	1.86	62	44	62	100.0	64	0.114	0.338	21.05
570	126.0	0.0	92.278	0.162	1.31	76	1.86	62	44	62	100.2	64	0.113	0.336	21.05
571	126.0	0.0	92.440	0.162	1.30	76	1.87	62	44	62	100.3	64	0.113	0.336	21.00
572	126.0	0.0	92.602	0.162	1.31	76	1.87	62	44	62	99.7	64	0.119	0.345	21.28
573	126.0	0.0	92.764	0.162	1.31	76	1.86	63	44	62	99.0	64	0.114	0.338	21.32
574	126.0	0.0	92.927	0.163	1.31	76	1.87	63	44	62	100.3	64	0.112	0.335	21.00
575	126.0	0.0	93.089	0.162	1.31	76	1.87	63	44	62	100.6	65	0.113	0.336	20.96
576	126.0	0.0	93.251	0.162	1.31	76	1.86	63	44	63	100.6	65	0.113	0.336	21.02
577	126.0	0.0	93.413	0.162	1.30	76	1.86	63	44	63	100.2	65	0.116	0.341	21.16
578	126.0	0.0	93.575	0.162	1.30	76	1.87	63	44	63	99.4	65	0.117	0.342	21.34
579	125.9	0.1	93.737	0.162	1.30	76	1.86	63	44	62	99.2	65	0.114	0.338	21.25
580	126.0	-0.1	93.899	0.162	1.31	76	1.86	63	44	63	99.3	65	0.118	0.344	21.30
581	126.1	-0.1	94.061	0.162	1.30	76	1.87	63	44	63	99.2	65	0.114	0.338	21.30
582	126.0	0.2	94.223	0.162	1.30	76	1.86	63	44	63	100.1	65	0.110	0.332	20.93
583	126.0	-0.1	94.386	0.163	1.30	76	1.87	63	44	63	101.5	66	0.115	0.339	20.98
584	126.1	-0.1	94.548	0.162	1.30	76	1.86	63	44	63	100.3	66	0.115	0.339	21.22
585	126.1	0.0	94.709	0.161	1.30	76	1.86	63	44	63	99.2	66	0.114	0.338	21.18
586	126.1	-0.1	94.871	0.162	1.30	76	1.86	63	44	63	100.2	66	0.113	0.336	21.09
587	126.1	0.1	95.033	0.162	1.30	76	1.86	63	44	63	100.5	66	0.113	0.336	21.04
588	126.1	0.0	95.195	0.162	1.30	76	1.86	63	44	63	100.7	66	0.112	0.335	20.99
589	126.0	0.0	95.357	0.162	1.31	76	1.87	63	44	64	101.0	66	0.111	0.333	20.90
590	126.1	0.0	95.520	0.163	1.30	76	1.86	63	44	64	101.9	66	0.112	0.335	20.90
591	126.0	0.0	95.682	0.162	1.31	76	1.86	63	44	63	100.9	66	0.114	0.338	21.04
592	126.0	0.0	95.844	0.162	1.30	76	1.87	63	44	64	100.6	66	0.112	0.335	21.04
593	126.0	0.0	96.005	0.161	1.30	76	1.86	63	44	64	100.1	66	0.113	0.336	20.99
594	126.0	0.0	96.167	0.162	1.30	76	1.87	63	44	64	100.6	66	0.114	0.338	21.09
595	126.1	0.0	96.329	0.162	1.31	76	1.86	63	44	64	100.2	66	0.115	0.339	21.18
596	126.0	0.0	96.491	0.162	1.30	76	1.87	64	44	64	100.1	68	0.114	0.338	21.20
597	126.0	0.0	96.653	0.162	1.30	76	1.86	64	44	64	100.3	66	0.113	0.336	21.11
598	125.9	0.2	96.816	0.163	1.30	76	1.86	64	44	64	101.1	66	0.113	0.336	21.04
599	126.0	-0.1	96.977	0.161	1.29	76	1.87	64	44	63	99.6	66	0.116	0.341	21.18
600	125.9	0.1	97.139	0.162	1.31	76	1.86	64	44	64	100.3	66	0.110	0.332	21.04
601	125.9	0.0	97.301	0.162	1.29	76	1.86	64	44	64	100.9	66	0.113	0.336	20.90
602	125.9	0.0	97.462	0.161	1.30	76	1.87	64	44	64	100.0	67	0.116	0.341	21.19
603	126.0	-0.1	97.624	0.162	1.30	76	1.86	64	44	64	99.9	66	0.114	0.338	21.23
604	126.0	0.0	97.786	0.162	1.30	76	1.87	64	44	64	100.4	70	0.112	0.335	21.08
605	125.7	0.2	97.949	0.163	1.30	76	1.86	64	44	64	101.9	70	0.112	0.335	21.03
606	125.6	0.1	98.111	0.162	1.30	76	1.87	64	44	64	101.3	70	0.113	0.336	21.07
607	125.4	0.3	98.272	0.161	1.30	76	1.86	64	44	65	100.8	71	0.111	0.333	21.04
608	125.1	0.3	98.434	0.162	1.30	76	1.87	64	44	64	101.3	72	0.116	0.341	21.20
609	124.9	0.2	98.595	0.161	1.29	76	1.86	64	44	65	100.0	72	0.114	0.338	21.35
610	124.4	0.5	98.757	0.162	1.30	76	1.87	64	44	65	100.6	73	0.114	0.338	21.26
611	124.1	0.4	98.919	0.162	1.30	76	1.87	65	44	65	101.0	74	0.113	0.336	21.24
612	123.6	0.5	99.082	0.163	1.29	76	1.87	65	44	65	102.0	75	0.113	0.336	21.21

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
613	123.2	0.4	99.243	0.161	1.29	76	1.87	65	44	65	101.0	76	0.112	0.335	21.18
614	122.7	0.5	99.405	0.162	1.30	76	1.87	65	44	65	101.9	77	0.113	0.336	21.20
615	122.2	0.5	99.566	0.161	1.30	76	1.88	65	44	65	101.2	78	0.113	0.336	21.27
616	121.7	0.5	99.727	0.161	1.30	76	1.87	65	44	64	100.9	78	0.115	0.339	21.37
617	121.1	0.5	99.889	0.162	1.29	76	1.87	66	44	65	101.0	79	0.116	0.341	21.52
618	120.4	0.7	100.051	0.162	1.30	76	1.88	66	44	65	100.7	79	0.115	0.339	21.53
619	119.8	0.7	100.213	0.162	1.30	76	1.87	66	44	65	100.8	77	0.114	0.338	21.42
620	119.3	0.5	100.374	0.161	1.29	76	1.88	66	44	65	100.4	78	0.115	0.339	21.41
621	118.8	0.5	100.535	0.161	1.30	76	1.88	66	44	65	100.5	77	0.113	0.336	21.36
622	118.1	0.7	100.697	0.162	1.29	76	1.87	66	44	65	101.1	77	0.116	0.341	21.40
623	117.7	0.4	100.858	0.161	1.30	76	1.88	66	44	65	100.2	77	0.114	0.338	21.45
624	117.1	0.6	101.019	0.161	1.30	77	1.88	66	45	65	100.4	77	0.113	0.336	21.31
625	116.7	0.4	101.182	0.163	1.29	77	1.88	66	45	65	102.0	77	0.113	0.336	21.26
626	116.0	0.7	101.343	0.161	1.30	77	1.88	66	45	66	100.6	77	0.115	0.339	21.35
627	115.5	0.5	101.505	0.162	1.29	77	1.88	66	45	66	100.9	77	0.114	0.338	21.40
628	115.1	0.4	101.666	0.161	1.30	77	1.88	66	45	65	99.9	79	0.119	0.345	21.60
629	114.5	0.6	101.827	0.161	1.29	77	1.88	67	45	65	99.5	78	0.114	0.338	21.62
630	113.8	0.7	101.989	0.162	1.30	77	1.88	67	45	66	100.6	77	0.113	0.336	21.32
631	113.2	0.6	102.150	0.161	1.29	77	1.88	67	45	65	100.8	77	0.112	0.335	21.21
632	112.8	0.4	102.313	0.163	1.29	77	1.87	67	45	66	102.3	76	0.112	0.335	21.15
633	112.4	0.4	102.474	0.161	1.29	77	1.88	66	45	65	100.9	75	0.114	0.338	21.23
634	111.8	0.5	102.635	0.161	1.29	77	1.88	66	45	65	100.4	75	0.114	0.338	21.31
635	111.1	0.8	102.797	0.162	1.29	77	1.88	66	45	65	101.0	75	0.112	0.335	21.22
636	110.8	0.3	102.958	0.161	1.29	77	1.88	66	45	65	101.2	75	0.109	0.330	20.98
637	110.2	0.6	103.120	0.162	1.30	77	1.87	66	45	66	101.7	70	0.115	0.339	21.08
638	109.9	0.4	103.282	0.162	1.29	77	1.88	66	45	66	100.7	69	0.112	0.335	21.16
639	109.7	0.2	103.444	0.162	1.30	77	1.87	66	45	66	100.8	68	0.111	0.333	20.95
640	109.5	0.2	103.606	0.162	1.29	77	1.87	66	45	65	101.0	68	0.114	0.338	21.03
641	109.2	0.2	103.767	0.161	1.30	77	1.88	66	45	65	99.6	66	0.115	0.339	21.20
642	109.2	0.0	103.929	0.162	1.30	77	1.87	66	45	65	99.8	66	0.113	0.336	21.13
643	109.0	0.1	104.091	0.162	1.30	77	1.87	66	45	65	99.6	65	0.118	0.344	21.26
644	109.0	0.0	104.252	0.161	1.30	77	1.87	65	45	65	98.2	65	0.117	0.342	21.43
645	108.9	0.1	104.415	0.163	1.30	77	1.86	65	45	65	99.5	65	0.113	0.336	21.20
646	108.9	0.0	104.578	0.163	1.30	77	1.87	65	45	65	100.4	64	0.113	0.336	21.01
647	108.8	0.1	104.739	0.161	1.30	77	1.88	65	45	64	99.5	64	0.114	0.338	21.05
648	108.8	0.0	104.901	0.162	1.29	77	1.87	65	45	64	100.0	64	0.113	0.336	21.05
649	108.8	0.0	105.063	0.162	1.30	77	1.87	65	45	64	100.3	64	0.111	0.333	20.91
650	108.8	0.0	105.225	0.162	1.30	77	1.87	65	45	63	99.9	63	0.119	0.345	21.17
651	108.9	0.0	105.387	0.162	1.30	77	1.87	65	45	63	98.7	63	0.116	0.341	21.39
652	108.8	0.1	105.548	0.161	1.30	77	1.87	64	45	63	98.1	63	0.114	0.338	21.16
653	108.8	0.0	105.711	0.163	1.30	77	1.88	64	45	63	99.8	63	0.117	0.342	21.21
654	108.7	0.0	105.874	0.163	1.30	77	1.87	64	45	64	99.3	63	0.117	0.342	21.35
655	108.8	0.0	106.036	0.162	1.30	77	1.87	64	45	63	98.6	63	0.115	0.339	21.26
656	108.8	-0.1	106.197	0.161	1.30	77	1.87	64	45	63	98.4	63	0.115	0.339	21.16

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
657	108.8	0.0	106.359	0.162	1.31	77	1.87	64	45	63	99.4	63	0.114	0.338	21.12
658	108.8	0.0	106.521	0.162	1.30	77	1.87	64	45	62	98.8	63	0.121	0.348	21.39
659	108.7	0.1	106.683	0.162	1.31	77	1.87	64	45	63	97.9	63	0.117	0.342	21.53
660	108.8	-0.1	106.845	0.162	1.31	77	1.87	64	45	63	98.0	63	0.117	0.342	21.35
661	108.8	0.0	107.008	0.163	1.30	77	1.86	64	45	63	98.8	62	0.118	0.344	21.38
662	108.8	-0.1	107.170	0.162	1.30	77	1.87	64	45	63	98.8	63	0.111	0.333	21.11
663	108.8	0.0	107.332	0.162	1.30	77	1.87	63	45	62	99.8	63	0.115	0.339	20.98
664	108.8	0.0	107.494	0.162	1.30	77	1.87	63	45	63	99.4	62	0.117	0.342	21.25
665	108.9	-0.1	107.656	0.162	1.30	77	1.87	63	45	62	99.1	63	0.112	0.335	21.11
666	108.8	0.1	107.818	0.162	1.31	77	1.87	63	45	62	99.7	62	0.114	0.338	20.97
667	108.8	0.0	107.981	0.163	1.31	77	1.87	63	45	62	100.8	62	0.110	0.332	20.87
668	108.8	0.0	108.142	0.161	1.30	76	1.87	63	45	62	99.8	62	0.115	0.339	20.91
669	108.9	-0.1	108.305	0.163	1.30	76	1.86	63	45	62	100.3	62	0.117	0.342	21.24
670	108.8	0.1	108.468	0.163	1.30	76	1.86	63	45	62	99.8	62	0.112	0.335	21.10
671	108.8	0.0	108.630	0.162	1.30	76	1.87	63	45	62	99.7	62	0.116	0.341	21.05
672	108.9	0.0	108.791	0.161	1.31	76	1.87	63	45	62	99.0	62	0.113	0.336	21.10
673	108.8	0.1	108.954	0.163	1.30	76	1.87	63	44	62	100.4	62	0.114	0.338	21.01
674	108.8	0.0	109.115	0.161	1.31	76	1.87	63	44	62	99.2	62	0.115	0.339	21.10
675	108.8	-0.1	109.278	0.163	1.30	76	1.86	63	44	61	100.4	62	0.112	0.335	21.01
676	108.9	0.0	109.440	0.162	1.31	76	1.86	63	44	61	100.4	64	0.113	0.336	20.93
677	108.8	0.0	109.603	0.163	1.30	76	1.86	63	44	61	101.1	64	0.114	0.338	21.05
678	108.8	0.0	109.765	0.162	1.31	76	1.87	63	44	61	100.2	63	0.112	0.335	20.99
679	108.8	0.0	109.927	0.162	1.30	76	1.86	63	44	61	100.3	63	0.114	0.338	20.98
680	108.9	-0.1	110.089	0.162	1.30	76	1.86	63	44	62	100.0	63	0.115	0.339	21.12
681	108.9	0.0	110.251	0.162	1.30	76	1.86	63	44	62	100.0	62	0.110	0.332	20.92
682	108.8	0.0	110.413	0.162	1.31	76	1.86	63	44	61	100.9	63	0.111	0.333	20.74
683	108.8	0.0	110.575	0.162	1.31	76	1.87	63	44	62	100.7	63	0.117	0.342	21.07
684	108.8	0.0	110.737	0.162	1.31	76	1.87	63	44	62	99.4	63	0.115	0.339	21.26
685	108.9	-0.1	110.900	0.163	1.30	76	1.87	63	44	62	99.8	64	0.116	0.341	21.22
686	108.8	0.1	111.062	0.162	1.30	76	1.87	63	44	62	99.8	63	0.110	0.332	20.99
687	108.8	0.0	111.224	0.162	1.30	76	1.87	63	44	62	100.7	64	0.113	0.336	20.85
688	108.9	0.0	111.386	0.162	1.30	76	1.87	63	44	62	100.9	64	0.112	0.335	20.95
689	108.9	0.0	111.548	0.162	1.31	76	1.87	63	44	62	100.6	64	0.113	0.336	20.95
690	109.0	-0.1	111.710	0.162	1.31	76	1.87	63	44	62	100.7	65	0.112	0.335	20.96
691	108.9	0.1	111.872	0.162	1.31	76	1.87	63	44	62	100.1	64	0.118	0.344	21.19
692	108.9	0.0	112.034	0.162	1.31	76	1.86	63	44	62	99.8	64	0.109	0.330	21.05
693	108.9	0.0	112.197	0.163	1.29	76	1.87	63	44	62	100.9	64	0.117	0.342	21.00
694	108.9	0.0	112.359	0.162	1.31	76	1.87	63	44	63	100.0	64	0.113	0.336	21.18
695	108.9	0.0	112.521	0.162	1.30	76	1.87	63	44	63	100.1	64	0.112	0.335	20.95
696	108.9	0.0	112.683	0.162	1.30	76	1.86	63	44	63	101.2	65	0.109	0.330	20.78
697	109.0	0.0	112.845	0.162	1.31	76	1.86	63	44	62	101.8	65	0.111	0.333	20.74
698	108.9	0.1	113.006	0.161	1.31	76	1.87	63	44	63	101.1	65	0.110	0.332	20.79
699	108.9	-0.1	113.169	0.163	1.30	76	1.87	63	44	63	101.9	65	0.114	0.338	20.93
700	108.9	0.0	113.331	0.162	1.30	76	1.86	63	44	63	100.7	65	0.112	0.335	21.02

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
701	108.9	0.0	113.493	0.162	1.30	76	1.87	63	44	63	100.7	65	0.112	0.335	20.93
702	108.9	0.1	113.655	0.162	1.29	76	1.87	63	44	63	100.8	65	0.113	0.336	20.97
703	109.0	-0.1	113.817	0.162	1.30	76	1.87	63	44	63	100.2	65	0.117	0.342	21.20
704	109.0	-0.1	113.979	0.162	1.30	76	1.87	63	44	63	99.6	65	0.113	0.336	21.20
705	109.0	0.1	114.140	0.161	1.30	76	1.86	63	44	63	99.7	66	0.111	0.333	20.94
706	108.9	0.0	114.302	0.162	1.30	76	1.87	63	44	64	101.0	68	0.115	0.339	21.06
707	108.8	0.2	114.464	0.162	1.30	76	1.87	63	44	63	100.6	66	0.112	0.335	21.11
708	108.6	0.1	114.627	0.163	1.31	76	1.87	63	44	63	100.8	65	0.116	0.341	21.12
709	108.6	0.0	114.789	0.162	1.30	76	1.87	63	44	63	99.9	65	0.113	0.336	21.16
710	108.7	-0.1	114.951	0.162	1.30	76	1.87	63	44	63	99.7	66	0.118	0.344	21.26
711	108.7	0.0	115.112	0.161	1.30	76	1.86	63	44	63	98.6	65	0.115	0.339	21.35
712	108.7	0.0	115.274	0.162	1.30	76	1.87	63	44	63	99.7	66	0.112	0.335	21.08
713	108.7	0.0	115.436	0.162	1.31	76	1.87	63	44	63	100.8	66	0.111	0.333	20.90
714	108.6	0.0	115.598	0.162	1.31	76	1.87	63	44	63	101.3	66	0.112	0.335	20.90
715	108.7	0.0	115.760	0.162	1.30	76	1.86	63	44	64	100.7	66	0.116	0.341	21.13
716	108.7	0.0	115.923	0.163	1.30	76	1.87	63	44	63	100.8	66	0.112	0.335	21.13
717	108.8	-0.1	116.085	0.162	1.29	76	1.86	63	44	63	100.5	66	0.113	0.336	20.99
718	108.7	0.0	116.246	0.161	1.30	76	1.87	64	44	64	99.8	66	0.116	0.341	21.18
719	108.6	0.1	116.408	0.162	1.30	76	1.86	64	44	64	100.0	66	0.112	0.335	21.13
720	108.7	-0.1	116.569	0.161	1.31	76	1.87	64	44	64	99.4	66	0.117	0.342	21.18
721	108.6	0.1	116.732	0.163	1.31	76	1.87	64	44	63	100.8	66	0.110	0.332	21.09
722	108.7	0.0	116.894	0.162	1.31	76	1.86	64	44	64	100.2	66	0.119	0.345	21.18
723	108.7	0.0	117.057	0.163	1.30	76	1.87	64	44	64	100.0	66	0.115	0.339	21.41
724	108.7	0.0	117.218	0.161	1.30	76	1.86	64	44	64	98.7	66	0.115	0.339	21.22
725	108.7	-0.1	117.380	0.162	1.30	76	1.87	64	44	63	99.7	66	0.115	0.339	21.22
726	108.7	0.0	117.542	0.162	1.30	76	1.87	64	44	64	99.9	66	0.113	0.336	21.13
727	108.7	0.0	117.704	0.162	1.30	76	1.86	64	44	64	100.6	66	0.111	0.333	20.95
728	108.7	0.0	117.865	0.161	1.30	76	1.87	64	44	64	100.4	67	0.114	0.338	21.00
729	108.8	-0.1	118.027	0.162	1.30	76	1.87	64	44	64	100.4	66	0.115	0.339	21.19
730	108.7	0.1	118.190	0.163	1.30	76	1.87	64	44	64	100.6	67	0.114	0.338	21.19
731	108.7	0.0	118.352	0.162	1.30	76	1.87	64	44	63	99.8	67	0.117	0.342	21.29
732	108.8	-0.1	118.514	0.162	1.30	76	1.86	64	44	64	99.7	66	0.112	0.335	21.19
733	108.7	0.1	118.676	0.162	1.30	76	1.87	64	44	64	100.8	67	0.110	0.332	20.86
734	108.8	-0.1	118.838	0.162	1.30	76	1.86	64	44	64	101.6	67	0.112	0.335	20.87
735	108.7	0.1	118.999	0.161	1.30	76	1.87	64	44	64	100.5	67	0.114	0.338	21.06
736	108.8	0.0	119.161	0.162	1.30	76	1.87	64	44	64	101.0	67	0.109	0.330	20.92
737	108.7	0.1	119.323	0.162	1.31	76	1.87	64	44	64	101.4	70	0.116	0.341	21.04
738	108.5	0.1	119.486	0.163	1.29	76	1.87	64	44	64	101.3	67	0.112	0.335	21.18
739	108.6	-0.1	119.648	0.162	1.30	76	1.86	64	44	64	100.4	67	0.114	0.338	21.06
740	108.5	0.1	119.810	0.162	1.29	76	1.87	64	44	64	100.5	67	0.114	0.338	21.15
741	108.4	0.1	119.971	0.161	1.30	76	1.88	64	44	64	99.9	67	0.112	0.335	21.06
742	108.6	-0.1	120.133	0.162	1.30	76	1.87	64	44	64	100.5	67	0.116	0.341	21.15
743	108.6	0.0	120.295	0.162	1.30	76	1.87	64	44	64	99.9	67	0.115	0.339	21.29
744	108.5	0.1	120.457	0.162	1.30	76	1.86	64	44	64	99.7	67	0.115	0.339	21.24

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
745	108.5	0.0	120.620	0.163	1.30	76	1.86	64	44	64	100.6	67	0.113	0.336	21.15
746	108.5	0.0	120.782	0.162	1.30	77	1.86	64	44	64	100.8	67	0.109	0.330	20.87
747	108.5	0.0	120.944	0.162	1.30	77	1.86	64	44	64	101.8	67	0.110	0.332	20.73
748	108.5	0.0	121.105	0.161	1.30	77	1.86	64	44	64	101.3	69	0.112	0.335	20.89
749	108.6	0.0	121.267	0.162	1.30	77	1.87	64	44	65	101.5	67	0.110	0.332	20.89
750	108.6	0.0	121.429	0.162	1.30	77	1.87	64	44	64	101.2	66	0.113	0.336	20.91
751	108.5	0.1	121.591	0.162	1.30	77	1.87	64	44	64	101.1	66	0.110	0.332	20.90
752	108.5	0.0	121.753	0.162	1.30	77	1.87	64	44	64	101.1	65	0.112	0.335	20.84
753	108.5	0.0	121.916	0.163	1.31	77	1.87	64	44	64	101.5	65	0.113	0.336	20.97
754	108.5	0.0	122.078	0.162	1.29	77	1.87	64	44	65	100.2	64	0.114	0.338	21.06
755	108.5	0.0	122.240	0.162	1.30	77	1.86	64	44	65	100.3	64	0.110	0.332	20.91
756	108.5	0.0	122.401	0.161	1.30	77	1.87	64	44	65	100.3	64	0.112	0.335	20.81
757	108.5	0.0	122.563	0.162	1.30	77	1.86	64	44	65	100.7	64	0.114	0.338	21.00
758	108.6	-0.1	122.725	0.162	1.31	77	1.87	64	44	65	100.2	64	0.112	0.335	21.00
759	108.5	0.1	122.887	0.162	1.30	77	1.87	64	44	65	100.1	64	0.115	0.339	21.05
760	108.5	0.0	123.050	0.163	1.31	77	1.87	64	44	65	100.7	64	0.111	0.333	21.00
761	108.5	0.0	123.212	0.162	1.30	77	1.87	64	44	65	100.3	63	0.114	0.338	20.94
762	108.5	0.0	123.374	0.162	1.30	77	1.87	64	44	64	99.6	63	0.118	0.344	21.26
763	108.6	-0.1	123.536	0.162	1.30	77	1.87	64	44	64	98.6	63	0.116	0.341	21.35
764	108.6	0.0	123.698	0.162	1.30	77	1.87	64	44	64	99.1	63	0.111	0.333	21.03
765	108.5	0.1	123.860	0.162	1.31	77	1.86	64	44	64	100.2	63	0.113	0.336	20.89
766	108.6	-0.1	124.022	0.162	1.31	77	1.87	64	44	64	100.3	63	0.113	0.336	20.98
767	108.6	0.0	124.184	0.162	1.31	77	1.86	64	44	63	99.8	63	0.116	0.341	21.12
768	108.5	0.0	124.346	0.162	1.29	77	1.88	64	44	63	99.1	66	0.118	0.344	21.38
769	108.4	0.1	124.509	0.163	1.30	77	1.87	64	44	63	99.4	63	0.114	0.338	21.29
770	108.4	0.1	124.671	0.162	1.30	77	1.87	63	44	63	99.3	63	0.113	0.336	21.03
771	108.4	0.0	124.832	0.161	1.30	77	1.87	63	44	63	98.9	62	0.117	0.342	21.15
772	108.4	-0.1	124.995	0.163	1.30	77	1.86	63	44	63	99.9	62	0.112	0.335	21.10
773	108.4	0.0	125.156	0.161	1.30	77	1.86	63	44	62	99.1	62	0.114	0.338	20.96
774	108.3	0.1	125.319	0.163	1.31	77	1.87	63	44	62	100.2	62	0.116	0.341	21.14
775	108.4	-0.1	125.481	0.162	1.31	77	1.87	63	44	63	99.2	62	0.114	0.338	21.14
776	108.4	0.0	125.644	0.163	1.30	77	1.87	63	44	62	99.7	62	0.117	0.342	21.19
777	108.3	0.1	125.806	0.162	1.31	77	1.87	63	44	62	98.8	62	0.115	0.339	21.24
778	108.4	-0.1	125.968	0.162	1.30	77	1.86	63	44	62	99.0	62	0.114	0.338	21.10
779	108.4	0.0	126.130	0.162	1.30	77	1.87	63	44	62	99.4	62	0.115	0.339	21.10
780	108.4	0.0	126.292	0.162	1.30	77	1.86	63	44	62	99.4	62	0.114	0.338	21.10
781	108.4	0.0	126.454	0.162	1.31	77	1.86	63	44	62	99.9	62	0.110	0.332	20.87
782	108.4	0.0	126.616	0.162	1.31	77	1.87	63	44	62	100.4	62	0.115	0.339	20.91
783	108.4	-0.1	126.778	0.162	1.31	76	1.86	63	44	62	100.0	62	0.113	0.336	21.05
784	108.4	0.0	126.941	0.163	1.30	76	1.87	63	44	62	100.7	62	0.112	0.335	20.91
785	108.5	0.0	127.103	0.162	1.30	76	1.86	63	44	62	100.2	62	0.115	0.339	21.01
786	108.4	0.1	127.266	0.163	1.31	76	1.86	62	44	62	100.1	62	0.117	0.342	21.24
787	108.4	0.0	127.427	0.161	1.31	76	1.87	62	44	62	98.2	61	0.115	0.339	21.23
788	108.5	-0.1	127.589	0.162	1.30	76	1.87	62	44	62	98.7	61	0.118	0.344	21.26

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
789	108.4	0.1	127.751	0.162	1.31	76	1.86	62	44	61	98.3	61	0.118	0.344	21.40
790	108.4	-0.1	127.914	0.163	1.30	76	1.87	62	44	62	99.0	61	0.114	0.338	21.22
791	108.3	0.1	128.076	0.162	1.30	76	1.87	62	44	61	99.5	61	0.112	0.335	20.94
792	108.4	-0.1	128.239	0.163	1.31	76	1.87	62	44	61	100.3	61	0.118	0.344	21.12
793	108.4	0.0	128.401	0.162	1.30	76	1.86	62	44	61	99.1	61	0.113	0.336	21.17
794	108.4	0.0	128.563	0.162	1.30	76	1.86	62	44	61	99.1	61	0.117	0.342	21.12
795	108.5	-0.1	128.725	0.162	1.30	76	1.87	62	44	61	99.4	61	0.112	0.335	21.08
796	108.4	0.1	128.887	0.162	1.30	76	1.86	62	44	61	99.8	64	0.116	0.341	21.06
797	108.4	-0.1	129.049	0.162	1.31	76	1.86	62	44	61	99.6	63	0.115	0.339	21.22
798	108.5	0.0	129.211	0.162	1.30	76	1.86	62	44	61	99.6	62	0.112	0.335	21.02
799	108.4	0.0	129.373	0.162	1.31	76	1.87	62	44	61	100.1	65	0.116	0.341	21.08
800	108.4	0.0	129.536	0.163	1.30	76	1.88	62	44	61	100.3	62	0.114	0.338	21.17
801	108.3	0.1	129.699	0.163	1.31	76	1.87	62	44	61	100.1	62	0.114	0.338	21.05
802	108.3	0.0	129.862	0.163	1.31	76	1.87	62	44	61	100.4	62	0.114	0.338	21.05
803	108.3	0.0	130.024	0.162	1.31	76	1.86	62	44	61	99.8	62	0.114	0.338	21.05
804	108.3	0.0	130.186	0.162	1.31	76	1.87	62	44	62	99.5	63	0.117	0.342	21.20
805	108.3	0.0	130.349	0.163	1.31	76	1.87	62	44	62	100.0	63	0.113	0.336	21.16
806	108.4	-0.1	130.511	0.162	1.31	76	1.88	62	44	62	99.8	65	0.115	0.339	21.09
807	108.1	0.3	130.673	0.162	1.31	76	1.87	62	44	62	100.3	67	0.113	0.336	21.13
808	107.8	0.3	130.836	0.163	1.31	76	1.88	62	44	62	101.2	68	0.113	0.336	21.07
809	107.7	0.2	130.999	0.163	1.31	76	1.87	63	44	62	102.1	69	0.108	0.329	20.85
810	107.3	0.4	131.161	0.162	1.31	76	1.88	63	44	62	102.3	70	0.111	0.333	20.78
811	106.9	0.4	131.323	0.162	1.31	76	1.88	63	44	62	101.5	71	0.118	0.344	21.27
812	106.4	0.4	131.485	0.162	1.31	75	1.87	63	44	62	100.2	73	0.115	0.339	21.48
813	106.0	0.5	131.647	0.162	1.31	75	1.87	63	44	62	100.4	74	0.115	0.339	21.38
814	105.4	0.5	131.809	0.162	1.31	75	1.88	63	44	62	100.8	75	0.115	0.339	21.40
815	104.9	0.5	131.971	0.162	1.30	76	1.87	64	44	63	100.7	75	0.115	0.339	21.41
816	104.4	0.5	132.133	0.162	1.31	76	1.88	64	44	63	100.5	76	0.116	0.341	21.46
817	103.8	0.6	132.296	0.163	1.31	76	1.88	64	44	63	101.3	76	0.113	0.336	21.38
818	103.1	0.7	132.458	0.162	1.30	76	1.88	64	44	63	101.0	77	0.116	0.341	21.39
819	102.7	0.4	132.620	0.162	1.30	76	1.88	64	44	63	100.5	75	0.116	0.341	21.52
820	102.2	0.5	132.781	0.161	1.30	76	1.88	64	44	64	99.9	76	0.113	0.336	21.37
821	101.5	0.7	132.943	0.162	1.30	76	1.88	64	44	64	101.1	76	0.114	0.338	21.29
822	100.9	0.6	133.105	0.162	1.30	76	1.88	65	44	63	101.3	77	0.114	0.338	21.34
823	100.4	0.6	133.267	0.162	1.30	76	1.89	65	45	63	100.6	76	0.119	0.345	21.57
824	99.9	0.5	133.429	0.162	1.31	76	1.88	65	45	64	100.3	76	0.111	0.333	21.43
825	99.3	0.6	133.591	0.162	1.30	76	1.89	65	45	64	101.6	77	0.111	0.333	21.06
826	98.9	0.5	133.753	0.162	1.29	76	1.89	65	45	64	102.6	77	0.111	0.333	21.07
827	98.5	0.4	133.915	0.162	1.30	76	1.89	65	45	64	102.4	76	0.112	0.335	21.11
828	97.9	0.6	134.077	0.162	1.30	76	1.89	65	45	64	101.6	77	0.117	0.342	21.39
829	97.4	0.5	134.238	0.161	1.30	76	1.89	65	45	64	100.4	78	0.112	0.335	21.41
830	96.9	0.5	134.400	0.162	1.30	76	1.88	65	45	64	101.5	77	0.113	0.336	21.22
831	96.4	0.5	134.562	0.162	1.31	76	1.89	66	45	64	101.5	77	0.115	0.339	21.35
832	95.6	0.8	134.725	0.163	1.30	76	1.88	66	45	64	101.8	78	0.114	0.338	21.41

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
833	95.1	0.5	134.886	0.161	1.30	76	1.88	66	45	64	100.8	78	0.112	0.335	21.28
834	94.7	0.5	135.048	0.162	1.30	76	1.88	66	45	64	102.1	77	0.110	0.332	21.08
835	94.1	0.6	135.210	0.162	1.30	76	1.88	66	45	65	102.3	77	0.114	0.338	21.16
836	93.8	0.3	135.371	0.161	1.30	76	1.88	66	45	65	100.7	72	0.114	0.338	21.30
837	93.6	0.2	135.533	0.162	1.30	76	1.88	65	45	65	100.6	71	0.113	0.336	21.20
838	93.3	0.3	135.696	0.163	1.31	76	1.87	65	45	65	101.4	70	0.114	0.338	21.18
839	93.1	0.1	135.858	0.162	1.30	76	1.88	65	45	65	100.6	70	0.114	0.338	21.21
840	93.0	0.1	136.021	0.163	1.31	76	1.87	65	45	64	101.1	68	0.113	0.336	21.15
841	92.9	0.1	136.183	0.162	1.30	76	1.87	65	45	64	100.6	68	0.113	0.336	21.08
842	93.0	-0.1	136.345	0.162	1.30	76	1.87	65	45	64	100.3	68	0.117	0.342	21.27
843	92.8	0.1	136.506	0.161	1.30	76	1.87	65	45	64	99.3	68	0.113	0.336	21.27
844	92.8	0.0	136.668	0.162	1.30	76	1.87	65	45	64	100.7	68	0.110	0.332	20.94
845	92.8	0.1	136.831	0.163	1.31	76	1.87	65	45	64	102.1	67	0.112	0.335	20.88
846	92.8	0.0	136.993	0.162	1.31	76	1.88	65	45	64	101.5	67	0.111	0.333	20.92
847	92.7	0.0	137.156	0.163	1.31	76	1.87	65	45	64	102.0	67	0.112	0.335	20.92
848	92.7	0.0	137.318	0.162	1.30	76	1.87	65	45	64	100.9	67	0.115	0.339	21.11
849	92.7	0.1	137.480	0.162	1.30	76	1.87	65	45	64	100.3	67	0.114	0.338	21.20
850	92.6	0.1	137.642	0.162	1.29	76	1.87	65	45	64	100.3	67	0.113	0.336	21.11
851	92.8	-0.2	137.804	0.162	1.31	76	1.87	65	45	64	100.5	67	0.114	0.338	21.11
852	92.7	0.1	137.966	0.162	1.30	76	1.87	65	45	64	100.6	67	0.112	0.335	21.06
853	92.7	0.0	138.128	0.162	1.30	76	1.87	65	45	64	100.6	67	0.115	0.339	21.11
854	92.7	0.0	138.290	0.162	1.30	76	1.88	65	45	64	100.1	67	0.115	0.339	21.24
855	92.8	0.0	138.453	0.163	1.31	76	1.88	65	45	64	100.4	67	0.115	0.339	21.24
856	92.7	0.1	138.616	0.163	1.30	76	1.88	65	45	64	100.8	67	0.112	0.335	21.11
857	92.7	0.0	138.778	0.162	1.30	76	1.87	65	45	64	100.5	67	0.115	0.339	21.11
858	92.8	-0.1	138.940	0.162	1.30	76	1.87	65	45	64	100.3	67	0.114	0.338	21.20
859	92.7	0.1	139.102	0.162	1.31	76	1.87	65	45	64	100.6	67	0.110	0.332	20.97
860	92.7	0.0	139.264	0.162	1.31	76	1.87	65	45	64	101.3	67	0.113	0.336	20.92
861	92.8	0.0	139.426	0.162	1.31	76	1.87	65	45	64	100.8	67	0.115	0.339	21.15
862	92.7	0.1	139.589	0.163	1.30	76	1.87	65	45	64	100.6	67	0.115	0.339	21.24
863	92.8	-0.1	139.751	0.162	1.31	76	1.88	65	45	64	100.1	67	0.112	0.335	21.11
864	92.7	0.0	139.914	0.163	1.31	76	1.87	65	45	64	101.4	67	0.112	0.335	20.97
865	92.8	-0.1	140.076	0.162	1.30	76	1.88	65	45	64	101.1	67	0.112	0.335	20.97
866	92.7	0.1	140.238	0.162	1.30	76	1.88	65	45	64	100.8	67	0.115	0.339	21.11
867	92.7	0.0	140.400	0.162	1.30	76	1.87	65	45	64	99.9	67	0.117	0.342	21.34
868	92.8	-0.1	140.563	0.163	1.30	76	1.88	65	45	64	100.0	67	0.115	0.339	21.34
869	92.8	0.0	140.724	0.161	1.31	76	1.87	65	45	64	98.8	67	0.117	0.342	21.34
870	92.8	0.0	140.887	0.163	1.31	76	1.88	65	45	64	100.2	67	0.113	0.336	21.24
871	92.7	0.1	141.049	0.162	1.31	76	1.88	65	45	64	99.9	67	0.116	0.341	21.20
872	92.7	0.0	141.212	0.163	1.30	76	1.88	64	44	64	100.5	67	0.114	0.338	21.24
873	92.7	0.0	141.375	0.163	1.31	76	1.88	65	45	64	100.6	67	0.114	0.338	21.15
874	92.7	0.0	141.537	0.162	1.30	76	1.88	65	44	64	100.4	67	0.113	0.336	21.11
875	92.8	0.0	141.699	0.162	1.30	76	1.88	65	44	64	100.3	68	0.116	0.341	21.21
876	92.8	-0.1	141.861	0.162	1.30	77	1.87	65	45	64	99.7	68	0.116	0.341	21.36

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
877	92.9	0.0	142.023	0.162	1.31	77	1.87	65	45	64	99.5	68	0.114	0.338	21.27
878	92.7	0.2	142.185	0.162	1.31	77	1.87	65	44	64	99.9	67	0.114	0.338	21.16
879	92.8	-0.1	142.347	0.162	1.31	77	1.88	65	44	64	99.9	67	0.115	0.339	21.20
880	92.8	0.0	142.510	0.163	1.31	77	1.88	65	44	64	100.7	67	0.112	0.335	21.11
881	92.8	0.0	142.673	0.163	1.30	77	1.88	65	44	64	100.8	67	0.116	0.341	21.15
882	92.8	0.0	142.835	0.162	1.31	77	1.88	65	44	63	99.5	67	0.117	0.342	21.38
883	92.9	-0.1	142.997	0.162	1.30	77	1.88	65	44	64	99.0	67	0.116	0.341	21.38
884	92.8	0.1	143.159	0.162	1.31	77	1.88	65	44	63	99.3	67	0.114	0.338	21.24
885	92.8	0.0	143.322	0.163	1.31	77	1.87	65	44	63	100.3	68	0.116	0.341	21.25
886	92.8	0.0	143.484	0.162	1.31	77	1.87	64	44	63	100.1	67	0.110	0.332	21.07
887	92.8	0.0	143.646	0.162	1.31	77	1.88	64	44	63	100.8	68	0.114	0.338	20.98
888	92.8	0.0	143.809	0.163	1.31	77	1.88	64	44	63	101.4	68	0.113	0.336	21.13
889	92.8	0.0	143.972	0.163	1.31	77	1.88	64	44	63	100.7	68	0.117	0.342	21.27
890	92.8	0.0	144.134	0.162	1.31	77	1.87	64	44	63	100.0	68	0.110	0.332	21.13
891	92.8	0.0	144.297	0.163	1.30	76	1.88	64	44	63	101.8	70	0.112	0.335	20.91
892	92.9	-0.1	144.459	0.162	1.31	76	1.87	64	44	63	101.4	68	0.113	0.336	21.05
893	92.9	0.0	144.621	0.162	1.31	76	1.87	64	44	64	101.0	67	0.111	0.333	20.98
894	92.9	0.0	144.783	0.162	1.31	76	1.88	64	44	64	100.8	66	0.115	0.339	21.05
895	92.9	0.0	144.946	0.163	1.31	77	1.88	64	44	64	100.5	66	0.116	0.341	21.27
896	92.8	0.0	145.108	0.162	1.31	76	1.88	64	44	64	99.3	65	0.115	0.339	21.26
897	92.9	-0.1	145.271	0.163	1.31	77	1.88	64	44	63	100.6	65	0.110	0.332	20.97
898	92.8	0.1	145.434	0.163	1.31	77	1.87	64	44	63	101.6	65	0.111	0.333	20.79
899	92.8	0.0	145.596	0.162	1.31	76	1.88	64	44	64	101.2	64	0.112	0.335	20.87
900	92.9	0.0	145.758	0.162	1.30	76	1.88	64	44	63	101.2	64	0.110	0.332	20.81
901	92.9	0.0	145.920	0.162	1.30	76	1.88	64	44	64	101.5	64	0.110	0.332	20.72
902	92.9	0.0	146.083	0.163	1.31	77	1.87	64	44	64	101.6	64	0.116	0.341	21.00
903	92.8	0.1	146.245	0.162	1.31	77	1.88	64	44	64	99.7	64	0.115	0.339	21.23
904	92.8	0.0	146.407	0.162	1.31	77	1.88	64	44	64	99.4	63	0.113	0.336	21.08
905	92.8	0.0	146.569	0.162	1.30	77	1.89	64	44	64	100.4	67	0.111	0.333	20.93
906	92.7	0.2	146.733	0.164	1.31	77	1.87	64	44	64	102.1	64	0.113	0.336	20.94
907	92.6	0.0	146.895	0.162	1.30	77	1.88	64	44	64	100.6	63	0.110	0.332	20.85
908	92.6	0.0	147.057	0.162	1.31	77	1.88	64	44	63	100.8	63	0.113	0.336	20.84
909	92.6	0.1	147.220	0.163	1.31	77	1.88	64	44	64	101.1	63	0.113	0.336	20.98
910	92.6	0.0	147.382	0.162	1.30	76	1.88	64	44	63	100.0	63	0.115	0.339	21.07
911	92.6	0.0	147.544	0.162	1.31	76	1.87	64	44	63	99.9	63	0.113	0.336	21.07
912	92.6	0.0	147.706	0.162	1.31	76	1.87	63	44	63	100.3	63	0.111	0.333	20.89
913	92.6	0.0	147.868	0.162	1.31	77	1.88	63	44	63	100.2	63	0.117	0.342	21.07
914	92.6	0.0	148.031	0.163	1.31	77	1.87	63	44	63	99.6	63	0.117	0.342	21.35
915	92.7	0.0	148.194	0.163	1.31	77	1.87	63	44	63	99.4	63	0.113	0.336	21.16
916	92.6	0.1	148.357	0.163	1.31	76	1.87	63	44	63	100.4	63	0.113	0.336	20.98
917	92.7	-0.2	148.519	0.162	1.30	76	1.87	63	44	63	100.0	62	0.115	0.339	21.06
918	92.7	0.0	148.681	0.162	1.30	76	1.87	63	44	63	99.6	62	0.114	0.338	21.10
919	92.7	0.0	148.844	0.163	1.31	76	1.87	63	44	63	100.3	62	0.114	0.338	21.05
920	92.7	0.0	149.006	0.162	1.31	76	1.87	63	44	63	100.1	62	0.111	0.333	20.91

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
921	92.6	0.1	149.168	0.162	1.31	76	1.88	63	44	63	100.7	62	0.112	0.335	20.82
922	92.6	0.0	149.331	0.163	1.31	76	1.88	63	44	63	101.4	64	0.113	0.336	20.93
923	92.6	0.0	149.493	0.162	1.31	76	1.88	63	44	63	100.6	64	0.113	0.336	21.00
924	92.7	-0.1	149.657	0.164	1.31	76	1.88	63	44	62	101.5	63	0.114	0.338	21.04
925	92.7	0.0	149.819	0.162	1.31	76	1.88	63	44	62	100.2	63	0.112	0.335	20.98
926	92.7	0.0	149.981	0.162	1.30	76	1.87	63	44	62	100.2	63	0.115	0.339	21.03
927	92.7	0.0	150.143	0.162	1.30	76	1.88	63	44	62	99.9	63	0.114	0.338	21.12
928	92.7	0.0	150.306	0.163	1.31	76	1.88	63	44	62	100.6	63	0.112	0.335	20.98
929	92.6	0.0	150.468	0.162	1.31	76	1.88	63	44	62	100.4	63	0.113	0.336	20.93
930	92.6	0.1	150.631	0.163	1.31	76	1.88	63	44	63	100.7	64	0.117	0.342	21.17
931	92.7	-0.2	150.793	0.162	1.31	76	1.88	63	44	63	99.6	64	0.113	0.336	21.18
932	92.6	0.1	150.956	0.163	1.31	76	1.87	63	44	63	100.6	64	0.113	0.336	21.00
933	92.6	0.0	151.119	0.163	1.31	76	1.88	63	44	63	101.2	64	0.111	0.333	20.91
934	92.7	-0.1	151.281	0.162	1.31	76	1.88	63	44	62	100.9	64	0.113	0.336	20.91
935	92.7	0.0	151.444	0.163	1.30	76	1.87	63	44	62	101.2	64	0.113	0.336	21.00
936	92.6	0.1	151.605	0.161	1.30	76	1.88	63	44	63	99.8	67	0.115	0.339	21.12
937	92.5	0.1	151.768	0.163	1.30	76	1.87	63	44	63	100.4	65	0.117	0.342	21.32
938	92.5	0.0	151.930	0.162	1.31	76	1.88	63	44	63	99.5	65	0.112	0.335	21.16
939	92.5	0.0	152.093	0.163	1.31	76	1.87	63	44	63	101.0	65	0.112	0.335	20.93
940	92.6	-0.1	152.255	0.162	1.31	76	1.88	63	44	63	100.7	65	0.114	0.338	21.02
941	92.6	0.0	152.418	0.163	1.30	76	1.88	63	44	63	101.0	65	0.113	0.336	21.07
942	92.6	0.0	152.581	0.163	1.31	76	1.87	63	44	63	101.1	65	0.112	0.335	20.97
943	92.6	0.0	152.743	0.162	1.30	76	1.87	63	44	63	100.6	66	0.115	0.339	21.08
944	92.6	0.0	152.905	0.162	1.30	76	1.87	63	44	63	100.7	66	0.109	0.330	20.95
945	92.5	0.1	153.067	0.162	1.31	76	1.87	63	44	63	101.3	66	0.113	0.336	20.85
946	92.5	0.0	153.230	0.163	1.30	76	1.88	63	44	63	101.7	66	0.113	0.336	21.04
947	92.5	0.0	153.392	0.162	1.31	76	1.87	63	44	64	100.6	66	0.113	0.336	21.04
948	92.6	-0.1	153.554	0.162	1.31	76	1.88	63	44	63	100.4	66	0.115	0.339	21.13
949	92.5	0.1	153.716	0.162	1.31	76	1.87	63	44	64	99.8	66	0.116	0.341	21.27
950	92.5	0.0	153.880	0.164	1.30	76	1.87	63	44	63	100.3	66	0.119	0.345	21.45
951	92.6	-0.1	154.042	0.162	1.31	76	1.87	64	44	64	98.9	66	0.114	0.338	21.36
952	92.6	0.0	154.204	0.162	1.30	76	1.87	64	44	63	99.5	67	0.116	0.341	21.23
953	92.7	-0.2	154.366	0.162	1.30	76	1.87	64	44	64	99.7	67	0.115	0.339	21.29
954	92.7	0.1	154.528	0.162	1.31	76	1.87	64	44	64	100.2	66	0.110	0.332	21.00
955	92.7	0.0	154.690	0.162	1.31	76	1.88	64	44	64	101.1	66	0.112	0.335	20.85
956	92.7	0.0	154.853	0.163	1.31	76	1.87	64	44	64	101.6	66	0.115	0.339	21.09
957	92.7	0.0	155.015	0.162	1.31	76	1.87	64	44	64	100.3	66	0.113	0.336	21.13
958	92.7	0.0	155.178	0.163	1.31	76	1.87	64	44	64	101.2	67	0.112	0.335	21.00
959	92.7	0.0	155.341	0.163	1.30	76	1.87	64	44	64	101.5	67	0.114	0.338	21.06
960	92.6	0.0	155.503	0.162	1.31	76	1.88	64	44	64	100.6	67	0.113	0.336	21.11
961	92.7	-0.1	155.665	0.162	1.30	76	1.87	64	44	64	100.6	67	0.113	0.336	21.06
962	92.7	0.0	155.827	0.162	1.31	76	1.88	64	44	64	100.8	67	0.112	0.335	21.01
963	92.7	0.0	155.989	0.162	1.31	76	1.87	64	44	64	100.7	67	0.115	0.339	21.11
964	92.8	-0.1	156.151	0.162	1.31	76	1.87	64	44	64	100.1	67	0.115	0.339	21.24

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
965	92.7	0.1	156.314	0.163	1.31	76	1.87	64	44	65	101.0	67	0.110	0.332	21.01
966	92.7	0.0	156.476	0.162	1.31	76	1.87	64	44	64	101.0	67	0.114	0.338	20.97
967	92.6	0.1	156.639	0.163	1.31	76	1.87	64	44	64	101.8	70	0.112	0.335	21.09
968	92.6	0.0	156.801	0.162	1.30	76	1.87	64	44	64	101.0	68	0.113	0.336	21.05
969	92.6	0.1	156.964	0.163	1.30	76	1.87	64	44	64	101.4	67	0.113	0.336	21.07
970	92.6	0.0	157.125	0.161	1.30	76	1.87	64	44	65	100.0	68	0.114	0.338	21.12
971	92.6	0.0	157.288	0.163	1.30	76	1.87	64	44	65	101.3	67	0.112	0.335	21.07
972	92.6	0.0	157.450	0.162	1.31	76	1.88	64	44	64	101.1	68	0.111	0.333	20.93
973	92.5	0.0	157.612	0.162	1.31	76	1.88	64	44	64	101.4	68	0.113	0.336	20.99
974	92.5	0.0	157.774	0.162	1.31	76	1.87	64	44	64	100.6	67	0.116	0.341	21.21
975	92.5	0.0	157.937	0.163	1.30	76	1.87	64	44	64	100.2	67	0.117	0.342	21.38
976	92.6	-0.1	158.100	0.163	1.30	76	1.87	64	44	64	100.5	67	0.109	0.330	21.06
977	92.5	0.1	158.262	0.162	1.30	76	1.87	64	44	64	100.9	68	0.116	0.341	21.02
978	92.6	0.0	158.424	0.162	1.30	77	1.87	64	44	64	100.3	68	0.115	0.339	21.31
979	92.6	0.0	158.586	0.162	1.30	77	1.88	64	44	64	99.4	68	0.117	0.342	21.36
980	92.6	-0.1	158.748	0.162	1.30	77	1.88	64	44	64	99.3	68	0.115	0.339	21.36
981	92.5	0.1	158.911	0.163	1.30	77	1.88	64	44	64	100.8	70	0.110	0.332	21.05
982	92.6	0.0	159.073	0.162	1.31	77	1.88	64	44	65	101.2	67	0.112	0.335	20.90
983	92.7	-0.1	159.236	0.163	1.31	77	1.88	64	44	65	101.7	67	0.112	0.335	20.97
984	92.6	0.1	159.399	0.163	1.30	77	1.88	64	44	64	101.3	66	0.114	0.338	21.05
985	92.6	0.0	159.560	0.161	1.30	77	1.88	64	44	64	99.7	66	0.113	0.336	21.09
986	92.6	0.0	159.722	0.162	1.30	77	1.87	64	44	64	100.3	65	0.112	0.335	20.98
987	92.6	0.0	159.884	0.162	1.29	77	1.87	64	44	65	101.1	65	0.108	0.329	20.74
988	92.6	0.0	160.046	0.162	1.30	77	1.87	64	44	64	101.6	65	0.113	0.336	20.79
989	92.7	0.0	160.208	0.162	1.30	77	1.87	64	44	64	101.1	65	0.111	0.333	20.93
990	92.6	0.1	160.370	0.162	1.30	77	1.87	64	44	64	100.6	64	0.114	0.338	20.96
991	92.5	0.1	160.533	0.163	1.31	77	1.87	64	44	65	100.9	64	0.112	0.335	21.00
992	92.5	0.0	160.695	0.162	1.29	77	1.88	64	44	64	99.8	64	0.118	0.344	21.18
993	92.6	-0.1	160.857	0.162	1.30	77	1.87	64	44	64	99.1	64	0.114	0.338	21.28
994	92.6	0.0	161.019	0.162	1.30	77	1.88	64	44	64	99.2	64	0.115	0.339	21.14
995	92.6	0.0	161.181	0.162	1.30	77	1.87	64	44	65	99.6	64	0.114	0.338	21.14
996	92.6	0.0	161.343	0.162	1.30	77	1.87	64	44	64	100.0	63	0.110	0.332	20.90
997	92.6	-0.1	161.505	0.162	1.30	77	1.88	64	44	63	100.4	63	0.115	0.339	20.93
998	92.6	0.0	161.667	0.162	1.29	77	1.87	64	44	63	100.3	65	0.112	0.335	21.05
999	92.6	0.1	161.829	0.162	1.30	77	1.87	64	44	63	100.0	63	0.115	0.339	21.05
1000	92.6	0.0	161.992	0.163	1.31	77	1.87	64	44	63	100.1	63	0.115	0.339	21.16
1001	92.4	0.2	162.154	0.162	1.29	77	1.88	64	44	62	99.6	68	0.115	0.339	21.21
1002	92.3	0.1	162.315	0.161	1.29	77	1.88	64	44	63	99.3	68	0.114	0.338	21.22
1003	92.2	0.1	162.477	0.162	1.30	77	1.87	64	44	63	99.9	68	0.115	0.339	21.22
1004	92.0	0.3	162.638	0.161	1.29	77	1.87	64	44	63	99.2	68	0.115	0.339	21.27
1005	91.8	0.1	162.800	0.162	1.30	77	1.86	64	44	63	100.5	70	0.109	0.330	21.01
1006	91.6	0.2	162.962	0.162	1.28	77	1.86	64	44	63	100.7	70	0.120	0.346	21.26
1007	91.2	0.4	163.124	0.162	1.29	77	1.86	64	44	62	99.3	71	0.117	0.342	21.64
1008	90.8	0.4	163.285	0.161	1.29	77	1.86	64	44	61	98.3	71	0.116	0.341	21.46

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24
 Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335
 Sample Train Leak Checks
 Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1009	90.4	0.4	163.446	0.161	1.30	76	1.87	64	44	61	98.8	72	0.118	0.344	21.52
1010	89.8	0.6	163.608	0.162	1.29	76	1.86	64	44	60	99.3	73	0.118	0.344	21.63
1011	89.4	0.4	163.769	0.161	1.29	76	1.87	64	45	60	98.7	73	0.116	0.341	21.55
1012	88.9	0.5	163.930	0.161	1.30	76	1.86	64	45	59	98.8	73	0.119	0.345	21.60
1013	88.2	0.6	164.093	0.163	1.29	76	1.87	64	45	59	99.7	72	0.117	0.342	21.63
1014	87.7	0.6	164.254	0.161	1.29	76	1.87	64	45	60	98.7	71	0.115	0.339	21.43
1015	87.1	0.6	164.415	0.161	1.29	76	1.87	63	45	59	99.6	72	0.113	0.336	21.24
1016	86.7	0.4	164.576	0.161	1.29	76	1.86	63	45	59	100.6	72	0.111	0.333	21.07
1017	86.0	0.6	164.737	0.161	1.30	76	1.86	63	45	60	100.8	73	0.115	0.339	21.17
1018	85.6	0.5	164.899	0.162	1.30	76	1.87	63	45	61	101.0	74	0.114	0.338	21.33
1019	85.0	0.6	165.061	0.162	1.30	76	1.87	63	45	61	101.1	75	0.112	0.335	21.21
1020	84.5	0.5	165.222	0.161	1.29	76	1.87	63	45	62	101.0	76	0.113	0.336	21.18
1021	83.9	0.6	165.384	0.162	1.29	76	1.87	64	45	62	101.4	77	0.116	0.341	21.39
1022	83.7	0.2	165.545	0.161	1.29	76	1.88	64	45	62	100.3	76	0.113	0.336	21.39
1023	83.0	0.6	165.706	0.161	1.30	75	1.87	64	45	62	100.5	77	0.115	0.339	21.34
1024	82.4	0.6	165.867	0.161	1.29	75	1.88	64	45	61	100.3	77	0.117	0.342	21.54
1025	81.8	0.6	166.029	0.162	1.28	75	1.87	64	45	62	101.1	78	0.110	0.332	21.32
1026	81.2	0.6	166.190	0.161	1.30	75	1.88	64	45	62	101.4	77	0.114	0.338	21.17
1027	80.8	0.4	166.352	0.162	1.29	75	1.88	64	45	62	101.9	77	0.113	0.336	21.31
1028	80.2	0.6	166.512	0.160	1.29	75	1.87	64	45	62	100.6	77	0.112	0.335	21.21
1029	79.7	0.5	166.673	0.161	1.29	75	1.87	64	45	63	101.8	78	0.110	0.332	21.08
1030	79.1	0.6	166.834	0.161	1.29	75	1.88	64	45	62	102.8	79	0.108	0.329	20.91
1031	78.8	0.4	166.996	0.162	1.30	75	1.87	64	45	64	103.0	73	0.114	0.338	21.05
1032	78.5	0.3	167.158	0.162	1.29	75	1.87	64	45	64	101.4	72	0.115	0.339	21.31
1033	78.3	0.2	167.319	0.161	1.29	75	1.87	64	45	64	99.9	71	0.115	0.339	21.34
1034	78.0	0.3	167.480	0.161	1.29	75	1.87	64	45	64	99.8	71	0.114	0.338	21.28
1035	78.0	0.0	167.641	0.161	1.29	75	1.87	64	45	63	100.5	70	0.110	0.332	21.04
1036	77.9	0.1	167.803	0.162	1.29	75	1.87	64	45	63	101.3	69	0.116	0.341	21.11
1037	77.9	0.1	167.964	0.161	1.30	75	1.86	64	45	64	100.2	69	0.112	0.335	21.19
1038	77.8	0.1	168.126	0.162	1.30	75	1.86	64	45	63	101.2	69	0.111	0.333	20.96
1039	77.8	0.0	168.287	0.161	1.29	75	1.86	64	45	63	100.9	69	0.114	0.338	21.05
1040	77.8	0.0	168.449	0.162	1.29	75	1.86	64	45	64	101.1	68	0.112	0.335	21.09
1041	77.8	0.0	168.610	0.161	1.29	75	1.86	64	45	64	100.6	68	0.112	0.335	20.99
1042	77.8	0.0	168.771	0.161	1.30	75	1.86	64	45	64	100.1	68	0.118	0.344	21.27
1043	77.8	0.0	168.932	0.161	1.29	75	1.86	64	45	64	99.5	68	0.112	0.335	21.27
1044	77.7	0.2	169.094	0.162	1.29	75	1.86	64	45	64	100.8	68	0.112	0.335	20.99
1045	77.8	-0.2	169.255	0.161	1.29	75	1.86	64	45	64	100.8	68	0.112	0.335	20.99
1046	77.7	0.1	169.417	0.162	1.29	75	1.87	64	45	64	101.2	68	0.114	0.338	21.08
1047	77.7	0.0	169.578	0.161	1.29	75	1.87	64	45	64	100.0	68	0.115	0.339	21.22
1048	77.8	-0.1	169.739	0.161	1.29	75	1.87	64	45	64	99.3	68	0.118	0.344	21.40
1049	77.7	0.1	169.900	0.161	1.29	75	1.86	64	45	64	98.9	68	0.114	0.338	21.36
1050	77.8	-0.1	170.062	0.162	1.29	75	1.86	64	45	64	100.3	68	0.112	0.335	21.08
1051	77.8	0.0	170.223	0.161	1.28	75	1.87	64	45	64	100.5	68	0.113	0.336	21.03
1052	77.7	0.0	170.385	0.162	1.29	75	1.87	64	45	64	100.9	68	0.115	0.339	21.17

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1053	77.7	0.0	170.545	0.160	1.29	75	1.86	64	45	63	99.1	68	0.115	0.339	21.27
1054	77.7	0.1	170.706	0.161	1.29	75	1.86	64	45	64	99.4	68	0.116	0.341	21.31
1055	77.7	0.0	170.867	0.161	1.29	75	1.86	64	45	63	99.2	68	0.116	0.341	21.36
1056	77.7	0.0	171.030	0.163	1.29	75	1.87	64	45	63	100.4	68	0.115	0.339	21.31
1057	77.7	0.0	171.191	0.161	1.29	75	1.87	64	45	63	99.3	68	0.116	0.341	21.31
1058	77.7	-0.1	171.352	0.161	1.29	75	1.87	64	45	63	99.4	68	0.114	0.338	21.27
1059	77.7	0.0	171.513	0.161	1.29	75	1.86	64	45	63	99.9	68	0.112	0.335	21.08
1060	77.7	0.1	171.674	0.161	1.29	75	1.86	64	45	63	100.8	68	0.110	0.332	20.89
1061	77.7	0.0	171.836	0.162	1.29	75	1.86	64	45	64	101.6	69	0.115	0.339	21.04
1062	77.7	0.0	171.997	0.161	1.29	75	1.86	64	45	64	100.1	69	0.115	0.339	21.29
1063	77.8	-0.1	172.160	0.163	1.29	75	1.86	64	45	64	101.2	69	0.111	0.333	21.10
1064	77.8	0.0	172.320	0.160	1.29	75	1.86	64	45	65	99.6	69	0.117	0.342	21.19
1065	77.8	0.0	172.481	0.161	1.29	75	1.87	64	44	63	99.6	68	0.114	0.338	21.32
1066	77.7	0.0	172.643	0.162	1.30	75	1.87	64	44	63	100.7	69	0.110	0.332	21.00
1067	77.8	-0.1	172.804	0.161	1.29	75	1.86	64	44	64	100.9	69	0.114	0.338	21.01
1068	77.7	0.1	172.965	0.161	1.29	75	1.86	64	44	64	100.7	68	0.111	0.333	21.04
1069	77.7	0.0	173.127	0.162	1.29	75	1.86	64	44	64	100.9	69	0.117	0.342	21.18
1070	77.7	0.0	173.289	0.162	1.29	75	1.86	64	44	64	100.4	68	0.113	0.336	21.28
1071	77.9	-0.1	173.449	0.160	1.29	75	1.86	64	44	64	99.3	68	0.113	0.336	21.08
1072	77.8	0.1	173.610	0.161	1.29	76	1.86	64	44	64	100.6	68	0.110	0.332	20.94
1073	77.8	0.0	173.771	0.161	1.29	76	1.87	64	44	64	100.9	69	0.113	0.336	20.95
1074	77.8	0.0	173.933	0.162	1.29	76	1.87	64	44	64	101.4	69	0.112	0.335	21.05
1075	77.9	0.0	174.095	0.162	1.29	76	1.86	64	44	64	101.0	68	0.113	0.336	21.04
1076	77.7	0.2	174.256	0.161	1.29	76	1.87	64	44	64	100.8	69	0.109	0.330	20.90
1077	77.8	-0.1	174.417	0.161	1.29	76	1.86	64	44	64	101.1	71	0.115	0.339	21.03
1078	77.8	0.0	174.578	0.161	1.29	76	1.86	64	44	65	100.4	69	0.113	0.336	21.21
1079	77.8	0.0	174.739	0.161	1.29	76	1.86	65	44	65	99.8	68	0.114	0.338	21.14
1080	77.8	0.0	174.900	0.161	1.29	76	1.86	64	44	64	99.9	67	0.113	0.336	21.12
1081	77.7	0.0	175.062	0.162	1.28	76	1.86	64	44	64	100.8	67	0.111	0.333	20.97
1082	77.8	-0.1	175.223	0.161	1.29	76	1.87	64	44	64	100.3	66	0.114	0.338	21.00
1083	77.8	0.0	175.385	0.162	1.29	76	1.87	64	44	64	100.4	66	0.115	0.339	21.18
1084	77.8	0.0	175.545	0.160	1.29	76	1.87	64	44	65	98.7	66	0.114	0.338	21.18
1085	77.8	0.0	175.706	0.161	1.29	76	1.86	64	44	65	99.7	65	0.111	0.333	20.98
1086	77.8	0.0	175.867	0.161	1.29	76	1.86	64	44	65	100.3	65	0.112	0.335	20.88
1087	77.8	0.0	176.030	0.163	1.29	76	1.87	64	44	64	101.8	65	0.111	0.333	20.88
1088	77.8	0.0	176.191	0.161	1.29	76	1.87	64	44	64	100.8	65	0.110	0.332	20.79
1089	77.9	-0.1	176.352	0.161	1.28	76	1.86	64	44	64	100.9	64	0.111	0.333	20.78
1090	77.8	0.1	176.513	0.161	1.29	76	1.86	64	44	65	100.9	64	0.110	0.332	20.77
1091	77.9	-0.1	176.674	0.161	1.29	76	1.86	64	44	65	100.7	64	0.113	0.336	20.86
1092	77.8	0.1	176.835	0.161	1.29	76	1.86	64	44	65	99.9	64	0.115	0.339	21.09
1093	77.8	0.0	176.997	0.162	1.29	76	1.86	64	44	65	100.2	64	0.111	0.333	21.00
1094	77.8	-0.1	177.158	0.161	1.29	76	1.86	64	44	65	100.0	64	0.113	0.336	20.91
1095	77.8	0.1	177.320	0.162	1.28	76	1.86	64	44	65	100.4	64	0.115	0.339	21.09
1096	77.7	0.0	177.481	0.161	1.29	76	1.86	64	44	65	99.1	64	0.115	0.339	21.18

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1097	77.8	-0.1	177.642	0.161	1.29	76	1.86	64	44	64	99.3	64	0.111	0.333	21.00
1098	77.8	0.0	177.803	0.161	1.29	76	1.86	64	44	65	99.9	64	0.114	0.338	20.95
1099	77.7	0.0	177.965	0.162	1.29	76	1.86	64	44	65	100.4	64	0.113	0.336	21.05
1100	77.7	0.0	178.126	0.161	1.28	76	1.87	64	44	64	100.0	67	0.112	0.335	20.98
1101	77.6	0.1	178.288	0.162	1.28	76	1.86	64	44	64	100.8	64	0.113	0.336	20.98
1102	77.6	0.0	178.448	0.160	1.29	76	1.86	64	44	64	99.0	64	0.115	0.339	21.09
1103	77.5	0.1	178.610	0.162	1.29	76	1.86	64	44	65	99.8	63	0.114	0.338	21.13
1104	77.4	0.0	178.771	0.161	1.29	76	1.86	64	44	64	99.2	63	0.113	0.336	21.03
1105	77.5	0.0	178.933	0.162	1.29	77	1.86	64	44	64	100.2	63	0.112	0.335	20.93
1106	77.5	0.0	179.095	0.162	1.29	77	1.87	64	45	64	99.9	63	0.117	0.342	21.12
1107	77.5	0.0	179.256	0.161	1.29	77	1.86	64	45	64	98.9	63	0.112	0.335	21.12
1108	77.5	0.0	179.417	0.161	1.28	77	1.86	64	44	64	99.0	63	0.116	0.341	21.07
1109	77.5	0.0	179.578	0.161	1.29	77	1.86	64	44	64	98.9	63	0.114	0.338	21.16
1110	77.6	-0.1	179.739	0.161	1.30	77	1.87	63	45	64	99.3	63	0.110	0.332	20.89
1111	77.6	0.0	179.901	0.162	1.30	77	1.86	63	45	64	100.7	63	0.113	0.336	20.84
1112	77.6	0.0	180.063	0.162	1.28	77	1.87	63	45	64	100.5	63	0.113	0.336	20.98
1113	77.6	0.0	180.224	0.161	1.29	77	1.87	63	45	64	99.5	63	0.113	0.336	20.98
1114	77.6	0.0	180.386	0.162	1.29	77	1.86	63	44	64	99.9	63	0.115	0.339	21.07
1115	77.5	0.0	180.547	0.161	1.29	77	1.86	63	45	64	99.4	63	0.110	0.332	20.93
1116	77.5	0.0	180.708	0.161	1.29	77	1.87	63	45	63	99.6	63	0.116	0.341	20.98
1117	77.5	0.0	180.870	0.162	1.29	77	1.86	63	45	64	100.0	63	0.111	0.333	21.03
1118	77.6	0.0	181.032	0.162	1.29	77	1.87	63	45	63	100.3	63	0.112	0.335	20.84
1119	77.6	0.0	181.194	0.162	1.29	77	1.87	63	45	63	100.9	63	0.110	0.332	20.79
1120	77.5	0.1	181.355	0.161	1.28	77	1.86	63	45	63	100.9	63	0.108	0.329	20.60
1121	77.5	-0.1	181.516	0.161	1.29	77	1.86	63	44	64	100.7	63	0.115	0.339	20.84
1122	77.6	0.0	181.677	0.161	1.29	77	1.86	63	45	63	100.1	63	0.109	0.330	20.89
1123	77.5	0.0	181.839	0.162	1.29	77	1.86	63	45	63	100.7	63	0.114	0.338	20.84
1124	77.5	0.0	182.000	0.161	1.30	77	1.87	63	45	63	99.7	62	0.113	0.336	21.02
1125	77.5	0.0	182.163	0.163	1.28	77	1.86	63	45	63	100.3	62	0.115	0.339	21.05
1126	77.5	0.0	182.324	0.161	1.29	76	1.86	63	45	63	99.1	62	0.113	0.336	21.05
1127	77.5	0.0	182.485	0.161	1.28	76	1.87	63	45	63	99.2	63	0.115	0.339	21.06
1128	77.6	0.0	182.647	0.162	1.29	76	1.87	63	44	63	99.1	62	0.120	0.346	21.38
1129	77.6	0.0	182.808	0.161	1.29	76	1.86	63	45	63	97.9	62	0.113	0.336	21.28
1130	77.6	0.0	182.969	0.161	1.29	76	1.86	63	45	63	98.3	62	0.118	0.344	21.19
1131	77.5	0.1	183.131	0.162	1.29	76	1.87	63	44	63	99.0	65	0.116	0.341	21.36
1132	77.4	0.1	183.293	0.162	1.29	76	1.87	63	44	63	99.1	63	0.114	0.338	21.18
1133	77.4	0.0	183.455	0.162	1.28	76	1.86	63	44	63	100.1	62	0.109	0.330	20.83
1134	77.4	-0.1	183.616	0.161	1.28	76	1.87	63	45	62	100.2	62	0.114	0.338	20.82
1135	77.3	0.1	183.777	0.161	1.29	76	1.86	63	45	63	99.7	62	0.114	0.338	21.05
1136	77.4	-0.1	183.939	0.162	1.29	76	1.86	63	45	63	99.6	62	0.116	0.341	21.14
1137	77.4	0.0	184.100	0.161	1.30	76	1.86	63	45	62	98.4	62	0.117	0.342	21.28
1138	77.3	0.1	184.262	0.162	1.29	76	1.86	63	45	62	98.9	62	0.114	0.338	21.19
1139	77.4	0.0	184.424	0.162	1.29	76	1.86	63	45	63	99.4	62	0.114	0.338	21.05
1140	77.4	-0.1	184.585	0.161	1.29	76	1.87	63	45	63	98.9	62	0.116	0.341	21.14

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24
 Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335
 Sample Train Leak Checks
 Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1141	77.3	0.1	184.747	0.162	1.29	76	1.86	62	45	63	99.2	62	0.115	0.339	21.19
1142	77.5	-0.1	184.908	0.161	1.29	76	1.86	63	45	64	98.7	62	0.114	0.338	21.10
1143	77.4	0.0	185.069	0.161	1.29	76	1.86	62	44	63	98.5	62	0.119	0.345	21.28
1144	77.4	0.0	185.231	0.162	1.29	76	1.87	62	45	62	98.5	62	0.116	0.341	21.37
1145	77.4	0.0	185.393	0.162	1.30	76	1.86	62	45	62	98.9	62	0.113	0.336	21.10
1146	77.4	0.0	185.555	0.162	1.29	76	1.86	62	45	62	100.0	62	0.112	0.335	20.91
1147	77.4	0.0	185.716	0.161	1.29	76	1.86	62	44	63	99.4	62	0.117	0.342	21.10
1148	77.4	-0.1	185.878	0.162	1.30	76	1.86	62	45	63	99.7	62	0.111	0.333	21.05
1149	77.4	0.0	186.039	0.161	1.30	76	1.86	62	44	62	99.2	62	0.117	0.342	21.05
1150	77.4	-0.1	186.200	0.161	1.29	76	1.86	62	45	62	99.0	62	0.112	0.335	21.10
1151	77.4	0.0	186.363	0.163	1.30	76	1.86	62	45	62	101.5	62	0.105	0.324	20.54
1152	77.4	0.0	186.525	0.162	1.29	76	1.86	62	44	62	102.2	62	0.113	0.336	20.58
1153	77.4	0.0	186.686	0.161	1.29	76	1.86	62	44	63	100.2	62	0.116	0.341	21.10
1154	77.4	0.0	186.847	0.161	1.29	76	1.87	62	44	62	98.7	62	0.115	0.339	21.19
1155	77.4	0.0	187.009	0.162	1.29	76	1.87	62	44	63	99.1	62	0.116	0.341	21.19
1156	77.4	0.0	187.170	0.161	1.29	76	1.85	62	44	63	98.4	62	0.116	0.341	21.24
1157	77.4	0.0	187.331	0.161	1.29	76	1.86	62	44	63	98.6	62	0.113	0.336	21.10
1158	77.5	0.0	187.494	0.163	1.29	76	1.86	62	44	62	100.4	62	0.114	0.338	21.01
1159	77.5	0.0	187.655	0.161	1.30	76	1.85	62	44	62	99.5	62	0.112	0.335	20.96
1160	77.5	0.0	187.817	0.162	1.28	76	1.86	62	44	63	100.3	62	0.113	0.336	20.91
1161	77.5	0.0	187.978	0.161	1.29	76	1.86	62	44	62	99.4	62	0.116	0.341	21.10
1162	77.4	0.0	188.139	0.161	1.29	76	1.86	62	44	62	99.1	64	0.113	0.336	21.12
1163	77.4	0.1	188.300	0.161	1.29	76	1.85	62	44	63	99.5	62	0.112	0.335	20.93
1164	77.4	0.0	188.462	0.162	1.30	76	1.86	62	44	62	100.2	62	0.115	0.339	21.01
1165	77.3	0.1	188.625	0.163	1.29	76	1.86	62	44	62	100.4	62	0.114	0.338	21.10
1166	77.4	-0.1	188.786	0.161	1.29	76	1.86	62	44	64	98.9	63	0.116	0.341	21.15
1167	77.3	0.1	188.947	0.161	1.28	76	1.86	62	44	62	98.6	64	0.117	0.342	21.31
1168	77.3	0.0	189.108	0.161	1.30	76	1.86	62	44	62	98.7	63	0.112	0.335	21.13
1169	77.3	0.0	189.270	0.162	1.29	76	1.86	62	44	62	99.6	63	0.117	0.342	21.12
1170	77.3	0.0	189.431	0.161	1.29	75	1.85	62	44	62	98.9	63	0.114	0.338	21.21
1171	77.3	0.0	189.593	0.162	1.29	75	1.86	62	44	62	99.9	62	0.112	0.335	20.97
1172	77.4	-0.1	189.755	0.162	1.29	75	1.87	62	44	61	99.9	63	0.119	0.345	21.20
1173	77.3	0.0	189.916	0.161	1.28	75	1.87	62	44	62	98.6	63	0.114	0.338	21.30
1174	77.3	0.0	190.077	0.161	1.29	75	1.86	62	44	62	99.1	63	0.112	0.335	20.98
1175	77.4	-0.1	190.238	0.161	1.29	75	1.86	62	44	62	100.2	64	0.112	0.335	20.90
1176	77.4	0.0	190.400	0.162	1.29	75	1.86	62	44	62	100.5	64	0.117	0.342	21.14
1177	77.3	0.1	190.562	0.162	1.29	75	1.86	62	44	62	100.2	64	0.110	0.332	21.05
1178	77.4	-0.1	190.724	0.162	1.29	75	1.86	62	44	62	100.4	65	0.117	0.342	21.06
1179	77.3	0.1	190.885	0.161	1.28	75	1.87	62	44	62	99.4	64	0.114	0.338	21.24
1180	77.3	-0.1	191.046	0.161	1.29	75	1.86	62	44	62	99.6	65	0.111	0.333	20.96
1181	77.4	-0.1	191.207	0.161	1.29	75	1.87	62	44	62	100.5	65	0.112	0.335	20.88
1182	77.4	0.0	191.368	0.161	1.29	75	1.86	62	44	63	100.4	65	0.114	0.338	21.02
1183	77.3	0.1	191.530	0.162	1.29	75	1.86	62	44	63	100.6	65	0.113	0.336	21.07
1184	77.4	-0.1	191.692	0.162	1.29	75	1.86	63	44	63	100.8	65	0.111	0.333	20.93

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1185	77.4	-0.1	191.853	0.161	1.28	75	1.86	63	44	62	100.1	66	0.117	0.342	21.12
1186	77.4	0.0	192.014	0.161	1.29	75	1.86	63	44	63	99.7	66	0.111	0.333	21.13
1187	77.4	0.0	192.176	0.162	1.29	75	1.86	63	44	62	100.3	66	0.117	0.342	21.13
1188	77.3	0.1	192.337	0.161	1.29	75	1.86	63	44	62	99.3	66	0.115	0.339	21.32
1189	77.3	0.0	192.498	0.161	1.29	75	1.85	63	44	62	99.4	66	0.112	0.335	21.09
1190	77.4	0.0	192.660	0.162	1.29	75	1.86	63	44	62	101.0	66	0.111	0.333	20.90
1191	77.4	0.0	192.822	0.162	1.29	75	1.86	63	44	63	101.2	66	0.114	0.338	20.99
1192	77.4	0.0	192.983	0.161	1.28	75	1.86	63	44	63	100.5	67	0.111	0.333	21.00
1193	77.4	0.0	193.144	0.161	1.29	75	1.86	63	44	63	101.0	69	0.111	0.333	20.89
1194	77.4	0.0	193.305	0.161	1.30	75	1.86	63	44	63	100.8	67	0.115	0.339	21.08
1195	77.3	0.1	193.466	0.161	1.29	75	1.87	63	44	64	100.3	70	0.112	0.335	21.14
1196	77.2	0.1	193.628	0.162	1.29	75	1.86	63	44	63	101.6	72	0.111	0.333	21.00
1197	77.0	0.2	193.789	0.161	1.29	75	1.87	63	44	64	101.4	73	0.113	0.336	21.08
1198	76.8	0.2	193.951	0.162	1.28	75	1.87	64	44	64	101.6	72	0.113	0.336	21.17
1199	76.6	0.2	194.111	0.160	1.29	75	1.86	64	44	64	100.2	72	0.112	0.335	21.11
1200	76.2	0.4	194.272	0.161	1.29	75	1.87	64	44	64	101.2	72	0.111	0.333	21.02
1201	75.8	0.4	194.433	0.161	1.29	75	1.86	64	44	64	101.1	73	0.115	0.339	21.17
1202	75.3	0.4	194.595	0.162	1.29	75	1.87	64	44	64	101.5	73	0.111	0.333	21.18
1203	74.8	0.5	194.756	0.161	1.29	75	1.87	64	45	64	101.5	74	0.110	0.332	20.95
1204	74.3	0.5	194.917	0.161	1.28	75	1.87	64	45	64	101.9	75	0.113	0.336	21.07
1205	73.7	0.6	195.077	0.160	1.29	75	1.87	64	45	64	100.5	75	0.115	0.339	21.31
1206	73.2	0.6	195.238	0.161	1.29	76	1.87	65	45	64	100.6	75	0.112	0.335	21.27
1207	72.7	0.5	195.399	0.161	1.29	76	1.87	65	45	65	101.4	75	0.108	0.329	20.93
1208	72.2	0.5	195.561	0.162	1.28	76	1.87	65	45	64	102.7	76	0.114	0.338	21.04
1209	71.5	0.6	195.721	0.160	1.28	76	1.87	65	45	65	100.5	74	0.113	0.336	21.27
1210	71.0	0.5	195.881	0.160	1.28	76	1.88	65	45	65	100.0	73	0.112	0.335	21.14
1211	70.4	0.6	196.042	0.161	1.28	76	1.87	65	45	65	100.7	73	0.114	0.338	21.18
1212	69.7	0.7	196.203	0.161	1.28	76	1.87	65	45	64	100.6	74	0.113	0.336	21.24
1213	69.3	0.4	196.364	0.161	1.28	76	1.88	65	45	64	100.4	74	0.115	0.339	21.29
1214	68.9	0.4	196.525	0.161	1.28	76	1.87	65	45	64	100.2	74	0.114	0.338	21.34
1215	68.2	0.7	196.686	0.161	1.28	76	1.88	65	45	64	100.2	74	0.114	0.338	21.29
1216	67.6	0.6	196.846	0.160	1.28	76	1.87	65	45	64	99.2	74	0.118	0.344	21.48
1217	67.2	0.4	197.007	0.161	1.29	76	1.87	65	45	64	99.2	75	0.117	0.342	21.63
1218	66.5	0.6	197.168	0.161	1.28	76	1.87	65	45	64	99.9	75	0.109	0.330	21.22
1219	66.1	0.4	197.329	0.161	1.29	76	1.87	65	45	64	101.4	75	0.112	0.335	20.98
1220	65.6	0.5	197.490	0.161	1.28	76	1.88	65	45	64	101.5	76	0.114	0.338	21.23
1221	64.9	0.7	197.650	0.160	1.28	76	1.87	65	45	64	100.4	75	0.111	0.333	21.18
1222	64.4	0.4	197.810	0.160	1.28	76	1.87	65	46	64	100.1	74	0.116	0.341	21.26
1223	64.0	0.5	197.971	0.161	1.28	76	1.88	65	46	64	100.3	74	0.113	0.336	21.34
1224	63.4	0.6	198.133	0.162	1.28	76	1.87	66	46	64	101.2	75	0.112	0.335	21.16
1225	62.8	0.6	198.294	0.161	1.28	76	1.88	66	46	64	100.4	74	0.118	0.344	21.40
1226	62.4	0.4	198.454	0.160	1.28	76	1.87	65	46	64	99.2	69	0.109	0.330	21.20
1227	62.1	0.3	198.615	0.161	1.29	76	1.86	65	46	65	100.4	68	0.113	0.336	20.90
1228	61.9	0.3	198.776	0.161	1.29	76	1.87	65	46	64	100.5	67	0.113	0.336	21.07

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1229	61.8	0.1	198.937	0.161	1.29	76	1.87	65	46	64	100.1	66	0.112	0.335	21.00
1230	61.5	0.2	199.099	0.162	1.28	76	1.86	65	46	64	100.5	65	0.115	0.339	21.08
1231	61.5	0.0	199.260	0.161	1.28	76	1.87	65	46	64	99.4	65	0.114	0.338	21.16
1232	61.3	0.2	199.421	0.161	1.28	76	1.87	64	46	64	99.4	64	0.113	0.336	21.06
1233	61.2	0.1	199.582	0.161	1.29	76	1.87	64	46	64	99.4	64	0.115	0.339	21.09
1234	61.2	0.0	199.743	0.161	1.29	76	1.86	64	46	63	99.2	64	0.114	0.338	21.14
1235	61.2	0.1	199.904	0.161	1.29	76	1.86	64	46	63	99.0	63	0.116	0.341	21.17
1236	61.2	0.0	200.066	0.162	1.28	76	1.87	64	46	63	99.8	63	0.110	0.332	20.98
1237	61.1	0.0	200.227	0.161	1.28	76	1.86	64	46	63	100.1	66	0.114	0.338	20.92
1238	61.0	0.2	200.388	0.161	1.28	76	1.87	64	46	63	100.0	65	0.114	0.338	21.12
1239	61.0	0.0	200.549	0.161	1.28	76	1.86	64	46	62	99.1	64	0.116	0.341	21.19
1240	61.0	0.0	200.710	0.161	1.29	76	1.86	64	46	63	98.6	64	0.117	0.342	21.32
1241	61.0	0.0	200.871	0.161	1.29	76	1.86	64	46	63	98.8	64	0.111	0.333	21.09
1242	61.0	0.0	201.033	0.162	1.28	76	1.87	64	46	63	100.3	64	0.114	0.338	20.95
1243	60.9	0.1	201.194	0.161	1.29	76	1.87	64	46	63	99.5	64	0.116	0.341	21.18
1244	60.9	0.1	201.355	0.161	1.28	76	1.87	64	46	63	98.8	64	0.115	0.339	21.23
1245	61.0	-0.1	201.517	0.162	1.29	76	1.86	64	46	63	99.5	64	0.114	0.338	21.14
1246	61.0	0.0	201.677	0.160	1.28	76	1.87	64	46	63	98.7	67	0.115	0.339	21.17
1247	61.0	0.0	201.838	0.161	1.29	76	1.87	64	45	63	99.7	65	0.111	0.333	21.04
1248	61.0	0.0	202.001	0.163	1.29	76	1.87	64	45	65	101.0	65	0.116	0.341	21.07
1249	60.9	0.1	202.162	0.161	1.29	76	1.86	64	45	64	99.2	64	0.115	0.339	21.24
1250	60.9	0.0	202.323	0.161	1.28	76	1.87	64	45	64	98.8	64	0.115	0.339	21.18
1251	60.9	0.0	202.484	0.161	1.29	76	1.87	64	45	63	99.7	64	0.108	0.329	20.86
1252	60.9	0.0	202.645	0.161	1.29	76	1.86	64	45	64	100.7	64	0.113	0.336	20.77
1253	60.9	0.0	202.806	0.161	1.29	76	1.86	63	45	64	100.6	64	0.111	0.333	20.91
1254	60.9	0.0	202.968	0.162	1.29	76	1.86	63	45	65	100.6	64	0.115	0.339	21.00
1255	60.8	0.1	203.129	0.161	1.28	76	1.87	63	45	64	99.9	64	0.110	0.332	20.95
1256	60.8	0.1	203.290	0.161	1.28	76	1.86	63	45	64	100.8	64	0.108	0.329	20.62
1257	60.8	0.0	203.451	0.161	1.28	76	1.87	63	45	64	100.7	64	0.118	0.344	21.00
1258	60.8	-0.1	203.612	0.161	1.29	76	1.86	63	45	63	99.5	63	0.110	0.332	21.08
1259	60.7	0.1	203.773	0.161	1.29	76	1.87	63	45	64	100.0	63	0.111	0.333	20.75
1260	60.9	-0.2	203.935	0.162	1.29	76	1.86	63	45	64	101.1	63	0.113	0.336	20.89
1261	60.8	0.1	204.096	0.161	1.28	76	1.87	63	45	64	100.0	63	0.112	0.335	20.93
1262	60.8	0.0	204.257	0.161	1.28	76	1.86	63	45	64	100.0	63	0.112	0.335	20.89
1263	60.8	0.0	204.418	0.161	1.28	76	1.86	63	45	64	100.1	63	0.112	0.335	20.89
1264	60.8	0.0	204.579	0.161	1.28	76	1.87	63	45	63	99.8	63	0.115	0.339	21.03
1265	60.7	0.1	204.740	0.161	1.29	76	1.87	63	45	64	99.7	63	0.110	0.332	20.93
1266	60.8	0.0	204.903	0.163	1.28	76	1.86	63	45	64	101.5	63	0.112	0.335	20.79
1267	60.7	0.0	205.064	0.161	1.28	76	1.86	63	45	64	100.2	63	0.113	0.336	20.93
1268	60.8	0.0	205.225	0.161	1.28	76	1.87	63	45	64	99.9	63	0.112	0.335	20.93
1269	60.7	0.1	205.386	0.161	1.28	76	1.87	63	45	64	99.4	63	0.118	0.344	21.16
1270	60.8	-0.1	205.547	0.161	1.28	76	1.87	63	45	64	98.7	63	0.113	0.336	21.21
1271	60.8	0.0	205.708	0.161	1.28	76	1.86	63	45	63	99.2	65	0.114	0.338	21.05
1272	60.7	0.1	205.870	0.162	1.29	76	1.86	63	45	63	100.6	64	0.110	0.332	20.92

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1273	60.7	0.0	206.031	0.161	1.28	76	1.87	63	45	63	100.6	63	0.110	0.332	20.71
1274	60.8	0.0	206.192	0.161	1.28	76	1.87	63	45	63	100.6	63	0.114	0.338	20.89
1275	60.7	0.0	206.353	0.161	1.28	76	1.87	63	45	63	99.6	63	0.115	0.339	21.12
1276	60.7	0.0	206.514	0.161	1.28	76	1.87	63	45	62	99.4	63	0.111	0.333	20.98
1277	60.7	0.0	206.675	0.161	1.28	76	1.87	63	45	63	100.0	64	0.113	0.336	20.90
1278	60.8	-0.1	206.837	0.162	1.28	76	1.87	63	45	63	100.7	64	0.113	0.336	21.00
1279	60.8	-0.1	206.998	0.161	1.28	76	1.86	63	45	64	99.8	64	0.113	0.336	21.00
1280	60.7	0.1	207.160	0.162	1.28	76	1.87	63	45	63	100.9	64	0.109	0.330	20.81
1281	60.7	0.0	207.321	0.161	1.28	76	1.87	63	45	63	100.5	65	0.115	0.339	20.92
1282	60.7	0.0	207.482	0.161	1.29	76	1.86	63	45	63	99.9	67	0.114	0.338	21.18
1283	60.7	-0.1	207.643	0.161	1.29	76	1.87	63	45	64	99.6	65	0.112	0.335	21.04
1284	60.9	-0.1	207.805	0.162	1.29	76	1.86	63	45	64	100.2	65	0.116	0.341	21.11
1285	60.8	0.1	207.966	0.161	1.28	76	1.86	63	45	63	99.4	64	0.112	0.335	21.10
1286	60.7	0.0	208.127	0.161	1.28	76	1.86	63	45	63	99.5	64	0.114	0.338	21.00
1287	60.7	0.0	208.288	0.161	1.28	76	1.86	63	45	64	99.8	64	0.112	0.335	21.00
1288	60.8	-0.1	208.449	0.161	1.29	76	1.86	63	45	64	100.0	64	0.112	0.335	20.91
1289	60.8	0.1	208.610	0.161	1.29	76	1.86	63	45	63	100.3	64	0.111	0.333	20.86
1290	60.8	0.0	208.772	0.162	1.29	76	1.86	63	45	64	101.3	64	0.110	0.332	20.77
1291	60.8	0.0	208.933	0.161	1.28	76	1.86	63	45	64	100.7	63	0.112	0.335	20.80
1292	60.7	0.1	209.094	0.161	1.28	76	1.86	63	45	64	100.0	63	0.115	0.339	21.03
1293	60.8	0.0	209.255	0.161	1.28	76	1.86	63	45	64	99.1	63	0.115	0.339	21.16
1294	60.8	0.0	209.416	0.161	1.29	76	1.86	63	45	64	99.3	63	0.111	0.333	20.98
1295	60.7	0.1	209.577	0.161	1.29	76	1.87	63	45	64	100.5	67	0.110	0.332	20.79
1296	60.6	0.1	209.739	0.162	1.29	76	1.86	63	45	64	101.2	64	0.115	0.339	20.98
1297	60.5	0.1	209.900	0.161	1.29	76	1.86	63	45	64	99.3	63	0.115	0.339	21.17
1298	60.5	0.0	210.062	0.162	1.28	76	1.87	63	45	64	99.6	63	0.113	0.336	21.07
1299	60.4	0.1	210.222	0.160	1.28	76	1.86	63	45	64	98.6	63	0.115	0.339	21.07
1300	60.5	-0.1	210.383	0.161	1.29	76	1.86	63	45	63	98.8	63	0.117	0.342	21.26
1301	60.5	-0.1	210.545	0.162	1.28	76	1.87	63	45	64	98.9	63	0.116	0.341	21.30
1302	60.5	0.1	210.707	0.162	1.29	76	1.86	63	45	63	99.3	63	0.112	0.335	21.07
1303	60.4	0.0	210.868	0.161	1.29	76	1.86	63	45	63	99.4	63	0.115	0.339	21.03
1304	60.5	0.0	211.029	0.161	1.28	76	1.86	63	45	63	99.3	62	0.113	0.336	21.06
1305	60.4	0.0	211.190	0.161	1.28	76	1.86	63	45	63	99.1	62	0.115	0.339	21.05
1306	60.5	-0.1	211.351	0.161	1.29	76	1.86	63	45	63	99.2	62	0.113	0.336	21.05
1307	60.5	0.0	211.512	0.161	1.29	76	1.86	63	45	63	99.5	62	0.112	0.335	20.91
1308	60.5	0.0	211.674	0.162	1.29	76	1.86	63	45	63	100.5	65	0.114	0.338	20.99
1309	60.6	-0.1	211.836	0.162	1.28	76	1.86	63	45	63	99.9	63	0.117	0.342	21.23
1310	60.6	0.1	211.997	0.161	1.28	76	1.86	63	45	62	98.9	63	0.111	0.333	21.07
1311	60.5	0.1	212.158	0.161	1.29	76	1.87	63	45	62	99.7	63	0.113	0.336	20.89
1312	60.5	-0.1	212.319	0.161	1.29	76	1.86	63	45	63	99.8	63	0.114	0.338	21.03
1313	60.4	0.1	212.481	0.162	1.29	76	1.86	63	45	62	100.2	63	0.112	0.335	20.98
1314	60.5	-0.1	212.642	0.161	1.29	76	1.86	63	45	63	99.7	63	0.114	0.338	20.98
1315	60.5	0.0	212.804	0.162	1.28	76	1.86	63	45	63	100.2	64	0.114	0.338	21.08
1316	60.5	0.0	212.965	0.161	1.29	76	1.86	63	45	63	99.4	64	0.114	0.338	21.09

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1317	60.5	0.0	213.126	0.161	1.29	76	1.86	63	45	63	99.5	64	0.113	0.336	21.05
1318	60.5	0.0	213.287	0.161	1.28	76	1.86	63	45	63	99.5	64	0.115	0.339	21.09
1319	60.5	0.1	213.448	0.161	1.29	76	1.86	63	45	63	99.4	65	0.113	0.336	21.10
1320	60.5	0.0	213.610	0.162	1.29	76	1.86	63	45	63	100.3	65	0.113	0.336	21.02
1321	60.5	0.1	213.772	0.162	1.29	76	1.86	63	45	63	100.4	65	0.114	0.338	21.07
1322	60.5	0.0	213.933	0.161	1.29	76	1.86	63	45	63	99.6	65	0.114	0.338	21.11
1323	60.5	0.0	214.094	0.161	1.28	76	1.86	63	45	63	99.4	65	0.114	0.338	21.11
1324	60.5	0.0	214.255	0.161	1.28	76	1.86	63	45	63	100.0	66	0.110	0.332	20.94
1325	60.5	-0.1	214.416	0.161	1.29	76	1.86	63	45	63	100.6	66	0.113	0.336	20.90
1326	60.5	0.0	214.577	0.161	1.29	76	1.87	63	45	64	100.6	69	0.112	0.335	21.02
1327	60.4	0.1	214.739	0.162	1.28	76	1.87	63	45	65	101.1	68	0.113	0.336	21.04
1328	60.4	0.0	214.901	0.162	1.29	76	1.86	63	45	65	100.6	66	0.114	0.338	21.11
1329	60.4	0.0	215.062	0.161	1.27	76	1.87	63	45	64	99.6	65	0.113	0.336	21.08
1330	60.4	0.0	215.223	0.161	1.29	76	1.86	63	45	64	99.7	65	0.113	0.336	21.02
1331	60.4	0.1	215.384	0.161	1.29	76	1.86	64	45	64	100.1	65	0.111	0.333	20.93
1332	60.4	0.0	215.545	0.161	1.29	76	1.86	63	45	64	100.7	64	0.109	0.330	20.73
1333	60.4	0.0	215.707	0.162	1.29	76	1.86	63	45	64	101.6	64	0.112	0.335	20.77
1334	60.4	0.0	215.868	0.161	1.28	76	1.86	63	45	64	100.7	64	0.111	0.333	20.86
1335	60.3	0.0	216.029	0.161	1.28	76	1.86	63	45	64	100.0	64	0.116	0.341	21.05
1336	60.3	0.0	216.190	0.161	1.29	76	1.86	63	45	64	99.2	64	0.114	0.338	21.18
1337	60.4	0.0	216.351	0.161	1.29	76	1.86	63	45	64	99.6	64	0.110	0.332	20.91
1338	60.4	0.0	216.512	0.161	1.29	76	1.87	63	45	65	99.9	63	0.116	0.341	20.99
1339	60.4	0.0	216.674	0.162	1.29	76	1.87	63	45	64	99.6	63	0.116	0.341	21.26
1340	60.4	0.0	216.836	0.162	1.29	76	1.87	63	45	64	98.9	63	0.117	0.342	21.30
1341	60.4	0.0	216.997	0.161	1.28	76	1.87	63	45	64	98.5	63	0.113	0.336	21.16
1342	60.3	0.0	217.158	0.161	1.29	76	1.86	63	45	64	99.3	63	0.113	0.336	20.98
1343	60.4	-0.1	217.319	0.161	1.29	76	1.87	63	45	64	99.7	63	0.113	0.336	20.98
1344	60.5	0.0	217.480	0.161	1.28	76	1.86	63	45	64	99.4	63	0.116	0.341	21.12
1345	60.4	0.1	217.642	0.162	1.29	76	1.86	63	45	63	99.2	63	0.117	0.342	21.30
1346	60.3	0.0	217.804	0.162	1.29	76	1.86	63	45	63	98.4	62	0.119	0.345	21.43
1347	60.4	-0.1	217.965	0.161	1.28	76	1.87	63	45	63	97.9	62	0.113	0.336	21.24
1348	60.4	0.1	218.126	0.161	1.28	76	1.86	63	45	63	99.2	62	0.111	0.333	20.87
1349	60.4	0.0	218.287	0.161	1.29	76	1.86	63	45	63	99.9	62	0.114	0.338	20.91
1350	60.4	0.0	218.448	0.161	1.29	76	1.86	63	45	63	99.8	62	0.111	0.333	20.91
1351	60.4	0.0	218.610	0.162	1.29	76	1.85	63	45	63	100.7	62	0.112	0.335	20.82
1352	60.4	0.0	218.772	0.162	1.29	76	1.86	63	45	63	100.5	62	0.114	0.338	20.96
1353	60.4	0.0	218.933	0.161	1.29	76	1.86	63	45	63	99.6	62	0.112	0.335	20.96
1354	60.5	-0.1	219.094	0.161	1.28	76	1.86	63	45	63	99.7	62	0.113	0.336	20.91
1355	60.5	0.0	219.256	0.162	1.29	76	1.86	63	45	63	100.2	62	0.114	0.338	21.01
1356	60.5	0.0	219.417	0.161	1.29	76	1.87	63	45	63	99.4	64	0.114	0.338	21.07
1357	60.4	0.1	219.578	0.161	1.29	76	1.87	63	45	63	99.2	66	0.117	0.342	21.25
1358	60.4	0.0	219.740	0.162	1.28	76	1.86	63	45	62	98.5	63	0.122	0.349	21.61
1359	60.4	0.0	219.902	0.162	1.28	76	1.87	63	45	62	97.9	63	0.113	0.336	21.39
1360	60.5	-0.1	220.063	0.161	1.29	76	1.86	63	45	63	98.7	63	0.113	0.336	20.98

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1361	60.4	0.1	220.224	0.161	1.29	76	1.86	63	45	62	99.5	63	0.115	0.339	21.07
1362	60.3	0.0	220.385	0.161	1.29	76	1.86	63	45	62	99.0	63	0.115	0.339	21.16
1363	60.4	-0.1	220.546	0.161	1.29	76	1.86	63	45	62	99.1	63	0.112	0.335	21.03
1364	60.4	0.0	220.708	0.162	1.29	76	1.87	63	45	62	100.8	64	0.109	0.330	20.76
1365	60.3	0.1	220.870	0.162	1.29	76	1.86	63	45	63	101.3	64	0.114	0.338	20.86
1366	60.3	0.0	221.031	0.161	1.28	76	1.86	63	45	63	99.8	64	0.115	0.339	21.14
1367	60.4	-0.1	221.192	0.161	1.28	76	1.87	63	45	63	98.9	64	0.116	0.341	21.23
1368	60.4	0.0	221.353	0.161	1.29	76	1.86	63	45	63	98.8	65	0.115	0.339	21.24
1369	60.3	0.2	221.515	0.162	1.29	76	1.87	63	45	64	99.6	67	0.116	0.341	21.27
1370	60.4	-0.2	221.676	0.161	1.29	76	1.86	63	45	64	99.0	65	0.114	0.338	21.22
1371	60.4	0.0	221.838	0.162	1.29	76	1.86	63	45	63	99.6	64	0.115	0.339	21.15
1372	60.4	0.1	221.999	0.161	1.28	76	1.87	63	45	63	98.8	64	0.117	0.342	21.28
1373	60.4	-0.1	222.160	0.161	1.28	76	1.87	63	45	63	98.6	64	0.114	0.338	21.23
1374	60.3	0.1	222.322	0.162	1.28	76	1.86	63	45	63	99.6	64	0.114	0.338	21.09
1375	60.3	0.0	222.483	0.161	1.28	76	1.86	63	45	63	99.5	63	0.112	0.335	20.99
1376	60.3	0.0	222.644	0.161	1.29	76	1.86	63	45	63	99.8	63	0.113	0.336	20.93
1377	60.4	-0.1	222.807	0.163	1.29	76	1.86	63	45	63	101.5	63	0.109	0.330	20.79
1378	60.5	0.0	222.967	0.160	1.29	76	1.86	63	45	63	99.6	63	0.116	0.341	20.93
1379	60.5	0.0	223.128	0.161	1.28	76	1.86	63	45	63	99.6	63	0.112	0.335	21.07
1380	60.3	0.2	223.290	0.162	1.28	76	1.86	63	45	63	100.3	63	0.112	0.335	20.89
1381	60.4	-0.1	223.451	0.161	1.29	76	1.86	63	45	63	99.8	63	0.115	0.339	21.03
1382	60.3	0.1	223.612	0.161	1.29	76	1.86	63	45	63	99.6	63	0.111	0.333	20.98
1383	60.4	-0.1	223.774	0.162	1.28	76	1.87	63	45	63	100.5	63	0.113	0.336	20.89
1384	60.3	0.1	223.935	0.161	1.29	76	1.86	63	45	63	99.7	63	0.115	0.339	21.07
1385	60.3	0.0	224.097	0.162	1.28	76	1.86	63	45	63	99.8	63	0.114	0.338	21.12
1386	60.5	-0.2	224.258	0.161	1.29	76	1.85	63	45	63	99.4	62	0.111	0.333	20.92
1387	60.3	0.2	224.418	0.160	1.28	76	1.86	63	45	62	98.8	62	0.117	0.342	21.05
1388	60.4	-0.1	224.580	0.162	1.29	76	1.86	63	45	63	99.8	64	0.112	0.335	21.12
1389	60.4	0.0	224.742	0.162	1.28	76	1.86	63	46	63	99.9	62	0.115	0.339	21.03
1390	60.4	-0.1	224.903	0.161	1.29	76	1.86	63	46	62	99.0	62	0.115	0.339	21.14
1391	60.4	0.0	225.064	0.161	1.28	76	1.86	63	46	63	98.7	62	0.115	0.339	21.14
1392	60.4	0.0	225.225	0.161	1.29	76	1.86	63	46	62	98.7	62	0.115	0.339	21.14
1393	60.4	0.0	225.386	0.161	1.29	76	1.86	63	46	62	99.3	62	0.110	0.332	20.91
1394	60.4	0.0	225.548	0.162	1.29	76	1.86	63	46	62	100.3	62	0.116	0.341	20.96
1395	60.3	0.1	225.710	0.162	1.28	76	1.85	63	46	62	99.7	62	0.115	0.339	21.19
1396	60.4	-0.1	225.871	0.161	1.29	76	1.85	62	46	62	98.8	62	0.113	0.336	21.05
1397	60.3	0.0	226.033	0.162	1.28	76	1.86	62	46	62	100.0	62	0.113	0.336	20.96
1398	60.4	-0.1	226.193	0.160	1.29	76	1.86	62	46	62	98.8	62	0.115	0.339	21.05
1399	60.3	0.1	226.355	0.162	1.29	76	1.86	62	46	62	99.3	62	0.117	0.342	21.24
1400	60.3	0.0	226.516	0.161	1.29	76	1.87	63	46	62	98.7	65	0.113	0.336	21.17
1401	60.2	0.1	226.677	0.161	1.29	76	1.86	63	46	62	99.4	65	0.114	0.338	21.07
1402	60.1	0.1	226.839	0.162	1.29	76	1.86	63	46	61	100.4	67	0.113	0.336	21.09
1403	60.1	0.0	227.000	0.161	1.28	76	1.87	63	46	61	100.0	68	0.114	0.338	21.12
1404	59.8	0.2	227.161	0.161	1.28	76	1.86	63	46	62	99.4	67	0.118	0.344	21.35

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1405	59.7	0.2	227.322	0.161	1.28	76	1.87	63	46	62	99.0	68	0.112	0.335	21.25
1406	59.4	0.2	227.483	0.161	1.29	76	1.86	63	46	62	100.0	69	0.112	0.335	21.00
1407	59.0	0.4	227.645	0.162	1.29	76	1.87	63	46	63	101.1	70	0.115	0.339	21.16
1408	58.6	0.4	227.807	0.162	1.29	76	1.86	63	46	62	100.6	71	0.114	0.338	21.27
1409	58.1	0.5	227.967	0.160	1.27	76	1.87	63	46	62	99.6	73	0.113	0.336	21.21
1410	57.7	0.4	228.128	0.161	1.28	76	1.87	64	46	62	100.9	74	0.111	0.333	21.09
1411	57.1	0.6	228.289	0.161	1.28	76	1.87	64	46	63	101.0	74	0.115	0.339	21.20
1412	56.6	0.5	228.449	0.160	1.28	76	1.87	64	46	62	99.6	75	0.116	0.341	21.44
1413	56.0	0.5	228.611	0.162	1.29	76	1.87	64	46	62	101.2	76	0.108	0.329	21.13
1414	55.7	0.3	228.772	0.161	1.28	76	1.88	64	46	63	102.2	76	0.109	0.330	20.81
1415	55.0	0.7	228.933	0.161	1.27	76	1.88	64	46	63	102.5	76	0.112	0.335	21.00
1416	54.5	0.6	229.093	0.160	1.27	76	1.87	64	46	63	100.9	77	0.114	0.338	21.25
1417	53.9	0.6	229.254	0.161	1.28	76	1.87	65	46	63	101.0	77	0.112	0.335	21.26
1418	53.3	0.5	229.414	0.160	1.28	76	1.87	65	46	63	100.5	76	0.112	0.335	21.15
1419	52.9	0.5	229.576	0.162	1.28	76	1.87	65	46	64	101.8	76	0.114	0.338	21.24
1420	52.3	0.6	229.737	0.161	1.27	76	1.87	65	46	64	100.9	75	0.112	0.335	21.23
1421	51.7	0.5	229.897	0.160	1.28	76	1.88	65	46	64	100.2	77	0.115	0.339	21.29
1422	51.2	0.5	230.057	0.160	1.29	76	1.87	65	46	64	100.2	77	0.112	0.335	21.31
1423	50.7	0.5	230.218	0.161	1.28	76	1.88	65	46	64	100.8	76	0.114	0.338	21.25
1424	50.1	0.5	230.380	0.162	1.28	76	1.87	65	46	64	101.6	77	0.112	0.335	21.25
1425	49.6	0.5	230.541	0.161	1.28	76	1.87	65	47	64	101.7	78	0.109	0.330	21.03
1426	49.1	0.5	230.701	0.160	1.27	76	1.87	66	47	64	101.6	78	0.112	0.335	21.04
1427	48.6	0.5	230.861	0.160	1.28	76	1.88	66	47	65	101.4	77	0.110	0.332	21.08
1428	47.9	0.7	231.022	0.161	1.28	76	1.88	66	47	65	102.1	77	0.110	0.332	20.97
1429	47.6	0.3	231.183	0.161	1.28	76	1.88	66	47	64	102.3	81	0.113	0.336	21.16
1430	47.0	0.6	231.344	0.161	1.28	76	1.87	66	47	65	101.7	78	0.112	0.335	21.26
1431	46.4	0.6	231.504	0.160	1.27	76	1.88	66	47	65	100.6	77	0.113	0.336	21.22
1432	46.0	0.3	231.665	0.161	1.28	76	1.87	66	47	66	101.1	71	0.109	0.330	21.01
1433	45.7	0.3	231.825	0.160	1.28	76	1.88	66	47	66	100.3	70	0.115	0.339	21.04
1434	45.6	0.2	231.986	0.161	1.28	76	1.87	66	47	66	100.0	69	0.115	0.339	21.30
1435	45.3	0.2	232.148	0.162	1.27	76	1.87	65	47	65	100.5	68	0.110	0.332	21.04
1436	45.1	0.2	232.309	0.161	1.28	76	1.87	65	47	65	100.7	66	0.111	0.333	20.83
1437	45.0	0.2	232.469	0.160	1.28	76	1.87	65	47	65	99.9	66	0.115	0.339	21.04
1438	44.9	0.1	232.630	0.161	1.28	76	1.87	65	47	65	99.6	66	0.114	0.338	21.18
1439	44.8	0.1	232.791	0.161	1.28	76	1.86	65	47	64	99.8	67	0.111	0.333	21.00
1440	44.8	0.1	232.952	0.161	1.28	76	1.87	65	47	64	100.6	68	0.112	0.335	20.93
1441	44.6	0.1	233.114	0.162	1.28	76	1.86	65	47	64	101.4	65	0.110	0.332	20.86
1442	44.6	0.1	233.275	0.161	1.28	76	1.87	65	47	64	100.6	65	0.113	0.336	20.88
1443	44.5	0.1	233.435	0.160	1.28	76	1.87	65	47	63	99.6	65	0.113	0.336	21.02
1444	44.5	0.0	233.596	0.161	1.28	76	1.87	65	47	63	99.3	65	0.118	0.344	21.25
1445	44.5	0.0	233.757	0.161	1.28	76	1.86	65	47	64	98.9	65	0.112	0.335	21.20
1446	44.4	0.0	233.918	0.161	1.28	76	1.88	65	47	65	99.3	65	0.115	0.339	21.07
1447	44.3	0.1	234.080	0.162	1.28	76	1.87	65	47	63	100.5	65	0.110	0.332	20.97
1448	44.3	0.0	234.241	0.161	1.28	76	1.87	65	47	64	100.3	66	0.114	0.338	20.94

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24
 Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335
 Sample Train Leak Checks
 Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1449	44.3	0.1	234.402	0.161	1.28	76	1.87	65	47	63	99.9	65	0.114	0.338	21.12
1450	44.2	0.0	234.562	0.160	1.29	76	1.87	65	47	64	99.1	66	0.112	0.335	21.03
1451	44.3	-0.1	234.723	0.161	1.28	76	1.86	65	47	64	100.0	66	0.114	0.338	21.04
1452	44.2	0.2	234.885	0.162	1.28	76	1.87	64	47	64	100.4	66	0.114	0.338	21.13
1453	44.2	0.0	235.046	0.161	1.28	76	1.87	64	47	64	99.8	66	0.112	0.335	21.04
1454	44.2	0.0	235.207	0.161	1.28	76	1.87	64	47	65	100.0	66	0.114	0.338	21.04
1455	44.3	-0.1	235.368	0.161	1.27	76	1.87	64	47	64	100.1	66	0.111	0.333	20.99
1456	44.2	0.1	235.529	0.161	1.28	76	1.87	64	47	65	99.9	66	0.117	0.342	21.13
1457	44.2	0.0	235.690	0.161	1.28	76	1.87	64	47	65	99.2	66	0.114	0.338	21.27
1458	44.3	-0.1	235.852	0.162	1.28	76	1.86	64	47	64	99.5	66	0.117	0.342	21.27
1459	44.1	0.1	236.013	0.161	1.27	76	1.86	64	47	65	98.9	67	0.115	0.339	21.33
1460	44.1	0.0	236.174	0.161	1.28	76	1.87	64	47	65	99.3	67	0.112	0.335	21.11
1461	44.1	0.0	236.335	0.161	1.28	76	1.87	64	47	65	99.7	67	0.116	0.341	21.15
1462	44.1	0.1	236.496	0.161	1.28	76	1.86	64	47	65	99.5	67	0.113	0.336	21.20
1463	44.1	0.0	236.656	0.160	1.28	76	1.87	65	47	65	98.9	67	0.115	0.339	21.15
1464	44.1	0.0	236.819	0.163	1.28	76	1.87	64	47	65	100.6	67	0.115	0.339	21.24
1465	44.1	0.0	236.979	0.160	1.28	76	1.87	64	47	65	98.8	67	0.113	0.336	21.15
1466	44.1	-0.1	237.140	0.161	1.28	76	1.87	64	47	64	99.7	67	0.114	0.338	21.11
1467	44.1	0.0	237.301	0.161	1.28	76	1.87	65	47	64	99.8	70	0.115	0.339	21.23
1468	44.1	0.0	237.462	0.161	1.28	77	1.87	65	48	64	99.5	67	0.114	0.338	21.23
1469	44.1	0.0	237.623	0.161	1.28	77	1.87	65	48	64	99.6	67	0.111	0.333	21.01
1470	44.1	0.0	237.785	0.162	1.27	77	1.87	65	48	64	101.0	66	0.111	0.333	20.86
1471	44.1	0.0	237.946	0.161	1.28	77	1.87	65	48	64	100.5	66	0.112	0.335	20.90
1472	44.1	0.0	238.107	0.161	1.28	77	1.87	64	48	64	99.9	65	0.115	0.339	21.08
1473	43.9	0.2	238.268	0.161	1.28	77	1.87	64	48	64	99.7	65	0.110	0.332	20.97
1474	44.1	-0.1	238.429	0.161	1.28	77	1.86	64	48	64	99.8	65	0.116	0.341	21.02
1475	44.0	0.1	238.590	0.161	1.29	77	1.86	64	48	64	99.7	65	0.110	0.332	21.02
1476	44.0	0.0	238.752	0.162	1.28	77	1.87	64	48	65	100.2	64	0.116	0.341	21.01
1477	44.0	0.0	238.913	0.161	1.27	77	1.86	64	48	65	99.2	64	0.113	0.336	21.14
1478	44.0	0.0	239.073	0.160	1.28	77	1.87	64	48	65	98.7	64	0.113	0.336	21.00
1479	44.0	0.0	239.234	0.161	1.28	77	1.87	64	48	64	99.5	64	0.114	0.338	21.05
1480	44.0	0.0	239.395	0.161	1.28	77	1.87	64	48	64	99.3	64	0.114	0.338	21.09
1481	44.0	0.0	239.557	0.162	1.29	77	1.87	64	48	64	99.7	64	0.115	0.339	21.14
1482	44.0	0.0	239.719	0.162	1.28	77	1.87	64	48	64	99.5	64	0.115	0.339	21.18
1483	44.1	-0.1	239.879	0.160	1.28	77	1.87	64	48	64	97.9	64	0.117	0.342	21.28
1484	43.9	0.1	240.040	0.161	1.28	77	1.87	64	48	64	98.6	64	0.112	0.335	21.14
1485	44.0	0.0	240.201	0.161	1.28	77	1.86	64	48	64	98.9	63	0.117	0.342	21.13
1486	44.0	-0.1	240.362	0.161	1.28	77	1.86	64	48	64	98.3	63	0.117	0.342	21.35
1487	44.0	0.0	240.524	0.162	1.29	77	1.87	64	48	64	99.1	63	0.110	0.332	21.03
1488	44.0	0.0	240.685	0.161	1.28	77	1.86	64	48	63	99.8	63	0.112	0.335	20.79
1489	44.0	0.0	240.847	0.162	1.28	77	1.87	64	48	63	100.5	63	0.115	0.339	21.03
1490	44.0	0.0	241.007	0.160	1.27	77	1.86	64	48	63	98.5	63	0.114	0.338	21.12
1491	44.0	0.0	241.168	0.161	1.28	77	1.87	64	48	64	98.9	63	0.115	0.339	21.12
1492	44.0	0.0	241.330	0.162	1.28	77	1.86	64	48	63	99.2	63	0.116	0.341	21.21

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1493	43.9	0.1	241.491	0.161	1.28	77	1.87	64	48	63	98.7	63	0.112	0.335	21.07
1494	44.0	-0.1	241.653	0.162	1.28	77	1.87	63	48	63	99.9	63	0.114	0.338	20.98
1495	43.9	0.1	241.814	0.161	1.28	77	1.86	63	48	63	99.1	63	0.116	0.341	21.16
1496	43.9	0.0	241.975	0.161	1.28	77	1.87	63	48	63	98.1	62	0.118	0.344	21.34
1497	43.9	0.0	242.136	0.161	1.28	77	1.86	63	48	62	98.1	62	0.112	0.335	21.14
1498	44.0	-0.1	242.297	0.161	1.28	77	1.86	63	48	63	99.1	62	0.113	0.336	20.91
1499	43.9	0.1	242.459	0.162	1.28	77	1.86	63	49	62	99.9	62	0.115	0.339	21.05
1500	43.9	0.0	242.621	0.162	1.28	77	1.87	63	49	62	99.5	62	0.114	0.338	21.10
1501	43.9	0.0	242.782	0.161	1.27	77	1.88	63	49	62	99.4	66	0.112	0.335	21.00
1502	43.8	0.2	242.942	0.160	1.28	77	1.87	63	49	62	98.7	63	0.117	0.342	21.15
1503	43.8	0.0	243.104	0.162	1.28	77	1.86	63	49	62	98.9	63	0.117	0.342	21.35
1504	43.7	0.1	243.265	0.161	1.28	77	1.86	63	49	62	98.4	62	0.111	0.333	21.06
1505	43.8	-0.1	243.426	0.161	1.29	77	1.87	63	49	62	99.7	62	0.110	0.332	20.73
1506	43.7	0.1	243.589	0.163	1.28	77	1.86	63	49	62	101.5	65	0.115	0.339	20.94
1507	43.7	0.0	243.750	0.161	1.28	76	1.86	63	49	62	100.0	64	0.110	0.332	20.96
1508	43.6	0.1	243.911	0.161	1.28	76	1.86	63	49	62	99.7	63	0.117	0.342	21.04
1509	43.7	-0.1	244.072	0.161	1.28	76	1.86	63	49	62	99.0	63	0.114	0.338	21.21
1510	43.8	-0.1	244.233	0.161	1.29	76	1.86	63	49	62	98.7	63	0.116	0.341	21.16
1511	43.7	0.1	244.395	0.162	1.29	76	1.87	63	49	62	99.7	63	0.112	0.335	21.07
1512	43.7	0.0	244.557	0.162	1.28	76	1.87	63	49	62	100.5	63	0.110	0.332	20.79
1513	43.7	0.0	244.718	0.161	1.29	76	1.87	63	49	62	100.8	64	0.111	0.333	20.76
1514	43.8	0.0	244.880	0.162	1.28	76	1.86	63	49	62	101.6	64	0.110	0.332	20.77
1515	43.7	0.1	245.040	0.160	1.29	76	1.86	63	49	62	100.3	64	0.111	0.333	20.77
1516	43.8	-0.1	245.202	0.162	1.29	76	1.87	63	49	62	102.1	64	0.105	0.324	20.53
1517	43.7	0.1	245.363	0.161	1.29	76	1.86	63	49	62	102.1	64	0.111	0.333	20.53
1518	43.7	0.0	245.525	0.162	1.29	76	1.86	63	49	62	101.7	64	0.114	0.338	20.95
1519	43.8	-0.1	245.687	0.162	1.28	76	1.87	63	49	62	100.5	65	0.113	0.336	21.06
1520	43.8	0.0	245.848	0.161	1.28	76	1.86	63	49	62	99.5	65	0.116	0.341	21.16
1521	43.8	0.0	246.009	0.161	1.28	76	1.87	63	49	62	99.4	65	0.111	0.333	21.07
1522	43.7	0.0	246.170	0.161	1.28	76	1.86	63	49	63	99.8	65	0.115	0.339	21.02
1523	43.7	0.0	246.332	0.162	1.29	76	1.87	63	49	63	100.0	65	0.116	0.341	21.25
1524	43.8	0.0	246.493	0.161	1.29	76	1.86	63	49	63	98.9	65	0.114	0.338	21.20
1525	43.8	0.0	246.655	0.162	1.28	76	1.87	63	49	63	99.8	65	0.114	0.338	21.11
1526	43.7	0.0	246.816	0.161	1.29	76	1.86	63	49	63	99.6	65	0.113	0.336	21.07
1527	43.8	0.0	246.978	0.162	1.28	76	1.87	63	49	63	100.5	66	0.113	0.336	21.03
1528	43.9	-0.1	247.139	0.161	1.28	76	1.87	63	49	63	100.0	66	0.113	0.336	21.04
1529	43.8	0.1	247.300	0.161	1.29	76	1.86	63	49	63	99.9	66	0.114	0.338	21.09
1530	43.8	0.0	247.461	0.161	1.29	76	1.87	63	49	63	100.1	66	0.110	0.332	20.95
1531	43.8	-0.1	247.623	0.162	1.28	76	1.87	64	49	63	100.8	66	0.116	0.341	21.04
1532	43.8	0.0	247.784	0.161	1.28	76	1.86	64	49	65	100.1	69	0.111	0.333	21.12
1533	43.7	0.1	247.945	0.161	1.28	76	1.87	64	49	63	100.1	67	0.115	0.339	21.08
1534	43.7	0.0	248.106	0.161	1.28	76	1.86	64	49	64	99.8	66	0.112	0.335	21.10
1535	43.7	0.0	248.267	0.161	1.29	76	1.86	64	49	63	100.2	68	0.112	0.335	20.97
1536	43.7	0.1	248.428	0.161	1.28	76	1.87	64	49	63	100.1	67	0.116	0.341	21.16

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1537	43.8	-0.1	248.590	0.162	1.28	76	1.86	64	49	64	100.3	66	0.111	0.333	21.10
1538	43.8	0.0	248.752	0.162	1.29	76	1.87	64	49	64	101.0	66	0.110	0.332	20.81
1539	43.7	0.1	248.913	0.161	1.28	76	1.86	64	49	64	100.8	65	0.113	0.336	20.89
1540	43.7	0.0	249.074	0.161	1.28	76	1.86	64	49	64	100.0	65	0.115	0.339	21.11
1541	43.6	0.1	249.235	0.161	1.28	76	1.87	64	49	64	99.4	64	0.113	0.336	21.10
1542	43.8	-0.2	249.396	0.161	1.28	76	1.86	64	49	64	99.5	64	0.113	0.336	21.00
1543	43.7	0.1	249.558	0.162	1.28	76	1.87	64	49	64	99.7	64	0.119	0.345	21.28
1544	43.6	0.0	249.719	0.161	1.28	76	1.86	64	49	64	98.4	64	0.114	0.338	21.32
1545	43.8	-0.1	249.881	0.162	1.28	76	1.86	64	50	64	99.5	64	0.113	0.336	21.05
1546	43.7	0.1	250.041	0.160	1.28	76	1.86	64	50	64	99.1	64	0.113	0.336	21.00
1547	43.7	0.0	250.202	0.161	1.28	76	1.86	64	50	64	99.8	63	0.112	0.335	20.94
1548	43.7	0.0	250.364	0.162	1.28	76	1.86	64	50	64	100.1	63	0.117	0.342	21.12
1549	43.8	-0.1	250.525	0.161	1.28	76	1.87	64	50	64	98.6	63	0.116	0.341	21.30
1550	43.7	0.1	250.687	0.162	1.28	76	1.86	64	50	64	99.0	63	0.115	0.339	21.21
1551	43.6	0.0	250.848	0.161	1.28	77	1.87	64	50	64	98.4	63	0.117	0.342	21.26
1552	43.8	-0.1	251.009	0.161	1.28	77	1.86	64	50	63	98.4	63	0.113	0.336	21.16
1553	43.7	0.1	251.170	0.161	1.28	76	1.86	63	50	63	99.2	63	0.113	0.336	20.98
1554	43.7	0.0	251.332	0.162	1.29	77	1.86	63	50	62	100.0	63	0.115	0.339	21.07
1555	43.6	0.1	251.493	0.161	1.28	77	1.87	63	50	62	98.5	63	0.118	0.344	21.30
1556	43.7	-0.1	251.655	0.162	1.29	77	1.87	63	50	63	98.9	63	0.112	0.335	21.16
1557	43.7	0.0	251.816	0.161	1.27	77	1.86	63	50	63	99.0	63	0.115	0.339	21.03
1558	43.7	0.0	251.977	0.161	1.28	76	1.86	63	50	63	98.9	63	0.116	0.341	21.21
1559	43.8	-0.1	252.138	0.161	1.28	76	1.86	63	50	62	98.7	62	0.113	0.336	21.11
1560	43.8	0.0	252.300	0.162	1.29	76	1.86	63	50	63	99.9	62	0.113	0.336	20.96
1561	43.7	0.0	252.461	0.161	1.28	76	1.86	63	50	63	99.4	62	0.115	0.339	21.05
1562	43.8	-0.1	252.623	0.162	1.29	76	1.86	63	50	62	99.8	62	0.113	0.336	21.05
1563	43.7	0.1	252.784	0.161	1.27	76	1.86	63	50	62	99.2	65	0.117	0.342	21.17
1564	43.7	0.0	252.945	0.161	1.28	76	1.86	63	50	62	98.9	62	0.113	0.336	21.17
1565	43.8	-0.1	253.107	0.162	1.28	76	1.86	63	50	62	99.4	62	0.116	0.341	21.10
1566	43.7	0.0	253.268	0.161	1.28	76	1.86	63	50	62	98.6	62	0.116	0.341	21.24
1567	43.7	0.0	253.429	0.161	1.29	76	1.86	63	50	62	98.6	62	0.113	0.336	21.10
1568	43.8	-0.1	253.591	0.162	1.29	76	1.86	63	50	62	99.9	62	0.113	0.336	20.96
1569	43.7	0.1	253.753	0.162	1.28	76	1.86	63	50	62	100.1	62	0.114	0.338	21.01
1570	43.7	0.0	253.914	0.161	1.28	76	1.87	63	50	62	99.1	64	0.117	0.342	21.21
1571	43.6	0.1	254.075	0.161	1.28	76	1.86	63	50	62	98.6	63	0.115	0.339	21.27
1572	43.7	0.0	254.236	0.161	1.29	76	1.86	63	50	62	98.8	63	0.113	0.336	21.07
1573	43.8	-0.1	254.398	0.162	1.29	76	1.87	63	50	62	100.2	62	0.111	0.333	20.88
1574	43.7	0.1	254.559	0.161	1.28	76	1.86	63	50	62	100.1	63	0.113	0.336	20.88
1575	43.7	0.0	254.721	0.162	1.28	76	1.86	63	50	62	100.4	63	0.114	0.338	21.03
1576	43.6	0.1	254.883	0.162	1.28	76	1.86	63	50	62	100.1	63	0.113	0.336	21.03
1577	43.7	-0.1	255.043	0.160	1.28	76	1.86	63	50	62	98.7	63	0.115	0.339	21.07
1578	43.6	0.1	255.205	0.162	1.28	76	1.86	63	50	62	99.9	63	0.113	0.336	21.07
1579	43.6	0.0	255.366	0.161	1.29	76	1.87	63	50	62	100.0	64	0.109	0.330	20.80
1580	43.6	0.0	255.527	0.161	1.28	76	1.85	63	50	62	100.3	64	0.117	0.342	21.00

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1581	43.7	0.0	255.690	0.163	1.28	76	1.86	63	50	62	100.4	64	0.115	0.339	21.28
1582	43.7	0.0	255.851	0.161	1.28	76	1.86	63	50	62	99.0	64	0.112	0.335	21.05
1583	43.8	-0.1	256.012	0.161	1.28	76	1.86	63	50	62	99.5	64	0.116	0.341	21.09
1584	43.7	0.1	256.173	0.161	1.28	76	1.86	63	50	62	99.4	65	0.112	0.335	21.10
1585	43.7	0.0	256.334	0.161	1.29	76	1.86	63	50	62	100.0	65	0.111	0.333	20.88
1586	43.7	0.0	256.496	0.162	1.29	76	1.86	63	50	62	101.4	65	0.110	0.332	20.79
1587	43.8	-0.1	256.658	0.162	1.29	76	1.86	63	50	62	101.3	65	0.114	0.338	20.93
1588	43.8	0.0	256.819	0.161	1.28	76	1.87	63	50	62	99.9	65	0.114	0.338	21.11
1589	43.8	0.0	256.981	0.162	1.28	76	1.86	63	50	63	100.2	65	0.113	0.336	21.07
1590	43.8	0.0	257.142	0.161	1.28	76	1.86	63	50	62	99.9	65	0.112	0.335	20.97
1591	43.8	0.0	257.303	0.161	1.29	76	1.86	63	50	63	100.1	65	0.113	0.336	20.97
1592	43.7	0.0	257.464	0.161	1.28	76	1.86	63	50	62	100.0	65	0.113	0.336	21.02
1593	43.7	0.1	257.626	0.162	1.29	76	1.86	63	50	62	100.6	66	0.113	0.336	21.03
1594	43.7	-0.1	257.788	0.162	1.28	76	1.86	63	50	64	101.2	68	0.109	0.330	20.87
1595	43.8	-0.1	257.949	0.161	1.27	76	1.87	63	50	63	100.5	66	0.117	0.342	21.06
1596	43.7	0.1	258.110	0.161	1.28	76	1.86	63	50	63	99.6	66	0.112	0.335	21.18
1597	43.7	0.0	258.271	0.161	1.28	76	1.86	63	50	63	99.5	66	0.115	0.339	21.09
1598	43.6	0.0	258.432	0.161	1.28	76	1.86	63	50	63	99.2	67	0.118	0.344	21.37
1599	43.8	-0.2	258.593	0.161	1.29	76	1.86	64	50	63	98.6	66	0.114	0.338	21.33
1600	43.6	0.2	258.755	0.162	1.27	76	1.86	64	50	63	99.8	66	0.113	0.336	21.09
1601	43.7	-0.1	258.916	0.161	1.27	76	1.87	64	50	63	99.6	66	0.115	0.339	21.13
1602	43.7	-0.1	259.077	0.161	1.28	76	1.86	64	50	63	99.6	66	0.112	0.335	21.09
1603	43.7	0.0	259.238	0.161	1.28	76	1.87	64	50	63	100.1	66	0.112	0.335	20.95
1604	43.7	0.0	259.399	0.161	1.28	76	1.87	64	50	63	99.9	66	0.117	0.342	21.18
1605	43.7	0.0	259.561	0.162	1.29	76	1.86	64	51	63	99.7	67	0.115	0.339	21.33
1606	43.6	0.1	259.723	0.162	1.28	76	1.86	64	51	63	100.1	67	0.111	0.333	21.06
1607	43.7	-0.1	259.884	0.161	1.28	76	1.86	64	51	65	100.7	69	0.111	0.333	20.89
1608	43.7	0.0	260.045	0.161	1.28	76	1.87	64	51	64	100.5	67	0.116	0.341	21.13
1609	43.8	-0.1	260.206	0.161	1.28	76	1.87	64	51	64	99.6	66	0.112	0.335	21.14
1610	43.6	0.1	260.367	0.161	1.28	76	1.87	64	51	64	100.1	65	0.110	0.332	20.84
1611	43.7	-0.1	260.528	0.161	1.28	76	1.86	64	51	64	101.0	65	0.110	0.332	20.74
1612	43.6	0.1	260.691	0.163	1.28	76	1.86	64	51	63	102.2	64	0.112	0.335	20.82
1613	43.8	-0.2	260.852	0.161	1.29	76	1.87	64	51	64	99.9	64	0.117	0.342	21.14
1614	43.7	0.1	261.013	0.161	1.28	77	1.86	64	51	64	98.6	64	0.116	0.341	21.32
1615	43.7	0.0	261.174	0.161	1.29	77	1.86	64	51	64	98.3	64	0.115	0.339	21.23
1616	43.8	-0.1	261.335	0.161	1.28	77	1.86	64	51	63	98.8	64	0.113	0.336	21.09
1617	43.8	0.0	261.496	0.161	1.28	76	1.86	64	51	64	99.5	63	0.112	0.335	20.94
1618	43.7	0.1	261.658	0.162	1.28	77	1.86	64	51	64	100.3	63	0.114	0.338	20.98
1619	43.7	0.0	261.819	0.161	1.28	77	1.86	64	51	64	99.5	63	0.112	0.335	20.98
1620	43.7	-0.1	261.980	0.161	1.28	77	1.85	64	51	64	99.5	63	0.114	0.338	20.98
1621	43.6	0.1	262.141	0.161	1.28	77	1.86	64	51	64	99.2	63	0.115	0.339	21.12
1622	43.8	-0.2	262.302	0.161	1.28	77	1.86	64	51	64	98.5	63	0.117	0.342	21.26
1623	43.7	0.1	262.464	0.162	1.28	77	1.86	63	51	63	98.9	63	0.114	0.338	21.21
1624	43.6	0.1	262.626	0.162	1.28	77	1.87	63	51	63	99.4	63	0.114	0.338	21.07

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1625	43.6	0.0	262.787	0.161	1.27	77	1.86	64	51	63	99.2	66	0.115	0.339	21.15
1626	43.7	0.0	262.948	0.161	1.27	77	1.87	64	51	63	99.5	66	0.111	0.333	21.04
1627	43.5	0.2	263.109	0.161	1.28	77	1.87	64	51	63	99.7	66	0.116	0.341	21.09
1628	43.4	0.1	263.270	0.161	1.28	77	1.86	64	51	63	99.2	67	0.115	0.339	21.28
1629	43.2	0.2	263.431	0.161	1.28	77	1.87	64	51	62	98.7	67	0.117	0.342	21.34
1630	43.0	0.2	263.593	0.162	1.29	77	1.86	64	51	63	99.3	68	0.115	0.339	21.35
1631	42.6	0.4	263.755	0.162	1.28	77	1.86	64	51	62	99.8	69	0.113	0.336	21.18
1632	42.2	0.3	263.916	0.161	1.28	77	1.87	64	51	62	99.9	69	0.113	0.336	21.10
1633	41.9	0.4	264.076	0.160	1.28	77	1.87	64	51	62	99.0	70	0.118	0.344	21.34
1634	41.5	0.4	264.237	0.161	1.29	77	1.86	64	51	62	98.7	71	0.117	0.342	21.55
1635	41.0	0.5	264.398	0.161	1.28	77	1.87	64	51	62	98.7	72	0.115	0.339	21.43
1636	40.6	0.4	264.560	0.162	1.29	77	1.87	64	51	62	99.9	72	0.115	0.339	21.35
1637	40.3	0.3	264.721	0.161	1.29	77	1.87	64	51	62	99.8	73	0.113	0.336	21.26
1638	39.8	0.5	264.882	0.161	1.27	77	1.87	64	51	62	100.6	73	0.110	0.332	21.04
1639	39.3	0.5	265.043	0.161	1.28	76	1.87	64	51	62	101.0	74	0.116	0.341	21.19
1640	38.8	0.5	265.204	0.161	1.28	77	1.88	64	51	62	100.4	74	0.112	0.335	21.29
1641	38.4	0.4	265.365	0.161	1.28	76	1.87	64	51	62	100.5	73	0.113	0.336	21.14
1642	37.8	0.6	265.527	0.162	1.27	76	1.87	64	51	62	101.6	73	0.111	0.333	21.08
1643	37.2	0.5	265.688	0.161	1.28	76	1.87	64	51	62	101.0	74	0.114	0.338	21.14
1644	36.8	0.4	265.848	0.160	1.28	76	1.87	65	52	62	99.6	73	0.117	0.342	21.42
1645	36.4	0.5	266.009	0.161	1.28	76	1.87	65	52	62	100.0	73	0.110	0.332	21.23
1646	35.8	0.6	266.170	0.161	1.28	76	1.87	65	52	61	101.3	76	0.111	0.333	20.97
1647	35.3	0.5	266.331	0.161	1.28	76	1.88	65	52	61	101.6	74	0.113	0.336	21.12
1648	34.9	0.4	266.493	0.162	1.27	76	1.87	65	52	62	102.0	73	0.108	0.329	20.95
1649	34.4	0.4	266.654	0.161	1.28	76	1.87	65	52	63	102.0	73	0.111	0.333	20.85
1650	33.9	0.6	266.814	0.160	1.28	76	1.87	65	52	64	101.3	73	0.111	0.333	20.99
1651	33.5	0.4	266.975	0.161	1.28	76	1.88	65	52	63	101.5	73	0.111	0.333	20.99
1652	33.0	0.5	267.136	0.161	1.28	76	1.87	65	52	62	101.2	73	0.114	0.338	21.13
1653	32.5	0.5	267.297	0.161	1.28	76	1.88	65	52	62	100.9	73	0.111	0.333	21.13
1654	32.0	0.4	267.458	0.161	1.28	76	1.87	65	52	63	100.8	74	0.115	0.339	21.19
1655	31.6	0.5	267.619	0.161	1.27	76	1.87	65	52	63	100.8	74	0.111	0.333	21.20
1656	30.9	0.6	267.780	0.161	1.28	76	1.88	65	52	63	100.8	74	0.114	0.338	21.15
1657	30.7	0.3	267.940	0.160	1.29	76	1.88	65	52	63	99.7	70	0.114	0.338	21.25
1658	30.3	0.3	268.102	0.162	1.28	76	1.88	65	52	64	101.0	69	0.108	0.329	20.92
1659	30.1	0.3	268.263	0.161	1.27	76	1.87	65	52	63	101.1	68	0.114	0.338	20.90
1660	29.8	0.3	268.424	0.161	1.28	76	1.87	65	52	64	100.5	68	0.113	0.336	21.13
1661	29.7	0.1	268.586	0.162	1.27	76	1.87	64	52	63	100.6	67	0.113	0.336	21.07
1662	29.6	0.1	268.746	0.160	1.27	76	1.88	64	52	63	99.1	67	0.116	0.341	21.20
1663	29.4	0.2	268.907	0.161	1.28	76	1.87	64	52	63	99.2	67	0.115	0.339	21.29
1664	29.3	0.1	269.068	0.161	1.28	76	1.87	64	52	63	99.3	66	0.112	0.335	21.10
1665	29.3	0.0	269.230	0.162	1.28	76	1.87	64	52	63	100.7	66	0.112	0.335	20.95
1666	29.1	0.1	269.391	0.161	1.28	76	1.87	64	52	63	100.2	66	0.114	0.338	21.04
1667	29.2	0.0	269.552	0.161	1.27	76	1.87	64	52	63	100.0	66	0.112	0.335	21.04
1668	28.9	0.2	269.713	0.161	1.28	76	1.87	64	52	62	100.1	66	0.113	0.336	20.99

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1669	28.9	0.0	269.874	0.161	1.28	76	1.87	64	52	63	100.1	66	0.113	0.336	21.04
1670	28.8	0.1	270.035	0.161	1.28	76	1.86	64	52	63	100.3	66	0.110	0.332	20.90
1671	28.9	0.0	270.197	0.162	1.28	76	1.86	64	52	63	101.3	66	0.113	0.336	20.90
1672	28.8	0.1	270.358	0.161	1.27	76	1.86	64	52	63	100.5	66	0.111	0.333	20.95
1673	28.7	0.1	270.519	0.161	1.28	76	1.87	64	52	63	100.4	66	0.113	0.336	20.95
1674	28.8	-0.1	270.680	0.161	1.28	76	1.87	64	52	63	100.4	66	0.111	0.333	20.95
1675	28.8	0.0	270.841	0.161	1.28	76	1.86	64	52	63	100.3	66	0.114	0.338	20.99
1676	28.8	0.0	271.002	0.161	1.28	76	1.87	64	52	63	99.9	66	0.114	0.338	21.13
1677	28.8	0.0	271.164	0.162	1.28	76	1.86	64	52	63	100.4	66	0.112	0.335	21.04
1678	28.7	0.0	271.325	0.161	1.27	76	1.86	64	52	63	100.1	66	0.113	0.336	20.99
1679	28.7	0.0	271.485	0.160	1.28	76	1.86	64	52	63	99.5	67	0.113	0.336	21.05
1680	28.6	0.1	271.646	0.161	1.28	76	1.86	64	52	63	100.0	67	0.114	0.338	21.11
1681	28.6	0.0	271.807	0.161	1.28	76	1.86	64	52	65	100.4	69	0.109	0.330	20.94
1682	28.6	0.0	271.969	0.162	1.28	76	1.87	64	52	64	101.9	66	0.110	0.332	20.74
1683	28.7	0.0	272.130	0.161	1.27	76	1.87	64	52	64	101.6	66	0.108	0.329	20.66
1684	28.6	0.1	272.291	0.161	1.28	76	1.87	64	52	64	101.5	65	0.112	0.335	20.75
1685	28.7	-0.1	272.452	0.161	1.28	76	1.87	64	52	64	101.0	65	0.110	0.332	20.83
1686	28.6	0.1	272.613	0.161	1.28	76	1.87	64	52	64	101.1	65	0.109	0.330	20.69
1687	28.6	0.1	272.774	0.161	1.28	76	1.87	64	52	64	101.2	64	0.112	0.335	20.78
1688	28.5	0.1	272.935	0.161	1.29	76	1.87	64	52	64	100.5	64	0.112	0.335	20.91
1689	28.6	-0.1	273.097	0.162	1.28	76	1.87	64	52	64	100.9	64	0.112	0.335	20.91
1690	28.6	0.0	273.258	0.161	1.28	76	1.87	64	52	64	99.9	64	0.115	0.339	21.05
1691	28.6	0.0	273.418	0.160	1.28	76	1.87	64	52	64	98.7	64	0.114	0.338	21.14
1692	28.6	0.0	273.579	0.161	1.28	76	1.86	64	52	64	99.8	64	0.109	0.330	20.86
1693	28.6	0.0	273.740	0.161	1.28	76	1.87	64	52	64	100.7	64	0.112	0.335	20.77
1694	28.5	0.1	273.902	0.162	1.28	76	1.87	64	52	64	101.1	63	0.112	0.335	20.90
1695	28.5	0.0	274.063	0.161	1.28	76	1.86	64	52	64	99.7	63	0.116	0.341	21.07
1696	28.4	0.1	274.224	0.161	1.27	76	1.87	64	52	64	99.1	63	0.113	0.336	21.12
1697	28.5	-0.1	274.385	0.161	1.28	76	1.86	64	52	63	99.4	63	0.113	0.336	20.98
1698	28.6	-0.1	274.546	0.161	1.28	76	1.86	64	52	63	99.7	63	0.113	0.336	20.98
1699	28.5	0.1	274.707	0.161	1.28	77	1.87	64	52	63	99.5	63	0.114	0.338	21.03
1700	28.4	0.0	274.869	0.162	1.29	76	1.86	64	52	63	99.5	63	0.118	0.344	21.26
1701	28.5	0.0	275.030	0.161	1.29	76	1.87	63	52	63	98.2	63	0.116	0.341	21.35
1702	28.5	0.0	275.192	0.162	1.27	76	1.87	63	52	62	99.3	63	0.111	0.333	21.03
1703	28.5	0.0	275.352	0.160	1.28	76	1.86	63	52	63	99.2	63	0.113	0.336	20.89
1704	28.5	-0.1	275.513	0.161	1.28	76	1.87	63	52	63	99.3	62	0.118	0.344	21.20
1705	28.5	0.0	275.674	0.161	1.28	76	1.87	63	52	63	98.4	62	0.114	0.338	21.24
1706	28.5	0.0	275.836	0.162	1.28	76	1.86	63	52	63	99.2	62	0.115	0.339	21.10
1707	28.5	0.0	275.997	0.161	1.28	76	1.87	63	52	63	98.8	62	0.115	0.339	21.14
1708	28.5	0.0	276.159	0.162	1.28	76	1.86	63	52	63	99.7	62	0.112	0.335	21.01
1709	28.5	0.0	276.320	0.161	1.28	76	1.87	63	52	62	99.5	62	0.114	0.338	20.96
1710	28.4	0.1	276.480	0.160	1.29	76	1.87	63	52	62	99.1	62	0.111	0.333	20.91
1711	28.5	-0.1	276.642	0.162	1.28	76	1.87	63	52	62	100.5	62	0.113	0.336	20.87
1712	28.5	0.0	276.803	0.161	1.28	76	1.86	63	52	62	99.4	62	0.117	0.342	21.14

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1713	28.5	0.0	276.965	0.162	1.28	76	1.87	63	52	62	99.4	62	0.112	0.335	21.10
1714	28.5	0.0	277.126	0.161	1.27	76	1.87	63	52	62	99.5	64	0.113	0.336	20.93
1715	28.6	-0.1	277.287	0.161	1.28	76	1.87	63	52	62	99.9	64	0.113	0.336	21.00
1716	28.5	0.1	277.448	0.161	1.28	76	1.86	63	52	62	99.6	63	0.114	0.338	21.04
1717	28.5	0.0	277.609	0.161	1.28	76	1.87	63	52	61	99.3	63	0.114	0.338	21.07
1718	28.5	0.0	277.771	0.162	1.28	76	1.87	63	52	62	100.4	63	0.109	0.330	20.84
1719	28.6	0.0	277.932	0.161	1.28	76	1.87	63	52	62	100.1	63	0.116	0.341	20.93
1720	28.6	-0.1	278.094	0.162	1.27	76	1.88	63	52	62	100.3	63	0.111	0.333	21.03
1721	28.6	0.0	278.254	0.160	1.27	76	1.86	63	52	62	99.2	63	0.113	0.336	20.89
1722	28.5	0.1	278.415	0.161	1.28	76	1.87	63	52	62	100.0	63	0.112	0.335	20.93
1723	28.6	0.0	278.577	0.162	1.28	76	1.87	63	52	62	100.8	63	0.111	0.333	20.84
1724	28.5	0.0	278.738	0.161	1.28	76	1.86	63	52	63	100.3	64	0.113	0.336	20.90
1725	28.6	-0.1	278.900	0.162	1.28	76	1.87	63	52	62	100.8	64	0.112	0.335	20.95
1726	28.5	0.1	279.061	0.161	1.27	76	1.88	63	52	62	100.0	67	0.115	0.339	21.08
1727	28.5	0.1	279.222	0.161	1.28	76	1.86	63	52	62	99.7	65	0.113	0.336	21.13
1728	28.4	0.1	279.383	0.161	1.28	76	1.86	63	52	62	99.4	64	0.114	0.338	21.06
1729	28.4	0.0	279.544	0.161	1.29	76	1.86	63	52	62	99.7	65	0.112	0.335	21.01
1730	28.4	0.0	279.705	0.161	1.29	76	1.86	63	52	62	100.4	65	0.110	0.332	20.83
1731	28.3	0.1	279.867	0.162	1.28	76	1.86	63	52	63	101.4	65	0.112	0.335	20.83
1732	28.5	-0.2	280.029	0.162	1.27	76	1.86	63	52	63	100.9	65	0.114	0.338	21.02
1733	28.4	0.1	280.189	0.160	1.28	76	1.86	63	52	62	99.2	65	0.113	0.336	21.07
1734	28.3	0.0	280.350	0.161	1.28	76	1.87	63	52	63	99.9	65	0.112	0.335	20.97
1735	28.3	0.0	280.512	0.162	1.29	76	1.87	63	52	63	100.7	65	0.113	0.336	20.97
1736	28.4	-0.1	280.673	0.161	1.28	76	1.86	63	52	63	99.7	65	0.116	0.341	21.16
1737	28.4	0.1	280.835	0.162	1.28	76	1.86	63	52	63	99.3	65	0.118	0.344	21.39
1738	28.5	-0.1	280.996	0.161	1.28	76	1.86	63	52	63	98.7	65	0.111	0.333	21.16
1739	28.4	0.0	281.157	0.161	1.28	76	1.87	63	52	63	99.4	65	0.116	0.341	21.07
1740	28.3	0.1	281.318	0.161	1.28	76	1.87	63	52	63	99.0	66	0.118	0.344	21.40
1741	28.4	-0.1	281.479	0.161	1.29	76	1.87	63	52	63	98.1	66	0.118	0.344	21.50
1742	28.5	-0.1	281.640	0.161	1.28	76	1.87	63	52	63	97.9	66	0.117	0.342	21.45
1743	28.4	0.0	281.802	0.162	1.28	76	1.86	63	52	63	99.3	66	0.112	0.335	21.18
1744	28.4	0.1	281.963	0.161	1.28	76	1.87	63	52	63	100.1	66	0.110	0.332	20.85
1745	28.4	0.0	282.124	0.161	1.28	76	1.87	63	52	63	100.5	66	0.115	0.339	20.99
1746	28.4	0.0	282.285	0.161	1.28	76	1.87	63	52	63	100.0	66	0.112	0.335	21.09
1747	28.4	0.0	282.446	0.161	1.28	76	1.86	63	52	63	99.8	66	0.115	0.339	21.09
1748	28.4	0.0	282.607	0.161	1.28	76	1.87	64	52	63	99.2	66	0.117	0.342	21.32
1749	28.5	0.0	282.769	0.162	1.28	76	1.87	64	52	63	99.2	66	0.116	0.341	21.36
1750	28.5	0.0	282.930	0.161	1.27	76	1.87	64	52	63	99.4	66	0.108	0.329	20.95
1751	28.4	0.1	283.091	0.161	1.28	76	1.87	64	52	64	100.9	67	0.112	0.335	20.77
1752	28.4	0.0	283.252	0.161	1.28	76	1.87	64	52	64	102.2	69	0.103	0.321	20.56
1753	28.5	-0.1	283.413	0.161	1.29	76	1.86	64	52	64	102.0	66	0.117	0.342	20.79
1754	28.5	0.0	283.574	0.161	1.28	76	1.87	64	52	64	100.5	66	0.110	0.332	21.09
1755	28.4	0.0	283.736	0.162	1.28	76	1.86	64	52	63	101.0	65	0.111	0.333	20.80
1756	28.5	-0.1	283.897	0.161	1.28	76	1.87	64	52	63	101.1	65	0.109	0.330	20.74

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1757	28.4	0.1	284.058	0.161	1.28	76	1.87	64	52	64	101.0	66	0.114	0.338	20.89
1758	28.4	0.0	284.219	0.161	1.28	76	1.87	64	53	64	99.6	65	0.118	0.344	21.31
1759	28.4	0.0	284.380	0.161	1.28	76	1.86	64	53	64	98.6	64	0.113	0.336	21.24
1760	28.4	0.0	284.541	0.161	1.29	76	1.86	64	53	64	99.0	64	0.115	0.339	21.09
1761	28.4	0.0	284.703	0.162	1.27	76	1.87	64	53	64	100.2	64	0.111	0.333	21.00
1762	28.4	0.0	284.865	0.162	1.27	76	1.86	64	53	64	100.6	63	0.113	0.336	20.90
1763	28.4	0.0	285.025	0.160	1.28	76	1.87	64	53	64	99.0	63	0.115	0.339	21.07
1764	28.3	0.1	285.186	0.161	1.28	76	1.87	64	53	64	99.3	63	0.113	0.336	21.07
1765	28.3	0.0	285.347	0.161	1.28	76	1.86	64	53	64	99.3	63	0.115	0.339	21.07
1766	28.3	0.0	285.509	0.162	1.29	76	1.87	64	53	64	99.9	63	0.113	0.336	21.07
1767	28.4	0.0	285.671	0.162	1.27	76	1.86	64	53	63	99.7	63	0.117	0.342	21.16
1768	28.3	0.0	285.832	0.161	1.27	76	1.87	63	53	63	99.0	63	0.111	0.333	21.07
1769	28.3	0.0	285.993	0.161	1.28	76	1.87	63	53	64	99.6	63	0.114	0.338	20.93
1770	28.4	-0.1	286.154	0.161	1.28	76	1.86	63	53	63	99.5	63	0.115	0.339	21.12
1771	28.4	0.0	286.315	0.161	1.28	76	1.86	63	53	63	99.4	62	0.110	0.332	20.92
1772	28.3	0.1	286.476	0.161	1.28	76	1.87	63	53	63	100.0	62	0.113	0.336	20.82
1773	28.4	-0.1	286.638	0.162	1.28	76	1.87	63	53	63	100.8	62	0.111	0.333	20.87
1774	28.4	0.0	286.799	0.161	1.28	76	1.86	63	53	63	99.6	62	0.117	0.342	21.05
1775	28.4	0.0	286.960	0.161	1.28	76	1.87	63	53	62	99.0	62	0.112	0.335	21.10
1776	28.4	0.0	287.122	0.162	1.28	76	1.86	63	53	63	99.9	62	0.114	0.338	20.96
1777	28.3	0.1	287.283	0.161	1.28	76	1.87	63	53	63	99.6	62	0.112	0.335	20.96
1778	28.4	-0.1	287.444	0.161	1.28	76	1.87	63	53	63	99.4	62	0.116	0.341	21.05
1779	28.4	0.0	287.606	0.162	1.28	76	1.87	63	53	63	99.4	62	0.115	0.339	21.19
1780	28.4	0.0	287.767	0.161	1.28	76	1.86	63	53	62	99.3	64	0.110	0.332	20.93
1781	28.4	0.0	287.929	0.162	1.28	76	1.87	63	53	62	100.7	63	0.114	0.338	20.90
1782	28.3	0.0	288.090	0.161	1.28	76	1.87	63	53	62	99.4	62	0.116	0.341	21.15
1783	28.4	-0.1	288.251	0.161	1.29	76	1.86	63	53	62	98.8	62	0.113	0.336	21.10
1784	28.5	0.0	288.412	0.161	1.29	76	1.86	63	53	62	99.3	62	0.113	0.336	20.96
1785	28.5	0.0	288.574	0.162	1.29	76	1.87	63	53	62	100.5	63	0.111	0.333	20.88
1786	28.4	0.0	288.736	0.162	1.28	76	1.87	63	53	62	100.9	63	0.112	0.335	20.84
1787	28.4	0.0	288.897	0.161	1.28	76	1.87	63	53	62	100.0	63	0.114	0.338	20.98
1788	28.3	0.1	289.058	0.161	1.28	76	1.88	63	53	63	99.8	65	0.112	0.335	21.00
1789	28.4	-0.1	289.218	0.160	1.28	76	1.87	63	53	62	99.5	64	0.112	0.335	20.92
1790	28.4	0.1	289.380	0.162	1.28	76	1.87	63	53	62	100.6	64	0.114	0.338	21.00
1791	28.4	0.0	289.542	0.162	1.29	76	1.86	63	53	62	100.3	64	0.113	0.336	21.05
1792	28.4	0.0	289.704	0.162	1.28	76	1.87	63	53	62	100.0	64	0.116	0.341	21.14
1793	28.4	0.0	289.865	0.161	1.28	76	1.86	63	53	63	99.1	64	0.113	0.336	21.14
1794	28.4	0.0	290.025	0.160	1.28	76	1.87	63	53	63	98.9	65	0.113	0.336	21.01
1795	28.4	0.0	290.187	0.162	1.28	76	1.87	63	53	63	100.5	65	0.113	0.336	21.02
1796	28.4	0.0	290.348	0.161	1.28	76	1.86	63	53	63	99.9	65	0.113	0.336	21.02
1797	28.3	0.0	290.509	0.161	1.29	76	1.87	63	53	63	99.7	65	0.115	0.339	21.11
1798	28.3	0.0	290.671	0.162	1.28	76	1.87	63	53	63	100.3	65	0.111	0.333	21.02
1799	28.3	0.0	290.832	0.161	1.28	76	1.86	63	53	63	100.2	65	0.112	0.335	20.88
1800	28.3	0.1	290.993	0.161	1.28	76	1.87	63	53	63	100.2	65	0.114	0.338	21.02

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1801	28.4	-0.1	291.154	0.161	1.28	76	1.86	63	53	63	100.1	65	0.110	0.332	20.93
1802	28.4	0.0	291.315	0.161	1.28	76	1.86	63	53	63	100.7	66	0.111	0.333	20.80
1803	28.4	-0.1	291.477	0.162	1.29	76	1.87	63	53	63	101.2	66	0.115	0.339	21.04
1804	28.3	0.1	291.639	0.162	1.28	76	1.87	63	53	64	100.4	66	0.113	0.336	21.13
1805	28.4	-0.1	291.800	0.161	1.28	76	1.86	63	53	63	99.8	66	0.113	0.336	21.04
1806	28.3	0.1	291.960	0.160	1.27	76	1.87	63	53	63	99.0	66	0.116	0.341	21.18
1807	28.3	0.0	292.121	0.161	1.28	76	1.86	63	53	63	99.0	66	0.116	0.341	21.32
1808	28.4	-0.1	292.282	0.161	1.28	76	1.86	63	53	64	99.8	66	0.106	0.326	20.85
1809	28.3	0.1	292.444	0.162	1.28	76	1.86	63	53	64	101.4	66	0.117	0.342	20.90
1810	28.4	0.0	292.606	0.162	1.27	76	1.86	63	53	64	100.9	66	0.109	0.330	21.04
1811	28.4	0.0	292.767	0.161	1.28	76	1.87	63	53	63	100.4	66	0.113	0.336	20.85
1812	28.3	0.0	292.927	0.160	1.27	76	1.86	64	53	64	99.6	66	0.115	0.339	21.13
1813	28.4	0.0	293.088	0.161	1.28	76	1.86	64	53	64	99.5	66	0.113	0.336	21.13
1814	28.4	0.0	293.249	0.161	1.28	76	1.87	64	53	64	99.7	67	0.114	0.338	21.10
1815	28.3	0.1	293.411	0.162	1.29	76	1.86	64	53	64	100.6	66	0.111	0.333	21.00
1816	28.4	-0.1	293.573	0.162	1.28	76	1.87	64	53	64	101.2	67	0.111	0.333	20.86
1817	28.3	0.1	293.734	0.161	1.28	76	1.87	64	53	64	100.2	66	0.117	0.342	21.14
1818	28.3	0.0	293.894	0.160	1.28	76	1.87	64	53	64	98.6	67	0.114	0.338	21.28
1819	28.4	0.0	294.055	0.161	1.28	76	1.87	64	53	64	99.7	68	0.111	0.333	21.02
1820	28.4	0.0	294.216	0.161	1.28	76	1.86	64	53	64	100.9	67	0.109	0.330	20.79
1821	28.3	0.0	294.378	0.162	1.28	76	1.86	64	53	64	102.0	67	0.111	0.333	20.78
1822	28.3	0.0	294.539	0.161	1.28	76	1.87	64	53	64	101.4	67	0.109	0.330	20.78
1823	28.3	0.0	294.700	0.161	1.27	76	1.87	64	53	64	101.1	67	0.114	0.338	20.92
1824	28.4	-0.1	294.861	0.161	1.28	76	1.86	64	53	64	100.1	67	0.115	0.339	21.20
1825	28.3	0.1	295.022	0.161	1.28	76	1.87	64	53	64	99.5	67	0.113	0.336	21.15
1826	28.2	0.1	295.183	0.161	1.28	76	1.86	64	53	64	100.0	67	0.112	0.335	21.01
1827	28.3	-0.1	295.345	0.162	1.29	76	1.86	64	53	64	101.5	67	0.108	0.329	20.78
1828	28.4	-0.1	295.506	0.161	1.28	76	1.86	64	53	64	101.4	67	0.112	0.335	20.78
1829	28.3	0.1	295.667	0.161	1.27	76	1.87	64	53	64	101.1	67	0.111	0.333	20.92
1830	28.2	0.1	295.828	0.161	1.28	76	1.86	64	53	64	101.0	67	0.110	0.332	20.83
1831	28.3	-0.1	295.989	0.161	1.28	76	1.87	64	53	64	101.2	67	0.111	0.333	20.83
1832	28.3	0.0	296.150	0.161	1.28	76	1.87	64	53	64	100.6	67	0.115	0.339	21.06
1833	28.3	0.0	296.312	0.162	1.27	77	1.86	64	53	64	100.6	67	0.111	0.333	21.06
1834	28.3	0.0	296.473	0.161	1.28	77	1.87	64	53	64	99.9	67	0.115	0.339	21.06
1835	28.3	0.1	296.635	0.162	1.27	77	1.87	64	53	64	100.3	69	0.114	0.338	21.22
1836	28.3	0.0	296.795	0.160	1.28	77	1.87	64	53	64	98.7	68	0.116	0.341	21.28
1837	28.4	-0.1	296.956	0.161	1.28	77	1.87	64	53	64	99.1	67	0.113	0.336	21.21
1838	28.3	0.1	297.117	0.161	1.28	77	1.87	64	53	64	99.9	66	0.109	0.330	20.86
1839	28.3	0.0	297.279	0.162	1.27	77	1.86	64	53	65	101.6	66	0.110	0.332	20.71
1840	28.2	0.1	297.440	0.161	1.28	77	1.86	64	53	64	101.4	68	0.110	0.332	20.78
1841	28.0	0.2	297.601	0.161	1.28	77	1.87	64	53	64	101.1	69	0.113	0.336	20.95
1842	27.9	0.2	297.762	0.161	1.28	77	1.87	64	53	65	100.4	69	0.113	0.336	21.10
1843	27.5	0.3	297.922	0.160	1.28	77	1.87	64	53	65	99.4	70	0.114	0.338	21.16
1844	27.1	0.4	298.083	0.161	1.28	77	1.86	65	53	64	100.2	71	0.112	0.335	21.13

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1845	26.7	0.4	298.245	0.162	1.28	77	1.86	65	54	65	101.0	72	0.114	0.338	21.15
1846	26.4	0.3	298.406	0.161	1.27	77	1.88	65	53	65	100.2	72	0.114	0.338	21.25
1847	26.0	0.4	298.567	0.161	1.27	77	1.87	65	54	64	100.0	73	0.114	0.338	21.26
1848	25.6	0.4	298.727	0.160	1.28	77	1.87	65	54	64	99.9	74	0.110	0.332	21.09
1849	25.2	0.4	298.888	0.161	1.28	77	1.88	65	54	65	100.7	74	0.117	0.342	21.25
1850	24.9	0.3	299.049	0.161	1.28	77	1.88	65	54	64	99.5	74	0.118	0.344	21.62
1851	24.5	0.4	299.211	0.162	1.27	77	1.88	65	54	64	99.0	75	0.120	0.346	21.76
1852	24.0	0.5	299.371	0.160	1.27	77	1.88	65	54	64	98.0	75	0.113	0.336	21.54
1853	23.7	0.2	299.531	0.160	1.27	77	1.87	65	54	64	99.4	75	0.112	0.335	21.17
1854	23.2	0.5	299.692	0.161	1.28	77	1.88	65	54	64	101.1	75	0.111	0.333	21.08
1855	22.7	0.5	299.853	0.161	1.28	77	1.87	65	54	64	101.0	75	0.115	0.339	21.22
1856	22.4	0.3	300.014	0.161	1.28	77	1.87	65	54	64	100.6	75	0.111	0.333	21.22
1857	21.8	0.6	300.175	0.161	1.28	77	1.88	65	54	64	100.9	75	0.113	0.336	21.12
1858	21.4	0.4	300.335	0.160	1.27	77	1.88	65	54	64	99.7	74	0.117	0.342	21.40
1859	21.1	0.4	300.496	0.161	1.28	77	1.88	65	54	64	99.9	74	0.111	0.333	21.29
1860	20.6	0.5	300.657	0.161	1.28	77	1.87	65	54	63	100.3	75	0.116	0.341	21.26
1861	20.1	0.5	300.818	0.161	1.28	77	1.87	65	54	63	100.1	75	0.114	0.338	21.41
1862	19.7	0.5	300.979	0.161	1.28	77	1.87	66	54	64	99.8	74	0.115	0.339	21.35
1863	19.2	0.5	301.140	0.161	1.26	77	1.87	66	54	63	99.9	75	0.114	0.338	21.35
1864	18.7	0.5	301.300	0.160	1.27	77	1.87	66	54	63	99.6	74	0.112	0.335	21.21
1865	18.6	0.1	301.461	0.161	1.28	77	1.88	66	54	63	100.5	74	0.114	0.338	21.20
1866	18.1	0.5	301.621	0.160	1.28	77	1.88	65	54	63	99.8	74	0.113	0.336	21.25
1867	17.6	0.4	301.783	0.162	1.27	77	1.88	65	54	63	100.4	73	0.118	0.344	21.42
1868	17.3	0.4	301.944	0.161	1.28	77	1.88	65	54	63	99.4	74	0.113	0.336	21.42
1869	17.0	0.3	302.105	0.161	1.27	77	1.87	65	54	63	99.6	69	0.114	0.338	21.20
1870	16.7	0.3	302.265	0.160	1.27	77	1.87	65	54	63	99.4	67	0.109	0.330	20.94
1871	16.6	0.1	302.426	0.161	1.28	77	1.88	65	55	63	100.7	66	0.112	0.335	20.82
1872	16.4	0.1	302.587	0.161	1.28	77	1.87	65	55	63	100.2	66	0.115	0.339	21.09
1873	16.4	0.1	302.749	0.162	1.27	77	1.87	65	55	62	100.4	66	0.110	0.332	20.99
1874	16.2	0.2	302.910	0.161	1.27	76	1.87	64	55	62	100.1	65	0.114	0.338	20.94
1875	16.3	-0.1	303.071	0.161	1.27	76	1.88	64	55	63	100.1	64	0.111	0.333	20.96
1876	16.1	0.2	303.231	0.160	1.28	76	1.87	64	55	62	99.6	64	0.112	0.335	20.86
1877	16.1	-0.1	303.393	0.162	1.28	76	1.87	64	55	62	100.6	64	0.115	0.339	21.05
1878	16.0	0.1	303.554	0.161	1.28	76	1.88	64	55	63	99.0	64	0.117	0.342	21.28
1879	16.0	0.1	303.716	0.162	1.28	76	1.87	64	55	63	99.7	64	0.109	0.330	21.00
1880	15.9	0.1	303.877	0.161	1.27	76	1.87	64	55	62	100.5	64	0.111	0.333	20.72
1881	15.9	0.0	304.037	0.160	1.28	76	1.87	64	55	63	99.5	64	0.118	0.344	21.14
1882	15.8	0.1	304.198	0.161	1.28	76	1.87	64	54	63	99.1	64	0.111	0.333	21.14
1883	15.8	0.0	304.359	0.161	1.28	76	1.87	64	54	63	100.0	64	0.110	0.332	20.77
1884	15.8	0.1	304.521	0.162	1.28	76	1.87	64	54	64	101.1	64	0.115	0.339	20.95
1885	15.8	-0.1	304.682	0.161	1.28	76	1.87	64	54	63	99.3	64	0.116	0.341	21.23
1886	15.8	0.0	304.843	0.161	1.27	76	1.87	64	54	63	98.9	65	0.114	0.338	21.19
1887	15.8	0.0	305.004	0.161	1.27	76	1.88	64	54	63	99.2	65	0.114	0.338	21.11
1888	15.7	0.1	305.165	0.161	1.28	76	1.87	64	54	63	99.8	65	0.111	0.333	20.97

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1889	15.7	0.0	305.326	0.161	1.28	76	1.87	64	54	63	100.2	65	0.113	0.336	20.93
1890	15.8	-0.1	305.488	0.162	1.28	76	1.87	64	54	64	100.9	68	0.113	0.336	21.05
1891	15.8	0.0	305.649	0.161	1.27	76	1.87	64	54	64	100.0	66	0.114	0.338	21.11
1892	15.7	0.1	305.810	0.161	1.27	76	1.87	64	54	64	99.5	65	0.114	0.338	21.12
1893	15.7	0.0	305.970	0.160	1.27	76	1.87	64	54	64	98.8	65	0.114	0.338	21.11
1894	15.7	0.1	306.131	0.161	1.27	76	1.87	64	54	64	99.6	64	0.112	0.335	21.01
1895	15.7	0.0	306.292	0.161	1.28	76	1.88	64	54	64	100.3	64	0.109	0.330	20.77
1896	15.7	0.0	306.454	0.162	1.28	76	1.87	64	54	65	101.8	64	0.110	0.332	20.67
1897	15.7	0.0	306.615	0.161	1.27	76	1.87	64	54	65	100.6	64	0.116	0.341	21.00
1898	15.7	0.0	306.776	0.161	1.28	76	1.86	64	54	65	99.3	64	0.114	0.338	21.18
1899	15.7	0.0	306.936	0.160	1.27	76	1.87	64	54	65	98.9	64	0.110	0.332	20.91
1900	15.7	0.0	307.097	0.161	1.28	76	1.87	63	54	64	100.3	63	0.113	0.336	20.85
1901	15.8	-0.1	307.258	0.161	1.28	76	1.88	63	54	64	100.2	63	0.111	0.333	20.89
1902	15.7	0.1	307.420	0.162	1.27	76	1.87	63	54	64	101.0	63	0.111	0.333	20.79
1903	15.8	-0.1	307.581	0.161	1.28	76	1.87	63	54	64	100.2	63	0.114	0.338	20.93
1904	15.7	0.1	307.741	0.160	1.28	76	1.87	63	54	64	99.4	64	0.111	0.333	20.94
1905	15.7	-0.1	307.902	0.161	1.28	76	1.87	63	54	63	100.1	63	0.113	0.336	20.90
1906	15.7	0.0	308.063	0.161	1.28	76	1.87	63	54	63	100.1	63	0.111	0.333	20.89
1907	15.7	0.0	308.224	0.161	1.28	76	1.87	63	54	63	100.0	63	0.114	0.338	20.93
1908	15.8	-0.1	308.386	0.162	1.28	76	1.87	63	54	63	100.2	63	0.114	0.338	21.07
1909	15.7	0.1	308.547	0.161	1.27	76	1.86	63	54	62	98.9	63	0.117	0.342	21.21
1910	15.6	0.1	308.707	0.160	1.27	76	1.87	63	54	62	98.3	63	0.111	0.333	21.07
1911	15.6	0.0	308.868	0.161	1.28	76	1.87	63	54	63	100.0	64	0.111	0.333	20.80
1912	15.7	0.0	309.029	0.161	1.28	76	1.87	63	54	63	100.5	64	0.113	0.336	20.91
1913	15.6	0.0	309.191	0.162	1.28	76	1.87	63	54	63	100.6	64	0.113	0.336	21.00
1914	15.7	-0.1	309.352	0.161	1.28	76	1.87	63	54	63	99.9	64	0.112	0.335	20.95
1915	15.6	0.1	309.513	0.161	1.27	76	1.87	63	54	63	99.8	64	0.115	0.339	21.05
1916	15.7	0.0	309.674	0.161	1.27	76	1.86	63	54	64	99.6	65	0.112	0.335	21.06
1917	15.7	0.0	309.834	0.160	1.28	76	1.87	63	54	63	99.0	65	0.116	0.341	21.11
1918	15.7	0.0	309.995	0.161	1.28	76	1.87	63	54	63	99.4	65	0.112	0.335	21.11
1919	15.7	0.0	310.157	0.162	1.27	76	1.87	63	54	63	100.5	65	0.112	0.335	20.93
1920	15.7	0.0	310.318	0.161	1.27	76	1.88	63	54	63	100.2	65	0.113	0.336	20.97
1921	15.7	0.0	310.479	0.161	1.27	76	1.88	63	54	63	99.9	65	0.114	0.338	21.07
1922	15.7	0.0	310.640	0.161	1.27	76	1.88	63	54	63	99.8	65	0.112	0.335	21.02
1923	15.6	0.1	310.800	0.160	1.27	76	1.87	63	54	64	99.3	66	0.114	0.338	21.03
1924	15.7	-0.1	310.961	0.161	1.28	76	1.88	63	54	64	99.7	68	0.116	0.341	21.24
1925	15.6	0.1	311.123	0.162	1.27	76	1.87	64	54	64	99.8	66	0.114	0.338	21.24
1926	15.7	-0.1	311.284	0.161	1.27	76	1.86	63	54	64	99.8	66	0.109	0.330	20.90
1927	15.7	0.0	311.444	0.160	1.27	76	1.88	63	54	64	100.2	65	0.112	0.335	20.80
1928	15.7	0.1	311.605	0.161	1.28	76	1.87	63	54	63	100.5	65	0.113	0.336	20.97
1929	15.7	0.0	311.766	0.161	1.28	76	1.87	63	54	64	100.3	64	0.110	0.332	20.87
1930	15.7	0.0	311.927	0.161	1.27	76	1.87	63	54	63	100.3	64	0.114	0.338	20.91
1931	15.7	0.0	312.089	0.162	1.28	76	1.87	63	54	64	100.7	64	0.111	0.333	20.95
1932	15.8	-0.1	312.250	0.161	1.27	76	1.87	63	54	64	100.2	64	0.112	0.335	20.86

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1933	15.8	0.0	312.410	0.160	1.28	76	1.87	63	54	64	99.9	64	0.110	0.332	20.81
1934	15.7	0.0	312.571	0.161	1.27	76	1.86	63	54	65	100.4	63	0.114	0.338	20.90
1935	15.7	0.1	312.732	0.161	1.28	76	1.87	63	54	64	99.8	63	0.113	0.336	21.03
1936	15.7	0.0	312.894	0.162	1.27	76	1.87	63	54	64	99.9	63	0.116	0.341	21.12
1937	15.8	-0.1	313.054	0.160	1.27	76	1.86	63	54	64	98.3	63	0.114	0.338	21.16
1938	15.7	0.1	313.215	0.161	1.27	76	1.87	63	54	64	99.2	66	0.114	0.338	21.10
1939	15.6	0.0	313.376	0.161	1.27	76	1.87	63	54	64	99.6	64	0.113	0.336	21.07
1940	15.7	0.0	313.536	0.160	1.28	76	1.87	63	54	63	98.9	63	0.113	0.336	20.99
1941	15.6	0.1	313.698	0.162	1.28	76	1.86	63	54	64	100.2	63	0.114	0.338	21.03
1942	15.6	0.0	313.859	0.161	1.27	76	1.87	63	54	63	99.5	63	0.113	0.336	21.03
1943	15.6	0.0	314.020	0.161	1.27	76	1.87	63	54	63	99.5	63	0.114	0.338	21.03
1944	15.5	0.1	314.181	0.161	1.28	76	1.87	63	54	64	99.4	62	0.113	0.336	21.02
1945	15.5	0.0	314.341	0.160	1.28	76	1.87	63	54	63	98.6	62	0.115	0.339	21.05
1946	15.5	0.1	314.503	0.162	1.28	76	1.87	63	54	64	99.6	62	0.115	0.339	21.14
1947	15.7	-0.2	314.664	0.161	1.28	76	1.86	63	54	64	98.8	62	0.114	0.338	21.10
1948	15.5	0.1	314.825	0.161	1.27	76	1.86	63	54	63	99.4	62	0.111	0.333	20.91
1949	15.5	0.0	314.987	0.162	1.27	76	1.87	63	54	63	100.7	62	0.112	0.335	20.82
1950	15.6	0.0	315.147	0.160	1.27	76	1.86	63	54	63	99.8	62	0.110	0.332	20.77
1951	15.6	0.0	315.308	0.161	1.28	76	1.87	63	54	63	100.2	62	0.115	0.339	20.91
1952	15.6	0.0	315.469	0.161	1.27	76	1.87	63	54	63	99.6	62	0.112	0.335	21.01
1953	15.6	0.0	315.631	0.162	1.28	76	1.87	63	54	63	99.9	62	0.116	0.341	21.05
1954	15.6	0.1	315.792	0.161	1.28	76	1.87	63	54	63	99.2	64	0.113	0.336	21.12
1955	15.7	-0.1	315.953	0.161	1.27	76	1.86	63	54	62	99.7	63	0.111	0.333	20.90
1956	15.6	0.0	316.114	0.161	1.28	76	1.87	63	55	62	100.2	63	0.112	0.335	20.84
1957	15.5	0.1	316.274	0.160	1.28	76	1.87	63	55	62	99.5	63	0.113	0.336	20.93
1958	15.6	-0.1	316.435	0.161	1.28	76	1.86	63	54	62	99.5	62	0.115	0.339	21.06
1959	15.6	0.0	316.597	0.162	1.28	76	1.86	63	54	62	99.6	63	0.115	0.339	21.15
1960	15.6	0.0	316.759	0.162	1.28	76	1.87	63	54	62	99.8	63	0.112	0.335	21.03
1961	15.6	0.0	316.920	0.161	1.27	76	1.86	63	54	62	99.6	63	0.114	0.338	20.98
1962	15.7	0.0	317.081	0.161	1.28	76	1.86	63	54	62	99.9	63	0.110	0.332	20.89
1963	15.6	0.0	317.241	0.160	1.28	76	1.87	63	54	63	99.7	63	0.112	0.335	20.79
1964	15.6	0.0	317.402	0.161	1.28	76	1.87	63	54	63	100.1	64	0.115	0.339	21.04
1965	15.6	0.0	317.564	0.162	1.27	76	1.86	63	54	62	100.5	64	0.109	0.330	20.91
1966	15.6	0.0	317.725	0.161	1.28	76	1.86	63	54	62	100.5	64	0.113	0.336	20.81
1967	15.7	-0.1	317.886	0.161	1.27	76	1.87	63	54	63	99.6	64	0.119	0.345	21.28
1968	15.7	0.0	318.047	0.161	1.27	76	1.86	63	54	62	98.8	64	0.110	0.332	21.14
1969	15.6	0.0	318.208	0.161	1.28	76	1.87	63	54	63	99.9	66	0.113	0.336	20.88
1970	15.6	0.0	318.369	0.161	1.28	76	1.87	63	54	63	100.4	65	0.112	0.335	20.98
1971	15.7	-0.1	318.531	0.162	1.27	76	1.87	63	54	63	100.8	65	0.112	0.335	20.93
1972	15.7	0.0	318.691	0.160	1.27	76	1.86	63	55	63	99.4	65	0.115	0.339	21.07
1973	15.5	0.1	318.852	0.161	1.27	76	1.86	63	54	63	99.4	65	0.114	0.338	21.16
1974	15.7	-0.1	319.013	0.161	1.27	76	1.87	63	55	63	99.6	65	0.112	0.335	21.02
1975	15.7	0.0	319.174	0.161	1.28	76	1.86	63	55	63	100.1	65	0.112	0.335	20.93
1976	15.6	0.1	319.335	0.161	1.28	76	1.87	63	55	63	100.1	66	0.115	0.339	21.08

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24
 Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335
 Sample Train Leak Checks
 Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
1977	15.7	-0.1	319.496	0.161	1.28	76	1.87	63	55	63	99.9	65	0.110	0.332	20.98
1978	15.7	0.0	319.658	0.162	1.27	76	1.87	63	54	63	101.6	66	0.108	0.329	20.65
1979	15.6	0.0	319.818	0.160	1.27	76	1.87	63	54	63	101.0	66	0.112	0.335	20.76
1980	15.7	-0.1	319.978	0.160	1.28	76	1.87	63	55	63	100.5	66	0.110	0.332	20.85
1981	15.6	0.2	320.139	0.161	1.27	76	1.87	63	55	63	100.9	66	0.112	0.335	20.85
1982	15.6	-0.1	320.301	0.162	1.27	76	1.87	63	55	63	101.4	66	0.111	0.333	20.90
1983	15.7	0.0	320.462	0.161	1.27	76	1.86	63	55	63	100.6	66	0.112	0.335	20.90
1984	15.6	0.1	320.623	0.161	1.27	76	1.86	63	55	63	100.3	66	0.114	0.338	21.04
1985	15.6	0.0	320.784	0.161	1.27	76	1.86	63	55	64	99.8	66	0.114	0.338	21.13
1986	15.6	0.0	320.944	0.160	1.28	76	1.86	63	55	64	98.9	66	0.114	0.338	21.13
1987	15.7	0.0	321.105	0.161	1.28	76	1.87	63	55	63	99.8	66	0.112	0.335	21.04
1988	15.7	0.0	321.267	0.162	1.28	76	1.87	64	55	63	100.6	66	0.114	0.338	21.04
1989	15.7	-0.1	321.428	0.161	1.26	76	1.87	64	55	63	99.5	66	0.116	0.341	21.22
1990	15.7	0.0	321.588	0.160	1.27	76	1.87	64	55	63	98.7	66	0.112	0.335	21.13
1991	15.7	0.0	321.749	0.161	1.27	76	1.87	64	55	64	99.9	66	0.113	0.336	20.99
1992	15.7	0.0	321.910	0.161	1.27	76	1.87	64	55	64	100.1	66	0.113	0.336	21.04
1993	15.6	0.1	322.071	0.161	1.28	76	1.87	64	55	64	100.0	66	0.113	0.336	21.04
1994	15.6	0.0	322.232	0.161	1.27	76	1.87	64	55	64	100.4	66	0.109	0.330	20.85
1995	15.7	-0.1	322.393	0.161	1.27	76	1.87	64	55	64	101.1	67	0.112	0.335	20.82
1996	15.7	0.0	322.554	0.161	1.27	76	1.87	64	55	64	101.3	67	0.108	0.329	20.78
1997	15.6	0.0	322.714	0.160	1.27	76	1.87	64	55	64	100.7	67	0.113	0.336	20.83
1998	15.7	-0.1	322.875	0.161	1.28	76	1.87	64	55	64	100.6	67	0.113	0.336	21.06
1999	15.7	0.1	323.037	0.162	1.28	76	1.86	64	55	64	101.0	67	0.110	0.332	20.92
2000	15.7	0.0	323.198	0.161	1.28	76	1.86	64	55	64	101.0	69	0.112	0.335	20.89
2001	15.6	0.1	323.358	0.160	1.27	76	1.87	64	55	64	100.8	67	0.107	0.327	20.75
2002	15.7	-0.1	323.519	0.161	1.27	76	1.87	64	55	64	101.5	67	0.113	0.336	20.78
2003	15.7	0.0	323.680	0.161	1.27	76	1.86	64	55	64	100.6	67	0.114	0.338	21.11
2004	15.7	0.0	323.841	0.161	1.28	76	1.87	64	55	64	100.6	67	0.106	0.326	20.78
2005	15.6	0.1	324.002	0.161	1.27	76	1.87	64	55	64	101.3	67	0.115	0.339	20.83
2006	15.6	0.0	324.163	0.161	1.27	76	1.86	64	55	64	100.4	67	0.113	0.336	21.15
2007	15.7	0.0	324.324	0.161	1.27	77	1.87	64	55	64	99.6	67	0.114	0.338	21.11
2008	15.7	0.0	324.484	0.160	1.27	77	1.86	64	55	64	98.8	67	0.115	0.339	21.20
2009	15.7	0.0	324.645	0.161	1.27	77	1.87	64	55	64	99.6	67	0.111	0.333	21.06
2010	15.6	0.1	324.807	0.162	1.27	77	1.87	64	55	64	100.8	67	0.112	0.335	20.92
2011	15.7	-0.1	324.968	0.161	1.27	77	1.87	64	55	64	100.7	67	0.110	0.332	20.87
2012	15.7	-0.1	325.128	0.160	1.26	77	1.87	64	55	64	100.0	67	0.113	0.336	20.92
2013	15.6	0.1	325.289	0.161	1.27	77	1.86	64	55	64	100.6	67	0.110	0.332	20.92
2014	15.7	-0.1	325.450	0.161	1.27	77	1.87	64	55	65	100.7	67	0.112	0.335	20.87
2015	15.7	0.1	325.611	0.161	1.28	77	1.87	64	55	64	100.7	68	0.111	0.333	20.93
2016	15.7	-0.1	325.772	0.161	1.28	77	1.87	64	55	64	101.1	67	0.108	0.329	20.74
2017	15.7	0.0	325.933	0.161	1.27	77	1.87	64	55	64	101.8	67	0.108	0.329	20.59
2018	15.7	0.0	326.094	0.161	1.27	77	1.87	64	55	64	102.0	68	0.110	0.332	20.69
2019	15.6	0.0	326.254	0.160	1.27	77	1.87	64	55	64	100.3	68	0.116	0.341	21.08
2020	15.7	0.0	326.415	0.161	1.27	77	1.86	64	55	64	100.0	68	0.110	0.332	21.08

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
2021	15.7	0.0	326.577	0.162	1.28	77	1.87	64	55	64	100.9	68	0.113	0.336	20.94
2022	15.7	0.0	326.738	0.161	1.27	77	1.87	64	55	64	100.3	68	0.113	0.336	21.08
2023	15.7	0.0	326.899	0.161	1.27	77	1.87	64	55	65	99.8	68	0.115	0.339	21.17
2024	15.6	0.0	327.059	0.160	1.27	77	1.86	64	55	64	99.0	67	0.112	0.335	21.12
2025	15.7	0.0	327.220	0.161	1.27	77	1.87	64	55	64	100.3	68	0.110	0.332	20.88
2026	15.7	0.0	327.381	0.161	1.28	77	1.87	65	55	64	100.7	68	0.114	0.338	20.99
2027	15.7	0.0	327.543	0.162	1.27	77	1.87	65	55	65	100.6	68	0.114	0.338	21.17
2028	15.6	0.0	327.703	0.160	1.27	77	1.86	65	55	64	99.6	70	0.109	0.330	20.96
2029	15.7	-0.1	327.864	0.161	1.27	77	1.87	65	55	65	101.1	68	0.111	0.333	20.82
2030	15.7	0.0	328.025	0.161	1.27	77	1.87	65	55	65	100.9	67	0.112	0.335	20.93
2031	15.6	0.1	328.186	0.161	1.28	77	1.87	65	55	65	100.6	69	0.112	0.335	20.99
2032	15.6	0.0	328.347	0.161	1.28	77	1.87	65	55	64	100.5	66	0.111	0.333	20.93
2033	15.7	0.0	328.508	0.161	1.28	77	1.87	65	55	65	100.5	65	0.110	0.332	20.80
2034	15.6	0.1	328.669	0.161	1.26	77	1.87	64	55	64	100.7	65	0.112	0.335	20.83
2035	15.6	0.0	328.830	0.161	1.27	77	1.88	64	55	65	100.7	65	0.109	0.330	20.79
2036	15.7	-0.1	328.990	0.160	1.27	77	1.87	64	55	64	99.7	64	0.116	0.341	20.96
2037	15.6	0.1	329.151	0.161	1.27	77	1.87	64	55	64	99.1	64	0.115	0.339	21.23
2038	15.7	-0.1	329.313	0.162	1.28	77	1.87	64	55	64	99.0	64	0.117	0.342	21.28
2039	15.6	0.1	329.474	0.161	1.27	77	1.88	64	55	65	98.7	64	0.111	0.333	21.09
2040	15.7	0.0	329.635	0.161	1.27	77	1.87	64	55	65	99.7	64	0.112	0.335	20.86
2041	15.7	0.0	329.795	0.160	1.27	77	1.86	64	55	65	99.4	64	0.113	0.336	20.95
2042	15.7	0.0	329.956	0.161	1.28	77	1.86	64	55	65	99.5	64	0.115	0.339	21.09
2043	15.7	0.0	330.117	0.161	1.27	77	1.87	64	55	65	99.3	63	0.111	0.333	20.99
2044	15.8	-0.1	330.279	0.162	1.27	77	1.87	64	55	64	100.8	63	0.109	0.330	20.70
2045	15.6	0.1	330.440	0.161	1.28	77	1.87	64	55	64	101.2	63	0.108	0.329	20.56
2046	15.6	0.0	330.601	0.161	1.27	77	1.87	64	55	64	100.9	63	0.115	0.339	20.84
2047	15.6	0.0	330.762	0.161	1.28	77	1.86	64	55	64	99.9	63	0.110	0.332	20.93
2048	15.6	0.0	330.922	0.160	1.27	77	1.87	64	55	64	99.2	63	0.114	0.338	20.89
2049	15.6	0.0	331.083	0.161	1.27	77	1.87	64	55	63	100.1	65	0.110	0.332	20.91
2050	15.7	0.0	331.245	0.162	1.27	77	1.87	64	55	63	101.0	66	0.113	0.336	20.89
2051	15.5	0.1	331.406	0.161	1.27	77	1.87	64	55	64	100.4	67	0.111	0.333	20.96
2052	15.3	0.2	331.567	0.161	1.27	77	1.86	64	55	64	100.2	68	0.115	0.339	21.07
2053	15.0	0.3	331.727	0.160	1.28	77	1.87	64	55	64	98.9	69	0.116	0.341	21.32
2054	14.6	0.4	331.888	0.161	1.27	77	1.87	64	55	63	99.7	69	0.109	0.330	21.05
2055	14.4	0.3	332.049	0.161	1.27	77	1.86	64	55	63	100.8	70	0.112	0.335	20.87
2056	13.9	0.5	332.211	0.162	1.27	77	1.87	64	55	63	101.4	71	0.114	0.338	21.13
2057	13.5	0.4	332.372	0.161	1.27	77	1.87	64	55	63	99.7	71	0.117	0.342	21.37
2058	13.2	0.3	332.532	0.160	1.27	77	1.87	64	55	63	98.5	72	0.115	0.339	21.43
2059	12.9	0.4	332.693	0.161	1.28	77	1.87	64	55	63	99.2	72	0.116	0.341	21.39
2060	12.6	0.3	332.853	0.160	1.27	77	1.87	64	55	63	99.3	73	0.110	0.332	21.17
2061	12.2	0.4	333.015	0.162	1.27	77	1.88	64	55	63	101.8	73	0.110	0.332	20.90
2062	11.8	0.4	333.176	0.161	1.27	77	1.87	65	55	63	101.6	73	0.112	0.335	20.99
2063	11.4	0.3	333.336	0.160	1.27	77	1.87	65	55	63	100.5	73	0.112	0.335	21.08
2064	11.1	0.3	333.497	0.161	1.27	77	1.88	65	55	63	100.6	74	0.115	0.339	21.24

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
2065	10.7	0.3	333.657	0.160	1.27	77	1.87	65	55	62	99.3	74	0.116	0.341	21.43
2066	10.3	0.5	333.819	0.162	1.27	77	1.87	65	55	64	100.7	75	0.110	0.332	21.21
2067	10.1	0.2	333.980	0.161	1.27	77	1.88	65	56	62	101.2	76	0.112	0.335	21.04
2068	9.7	0.4	334.140	0.160	1.27	77	1.88	65	56	63	100.6	75	0.113	0.336	21.18
2069	9.2	0.5	334.301	0.161	1.27	77	1.88	65	55	62	100.2	75	0.118	0.344	21.45
2070	8.9	0.3	334.461	0.160	1.27	77	1.88	65	56	63	99.2	75	0.110	0.332	21.31
2071	8.5	0.4	334.622	0.161	1.27	77	1.87	65	56	63	100.6	74	0.114	0.338	21.11
2072	8.1	0.4	334.784	0.162	1.27	77	1.88	65	56	62	101.1	75	0.115	0.339	21.35
2073	7.6	0.5	334.944	0.160	1.26	76	1.88	65	56	63	99.6	74	0.112	0.335	21.26
2074	7.4	0.2	335.104	0.160	1.27	76	1.88	65	56	63	100.0	75	0.114	0.338	21.21
2075	6.9	0.4	335.264	0.160	1.27	76	1.88	65	56	63	100.2	75	0.112	0.335	21.22
2076	6.7	0.3	335.425	0.161	1.27	76	1.88	65	56	63	101.1	76	0.112	0.335	21.13
2077	6.3	0.3	335.586	0.161	1.28	76	1.88	65	56	63	101.3	76	0.113	0.336	21.19
2078	5.9	0.4	335.747	0.161	1.26	76	1.88	65	56	64	101.0	76	0.113	0.336	21.24
2079	5.6	0.4	335.907	0.160	1.27	76	1.89	65	56	63	100.5	77	0.112	0.335	21.20
2080	5.3	0.3	336.068	0.161	1.28	76	1.88	65	56	64	100.7	71	0.114	0.338	21.20
2081	5.1	0.2	336.228	0.160	1.27	76	1.88	65	56	64	99.8	70	0.110	0.332	21.04
2082	5.0	0.1	336.390	0.162	1.27	76	1.88	65	56	64	101.6	69	0.112	0.335	20.92
2083	5.0	0.0	336.551	0.161	1.27	76	1.87	65	56	65	100.6	68	0.114	0.338	21.09
2084	4.9	0.1	336.711	0.160	1.26	76	1.88	65	56	64	99.5	68	0.112	0.335	21.08
2085	4.8	0.1	336.872	0.161	1.27	76	1.88	65	56	64	100.1	67	0.114	0.338	21.07
2086	4.7	0.0	337.032	0.160	1.27	76	1.87	65	56	64	99.3	67	0.113	0.336	21.11
2087	4.7	0.0	337.193	0.161	1.28	76	1.88	65	56	64	100.0	67	0.113	0.336	21.06
2088	4.7	0.0	337.355	0.162	1.27	76	1.88	65	56	64	100.9	67	0.111	0.333	20.97
2089	4.6	0.1	337.515	0.160	1.27	76	1.87	65	56	64	100.0	66	0.111	0.333	20.86
2090	4.6	0.0	337.675	0.160	1.27	76	1.88	65	56	64	100.4	66	0.109	0.330	20.76
2091	4.6	0.0	337.836	0.161	1.27	76	1.87	65	56	64	101.4	66	0.110	0.332	20.71
2092	4.6	0.0	337.997	0.161	1.27	76	1.87	65	56	64	101.4	67	0.111	0.333	20.82
2093	4.5	0.1	338.158	0.161	1.27	76	1.87	65	56	64	101.5	67	0.108	0.329	20.73
2094	4.5	0.0	338.319	0.161	1.27	76	1.87	65	56	64	101.9	67	0.109	0.330	20.64
2095	4.5	0.0	338.479	0.160	1.26	76	1.87	65	56	64	101.4	67	0.109	0.330	20.68
2096	4.5	0.0	338.640	0.161	1.26	76	1.87	65	56	64	101.4	67	0.113	0.336	20.87
2097	4.4	0.1	338.800	0.160	1.27	76	1.88	65	56	64	100.3	67	0.109	0.330	20.87
2098	4.5	0.0	338.961	0.161	1.27	76	1.88	65	56	64	101.4	67	0.109	0.330	20.68
2099	4.5	0.0	339.123	0.162	1.27	76	1.88	64	56	63	102.8	67	0.107	0.327	20.59
2100	4.5	-0.1	339.283	0.160	1.26	76	1.88	64	56	64	101.7	67	0.109	0.330	20.59
2101	4.4	0.1	339.444	0.161	1.26	76	1.88	64	56	64	101.9	67	0.111	0.333	20.78
2102	4.4	0.0	339.604	0.160	1.27	76	1.87	64	56	64	100.6	67	0.111	0.333	20.87
2103	4.5	-0.1	339.765	0.161	1.27	76	1.87	64	56	64	100.4	67	0.116	0.341	21.11
2104	4.4	0.1	339.926	0.161	1.27	76	1.88	64	56	64	99.9	67	0.111	0.333	21.11
2105	4.4	0.0	340.087	0.161	1.26	77	1.88	64	56	64	100.1	67	0.113	0.336	20.97
2106	4.5	-0.1	340.247	0.160	1.27	77	1.88	64	56	64	98.9	67	0.118	0.344	21.29
2107	4.4	0.1	340.407	0.160	1.27	77	1.88	64	56	64	98.6	67	0.109	0.330	21.11
2108	4.4	0.0	340.568	0.161	1.27	77	1.88	64	56	64	100.6	67	0.110	0.332	20.73

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Start Time: 17:03
 Test Length: 2262 min
 Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015
 Meter Box Y Regression Slope: 0
 Meter Box Dynamic Y: 1.015
 Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg
 Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
2109	4.4	0.0	340.729	0.161	1.27	77	1.87	64	56	64	100.9	67	0.114	0.338	20.97
2110	4.5	-0.1	340.890	0.161	1.26	77	1.88	65	56	64	100.2	70	0.113	0.336	21.14
2111	4.5	0.0	341.051	0.161	1.27	77	1.87	65	56	65	100.1	68	0.112	0.335	21.05
2112	4.4	0.1	341.211	0.160	1.26	77	1.87	65	56	64	99.6	67	0.112	0.335	20.98
2113	4.3	0.1	341.372	0.161	1.27	77	1.88	64	56	64	100.5	66	0.110	0.332	20.86
2114	4.4	-0.1	341.533	0.161	1.27	77	1.88	64	56	64	100.3	66	0.115	0.339	20.99
2115	4.4	0.0	341.694	0.161	1.27	77	1.88	64	56	64	99.7	65	0.112	0.335	21.08
2116	4.4	-0.1	341.855	0.161	1.26	77	1.87	64	56	64	99.8	65	0.112	0.335	20.93
2117	4.4	0.0	342.015	0.160	1.26	77	1.87	64	56	64	99.0	65	0.117	0.342	21.16
2118	4.5	0.0	342.175	0.160	1.27	77	1.88	64	56	64	98.2	64	0.113	0.336	21.19
2119	4.4	0.1	342.336	0.161	1.27	77	1.88	64	56	65	99.1	64	0.113	0.336	21.00
2120	4.4	0.0	342.498	0.162	1.26	77	1.87	64	56	64	100.6	64	0.110	0.332	20.86
2121	4.4	0.0	342.658	0.160	1.27	77	1.87	64	56	65	99.2	64	0.117	0.342	21.05
2122	4.4	0.0	342.818	0.160	1.26	77	1.88	64	56	65	98.2	64	0.115	0.339	21.28
2123	4.4	0.0	342.979	0.161	1.27	77	1.87	64	56	65	99.3	64	0.108	0.329	20.86
2124	4.5	-0.1	343.140	0.161	1.27	77	1.87	64	56	65	100.4	64	0.114	0.338	20.81
2125	4.4	0.0	343.301	0.161	1.27	77	1.86	64	56	64	99.4	64	0.118	0.344	21.28
2126	4.4	0.0	343.462	0.161	1.27	77	1.87	64	56	64	98.6	63	0.111	0.333	21.13
2127	4.5	0.0	343.622	0.160	1.26	77	1.88	64	56	64	98.8	63	0.113	0.336	20.89
2128	4.4	0.0	343.783	0.161	1.26	77	1.87	64	56	64	99.7	63	0.113	0.336	20.98
2129	4.4	0.0	343.943	0.160	1.27	77	1.87	64	56	64	99.2	63	0.110	0.332	20.84
2130	4.4	0.0	344.104	0.161	1.27	77	1.87	64	56	64	100.3	63	0.112	0.335	20.79
2131	4.5	-0.1	344.266	0.162	1.27	77	1.87	64	56	64	100.9	63	0.111	0.333	20.84
2132	4.4	0.1	344.426	0.160	1.26	77	1.87	64	56	63	99.4	63	0.113	0.336	20.89
2133	4.4	0.0	344.586	0.160	1.27	77	1.88	64	56	64	98.6	63	0.118	0.344	21.21
2134	4.4	0.0	344.747	0.161	1.27	77	1.87	63	56	64	98.5	63	0.112	0.335	21.16
2135	4.5	-0.1	344.908	0.161	1.27	77	1.88	63	56	63	98.9	63	0.116	0.341	21.07
2136	4.5	0.0	345.069	0.161	1.27	77	1.87	63	56	63	98.9	62	0.113	0.336	21.11
2137	4.5	0.0	345.230	0.161	1.26	77	1.87	63	56	64	98.9	62	0.114	0.338	21.01
2138	4.5	0.0	345.391	0.161	1.27	77	1.88	63	56	63	99.3	62	0.112	0.335	20.96
2139	4.5	0.0	345.551	0.160	1.27	77	1.87	63	56	63	99.0	62	0.112	0.335	20.87
2140	4.5	-0.1	345.712	0.161	1.27	77	1.87	63	56	64	100.1	62	0.110	0.332	20.77
2141	4.5	0.0	345.873	0.161	1.27	77	1.87	63	56	63	100.3	64	0.113	0.336	20.84
2142	4.6	0.0	346.035	0.162	1.26	77	1.88	63	56	62	100.3	64	0.116	0.341	21.14
2143	4.5	0.1	346.195	0.160	1.26	77	1.87	63	56	62	98.2	63	0.114	0.338	21.17
2144	4.5	-0.1	346.356	0.161	1.27	77	1.87	63	56	62	99.4	63	0.109	0.330	20.84
2145	4.5	0.0	346.516	0.160	1.27	77	1.87	63	56	63	99.3	63	0.116	0.341	20.93
2146	4.6	-0.1	346.677	0.161	1.27	77	1.87	63	56	62	99.2	63	0.114	0.338	21.16
2147	4.5	0.0	346.839	0.162	1.27	76	1.88	63	56	63	99.3	63	0.116	0.341	21.16
2148	4.6	0.0	347.000	0.161	1.27	76	1.87	63	56	63	98.8	63	0.114	0.338	21.16
2149	4.6	0.0	347.160	0.160	1.27	76	1.88	63	56	63	98.3	65	0.116	0.341	21.18
2150	4.6	0.0	347.321	0.161	1.27	76	1.88	63	56	63	98.8	65	0.116	0.341	21.30
2151	4.5	0.1	347.482	0.161	1.27	76	1.87	63	56	63	98.9	64	0.112	0.335	21.10
2152	4.4	0.0	347.642	0.160	1.28	76	1.87	63	56	63	98.8	64	0.115	0.339	21.05

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 17:03

Test Length: 2262 min

Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg

Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
2153	4.4	0.0	347.804	0.162	1.27	76	1.87	63	56	63	99.9	64	0.115	0.339	21.18
2154	4.5	0.0	347.965	0.161	1.27	76	1.87	63	56	63	98.9	64	0.115	0.339	21.18
2155	4.4	0.1	348.125	0.160	1.26	76	1.87	63	56	64	98.6	64	0.112	0.335	21.05
2156	4.5	-0.1	348.286	0.161	1.27	76	1.88	63	56	63	99.8	64	0.113	0.336	20.95
2157	4.5	0.0	348.447	0.161	1.27	76	1.88	63	56	63	100.2	65	0.111	0.333	20.92
2158	4.4	0.0	348.608	0.161	1.27	76	1.87	63	56	63	100.6	65	0.111	0.333	20.83
2159	4.5	0.0	348.769	0.161	1.27	76	1.87	63	56	63	100.4	65	0.114	0.338	20.97
2160	4.5	0.0	348.930	0.161	1.26	76	1.87	63	56	63	99.8	65	0.114	0.338	21.11
2161	4.5	-0.1	349.090	0.160	1.27	76	1.87	63	56	63	98.4	65	0.118	0.344	21.30
2162	4.5	0.0	349.251	0.161	1.27	76	1.87	63	56	63	98.7	66	0.114	0.338	21.31
2163	4.5	0.0	349.412	0.161	1.27	76	1.88	63	56	63	99.2	65	0.113	0.336	21.08
2164	4.5	0.0	349.573	0.161	1.27	76	1.87	63	56	63	99.7	66	0.114	0.338	21.08
2165	4.5	0.0	349.734	0.161	1.26	76	1.88	63	56	63	99.8	66	0.113	0.336	21.09
2166	4.5	0.0	349.894	0.160	1.26	76	1.87	63	56	63	99.1	66	0.114	0.338	21.09
2167	4.5	-0.1	350.054	0.160	1.27	76	1.87	63	56	63	99.5	66	0.110	0.332	20.95
2168	4.5	0.0	350.215	0.161	1.27	76	1.87	63	56	64	100.4	66	0.114	0.338	20.95
2169	4.5	0.0	350.377	0.162	1.27	76	1.87	64	56	64	100.7	66	0.113	0.336	21.09
2170	4.5	0.0	350.538	0.161	1.26	76	1.87	64	56	64	100.3	66	0.109	0.330	20.85
2171	4.5	0.0	350.698	0.160	1.27	76	1.87	64	56	64	99.9	66	0.116	0.341	20.99
2172	4.6	-0.1	350.858	0.160	1.26	76	1.87	64	56	63	99.2	66	0.112	0.335	21.13
2173	4.5	0.1	351.019	0.161	1.27	76	1.88	64	56	63	100.0	66	0.112	0.335	20.95
2174	4.5	0.0	351.180	0.161	1.27	76	1.87	64	56	64	100.3	66	0.113	0.336	20.99
2175	4.6	0.0	351.341	0.161	1.27	76	1.87	64	56	64	100.1	66	0.113	0.336	21.04
2176	4.6	0.0	351.502	0.161	1.26	76	1.87	64	56	64	99.4	66	0.118	0.344	21.27
2177	4.6	0.0	351.662	0.160	1.26	76	1.87	64	56	64	98.7	66	0.109	0.330	21.09
2178	4.5	0.0	351.823	0.161	1.27	76	1.88	64	56	64	100.4	66	0.112	0.335	20.81
2179	4.5	0.0	351.983	0.160	1.27	76	1.88	64	56	64	100.0	66	0.113	0.336	20.99
2180	4.6	0.0	352.145	0.162	1.26	76	1.87	64	56	64	101.1	68	0.111	0.333	20.97
2181	4.5	0.1	352.305	0.160	1.26	76	1.88	64	56	64	99.9	67	0.114	0.338	21.02
2182	4.6	-0.1	352.466	0.161	1.27	76	1.87	64	56	64	100.3	66	0.110	0.332	20.96
2183	4.6	0.0	352.626	0.160	1.26	76	1.87	64	56	64	100.5	67	0.108	0.329	20.67
2184	4.5	0.1	352.787	0.161	1.27	76	1.87	64	56	64	101.1	67	0.117	0.342	21.01
2185	4.6	-0.1	352.948	0.161	1.27	76	1.87	64	56	64	99.0	67	0.120	0.346	21.57
2186	4.6	0.0	353.109	0.161	1.26	77	1.88	64	56	64	98.0	67	0.113	0.336	21.38
2187	4.5	0.1	353.269	0.160	1.26	77	1.88	64	56	64	98.5	67	0.113	0.336	21.06
2188	4.5	0.0	353.430	0.161	1.27	77	1.88	64	56	64	99.6	67	0.116	0.341	21.20
2189	4.5	0.0	353.590	0.160	1.27	77	1.88	64	56	64	98.5	67	0.114	0.338	21.24
2190	4.5	0.0	353.751	0.161	1.27	77	1.88	64	56	64	99.8	67	0.109	0.330	20.92
2191	4.5	0.0	353.912	0.161	1.26	77	1.87	64	56	65	100.4	67	0.115	0.339	20.97
2192	4.5	0.0	354.073	0.161	1.26	77	1.87	64	56	64	100.5	69	0.109	0.330	20.99
2193	4.5	0.0	354.233	0.160	1.26	77	1.87	64	56	64	100.1	68	0.113	0.336	20.90
2194	4.6	-0.1	354.393	0.160	1.27	77	1.87	64	56	64	100.0	67	0.110	0.332	20.93
2195	4.5	0.1	354.554	0.161	1.27	77	1.87	64	56	64	100.9	66	0.109	0.330	20.72
2196	4.5	0.0	354.716	0.162	1.26	77	1.88	64	56	64	101.8	65	0.111	0.333	20.75

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 17:03

Test Length: 2262 min

Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg

Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
2197	4.6	-0.1	354.876	0.160	1.26	77	1.87	64	56	64	100.1	65	0.112	0.335	20.88
2198	4.6	-0.1	355.036	0.160	1.26	77	1.87	64	56	64	100.0	64	0.108	0.329	20.73
2199	4.6	0.1	355.197	0.161	1.27	77	1.88	64	56	65	100.8	64	0.113	0.336	20.77
2200	4.6	0.0	355.357	0.160	1.27	77	1.87	64	56	65	99.6	64	0.112	0.335	20.95
2201	4.6	0.0	355.519	0.162	1.26	77	1.87	64	56	64	100.6	64	0.112	0.335	20.91
2202	4.6	0.0	355.679	0.160	1.26	77	1.88	64	56	64	99.1	64	0.115	0.339	21.05
2203	4.6	0.0	355.840	0.161	1.26	77	1.87	64	56	64	98.9	63	0.116	0.341	21.22
2204	4.6	0.0	356.000	0.160	1.26	77	1.87	64	56	64	98.1	63	0.112	0.335	21.07
2205	4.6	0.0	356.161	0.161	1.26	77	1.87	64	56	64	99.3	63	0.114	0.338	20.98
2206	4.6	0.0	356.322	0.161	1.27	77	1.87	64	56	64	99.3	63	0.114	0.338	21.07
2207	4.7	0.0	356.483	0.161	1.27	77	1.87	64	56	64	99.2	63	0.113	0.336	21.03
2208	4.6	0.0	356.644	0.161	1.26	77	1.88	64	56	64	99.7	63	0.110	0.332	20.84
2209	4.6	0.0	356.804	0.160	1.27	77	1.87	64	56	64	99.3	63	0.115	0.339	20.93
2210	4.6	0.0	356.965	0.161	1.27	77	1.88	64	56	64	99.4	63	0.113	0.336	21.07
2211	4.5	0.1	357.125	0.160	1.27	77	1.87	64	56	64	98.7	64	0.113	0.336	20.99
2212	4.7	-0.2	357.287	0.162	1.26	77	1.87	64	56	64	99.8	63	0.116	0.341	21.13
2213	4.6	0.1	357.448	0.161	1.27	77	1.87	64	56	64	98.9	63	0.112	0.335	21.07
2214	4.6	0.0	357.608	0.160	1.26	77	1.88	63	56	63	98.8	63	0.113	0.336	20.93
2215	4.5	0.0	357.768	0.160	1.27	77	1.88	63	56	63	98.6	62	0.116	0.341	21.11
2216	4.5	0.0	357.929	0.161	1.27	77	1.88	63	56	63	98.5	62	0.115	0.339	21.19
2217	4.5	0.0	358.091	0.162	1.27	77	1.87	63	56	63	99.2	62	0.114	0.338	21.10
2218	4.5	0.0	358.252	0.161	1.27	77	1.87	63	56	63	99.5	62	0.108	0.329	20.77
2219	4.5	0.0	358.412	0.160	1.26	77	1.87	63	56	63	100.0	62	0.111	0.333	20.63
2220	4.5	0.0	358.573	0.161	1.27	77	1.87	63	56	62	99.7	62	0.119	0.345	21.14
2221	4.5	0.0	358.734	0.161	1.27	77	1.87	63	56	63	98.3	62	0.113	0.336	21.24
2222	4.6	-0.1	358.894	0.160	1.27	77	1.88	63	56	63	97.9	62	0.115	0.339	21.05
2223	4.5	0.1	359.056	0.162	1.27	77	1.87	63	56	63	99.6	64	0.114	0.338	21.12
2224	4.5	0.0	359.217	0.161	1.27	77	1.87	63	56	62	99.1	63	0.113	0.336	21.04
2225	4.6	0.0	359.377	0.160	1.27	77	1.87	63	56	62	98.5	63	0.115	0.339	21.07
2226	4.5	0.1	359.538	0.161	1.27	77	1.87	63	56	62	99.3	63	0.111	0.333	20.98
2227	4.5	0.0	359.699	0.161	1.27	77	1.87	63	56	62	99.8	62	0.112	0.335	20.83
2228	4.6	0.0	359.860	0.161	1.27	77	1.87	63	56	62	99.6	63	0.116	0.341	21.06
2229	4.5	0.1	360.021	0.161	1.27	76	1.87	63	56	62	99.6	63	0.108	0.329	20.89
2230	4.6	-0.1	360.182	0.161	1.26	76	1.87	63	56	62	100.5	63	0.113	0.336	20.75
2231	4.6	0.0	360.342	0.160	1.27	76	1.87	63	56	62	99.7	63	0.112	0.335	20.93
2232	4.6	0.0	360.503	0.161	1.27	76	1.87	63	56	62	100.7	64	0.107	0.327	20.66
2233	4.6	0.0	360.664	0.161	1.27	76	1.87	63	56	63	101.0	64	0.115	0.339	20.81
2234	4.6	0.0	360.826	0.162	1.27	76	1.88	63	56	62	100.4	64	0.115	0.339	21.18
2235	4.6	0.0	360.986	0.160	1.26	76	1.88	63	56	63	98.3	64	0.115	0.339	21.18
2236	4.6	0.0	361.147	0.161	1.27	76	1.87	63	56	62	99.3	64	0.111	0.333	21.00
2237	4.7	-0.1	361.307	0.160	1.27	76	1.87	63	56	62	99.2	64	0.115	0.339	21.00
2238	4.6	0.1	361.468	0.161	1.27	76	1.88	63	56	62	100.0	65	0.110	0.332	20.96
2239	4.5	0.1	361.630	0.162	1.26	76	1.87	63	56	62	101.5	65	0.108	0.329	20.64
2240	4.6	-0.1	361.791	0.161	1.27	76	1.88	63	56	62	101.3	65	0.113	0.336	20.79

Train A - Particulate Sampling and Dilution Tunnel Data

ASTM E2515

Run: 4

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Test Start Time: 17:03

Test Length: 2262 min

Recording Interval: 1 min

Test Date: 12/5/24

Meter Box Y Regression Offset: 1.015

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.015

Sampling Box ID: 335

Sample Train Leak Checks

Pre-test 0 cfm @ 17.29 in. Hg

Post-Test 0.002 cfm @ 11 in. Hg

0	Fuel Consumption			Train A Sampling System								Dilution Tunnel			
Elapsed Time (min)	Scale Reading (lb.)	Weight Change	Meter Volume (ft ³)	Sample Rate (CFM)	Meter Δ H (" H ₂ O)	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Room Ambient (°F)	Pro - Rate	Tunnel Temp (°F)	Center dP (" H ₂ O)	√dP	vs
2241	4.7	-0.1	361.951	0.160	1.26	76	1.88	63	56	62	100.4	65	0.108	0.329	20.79
2242	4.6	0.1	362.112	0.161	1.26	76	1.88	63	56	63	101.4	67	0.111	0.333	20.71
2243	4.6	0.0	362.272	0.160	1.27	76	1.87	63	56	63	100.0	66	0.117	0.342	21.14
2244	4.6	0.0	362.433	0.161	1.27	76	1.88	63	56	63	99.1	65	0.114	0.338	21.26
2245	4.6	0.0	362.595	0.162	1.26	76	1.87	63	56	63	99.9	66	0.113	0.336	21.08
2246	4.6	0.0	362.755	0.160	1.26	76	1.87	63	56	63	99.2	65	0.113	0.336	21.03
2247	4.6	0.0	362.915	0.160	1.27	76	1.88	63	56	63	99.3	65	0.112	0.335	20.97
2248	4.5	0.1	363.076	0.161	1.27	76	1.88	63	56	63	100.2	66	0.113	0.336	20.98
2249	4.5	0.0	363.236	0.160	1.27	76	1.88	63	56	63	99.3	66	0.115	0.339	21.13
2250	4.6	-0.1	363.398	0.162	1.27	76	1.87	63	56	64	100.5	69	0.112	0.335	21.12
2251	4.2	0.3	363.559	0.161	1.27	76	1.87	64	56	64	100.5	70	0.112	0.335	21.02
2252	4.0	0.3	363.719	0.160	1.26	76	1.87	64	56	64	100.6	72	0.110	0.332	20.95
2253	3.6	0.3	363.879	0.160	1.27	76	1.87	64	56	64	101.1	72	0.110	0.332	20.88
2254	3.2	0.4	364.040	0.161	1.27	76	1.88	64	56	64	101.6	74	0.114	0.338	21.08
2255	2.9	0.3	364.201	0.161	1.27	76	1.88	64	56	64	101.1	75	0.112	0.335	21.21
2256	2.5	0.5	364.361	0.160	1.27	76	1.87	64	56	64	100.1	75	0.115	0.339	21.27
2257	2.2	0.3	364.522	0.161	1.26	76	1.88	65	56	64	100.5	76	0.114	0.338	21.37
2258	1.7	0.5	364.682	0.160	1.26	76	1.88	65	57	64	99.8	76	0.114	0.338	21.33
2259	1.5	0.2	364.842	0.160	1.27	76	1.87	65	57	64	99.7	77	0.116	0.341	21.44
2260	1.1	0.4	365.003	0.161	1.26	76	1.88	65	57	64	100.2	77	0.114	0.338	21.45
2261	0.7	0.4	365.163	0.160	1.26	76	1.88	65	57	64	100.1	77	0.111	0.333	21.21
2262	0.0	0.7	365.324	0.161	1.26	76	1.87	65	57	64	101.4	78	0.113	0.336	21.17

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	364.807	0.161	0.98	77.0	2.18	63.51	48.03	100.0
Minimum	0.000	0.146	0.94	69	2.10	62	37	90.5
Max	364.807	0.163	1.00	78	2.20	66	57	103.3
0	0.000		0.94	69	2.10	63	41	
1	0.146	0.146	1.00	69	2.20	64	37	90.5
2	0.307	0.161	0.99	69	2.20	64	37	101.3
3	0.466	0.159	0.99	69	2.20	64	37	99.9
4	0.625	0.159	1.01	69	2.20	64	37	99.3
5	0.788	0.163	1.00	69	2.20	64	37	102.1
6	0.948	0.160	1.00	69	2.20	64	37	100.9
7	1.108	0.160	1.01	69	2.20	64	37	100.7
8	1.270	0.162	1.01	69	2.20	64	38	101.9
9	1.430	0.160	1.00	69	2.20	64	38	101.2
10	1.590	0.160	1.00	69	2.20	64	38	100.7
11	1.750	0.160	1.00	69	2.20	64	38	99.8
12	1.911	0.161	0.99	69	2.20	64	38	100.6
13	2.071	0.160	0.99	70	2.20	64	38	100.0
14	2.231	0.160	1.00	70	2.20	65	38	100.0
15	2.392	0.161	0.99	70	2.10	65	38	101.3
16	2.552	0.160	0.99	70	2.10	65	39	100.7
17	2.712	0.160	0.99	70	2.20	65	39	100.5
18	2.873	0.161	0.99	70	2.10	65	39	101.1
19	3.033	0.160	0.99	70	2.10	65	39	100.0
20	3.194	0.161	1.00	71	2.10	65	39	100.4
21	3.355	0.161	0.99	71	2.10	64	39	100.2
22	3.515	0.160	0.99	71	2.10	65	39	99.2
23	3.675	0.160	0.99	71	2.10	64	39	99.6
24	3.837	0.162	1.00	71	2.10	64	39	101.4
25	3.998	0.161	0.99	72	2.10	64	39	100.7
26	4.158	0.160	0.99	72	2.10	64	39	100.0
27	4.318	0.160	0.99	72	2.10	64	40	100.8
28	4.480	0.162	0.99	72	2.10	64	40	102.0
29	4.640	0.160	0.99	72	2.10	64	40	99.8
30	4.801	0.161	1.00	72	2.10	64	40	100.5
31	4.962	0.161	1.00	72	2.10	64	40	100.6
32	5.123	0.161	0.99	73	2.10	64	40	100.2
33	5.284	0.161	0.99	73	2.10	64	40	99.4
34	5.444	0.160	1.00	73	2.10	64	40	98.1
35	5.606	0.162	1.00	73	2.10	64	40	99.7
36	5.767	0.161	0.99	73	2.10	64	40	99.0
37	5.927	0.160	1.00	73	2.10	64	40	98.2
38	6.089	0.162	0.99	73	2.10	64	40	100.1
39	6.250	0.161	0.99	73	2.10	64	40	99.4
40	6.410	0.160	0.99	74	2.10	64	40	98.6

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
41	6.571	0.161	0.99	74	2.10	64	40	99.8
42	6.733	0.162	0.99	74	2.10	64	40	100.3
43	6.894	0.161	0.99	74	2.10	64	41	99.0
44	7.055	0.161	1.00	74	2.10	64	40	98.8
45	7.217	0.162	1.00	74	2.10	64	41	100.1
46	7.378	0.161	0.99	74	2.10	64	41	99.9
47	7.538	0.160	1.00	74	2.10	64	41	98.5
48	7.699	0.161	1.00	74	2.10	64	41	98.4
49	7.862	0.163	1.00	74	2.10	63	41	100.1
50	8.022	0.160	0.99	75	2.10	63	41	99.0
51	8.183	0.161	1.00	75	2.10	63	41	99.6
52	8.345	0.162	1.00	75	2.10	63	41	99.6
53	8.507	0.162	1.00	75	2.10	63	41	99.9
54	8.667	0.160	1.00	75	2.10	63	41	99.0
55	8.829	0.162	1.00	75	2.10	63	41	100.3
56	8.991	0.162	1.00	75	2.10	63	41	100.1
57	9.152	0.161	1.00	75	2.10	63	41	98.7
58	9.313	0.161	1.00	75	2.10	63	41	98.7
59	9.475	0.162	1.00	75	2.10	63	41	100.0
60	9.637	0.162	1.00	75	2.10	63	41	99.7
61	9.798	0.161	0.99	75	2.10	63	41	99.0
62	9.959	0.161	1.00	75	2.10	63	41	99.4
63	10.121	0.162	1.00	75	2.10	63	41	99.6
64	10.283	0.162	1.00	75	2.10	63	41	99.2
65	10.444	0.161	1.00	76	2.10	63	41	99.0
66	10.605	0.161	1.00	76	2.10	63	41	99.4
67	10.767	0.162	1.00	76	2.10	63	41	99.9
68	10.930	0.163	1.00	76	2.10	63	41	100.6
69	11.091	0.161	1.00	76	2.10	63	41	99.1
70	11.252	0.161	1.00	76	2.10	63	41	99.0
71	11.414	0.162	1.00	76	2.10	63	41	99.5
72	11.576	0.162	1.00	76	2.10	63	41	99.1
73	11.737	0.161	1.00	76	2.10	63	41	98.7
74	11.899	0.162	1.00	76	2.10	63	41	99.7
75	12.061	0.162	1.00	76	2.10	63	41	100.4
76	12.223	0.162	0.99	76	2.10	63	41	101.1
77	12.384	0.161	1.00	76	2.10	63	41	99.7
78	12.546	0.162	1.00	76	2.10	63	41	99.9
79	12.708	0.162	1.00	76	2.10	63	41	100.2
80	12.870	0.162	1.00	76	2.10	63	41	100.4
81	13.031	0.161	1.00	76	2.10	63	41	99.8
82	13.193	0.162	1.00	76	2.10	63	41	100.0
83	13.355	0.162	1.00	76	2.10	63	41	99.4
84	13.517	0.162	1.00	76	2.10	63	41	98.7

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
85	13.678	0.161	1.00	76	2.10	63	41	97.7
86	13.840	0.162	1.00	76	2.10	63	41	99.2
87	14.003	0.163	1.00	76	2.10	63	41	100.8
88	14.165	0.162	0.99	76	2.10	63	41	100.3
89	14.326	0.161	1.00	76	2.10	63	41	99.2
90	14.488	0.162	1.00	76	2.10	63	41	99.2
91	14.650	0.162	1.00	76	2.10	63	41	98.9
92	14.812	0.162	1.00	76	2.10	63	41	99.1
93	14.973	0.161	1.00	76	2.10	63	41	99.1
94	15.135	0.162	1.00	76	2.10	62	41	99.8
95	15.298	0.163	1.00	76	2.10	62	41	99.7
96	15.460	0.162	1.00	76	2.10	62	41	99.1
97	15.621	0.161	1.00	76	2.10	62	41	99.0
98	15.783	0.162	1.00	76	2.10	62	41	100.0
99	15.946	0.163	1.00	76	2.10	62	41	100.6
100	16.107	0.161	1.00	76	2.10	62	41	98.4
101	16.269	0.162	1.00	76	2.10	62	41	98.7
102	16.431	0.162	1.00	76	2.10	62	42	99.4
103	16.593	0.162	1.00	76	2.10	62	41	99.3
104	16.755	0.162	0.99	76	2.10	62	41	99.0
105	16.916	0.161	1.00	76	2.10	62	41	98.7
106	17.078	0.162	1.00	76	2.10	62	41	99.1
107	17.241	0.163	1.00	76	2.10	62	42	99.3
108	17.403	0.162	1.00	76	2.10	62	41	99.0
109	17.564	0.161	1.00	76	2.10	62	42	99.1
110	17.726	0.162	1.00	76	2.10	62	42	100.7
111	17.888	0.162	1.00	76	2.10	62	42	100.8
112	18.051	0.163	0.99	76	2.10	62	41	100.3
113	18.212	0.161	1.00	76	2.10	62	41	98.7
114	18.374	0.162	1.00	76	2.10	62	42	99.4
115	18.536	0.162	1.00	76	2.10	62	42	99.7
116	18.699	0.163	1.00	76	2.10	62	42	100.5
117	18.860	0.161	1.00	76	2.10	62	42	98.7
118	19.022	0.162	1.00	76	2.10	62	42	99.8
119	19.184	0.162	1.00	76	2.10	62	42	100.9
120	19.346	0.162	0.99	76	2.10	62	42	101.0
121	19.507	0.161	1.00	76	2.10	62	42	99.8
122	19.669	0.162	1.00	76	2.10	62	42	99.9
123	19.831	0.162	1.00	76	2.10	62	42	99.5
124	19.993	0.162	1.00	76	2.10	62	42	99.7
125	20.155	0.162	1.00	76	2.10	62	42	100.3
126	20.317	0.162	1.00	76	2.10	62	42	100.5
127	20.479	0.162	1.00	76	2.10	62	42	100.5
128	20.641	0.162	0.99	76	2.10	62	42	100.5

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
129	20.802	0.161	1.00	76	2.10	63	42	100.0
130	20.964	0.162	1.00	76	2.10	63	42	100.6
131	21.126	0.162	1.00	76	2.10	63	42	99.4
132	21.288	0.162	1.00	76	2.10	63	42	98.2
133	21.449	0.161	1.00	76	2.10	63	42	98.1
134	21.611	0.162	1.00	76	2.10	63	42	99.4
135	21.773	0.162	1.00	76	2.10	63	42	99.6
136	21.935	0.162	1.00	76	2.10	63	42	99.5
137	22.096	0.161	0.99	76	2.10	63	42	98.5
138	22.258	0.162	1.00	76	2.10	63	42	99.2
139	22.420	0.162	1.00	76	2.10	63	42	99.9
140	22.582	0.162	0.99	76	2.10	63	42	100.7
141	22.743	0.161	1.00	76	2.10	63	42	100.2
142	22.905	0.162	1.00	76	2.10	63	42	101.1
143	23.067	0.162	1.00	76	2.10	63	42	101.1
144	23.229	0.162	0.99	76	2.10	63	42	100.0
145	23.390	0.161	0.99	76	2.10	63	42	99.2
146	23.552	0.162	0.99	76	2.10	63	42	100.6
147	23.715	0.163	1.00	77	2.10	63	42	101.3
148	23.876	0.161	0.99	77	2.10	63	42	99.6
149	24.037	0.161	1.00	77	2.10	63	42	99.6
150	24.199	0.162	1.00	77	2.10	64	42	100.6
151	24.362	0.163	0.99	77	2.10	64	42	100.9
152	24.523	0.161	0.99	77	2.10	64	42	99.3
153	24.684	0.161	0.99	77	2.10	64	42	98.9
154	24.846	0.162	1.00	77	2.10	64	42	99.0
155	25.009	0.163	1.00	77	2.10	64	42	99.7
156	25.170	0.161	1.00	77	2.10	64	42	99.0
157	25.331	0.161	1.00	77	2.10	64	42	99.2
158	25.493	0.162	1.00	77	2.10	64	42	99.6
159	25.655	0.162	1.00	77	2.10	64	42	99.5
160	25.817	0.162	0.99	77	2.10	64	42	99.8
161	25.978	0.161	1.00	77	2.10	64	42	99.4
162	26.140	0.162	1.00	77	2.10	64	42	99.7
163	26.302	0.162	0.99	77	2.10	64	42	99.9
164	26.464	0.162	1.00	77	2.10	64	42	100.4
165	26.625	0.161	1.00	77	2.10	64	42	99.2
166	26.787	0.162	1.00	77	2.10	64	42	99.3
167	26.949	0.162	1.00	77	2.10	64	42	99.2
168	27.111	0.162	0.99	77	2.10	64	42	99.3
169	27.272	0.161	1.00	77	2.10	64	42	99.2
170	27.434	0.162	1.00	77	2.10	64	42	100.3
171	27.596	0.162	1.00	77	2.10	64	42	100.8
172	27.757	0.161	0.99	77	2.10	64	42	100.7

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
173	27.919	0.162	1.00	77	2.10	64	42	101.5
174	28.081	0.162	1.00	77	2.10	64	42	101.3
175	28.243	0.162	1.00	77	2.10	64	42	100.5
176	28.404	0.161	1.00	77	2.10	64	42	99.9
177	28.566	0.162	1.00	77	2.10	64	42	100.6
178	28.728	0.162	1.00	77	2.10	64	42	100.5
179	28.890	0.162	1.00	78	2.10	64	42	100.6
180	29.052	0.162	1.00	78	2.10	64	42	100.2
181	29.213	0.161	1.00	78	2.10	64	43	99.4
182	29.375	0.162	1.00	78	2.10	64	43	100.0
183	29.537	0.162	0.99	78	2.10	64	43	99.7
184	29.699	0.162	1.00	78	2.10	64	43	99.5
185	29.861	0.162	1.00	78	2.10	64	43	99.4
186	30.023	0.162	1.00	78	2.10	64	43	99.1
187	30.185	0.162	1.00	78	2.10	64	43	99.1
188	30.346	0.161	1.00	78	2.10	64	43	98.7
189	30.508	0.162	1.00	78	2.10	64	43	99.6
190	30.670	0.162	1.00	78	2.10	64	43	99.7
191	30.832	0.162	0.99	78	2.10	64	43	99.4
192	30.994	0.162	1.00	78	2.10	64	43	99.4
193	31.156	0.162	1.00	78	2.20	64	43	99.6
194	31.318	0.162	1.00	78	2.20	64	43	99.6
195	31.480	0.162	1.00	78	2.20	64	43	100.2
196	31.641	0.161	1.00	78	2.20	64	43	99.8
197	31.802	0.161	1.00	78	2.20	64	43	99.6
198	31.965	0.163	1.00	78	2.20	64	43	100.8
199	32.126	0.161	1.00	78	2.20	64	43	99.9
200	32.287	0.161	1.00	78	2.20	65	43	100.4
201	32.449	0.162	1.00	78	2.20	65	43	100.5
202	32.611	0.162	0.99	78	2.20	65	44	99.7
203	32.773	0.162	1.00	78	2.20	65	44	99.7
204	32.934	0.161	1.00	78	2.20	65	44	99.7
205	33.096	0.162	1.00	78	2.20	65	44	100.8
206	33.258	0.162	0.99	78	2.20	65	44	101.3
207	33.419	0.161	0.99	78	2.20	65	44	100.9
208	33.581	0.162	1.00	78	2.20	65	44	100.8
209	33.742	0.161	1.00	78	2.20	65	44	98.8
210	33.905	0.163	1.00	78	2.20	65	44	99.9
211	34.066	0.161	1.00	78	2.20	65	44	99.9
212	34.227	0.161	1.00	78	2.20	65	44	100.6
213	34.389	0.162	1.00	78	2.20	65	44	100.8
214	34.551	0.162	1.00	78	2.20	65	44	100.7
215	34.712	0.161	1.00	78	2.20	65	44	100.0
216	34.873	0.161	1.00	77	2.20	65	44	99.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
217	35.035	0.162	1.00	77	2.20	65	44	100.4
218	35.198	0.163	1.00	77	2.20	65	45	100.7
219	35.359	0.161	1.00	77	2.20	65	45	99.3
220	35.521	0.162	1.00	77	2.20	64	45	100.0
221	35.683	0.162	1.00	77	2.10	64	45	100.4
222	35.845	0.162	1.00	77	2.10	64	45	99.9
223	36.006	0.161	1.00	77	2.20	64	45	98.6
224	36.168	0.162	1.00	77	2.20	64	45	98.6
225	36.330	0.162	1.00	77	2.10	64	45	98.4
226	36.493	0.163	1.00	77	2.20	64	45	99.7
227	36.654	0.161	1.00	77	2.20	64	45	99.5
228	36.816	0.162	1.00	77	2.20	64	45	100.7
229	36.978	0.162	1.00	77	2.20	64	45	100.1
230	37.140	0.162	1.00	77	2.20	64	45	99.3
231	37.302	0.162	1.00	77	2.10	64	45	99.3
232	37.463	0.161	1.00	77	2.20	63	45	99.0
233	37.626	0.163	1.00	77	2.20	63	45	100.3
234	37.788	0.162	1.00	77	2.20	63	45	99.8
235	37.950	0.162	1.00	77	2.10	63	45	99.9
236	38.111	0.161	1.00	77	2.10	63	45	99.3
237	38.273	0.162	1.00	77	2.10	63	45	99.6
238	38.436	0.163	1.00	77	2.20	63	45	99.4
239	38.597	0.161	1.00	77	2.10	63	45	98.2
240	38.759	0.162	1.00	77	2.10	63	45	99.7
241	38.921	0.162	1.00	77	2.10	63	45	99.9
242	39.084	0.163	1.00	77	2.20	63	45	100.4
243	39.246	0.162	0.99	77	2.20	63	44	100.2
244	39.407	0.161	1.00	77	2.10	63	44	99.4
245	39.569	0.162	1.00	77	2.10	63	45	99.0
246	39.732	0.163	1.00	77	2.20	63	45	99.9
247	39.893	0.161	1.00	77	2.20	63	44	99.3
248	40.055	0.162	1.00	77	2.10	63	44	99.3
249	40.217	0.162	1.00	77	2.10	63	44	99.0
250	40.380	0.163	1.00	77	2.10	62	44	100.4
251	40.541	0.161	1.00	77	2.10	62	44	99.2
252	40.703	0.162	1.00	77	2.10	62	44	99.6
253	40.865	0.162	1.00	77	2.10	62	44	99.3
254	41.028	0.163	1.00	77	2.10	62	44	99.9
255	41.189	0.161	1.00	77	2.20	62	44	99.1
256	41.351	0.162	1.00	77	2.10	62	44	99.3
257	41.512	0.161	1.00	76	2.10	62	44	98.6
258	41.675	0.163	1.00	76	2.10	62	44	100.3
259	41.837	0.162	1.00	76	2.20	62	44	100.2
260	41.998	0.161	1.00	76	2.10	62	44	100.4

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
261	42.160	0.162	1.00	76	2.20	62	44	100.7
262	42.323	0.163	1.00	76	2.10	62	44	100.3
263	42.485	0.162	1.00	76	2.20	62	44	99.1
264	42.646	0.161	1.00	76	2.20	62	44	98.5
265	42.808	0.162	1.00	76	2.20	62	44	99.5
266	42.971	0.163	1.00	76	2.10	62	44	100.5
267	43.132	0.161	1.00	76	2.10	62	44	99.4
268	43.294	0.162	1.00	76	2.20	62	44	99.8
269	43.455	0.161	1.00	76	2.10	62	44	98.9
270	43.618	0.163	1.00	76	2.20	62	44	100.4
271	43.780	0.162	0.99	76	2.20	62	44	99.9
272	43.941	0.161	1.00	76	2.10	62	44	99.7
273	44.103	0.162	1.00	76	2.20	63	44	100.8
274	44.265	0.162	1.00	76	2.10	63	44	100.5
275	44.427	0.162	0.99	76	2.20	63	44	99.7
276	44.588	0.161	1.00	76	2.20	63	44	99.4
277	44.750	0.162	1.00	76	2.10	63	44	100.5
278	44.912	0.162	0.99	77	2.20	63	44	100.6
279	45.074	0.162	0.99	77	2.20	63	44	100.9
280	45.235	0.161	1.00	77	2.10	63	44	99.6
281	45.396	0.161	1.00	77	2.20	63	44	98.7
282	45.559	0.163	1.00	77	2.20	63	44	100.0
283	45.720	0.161	1.00	77	2.20	63	44	98.9
284	45.882	0.162	1.00	77	2.20	63	44	99.5
285	46.043	0.161	1.00	77	2.10	63	44	99.1
286	46.206	0.163	1.00	77	2.10	63	44	100.6
287	46.367	0.161	0.99	77	2.20	63	44	99.6
288	46.528	0.161	1.00	77	2.20	63	44	99.8
289	46.690	0.162	1.00	77	2.10	63	44	99.7
290	46.852	0.162	0.99	77	2.20	63	44	99.1
291	47.013	0.161	0.99	77	2.10	63	44	99.1
292	47.175	0.162	1.00	77	2.10	63	44	100.3
293	47.337	0.162	1.00	77	2.20	64	44	100.7
294	47.499	0.162	0.99	77	2.10	64	44	100.7
295	47.660	0.161	0.99	77	2.20	64	44	99.5
296	47.822	0.162	0.99	77	2.10	64	44	99.6
297	47.984	0.162	1.00	77	2.10	64	44	99.9
298	48.145	0.161	0.99	77	2.20	64	44	99.1
299	48.307	0.162	1.00	77	2.10	64	44	99.2
300	48.468	0.161	0.99	77	2.10	64	44	98.7
301	48.630	0.162	0.99	77	2.10	64	44	99.9
302	48.792	0.162	0.99	77	2.10	64	44	100.1
303	48.953	0.161	0.99	77	2.10	64	44	99.3
304	49.115	0.162	1.00	77	2.10	64	44	99.7

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
305	49.277	0.162	0.99	77	2.10	64	44	100.1
306	49.439	0.162	0.99	77	2.20	64	44	100.7
307	49.600	0.161	0.99	77	2.10	64	44	99.7
308	49.761	0.161	1.00	77	2.10	64	44	98.7
309	49.924	0.163	1.00	77	2.10	64	44	99.8
310	50.085	0.161	0.99	77	2.20	64	44	99.3
311	50.246	0.161	1.00	77	2.10	64	44	99.7
312	50.408	0.162	1.00	77	2.10	64	44	100.4
313	50.571	0.163	0.99	77	2.10	64	44	101.2
314	50.732	0.161	0.99	77	2.20	64	44	100.1
315	50.893	0.161	1.00	77	2.20	64	44	100.2
316	51.055	0.162	1.00	77	2.10	64	44	100.0
317	51.218	0.163	1.00	77	2.20	64	44	100.1
318	51.379	0.161	0.99	77	2.20	64	44	99.6
319	51.540	0.161	1.00	77	2.20	64	44	100.1
320	51.702	0.162	1.00	77	2.10	64	44	100.1
321	51.865	0.163	1.00	77	2.10	64	44	100.4
322	52.026	0.161	1.00	77	2.10	64	44	98.8
323	52.187	0.161	1.00	77	2.10	64	44	98.2
324	52.349	0.162	1.00	77	2.10	64	44	98.5
325	52.512	0.163	1.00	77	2.10	64	44	99.1
326	52.673	0.161	0.99	77	2.10	64	45	98.1
327	52.835	0.162	1.00	77	2.10	64	45	99.2
328	52.997	0.162	1.00	77	2.10	64	45	99.3
329	53.159	0.162	1.00	77	2.10	63	45	99.3
330	53.321	0.162	1.00	77	2.10	63	45	99.3
331	53.482	0.161	1.00	77	2.10	63	45	97.9
332	53.644	0.162	1.00	77	2.10	63	45	98.2
333	53.807	0.163	1.00	77	2.10	63	45	99.1
334	53.968	0.161	1.00	77	2.20	63	45	98.1
335	54.130	0.162	1.00	77	2.10	63	45	98.9
336	54.292	0.162	1.00	77	2.10	63	45	99.1
337	54.455	0.163	0.99	77	2.20	63	45	100.0
338	54.616	0.161	1.00	77	2.20	63	45	99.4
339	54.778	0.162	1.00	77	2.10	63	45	100.5
340	54.940	0.162	1.00	77	2.10	63	45	99.8
341	55.102	0.162	1.00	77	2.10	63	45	100.0
342	55.264	0.162	0.99	77	2.20	63	45	100.3
343	55.425	0.161	1.00	77	2.10	63	45	98.5
344	55.587	0.162	1.00	77	2.10	63	45	98.8
345	55.750	0.163	1.00	77	2.10	63	45	100.1
346	55.911	0.161	1.00	77	2.10	63	45	99.1
347	56.073	0.162	1.00	77	2.10	63	45	100.0
348	56.235	0.162	1.00	77	2.20	63	45	100.4

Train B - Particulate Sampling

ASTM E2515

Run: 4
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Test Date: 12/5/24
Meter Box Y Regression Offset: 1.006
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.006
Sampling Box ID: 336
Sample Train Leak Checks
Pre-test 0 cfm @ 19.27 in. Hg
Post-Test 0.001 cfm @ 9.8 in. Hg

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
349	56.398	0.163	1.00	77	2.20	63	45	100.3
350	56.559	0.161	1.00	77	2.20	63	45	98.1
351	56.721	0.162	1.00	77	2.20	62	45	98.3
352	56.883	0.162	1.00	77	2.10	62	45	98.5
353	57.046	0.163	0.99	77	2.10	62	45	99.4
354	57.207	0.161	0.99	77	2.10	62	45	97.9
355	57.368	0.161	1.00	77	2.10	62	45	97.8
356	57.530	0.162	1.00	77	2.10	62	45	98.9
357	57.693	0.163	1.00	77	2.10	62	45	100.3
358	57.855	0.162	0.99	77	2.20	62	45	99.9
359	58.016	0.161	1.00	77	2.20	62	45	99.2
360	58.178	0.162	1.00	77	2.10	62	45	99.9
361	58.341	0.163	0.99	77	2.10	62	45	100.7
362	58.502	0.161	0.99	77	2.10	62	45	99.2
363	58.664	0.162	1.00	77	2.10	62	45	99.9
364	58.826	0.162	1.00	77	2.20	62	45	100.1
365	58.989	0.163	1.00	77	2.10	62	45	100.5
366	59.150	0.161	0.99	77	2.10	62	45	99.5
367	59.312	0.162	1.00	77	2.10	62	45	100.4
368	59.474	0.162	1.00	77	2.10	62	45	100.3
369	59.636	0.162	0.99	77	2.10	62	45	100.3
370	59.798	0.162	0.99	77	2.20	62	45	100.2
371	59.959	0.161	0.99	77	2.10	62	45	99.5
372	60.121	0.162	1.00	77	2.10	62	45	100.2
373	60.284	0.163	1.00	76	2.10	62	45	101.1
374	60.445	0.161	0.99	77	2.10	62	45	100.1
375	60.607	0.162	1.00	77	2.10	62	45	100.1
376	60.768	0.161	1.00	77	2.20	62	45	98.9
377	60.931	0.163	1.00	77	2.20	63	45	100.3
378	61.092	0.161	0.99	77	2.20	63	44	98.6
379	61.253	0.161	0.99	77	2.10	63	44	97.9
380	61.415	0.162	0.99	77	2.20	63	44	98.4
381	61.578	0.163	0.99	77	2.10	63	44	99.4
382	61.739	0.161	0.99	77	2.10	63	45	98.7
383	61.900	0.161	1.00	77	2.10	63	44	98.9
384	62.062	0.162	1.00	77	2.20	63	45	99.7
385	62.224	0.162	0.99	77	2.10	63	44	99.7
386	62.385	0.161	0.99	77	2.10	63	44	99.2
387	62.547	0.162	0.99	77	2.10	63	44	100.6
388	62.709	0.162	0.99	77	2.10	63	45	100.2
389	62.871	0.162	1.00	77	2.10	63	45	99.6
390	63.032	0.161	0.99	77	2.10	63	44	99.2
391	63.194	0.162	0.99	77	2.10	63	44	99.6
392	63.356	0.162	1.00	77	2.10	63	44	99.5

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
393	63.518	0.162	0.99	77	2.10	63	45	99.6
394	63.679	0.161	0.99	77	2.10	63	45	99.1
395	63.840	0.161	1.00	77	2.10	63	44	99.2
396	64.003	0.163	0.99	77	2.10	63	45	100.3
397	64.164	0.161	0.99	77	2.20	63	45	99.2
398	64.326	0.162	1.00	77	2.10	63	45	100.2
399	64.487	0.161	1.00	77	2.20	64	44	99.8
400	64.650	0.163	1.00	77	2.10	64	45	100.9
401	64.811	0.161	0.99	77	2.10	64	45	99.8
402	64.972	0.161	0.99	77	2.20	64	45	100.6
403	65.134	0.162	0.99	77	2.10	64	45	101.6
404	65.296	0.162	0.99	77	2.20	64	45	101.2
405	65.458	0.162	0.99	77	2.20	64	45	100.7
406	65.618	0.160	0.99	77	2.20	64	45	99.3
407	65.780	0.162	0.99	77	2.20	64	45	101.0
408	65.942	0.162	0.99	77	2.20	64	45	101.1
409	66.103	0.161	0.99	77	2.20	64	45	100.6
410	66.264	0.161	0.99	77	2.20	65	45	100.7
411	66.426	0.162	0.99	77	2.20	65	45	101.0
412	66.588	0.162	0.99	77	2.20	65	45	100.5
413	66.748	0.160	0.99	77	2.20	65	45	99.0
414	66.910	0.162	0.99	77	2.20	65	45	100.7
415	67.071	0.161	0.99	77	2.20	65	45	100.8
416	67.233	0.162	0.99	77	2.20	65	45	101.9
417	67.393	0.160	0.99	77	2.20	65	45	101.2
418	67.554	0.161	0.99	77	2.20	65	45	102.2
419	67.717	0.163	0.99	77	2.20	66	45	103.3
420	67.877	0.160	0.99	77	2.20	66	45	100.9
421	68.038	0.161	0.99	77	2.20	66	45	101.3
422	68.200	0.162	0.99	77	2.20	66	45	101.2
423	68.361	0.161	0.99	78	2.20	66	45	99.8
424	68.522	0.161	0.99	78	2.20	66	45	100.4
425	68.683	0.161	0.99	78	2.20	66	45	100.7
426	68.845	0.162	0.99	78	2.20	66	45	102.0
427	69.005	0.160	0.98	78	2.20	66	45	101.4
428	69.166	0.161	0.99	78	2.20	66	46	101.0
429	69.328	0.162	0.99	78	2.20	66	46	100.8
430	69.489	0.161	0.99	78	2.20	66	46	100.3
431	69.650	0.161	0.99	78	2.20	66	46	100.4
432	69.811	0.161	0.99	78	2.20	66	46	100.5
433	69.973	0.162	0.99	78	2.20	66	46	101.5
434	70.134	0.161	0.98	78	2.20	66	46	100.1
435	70.295	0.161	0.99	78	2.20	66	46	99.0
436	70.456	0.161	0.99	78	2.20	66	46	99.0

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
437	70.619	0.163	0.99	78	2.20	66	46	100.4
438	70.780	0.161	0.99	78	2.20	66	46	99.2
439	70.941	0.161	0.99	78	2.20	66	46	99.3
440	71.102	0.161	0.99	78	2.20	65	46	99.5
441	71.265	0.163	0.99	78	2.10	65	46	100.7
442	71.426	0.161	0.99	78	2.20	65	46	99.2
443	71.587	0.161	0.99	78	2.20	65	46	99.1
444	71.749	0.162	0.99	78	2.20	65	46	99.9
445	71.911	0.162	0.99	78	2.10	65	46	100.0
446	72.072	0.161	0.99	78	2.20	65	46	99.4
447	72.234	0.162	1.00	78	2.20	65	46	99.6
448	72.396	0.162	0.99	78	2.20	65	46	99.2
449	72.558	0.162	0.99	78	2.10	64	46	99.2
450	72.719	0.161	0.99	78	2.10	64	46	98.7
451	72.881	0.162	1.00	78	2.20	64	46	99.5
452	73.043	0.162	1.00	78	2.20	64	46	99.5
453	73.205	0.162	0.99	78	2.10	64	46	99.5
454	73.366	0.161	0.99	78	2.20	64	46	99.3
455	73.528	0.162	1.00	78	2.20	64	46	99.9
456	73.690	0.162	0.99	78	2.10	64	46	99.7
457	73.852	0.162	0.99	78	2.20	64	46	100.1
458	74.013	0.161	0.99	78	2.10	64	46	99.7
459	74.175	0.162	0.99	78	2.10	64	46	100.0
460	74.337	0.162	1.00	78	2.20	64	46	100.0
461	74.499	0.162	0.99	78	2.20	64	46	100.0
462	74.660	0.161	0.99	77	2.20	64	46	99.6
463	74.822	0.162	0.99	77	2.10	63	46	100.9
464	74.985	0.163	1.00	77	2.20	63	46	101.2
465	75.146	0.161	0.99	77	2.20	63	46	99.4
466	75.308	0.162	0.99	77	2.20	63	46	99.8
467	75.470	0.162	1.00	77	2.20	63	46	99.5
468	75.632	0.162	0.99	77	2.10	63	46	99.3
469	75.794	0.162	0.99	77	2.20	63	46	98.9
470	75.955	0.161	1.00	77	2.20	63	46	98.3
471	76.117	0.162	1.00	77	2.20	63	45	99.5
472	76.279	0.162	0.99	77	2.20	63	45	99.9
473	76.441	0.162	0.99	77	2.10	63	45	99.9
474	76.602	0.161	1.00	77	2.10	63	45	99.0
475	76.764	0.162	1.00	77	2.20	63	45	99.0
476	76.927	0.163	0.99	77	2.20	63	45	99.5
477	77.088	0.161	0.99	77	2.20	63	45	99.0
478	77.249	0.161	0.99	77	2.20	63	45	98.9
479	77.411	0.162	1.00	77	2.20	63	45	99.0
480	77.574	0.163	0.99	77	2.20	63	45	100.0

Train B - Particulate Sampling

ASTM E2515

Run: 4
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Test Date: 12/5/24
Meter Box Y Regression Offset: 1.006
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.006
Sampling Box ID: 336
Sample Train Leak Checks
Pre-test 0 cfm @ 19.27 in. Hg
Post-Test 0.001 cfm @ 9.8 in. Hg

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
481	77.735	0.161	0.99	77	2.10	63	45	99.4
482	77.896	0.161	1.00	77	2.20	63	45	99.7
483	78.058	0.162	0.99	77	2.20	63	45	100.3
484	78.221	0.163	0.99	77	2.10	63	45	100.6
485	78.381	0.160	0.99	77	2.10	63	45	98.6
486	78.542	0.161	0.99	77	2.10	63	45	99.4
487	78.704	0.162	0.99	77	2.10	63	45	99.9
488	78.867	0.163	0.99	77	2.20	63	45	100.5
489	79.028	0.161	0.99	77	2.20	63	45	99.7
490	79.189	0.161	0.99	77	2.10	63	45	100.3
491	79.351	0.162	0.99	77	2.20	63	45	100.8
492	79.513	0.162	0.99	77	2.20	63	45	100.3
493	79.674	0.161	0.99	77	2.20	63	45	100.1
494	79.836	0.162	1.00	77	2.20	63	45	100.7
495	79.998	0.162	0.99	77	2.20	63	45	100.5
496	80.159	0.161	0.99	77	2.20	63	45	100.2
497	80.320	0.161	0.99	77	2.20	64	45	100.8
498	80.482	0.162	0.99	77	2.10	64	45	101.9
499	80.644	0.162	0.99	77	2.20	64	45	101.5
500	80.806	0.162	0.99	77	2.10	64	45	101.0
501	80.967	0.161	0.99	77	2.10	64	45	99.7
502	81.128	0.161	1.00	77	2.10	64	45	99.6
503	81.291	0.163	0.99	77	2.20	64	45	101.7
504	81.452	0.161	0.99	77	2.20	64	45	100.9
505	81.613	0.161	0.99	77	2.20	64	45	100.5
506	81.774	0.161	0.99	77	2.20	64	45	100.1
507	81.937	0.163	0.99	77	2.20	64	45	101.4
508	82.098	0.161	0.99	77	2.20	64	45	100.2
509	82.259	0.161	0.99	77	2.20	64	45	100.0
510	82.421	0.162	1.00	77	2.20	64	45	100.2
511	82.583	0.162	0.99	77	2.20	64	45	100.4
512	82.744	0.161	0.99	77	2.10	64	45	100.3
513	82.906	0.162	0.99	77	2.20	64	45	100.7
514	83.068	0.162	1.00	77	2.20	64	45	100.6
515	83.230	0.162	0.99	77	2.20	64	45	100.0
516	83.391	0.161	0.99	77	2.20	64	45	99.3
517	83.552	0.161	0.99	77	2.10	64	45	99.9
518	83.714	0.162	0.99	77	2.10	64	45	100.4
519	83.876	0.162	0.99	77	2.10	64	45	100.3
520	84.037	0.161	0.99	78	2.20	64	45	100.2
521	84.199	0.162	1.00	78	2.20	64	45	100.7
522	84.361	0.162	1.00	77	2.20	64	45	100.2
523	84.523	0.162	0.99	78	2.10	64	45	99.9
524	84.684	0.161	0.99	78	2.20	64	45	99.1

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
525	84.846	0.162	1.00	78	2.20	64	45	99.2
526	85.008	0.162	0.99	78	2.20	64	45	99.2
527	85.170	0.162	0.99	78	2.20	64	45	99.5
528	85.331	0.161	0.99	77	2.20	64	45	98.4
529	85.493	0.162	1.00	77	2.10	64	45	99.0
530	85.655	0.162	1.00	77	2.10	64	45	99.7
531	85.817	0.162	0.99	77	2.20	63	45	100.3
532	85.978	0.161	0.99	77	2.20	63	45	99.8
533	86.140	0.162	1.00	77	2.10	63	45	100.0
534	86.302	0.162	0.99	77	2.20	63	45	100.2
535	86.464	0.162	0.99	77	2.20	63	45	100.4
536	86.625	0.161	0.99	77	2.10	63	45	99.0
537	86.787	0.162	1.00	77	2.20	63	45	98.9
538	86.949	0.162	0.99	77	2.20	63	45	98.9
539	87.111	0.162	0.99	77	2.20	63	45	99.8
540	87.272	0.161	1.00	77	2.20	63	45	99.9
541	87.434	0.162	1.00	77	2.20	63	45	100.1
542	87.597	0.163	0.99	77	2.20	63	45	100.1
543	87.758	0.161	0.99	77	2.20	63	45	98.9
544	87.919	0.161	0.99	77	2.20	63	45	99.2
545	88.081	0.162	1.00	77	2.20	63	45	99.8
546	88.244	0.163	1.00	77	2.10	63	45	100.3
547	88.406	0.162	0.99	77	2.20	63	45	99.7
548	88.567	0.161	1.00	77	2.20	63	45	98.8
549	88.729	0.162	1.00	77	2.10	63	45	99.1
550	88.892	0.163	1.00	77	2.10	63	45	100.1
551	89.053	0.161	0.99	77	2.20	63	45	99.4
552	89.215	0.162	0.99	77	2.10	63	45	100.2
553	89.376	0.161	1.00	77	2.20	62	45	99.3
554	89.539	0.163	1.00	77	2.10	62	45	100.4
555	89.701	0.162	0.99	77	2.10	62	45	99.6
556	89.862	0.161	1.00	77	2.10	62	45	98.6
557	90.024	0.162	1.00	77	2.20	62	45	99.3
558	90.187	0.163	1.00	77	2.20	62	45	100.2
559	90.348	0.161	0.99	77	2.20	62	45	98.9
560	90.510	0.162	0.99	77	2.10	62	45	99.4
561	90.672	0.162	1.00	77	2.20	62	45	100.2
562	90.834	0.162	1.00	77	2.20	62	45	101.2
563	90.996	0.162	0.99	77	2.10	62	45	100.8
564	91.157	0.161	1.00	77	2.20	62	45	99.9
565	91.319	0.162	0.99	77	2.20	62	45	101.0
566	91.482	0.163	1.00	77	2.10	62	45	101.2
567	91.643	0.161	0.99	77	2.20	62	45	99.3
568	91.805	0.162	1.00	77	2.20	62	45	99.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
569	91.967	0.162	1.00	77	2.20	62	45	100.1
570	92.129	0.162	0.99	77	2.10	62	45	100.3
571	92.290	0.161	0.99	77	2.20	62	45	99.8
572	92.452	0.162	0.99	77	2.10	62	45	99.9
573	92.613	0.161	1.00	77	2.20	62	45	98.5
574	92.776	0.163	0.99	77	2.10	62	45	100.4
575	92.937	0.161	0.99	77	2.20	62	45	100.1
576	93.099	0.162	1.00	77	2.20	62	45	100.8
577	93.260	0.161	0.99	77	2.10	62	45	99.7
578	93.423	0.163	1.00	77	2.20	63	45	100.2
579	93.584	0.161	0.99	77	2.20	63	45	98.7
580	93.745	0.161	0.99	77	2.20	63	45	98.8
581	93.907	0.162	1.00	77	2.10	63	45	99.3
582	94.069	0.162	0.99	77	2.10	63	45	100.2
583	94.230	0.161	0.99	77	2.20	63	45	100.4
584	94.392	0.162	0.99	77	2.20	63	45	100.4
585	94.554	0.162	0.99	77	2.10	63	45	100.0
586	94.716	0.162	0.99	77	2.20	63	45	100.3
587	94.877	0.161	0.99	77	2.20	63	45	100.0
588	95.039	0.162	0.99	77	2.10	63	45	100.8
589	95.201	0.162	0.99	77	2.20	63	45	101.2
590	95.363	0.162	0.99	77	2.10	63	45	101.4
591	95.524	0.161	0.99	77	2.20	63	45	100.4
592	95.685	0.161	0.99	77	2.10	63	45	100.1
593	95.848	0.163	0.99	77	2.20	63	45	101.5
594	96.009	0.161	0.99	77	2.10	63	45	100.1
595	96.170	0.161	0.99	77	2.20	63	45	99.7
596	96.331	0.161	0.99	77	2.20	63	45	99.6
597	96.494	0.163	0.99	77	2.10	63	45	101.0
598	96.655	0.161	0.99	77	2.20	63	45	99.9
599	96.816	0.161	0.99	77	2.20	63	45	99.8
600	96.978	0.162	0.99	77	2.20	63	45	100.4
601	97.140	0.162	0.99	77	2.10	64	45	101.1
602	97.301	0.161	0.99	77	2.20	64	45	100.2
603	97.462	0.161	0.99	77	2.10	64	45	99.4
604	97.624	0.162	0.99	77	2.20	64	45	100.5
605	97.786	0.162	0.99	77	2.20	64	45	101.4
606	97.947	0.161	0.99	77	2.20	64	45	100.8
607	98.108	0.161	0.99	77	2.20	64	45	100.9
608	98.270	0.162	0.99	77	2.10	64	45	101.4
609	98.431	0.161	0.99	77	2.20	64	45	100.1
610	98.592	0.161	0.99	77	2.20	64	45	100.1
611	98.754	0.162	0.99	77	2.20	64	45	101.2
612	98.916	0.162	0.99	77	2.20	64	45	101.5

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
613	99.077	0.161	0.99	77	2.20	64	45	101.2
614	99.237	0.160	0.99	77	2.20	65	45	100.7
615	99.399	0.162	0.99	77	2.20	65	45	102.0
616	99.560	0.161	0.99	77	2.20	65	45	101.0
617	99.721	0.161	0.99	77	2.20	65	45	100.5
618	99.882	0.161	0.99	77	2.20	65	45	100.3
619	100.044	0.162	0.99	77	2.20	65	45	100.9
620	100.205	0.161	0.98	77	2.20	65	45	100.5
621	100.366	0.161	0.99	77	2.20	65	45	100.6
622	100.527	0.161	0.99	77	2.20	65	45	100.6
623	100.689	0.162	0.99	77	2.20	65	45	101.0
624	100.849	0.160	0.99	77	2.20	66	46	100.0
625	101.010	0.161	0.99	77	2.20	66	46	101.0
626	101.172	0.162	0.99	77	2.20	66	46	101.6
627	101.333	0.161	0.98	77	2.20	66	46	100.6
628	101.494	0.161	0.99	77	2.20	66	46	100.2
629	101.654	0.160	0.99	77	2.20	66	46	99.2
630	101.816	0.162	0.99	77	2.20	66	46	100.9
631	101.977	0.161	0.99	77	2.20	66	46	101.1
632	102.138	0.161	0.99	77	2.20	66	46	101.4
633	102.299	0.161	0.99	77	2.20	66	46	101.2
634	102.461	0.162	0.99	77	2.20	66	46	101.3
635	102.621	0.160	0.99	78	2.20	66	46	100.0
636	102.782	0.161	0.99	78	2.20	66	46	101.3
637	102.945	0.163	0.98	78	2.20	66	46	102.5
638	103.105	0.160	0.99	78	2.20	66	46	99.6
639	103.266	0.161	0.99	78	2.20	66	46	100.3
640	103.428	0.162	0.99	78	2.20	66	46	101.2
641	103.590	0.162	0.99	78	2.20	66	46	100.4
642	103.750	0.160	0.99	78	2.20	65	46	98.7
643	103.912	0.162	0.99	78	2.20	65	46	99.7
644	104.074	0.162	0.99	78	2.20	65	46	98.9
645	104.235	0.161	0.99	78	2.20	65	46	98.4
646	104.396	0.161	0.99	78	2.20	65	46	99.3
647	104.558	0.162	0.99	78	2.20	65	46	100.2
648	104.720	0.162	0.99	78	2.20	65	46	100.1
649	104.882	0.162	0.99	78	2.20	65	46	100.5
650	105.043	0.161	0.99	78	2.20	65	46	99.4
651	105.204	0.161	0.99	78	2.20	65	46	98.2
652	105.367	0.163	0.99	78	2.20	64	46	99.5
653	105.528	0.161	0.98	77	2.20	64	46	98.7
654	105.689	0.161	0.99	77	2.20	64	46	98.4
655	105.851	0.162	0.99	78	2.20	64	46	98.8
656	106.013	0.162	0.99	78	2.20	64	46	99.2

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
657	106.174	0.161	0.99	78	2.20	64	46	98.9
658	106.335	0.161	0.99	77	2.20	64	46	98.4
659	106.497	0.162	0.99	77	2.20	64	46	98.2
660	106.660	0.163	0.99	77	2.20	64	46	98.9
661	106.821	0.161	0.99	77	2.20	64	46	97.9
662	106.982	0.161	0.99	77	2.20	64	46	98.5
663	107.144	0.162	1.00	77	2.20	64	46	100.1
664	107.306	0.162	0.99	77	2.20	63	46	99.7
665	107.468	0.162	0.99	77	2.20	63	46	99.4
666	107.629	0.161	1.00	77	2.20	63	46	99.4
667	107.791	0.162	1.00	77	2.20	63	46	100.5
668	107.954	0.163	0.99	77	2.20	63	46	101.3
669	108.115	0.161	0.99	77	2.20	63	46	99.2
670	108.276	0.161	1.00	77	2.20	63	46	98.7
671	108.439	0.163	1.00	77	2.20	63	46	100.4
672	108.601	0.162	1.00	77	2.20	63	46	99.8
673	108.762	0.161	0.99	77	2.20	63	46	99.3
674	108.924	0.162	0.99	77	2.20	63	46	99.9
675	109.086	0.162	1.00	77	2.20	63	46	99.9
676	109.248	0.162	0.99	77	2.20	63	46	100.5
677	109.409	0.161	0.99	77	2.20	63	46	100.0
678	109.571	0.162	1.00	77	2.20	63	46	100.4
679	109.733	0.162	1.00	77	2.20	63	46	100.4
680	109.895	0.162	0.99	77	2.20	63	46	100.1
681	110.056	0.161	0.99	77	2.20	63	46	99.5
682	110.218	0.162	1.00	77	2.20	62	46	101.1
683	110.380	0.162	0.99	77	2.20	62	46	100.8
684	110.542	0.162	0.99	77	2.20	62	46	99.6
685	110.703	0.161	0.99	77	2.20	62	46	98.7
686	110.865	0.162	1.00	77	2.20	62	46	99.9
687	111.028	0.163	0.99	77	2.20	62	46	101.4
688	111.189	0.161	0.99	77	2.20	62	46	100.4
689	111.350	0.161	0.99	77	2.20	62	45	100.1
690	111.512	0.162	1.00	77	2.20	62	45	100.8
691	111.674	0.162	0.99	77	2.20	62	45	100.3
692	111.836	0.162	0.99	77	2.20	62	45	100.0
693	111.997	0.161	0.99	77	2.20	63	45	99.8
694	112.159	0.162	0.99	77	2.20	62	45	100.1
695	112.321	0.162	0.99	77	2.20	63	45	100.2
696	112.482	0.161	0.99	77	2.20	63	45	100.7
697	112.643	0.161	0.99	77	2.20	63	45	101.3
698	112.805	0.162	0.99	77	2.20	63	45	101.9
699	112.968	0.163	0.99	77	2.20	63	45	102.0
700	113.128	0.160	0.99	77	2.20	63	45	99.6

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
701	113.290	0.162	0.99	77	2.10	63	45	100.9
702	113.451	0.161	0.99	77	2.20	63	45	100.3
703	113.614	0.163	0.99	77	2.20	63	45	100.9
704	113.774	0.160	0.99	77	2.20	63	45	98.5
705	113.936	0.162	0.99	77	2.20	63	45	100.5
706	114.098	0.162	0.99	77	2.20	63	45	101.1
707	114.259	0.161	0.99	77	2.20	63	45	100.1
708	114.420	0.161	0.99	77	2.20	63	45	99.7
709	114.582	0.162	0.99	77	2.20	63	45	100.1
710	114.744	0.162	0.99	77	2.20	63	45	99.8
711	114.905	0.161	0.99	77	2.20	63	45	98.8
712	115.066	0.161	0.99	77	2.20	63	45	99.2
713	115.228	0.162	0.99	77	2.20	63	45	101.0
714	115.390	0.162	0.99	77	2.20	63	45	101.4
715	115.551	0.161	0.98	77	2.20	63	45	100.2
716	115.712	0.161	0.99	77	2.10	63	45	99.7
717	115.874	0.162	0.99	77	2.20	63	45	100.6
718	116.036	0.162	0.99	77	2.20	63	45	100.5
719	116.197	0.161	0.99	77	2.20	63	45	99.6
720	116.358	0.161	0.99	77	2.20	63	45	99.6
721	116.520	0.162	0.99	77	2.20	63	45	100.3
722	116.682	0.162	0.99	77	2.20	63	45	100.3
723	116.843	0.161	0.99	77	2.20	63	45	98.9
724	117.004	0.161	0.99	77	2.20	63	45	98.8
725	117.166	0.162	0.99	77	2.20	64	45	99.8
726	117.328	0.162	0.99	77	2.20	64	45	100.1
727	117.489	0.161	0.99	77	2.20	64	45	100.1
728	117.650	0.161	0.99	77	2.20	64	45	100.5
729	117.813	0.163	0.99	77	2.20	64	45	101.2
730	117.974	0.161	0.99	77	2.20	64	45	99.5
731	118.135	0.161	0.99	77	2.20	64	45	99.3
732	118.296	0.161	0.99	77	2.20	64	45	99.3
733	118.459	0.163	0.99	77	2.20	64	45	101.5
734	118.620	0.161	0.99	77	2.20	64	45	101.1
735	118.781	0.161	0.99	77	2.20	64	45	100.6
736	118.943	0.162	0.99	77	2.20	64	45	101.2
737	119.105	0.162	0.98	77	2.20	64	45	101.5
738	119.266	0.161	0.99	77	2.20	64	45	100.2
739	119.427	0.161	0.99	77	2.20	64	45	99.9
740	119.589	0.162	0.99	77	2.20	64	45	100.6
741	119.750	0.161	0.98	77	2.20	64	45	100.0
742	119.911	0.161	0.99	77	2.10	64	45	100.0
743	120.073	0.162	0.99	77	2.20	64	45	100.1
744	120.235	0.162	0.99	77	2.20	64	45	99.8

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
745	120.396	0.161	0.99	77	2.20	64	45	99.5
746	120.558	0.162	0.99	77	2.10	64	45	101.0
747	120.719	0.161	0.99	77	2.20	64	45	101.4
748	120.881	0.162	0.99	77	2.20	64	45	102.2
749	121.042	0.161	0.99	77	2.20	64	45	101.2
750	121.203	0.161	0.99	77	2.20	64	45	100.9
751	121.365	0.162	0.99	77	2.20	64	45	101.4
752	121.527	0.162	0.99	77	2.20	64	45	101.4
753	121.688	0.161	0.99	77	2.20	64	45	100.5
754	121.849	0.161	0.99	77	2.20	64	45	99.9
755	122.011	0.162	0.99	77	2.20	64	45	100.6
756	122.173	0.162	0.98	77	2.20	64	45	101.2
757	122.334	0.161	0.99	77	2.10	64	45	100.4
758	122.495	0.161	0.99	77	2.20	64	45	99.9
759	122.658	0.163	0.99	77	2.20	64	45	101.0
760	122.819	0.161	0.98	77	2.10	64	45	99.8
761	122.980	0.161	0.99	77	2.10	64	45	100.0
762	123.141	0.161	0.99	77	2.10	64	45	99.3
763	123.304	0.163	0.99	77	2.20	64	45	99.5
764	123.465	0.161	0.99	77	2.20	64	45	98.8
765	123.626	0.161	0.99	77	2.20	64	45	99.9
766	123.788	0.162	0.99	77	2.10	64	45	100.7
767	123.950	0.162	0.99	77	2.20	64	45	100.1
768	124.111	0.161	0.99	77	2.20	64	45	98.8
769	124.272	0.161	0.99	77	2.20	64	45	98.4
770	124.434	0.162	0.99	77	2.10	64	45	99.6
771	124.597	0.163	0.99	77	2.20	63	45	100.4
772	124.758	0.161	0.99	77	2.20	63	45	98.9
773	124.919	0.161	0.99	77	2.20	63	45	99.4
774	125.081	0.162	0.99	77	2.20	63	45	99.9
775	125.243	0.162	0.99	77	2.10	63	45	99.5
776	125.404	0.161	0.99	77	2.10	63	45	98.7
777	125.566	0.162	0.99	77	2.10	63	45	99.1
778	125.728	0.162	0.99	77	2.20	63	45	99.4
779	125.890	0.162	0.99	77	2.20	63	45	99.7
780	126.051	0.161	0.99	77	2.10	63	45	99.1
781	126.213	0.162	0.99	77	2.10	63	45	100.2
782	126.375	0.162	0.99	77	2.10	63	45	100.7
783	126.536	0.161	0.99	77	2.20	63	45	99.6
784	126.698	0.162	0.99	77	2.20	63	45	100.2
785	126.859	0.161	0.99	77	2.10	63	45	99.7
786	127.022	0.163	0.99	77	2.20	63	45	100.2
787	127.183	0.161	0.98	77	2.20	63	45	98.4
788	127.345	0.162	0.99	77	2.20	63	45	98.8

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
789	127.506	0.161	0.99	77	2.10	63	45	97.8
790	127.669	0.163	0.99	77	2.20	63	45	99.1
791	127.830	0.161	0.99	77	2.20	63	45	99.0
792	127.992	0.162	0.99	77	2.20	62	45	99.8
793	128.153	0.161	0.99	77	2.20	62	45	98.7
794	128.316	0.163	0.99	77	2.20	62	45	99.9
795	128.477	0.161	0.99	77	2.20	62	45	98.9
796	128.639	0.162	0.99	77	2.10	62	45	99.9
797	128.800	0.161	0.99	77	2.20	62	45	99.2
798	128.963	0.163	0.99	77	2.10	62	45	100.3
799	129.124	0.161	0.99	77	2.20	62	45	99.6
800	129.285	0.161	0.99	77	2.20	62	45	99.2
801	129.447	0.162	0.99	77	2.20	62	45	99.6
802	129.610	0.163	0.99	77	2.20	62	45	100.5
803	129.771	0.161	0.99	77	2.20	62	45	99.3
804	129.932	0.161	0.99	76	2.20	62	45	99.1
805	130.094	0.162	1.00	76	2.20	62	45	99.7
806	130.257	0.163	0.99	76	2.20	62	45	100.7
807	130.418	0.161	0.99	76	2.20	62	45	99.9
808	130.579	0.161	0.99	76	2.20	62	45	100.3
809	130.741	0.162	0.99	76	2.20	62	45	101.8
810	130.903	0.162	0.99	76	2.20	62	45	102.7
811	131.064	0.161	0.99	76	2.20	63	45	101.2
812	131.225	0.161	0.99	76	2.20	63	45	99.8
813	131.387	0.162	0.99	76	2.20	63	45	100.5
814	131.548	0.161	0.99	76	2.20	63	45	100.3
815	131.709	0.161	0.99	76	2.20	63	45	100.3
816	131.870	0.161	0.99	76	2.20	63	45	100.2
817	132.032	0.162	0.98	76	2.20	63	45	101.0
818	132.193	0.161	0.98	76	2.20	64	45	100.6
819	132.354	0.161	0.99	76	2.20	64	45	100.2
820	132.515	0.161	0.99	76	2.20	64	46	100.2
821	132.676	0.161	0.98	76	2.20	64	46	100.8
822	132.837	0.161	0.99	76	2.20	64	46	101.0
823	132.998	0.161	0.99	76	2.20	64	46	100.3
824	133.160	0.162	0.98	76	2.20	64	46	100.6
825	133.321	0.161	0.98	76	2.20	64	46	101.3
826	133.481	0.160	0.98	76	2.20	64	46	101.6
827	133.643	0.162	0.99	76	2.20	64	46	102.7
828	133.804	0.161	0.98	76	2.20	64	46	101.3
829	133.965	0.161	0.98	76	2.20	65	46	100.8
830	134.126	0.161	0.99	76	2.20	65	46	101.2
831	134.288	0.162	0.98	76	2.20	65	46	101.8
832	134.448	0.160	0.98	76	2.20	65	46	100.2

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
833	134.609	0.161	0.99	76	2.20	65	46	101.1
834	134.770	0.161	0.99	77	2.20	65	46	101.7
835	134.932	0.162	0.99	77	2.20	65	46	102.4
836	135.092	0.160	0.98	77	2.20	65	46	100.2
837	135.253	0.161	0.99	77	2.20	65	46	100.2
838	135.415	0.162	0.98	77	2.20	65	46	100.9
839	135.576	0.161	0.98	77	2.20	65	46	100.1
840	135.737	0.161	0.99	77	2.20	65	46	100.0
841	135.898	0.161	0.99	77	2.20	65	46	100.1
842	136.061	0.163	0.98	77	2.20	65	46	101.1
843	136.221	0.160	0.98	77	2.20	65	46	98.8
844	136.382	0.161	0.98	77	2.20	65	46	100.2
845	136.544	0.162	0.99	77	2.20	65	46	101.6
846	136.706	0.162	0.98	77	2.20	65	46	101.6
847	136.867	0.161	0.98	77	2.20	65	46	100.9
848	137.028	0.161	0.99	77	2.20	65	46	100.4
849	137.190	0.162	0.98	77	2.20	65	46	100.4
850	137.351	0.161	0.98	77	2.20	65	46	99.8
851	137.512	0.161	0.98	77	2.20	64	46	100.0
852	137.673	0.161	0.99	77	2.20	65	46	100.1
853	137.836	0.163	0.98	77	2.20	64	46	101.3
854	137.996	0.160	0.98	77	2.20	64	46	99.0
855	138.157	0.161	0.99	77	2.20	64	46	99.3
856	138.319	0.162	0.99	77	2.20	64	46	100.3
857	138.481	0.162	0.99	77	2.20	64	46	100.6
858	138.642	0.161	0.99	77	2.20	64	46	99.8
859	138.803	0.161	0.99	77	2.20	64	46	100.1
860	138.965	0.162	0.99	77	2.20	64	46	101.4
861	139.126	0.161	0.98	77	2.20	64	46	100.3
862	139.287	0.161	0.99	77	2.20	64	46	99.5
863	139.449	0.162	0.99	77	2.20	64	46	100.3
864	139.611	0.162	0.99	77	2.20	64	46	100.9
865	139.771	0.160	0.99	77	2.20	64	46	100.0
866	139.932	0.161	0.99	77	2.20	64	46	100.3
867	140.094	0.162	0.99	77	2.20	64	46	100.1
868	140.256	0.162	0.99	77	2.20	64	46	99.5
869	140.417	0.161	0.99	77	2.20	64	46	98.9
870	140.578	0.161	0.99	77	2.20	64	46	99.1
871	140.740	0.162	0.99	77	2.20	64	46	100.1
872	140.902	0.162	0.99	77	2.20	64	46	100.1
873	141.063	0.161	0.99	77	2.20	64	46	99.5
874	141.224	0.161	0.99	77	2.20	64	46	99.9
875	141.386	0.162	0.99	77	2.20	64	46	100.5
876	141.547	0.161	0.98	77	2.20	64	46	99.3

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
877	141.708	0.161	0.99	77	2.20	64	46	99.2
878	141.869	0.161	0.99	77	2.20	64	46	99.6
879	142.032	0.163	0.99	77	2.20	64	46	100.9
880	142.192	0.160	0.99	77	2.20	64	46	99.1
881	142.354	0.162	0.99	77	2.20	64	45	100.5
882	142.515	0.161	0.99	77	2.20	64	46	99.2
883	142.677	0.162	0.98	77	2.20	64	46	99.3
884	142.838	0.161	0.99	77	2.20	64	46	99.0
885	142.999	0.161	0.99	77	2.20	64	45	99.4
886	143.161	0.162	0.99	77	2.20	64	46	100.4
887	143.323	0.162	0.98	77	2.20	64	46	101.1
888	143.484	0.161	0.99	77	2.20	64	46	100.4
889	143.646	0.162	0.99	77	2.20	64	45	100.4
890	143.808	0.162	0.99	77	2.10	64	45	100.4
891	143.969	0.161	0.99	77	2.20	64	45	100.8
892	144.130	0.161	0.99	77	2.20	64	45	101.0
893	144.291	0.161	0.99	77	2.20	64	45	100.5
894	144.454	0.163	0.99	77	2.20	64	45	101.6
895	144.615	0.161	0.99	77	2.20	64	45	99.5
896	144.776	0.161	0.99	77	2.20	64	45	98.9
897	144.938	0.162	0.99	77	2.20	64	45	100.2
898	145.100	0.162	0.99	77	2.20	64	45	101.3
899	145.260	0.160	0.99	77	2.20	64	45	100.2
900	145.422	0.162	0.99	77	2.20	64	45	101.3
901	145.584	0.162	0.99	77	2.20	64	45	101.7
902	145.745	0.161	0.98	77	2.20	64	45	100.6
903	145.906	0.161	0.99	77	2.20	64	45	99.4
904	146.068	0.162	0.99	77	2.20	64	45	99.7
905	146.230	0.162	0.98	77	2.20	64	45	100.7
906	146.391	0.161	0.98	77	2.20	64	45	100.5
907	146.552	0.161	0.99	77	2.20	64	45	100.3
908	146.713	0.161	0.99	77	2.20	64	45	100.5
909	146.876	0.163	0.99	77	2.20	64	45	101.4
910	147.037	0.161	0.99	77	2.20	64	45	99.6
911	147.198	0.161	0.99	77	2.20	63	45	99.4
912	147.360	0.162	0.99	77	2.20	63	45	100.4
913	147.522	0.162	0.99	77	2.20	63	45	100.4
914	147.683	0.161	0.99	77	2.20	63	45	98.7
915	147.844	0.161	0.99	77	2.20	63	45	98.5
916	148.006	0.162	0.99	77	2.20	63	45	100.0
917	148.168	0.162	0.99	77	2.20	63	45	100.1
918	148.329	0.161	0.99	77	2.20	63	45	99.2
919	148.491	0.162	0.99	77	2.20	63	45	99.8
920	148.653	0.162	0.99	77	2.20	63	45	100.2

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
921	148.815	0.162	0.98	77	2.20	63	45	100.8
922	148.976	0.161	0.99	77	2.10	63	45	100.3
923	149.138	0.162	0.99	77	2.20	63	45	100.7
924	149.300	0.162	0.99	77	2.20	63	45	100.4
925	149.462	0.162	0.99	77	2.20	63	45	100.3
926	149.623	0.161	0.99	77	2.20	63	45	99.7
927	149.785	0.162	0.99	77	2.20	63	45	100.0
928	149.947	0.162	0.99	77	2.20	63	45	100.1
929	150.108	0.161	0.99	77	2.20	63	45	99.9
930	150.270	0.162	0.99	77	2.20	63	45	100.2
931	150.431	0.161	0.99	77	2.20	63	45	99.1
932	150.594	0.163	0.99	77	2.20	63	45	100.7
933	150.755	0.161	0.99	77	2.20	63	45	100.1
934	150.916	0.161	0.99	77	2.20	63	45	100.4
935	151.078	0.162	0.99	77	2.20	63	45	100.8
936	151.240	0.162	0.98	77	2.20	63	45	100.5
937	151.401	0.161	0.99	77	2.20	63	45	99.3
938	151.562	0.161	0.99	77	2.20	63	45	99.0
939	151.724	0.162	0.99	77	2.20	63	45	100.5
940	151.886	0.162	0.99	77	2.20	63	45	100.9
941	152.047	0.161	0.99	77	2.20	63	45	99.9
942	152.209	0.162	0.99	77	2.20	63	45	100.6
943	152.371	0.162	0.99	77	2.20	63	45	100.7
944	152.532	0.161	0.99	77	2.20	63	45	100.2
945	152.693	0.161	0.99	77	2.20	63	45	100.8
946	152.855	0.162	0.99	77	2.20	63	45	101.2
947	153.017	0.162	0.98	77	2.20	63	45	100.7
948	153.178	0.161	0.99	77	2.20	63	45	99.9
949	153.340	0.162	0.99	77	2.20	63	45	100.0
950	153.501	0.161	0.99	77	2.20	63	45	98.6
951	153.663	0.162	0.98	77	2.20	63	45	99.0
952	153.824	0.161	0.98	77	2.20	63	45	99.0
953	153.985	0.161	0.99	77	2.20	63	45	99.2
954	154.147	0.162	0.99	77	2.20	63	45	100.3
955	154.309	0.162	0.99	77	2.20	63	45	101.3
956	154.470	0.161	0.99	77	2.20	63	45	100.4
957	154.631	0.161	0.99	77	2.20	63	45	99.8
958	154.793	0.162	0.99	77	2.20	64	45	100.7
959	154.954	0.161	0.99	77	2.20	64	45	100.3
960	155.115	0.161	0.99	77	2.20	64	45	100.1
961	155.277	0.162	0.99	77	2.20	64	45	100.7
962	155.439	0.162	0.99	77	2.20	64	45	100.9
963	155.600	0.161	0.98	77	2.20	64	45	100.2
964	155.761	0.161	0.99	77	2.20	64	45	99.7

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
965	155.922	0.161	0.99	77	2.20	64	45	99.9
966	156.085	0.163	0.99	77	2.20	64	45	101.8
967	156.245	0.160	0.98	77	2.20	64	45	100.0
968	156.406	0.161	0.99	77	2.20	64	45	100.5
969	156.568	0.162	0.99	77	2.20	64	45	100.9
970	156.730	0.162	0.99	77	2.20	64	45	100.8
971	156.890	0.160	0.98	77	2.20	64	45	99.5
972	157.052	0.162	0.99	77	2.20	64	45	101.2
973	157.214	0.162	0.98	77	2.20	64	45	101.5
974	157.375	0.161	0.98	77	2.20	64	45	100.1
975	157.536	0.161	0.99	77	2.20	64	45	99.1
976	157.697	0.161	0.99	77	2.20	64	45	99.4
977	157.859	0.162	0.99	77	2.20	64	45	101.0
978	158.020	0.161	0.98	77	2.20	64	45	99.9
979	158.181	0.161	0.99	77	2.20	64	45	99.1
980	158.343	0.162	0.99	77	2.20	64	45	99.6
981	158.504	0.161	0.99	77	2.20	64	45	99.9
982	158.665	0.161	0.99	77	2.20	64	45	100.9
983	158.826	0.161	0.99	77	2.20	64	45	100.8
984	158.988	0.162	0.99	77	2.20	64	45	101.0
985	159.150	0.162	0.98	77	2.20	64	45	100.6
986	159.311	0.161	0.98	77	2.20	64	45	100.0
987	159.472	0.161	0.99	77	2.20	64	45	100.8
988	159.634	0.162	0.98	77	2.20	64	45	101.9
989	159.795	0.161	0.98	77	2.20	64	45	100.8
990	159.956	0.161	0.98	77	2.20	64	45	100.3
991	160.118	0.162	0.99	77	2.20	64	45	100.6
992	160.280	0.162	0.99	77	2.20	64	45	100.1
993	160.441	0.161	0.99	77	2.20	64	45	98.8
994	160.602	0.161	0.99	77	2.20	64	45	98.9
995	160.764	0.162	0.99	77	2.20	64	45	99.9
996	160.925	0.161	0.98	77	2.20	64	45	99.7
997	161.086	0.161	0.99	77	2.20	64	45	100.1
998	161.248	0.162	0.99	77	2.20	64	45	100.6
999	161.410	0.162	0.99	77	2.20	64	45	100.3
1000	161.571	0.161	0.99	78	2.20	64	46	99.1
1001	161.732	0.161	0.99	77	2.20	64	45	99.2
1002	161.893	0.161	0.99	77	2.20	64	46	99.6
1003	162.056	0.163	0.99	77	2.20	64	46	100.9
1004	162.217	0.161	0.98	78	2.20	64	46	99.4
1005	162.378	0.161	0.99	77	2.20	64	46	100.1
1006	162.539	0.161	0.99	77	2.20	64	46	100.4
1007	162.701	0.162	0.99	77	2.20	64	46	99.7
1008	162.862	0.161	0.99	77	2.20	64	46	98.7

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1009	163.024	0.162	0.99	77	2.20	64	46	99.6
1010	163.185	0.161	0.99	77	2.20	64	46	98.8
1011	163.347	0.162	0.99	77	2.20	64	46	99.5
1012	163.508	0.161	0.99	77	2.20	63	46	98.9
1013	163.670	0.162	0.99	77	2.20	63	46	99.3
1014	163.832	0.162	1.00	77	2.20	63	46	99.5
1015	163.993	0.161	0.99	77	2.20	63	46	99.7
1016	164.154	0.161	0.99	77	2.20	63	46	100.7
1017	164.316	0.162	0.99	77	2.20	63	46	101.6
1018	164.478	0.162	0.99	77	2.20	63	46	101.2
1019	164.639	0.161	0.99	77	2.20	63	46	100.6
1020	164.800	0.161	0.99	77	2.20	63	46	101.2
1021	164.961	0.161	0.99	77	2.20	63	46	100.9
1022	165.124	0.163	0.99	77	2.20	63	46	101.7
1023	165.284	0.160	0.99	77	2.20	63	46	99.9
1024	165.446	0.162	0.99	77	2.20	63	46	100.9
1025	165.607	0.161	0.99	77	2.20	63	46	100.4
1026	165.769	0.162	0.99	76	2.20	63	46	102.0
1027	165.930	0.161	0.99	76	2.20	63	46	101.4
1028	166.091	0.161	0.99	76	2.20	63	46	101.3
1029	166.253	0.162	0.99	76	2.20	64	46	102.6
1030	166.414	0.161	0.99	76	2.20	64	46	102.9
1031	166.574	0.160	0.99	76	2.20	64	46	101.9
1032	166.736	0.162	0.99	76	2.20	64	46	101.5
1033	166.898	0.162	0.99	76	2.20	64	46	100.6
1034	167.059	0.161	0.99	76	2.20	64	46	100.0
1035	167.220	0.161	0.99	76	2.20	64	46	100.6
1036	167.382	0.162	0.99	76	2.20	64	46	101.4
1037	167.543	0.161	0.98	76	2.20	64	46	100.3
1038	167.705	0.162	0.98	76	2.20	64	46	101.3
1039	167.866	0.161	0.99	76	2.20	64	46	101.0
1040	168.028	0.162	0.98	76	2.20	64	46	101.2
1041	168.189	0.161	0.98	76	2.20	64	46	100.7
1042	168.350	0.161	0.99	76	2.20	64	46	100.3
1043	168.511	0.161	0.99	76	2.20	64	46	99.6
1044	168.673	0.162	0.99	76	2.20	64	46	100.9
1045	168.834	0.161	0.98	76	2.20	64	46	100.9
1046	168.995	0.161	0.99	76	2.20	64	46	100.7
1047	169.157	0.162	0.99	76	2.20	64	46	100.8
1048	169.318	0.161	0.98	76	2.20	64	46	99.4
1049	169.479	0.161	0.98	76	2.20	64	46	99.1
1050	169.640	0.161	0.98	76	2.20	64	46	99.8
1051	169.802	0.162	0.98	76	2.20	64	46	101.2
1052	169.963	0.161	0.98	76	2.20	64	46	100.4

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1053	170.124	0.161	0.98	76	2.20	64	46	99.8
1054	170.285	0.161	0.98	76	2.20	64	46	99.5
1055	170.447	0.162	0.98	76	2.20	64	46	99.9
1056	170.608	0.161	0.98	76	2.20	64	46	99.3
1057	170.769	0.161	0.98	76	2.20	64	46	99.4
1058	170.931	0.162	0.99	76	2.20	64	46	100.1
1059	171.092	0.161	0.98	76	2.20	64	46	100.0
1060	171.253	0.161	0.99	76	2.20	64	46	100.9
1061	171.415	0.162	0.98	77	2.20	64	46	101.6
1062	171.577	0.162	0.99	76	2.20	64	46	100.8
1063	171.737	0.160	0.98	77	2.20	64	46	99.4
1064	171.898	0.161	0.98	77	2.20	64	46	100.2
1065	172.060	0.162	0.99	77	2.20	64	46	100.2
1066	172.222	0.162	0.98	77	2.20	64	46	100.6
1067	172.382	0.160	0.98	77	2.20	64	46	100.2
1068	172.544	0.162	0.99	77	2.20	64	46	101.3
1069	172.705	0.161	0.99	77	2.20	64	46	100.2
1070	172.867	0.162	0.98	77	2.20	64	45	100.3
1071	173.028	0.161	0.99	77	2.20	64	45	99.8
1072	173.189	0.161	0.99	77	2.20	64	45	100.6
1073	173.351	0.162	0.99	77	2.20	64	45	101.7
1074	173.512	0.161	0.98	77	2.20	64	45	100.9
1075	173.672	0.160	0.99	77	2.20	64	45	99.9
1076	173.834	0.162	0.98	77	2.20	64	45	101.5
1077	173.996	0.162	0.98	77	2.20	64	45	101.9
1078	174.156	0.160	0.98	77	2.20	64	45	99.9
1079	174.317	0.161	0.98	77	2.20	64	45	99.9
1080	174.479	0.162	0.98	77	2.20	64	45	100.6
1081	174.640	0.161	0.98	77	2.20	64	45	100.3
1082	174.801	0.161	0.98	77	2.20	64	45	100.5
1083	174.962	0.161	0.98	77	2.20	64	45	99.9
1084	175.124	0.162	0.98	77	2.20	64	45	100.1
1085	175.284	0.160	0.98	77	2.20	64	45	99.2
1086	175.446	0.162	0.98	77	2.20	64	45	101.1
1087	175.607	0.161	0.98	77	2.20	64	45	100.7
1088	175.769	0.162	0.98	77	2.20	64	45	101.5
1089	175.929	0.160	0.98	77	2.20	64	45	100.4
1090	176.090	0.161	0.98	77	2.20	64	45	101.0
1091	176.252	0.162	0.98	77	2.20	64	45	101.4
1092	176.413	0.161	0.98	77	2.20	64	45	100.0
1093	176.574	0.161	0.98	77	2.20	64	45	99.7
1094	176.735	0.161	0.99	77	2.20	64	45	100.1
1095	176.897	0.162	0.98	77	2.20	64	45	100.5
1096	177.058	0.161	0.98	77	2.20	64	45	99.3

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1097	177.219	0.161	0.99	77	2.20	64	45	99.5
1098	177.381	0.162	0.98	77	2.20	64	45	100.6
1099	177.542	0.161	0.98	77	2.20	64	46	99.9
1100	177.703	0.161	0.98	77	2.20	64	45	100.1
1101	177.864	0.161	0.98	77	2.20	64	46	100.3
1102	178.026	0.162	0.98	77	2.20	64	46	100.4
1103	178.187	0.161	0.99	77	2.20	64	46	99.3
1104	178.348	0.161	0.99	77	2.20	64	46	99.4
1105	178.509	0.161	0.99	77	2.20	64	46	99.8
1106	178.671	0.162	0.98	77	2.20	64	46	100.2
1107	178.832	0.161	0.98	77	2.20	64	46	99.2
1108	178.993	0.161	0.98	77	2.20	64	45	99.3
1109	179.155	0.162	0.99	77	2.20	63	46	99.8
1110	179.317	0.162	0.98	77	2.20	63	46	100.2
1111	179.478	0.161	0.98	77	2.20	63	46	100.4
1112	179.639	0.161	0.99	77	2.20	63	46	100.2
1113	179.801	0.162	0.98	77	2.20	63	46	100.4
1114	179.962	0.161	0.98	77	2.20	63	46	99.6
1115	180.123	0.161	0.99	77	2.20	63	46	99.7
1116	180.284	0.161	0.99	77	2.20	63	46	99.9
1117	180.446	0.162	0.99	77	2.20	63	46	100.3
1118	180.607	0.161	0.98	77	2.20	63	46	100.0
1119	180.769	0.162	0.99	77	2.20	63	46	101.2
1120	180.930	0.161	0.98	77	2.20	63	46	101.2
1121	181.092	0.162	0.98	77	2.20	63	46	101.7
1122	181.253	0.161	0.98	77	2.20	63	46	100.4
1123	181.414	0.161	0.99	77	2.20	63	46	100.4
1124	181.577	0.163	0.98	77	2.20	63	46	101.2
1125	181.737	0.160	0.98	77	2.20	63	46	98.8
1126	181.898	0.161	0.98	77	2.20	63	46	99.3
1127	182.060	0.162	0.99	77	2.20	63	46	100.0
1128	182.222	0.162	0.98	77	2.20	63	46	99.2
1129	182.383	0.161	0.99	77	2.20	63	46	98.0
1130	182.544	0.161	0.99	77	2.20	63	46	98.4
1131	182.706	0.162	0.99	77	2.20	63	46	99.1
1132	182.867	0.161	0.98	77	2.20	63	46	98.6
1133	183.028	0.161	0.99	77	2.20	63	46	99.6
1134	183.190	0.162	0.99	77	2.20	63	46	101.0
1135	183.352	0.162	0.99	77	2.20	63	46	100.5
1136	183.513	0.161	0.98	77	2.20	63	46	99.1
1137	183.674	0.161	0.99	77	2.20	63	46	98.5
1138	183.836	0.162	0.99	77	2.20	63	46	99.0
1139	183.998	0.162	0.99	77	2.20	62	46	99.6
1140	184.159	0.161	0.99	77	2.20	62	46	99.1

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1141	184.320	0.161	0.99	77	2.20	62	46	98.7
1142	184.481	0.161	0.99	77	2.20	62	46	98.9
1143	184.643	0.162	0.99	77	2.20	62	46	99.3
1144	184.804	0.161	0.99	77	2.20	62	46	98.0
1145	184.966	0.162	0.99	77	2.10	62	46	99.0
1146	185.128	0.162	0.99	77	2.20	62	46	100.1
1147	185.289	0.161	0.98	77	2.20	62	46	99.5
1148	185.450	0.161	0.98	77	2.20	62	46	99.2
1149	185.612	0.162	0.99	77	2.20	62	46	99.9
1150	185.774	0.162	0.99	77	2.20	62	46	99.8
1151	185.935	0.161	0.98	77	2.20	62	46	100.4
1152	186.096	0.161	0.99	77	2.20	62	46	101.7
1153	186.257	0.161	0.99	77	2.20	62	46	100.3
1154	186.420	0.163	0.98	77	2.20	62	46	100.1
1155	186.581	0.161	0.99	77	2.20	62	46	98.6
1156	186.742	0.161	0.99	77	2.20	62	46	98.5
1157	186.903	0.161	0.99	77	2.20	62	46	98.7
1158	187.065	0.162	0.98	77	2.20	62	46	99.9
1159	187.226	0.161	0.99	77	2.20	62	46	99.6
1160	187.387	0.161	0.98	77	2.20	62	46	99.8
1161	187.549	0.162	0.99	77	2.20	62	46	100.1
1162	187.711	0.162	0.98	77	2.20	62	46	99.8
1163	187.872	0.161	0.99	77	2.20	62	46	99.6
1164	188.033	0.161	0.99	76	2.20	62	46	99.8
1165	188.196	0.163	0.99	76	2.20	62	46	100.7
1166	188.357	0.161	0.98	76	2.20	62	46	99.2
1167	188.518	0.161	0.99	76	2.20	62	46	98.9
1168	188.679	0.161	0.99	76	2.20	62	46	99.0
1169	188.841	0.162	0.98	76	2.20	62	46	99.9
1170	189.002	0.161	0.99	76	2.20	62	46	99.1
1171	189.163	0.161	0.99	76	2.20	62	46	99.4
1172	189.325	0.162	0.99	76	2.20	62	46	100.0
1173	189.487	0.162	0.99	76	2.20	62	46	99.3
1174	189.648	0.161	0.99	76	2.20	62	46	99.2
1175	189.809	0.161	0.99	76	2.20	62	46	100.3
1176	189.971	0.162	0.99	76	2.20	62	46	100.6
1177	190.132	0.161	0.98	76	2.20	62	46	99.7
1178	190.293	0.161	0.98	76	2.20	62	46	100.0
1179	190.454	0.161	0.99	76	2.20	62	46	99.5
1180	190.617	0.163	0.98	76	2.20	62	46	100.9
1181	190.777	0.160	0.98	76	2.20	62	46	100.0
1182	190.938	0.161	0.98	76	2.20	62	46	100.5
1183	191.100	0.162	0.99	76	2.20	62	46	100.7
1184	191.262	0.162	0.98	76	2.20	62	46	100.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1185	191.422	0.160	0.98	76	2.20	62	46	99.6
1186	191.584	0.162	0.99	76	2.20	62	46	100.5
1187	191.745	0.161	0.98	76	2.20	63	46	99.9
1188	191.907	0.162	0.98	76	2.20	63	46	100.0
1189	192.068	0.161	0.98	76	2.20	63	46	99.5
1190	192.229	0.161	0.98	76	2.20	63	46	100.5
1191	192.391	0.162	0.99	76	2.20	63	46	101.4
1192	192.552	0.161	0.98	76	2.20	63	46	100.6
1193	192.713	0.161	0.98	76	2.20	63	46	101.1
1194	192.874	0.161	0.99	76	2.20	63	46	100.9
1195	193.036	0.162	0.98	76	2.20	63	46	101.1
1196	193.196	0.160	0.98	76	2.20	63	46	100.5
1197	193.358	0.162	0.98	76	2.20	63	46	102.2
1198	193.519	0.161	0.98	76	2.20	63	46	101.1
1199	193.680	0.161	0.98	76	2.20	63	46	101.0
1200	193.841	0.161	0.98	76	2.20	63	46	101.3
1201	194.002	0.161	0.99	76	2.20	63	46	101.3
1202	194.163	0.161	0.98	76	2.20	63	46	101.0
1203	194.324	0.161	0.98	76	2.20	64	46	101.6
1204	194.485	0.161	0.98	76	2.20	64	46	102.1
1205	194.646	0.161	0.98	76	2.20	64	46	101.3
1206	194.807	0.161	0.98	76	2.20	64	46	100.8
1207	194.967	0.160	0.98	76	2.20	64	46	101.1
1208	195.128	0.161	0.98	77	2.20	64	46	102.3
1209	195.289	0.161	0.98	77	2.20	64	46	101.3
1210	195.449	0.160	0.98	77	2.20	64	46	100.1
1211	195.610	0.161	0.98	77	2.20	64	46	100.9
1212	195.772	0.162	0.98	77	2.20	64	46	101.4
1213	195.931	0.159	0.98	77	2.20	64	46	99.3
1214	196.092	0.161	0.98	77	2.20	64	46	100.3
1215	196.253	0.161	0.98	77	2.20	64	46	100.3
1216	196.414	0.161	0.97	77	2.20	65	46	100.0
1217	196.574	0.160	0.98	77	2.20	65	46	98.7
1218	196.735	0.161	0.98	77	2.20	65	46	100.0
1219	196.896	0.161	0.97	77	2.20	65	46	101.5
1220	197.056	0.160	0.98	77	2.20	65	46	101.0
1221	197.217	0.161	0.98	77	2.20	65	46	101.1
1222	197.379	0.162	0.98	77	2.20	65	46	101.5
1223	197.539	0.160	0.98	77	2.20	65	46	99.8
1224	197.699	0.160	0.98	77	2.20	65	47	100.1
1225	197.861	0.162	0.98	77	2.20	65	47	101.2
1226	198.022	0.161	0.98	77	2.20	65	47	99.9
1227	198.182	0.160	0.98	77	2.20	65	47	99.9
1228	198.343	0.161	0.98	77	2.20	64	47	100.6

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1229	198.505	0.162	0.98	77	2.20	64	47	100.8
1230	198.666	0.161	0.98	77	2.20	64	47	100.0
1231	198.826	0.160	0.98	77	2.20	64	47	98.9
1232	198.988	0.162	0.98	77	2.20	64	47	100.1
1233	199.149	0.161	0.98	77	2.20	64	47	99.6
1234	199.310	0.161	0.98	77	2.20	64	47	99.4
1235	199.471	0.161	0.98	77	2.20	64	47	99.1
1236	199.633	0.162	0.98	77	2.20	64	47	100.0
1237	199.794	0.161	0.98	77	2.20	64	47	100.3
1238	199.955	0.161	0.98	77	2.20	64	47	100.1
1239	200.116	0.161	0.98	77	2.20	64	47	99.3
1240	200.278	0.162	0.98	77	2.20	64	47	99.3
1241	200.439	0.161	0.98	77	2.20	64	47	98.9
1242	200.600	0.161	0.98	77	2.20	64	47	99.8
1243	200.762	0.162	0.98	77	2.20	64	47	100.2
1244	200.923	0.161	0.97	77	2.20	63	47	98.9
1245	201.084	0.161	0.98	77	2.20	63	47	99.0
1246	201.245	0.161	0.98	77	2.20	63	47	99.5
1247	201.407	0.162	0.98	77	2.20	63	47	100.4
1248	201.567	0.160	0.98	77	2.20	63	47	99.2
1249	201.728	0.161	0.98	77	2.20	63	47	99.3
1250	201.890	0.162	0.98	77	2.20	63	46	99.5
1251	202.051	0.161	0.98	77	2.20	63	46	99.8
1252	202.212	0.161	0.98	77	2.20	63	46	100.8
1253	202.373	0.161	0.98	77	2.20	63	46	100.7
1254	202.535	0.162	0.98	77	2.20	63	46	100.8
1255	202.696	0.161	0.97	77	2.20	63	46	100.0
1256	202.857	0.161	0.98	77	2.20	63	46	100.9
1257	203.018	0.161	0.98	77	2.20	63	46	100.8
1258	203.180	0.162	0.98	77	2.20	63	46	100.2
1259	203.341	0.161	0.98	77	2.20	63	46	100.1
1260	203.502	0.161	0.98	77	2.20	63	46	100.6
1261	203.664	0.162	0.98	77	2.20	63	46	100.8
1262	203.825	0.161	0.98	77	2.20	63	46	100.2
1263	203.986	0.161	0.98	77	2.20	63	46	100.3
1264	204.147	0.161	0.98	77	2.20	63	46	99.9
1265	204.309	0.162	0.98	77	2.20	63	46	100.4
1266	204.469	0.160	0.98	77	2.20	63	46	99.8
1267	204.630	0.161	0.98	77	2.20	63	46	100.4
1268	204.792	0.162	0.98	77	2.20	63	46	100.7
1269	204.953	0.161	0.98	77	2.20	63	46	99.5
1270	205.114	0.161	0.98	77	2.20	63	46	98.8
1271	205.275	0.161	0.98	77	2.20	63	46	99.3
1272	205.437	0.162	0.98	77	2.20	63	46	100.7

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1273	205.598	0.161	0.97	77	2.20	63	46	100.7
1274	205.759	0.161	0.98	77	2.20	63	46	100.7
1275	205.920	0.161	0.98	77	2.20	63	46	99.7
1276	206.082	0.162	0.98	77	2.20	63	46	100.1
1277	206.243	0.161	0.98	77	2.20	63	46	100.1
1278	206.404	0.161	0.98	77	2.20	63	46	100.2
1279	206.566	0.162	0.98	77	2.20	63	46	100.5
1280	206.727	0.161	0.98	77	2.20	63	46	100.4
1281	206.888	0.161	0.98	77	2.20	63	46	100.7
1282	207.049	0.161	0.98	77	2.20	63	46	100.1
1283	207.211	0.162	0.98	77	2.20	63	46	100.4
1284	207.371	0.160	0.98	77	2.20	63	46	99.1
1285	207.532	0.161	0.98	77	2.20	63	46	99.5
1286	207.694	0.162	0.98	77	2.20	63	46	100.3
1287	207.855	0.161	0.98	77	2.20	63	46	99.9
1288	208.016	0.161	0.98	77	2.20	63	46	100.1
1289	208.177	0.161	0.98	77	2.20	63	46	100.5
1290	208.339	0.162	0.98	77	2.20	63	46	101.4
1291	208.500	0.161	0.97	77	2.20	63	46	100.9
1292	208.661	0.161	0.98	77	2.20	63	46	100.1
1293	208.822	0.161	0.98	77	2.20	63	46	99.3
1294	208.984	0.162	0.98	77	2.20	63	46	100.0
1295	209.144	0.160	0.98	77	2.20	63	46	100.0
1296	209.305	0.161	0.98	77	2.20	63	46	100.8
1297	209.467	0.162	0.98	77	2.20	63	46	100.1
1298	209.628	0.161	0.98	77	2.20	63	46	99.1
1299	209.789	0.161	0.98	77	2.20	63	46	99.4
1300	209.950	0.161	0.98	77	2.20	63	46	98.9
1301	210.112	0.162	0.98	77	2.20	63	46	99.0
1302	210.273	0.161	0.98	77	2.20	63	46	98.8
1303	210.434	0.161	0.98	77	2.20	63	46	99.5
1304	210.595	0.161	0.99	77	2.20	63	46	99.4
1305	210.757	0.162	0.98	77	2.20	63	46	99.9
1306	210.918	0.161	0.98	77	2.20	63	46	99.3
1307	211.079	0.161	0.98	77	2.20	63	46	99.6
1308	211.241	0.162	0.98	77	2.20	63	46	100.7
1309	211.402	0.161	0.98	77	2.20	63	46	99.4
1310	211.563	0.161	0.98	77	2.20	63	46	99.0
1311	211.725	0.162	0.99	77	2.20	63	46	100.4
1312	211.887	0.162	0.98	77	2.10	63	46	100.6
1313	212.048	0.161	0.98	77	2.20	63	46	99.7
1314	212.209	0.161	0.98	77	2.20	63	46	99.8
1315	212.370	0.161	0.98	77	2.20	63	46	99.7
1316	212.532	0.162	0.98	77	2.20	63	46	100.1

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1317	212.693	0.161	0.98	77	2.20	63	46	99.6
1318	212.854	0.161	0.98	77	2.20	63	46	99.6
1319	213.016	0.162	0.98	77	2.20	63	46	100.2
1320	213.178	0.162	0.98	77	2.20	63	46	100.4
1321	213.338	0.160	0.98	77	2.20	63	46	99.3
1322	213.499	0.161	0.98	77	2.20	63	46	99.7
1323	213.662	0.163	0.98	77	2.20	63	46	100.8
1324	213.822	0.160	0.98	77	2.20	63	46	99.5
1325	213.983	0.161	0.98	77	2.20	63	46	100.7
1326	214.144	0.161	0.98	77	2.20	63	46	100.8
1327	214.306	0.162	0.98	77	2.20	63	46	101.2
1328	214.467	0.161	0.98	77	2.20	63	46	100.1
1329	214.628	0.161	0.98	77	2.20	63	46	99.8
1330	214.790	0.162	0.98	77	2.20	63	46	100.5
1331	214.951	0.161	0.98	77	2.20	63	46	100.2
1332	215.112	0.161	0.98	77	2.20	63	46	100.8
1333	215.273	0.161	0.98	77	2.10	63	46	101.1
1334	215.435	0.162	0.98	77	2.20	63	46	101.4
1335	215.595	0.160	0.98	77	2.20	63	46	99.5
1336	215.756	0.161	0.98	77	2.20	63	46	99.4
1337	215.918	0.162	0.98	77	2.20	63	46	100.3
1338	216.079	0.161	0.98	77	2.10	63	46	100.1
1339	216.240	0.161	0.98	77	2.20	63	46	99.1
1340	216.401	0.161	0.98	77	2.20	63	46	98.4
1341	216.563	0.162	0.98	77	2.20	63	46	99.2
1342	216.724	0.161	0.98	77	2.20	63	46	99.4
1343	216.885	0.161	0.98	77	2.20	63	46	99.8
1344	217.046	0.161	0.98	77	2.20	63	46	99.5
1345	217.208	0.162	0.98	77	2.20	63	46	99.3
1346	217.369	0.161	0.98	77	2.20	63	46	97.9
1347	217.530	0.161	0.98	77	2.20	63	46	98.0
1348	217.692	0.162	0.98	77	2.20	63	46	99.9
1349	217.853	0.161	0.98	77	2.20	63	46	100.1
1350	218.014	0.161	0.98	77	2.20	63	46	99.9
1351	218.175	0.161	0.98	77	2.20	63	46	100.2
1352	218.338	0.163	0.98	77	2.10	63	46	101.3
1353	218.498	0.160	0.98	77	2.20	63	46	99.1
1354	218.659	0.161	0.98	77	2.20	63	46	99.8
1355	218.821	0.162	0.99	77	2.20	63	46	100.3
1356	218.983	0.162	0.98	77	2.20	63	46	100.2
1357	219.143	0.160	0.98	77	2.20	63	46	98.7
1358	219.305	0.162	0.98	77	2.20	63	46	98.6
1359	219.467	0.162	0.99	77	2.20	63	46	98.0
1360	219.628	0.161	0.98	77	2.20	63	46	98.8

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1361	219.789	0.161	0.98	77	2.20	63	46	99.6
1362	219.950	0.161	0.98	77	2.10	63	46	99.2
1363	220.112	0.162	0.98	77	2.20	63	46	99.9
1364	220.273	0.161	0.98	77	2.20	63	46	100.3
1365	220.434	0.161	0.98	77	2.20	63	46	100.8
1366	220.596	0.162	0.99	77	2.20	63	46	100.5
1367	220.758	0.162	0.98	77	2.20	63	46	99.7
1368	220.918	0.160	0.98	77	2.20	63	46	98.3
1369	221.080	0.162	0.98	77	2.20	63	46	99.7
1370	221.241	0.161	0.98	77	2.20	63	46	99.1
1371	221.402	0.161	0.98	77	2.20	63	46	99.1
1372	221.563	0.161	0.98	77	2.20	63	46	98.9
1373	221.724	0.161	0.98	77	2.20	63	46	98.7
1374	221.887	0.163	0.98	77	2.20	63	46	100.4
1375	222.047	0.160	0.98	77	2.20	63	46	99.0
1376	222.208	0.161	0.98	77	2.20	63	46	99.9
1377	222.370	0.162	0.98	77	2.20	63	46	101.0
1378	222.531	0.161	0.98	77	2.20	63	46	100.4
1379	222.692	0.161	0.98	77	2.20	63	46	99.7
1380	222.853	0.161	0.98	77	2.20	63	46	99.8
1381	223.015	0.162	0.98	77	2.20	63	46	100.6
1382	223.177	0.162	0.98	77	2.20	63	47	100.3
1383	223.337	0.160	0.98	77	2.20	63	47	99.4
1384	223.498	0.161	0.98	77	2.10	63	47	99.8
1385	223.661	0.163	0.98	77	2.20	63	47	100.5
1386	223.822	0.161	0.98	77	2.20	63	47	99.5
1387	223.982	0.160	0.98	77	2.20	63	47	99.0
1388	224.144	0.162	0.98	77	2.20	63	47	99.9
1389	224.305	0.161	0.98	77	2.20	63	47	99.4
1390	224.466	0.161	0.98	77	2.10	63	47	99.1
1391	224.628	0.162	0.98	77	2.10	63	47	99.5
1392	224.789	0.161	0.98	77	2.10	63	47	98.9
1393	224.950	0.161	0.98	77	2.20	63	47	99.4
1394	225.111	0.161	0.98	77	2.10	63	47	99.8
1395	225.273	0.162	0.98	77	2.20	63	47	99.8
1396	225.435	0.162	0.98	77	2.20	63	47	99.6
1397	225.595	0.160	0.98	77	2.20	63	47	98.9
1398	225.756	0.161	0.98	77	2.20	63	47	99.5
1399	225.918	0.162	0.98	77	2.20	63	47	99.5
1400	226.079	0.161	0.98	77	2.20	63	47	98.9
1401	226.240	0.161	0.98	77	2.20	63	47	99.5
1402	226.401	0.161	0.98	77	2.20	63	47	99.9
1403	226.564	0.163	0.98	77	2.20	63	47	101.3
1404	226.724	0.160	0.98	77	2.20	63	47	98.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1405	226.885	0.161	0.98	77	2.20	63	47	99.2
1406	227.046	0.161	0.98	77	2.20	63	47	100.2
1407	227.208	0.162	0.98	77	2.20	63	47	101.2
1408	227.369	0.161	0.98	77	2.20	63	47	100.1
1409	227.530	0.161	0.98	77	2.20	63	47	100.3
1410	227.691	0.161	0.98	77	2.20	63	47	101.0
1411	227.852	0.161	0.98	77	2.20	64	47	101.1
1412	228.013	0.161	0.98	77	2.20	64	47	100.4
1413	228.174	0.161	0.98	77	2.20	64	47	100.7
1414	228.335	0.161	0.98	77	2.20	64	47	102.3
1415	228.495	0.160	0.98	77	2.20	64	47	102.0
1416	228.656	0.161	0.98	77	2.20	64	47	101.7
1417	228.818	0.162	0.98	77	2.20	64	47	101.8
1418	228.978	0.160	0.97	77	2.20	64	47	100.7
1419	229.138	0.160	0.98	77	2.20	64	47	100.6
1420	229.299	0.161	0.98	77	2.20	64	47	101.0
1421	229.460	0.161	0.97	77	2.20	64	47	101.0
1422	229.620	0.160	0.98	77	2.20	64	47	100.3
1423	229.781	0.161	0.98	77	2.20	65	47	101.0
1424	229.942	0.161	0.97	77	2.20	65	47	101.1
1425	230.102	0.160	0.98	77	2.20	65	48	101.2
1426	230.263	0.161	0.98	77	2.20	65	48	102.4
1427	230.424	0.161	0.98	77	2.20	65	48	102.2
1428	230.585	0.161	0.97	77	2.20	65	48	102.3
1429	230.744	0.159	0.98	77	2.20	65	48	101.2
1430	230.906	0.162	0.98	77	2.20	65	48	102.5
1431	231.066	0.160	0.97	77	2.20	65	48	100.7
1432	231.227	0.161	0.98	77	2.20	65	48	101.3
1433	231.387	0.160	0.98	77	2.20	65	48	100.4
1434	231.549	0.162	0.97	77	2.20	65	48	100.8
1435	231.709	0.160	0.98	77	2.20	65	48	99.3
1436	231.870	0.161	0.98	77	2.20	65	48	100.8
1437	232.031	0.161	0.98	77	2.20	65	48	100.6
1438	232.192	0.161	0.97	77	2.20	65	48	99.8
1439	232.352	0.160	0.98	77	2.20	65	48	99.3
1440	232.513	0.161	0.98	77	2.20	65	48	100.7
1441	232.675	0.162	0.98	77	2.20	65	48	101.5
1442	232.835	0.160	0.98	77	2.20	65	48	100.1
1443	232.996	0.161	0.98	77	2.20	65	48	100.3
1444	233.158	0.162	0.98	77	2.20	65	48	100.1
1445	233.318	0.160	0.97	77	2.20	64	48	98.4
1446	233.479	0.161	0.98	77	2.20	65	48	99.5
1447	233.640	0.161	0.98	77	2.20	64	48	100.0
1448	233.802	0.162	0.97	77	2.20	64	48	101.0

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1449	233.962	0.160	0.97	77	2.20	64	48	99.4
1450	234.123	0.161	0.98	77	2.20	64	48	99.8
1451	234.285	0.162	0.98	77	2.20	64	48	100.8
1452	234.445	0.160	0.97	77	2.20	64	48	99.3
1453	234.606	0.161	0.98	77	2.20	64	48	99.9
1454	234.767	0.161	0.98	77	2.20	64	48	100.1
1455	234.928	0.161	0.98	77	2.20	64	48	100.2
1456	235.089	0.161	0.98	77	2.20	64	48	100.0
1457	235.250	0.161	0.98	77	2.20	64	48	99.3
1458	235.411	0.161	0.98	77	2.20	64	48	99.0
1459	235.572	0.161	0.97	78	2.20	64	48	98.9
1460	235.732	0.160	0.98	78	2.20	64	48	98.7
1461	235.894	0.162	0.98	78	2.20	64	48	100.3
1462	236.055	0.161	0.98	78	2.20	64	48	99.5
1463	236.216	0.161	0.98	78	2.20	64	48	99.5
1464	236.376	0.160	0.98	78	2.20	64	48	98.7
1465	236.538	0.162	0.98	78	2.20	64	48	100.0
1466	236.699	0.161	0.98	78	2.20	64	48	99.7
1467	236.859	0.160	0.98	78	2.20	64	48	99.2
1468	237.021	0.162	0.98	78	2.20	64	48	100.1
1469	237.182	0.161	0.97	78	2.20	64	48	99.7
1470	237.342	0.160	0.97	78	2.20	64	48	99.9
1471	237.503	0.161	0.98	78	2.20	64	48	100.7
1472	237.665	0.162	0.97	78	2.20	64	48	100.7
1473	237.826	0.161	0.98	78	2.20	64	48	99.8
1474	237.986	0.160	0.98	78	2.20	64	49	99.3
1475	238.148	0.162	0.98	78	2.20	64	49	100.4
1476	238.309	0.161	0.97	78	2.20	64	49	99.8
1477	238.469	0.160	0.97	78	2.20	64	49	98.8
1478	238.630	0.161	0.98	78	2.20	64	49	99.4
1479	238.792	0.162	0.97	78	2.20	64	49	100.2
1480	238.952	0.160	0.97	78	2.20	64	49	98.8
1481	239.113	0.161	0.98	78	2.20	64	49	99.2
1482	239.275	0.162	0.98	78	2.20	64	49	99.6
1483	239.436	0.161	0.97	78	2.20	64	49	98.6
1484	239.596	0.160	0.98	78	2.20	64	49	98.1
1485	239.757	0.161	0.98	78	2.20	64	49	99.0
1486	239.919	0.162	0.98	78	2.20	64	49	99.0
1487	240.080	0.161	0.98	78	2.20	64	49	98.7
1488	240.240	0.160	0.98	78	2.20	64	49	99.3
1489	240.402	0.162	0.98	78	2.20	64	49	100.6
1490	240.563	0.161	0.98	78	2.20	64	49	99.2
1491	240.724	0.161	0.98	78	2.20	64	49	99.0
1492	240.885	0.161	0.98	78	2.20	64	49	98.8

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1493	241.047	0.162	0.98	78	2.20	64	49	99.5
1494	241.208	0.161	0.98	78	2.20	64	49	99.4
1495	241.368	0.160	0.98	78	2.20	64	49	98.6
1496	241.530	0.162	0.98	78	2.20	64	49	98.9
1497	241.691	0.161	0.98	78	2.20	63	49	98.2
1498	241.852	0.161	0.98	78	2.20	63	49	99.2
1499	242.013	0.161	0.98	78	2.20	63	49	99.4
1500	242.175	0.162	0.98	78	2.20	63	49	99.6
1501	242.336	0.161	0.97	78	2.20	64	49	99.5
1502	242.496	0.160	0.98	78	2.20	63	49	98.9
1503	242.658	0.162	0.98	78	2.20	63	49	99.0
1504	242.819	0.161	0.98	78	2.20	63	49	98.5
1505	242.980	0.161	0.98	78	2.20	63	50	99.8
1506	243.141	0.161	0.98	78	2.20	63	50	100.4
1507	243.303	0.162	0.98	78	2.20	63	50	100.7
1508	243.464	0.161	0.98	78	2.20	63	50	99.6
1509	243.625	0.161	0.98	77	2.20	63	50	99.0
1510	243.786	0.161	0.98	77	2.20	63	50	98.8
1511	243.949	0.163	0.98	78	2.20	63	50	100.3
1512	244.109	0.160	0.98	77	2.20	63	50	99.3
1513	244.270	0.161	0.98	77	2.20	63	50	100.9
1514	244.432	0.162	0.98	77	2.10	63	50	101.7
1515	244.593	0.161	0.98	77	2.20	63	50	101.0
1516	244.754	0.161	0.98	77	2.20	63	50	101.6
1517	244.916	0.162	0.98	77	2.20	63	50	102.8
1518	245.077	0.161	0.98	77	2.20	63	50	101.2
1519	245.239	0.162	0.98	77	2.20	63	50	100.6
1520	245.399	0.160	0.98	77	2.20	63	50	99.0
1521	245.560	0.161	0.98	77	2.20	63	50	99.6
1522	245.723	0.163	0.98	77	2.20	63	50	101.1
1523	245.883	0.160	0.98	77	2.20	63	50	98.8
1524	246.044	0.161	0.98	77	2.20	63	50	99.0
1525	246.206	0.162	0.98	77	2.20	63	50	100.0
1526	246.367	0.161	0.97	77	2.20	63	50	99.7
1527	246.528	0.161	0.98	77	2.20	63	50	100.0
1528	246.689	0.161	0.98	77	2.20	63	50	100.1
1529	246.851	0.162	0.98	77	2.20	63	50	100.6
1530	247.012	0.161	0.98	77	2.20	63	50	100.2
1531	247.172	0.160	0.98	77	2.20	63	50	99.7
1532	247.333	0.161	0.98	77	2.20	63	50	100.2
1533	247.495	0.162	0.98	77	2.20	63	50	100.8
1534	247.656	0.161	0.98	77	2.20	63	50	100.0
1535	247.817	0.161	0.98	77	2.20	64	50	100.3
1536	247.979	0.162	0.98	77	2.20	64	50	100.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1537	248.139	0.160	0.97	77	2.20	64	50	99.2
1538	248.300	0.161	0.98	77	2.20	64	50	100.5
1539	248.461	0.161	0.98	77	2.20	64	50	100.9
1540	248.623	0.162	0.98	77	2.20	64	50	100.7
1541	248.783	0.160	0.98	77	2.10	64	50	98.9
1542	248.945	0.162	0.98	78	2.20	64	50	100.2
1543	249.106	0.161	0.98	78	2.20	64	50	99.1
1544	249.267	0.161	0.97	78	2.20	64	50	98.3
1545	249.428	0.161	0.97	78	2.20	64	50	98.9
1546	249.589	0.161	0.98	78	2.20	64	50	99.6
1547	249.751	0.162	0.97	78	2.20	64	50	100.4
1548	249.911	0.160	0.98	78	2.20	64	50	98.8
1549	250.072	0.161	0.98	78	2.20	64	50	98.6
1550	250.234	0.162	0.98	78	2.20	64	50	98.9
1551	250.395	0.161	0.97	78	2.20	64	50	98.4
1552	250.556	0.161	0.98	78	2.20	64	50	98.6
1553	250.717	0.161	0.98	78	2.20	64	50	99.2
1554	250.879	0.162	0.98	78	2.20	64	50	100.0
1555	251.040	0.161	0.97	78	2.20	63	50	98.7
1556	251.200	0.160	0.98	78	2.20	63	51	97.8
1557	251.362	0.162	0.98	78	2.10	63	51	99.7
1558	251.524	0.162	0.98	78	2.20	63	50	99.6
1559	251.684	0.160	0.98	78	2.20	63	51	98.1
1560	251.845	0.161	0.98	78	2.20	63	51	99.2
1561	252.007	0.162	0.98	78	2.20	63	51	99.9
1562	252.168	0.161	0.97	78	2.20	63	51	99.1
1563	252.329	0.161	0.97	78	2.20	63	51	99.1
1564	252.490	0.161	0.98	78	2.10	63	51	98.8
1565	252.652	0.162	0.98	78	2.10	63	51	99.3
1566	252.813	0.161	0.98	77	2.20	63	51	98.7
1567	252.974	0.161	0.98	77	2.20	63	51	98.7
1568	253.136	0.162	0.98	78	2.20	63	51	99.9
1569	253.297	0.161	0.98	78	2.20	63	51	99.4
1570	253.458	0.161	0.98	77	2.20	63	51	99.1
1571	253.620	0.162	0.98	77	2.20	63	51	99.3
1572	253.782	0.162	0.98	77	2.20	63	51	99.5
1573	253.943	0.161	0.98	77	2.20	63	51	99.7
1574	254.104	0.161	0.98	77	2.10	63	51	100.2
1575	254.265	0.161	0.98	77	2.20	63	51	100.0
1576	254.427	0.162	0.98	77	2.20	63	51	100.2
1577	254.588	0.161	0.98	77	2.20	63	51	99.5
1578	254.749	0.161	0.98	77	2.20	63	51	99.4
1579	254.911	0.162	0.98	77	2.20	63	51	100.7
1580	255.073	0.162	0.98	77	2.20	63	51	101.0

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1581	255.233	0.160	0.98	77	2.20	63	51	98.6
1582	255.395	0.162	0.98	77	2.20	63	51	99.8
1583	255.557	0.162	0.98	77	2.20	63	51	100.2
1584	255.718	0.161	0.98	77	2.20	63	51	99.5
1585	255.879	0.161	0.98	77	2.20	63	51	100.1
1586	256.040	0.161	0.98	77	2.20	63	51	100.9
1587	256.202	0.162	0.98	77	2.20	63	51	101.4
1588	256.363	0.161	0.98	77	2.20	63	51	100.0
1589	256.524	0.161	0.98	77	2.20	63	51	99.7
1590	256.685	0.161	0.98	77	2.20	63	51	100.0
1591	256.847	0.162	0.98	77	2.20	63	51	100.9
1592	257.008	0.161	0.97	77	2.20	63	51	100.1
1593	257.169	0.161	0.98	77	2.20	63	51	100.1
1594	257.331	0.162	0.97	77	2.20	63	51	101.3
1595	257.492	0.161	0.97	77	2.20	63	51	100.6
1596	257.653	0.161	0.98	77	2.20	63	51	99.7
1597	257.814	0.161	0.98	77	2.20	63	51	99.7
1598	257.976	0.162	0.98	77	2.20	63	51	99.9
1599	258.136	0.160	0.97	77	2.20	63	51	98.1
1600	258.297	0.161	0.98	77	2.20	63	51	99.3
1601	258.459	0.162	0.97	77	2.20	63	51	100.4
1602	258.620	0.161	0.97	77	2.20	63	51	99.8
1603	258.781	0.161	0.98	77	2.20	63	51	100.2
1604	258.942	0.161	0.98	77	2.20	63	51	100.0
1605	259.104	0.162	0.98	77	2.20	63	51	99.8
1606	259.265	0.161	0.97	77	2.20	64	51	99.6
1607	259.426	0.161	0.97	77	2.20	64	51	100.8
1608	259.587	0.161	0.98	77	2.20	64	51	100.6
1609	259.749	0.162	0.97	78	2.20	64	51	100.3
1610	259.910	0.161	0.97	78	2.20	64	51	100.0
1611	260.071	0.161	0.98	78	2.20	64	51	100.9
1612	260.233	0.162	0.97	78	2.20	64	51	101.5
1613	260.394	0.161	0.97	78	2.20	64	51	99.8
1614	260.555	0.161	0.98	78	2.20	64	51	98.6
1615	260.715	0.160	0.98	78	2.20	64	51	97.8
1616	260.878	0.163	0.97	78	2.20	64	51	100.2
1617	261.038	0.160	0.98	78	2.20	64	51	98.9
1618	261.199	0.161	0.98	78	2.20	64	51	99.7
1619	261.361	0.162	0.98	78	2.20	64	51	100.3
1620	261.522	0.161	0.97	78	2.20	63	51	99.6
1621	261.683	0.161	0.97	78	2.20	63	51	99.3
1622	261.844	0.161	0.98	78	2.10	63	51	98.7
1623	262.006	0.162	0.98	78	2.20	63	51	99.1
1624	262.167	0.161	0.98	78	2.20	63	51	98.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1625	262.328	0.161	0.98	78	2.20	63	51	99.3
1626	262.489	0.161	0.98	78	2.20	63	51	99.7
1627	262.651	0.162	0.98	78	2.20	64	51	100.4
1628	262.812	0.161	0.97	78	2.20	64	52	99.3
1629	262.973	0.161	0.98	78	2.20	64	52	98.8
1630	263.135	0.162	0.97	78	2.20	64	52	99.4
1631	263.296	0.161	0.98	78	2.20	64	52	99.3
1632	263.456	0.160	0.98	78	2.20	64	52	99.4
1633	263.617	0.161	0.98	78	2.20	64	52	99.7
1634	263.779	0.162	0.98	78	2.20	64	52	99.5
1635	263.940	0.161	0.98	78	2.20	64	52	98.9
1636	264.101	0.161	0.98	78	2.20	64	52	99.4
1637	264.262	0.161	0.98	78	2.20	64	52	99.9
1638	264.424	0.162	0.98	78	2.20	64	52	101.3
1639	264.584	0.160	0.98	78	2.20	64	52	100.4
1640	264.745	0.161	0.98	78	2.20	64	52	100.5
1641	264.907	0.162	0.98	78	2.20	64	52	101.1
1642	265.067	0.160	0.98	77	2.20	64	52	100.4
1643	265.228	0.161	0.98	77	2.20	64	52	101.2
1644	265.389	0.161	0.98	77	2.20	64	52	100.4
1645	265.551	0.162	0.98	77	2.20	64	52	100.7
1646	265.711	0.160	0.98	77	2.20	64	52	100.8
1647	265.872	0.161	0.98	77	2.20	64	52	101.8
1648	266.034	0.162	0.98	77	2.20	64	52	102.2
1649	266.194	0.160	0.98	77	2.20	64	52	101.5
1650	266.355	0.161	0.98	77	2.20	64	52	102.0
1651	266.517	0.162	0.98	77	2.20	64	52	102.3
1652	266.678	0.161	0.97	77	2.20	64	52	101.3
1653	266.838	0.160	0.98	77	2.20	64	53	100.4
1654	266.999	0.161	0.98	77	2.20	64	53	101.0
1655	267.161	0.162	0.97	77	2.20	64	53	101.5
1656	267.321	0.160	0.98	77	2.20	64	53	100.3
1657	267.482	0.161	0.98	77	2.20	64	53	100.5
1658	267.643	0.161	0.98	77	2.20	64	53	100.5
1659	267.805	0.162	0.97	77	2.20	64	53	101.8
1660	267.965	0.160	0.97	77	2.20	64	53	100.0
1661	268.126	0.161	0.98	77	2.20	64	53	100.1
1662	268.288	0.162	0.97	77	2.20	64	53	100.5
1663	268.448	0.160	0.97	77	2.20	64	53	98.7
1664	268.609	0.161	0.98	77	2.20	64	53	99.5
1665	268.771	0.162	0.97	77	2.20	64	53	100.8
1666	268.932	0.161	0.97	77	2.20	64	53	100.3
1667	269.092	0.160	0.97	77	2.20	64	53	99.5
1668	269.253	0.161	0.98	77	2.20	64	53	100.2

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1669	269.415	0.162	0.97	77	2.20	64	53	100.8
1670	269.575	0.160	0.97	77	2.20	64	53	99.8
1671	269.736	0.161	0.98	77	2.20	64	53	100.8
1672	269.898	0.162	0.98	77	2.20	64	53	101.3
1673	270.059	0.161	0.97	77	2.20	64	53	100.6
1674	270.219	0.160	0.97	77	2.20	64	53	99.9
1675	270.380	0.161	0.97	77	2.20	64	53	100.4
1676	270.542	0.162	0.97	77	2.20	64	53	100.6
1677	270.702	0.160	0.97	77	2.20	64	53	99.3
1678	270.863	0.161	0.97	77	2.20	64	53	100.2
1679	271.025	0.162	0.97	77	2.20	64	53	100.9
1680	271.186	0.161	0.97	77	2.20	64	53	100.1
1681	271.346	0.160	0.97	77	2.20	64	53	99.9
1682	271.507	0.161	0.98	77	2.20	64	53	101.4
1683	271.669	0.162	0.97	77	2.20	64	53	102.4
1684	271.829	0.160	0.97	77	2.20	64	53	101.0
1685	271.990	0.161	0.97	77	2.20	64	53	101.1
1686	272.152	0.162	0.98	77	2.20	64	53	101.9
1687	272.312	0.160	0.97	77	2.20	64	53	100.7
1688	272.473	0.161	0.97	78	2.20	64	53	100.6
1689	272.634	0.161	0.97	78	2.20	64	53	100.2
1690	272.795	0.161	0.97	78	2.20	64	53	99.8
1691	272.956	0.161	0.97	78	2.20	64	53	99.3
1692	273.117	0.161	0.98	78	2.20	64	53	99.7
1693	273.278	0.161	0.97	78	2.20	64	53	100.6
1694	273.439	0.161	0.97	78	2.20	64	53	100.4
1695	273.600	0.161	0.97	78	2.20	64	53	99.6
1696	273.760	0.160	0.97	78	2.20	64	53	98.5
1697	273.922	0.162	0.98	78	2.20	64	53	99.9
1698	274.083	0.161	0.97	78	2.20	64	53	99.6
1699	274.244	0.161	0.98	78	2.20	64	53	99.5
1700	274.405	0.161	0.98	78	2.20	64	53	98.9
1701	274.566	0.161	0.97	78	2.20	64	53	98.1
1702	274.727	0.161	0.98	78	2.20	63	53	98.7
1703	274.888	0.161	0.97	78	2.20	63	53	99.7
1704	275.050	0.162	0.97	78	2.20	63	53	99.9
1705	275.210	0.160	0.98	78	2.20	63	53	97.7
1706	275.371	0.161	0.97	78	2.20	63	53	98.6
1707	275.533	0.162	0.98	78	2.20	63	53	99.4
1708	275.694	0.161	0.97	78	2.20	63	53	99.0
1709	275.855	0.161	0.97	77	2.20	63	53	99.5
1710	276.016	0.161	0.97	77	2.20	63	53	99.8
1711	276.178	0.162	0.98	77	2.20	63	53	100.7
1712	276.338	0.160	0.97	77	2.20	63	53	98.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1713	276.499	0.161	0.98	77	2.20	63	53	99.0
1714	276.661	0.162	0.98	77	2.20	63	53	100.3
1715	276.822	0.161	0.97	77	2.20	63	53	100.1
1716	276.983	0.161	0.98	77	2.20	63	53	99.7
1717	277.144	0.161	0.97	77	2.20	63	53	99.5
1718	277.306	0.162	0.98	77	2.20	63	53	100.6
1719	277.467	0.161	0.98	77	2.20	63	53	100.3
1720	277.627	0.160	0.98	77	2.20	63	53	99.2
1721	277.788	0.161	0.98	77	2.20	63	53	99.9
1722	277.950	0.162	0.97	77	2.20	63	53	100.8
1723	278.111	0.161	0.98	77	2.20	63	53	100.3
1724	278.272	0.161	0.98	77	2.20	63	53	100.4
1725	278.434	0.162	0.98	77	2.20	63	53	100.9
1726	278.594	0.160	0.96	77	2.20	63	53	99.5
1727	278.755	0.161	0.97	77	2.20	63	53	99.8
1728	278.916	0.161	0.98	77	2.20	63	53	99.6
1729	279.078	0.162	0.97	77	2.20	63	53	100.5
1730	279.238	0.160	0.97	77	2.20	63	53	99.9
1731	279.400	0.162	0.98	77	2.20	63	53	101.5
1732	279.561	0.161	0.98	77	2.20	63	53	100.5
1733	279.722	0.161	0.97	77	2.20	63	53	99.9
1734	279.883	0.161	0.97	77	2.20	63	53	100.0
1735	280.044	0.161	0.98	77	2.20	63	53	100.2
1736	280.206	0.162	0.97	77	2.20	63	53	100.4
1737	280.366	0.160	0.97	77	2.20	63	53	98.2
1738	280.527	0.161	0.98	77	2.20	63	53	98.8
1739	280.689	0.162	0.98	77	2.20	63	53	100.2
1740	280.850	0.161	0.97	77	2.20	63	53	99.1
1741	281.011	0.161	0.97	77	2.20	63	53	98.2
1742	281.172	0.161	0.98	77	2.20	63	53	98.1
1743	281.334	0.162	0.97	77	2.20	63	53	99.4
1744	281.494	0.160	0.97	77	2.20	63	53	99.6
1745	281.655	0.161	0.98	77	2.20	63	53	100.7
1746	281.816	0.161	0.98	77	2.20	63	53	100.1
1747	281.978	0.162	0.97	77	2.20	63	53	100.5
1748	282.138	0.160	0.97	77	2.20	63	53	98.7
1749	282.299	0.161	0.98	77	2.20	63	53	98.7
1750	282.461	0.162	0.97	77	2.20	63	53	100.2
1751	282.621	0.160	0.97	77	2.20	63	53	100.4
1752	282.782	0.161	0.97	77	2.20	64	53	102.3
1753	282.944	0.162	0.98	77	2.20	64	53	102.8
1754	283.105	0.161	0.97	77	2.20	64	53	100.6
1755	283.265	0.160	0.97	77	2.20	64	53	99.9
1756	283.426	0.161	0.98	77	2.20	64	53	101.2

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1757	283.588	0.162	0.97	77	2.20	64	53	101.7
1758	283.749	0.161	0.97	77	2.20	64	53	99.7
1759	283.909	0.160	0.98	77	2.20	64	53	98.1
1760	284.071	0.162	0.98	77	2.20	64	53	99.7
1761	284.232	0.161	0.97	77	2.20	64	53	99.7
1762	284.393	0.161	0.97	77	2.20	63	53	100.1
1763	284.554	0.161	0.97	77	2.20	63	53	99.8
1764	284.716	0.162	0.98	77	2.20	63	53	100.0
1765	284.876	0.160	0.98	77	2.20	63	53	98.8
1766	285.037	0.161	0.98	77	2.20	63	53	99.4
1767	285.198	0.161	0.98	77	2.20	63	53	99.2
1768	285.360	0.162	0.97	77	2.20	63	53	99.8
1769	285.521	0.161	0.97	77	2.20	63	53	99.7
1770	285.682	0.161	0.98	77	2.20	63	53	99.6
1771	285.844	0.162	0.98	77	2.20	63	53	100.1
1772	286.004	0.160	0.97	77	2.20	63	53	99.5
1773	286.165	0.161	0.98	77	2.20	63	53	100.3
1774	286.326	0.161	0.98	77	2.20	63	53	99.7
1775	286.488	0.162	0.98	77	2.20	63	53	99.8
1776	286.649	0.161	0.98	77	2.20	63	53	99.4
1777	286.810	0.161	0.98	77	2.20	63	53	99.7
1778	286.972	0.162	0.98	77	2.20	63	53	100.1
1779	287.133	0.161	0.97	77	2.20	63	53	99.0
1780	287.294	0.161	0.98	77	2.20	63	53	99.4
1781	287.455	0.161	0.98	77	2.20	63	53	100.2
1782	287.617	0.162	0.98	77	2.20	63	53	100.1
1783	287.778	0.161	0.98	77	2.20	63	53	98.9
1784	287.939	0.161	0.98	77	2.20	63	53	99.4
1785	288.100	0.161	0.98	77	2.20	63	53	100.0
1786	288.262	0.162	0.98	77	2.20	63	53	101.0
1787	288.423	0.161	0.98	77	2.20	63	53	100.2
1788	288.584	0.161	0.98	77	2.20	63	53	100.0
1789	288.746	0.162	0.98	77	2.20	63	53	100.8
1790	288.907	0.161	0.97	77	2.20	63	53	100.1
1791	289.068	0.161	0.98	77	2.20	63	53	99.8
1792	289.229	0.161	0.98	77	2.20	63	53	99.5
1793	289.391	0.162	0.98	77	2.20	63	53	99.9
1794	289.551	0.160	0.98	77	2.20	63	53	99.0
1795	289.712	0.161	0.98	77	2.20	63	53	100.0
1796	289.874	0.162	0.98	77	2.20	63	53	100.6
1797	290.035	0.161	0.97	77	2.20	63	53	99.8
1798	290.196	0.161	0.98	77	2.20	63	53	99.8
1799	290.357	0.161	0.98	77	2.20	63	53	100.3
1800	290.519	0.162	0.98	77	2.20	63	53	101.0

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1801	290.680	0.161	0.98	77	2.20	63	53	100.2
1802	290.840	0.160	0.98	77	2.20	63	53	100.2
1803	291.002	0.162	0.98	77	2.20	63	53	101.3
1804	291.163	0.161	0.97	77	2.20	63	53	99.9
1805	291.324	0.161	0.97	77	2.20	63	53	99.9
1806	291.485	0.161	0.97	77	2.20	63	53	99.8
1807	291.647	0.162	0.98	77	2.20	63	53	99.7
1808	291.808	0.161	0.97	77	2.20	63	53	99.9
1809	291.968	0.160	0.97	77	2.20	63	53	100.3
1810	292.129	0.161	0.98	77	2.20	63	53	100.4
1811	292.291	0.162	0.97	77	2.20	63	53	101.2
1812	292.451	0.160	0.97	77	2.20	63	53	99.7
1813	292.612	0.161	0.97	77	2.20	63	53	99.7
1814	292.774	0.162	0.98	77	2.20	63	54	100.5
1815	292.935	0.161	0.97	77	2.20	63	54	100.2
1816	293.096	0.161	0.97	77	2.20	63	54	100.7
1817	293.257	0.161	0.98	77	2.20	64	54	100.4
1818	293.418	0.161	0.97	77	2.20	64	54	99.4
1819	293.579	0.161	0.97	77	2.20	64	53	99.9
1820	293.740	0.161	0.97	77	2.20	64	54	101.0
1821	293.902	0.162	0.97	77	2.20	64	54	102.2
1822	294.062	0.160	0.97	77	2.20	64	54	100.9
1823	294.223	0.161	0.97	77	2.20	64	54	101.2
1824	294.384	0.161	0.97	77	2.20	64	54	100.2
1825	294.546	0.162	0.97	77	2.20	64	54	100.3
1826	294.706	0.160	0.97	77	2.20	64	54	99.5
1827	294.867	0.161	0.98	77	2.20	64	54	101.0
1828	295.029	0.162	0.97	77	2.20	64	54	102.2
1829	295.190	0.161	0.97	77	2.20	64	54	101.2
1830	295.351	0.161	0.97	77	2.20	64	54	101.1
1831	295.511	0.160	0.98	78	2.20	64	54	100.6
1832	295.673	0.162	0.97	78	2.20	64	54	101.2
1833	295.834	0.161	0.97	78	2.20	64	54	100.0
1834	295.995	0.161	0.97	78	2.20	64	54	100.0
1835	296.156	0.161	0.97	78	2.20	64	54	99.8
1836	296.317	0.161	0.97	78	2.20	64	54	99.4
1837	296.478	0.161	0.97	78	2.20	64	54	99.2
1838	296.639	0.161	0.97	78	2.20	64	54	100.0
1839	296.801	0.162	0.97	78	2.20	64	54	101.8
1840	296.961	0.160	0.97	78	2.20	64	54	100.9
1841	297.122	0.161	0.97	78	2.20	64	54	101.2
1842	297.283	0.161	0.97	78	2.20	64	54	100.6
1843	297.444	0.161	0.97	78	2.20	64	54	100.2
1844	297.605	0.161	0.97	78	2.20	64	54	100.3

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1845	297.765	0.160	0.98	78	2.20	64	54	99.9
1846	297.928	0.163	0.97	78	2.20	64	54	101.5
1847	298.087	0.159	0.97	78	2.20	65	54	98.9
1848	298.248	0.161	0.98	78	2.20	65	54	100.7
1849	298.410	0.162	0.97	78	2.20	65	54	101.4
1850	298.571	0.161	0.97	78	2.20	65	54	99.6
1851	298.731	0.160	0.97	78	2.20	65	54	97.9
1852	298.892	0.161	0.97	78	2.20	65	54	98.7
1853	299.053	0.161	0.97	78	2.20	65	54	100.1
1854	299.213	0.160	0.97	78	2.20	65	54	100.6
1855	299.374	0.161	0.97	78	2.20	65	54	101.1
1856	299.536	0.162	0.97	78	2.20	65	54	101.4
1857	299.696	0.160	0.97	78	2.20	65	54	100.4
1858	299.856	0.160	0.97	78	2.20	65	54	99.9
1859	300.017	0.161	0.97	78	2.20	65	54	100.0
1860	300.178	0.161	0.97	78	2.20	65	54	100.4
1861	300.339	0.161	0.97	78	2.20	65	54	100.2
1862	300.499	0.160	0.97	78	2.20	65	54	99.3
1863	300.661	0.162	0.97	78	2.20	65	55	100.7
1864	300.821	0.160	0.97	78	2.20	65	55	99.8
1865	300.982	0.161	0.98	78	2.20	65	55	100.7
1866	301.143	0.161	0.97	78	2.20	65	55	100.6
1867	301.304	0.161	0.97	78	2.20	65	55	99.9
1868	301.464	0.160	0.97	78	2.20	65	55	98.9
1869	301.625	0.161	0.97	78	2.20	65	55	99.7
1870	301.786	0.161	0.97	78	2.20	65	55	100.2
1871	301.947	0.161	0.97	78	2.20	64	55	100.8
1872	302.108	0.161	0.97	78	2.20	64	55	100.3
1873	302.270	0.162	0.97	78	2.20	64	55	100.5
1874	302.430	0.160	0.97	78	2.20	64	55	99.6
1875	302.590	0.160	0.98	78	2.20	64	55	99.4
1876	302.752	0.162	0.98	77	2.20	64	55	100.9
1877	302.913	0.161	0.97	77	2.20	64	55	100.1
1878	303.074	0.161	0.97	77	2.20	64	55	99.2
1879	303.235	0.161	0.97	77	2.20	64	55	99.3
1880	303.397	0.162	0.97	77	2.20	64	55	101.2
1881	303.557	0.160	0.97	77	2.20	64	55	99.6
1882	303.718	0.161	0.97	77	2.20	64	55	99.3
1883	303.879	0.161	0.97	77	2.20	64	55	100.1
1884	304.040	0.161	0.97	77	2.20	64	55	100.6
1885	304.201	0.161	0.97	77	2.20	64	55	99.5
1886	304.362	0.161	0.97	77	2.20	64	55	99.0
1887	304.524	0.162	0.97	77	2.20	64	55	100.0
1888	304.684	0.160	0.97	77	2.20	64	55	99.3

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1889	304.844	0.160	0.97	77	2.20	64	55	99.7
1890	305.006	0.162	0.97	77	2.20	64	55	101.1
1891	305.167	0.161	0.97	77	2.20	64	55	100.1
1892	305.328	0.161	0.97	77	2.20	64	55	99.7
1893	305.489	0.161	0.97	77	2.20	63	55	99.5
1894	305.650	0.161	0.97	77	2.20	63	55	99.7
1895	305.811	0.161	0.97	77	2.20	63	55	100.4
1896	305.971	0.160	0.97	77	2.20	63	55	100.6
1897	306.133	0.162	0.97	77	2.20	63	55	101.3
1898	306.294	0.161	0.97	77	2.20	63	55	99.5
1899	306.454	0.160	0.97	77	2.20	63	55	99.1
1900	306.615	0.161	0.97	77	2.20	63	55	100.4
1901	306.777	0.162	0.97	77	2.20	63	55	101.0
1902	306.937	0.160	0.97	77	2.20	63	55	99.9
1903	307.098	0.161	0.97	77	2.20	63	55	100.4
1904	307.259	0.161	0.97	77	2.20	63	55	100.1
1905	307.420	0.161	0.97	77	2.20	63	55	100.2
1906	307.581	0.161	0.97	77	2.20	63	55	100.2
1907	307.742	0.161	0.97	77	2.20	63	55	100.2
1908	307.904	0.162	0.97	77	2.20	63	55	100.3
1909	308.064	0.160	0.97	77	2.20	63	55	98.4
1910	308.225	0.161	0.97	77	2.20	63	55	99.1
1911	308.386	0.161	0.97	77	2.20	63	55	100.1
1912	308.547	0.161	0.97	77	2.20	63	55	100.6
1913	308.708	0.161	0.97	77	2.20	63	55	100.1
1914	308.868	0.160	0.97	77	2.20	63	55	99.4
1915	309.030	0.162	0.97	77	2.20	63	55	100.5
1916	309.191	0.161	0.97	77	2.20	63	55	99.8
1917	309.351	0.160	0.97	77	2.20	63	55	99.1
1918	309.513	0.162	0.97	77	2.20	63	55	100.2
1919	309.674	0.161	0.97	77	2.20	63	55	100.0
1920	309.834	0.160	0.97	77	2.20	63	55	99.7
1921	309.995	0.161	0.97	77	2.20	63	55	100.0
1922	310.157	0.162	0.97	77	2.20	63	55	100.5
1923	310.317	0.160	0.97	77	2.20	63	55	99.5
1924	310.478	0.161	0.97	77	2.20	63	55	99.8
1925	310.639	0.161	0.97	77	2.20	63	55	99.3
1926	310.800	0.161	0.96	77	2.20	63	55	100.0
1927	310.960	0.160	0.97	77	2.20	63	55	100.3
1928	311.121	0.161	0.97	77	2.20	63	55	100.7
1929	311.283	0.162	0.96	77	2.20	63	55	101.0
1930	311.443	0.160	0.97	77	2.20	63	55	99.8
1931	311.604	0.161	0.97	77	2.20	63	55	100.2
1932	311.765	0.161	0.97	77	2.20	63	55	100.4

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1933	311.926	0.161	0.96	77	2.20	63	55	100.7
1934	312.086	0.160	0.97	77	2.20	63	55	99.9
1935	312.248	0.162	0.97	77	2.20	63	55	100.5
1936	312.409	0.161	0.97	77	2.20	63	55	99.4
1937	312.569	0.160	0.97	77	2.20	63	55	98.4
1938	312.730	0.161	0.97	77	2.20	63	55	99.4
1939	312.892	0.162	0.97	78	2.20	63	55	100.2
1940	313.052	0.160	0.97	77	2.20	63	55	99.0
1941	313.213	0.161	0.97	77	2.20	63	55	99.7
1942	313.374	0.161	0.97	77	2.20	63	55	99.6
1943	313.535	0.161	0.97	77	2.20	63	55	99.6
1944	313.696	0.161	0.97	77	2.20	63	55	99.5
1945	313.856	0.160	0.97	77	2.20	63	55	98.8
1946	314.018	0.162	0.97	77	2.20	63	55	99.7
1947	314.179	0.161	0.97	77	2.20	63	55	99.0
1948	314.340	0.161	0.98	77	2.20	63	55	99.5
1949	314.501	0.161	0.97	77	2.20	63	55	100.2
1950	314.663	0.162	0.96	77	2.20	63	55	101.1
1951	314.823	0.160	0.97	77	2.20	63	55	99.7
1952	314.984	0.161	0.97	77	2.20	63	55	99.7
1953	315.146	0.162	0.97	77	2.20	63	55	100.0
1954	315.306	0.160	0.97	77	2.20	63	55	98.7
1955	315.467	0.161	0.97	77	2.20	63	55	99.8
1956	315.629	0.162	0.98	77	2.20	63	55	101.0
1957	315.790	0.161	0.97	77	2.20	63	55	100.3
1958	315.951	0.161	0.97	77	2.20	63	55	99.6
1959	316.112	0.161	0.97	77	2.20	63	55	99.1
1960	316.274	0.162	0.97	77	2.20	63	55	99.9
1961	316.434	0.160	0.97	77	2.20	63	55	99.1
1962	316.595	0.161	0.97	77	2.20	63	55	100.0
1963	316.756	0.161	0.97	77	2.20	63	55	100.5
1964	316.917	0.161	0.97	77	2.20	63	55	100.2
1965	317.078	0.161	0.97	77	2.20	63	55	100.1
1966	317.239	0.161	0.97	77	2.20	63	55	100.6
1967	317.401	0.162	0.97	77	2.20	63	55	100.3
1968	317.561	0.160	0.97	77	2.20	63	55	98.3
1969	317.722	0.161	0.97	77	2.20	63	55	100.1
1970	317.883	0.161	0.97	77	2.20	63	55	100.5
1971	318.045	0.162	0.97	77	2.20	63	55	100.9
1972	318.205	0.160	0.97	77	2.20	63	55	99.5
1973	318.366	0.161	0.97	77	2.20	63	55	99.6
1974	318.528	0.162	0.97	77	2.20	63	55	100.3
1975	318.688	0.160	0.97	77	2.20	63	55	99.6
1976	318.849	0.161	0.97	77	2.20	63	55	100.2

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
1977	319.010	0.161	0.97	77	2.20	63	55	100.1
1978	319.171	0.161	0.97	77	2.20	63	55	101.1
1979	319.332	0.161	0.97	77	2.20	63	55	101.7
1980	319.492	0.160	0.97	77	2.20	63	55	100.6
1981	319.654	0.162	0.96	77	2.20	63	55	101.6
1982	319.815	0.161	0.97	77	2.20	63	55	100.9
1983	319.975	0.160	0.97	77	2.20	63	55	100.2
1984	320.137	0.162	0.97	77	2.20	63	55	101.1
1985	320.298	0.161	0.96	77	2.20	63	55	99.9
1986	320.458	0.160	0.97	77	2.20	63	55	99.0
1987	320.619	0.161	0.97	77	2.20	63	55	99.9
1988	320.780	0.161	0.97	77	2.20	63	55	100.1
1989	320.941	0.161	0.97	77	2.20	63	55	99.7
1990	321.101	0.160	0.97	77	2.20	63	55	98.8
1991	321.263	0.162	0.97	77	2.20	63	55	100.6
1992	321.424	0.161	0.97	77	2.20	63	55	100.2
1993	321.584	0.160	0.97	77	2.20	63	55	99.5
1994	321.745	0.161	0.97	77	2.20	63	55	100.6
1995	321.906	0.161	0.97	77	2.20	64	55	101.2
1996	322.067	0.161	0.97	78	2.20	64	55	101.4
1997	322.228	0.161	0.97	77	2.20	64	55	101.3
1998	322.389	0.161	0.97	77	2.20	64	55	100.8
1999	322.550	0.161	0.97	78	2.20	64	55	100.4
2000	322.710	0.160	0.97	77	2.20	64	55	100.4
2001	322.871	0.161	0.97	78	2.20	64	55	101.4
2002	323.032	0.161	0.96	78	2.20	64	55	101.4
2003	323.193	0.161	0.97	78	2.20	64	55	100.6
2004	323.353	0.160	0.97	78	2.20	64	55	100.0
2005	323.515	0.162	0.97	78	2.20	64	55	101.9
2006	323.675	0.160	0.97	78	2.20	64	55	99.7
2007	323.836	0.161	0.97	78	2.20	64	55	99.7
2008	323.997	0.161	0.97	78	2.20	64	55	99.6
2009	324.158	0.161	0.97	78	2.20	64	55	99.7
2010	324.318	0.160	0.97	78	2.20	64	55	99.7
2011	324.479	0.161	0.97	78	2.20	64	55	100.8
2012	324.640	0.161	0.97	78	2.20	64	55	100.8
2013	324.801	0.161	0.97	78	2.20	64	55	100.7
2014	324.961	0.160	0.97	78	2.20	64	55	100.2
2015	325.123	0.162	0.97	78	2.20	64	55	101.5
2016	325.283	0.160	0.96	78	2.20	64	55	100.6
2017	325.443	0.160	0.97	78	2.20	64	55	101.3
2018	325.605	0.162	0.97	78	2.20	64	55	102.8
2019	325.766	0.161	0.96	78	2.20	64	55	101.0
2020	325.926	0.160	0.97	78	2.20	64	55	99.5

Train B - Particulate Sampling

ASTM E2515

Run: 4
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Test Date: 12/5/24
Meter Box Y Regression Offset: 1.006
Meter Box Y Regression Slope: 0
Meter Box Dynamic Y: 1.006
Sampling Box ID: 336
Sample Train Leak Checks
Pre-test 0 cfm @ 19.27 in. Hg
Post-Test 0.001 cfm @ 9.8 in. Hg

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
2021	326.087	0.161	0.97	78	2.20	64	55	100.4
2022	326.248	0.161	0.97	78	2.20	64	55	100.4
2023	326.408	0.160	0.97	78	2.20	64	55	99.3
2024	326.569	0.161	0.97	78	2.20	64	55	99.7
2025	326.731	0.162	0.97	78	2.20	64	55	101.0
2026	326.891	0.160	0.96	78	2.20	64	55	100.2
2027	327.051	0.160	0.96	78	2.20	64	55	99.5
2028	327.212	0.161	0.97	78	2.20	64	55	100.4
2029	327.374	0.162	0.96	78	2.20	64	55	101.8
2030	327.534	0.160	0.97	78	2.20	64	55	100.4
2031	327.695	0.161	0.97	78	2.20	64	55	100.7
2032	327.856	0.161	0.97	78	2.20	64	55	100.6
2033	328.017	0.161	0.97	78	2.20	64	55	100.7
2034	328.177	0.160	0.97	78	2.20	64	55	100.2
2035	328.338	0.161	0.97	78	2.20	64	55	100.8
2036	328.499	0.161	0.97	78	2.20	64	55	100.4
2037	328.660	0.161	0.97	78	2.20	64	55	99.3
2038	328.821	0.161	0.97	78	2.20	64	55	98.5
2039	328.982	0.161	0.97	78	2.20	64	55	98.9
2040	329.142	0.160	0.97	78	2.20	64	55	99.2
2041	329.303	0.161	0.97	78	2.20	64	55	100.2
2042	329.465	0.162	0.97	78	2.20	64	55	100.2
2043	329.626	0.161	0.96	78	2.20	64	55	99.4
2044	329.786	0.160	0.97	78	2.20	64	55	99.7
2045	329.947	0.161	0.97	78	2.20	64	55	101.3
2046	330.109	0.162	0.97	78	2.20	64	55	101.6
2047	330.269	0.160	0.97	78	2.20	64	55	99.5
2048	330.430	0.161	0.97	78	2.20	64	55	100.0
2049	330.591	0.161	0.97	78	2.20	64	55	100.2
2050	330.752	0.161	0.97	78	2.20	64	55	100.5
2051	330.912	0.160	0.97	78	2.20	64	55	99.9
2052	331.073	0.161	0.97	78	2.20	64	55	100.3
2053	331.235	0.162	0.97	78	2.20	64	55	100.3
2054	331.395	0.160	0.97	78	2.20	64	55	99.2
2055	331.556	0.161	0.97	78	2.20	64	56	100.9
2056	331.718	0.162	0.97	78	2.20	64	56	101.6
2057	331.878	0.160	0.97	78	2.20	64	56	99.2
2058	332.039	0.161	0.97	78	2.20	64	56	99.3
2059	332.200	0.161	0.97	78	2.20	64	56	99.3
2060	332.361	0.161	0.97	78	2.20	64	56	100.0
2061	332.521	0.160	0.97	78	2.20	64	56	100.7
2062	332.682	0.161	0.97	78	2.20	64	56	101.7
2063	332.844	0.162	0.97	78	2.20	64	56	101.9
2064	333.004	0.160	0.97	78	2.20	64	56	100.1

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
2065	333.164	0.160	0.97	78	2.20	64	56	99.4
2066	333.325	0.161	0.97	78	2.20	64	56	100.2
2067	333.486	0.161	0.96	78	2.20	64	56	101.3
2068	333.646	0.160	0.97	78	2.20	64	56	100.8
2069	333.807	0.161	0.97	78	2.20	64	56	100.3
2070	333.968	0.161	0.97	78	2.20	64	56	100.0
2071	334.128	0.160	0.97	78	2.20	64	56	100.1
2072	334.289	0.161	0.97	78	2.20	64	56	100.6
2073	334.451	0.162	0.97	78	2.20	64	56	100.9
2074	334.610	0.159	0.97	78	2.20	64	56	99.4
2075	334.771	0.161	0.97	77	2.20	65	56	100.9
2076	334.932	0.161	0.97	78	2.20	65	56	101.2
2077	335.093	0.161	0.97	77	2.20	65	56	101.3
2078	335.253	0.160	0.97	77	2.20	65	56	100.5
2079	335.413	0.160	0.97	77	2.20	65	56	100.6
2080	335.574	0.161	0.97	77	2.20	65	56	100.9
2081	335.735	0.161	0.97	77	2.20	65	56	100.6
2082	335.895	0.160	0.96	77	2.20	65	56	100.4
2083	336.057	0.162	0.97	77	2.20	65	56	101.4
2084	336.217	0.160	0.96	77	2.20	64	56	99.6
2085	336.377	0.160	0.97	77	2.20	64	56	99.6
2086	336.538	0.161	0.97	77	2.20	64	56	100.1
2087	336.699	0.161	0.96	77	2.20	64	56	100.1
2088	336.859	0.160	0.96	77	2.20	64	56	99.8
2089	337.020	0.161	0.96	77	2.20	64	56	100.8
2090	337.181	0.161	0.96	78	2.20	64	56	101.1
2091	337.341	0.160	0.96	78	2.20	64	56	100.8
2092	337.502	0.161	0.96	78	2.20	64	56	101.3
2093	337.663	0.161	0.96	77	2.20	64	56	101.5
2094	337.823	0.160	0.96	77	2.20	64	56	101.4
2095	337.984	0.161	0.97	78	2.20	64	56	102.0
2096	338.145	0.161	0.97	78	2.20	64	56	101.4
2097	338.305	0.160	0.96	78	2.20	64	56	100.3
2098	338.465	0.160	0.96	78	2.20	64	56	100.7
2099	338.626	0.161	0.96	78	2.20	64	56	102.1
2100	338.787	0.161	0.96	78	2.20	64	56	102.3
2101	338.947	0.160	0.96	78	2.20	64	56	101.2
2102	339.108	0.161	0.96	78	2.20	64	56	101.1
2103	339.269	0.161	0.96	78	2.20	64	56	100.3
2104	339.429	0.160	0.96	78	2.20	64	56	99.2
2105	339.590	0.161	0.96	78	2.20	64	56	100.1
2106	339.751	0.161	0.96	78	2.20	64	56	99.7
2107	339.911	0.160	0.96	78	2.20	64	56	98.7
2108	340.071	0.160	0.96	78	2.20	64	56	100.1

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
2109	340.232	0.161	0.96	78	2.20	64	56	101.0
2110	340.393	0.161	0.96	78	2.20	64	56	100.3
2111	340.553	0.160	0.96	78	2.20	64	56	99.6
2112	340.714	0.161	0.96	78	2.20	64	56	100.3
2113	340.875	0.161	0.96	78	2.20	64	56	100.6
2114	341.035	0.160	0.96	78	2.20	64	56	99.8
2115	341.196	0.161	0.96	78	2.20	64	56	99.8
2116	341.357	0.161	0.96	78	2.20	64	56	99.9
2117	341.517	0.160	0.96	78	2.20	64	56	99.1
2118	341.677	0.160	0.96	78	2.20	64	56	98.4
2119	341.838	0.161	0.96	78	2.20	64	56	99.3
2120	341.999	0.161	0.96	78	2.20	64	56	100.1
2121	342.159	0.160	0.96	78	2.20	64	56	99.3
2122	342.320	0.161	0.97	78	2.20	64	56	99.0
2123	342.481	0.161	0.96	78	2.20	64	56	99.4
2124	342.641	0.160	0.96	78	2.20	64	56	99.9
2125	342.801	0.160	0.96	78	2.20	64	56	98.9
2126	342.963	0.162	0.96	78	2.20	64	56	99.3
2127	343.123	0.160	0.96	78	2.20	64	56	98.9
2128	343.283	0.160	0.96	78	2.20	64	56	99.2
2129	343.445	0.162	0.96	78	2.20	64	56	100.6
2130	343.605	0.160	0.96	78	2.20	64	56	99.8
2131	343.765	0.160	0.97	78	2.20	64	56	99.8
2132	343.926	0.161	0.96	78	2.20	64	56	100.2
2133	344.087	0.161	0.96	78	2.20	64	56	99.3
2134	344.247	0.160	0.97	78	2.20	64	56	98.0
2135	344.407	0.160	0.96	78	2.20	64	56	98.4
2136	344.569	0.162	0.96	78	2.20	63	56	99.6
2137	344.729	0.160	0.96	78	2.20	63	56	98.5
2138	344.890	0.161	0.97	78	2.20	63	56	99.4
2139	345.051	0.161	0.96	78	2.20	63	56	99.8
2140	345.212	0.161	0.96	78	2.20	63	56	100.2
2141	345.372	0.160	0.97	78	2.20	63	56	99.8
2142	345.533	0.161	0.97	78	2.20	63	56	99.8
2143	345.694	0.161	0.96	78	2.20	63	56	98.9
2144	345.854	0.160	0.96	78	2.20	63	56	98.9
2145	346.015	0.161	0.96	78	2.20	63	56	100.1
2146	346.176	0.161	0.96	78	2.20	63	56	99.3
2147	346.336	0.160	0.97	78	2.20	63	56	98.2
2148	346.497	0.161	0.97	78	2.20	63	56	98.8
2149	346.658	0.161	0.96	78	2.20	63	56	98.9
2150	346.819	0.161	0.96	78	2.20	63	56	98.8
2151	346.979	0.160	0.97	78	2.20	63	56	98.3
2152	347.140	0.161	0.97	77	2.20	63	56	99.5

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
2153	347.301	0.161	0.97	77	2.20	63	56	99.4
2154	347.461	0.160	0.97	77	2.20	63	56	98.4
2155	347.622	0.161	0.97	77	2.20	63	56	99.4
2156	347.784	0.162	0.97	77	2.20	63	56	100.5
2157	347.944	0.160	0.96	77	2.20	63	56	99.7
2158	348.104	0.160	0.97	77	2.20	63	56	100.1
2159	348.265	0.161	0.97	77	2.20	63	56	100.6
2160	348.426	0.161	0.95	77	2.20	63	56	99.9
2161	348.586	0.160	0.96	77	2.20	63	56	98.5
2162	348.747	0.161	0.96	77	2.20	63	56	98.8
2163	348.908	0.161	0.96	77	2.20	63	56	99.3
2164	349.068	0.160	0.96	77	2.20	63	56	99.2
2165	349.228	0.160	0.96	77	2.20	63	56	99.3
2166	349.390	0.162	0.96	77	2.20	63	56	100.5
2167	349.550	0.160	0.96	77	2.20	63	56	99.6
2168	349.710	0.160	0.96	77	2.20	63	56	99.9
2169	349.871	0.161	0.96	77	2.20	63	56	100.2
2170	350.032	0.161	0.96	77	2.20	63	56	100.4
2171	350.192	0.160	0.96	77	2.20	63	56	100.0
2172	350.352	0.160	0.96	77	2.20	63	56	99.4
2173	350.513	0.161	0.96	77	2.20	63	56	100.1
2174	350.673	0.160	0.96	77	2.20	63	56	99.8
2175	350.834	0.161	0.96	77	2.20	63	56	100.2
2176	350.995	0.161	0.96	78	2.20	64	56	99.5
2177	351.155	0.160	0.96	78	2.20	64	56	98.6
2178	351.316	0.161	0.96	78	2.20	64	56	100.4
2179	351.477	0.161	0.96	78	2.20	64	56	100.6
2180	351.637	0.160	0.96	77	2.20	64	56	99.9
2181	351.797	0.160	0.96	78	2.20	64	56	99.9
2182	351.958	0.161	0.97	78	2.20	64	56	100.3
2183	352.119	0.161	0.96	78	2.20	64	56	101.1
2184	352.279	0.160	0.96	78	2.20	64	56	100.4
2185	352.440	0.161	0.96	78	2.20	64	56	98.9
2186	352.601	0.161	0.96	78	2.20	64	56	98.1
2187	352.761	0.160	0.96	78	2.20	64	56	98.6
2188	352.921	0.160	0.96	78	2.20	64	56	99.1
2189	353.083	0.162	0.96	78	2.20	64	56	99.9
2190	353.242	0.159	0.96	78	2.20	64	56	98.7
2191	353.403	0.161	0.96	78	2.20	64	56	100.6
2192	353.564	0.161	0.96	78	2.20	64	56	100.6
2193	353.724	0.160	0.96	78	2.20	64	56	100.2
2194	353.884	0.160	0.96	78	2.20	64	56	100.2
2195	354.045	0.161	0.96	78	2.20	64	56	101.0
2196	354.206	0.161	0.96	78	2.20	64	56	101.3

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
2197	354.366	0.160	0.96	78	2.20	64	56	100.2
2198	354.526	0.160	0.96	78	2.20	64	56	100.1
2199	354.687	0.161	0.96	78	2.20	64	56	100.9
2200	354.847	0.160	0.96	78	2.20	64	56	99.8
2201	355.008	0.161	0.96	78	2.20	64	56	100.1
2202	355.169	0.161	0.96	78	2.20	64	56	99.8
2203	355.329	0.160	0.96	78	2.20	64	56	98.4
2204	355.489	0.160	0.96	78	2.20	64	56	98.2
2205	355.651	0.162	0.96	78	2.20	64	56	100.0
2206	355.811	0.160	0.96	78	2.20	64	56	98.8
2207	355.971	0.160	0.96	78	2.20	64	56	98.7
2208	356.132	0.161	0.96	78	2.20	64	56	99.9
2209	356.293	0.161	0.96	78	2.20	64	56	100.1
2210	356.453	0.160	0.96	78	2.20	64	56	98.9
2211	356.614	0.161	0.96	78	2.20	64	56	99.5
2212	356.776	0.162	0.96	78	2.20	64	56	100.0
2213	356.935	0.159	0.96	78	2.20	64	57	97.8
2214	357.096	0.161	0.97	78	2.20	64	57	99.5
2215	357.257	0.161	0.97	78	2.20	64	57	99.3
2216	357.418	0.161	0.96	78	2.20	63	57	98.6
2217	357.578	0.160	0.96	78	2.20	63	57	98.1
2218	357.739	0.161	0.97	78	2.20	63	57	99.7
2219	357.900	0.161	0.96	78	2.20	63	57	100.8
2220	358.060	0.160	0.96	78	2.20	63	57	99.3
2221	358.221	0.161	0.96	78	2.20	63	57	98.5
2222	358.383	0.162	0.96	78	2.20	63	57	99.3
2223	358.543	0.160	0.96	78	2.20	63	57	98.5
2224	358.703	0.160	0.96	78	2.20	63	57	98.7
2225	358.865	0.162	0.97	78	2.20	63	57	99.9
2226	359.026	0.161	0.96	78	2.20	63	57	99.4
2227	359.186	0.160	0.97	78	2.20	63	57	99.3
2228	359.346	0.160	0.97	78	2.20	63	57	99.1
2229	359.508	0.162	0.96	77	2.20	63	57	100.4
2230	359.668	0.160	0.96	78	2.20	63	57	99.9
2231	359.829	0.161	0.97	77	2.20	63	57	100.4
2232	359.991	0.162	0.96	77	2.20	63	57	101.4
2233	360.151	0.160	0.96	77	2.20	63	57	100.5
2234	360.311	0.160	0.96	77	2.20	63	57	99.3
2235	360.472	0.161	0.96	77	2.20	63	57	99.0
2236	360.634	0.162	0.96	77	2.20	63	57	100.1
2237	360.794	0.160	0.96	77	2.20	63	57	99.3
2238	360.954	0.160	0.96	77	2.20	63	57	99.5
2239	361.116	0.162	0.96	77	2.20	63	57	101.7
2240	361.276	0.160	0.96	77	2.20	63	57	100.9

Train B - Particulate Sampling

ASTM E2515

Run: 4

Test Date: 12/5/24

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.006

Meter Box Y Regression Slope: 0

Meter Box Dynamic Y: 1.006

Sampling Box ID: 336

Sample Train Leak Checks

Pre-test 0 cfm @ 19.27 in. Hg

Post-Test 0.001 cfm @ 9.8 in. Hg

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Train B Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
2241	361.436	0.160	0.97	77	2.20	63	57	100.5
2242	361.598	0.162	0.96	77	2.20	63	57	102.1
2243	361.758	0.160	0.96	77	2.20	63	57	100.1
2244	361.918	0.160	0.96	77	2.20	63	57	98.6
2245	362.079	0.161	0.96	77	2.20	63	57	99.4
2246	362.240	0.161	0.96	77	2.20	63	57	99.9
2247	362.400	0.160	0.96	77	2.20	63	57	99.5
2248	362.560	0.160	0.96	77	2.20	63	57	99.7
2249	362.722	0.162	0.96	77	2.20	63	57	100.6
2250	362.882	0.160	0.96	77	2.20	63	57	99.4
2251	363.042	0.160	0.97	77	2.20	63	57	100.0
2252	363.204	0.162	0.96	77	2.20	64	57	102.0
2253	363.364	0.160	0.96	77	2.20	64	57	101.2
2254	363.524	0.160	0.96	77	2.20	64	57	101.1
2255	363.685	0.161	0.97	77	2.20	64	57	101.2
2256	363.845	0.160	0.96	77	2.20	64	57	100.2
2257	364.005	0.160	0.96	77	2.20	64	57	100.0
2258	364.166	0.161	0.96	77	2.20	64	57	100.5
2259	364.326	0.160	0.96	77	2.20	64	57	99.8
2260	364.486	0.160	0.96	77	2.20	64	57	99.7
2261	364.646	0.160	0.96	77	2.20	65	57	100.2
2262	364.807	0.161	0.96	77	2.20	65	57	101.6

Train C - First Hour Particulate Sampling

Run:	4	Test Date:	12/5/24
Manufacturer:	Central Boiler	Meter Box Y Regression Offset:	1.01
Model:	Classic Edge 560.1	Meter Box Y Regression Factor:	0
Tracking No.:	2495	Meter Box Dynamic Y:	1.010
Project No.:	0117WB043E	Sample Box ID:	371
Start Time:	17:03	Sample Train Leak Checks	
Total Sampling Time:	60 min	Pre-test	0 cfm @ 22.02 in. Hg
Recording Interval:	1 min	Post-Test	0.001 cfm @ 9.7 in. Hg

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
Tot / Avg	9.384	0.156	2.17	64.8	1.62	63.2	59.7	100.2
Minimum	0.000	0.132	2.13	64	1.33	62	56	83.8
Max	9.384	0.160	2.27	65	1.86	64	62	103.4
0	0.000		2.25	64	1.44	63	57	
1	0.132	0.132	2.23	64	1.50	63	57	83.8
2	0.291	0.159	2.21	64	1.82	63	56	102.4
3	0.449	0.158	2.20	64	1.75	63	56	101.7
4	0.608	0.159	2.21	64	1.44	63	57	101.7
5	0.766	0.158	2.27	64	1.42	64	57	101.5
6	0.926	0.160	2.23	64	1.40	64	57	103.4
7	1.084	0.158	2.22	64	1.42	64	57	101.9
8	1.242	0.158	2.21	64	1.84	64	57	101.9
9	1.400	0.158	2.21	64	1.50	64	57	102.5
10	1.558	0.158	2.18	64	1.37	64	58	101.9
11	1.716	0.158	2.20	65	1.69	64	58	101.0
12	1.873	0.157	2.18	65	1.86	64	58	100.5
13	2.031	0.158	2.18	65	1.59	64	58	101.2
14	2.187	0.156	2.17	65	1.84	64	58	100.0
15	2.344	0.157	2.14	65	1.52	64	58	101.4
16	2.501	0.157	2.16	65	1.80	64	59	101.4
17	2.657	0.156	2.16	65	1.79	64	59	100.6
18	2.814	0.157	2.16	65	1.81	64	59	101.2
19	2.970	0.156	2.17	65	1.82	64	59	100.1
20	3.126	0.156	2.16	65	1.40	64	59	100.0
21	3.283	0.157	2.16	65	1.53	64	59	100.5
22	3.439	0.156	2.16	65	1.63	64	60	99.4
23	3.596	0.157	2.16	65	1.45	64	60	100.4
24	3.753	0.157	2.17	65	1.71	64	60	101.1
25	3.910	0.157	2.15	65	1.40	64	60	101.1
26	4.067	0.157	2.14	65	1.82	64	60	101.1
27	4.223	0.156	2.17	65	1.81	64	60	101.3
28	4.380	0.157	2.16	65	1.80	64	60	101.9
29	4.537	0.157	2.16	65	1.77	64	60	101.0
30	4.693	0.156	2.16	65	1.34	63	60	100.4
31	4.850	0.157	2.13	65	1.83	63	60	101.2
32	5.006	0.156	2.16	65	1.73	63	60	100.3

Train C - First Hour Particulate Sampling

Run:	4	Test Date:	12/5/24
Manufacturer:	Central Boiler	Meter Box Y Regression Offset:	<u>1.01</u>
Model:	Classic Edge 560.1	Meter Box Y Regression Factor:	<u>0</u>
Tracking No.:	2495	Meter Box Dynamic Y:	<u>1.010</u>
Project No.:	0117WB043E	Sample Box ID:	<u>371</u>
Start Time:	<u>17:03</u>	Sample Train Leak Checks	
Total Sampling Time:	<u>60</u> min	Pre-test	<u>0</u> cfm @ <u>22.02</u> in. Hg
Recording Interval:	<u>1</u> min	Post-Test	<u>0.001</u> cfm @ <u>9.7</u> in. Hg

Elapsed Time (min)	Train C Sampling System							
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Filter Temp (°F)	Dryer Temp (°F)	Pro - Rate
33	5.162	0.156	2.16	65	1.63	63	61	99.5
34	5.319	0.157	2.15	65	1.47	63	61	99.5
35	5.475	0.156	2.16	65	1.82	63	61	99.2
36	5.632	0.157	2.15	65	1.77	63	61	99.8
37	5.789	0.157	2.15	65	1.76	63	61	99.6
38	5.944	0.155	2.15	65	1.50	63	61	99.0
39	6.101	0.157	2.13	65	1.77	63	61	100.1
40	6.257	0.156	2.13	65	1.45	63	61	99.4
41	6.413	0.156	2.15	65	1.70	63	61	100.2
42	6.570	0.157	2.14	65	1.33	63	61	100.7
43	6.726	0.156	2.16	65	1.39	63	61	99.3
44	6.883	0.157	2.14	65	1.65	63	61	99.7
45	7.039	0.156	2.15	65	1.40	63	61	99.9
46	7.195	0.156	2.15	65	1.41	63	61	100.3
47	7.352	0.157	2.15	65	1.54	63	61	100.1
48	7.509	0.157	2.14	65	1.33	62	61	99.5
49	7.664	0.155	2.15	65	1.59	62	61	98.6
50	7.821	0.157	2.14	65	1.74	62	61	100.7
51	7.977	0.156	2.16	65	1.78	62	61	100.2
52	8.133	0.156	2.15	65	1.50	62	61	99.6
53	8.289	0.156	2.16	65	1.35	62	61	99.8
54	8.445	0.156	2.16	65	1.66	62	61	100.2
55	8.602	0.157	2.15	65	1.56	62	61	100.8
56	8.759	0.157	2.15	65	1.79	62	61	100.6
57	8.915	0.156	2.15	65	1.60	62	61	99.2
58	9.071	0.156	2.15	65	1.75	62	61	99.2
59	9.228	0.157	2.16	65	1.83	62	61	100.6
60	9.384	0.156	2.16	65	1.78	62	62	99.6

Train D - Ambient Background and Flue Gas Data**Run:** 4**Test Date:** 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
Tot / Avg	362.385	0.160	1.54	66.0	1.20	145.91	-0.032	943.1	0.49	4.18
Minimum	0.000	0.156	1.36	65	1.10	77.00	-0.064	20.9	0.00	0.11
Max	362.385	0.169	1.61	67	1.20	314.00	-0.016	1040.0	4.87	18.43
0	0.000		1.60	65	1.20	275	-0.043	447.0	0.04	15.77
1	0.167	0.167	1.61	66	1.20	247	-0.043	1040.0	0.58	5.22
2	0.336	0.169	1.60	66	1.20	272	-0.052	1040.0	0.17	17.99
3	0.498	0.162	1.57	66	1.20	282	-0.050	1040.0	0.02	17.64
4	0.661	0.163	1.57	66	1.20	280	-0.052	540.2	0.05	15.83
5	0.823	0.162	1.56	66	1.20	280	-0.050	690.7	0.07	16.29
6	0.985	0.162	1.56	66	1.20	283	-0.051	695.4	0.00	15.53
7	1.148	0.163	1.56	66	1.20	285	-0.051	628.2	0.06	15.39
8	1.309	0.161	1.55	66	1.20	283	-0.053	653.2	0.07	15.21
9	1.470	0.161	1.55	66	1.20	284	-0.052	750.3	0.00	15.53
10	1.629	0.159	1.55	66	1.20	287	-0.052	717.6	0.00	14.84
11	1.790	0.161	1.55	66	1.20	284	-0.051	607.5	0.06	15.21
12	1.950	0.160	1.54	66	1.20	288	-0.051	711.8	0.00	15.13
13	2.110	0.160	1.54	66	1.20	286	-0.052	591.7	0.06	15.10
14	2.269	0.159	1.54	66	1.20	290	-0.051	610.4	0.06	14.77
15	2.429	0.160	1.54	66	1.20	288	-0.052	563.8	0.06	15.09
16	2.588	0.159	1.54	66	1.20	287	-0.052	615.0	0.06	14.63
17	2.746	0.158	1.54	66	1.20	290	-0.052	700.2	0.00	14.90
18	2.906	0.160	1.54	66	1.20	289	-0.056	586.2	0.06	14.64
19	3.065	0.159	1.53	66	1.20	264	-0.046	1040.0	0.17	7.13
20	3.223	0.158	1.54	66	1.20	248	-0.047	1040.0	0.12	4.26
21	3.383	0.160	1.53	66	1.20	237	-0.044	1040.0	0.10	3.32
22	3.541	0.158	1.53	66	1.20	229	-0.039	1040.0	0.09	2.71
23	3.698	0.157	1.54	66	1.20	224	-0.042	1040.0	0.12	2.45
24	3.858	0.160	1.53	66	1.20	219	-0.042	1040.0	0.06	2.85
25	4.017	0.159	1.53	66	1.20	214	-0.041	1040.0	0.05	2.63
26	4.174	0.157	1.53	66	1.20	210	-0.040	1040.0	0.05	2.38
27	4.334	0.160	1.53	66	1.20	206	-0.040	1040.0	0.06	2.24
28	4.492	0.158	1.53	66	1.20	203	-0.037	1040.0	0.03	1.76
29	4.649	0.157	1.53	66	1.20	200	-0.037	752.6	0.00	1.23
30	4.809	0.160	1.53	66	1.20	196	-0.036	532.1	0.05	0.88
31	4.966	0.157	1.53	66	1.20	193	-0.035	585.9	0.06	0.95
32	5.124	0.158	1.54	66	1.20	190	-0.034	579.3	0.06	0.87

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
33	5.282	0.158	1.52	66	1.20	185	-0.034	618.9	0.06	0.88
34	5.440	0.158	1.53	66	1.20	182	-0.033	771.3	0.00	1.01
35	5.598	0.158	1.53	66	1.20	179	-0.032	938.7	0.03	1.25
36	5.756	0.158	1.53	66	1.20	176	-0.032	952.6	0.03	1.22
37	5.914	0.158	1.53	66	1.20	173	-0.032	1040.0	0.06	1.53
38	6.072	0.158	1.53	66	1.20	170	-0.033	1040.0	0.04	1.36
39	6.230	0.158	1.53	66	1.20	167	-0.033	1040.0	0.05	1.40
40	6.388	0.158	1.53	66	1.20	164	-0.031	1040.0	0.08	1.74
41	6.547	0.159	1.53	66	1.20	162	-0.031	1040.0	0.07	1.56
42	6.705	0.158	1.53	66	1.20	159	-0.030	1040.0	0.06	1.43
43	6.862	0.157	1.53	66	1.20	156	-0.030	1040.0	0.11	1.96
44	7.021	0.159	1.53	66	1.20	154	-0.029	1040.0	0.09	1.76
45	7.179	0.158	1.53	66	1.20	152	-0.028	1040.0	0.10	1.87
46	7.336	0.157	1.53	66	1.20	149	-0.027	1040.0	0.08	1.66
47	7.495	0.159	1.53	66	1.20	147	-0.027	1040.0	0.10	1.81
48	7.653	0.158	1.53	66	1.20	145	-0.029	1040.0	0.06	1.45
49	7.811	0.158	1.53	66	1.20	143	-0.026	1040.0	0.09	1.77
50	7.969	0.158	1.53	66	1.20	141	-0.026	1040.0	0.10	1.80
51	8.127	0.158	1.53	66	1.20	139	-0.026	1040.0	0.09	1.74
52	8.285	0.158	1.53	66	1.20	137	-0.026	1040.0	0.10	1.75
53	8.443	0.158	1.53	66	1.20	135	-0.025	1040.0	0.11	1.88
54	8.600	0.157	1.53	66	1.20	133	-0.025	1040.0	0.10	1.82
55	8.759	0.159	1.53	66	1.20	132	-0.024	1040.0	0.10	1.76
56	8.917	0.158	1.53	66	1.20	130	-0.024	1040.0	0.12	1.99
57	9.075	0.158	1.53	66	1.20	128	-0.024	1040.0	0.10	1.77
58	9.234	0.159	1.53	66	1.20	126	-0.024	1040.0	0.11	1.79
59	9.392	0.158	1.53	66	1.20	125	-0.023	1040.0	0.09	1.61
60	9.549	0.157	1.53	66	1.20	124	-0.023	1040.0	0.12	1.92
61	9.709	0.160	1.53	66	1.20	123	-0.023	1040.0	0.11	1.77
62	9.867	0.158	1.53	66	1.20	121	-0.023	1040.0	0.09	1.62
63	10.024	0.157	1.54	66	1.20	120	-0.022	1040.0	0.10	1.68
64	10.183	0.159	1.53	66	1.20	118	-0.022	1040.0	0.11	1.75
65	10.341	0.158	1.53	66	1.20	117	-0.022	1040.0	0.09	1.53
66	10.499	0.158	1.53	66	1.20	116	-0.022	1040.0	0.08	1.43
67	10.658	0.159	1.53	66	1.20	115	-0.022	1040.0	0.09	1.55
68	10.816	0.158	1.54	66	1.20	113	-0.022	1040.0	0.11	1.68

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
69	10.974	0.158	1.53	66	1.20	112	-0.021	1040.0	0.09	1.55
70	11.133	0.159	1.53	66	1.20	111	-0.021	1040.0	0.10	1.58
71	11.291	0.158	1.53	66	1.20	110	-0.021	1040.0	0.08	1.42
72	11.449	0.158	1.53	66	1.20	109	-0.021	1040.0	0.12	1.73
73	11.607	0.158	1.53	66	1.20	108	-0.021	1040.0	0.09	1.49
74	11.765	0.158	1.53	66	1.20	107	-0.021	1040.0	0.10	1.51
75	11.924	0.159	1.53	66	1.20	106	-0.020	1040.0	0.09	1.44
76	12.082	0.158	1.53	66	1.20	105	-0.020	1040.0	0.08	1.33
77	12.239	0.157	1.53	66	1.20	104	-0.020	1040.0	0.10	1.51
78	12.398	0.159	1.53	66	1.20	104	-0.020	1040.0	0.09	1.41
79	12.556	0.158	1.53	66	1.20	103	-0.020	1040.0	0.09	1.42
80	12.713	0.157	1.53	66	1.20	102	-0.020	1040.0	0.10	1.45
81	12.873	0.160	1.53	66	1.20	101	-0.019	1040.0	0.10	1.46
82	13.031	0.158	1.53	66	1.10	100	-0.019	1040.0	0.11	1.57
83	13.188	0.157	1.53	66	1.20	100	-0.019	1040.0	0.09	1.40
84	13.347	0.159	1.53	66	1.20	99	-0.019	1040.0	0.10	1.43
85	13.505	0.158	1.53	66	1.10	98	-0.019	1040.0	0.10	1.44
86	13.663	0.158	1.53	66	1.20	97	-0.019	1040.0	0.10	1.45
87	13.822	0.159	1.53	66	1.20	97	-0.019	1040.0	0.10	1.45
88	13.980	0.158	1.54	66	1.20	156	-0.040	1040.0	0.93	6.09
89	14.138	0.158	1.53	66	1.20	142	-0.025	1040.0	0.97	5.85
90	14.296	0.158	1.53	66	1.20	129	-0.024	1040.0	0.79	4.77
91	14.454	0.158	1.54	65	1.20	121	-0.023	1040.0	0.59	3.70
92	14.612	0.158	1.53	65	1.20	115	-0.022	1040.0	0.42	2.78
93	14.770	0.158	1.53	66	1.20	111	-0.022	1040.0	0.37	2.50
94	14.927	0.157	1.54	65	1.10	108	-0.022	1040.0	0.31	2.18
95	15.086	0.159	1.53	65	1.20	105	-0.021	1040.0	0.30	2.14
96	15.244	0.158	1.53	65	1.20	103	-0.020	1040.0	0.26	1.89
97	15.401	0.157	1.54	65	1.20	102	-0.020	1040.0	0.22	1.71
98	15.560	0.159	1.53	65	1.10	100	-0.020	1040.0	0.19	1.55
99	15.718	0.158	1.53	65	1.20	99	-0.020	1040.0	0.20	1.63
100	15.876	0.158	1.53	65	1.20	98	-0.019	1040.0	0.18	1.50
101	16.035	0.159	1.53	65	1.20	97	-0.019	1040.0	0.14	1.30
102	16.193	0.158	1.53	65	1.20	97	-0.019	1040.0	0.14	1.26
103	16.351	0.158	1.54	65	1.20	95	-0.019	1040.0	0.13	1.21
104	16.510	0.159	1.53	65	1.20	94	-0.019	1040.0	0.13	1.22

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
105	16.668	0.158	1.53	65	1.20	94	-0.019	1040.0	0.17	1.49
106	16.826	0.158	1.53	65	1.10	94	-0.018	1040.0	0.15	1.38
107	16.985	0.159	1.53	65	1.20	93	-0.018	1040.0	0.14	1.33
108	17.143	0.158	1.53	65	1.20	92	-0.018	1040.0	0.11	1.17
109	17.301	0.158	1.53	65	1.20	92	-0.018	1040.0	0.12	1.24
110	17.460	0.159	1.53	65	1.20	92	-0.018	1040.0	0.13	1.31
111	17.618	0.158	1.54	65	1.20	91	-0.018	1040.0	0.13	1.32
112	17.776	0.158	1.53	65	1.20	90	-0.018	1040.0	0.11	1.19
113	17.934	0.158	1.53	65	1.20	90	-0.017	1040.0	0.14	1.42
114	18.092	0.158	1.53	65	1.20	90	-0.018	1040.0	0.13	1.32
115	18.251	0.159	1.53	65	1.20	89	-0.018	1040.0	0.15	1.47
116	18.409	0.158	1.53	65	1.20	89	-0.018	1040.0	0.13	1.39
117	18.568	0.159	1.53	65	1.20	89	-0.017	1040.0	0.15	1.54
118	18.727	0.159	1.53	65	1.20	88	-0.017	1040.0	0.13	1.43
119	18.885	0.158	1.53	65	1.10	147	-0.031	1040.0	0.57	5.53
120	19.043	0.158	1.53	65	1.20	131	-0.024	1040.0	1.01	5.48
121	19.201	0.158	1.53	65	1.20	121	-0.022	1040.0	0.85	4.61
122	19.359	0.158	1.53	65	1.20	114	-0.021	1040.0	0.64	3.53
123	19.516	0.157	1.53	65	1.20	109	-0.021	1040.0	0.52	2.93
124	19.676	0.160	1.53	65	1.20	106	-0.021	1040.0	0.47	2.72
125	19.834	0.158	1.53	65	1.10	103	-0.021	1040.0	0.38	2.29
126	19.991	0.157	1.53	65	1.20	101	-0.020	1040.0	0.35	2.17
127	20.150	0.159	1.53	65	1.20	98	-0.019	1040.0	0.27	1.77
128	20.308	0.158	1.53	65	1.20	97	-0.020	1040.0	0.21	1.49
129	20.466	0.158	1.53	65	1.20	95	-0.018	1040.0	0.19	1.40
130	20.624	0.158	1.53	65	1.20	94	-0.018	1040.0	0.20	1.45
131	20.782	0.158	1.53	65	1.20	93	-0.018	1040.0	0.21	1.49
132	20.940	0.158	1.53	65	1.20	92	-0.018	1040.0	0.16	1.26
133	21.098	0.158	1.53	65	1.20	91	-0.018	1040.0	0.15	1.23
134	21.256	0.158	1.53	65	1.20	89	-0.018	1040.0	0.14	1.14
135	21.414	0.158	1.53	65	1.20	89	-0.018	1040.0	0.12	1.05
136	21.572	0.158	1.53	65	1.20	88	-0.017	1040.0	0.12	1.10
137	21.728	0.156	1.53	65	1.20	88	-0.017	1040.0	0.11	1.04
138	21.888	0.160	1.53	65	1.20	87	-0.017	1040.0	0.09	0.91
139	22.046	0.158	1.53	65	1.20	86	-0.018	1040.0	0.10	0.99
140	22.203	0.157	1.53	65	1.20	86	-0.017	1040.0	0.09	0.92

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
141	22.362	0.159	1.53	65	1.20	86	-0.017	1040.0	0.08	0.92
142	22.519	0.157	1.53	65	1.20	85	-0.017	1040.0	0.08	0.90
143	22.677	0.158	1.53	65	1.20	85	-0.017	1040.0	0.08	0.91
144	22.835	0.158	1.53	65	1.20	84	-0.016	1040.0	0.07	0.84
145	22.993	0.158	1.53	65	1.20	84	-0.016	1040.0	0.08	0.96
146	23.151	0.158	1.53	65	1.20	84	-0.016	1040.0	0.09	1.01
147	23.309	0.158	1.53	65	1.20	84	-0.017	1040.0	0.09	1.03
148	23.466	0.157	1.53	65	1.20	83	-0.016	1040.0	0.09	1.04
149	23.625	0.159	1.53	65	1.20	83	-0.016	1040.0	0.08	1.02
150	23.783	0.158	1.53	65	1.20	138	-0.024	1040.0	0.45	5.49
151	23.940	0.157	1.53	65	1.20	124	-0.022	1040.0	0.79	5.37
152	24.098	0.158	1.53	65	1.20	117	-0.022	1040.0	0.69	4.66
153	24.255	0.157	1.53	65	1.20	112	-0.021	1040.0	0.52	3.60
154	24.413	0.158	1.53	66	1.20	107	-0.021	1040.0	0.40	2.86
155	24.571	0.158	1.53	65	1.20	104	-0.020	1040.0	0.37	2.64
156	24.729	0.158	1.53	66	1.20	101	-0.019	1040.0	0.32	2.36
157	24.887	0.158	1.52	66	1.20	99	-0.019	1040.0	0.23	1.86
158	25.045	0.158	1.53	66	1.20	97	-0.019	1040.0	0.23	1.86
159	25.202	0.157	1.53	66	1.20	95	-0.018	1040.0	0.20	1.67
160	25.361	0.159	1.53	66	1.20	94	-0.018	1040.0	0.16	1.44
161	25.519	0.158	1.53	66	1.20	92	-0.018	1040.0	0.15	1.40
162	25.676	0.157	1.53	66	1.20	91	-0.018	1040.0	0.15	1.42
163	25.835	0.159	1.53	66	1.20	91	-0.018	1040.0	0.11	1.17
164	25.993	0.158	1.53	66	1.20	90	-0.017	1040.0	0.13	1.32
165	26.150	0.157	1.53	66	1.20	89	-0.018	1040.0	0.09	1.06
166	26.309	0.159	1.53	66	1.20	89	-0.018	1040.0	0.10	1.16
167	26.467	0.158	1.53	66	1.20	87	-0.017	1040.0	0.10	1.15
168	26.625	0.158	1.53	66	1.20	87	-0.017	1040.0	0.10	1.17
169	26.783	0.158	1.53	66	1.20	86	-0.016	1040.0	0.09	1.14
170	26.941	0.158	1.53	66	1.20	86	-0.017	1040.0	0.08	1.10
171	27.099	0.158	1.53	66	1.20	85	-0.016	1040.0	0.06	0.97
172	27.257	0.158	1.53	66	1.20	85	-0.016	1040.0	0.06	0.91
173	27.414	0.157	1.53	66	1.20	84	-0.016	1040.0	0.07	1.00
174	27.573	0.159	1.53	66	1.20	84	-0.016	1040.0	0.06	0.98
175	27.731	0.158	1.53	66	1.20	83	-0.016	1040.0	0.06	0.98
176	27.888	0.157	1.53	66	1.20	83	-0.016	1040.0	0.06	1.01

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
177	28.047	0.159	1.53	66	1.20	83	-0.016	1040.0	0.05	0.94
178	28.205	0.158	1.53	66	1.20	82	-0.016	1040.0	0.06	1.01
179	28.363	0.158	1.53	66	1.20	81	-0.016	1040.0	0.07	1.08
180	28.522	0.159	1.53	66	1.20	88	-0.027	1040.0	0.05	0.91
181	28.679	0.157	1.53	66	1.20	128	-0.023	1040.0	0.42	5.40
182	28.837	0.158	1.53	66	1.20	119	-0.022	1040.0	0.63	5.09
183	28.996	0.159	1.53	66	1.20	113	-0.021	1040.0	0.52	4.18
184	29.154	0.158	1.53	66	1.20	109	-0.021	1040.0	0.40	3.31
185	29.312	0.158	1.53	66	1.20	105	-0.020	1040.0	0.31	2.69
186	29.470	0.158	1.53	66	1.20	102	-0.020	1040.0	0.26	2.29
187	29.628	0.158	1.53	66	1.20	100	-0.019	1040.0	0.22	2.03
188	29.787	0.159	1.53	66	1.20	98	-0.019	1040.0	0.16	1.66
189	29.945	0.158	1.53	67	1.20	96	-0.019	1040.0	0.17	1.74
190	30.103	0.158	1.53	67	1.20	95	-0.018	1040.0	0.14	1.48
191	30.262	0.159	1.53	67	1.20	94	-0.018	1040.0	0.12	1.34
192	30.420	0.158	1.53	67	1.20	129	-0.035	1040.0	0.32	2.85
193	30.577	0.157	1.53	67	1.20	179	-0.040	1040.0	2.24	8.81
194	30.736	0.159	1.53	67	1.20	220	-0.045	1040.0	1.33	13.60
195	30.894	0.158	1.53	67	1.20	250	-0.048	1040.0	0.94	15.41
196	31.051	0.157	1.53	67	1.20	275	-0.052	1040.0	0.24	17.84
197	31.211	0.160	1.53	67	1.20	289	-0.053	1040.0	0.20	18.43
198	31.369	0.158	1.53	67	1.20	282	-0.052	1040.0	0.13	17.89
199	31.526	0.157	1.53	67	1.20	290	-0.052	1040.0	0.09	17.19
200	31.685	0.159	1.53	67	1.20	292	-0.054	721.8	0.01	16.71
201	31.843	0.158	1.53	67	1.20	292	-0.054	951.0	0.01	16.72
202	32.001	0.158	1.53	67	1.20	292	-0.055	925.1	0.01	16.76
203	32.160	0.159	1.53	67	1.20	289	-0.053	1040.0	0.03	16.89
204	32.318	0.158	1.53	67	1.20	292	-0.053	844.5	0.02	16.27
205	32.476	0.158	1.53	67	1.20	289	-0.054	1040.0	0.03	16.44
206	32.635	0.159	1.53	67	1.20	288	-0.054	1040.0	0.03	16.28
207	32.793	0.158	1.53	67	1.20	289	-0.055	933.5	0.02	16.22
208	32.952	0.159	1.53	67	1.20	290	-0.055	964.0	0.03	16.13
209	33.110	0.158	1.53	67	1.20	291	-0.055	1004.4	0.03	16.18
210	33.268	0.158	1.53	67	1.20	292	-0.055	1007.3	0.03	16.32
211	33.426	0.158	1.53	67	1.20	294	-0.055	1019.3	0.03	16.21
212	33.584	0.158	1.53	67	1.20	295	-0.055	994.4	0.03	16.14

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
213	33.742	0.158	1.54	67	1.20	295	-0.056	938.1	0.02	15.84
214	33.900	0.158	1.53	67	1.20	296	-0.055	894.0	0.02	15.58
215	34.059	0.159	1.53	67	1.20	296	-0.056	812.4	0.01	15.49
216	34.216	0.157	1.53	67	1.20	297	-0.055	939.4	0.03	15.52
217	34.376	0.160	1.53	66	1.20	298	-0.055	930.0	0.02	15.36
218	34.534	0.158	1.53	66	1.20	285	-0.051	850.0	0.02	15.46
219	34.692	0.158	1.53	66	1.20	264	-0.051	821.5	0.02	8.21
220	34.851	0.159	1.53	66	1.20	251	-0.049	1040.0	0.18	6.21
221	35.010	0.159	1.53	66	1.20	240	-0.048	1040.0	0.16	5.53
222	35.167	0.157	1.53	66	1.20	233	-0.047	1040.0	0.18	4.17
223	35.326	0.159	1.53	66	1.20	227	-0.046	1040.0	0.13	5.14
224	35.485	0.159	1.53	66	1.20	221	-0.046	1040.0	0.10	4.76
225	35.643	0.158	1.54	66	1.20	216	-0.044	1040.0	0.09	3.75
226	35.802	0.159	1.53	66	1.20	212	-0.043	1040.0	0.11	3.23
227	35.961	0.159	1.53	66	1.20	209	-0.041	1040.0	0.11	2.91
228	36.118	0.157	1.54	66	1.20	207	-0.040	1040.0	0.05	1.93
229	36.277	0.159	1.53	66	1.20	204	-0.039	974.1	0.02	1.46
230	36.435	0.158	1.54	66	1.20	200	-0.039	1040.0	0.05	1.51
231	36.593	0.158	1.53	66	1.20	197	-0.038	1040.0	0.06	1.62
232	36.752	0.159	1.53	66	1.20	193	-0.037	1040.0	0.08	1.79
233	36.911	0.159	1.53	66	1.20	189	-0.037	1040.0	0.12	2.11
234	37.069	0.158	1.54	66	1.20	186	-0.036	1040.0	0.11	1.98
235	37.228	0.159	1.53	66	1.20	182	-0.035	1040.0	0.12	2.12
236	37.387	0.159	1.53	66	1.20	179	-0.035	1040.0	0.11	2.06
237	37.545	0.158	1.53	66	1.20	176	-0.034	1040.0	0.14	2.34
238	37.704	0.159	1.53	66	1.20	173	-0.034	1040.0	0.19	2.90
239	37.862	0.158	1.54	66	1.20	170	-0.033	1040.0	0.16	2.55
240	38.020	0.158	1.54	66	1.20	167	-0.033	1040.0	0.18	2.79
241	38.180	0.160	1.53	66	1.20	164	-0.032	1040.0	0.15	2.46
242	38.338	0.158	1.53	66	1.20	162	-0.032	1040.0	0.17	2.67
243	38.496	0.158	1.53	66	1.20	159	-0.031	1040.0	0.17	2.72
244	38.655	0.159	1.53	66	1.20	156	-0.031	1040.0	0.15	2.45
245	38.813	0.158	1.53	66	1.20	154	-0.031	1040.0	0.17	2.69
246	38.971	0.158	1.53	66	1.20	152	-0.030	1040.0	0.16	2.67
247	39.130	0.159	1.53	66	1.20	149	-0.030	1040.0	0.16	2.57
248	39.288	0.158	1.54	66	1.20	147	-0.029	1040.0	0.15	2.51

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
249	39.447	0.159	1.54	66	1.20	145	-0.029	1040.0	0.17	2.74
250	39.606	0.159	1.53	66	1.20	143	-0.029	1040.0	0.15	2.50
251	39.764	0.158	1.54	66	1.20	141	-0.029	1040.0	0.14	2.35
252	39.922	0.158	1.53	66	1.20	139	-0.028	1040.0	0.13	2.31
253	40.081	0.159	1.53	66	1.20	137	-0.027	1040.0	0.16	2.64
254	40.239	0.158	1.54	66	1.20	135	-0.027	1040.0	0.18	2.84
255	40.397	0.158	1.53	66	1.20	133	-0.027	1040.0	0.17	2.70
256	40.556	0.159	1.53	66	1.20	131	-0.027	1040.0	0.19	2.93
257	40.714	0.158	1.53	65	1.20	130	-0.026	1040.0	0.16	2.57
258	40.872	0.158	1.53	65	1.20	128	-0.026	1040.0	0.16	2.59
259	41.031	0.159	1.54	65	1.20	127	-0.026	1040.0	0.17	2.69
260	41.189	0.158	1.54	65	1.20	126	-0.026	1040.0	0.14	2.38
261	41.348	0.159	1.53	65	1.20	124	-0.025	1040.0	0.17	2.65
262	41.506	0.158	1.53	65	1.10	123	-0.025	1040.0	0.13	2.19
263	41.663	0.157	1.54	65	1.20	121	-0.024	1040.0	0.14	2.40
264	41.822	0.159	1.53	65	1.20	120	-0.024	1040.0	0.14	2.35
265	41.980	0.158	1.53	65	1.20	118	-0.024	1040.0	0.15	2.42
266	42.137	0.157	1.54	65	1.20	117	-0.023	1040.0	0.13	2.21
267	42.296	0.159	1.53	65	1.20	116	-0.023	1040.0	0.12	2.13
268	42.453	0.157	1.53	65	1.20	115	-0.023	1040.0	0.12	2.07
269	42.611	0.158	1.53	65	1.20	114	-0.023	1040.0	0.12	2.12
270	42.769	0.158	1.53	65	1.20	113	-0.023	1040.0	0.13	2.22
271	42.927	0.158	1.53	65	1.20	112	-0.023	1040.0	0.13	2.22
272	43.085	0.158	1.53	65	1.20	111	-0.023	1040.0	0.14	2.26
273	43.243	0.158	1.53	65	1.20	109	-0.022	1040.0	0.13	2.18
274	43.401	0.158	1.53	65	1.20	109	-0.022	1040.0	0.11	1.98
275	43.559	0.158	1.53	65	1.20	107	-0.022	1040.0	0.13	2.20
276	43.717	0.158	1.53	65	1.20	106	-0.022	1040.0	0.09	1.81
277	43.874	0.157	1.53	65	1.20	107	-0.021	1040.0	0.12	2.05
278	44.034	0.160	1.53	65	1.20	104	-0.021	1040.0	0.11	1.94
279	44.192	0.158	1.53	65	1.20	104	-0.021	1040.0	0.13	2.19
280	44.349	0.157	1.53	65	1.20	104	-0.021	1040.0	0.11	1.94
281	44.508	0.159	1.53	65	1.20	103	-0.021	1040.0	0.12	2.02
282	44.666	0.158	1.53	65	1.20	102	-0.022	1040.0	0.10	1.86
283	44.824	0.158	1.53	65	1.20	102	-0.021	1040.0	0.10	1.88
284	44.983	0.159	1.53	65	1.20	101	-0.020	1040.0	0.10	1.88

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
285	45.140	0.157	1.53	65	1.20	100	-0.020	1040.0	0.12	2.05
286	45.298	0.158	1.53	65	1.20	100	-0.020	1040.0	0.11	1.94
287	45.457	0.159	1.53	65	1.20	146	-0.045	1040.0	0.10	1.81
288	45.614	0.157	1.54	65	1.20	151	-0.033	1040.0	0.39	3.48
289	45.773	0.159	1.53	65	1.20	141	-0.030	1040.0	0.40	3.07
290	45.931	0.158	1.53	65	1.20	134	-0.029	1040.0	0.31	2.55
291	46.090	0.159	1.53	65	1.20	128	-0.027	1040.0	0.27	2.40
292	46.248	0.158	1.53	66	1.20	124	-0.027	1040.0	0.19	2.00
293	46.406	0.158	1.53	66	1.20	121	-0.026	1040.0	0.17	1.93
294	46.564	0.158	1.53	66	1.20	119	-0.025	1040.0	0.15	1.80
295	46.723	0.159	1.53	66	1.20	117	-0.024	1040.0	0.14	1.80
296	46.881	0.158	1.53	66	1.20	115	-0.023	1040.0	0.13	1.79
297	47.038	0.157	1.53	66	1.20	113	-0.023	1040.0	0.13	1.79
298	47.198	0.160	1.53	66	1.20	112	-0.023	1040.0	0.11	1.66
299	47.356	0.158	1.53	66	1.20	109	-0.023	1040.0	0.11	1.63
300	47.513	0.157	1.53	66	1.20	109	-0.022	1040.0	0.11	1.70
301	47.672	0.159	1.53	66	1.20	108	-0.022	1040.0	0.10	1.60
302	47.830	0.158	1.53	66	1.20	107	-0.022	1040.0	0.10	1.58
303	47.988	0.158	1.53	66	1.20	107	-0.022	1040.0	0.11	1.70
304	48.147	0.159	1.53	66	1.20	106	-0.021	1040.0	0.11	1.77
305	48.304	0.157	1.53	66	1.20	105	-0.021	1040.0	0.09	1.57
306	48.462	0.158	1.53	66	1.20	105	-0.021	1040.0	0.10	1.66
307	48.621	0.159	1.53	66	1.20	102	-0.021	1040.0	0.07	1.40
308	48.779	0.158	1.53	66	1.20	103	-0.021	1040.0	0.09	1.62
309	48.937	0.158	1.53	66	1.20	101	-0.021	1040.0	0.08	1.55
310	49.095	0.158	1.53	66	1.20	102	-0.020	1040.0	0.07	1.45
311	49.253	0.158	1.53	66	1.20	102	-0.020	1040.0	0.08	1.60
312	49.411	0.158	1.53	66	1.20	102	-0.020	1040.0	0.07	1.46
313	49.570	0.159	1.53	66	1.20	100	-0.020	1040.0	0.08	1.55
314	49.726	0.156	1.53	66	1.20	98	-0.020	1040.0	0.08	1.57
315	49.886	0.160	1.53	66	1.20	99	-0.020	1040.0	0.08	1.60
316	50.044	0.158	1.53	66	1.20	97	-0.020	1040.0	0.08	1.55
317	50.201	0.157	1.53	66	1.20	97	-0.020	1040.0	0.07	1.45
318	50.361	0.160	1.53	66	1.20	143	-0.042	1040.0	0.07	1.47
319	50.518	0.157	1.53	66	1.20	131	-0.031	1040.0	0.11	1.80
320	50.676	0.158	1.53	66	1.20	126	-0.029	1040.0	0.10	1.49

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
321	50.835	0.159	1.53	66	1.20	122	-0.027	1040.0	0.09	1.33
322	50.993	0.158	1.53	66	1.20	119	-0.026	1040.0	0.07	1.21
323	51.151	0.158	1.53	66	1.20	117	-0.026	1040.0	0.06	1.10
324	51.309	0.158	1.53	66	1.20	115	-0.025	1040.0	0.05	1.06
325	51.467	0.158	1.53	66	1.20	113	-0.024	1040.0	0.05	1.10
326	51.625	0.158	1.53	66	1.20	110	-0.024	1040.0	0.05	1.14
327	51.783	0.158	1.53	66	1.20	110	-0.023	1040.0	0.04	1.07
328	51.941	0.158	1.53	66	1.20	108	-0.023	1040.0	0.04	1.12
329	52.100	0.159	1.53	66	1.20	107	-0.023	1040.0	0.04	1.13
330	52.258	0.158	1.53	66	1.20	106	-0.022	1040.0	0.04	1.16
331	52.416	0.158	1.53	66	1.20	106	-0.022	1040.0	0.04	1.10
332	52.575	0.159	1.53	66	1.20	106	-0.022	1040.0	0.04	1.14
333	52.734	0.159	1.53	66	1.20	104	-0.022	1040.0	0.04	1.15
334	52.892	0.158	1.53	66	1.20	103	-0.021	1040.0	0.04	1.19
335	53.051	0.159	1.53	66	1.20	102	-0.021	1040.0	0.04	1.16
336	53.209	0.158	1.53	66	1.20	103	-0.021	1040.0	0.04	1.21
337	53.367	0.158	1.53	66	1.20	99	-0.021	1040.0	0.05	1.28
338	53.527	0.160	1.53	66	1.20	100	-0.021	1040.0	0.05	1.25
339	53.685	0.158	1.53	66	1.20	100	-0.020	1040.0	0.04	1.22
340	53.843	0.158	1.53	66	1.20	100	-0.020	1040.0	0.05	1.26
341	54.001	0.158	1.53	66	1.20	100	-0.020	1040.0	0.04	1.22
342	54.160	0.159	1.53	66	1.20	99	-0.020	1040.0	0.04	1.23
343	54.317	0.157	1.53	66	1.10	99	-0.020	1040.0	0.04	1.24
344	54.477	0.160	1.53	66	1.20	98	-0.020	1040.0	0.05	1.29
345	54.635	0.158	1.53	66	1.20	98	-0.020	992.8	0.03	1.15
346	54.793	0.158	1.53	66	1.20	97	-0.020	1040.0	0.05	1.36
347	54.953	0.160	1.53	66	1.20	96	-0.020	1040.0	0.05	1.31
348	55.111	0.158	1.53	66	1.20	96	-0.020	1040.0	0.03	1.18
349	55.269	0.158	1.54	66	1.10	134	-0.041	1040.0	0.04	1.25
350	55.428	0.159	1.53	66	1.20	124	-0.030	931.4	0.01	1.14
351	55.587	0.159	1.53	66	1.20	119	-0.027	628.6	0.06	0.85
352	55.744	0.157	1.53	66	1.20	116	-0.026	505.6	0.05	0.69
353	55.904	0.160	1.53	66	1.20	114	-0.026	452.8	0.05	0.62
354	56.062	0.158	1.54	66	1.20	111	-0.025	406.2	0.04	0.56
355	56.220	0.158	1.53	66	1.20	109	-0.024	404.9	0.04	0.53
356	56.379	0.159	1.53	66	1.20	108	-0.023	406.0	0.04	0.58

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
357	56.537	0.158	1.53	66	1.20	106	-0.023	430.7	0.04	0.54
358	56.695	0.158	1.53	66	1.20	105	-0.023	487.8	0.05	0.64
359	56.855	0.160	1.53	66	1.20	104	-0.023	523.4	0.05	0.65
360	57.012	0.157	1.53	66	1.20	103	-0.022	560.9	0.06	0.70
361	57.171	0.159	1.53	66	1.20	102	-0.022	596.5	0.06	0.71
362	57.330	0.159	1.53	66	1.20	101	-0.022	600.1	0.06	0.72
363	57.488	0.158	1.53	66	1.20	101	-0.021	696.5	0.00	0.79
364	57.646	0.158	1.53	66	1.20	99	-0.021	657.7	0.00	0.80
365	57.804	0.158	1.53	65	1.20	99	-0.021	658.0	0.00	0.77
366	57.962	0.158	1.53	65	1.20	97	-0.021	717.2	0.00	0.80
367	58.121	0.159	1.53	65	1.20	98	-0.020	734.1	0.01	0.87
368	58.279	0.158	1.53	65	1.20	97	-0.020	850.0	0.01	0.94
369	58.437	0.158	1.53	65	1.20	95	-0.020	890.8	0.02	0.99
370	58.595	0.158	1.53	65	1.20	97	-0.020	795.9	0.01	0.88
371	58.754	0.159	1.53	65	1.20	95	-0.020	815.9	0.02	0.95
372	58.911	0.157	1.53	65	1.20	94	-0.019	904.0	0.02	0.95
373	59.070	0.159	1.53	65	1.20	94	-0.019	959.4	0.02	0.98
374	59.228	0.158	1.53	65	1.20	93	-0.019	977.2	0.03	1.06
375	59.385	0.157	1.53	65	1.20	93	-0.019	947.7	0.02	1.03
376	59.544	0.159	1.53	65	1.20	93	-0.019	951.9	0.03	1.05
377	59.702	0.158	1.53	65	1.20	93	-0.019	1040.0	0.04	1.18
378	59.859	0.157	1.53	65	1.20	93	-0.019	974.3	0.03	1.12
379	60.018	0.159	1.52	65	1.20	91	-0.019	1026.6	0.03	1.09
380	60.175	0.157	1.53	65	1.20	129	-0.039	1040.0	0.07	1.42
381	60.333	0.158	1.53	65	1.20	120	-0.028	1040.0	0.03	1.36
382	60.491	0.158	1.53	65	1.20	115	-0.026	803.4	0.01	1.03
383	60.649	0.158	1.53	65	1.20	112	-0.025	691.0	0.00	0.90
384	60.807	0.158	1.53	65	1.20	110	-0.024	575.1	0.06	0.75
385	60.965	0.158	1.53	65	1.20	108	-0.023	512.6	0.05	0.66
386	61.123	0.158	1.53	65	1.20	106	-0.023	435.6	0.04	0.56
387	61.282	0.159	1.53	65	1.20	104	-0.022	494.9	0.05	0.63
388	61.440	0.158	1.53	65	1.20	103	-0.021	507.8	0.05	0.58
389	61.597	0.157	1.53	65	1.20	102	-0.022	477.1	0.05	0.58
390	61.756	0.159	1.53	65	1.20	101	-0.021	497.5	0.05	0.58
391	61.914	0.158	1.53	65	1.20	100	-0.021	601.7	0.00	0.74
392	62.072	0.158	1.54	65	1.20	99	-0.020	580.7	0.06	0.66

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
393	62.231	0.159	1.53	65	1.20	98	-0.020	688.7	0.00	0.73
394	62.388	0.157	1.53	65	1.20	97	-0.020	778.2	0.01	0.88
395	62.546	0.158	1.53	66	1.20	96	-0.020	808.5	0.01	0.88
396	62.705	0.159	1.53	66	1.20	96	-0.020	848.4	0.01	0.88
397	62.862	0.157	1.53	66	1.20	95	-0.020	796.7	0.01	0.81
398	63.021	0.159	1.53	66	1.20	95	-0.019	900.5	0.01	0.88
399	63.179	0.158	1.53	66	1.20	94	-0.019	1003.5	0.03	1.00
400	63.337	0.158	1.53	66	1.20	93	-0.019	874.0	0.02	0.90
401	63.495	0.158	1.53	66	1.20	93	-0.018	986.6	0.03	1.03
402	63.653	0.158	1.53	66	1.20	120	-0.036	1040.0	0.20	2.86
403	63.811	0.158	1.53	66	1.20	127	-0.036	1040.0	0.18	1.55
404	63.970	0.159	1.53	66	1.20	153	-0.036	1040.0	0.61	2.46
405	64.128	0.158	1.53	66	1.20	170	-0.039	1040.0	1.11	3.70
406	64.285	0.157	1.53	66	1.20	188	-0.041	1040.0	2.27	5.97
407	64.444	0.159	1.53	66	1.20	212	-0.043	1040.0	3.12	9.22
408	64.602	0.158	1.53	66	1.20	236	-0.046	1040.0	2.77	13.37
409	64.760	0.158	1.53	66	1.20	256	-0.047	1040.0	2.12	14.08
410	64.919	0.159	1.53	66	1.20	272	-0.050	1040.0	1.13	14.86
411	65.076	0.157	1.53	66	1.20	281	-0.052	1040.0	0.58	15.11
412	65.234	0.158	1.53	66	1.20	290	-0.054	1040.0	0.34	15.36
413	65.393	0.159	1.53	66	1.20	296	-0.055	1040.0	0.31	15.83
414	65.550	0.157	1.53	66	1.20	291	-0.055	1040.0	0.14	15.79
415	65.709	0.159	1.53	66	1.20	288	-0.052	1040.0	0.07	15.90
416	65.867	0.158	1.53	66	1.20	289	-0.052	1040.0	0.05	15.79
417	66.023	0.156	1.53	66	1.20	290	-0.053	1040.0	0.05	15.98
418	66.183	0.160	1.53	66	1.20	288	-0.054	709.8	0.00	15.67
419	66.341	0.158	1.53	66	1.20	287	-0.053	679.1	0.00	15.60
420	66.498	0.157	1.53	66	1.20	288	-0.054	708.5	0.00	15.62
421	66.657	0.159	1.53	66	1.20	289	-0.053	669.7	0.00	15.68
422	66.814	0.157	1.53	66	1.20	291	-0.055	666.4	0.00	15.70
423	66.972	0.158	1.53	66	1.20	292	-0.055	671.2	0.00	15.81
424	67.131	0.159	1.53	66	1.20	294	-0.056	684.6	0.00	15.87
425	67.289	0.158	1.53	66	1.20	295	-0.055	718.5	0.00	15.95
426	67.447	0.158	1.53	66	1.20	297	-0.055	765.8	0.00	15.91
427	67.605	0.158	1.53	66	1.20	297	-0.056	694.3	0.00	15.77
428	67.763	0.158	1.53	66	1.20	298	-0.056	762.3	0.00	15.65

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
429	67.921	0.158	1.53	66	1.20	298	-0.057	747.4	0.00	15.38
430	68.080	0.159	1.53	66	1.20	299	-0.057	724.1	0.00	15.38
431	68.237	0.157	1.53	66	1.20	300	-0.055	676.8	0.00	15.41
432	68.396	0.159	1.53	66	1.20	301	-0.057	666.7	0.07	15.55
433	68.554	0.158	1.53	66	1.20	301	-0.056	584.9	0.06	15.25
434	68.711	0.157	1.53	66	1.20	282	-0.053	539.9	0.05	14.72
435	68.869	0.158	1.53	66	1.20	263	-0.052	982.3	0.04	9.18
436	69.027	0.158	1.53	66	1.20	251	-0.051	1040.0	0.14	8.20
437	69.184	0.157	1.53	66	1.20	241	-0.049	1040.0	0.18	8.10
438	69.343	0.159	1.53	66	1.20	234	-0.048	1040.0	0.31	6.03
439	69.501	0.158	1.53	66	1.20	228	-0.047	1040.0	0.14	8.89
440	69.659	0.158	1.53	66	1.20	222	-0.047	1040.0	0.15	7.58
441	69.817	0.158	1.53	66	1.20	217	-0.046	1040.0	0.21	5.78
442	69.975	0.158	1.53	66	1.20	213	-0.044	1040.0	0.19	4.82
443	70.134	0.159	1.53	66	1.20	211	-0.042	1040.0	0.16	3.90
444	70.292	0.158	1.53	66	1.20	208	-0.041	1040.0	0.08	2.55
445	70.450	0.158	1.53	66	1.20	205	-0.040	1040.0	0.15	2.38
446	70.609	0.159	1.53	66	1.20	202	-0.040	1040.0	0.26	2.59
447	70.767	0.158	1.53	67	1.20	198	-0.039	1040.0	0.34	2.74
448	70.925	0.158	1.53	67	1.20	195	-0.038	1040.0	0.42	3.03
449	71.084	0.159	1.53	67	1.20	191	-0.038	1040.0	0.40	2.78
450	71.243	0.159	1.53	67	1.20	188	-0.037	1040.0	0.48	3.17
451	71.400	0.157	1.53	67	1.20	184	-0.037	1040.0	0.49	3.15
452	71.559	0.159	1.53	67	1.20	181	-0.036	1040.0	0.48	3.06
453	71.717	0.158	1.53	67	1.20	178	-0.036	1040.0	0.48	3.06
454	71.875	0.158	1.53	67	1.20	175	-0.035	1040.0	0.50	3.16
455	72.034	0.159	1.53	67	1.20	172	-0.034	1040.0	0.52	3.25
456	72.192	0.158	1.53	67	1.20	169	-0.034	1040.0	0.53	3.26
457	72.350	0.158	1.53	67	1.20	166	-0.033	1040.0	0.52	3.26
458	72.510	0.160	1.53	66	1.20	163	-0.033	1040.0	0.47	2.99
459	72.668	0.158	1.53	66	1.20	161	-0.032	1040.0	0.51	3.19
460	72.826	0.158	1.53	66	1.20	159	-0.032	1040.0	0.49	3.10
461	72.986	0.160	1.53	66	1.20	156	-0.031	1040.0	0.46	2.93
462	73.144	0.158	1.53	66	1.20	154	-0.031	1040.0	0.47	2.98
463	73.301	0.157	1.53	66	1.20	151	-0.031	1040.0	0.50	3.17
464	73.461	0.160	1.53	66	1.20	149	-0.030	1040.0	0.47	2.98

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
465	73.619	0.158	1.53	66	1.20	147	-0.030	1040.0	0.46	2.91
466	73.777	0.158	1.53	66	1.20	145	-0.030	1040.0	0.44	2.84
467	73.936	0.159	1.53	66	1.20	143	-0.030	1040.0	0.41	2.67
468	74.094	0.158	1.53	66	1.20	141	-0.029	1040.0	0.51	3.21
469	74.252	0.158	1.54	66	1.20	138	-0.028	1040.0	0.39	2.61
470	74.411	0.159	1.53	66	1.20	137	-0.029	1040.0	0.44	2.87
471	74.569	0.158	1.53	66	1.20	135	-0.028	1040.0	0.40	2.67
472	74.727	0.158	1.53	66	1.20	133	-0.028	1040.0	0.43	2.81
473	74.886	0.159	1.53	66	1.20	132	-0.028	1040.0	0.39	2.61
474	75.044	0.158	1.54	66	1.20	130	-0.028	1040.0	0.37	2.48
475	75.202	0.158	1.53	66	1.20	128	-0.026	1040.0	0.44	2.85
476	75.361	0.159	1.53	66	1.20	127	-0.026	1040.0	0.40	2.61
477	75.519	0.158	1.53	66	1.20	126	-0.027	1040.0	0.34	2.36
478	75.677	0.158	1.53	66	1.20	125	-0.026	1040.0	0.35	2.39
479	75.835	0.158	1.53	66	1.20	124	-0.026	1040.0	0.42	2.76
480	75.993	0.158	1.53	66	1.20	122	-0.025	1040.0	0.43	2.84
481	76.152	0.159	1.53	66	1.20	120	-0.025	1040.0	0.36	2.42
482	76.310	0.158	1.53	66	1.20	119	-0.024	1040.0	0.34	2.34
483	76.468	0.158	1.53	66	1.20	118	-0.024	1040.0	0.35	2.37
484	76.627	0.159	1.53	66	1.20	116	-0.024	1040.0	0.32	2.24
485	76.785	0.158	1.53	66	1.20	115	-0.024	1040.0	0.33	2.26
486	76.942	0.157	1.53	66	1.20	114	-0.023	1040.0	0.29	2.04
487	77.101	0.159	1.53	66	1.20	113	-0.023	1040.0	0.29	2.07
488	77.259	0.158	1.53	66	1.20	112	-0.023	1040.0	0.30	2.10
489	77.416	0.157	1.53	66	1.20	111	-0.023	1040.0	0.27	1.94
490	77.575	0.159	1.53	66	1.20	110	-0.022	1040.0	0.30	2.09
491	77.732	0.157	1.53	66	1.20	110	-0.023	1040.0	0.29	2.04
492	77.890	0.158	1.53	66	1.20	109	-0.022	1040.0	0.29	2.01
493	78.048	0.158	1.53	66	1.20	109	-0.022	1040.0	0.26	1.90
494	78.206	0.158	1.53	66	1.20	106	-0.022	1040.0	0.26	1.90
495	78.364	0.158	1.53	66	1.20	105	-0.022	1040.0	0.26	1.90
496	78.522	0.158	1.53	66	1.20	106	-0.022	1040.0	0.27	1.96
497	78.680	0.158	1.53	66	1.20	105	-0.021	1040.0	0.27	1.91
498	78.839	0.159	1.53	66	1.20	104	-0.022	1040.0	0.25	1.86
499	78.997	0.158	1.53	66	1.20	103	-0.021	1040.0	0.27	1.90
500	79.154	0.157	1.53	66	1.20	102	-0.021	1040.0	0.24	1.81

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
501	79.313	0.159	1.53	66	1.20	101	-0.021	1040.0	0.24	1.78
502	79.471	0.158	1.53	66	1.20	102	-0.021	1040.0	0.20	1.60
503	79.628	0.157	1.53	66	1.20	150	-0.044	1040.0	0.26	1.88
504	79.788	0.160	1.53	66	1.20	149	-0.033	1040.0	0.49	3.71
505	79.945	0.157	1.53	66	1.20	140	-0.030	1040.0	0.43	3.24
506	80.103	0.158	1.53	66	1.20	134	-0.028	1040.0	0.38	2.89
507	80.262	0.159	1.53	66	1.20	129	-0.027	1040.0	0.33	2.64
508	80.420	0.158	1.53	66	1.20	125	-0.026	1040.0	0.28	2.31
509	80.578	0.158	1.53	66	1.20	122	-0.026	1040.0	0.22	1.96
510	80.736	0.158	1.53	66	1.20	119	-0.025	1040.0	0.18	1.75
511	80.894	0.158	1.53	66	1.20	117	-0.024	1040.0	0.19	1.79
512	81.053	0.159	1.53	66	1.20	115	-0.024	1040.0	0.16	1.59
513	81.211	0.158	1.53	66	1.20	113	-0.023	1040.0	0.15	1.55
514	81.369	0.158	1.53	66	1.20	111	-0.023	1040.0	0.15	1.56
515	81.527	0.158	1.53	66	1.20	109	-0.023	1040.0	0.14	1.46
516	81.686	0.159	1.53	66	1.20	108	-0.022	1040.0	0.13	1.42
517	81.843	0.157	1.53	66	1.20	107	-0.022	1040.0	0.11	1.23
518	82.002	0.159	1.53	66	1.20	106	-0.022	1040.0	0.13	1.40
519	82.160	0.158	1.53	66	1.20	106	-0.022	1040.0	0.13	1.42
520	82.317	0.157	1.53	66	1.20	103	-0.021	1040.0	0.10	1.21
521	82.477	0.160	1.53	66	1.20	104	-0.021	1040.0	0.09	1.15
522	82.635	0.158	1.53	66	1.20	102	-0.021	1040.0	0.11	1.25
523	82.792	0.157	1.53	66	1.20	101	-0.021	1040.0	0.11	1.23
524	82.952	0.160	1.53	67	1.20	100	-0.021	1040.0	0.11	1.24
525	83.110	0.158	1.53	67	1.20	98	-0.020	1040.0	0.09	1.14
526	83.267	0.157	1.53	67	1.20	97	-0.020	1040.0	0.08	1.05
527	83.427	0.160	1.53	67	1.20	97	-0.020	1040.0	0.08	1.09
528	83.584	0.157	1.53	67	1.20	97	-0.020	1040.0	0.08	1.06
529	83.742	0.158	1.53	67	1.20	97	-0.020	1040.0	0.07	1.01
530	83.901	0.159	1.53	67	1.20	96	-0.020	1040.0	0.08	1.05
531	84.059	0.158	1.53	67	1.20	96	-0.020	1040.0	0.08	1.05
532	84.217	0.158	1.53	67	1.20	94	-0.019	1040.0	0.06	0.97
533	84.376	0.159	1.53	67	1.20	94	-0.019	1040.0	0.07	1.03
534	84.534	0.158	1.53	67	1.20	140	-0.042	1040.0	0.07	0.99
535	84.692	0.158	1.53	67	1.20	132	-0.031	1040.0	0.15	1.68
536	84.851	0.159	1.53	67	1.20	127	-0.029	1040.0	0.11	1.36

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
537	85.008	0.157	1.53	67	1.20	122	-0.028	1040.0	0.09	1.18
538	85.167	0.159	1.53	67	1.20	119	-0.027	1040.0	0.08	1.13
539	85.326	0.159	1.53	67	1.20	116	-0.026	1040.0	0.06	0.97
540	85.483	0.157	1.53	67	1.20	114	-0.025	1040.0	0.05	0.90
541	85.642	0.159	1.53	67	1.20	113	-0.024	1040.0	0.05	0.88
542	85.801	0.159	1.53	67	1.20	111	-0.024	1040.0	0.05	0.90
543	85.958	0.157	1.53	66	1.20	110	-0.023	1036.2	0.03	0.79
544	86.118	0.160	1.53	66	1.20	107	-0.023	991.2	0.03	0.77
545	86.276	0.158	1.53	66	1.20	105	-0.023	943.9	0.02	0.73
546	86.433	0.157	1.53	66	1.20	105	-0.022	1002.8	0.03	0.78
547	86.593	0.160	1.53	66	1.20	104	-0.022	945.2	0.02	0.74
548	86.751	0.158	1.53	66	1.20	104	-0.022	877.2	0.02	0.73
549	86.908	0.157	1.54	66	1.20	102	-0.022	806.6	0.01	0.67
550	87.067	0.159	1.53	66	1.20	101	-0.021	849.3	0.01	0.68
551	87.225	0.158	1.54	66	1.20	99	-0.021	820.6	0.01	0.65
552	87.383	0.158	1.53	66	1.10	99	-0.021	812.1	0.01	0.67
553	87.542	0.159	1.53	66	1.20	98	-0.021	812.1	0.01	0.70
554	87.700	0.158	1.53	66	1.20	97	-0.021	736.7	0.00	0.63
555	87.858	0.158	1.53	66	1.20	96	-0.020	784.4	0.01	0.69
556	88.018	0.160	1.53	66	1.20	97	-0.020	740.9	0.00	0.62
557	88.176	0.158	1.54	66	1.20	97	-0.020	798.9	0.00	0.64
558	88.334	0.158	1.53	66	1.20	94	-0.020	713.9	0.00	0.63
559	88.493	0.159	1.53	66	1.20	94	-0.020	774.9	0.01	0.65
560	88.651	0.158	1.54	66	1.20	92	-0.020	725.7	0.00	0.62
561	88.809	0.158	1.53	66	1.20	93	-0.020	654.1	0.00	0.58
562	88.969	0.160	1.53	66	1.20	92	-0.019	759.7	0.00	0.63
563	89.127	0.158	1.54	66	1.20	92	-0.019	693.9	0.00	0.62
564	89.285	0.158	1.53	66	1.20	91	-0.019	705.6	0.00	0.62
565	89.444	0.159	1.53	66	1.20	129	-0.039	742.2	0.05	0.99
566	89.602	0.158	1.53	66	1.20	122	-0.028	786.8	0.00	0.82
567	89.760	0.158	1.53	66	1.20	118	-0.027	564.1	0.06	0.64
568	89.918	0.158	1.53	66	1.20	114	-0.026	482.3	0.05	0.56
569	90.076	0.158	1.54	66	1.20	112	-0.025	434.0	0.04	0.52
570	90.235	0.159	1.53	66	1.20	109	-0.024	425.2	0.04	0.48
571	90.393	0.158	1.53	66	1.20	107	-0.024	379.6	0.04	0.45
572	90.551	0.158	1.53	66	1.20	106	-0.023	374.1	0.04	0.43

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024
 Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
573	90.710	0.159	1.53	66	1.20	105	-0.022	386.4	0.04	0.45
574	90.868	0.158	1.53	66	1.20	103	-0.022	374.4	0.04	0.45
575	91.026	0.158	1.53	66	1.20	101	-0.022	324.3	0.03	0.41
576	91.185	0.159	1.53	66	1.20	101	-0.022	345.6	0.03	0.40
577	91.343	0.158	1.53	66	1.20	99	-0.021	350.5	0.04	0.40
578	91.500	0.157	1.53	66	1.20	97	-0.021	378.3	0.04	0.41
579	91.660	0.160	1.53	66	1.20	98	-0.021	381.3	0.04	0.44
580	91.818	0.158	1.53	66	1.20	97	-0.021	364.7	0.04	0.41
581	91.975	0.157	1.53	66	1.20	95	-0.020	361.2	0.04	0.42
582	92.134	0.159	1.53	66	1.20	95	-0.020	353.7	0.04	0.41
583	92.292	0.158	1.53	66	1.20	95	-0.020	384.8	0.04	0.43
584	92.449	0.157	1.53	66	1.20	94	-0.019	382.5	0.04	0.41
585	92.609	0.160	1.53	66	1.20	93	-0.019	373.5	0.04	0.42
586	92.766	0.157	1.53	66	1.20	92	-0.019	356.7	0.04	0.39
587	92.924	0.158	1.53	66	1.20	92	-0.019	385.5	0.04	0.43
588	93.083	0.159	1.53	66	1.20	91	-0.019	386.4	0.04	0.40
589	93.240	0.157	1.53	66	1.20	91	-0.019	377.3	0.04	0.41
590	93.398	0.158	1.53	66	1.20	90	-0.019	394.6	0.04	0.41
591	93.557	0.159	1.53	66	1.20	90	-0.019	388.4	0.04	0.42
592	93.714	0.157	1.53	66	1.20	91	-0.018	427.9	0.04	0.45
593	93.873	0.159	1.53	66	1.20	88	-0.018	408.7	0.04	0.46
594	94.031	0.158	1.53	66	1.20	88	-0.018	407.1	0.04	0.43
595	94.188	0.157	1.53	66	1.20	88	-0.018	431.4	0.04	0.45
596	94.347	0.159	1.53	66	1.20	123	-0.037	759.7	0.08	1.44
597	94.505	0.158	1.53	66	1.20	117	-0.027	789.5	0.00	0.84
598	94.662	0.157	1.53	66	1.20	113	-0.025	615.8	0.06	0.68
599	94.822	0.160	1.53	66	1.20	110	-0.024	520.5	0.05	0.60
600	94.979	0.157	1.53	66	1.20	107	-0.023	443.4	0.04	0.52
601	95.137	0.158	1.53	66	1.20	105	-0.023	384.5	0.04	0.47
602	95.296	0.159	1.53	66	1.20	104	-0.022	372.8	0.04	0.46
603	95.454	0.158	1.53	66	1.20	103	-0.025	352.4	0.04	0.41
604	95.612	0.158	1.53	66	1.20	123	-0.036	1040.0	0.08	1.44
605	95.770	0.158	1.53	66	1.20	139	-0.036	1040.0	0.15	1.20
606	95.928	0.158	1.53	66	1.20	158	-0.035	1040.0	0.29	1.68
607	96.086	0.158	1.53	66	1.20	171	-0.038	1040.0	0.86	2.68
608	96.244	0.158	1.53	66	1.20	187	-0.041	1040.0	1.69	4.43

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
609	96.401	0.157	1.53	66	1.20	204	-0.042	1040.0	2.23	6.43
610	96.559	0.158	1.53	66	1.20	218	-0.044	1040.0	3.04	8.21
611	96.717	0.158	1.53	66	1.20	230	-0.046	1040.0	2.52	9.63
612	96.874	0.157	1.53	66	1.20	244	-0.048	1040.0	1.97	10.23
613	97.033	0.159	1.53	66	1.20	259	-0.051	1040.0	1.57	12.16
614	97.191	0.158	1.53	66	1.20	274	-0.051	1040.0	1.31	12.57
615	97.349	0.158	1.53	66	1.20	283	-0.053	1040.0	0.36	13.89
616	97.507	0.158	1.53	66	1.20	290	-0.054	1040.0	0.20	14.47
617	97.665	0.158	1.53	66	1.20	298	-0.057	1040.0	0.07	15.12
618	97.823	0.158	1.53	66	1.20	304	-0.057	1040.0	0.03	15.54
619	97.982	0.159	1.53	66	1.20	296	-0.056	1030.0	0.02	15.62
620	98.140	0.158	1.53	66	1.20	296	-0.059	768.7	0.00	15.41
621	98.298	0.158	1.53	66	1.20	294	-0.056	724.4	0.02	15.07
622	98.456	0.158	1.53	66	1.20	291	-0.056	810.6	0.00	15.40
623	98.614	0.158	1.53	66	1.20	291	-0.056	719.2	0.00	15.19
624	98.773	0.159	1.53	66	1.20	291	-0.058	818.6	0.01	15.23
625	98.931	0.158	1.53	66	1.20	291	-0.058	837.4	0.02	14.99
626	99.088	0.157	1.53	66	1.20	293	-0.057	784.3	0.01	15.23
627	99.246	0.158	1.53	66	1.20	294	-0.059	755.8	0.01	15.45
628	99.404	0.158	1.53	66	1.20	296	-0.058	732.5	0.00	15.58
629	99.562	0.158	1.53	66	1.20	297	-0.059	605.9	0.06	15.72
630	99.721	0.159	1.53	66	1.20	296	-0.058	576.5	0.06	15.70
631	99.879	0.158	1.53	66	1.20	298	-0.060	506.4	0.05	15.21
632	100.037	0.158	1.53	66	1.20	297	-0.059	542.2	0.05	15.46
633	100.196	0.159	1.53	66	1.20	297	-0.058	486.5	0.05	15.20
634	100.354	0.158	1.53	66	1.20	298	-0.060	442.1	0.04	14.91
635	100.512	0.158	1.53	66	1.20	297	-0.059	505.9	0.05	15.12
636	100.671	0.159	1.53	66	1.20	300	-0.059	468.0	0.05	14.79
637	100.828	0.157	1.53	66	1.20	277	-0.055	439.5	0.04	15.01
638	100.987	0.159	1.53	66	1.20	261	-0.054	388.0	0.04	9.93
639	101.145	0.158	1.53	66	1.20	249	-0.053	536.4	0.00	9.55
640	101.303	0.158	1.53	66	1.20	240	-0.052	864.8	0.03	9.65
641	101.461	0.158	1.53	66	1.20	234	-0.051	1040.0	0.14	8.03
642	101.619	0.158	1.53	66	1.20	227	-0.051	1040.0	0.18	10.17
643	101.776	0.157	1.53	66	1.20	221	-0.049	1040.0	0.09	10.68
644	101.936	0.160	1.53	66	1.20	217	-0.049	1040.0	0.07	8.96

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
645	102.094	0.158	1.53	66	1.20	212	-0.048	1040.0	0.09	7.72
646	102.251	0.157	1.53	66	1.20	211	-0.046	1040.0	0.12	6.48
647	102.410	0.159	1.53	66	1.20	209	-0.045	1040.0	0.09	4.62
648	102.568	0.158	1.53	66	1.20	206	-0.045	1040.0	0.31	4.48
649	102.726	0.158	1.53	66	1.20	202	-0.044	1040.0	0.55	4.73
650	102.885	0.159	1.53	66	1.20	199	-0.044	1040.0	0.85	5.55
651	103.042	0.157	1.53	66	1.20	195	-0.042	1040.0	0.94	5.65
652	103.200	0.158	1.53	66	1.20	192	-0.042	1040.0	0.96	5.50
653	103.359	0.159	1.53	66	1.20	188	-0.041	1040.0	1.08	5.91
654	103.517	0.158	1.53	66	1.20	185	-0.041	1040.0	1.02	5.59
655	103.675	0.158	1.53	66	1.20	182	-0.041	1040.0	1.08	5.76
656	103.834	0.159	1.53	66	1.20	179	-0.040	1040.0	1.16	6.11
657	103.992	0.158	1.53	66	1.20	175	-0.040	1040.0	1.16	6.09
658	104.150	0.158	1.53	66	1.20	172	-0.039	1040.0	1.06	5.59
659	104.309	0.159	1.53	66	1.20	170	-0.038	1040.0	1.11	5.84
660	104.467	0.158	1.53	66	1.20	167	-0.038	1040.0	1.13	5.96
661	104.625	0.158	1.53	66	1.20	164	-0.037	1040.0	1.07	5.68
662	104.784	0.159	1.53	66	1.20	161	-0.037	1040.0	0.98	5.30
663	104.942	0.158	1.53	66	1.20	159	-0.037	1040.0	0.95	5.18
664	105.100	0.158	1.53	66	1.20	157	-0.036	1040.0	0.96	5.24
665	105.259	0.159	1.53	66	1.20	154	-0.036	1040.0	0.93	5.12
666	105.416	0.157	1.53	66	1.20	152	-0.035	1040.0	0.93	5.12
667	105.574	0.158	1.53	66	1.20	150	-0.034	1040.0	0.82	4.65
668	105.733	0.159	1.53	66	1.20	147	-0.034	1040.0	0.86	4.84
669	105.891	0.158	1.54	66	1.20	145	-0.034	1040.0	0.78	4.47
670	106.050	0.159	1.53	66	1.20	144	-0.034	1040.0	0.76	4.42
671	106.208	0.158	1.53	66	1.20	141	-0.033	1040.0	0.83	4.75
672	106.366	0.158	1.53	66	1.20	140	-0.033	1040.0	0.71	4.23
673	106.525	0.159	1.53	66	1.20	138	-0.032	1040.0	0.67	4.03
674	106.684	0.159	1.53	66	1.20	137	-0.031	1040.0	0.69	4.10
675	106.842	0.158	1.54	66	1.20	135	-0.031	1040.0	0.72	4.30
676	107.001	0.159	1.53	66	1.20	133	-0.031	1040.0	0.67	4.08
677	107.160	0.159	1.53	66	1.20	132	-0.031	1040.0	0.66	4.04
678	107.318	0.158	1.53	66	1.20	130	-0.031	1040.0	0.66	4.05
679	107.477	0.159	1.53	66	1.20	128	-0.031	1040.0	0.59	3.66
680	107.636	0.159	1.53	66	1.20	127	-0.030	1040.0	0.60	3.75

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
681	107.793	0.157	1.53	66	1.20	125	-0.030	1040.0	0.63	3.91
682	107.953	0.160	1.53	66	1.20	124	-0.029	1040.0	0.59	3.71
683	108.111	0.158	1.53	66	1.20	123	-0.028	1040.0	0.53	3.41
684	108.268	0.157	1.54	66	1.20	121	-0.029	1040.0	0.51	3.30
685	108.427	0.159	1.53	66	1.20	121	-0.027	1040.0	0.50	3.24
686	108.585	0.158	1.53	66	1.20	118	-0.029	1040.0	0.55	3.54
687	108.743	0.158	1.53	66	1.20	118	-0.028	1040.0	0.49	3.19
688	108.902	0.159	1.53	66	1.20	116	-0.027	1040.0	0.47	3.10
689	109.060	0.158	1.53	66	1.20	116	-0.028	1040.0	0.49	3.22
690	109.219	0.159	1.53	66	1.20	114	-0.027	1040.0	0.48	3.14
691	109.378	0.159	1.53	66	1.20	113	-0.027	1040.0	0.46	3.10
692	109.536	0.158	1.53	66	1.20	113	-0.027	1040.0	0.42	2.84
693	109.694	0.158	1.53	66	1.20	111	-0.026	1040.0	0.44	2.94
694	109.853	0.159	1.53	66	1.20	110	-0.027	1040.0	0.45	3.00
695	110.010	0.157	1.53	66	1.20	108	-0.026	1040.0	0.44	2.98
696	110.169	0.159	1.53	66	1.20	108	-0.026	1040.0	0.35	2.48
697	110.327	0.158	1.53	66	1.20	108	-0.026	1040.0	0.41	2.80
698	110.485	0.158	1.53	66	1.20	106	-0.026	1040.0	0.39	2.71
699	110.644	0.159	1.53	66	1.20	105	-0.026	1040.0	0.39	2.67
700	110.802	0.158	1.53	66	1.20	106	-0.025	1040.0	0.37	2.57
701	110.960	0.158	1.53	66	1.20	105	-0.026	1040.0	0.40	2.75
702	111.118	0.158	1.53	66	1.20	104	-0.025	1040.0	0.37	2.55
703	111.277	0.159	1.53	66	1.20	104	-0.025	1040.0	0.36	2.48
704	111.433	0.156	1.53	66	1.20	102	-0.024	1040.0	0.34	2.42
705	111.593	0.160	1.53	66	1.20	103	-0.025	1040.0	0.36	2.47
706	111.751	0.158	1.53	66	1.20	151	-0.046	1040.0	0.38	2.60
707	111.908	0.157	1.53	66	1.20	148	-0.036	1040.0	0.92	4.65
708	112.067	0.159	1.53	66	1.20	140	-0.035	1040.0	0.66	3.70
709	112.225	0.158	1.53	66	1.20	135	-0.032	1040.0	0.59	3.35
710	112.383	0.158	1.53	66	1.20	130	-0.031	1040.0	0.51	3.00
711	112.542	0.159	1.53	66	1.20	126	-0.031	1040.0	0.49	2.94
712	112.700	0.158	1.54	66	1.20	123	-0.029	1040.0	0.46	2.83
713	112.858	0.158	1.53	66	1.20	121	-0.029	1040.0	0.42	2.68
714	113.016	0.158	1.53	66	1.20	119	-0.029	1040.0	0.40	2.55
715	113.174	0.158	1.53	66	1.20	117	-0.028	1040.0	0.38	2.50
716	113.332	0.158	1.53	66	1.20	115	-0.028	1040.0	0.37	2.42

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
717	113.491	0.159	1.53	66	1.20	114	-0.027	1040.0	0.34	2.32
718	113.648	0.157	1.53	66	1.20	111	-0.027	1040.0	0.34	2.31
719	113.807	0.159	1.53	66	1.20	111	-0.027	1040.0	0.31	2.16
720	113.965	0.158	1.53	66	1.20	110	-0.026	1040.0	0.32	2.24
721	114.122	0.157	1.53	66	1.20	109	-0.027	1040.0	0.29	2.10
722	114.281	0.159	1.53	66	1.20	107	-0.026	1040.0	0.27	2.00
723	114.439	0.158	1.53	66	1.20	106	-0.026	1040.0	0.27	1.97
724	114.596	0.157	1.53	66	1.20	106	-0.026	1040.0	0.25	1.90
725	114.755	0.159	1.53	66	1.20	105	-0.026	1040.0	0.27	1.97
726	114.912	0.157	1.53	66	1.20	104	-0.026	1040.0	0.24	1.83
727	115.070	0.158	1.53	66	1.20	103	-0.025	1040.0	0.24	1.85
728	115.229	0.159	1.53	66	1.20	102	-0.025	1040.0	0.21	1.69
729	115.387	0.158	1.53	66	1.20	102	-0.024	1040.0	0.20	1.65
730	115.545	0.158	1.53	66	1.20	102	-0.024	1040.0	0.19	1.60
731	115.704	0.159	1.53	66	1.20	101	-0.024	1040.0	0.20	1.65
732	115.862	0.158	1.53	66	1.20	101	-0.024	1040.0	0.20	1.62
733	116.020	0.158	1.53	66	1.20	100	-0.024	1040.0	0.18	1.56
734	116.179	0.159	1.53	66	1.20	99	-0.024	1040.0	0.18	1.57
735	116.337	0.158	1.53	66	1.20	99	-0.024	1040.0	0.18	1.55
736	116.495	0.158	1.53	66	1.20	98	-0.024	1040.0	0.16	1.45
737	116.654	0.159	1.53	66	1.20	137	-0.045	1040.0	0.16	1.44
738	116.811	0.157	1.53	66	1.20	131	-0.033	1040.0	0.33	2.50
739	116.970	0.159	1.53	66	1.20	126	-0.031	1040.0	0.37	2.32
740	117.128	0.158	1.53	66	1.20	123	-0.031	1040.0	0.31	2.07
741	117.285	0.157	1.53	66	1.20	120	-0.030	1040.0	0.28	1.96
742	117.444	0.159	1.53	66	1.20	117	-0.029	1040.0	0.27	2.01
743	117.602	0.158	1.53	66	1.20	115	-0.029	1040.0	0.23	1.85
744	117.760	0.158	1.53	66	1.20	113	-0.029	1040.0	0.23	1.88
745	117.919	0.159	1.53	66	1.20	111	-0.028	1040.0	0.21	1.86
746	118.077	0.158	1.53	66	1.20	111	-0.027	1040.0	0.19	1.80
747	118.235	0.158	1.53	66	1.20	109	-0.027	1040.0	0.18	1.78
748	118.394	0.159	1.53	66	1.20	108	-0.026	1040.0	0.18	1.74
749	118.552	0.158	1.53	66	1.20	107	-0.027	1040.0	0.17	1.70
750	118.710	0.158	1.53	66	1.20	106	-0.026	1040.0	0.15	1.63
751	118.869	0.159	1.53	66	1.20	105	-0.026	1040.0	0.15	1.62
752	119.026	0.157	1.53	66	1.20	104	-0.026	1040.0	0.14	1.56

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
753	119.185	0.159	1.53	66	1.20	104	-0.025	1040.0	0.13	1.53
754	119.343	0.158	1.53	66	1.20	102	-0.026	1040.0	0.14	1.56
755	119.501	0.158	1.53	66	1.20	103	-0.025	1040.0	0.13	1.53
756	119.660	0.159	1.53	66	1.20	102	-0.025	1040.0	0.13	1.53
757	119.818	0.158	1.53	66	1.20	101	-0.024	1040.0	0.11	1.39
758	119.975	0.157	1.53	66	1.20	100	-0.024	1040.0	0.12	1.46
759	120.134	0.159	1.53	66	1.20	101	-0.024	1040.0	0.11	1.39
760	120.292	0.158	1.53	66	1.20	100	-0.024	1040.0	0.12	1.49
761	120.449	0.157	1.53	66	1.20	99	-0.024	1040.0	0.12	1.44
762	120.609	0.160	1.53	66	1.20	99	-0.024	1040.0	0.11	1.43
763	120.767	0.158	1.53	66	1.20	97	-0.024	1040.0	0.11	1.39
764	120.924	0.157	1.53	66	1.20	97	-0.024	1040.0	0.10	1.34
765	121.084	0.160	1.53	66	1.20	97	-0.024	1040.0	0.11	1.38
766	121.242	0.158	1.53	66	1.20	97	-0.024	1040.0	0.10	1.33
767	121.399	0.157	1.53	67	1.20	97	-0.024	1040.0	0.10	1.34
768	121.559	0.160	1.53	66	1.20	129	-0.043	1040.0	0.09	1.27
769	121.717	0.158	1.53	66	1.20	124	-0.033	1040.0	0.16	1.67
770	121.875	0.158	1.53	67	1.20	120	-0.031	1040.0	0.17	1.39
771	122.034	0.159	1.53	67	1.20	116	-0.030	1040.0	0.14	1.21
772	122.192	0.158	1.53	67	1.20	114	-0.030	1040.0	0.12	1.15
773	122.350	0.158	1.53	67	1.20	112	-0.029	1040.0	0.10	1.05
774	122.509	0.159	1.53	67	1.20	110	-0.027	1040.0	0.10	1.06
775	122.667	0.158	1.53	67	1.20	109	-0.027	1040.0	0.09	1.04
776	122.825	0.158	1.53	67	1.20	107	-0.027	1040.0	0.08	1.02
777	122.984	0.159	1.53	67	1.20	106	-0.026	1040.0	0.09	1.11
778	123.142	0.158	1.53	67	1.20	106	-0.025	1040.0	0.07	1.03
779	123.300	0.158	1.53	67	1.20	105	-0.025	1040.0	0.08	1.13
780	123.458	0.158	1.53	67	1.20	104	-0.024	1040.0	0.08	1.11
781	123.616	0.158	1.53	67	1.20	103	-0.024	1040.0	0.08	1.12
782	123.774	0.158	1.53	67	1.20	103	-0.023	1040.0	0.07	1.12
783	123.933	0.159	1.53	66	1.20	101	-0.024	1040.0	0.08	1.17
784	124.091	0.158	1.53	67	1.20	101	-0.024	1040.0	0.07	1.15
785	124.250	0.159	1.53	66	1.20	101	-0.025	1040.0	0.08	1.19
786	124.409	0.159	1.53	66	1.20	99	-0.024	1040.0	0.07	1.16
787	124.567	0.158	1.53	66	1.20	100	-0.025	1040.0	0.08	1.21
788	124.726	0.159	1.53	66	1.20	98	-0.025	1040.0	0.08	1.21

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
789	124.884	0.158	1.53	66	1.20	99	-0.024	1040.0	0.08	1.23
790	125.042	0.158	1.53	66	1.20	98	-0.024	1040.0	0.07	1.20
791	125.202	0.160	1.54	66	1.20	98	-0.023	1040.0	0.07	1.17
792	125.360	0.158	1.53	66	1.20	97	-0.024	1040.0	0.07	1.23
793	125.518	0.158	1.53	66	1.10	96	-0.024	1040.0	0.06	1.15
794	125.677	0.159	1.53	66	1.20	96	-0.024	1040.0	0.06	1.15
795	125.836	0.159	1.53	66	1.20	96	-0.023	1040.0	0.07	1.17
796	125.993	0.157	1.53	66	1.20	95	-0.020	1040.0	0.06	1.16
797	126.152	0.159	1.53	66	1.20	95	-0.024	1040.0	0.07	1.24
798	126.311	0.159	1.53	66	1.20	95	-0.024	1040.0	0.07	1.23
799	126.469	0.158	1.53	66	1.20	123	-0.037	1040.0	0.26	3.04
800	126.628	0.159	1.53	66	1.20	119	-0.032	1031.1	0.03	1.19
801	126.787	0.159	1.53	66	1.20	115	-0.031	839.6	0.01	0.97
802	126.945	0.158	1.53	66	1.20	112	-0.029	731.8	0.00	0.86
803	127.104	0.159	1.54	66	1.20	110	-0.026	700.8	0.00	0.79
804	127.263	0.159	1.53	66	1.20	108	-0.024	642.5	0.06	0.74
805	127.420	0.157	1.53	66	1.20	106	-0.024	660.9	0.00	0.77
806	127.579	0.159	1.53	66	1.20	126	-0.039	658.0	0.00	0.80
807	127.738	0.159	1.53	66	1.20	138	-0.038	1040.0	0.49	2.76
808	127.895	0.157	1.53	66	1.20	170	-0.039	1040.0	0.84	3.81
809	128.054	0.159	1.53	66	1.20	195	-0.042	1040.0	0.98	5.22
810	128.212	0.158	1.53	66	1.20	218	-0.044	1040.0	1.07	8.54
811	128.370	0.158	1.53	66	1.20	241	-0.047	1040.0	1.05	12.25
812	128.529	0.159	1.53	66	1.20	258	-0.049	1040.0	0.88	13.22
813	128.687	0.158	1.53	66	1.20	270	-0.052	1040.0	0.65	13.24
814	128.845	0.158	1.53	66	1.20	280	-0.053	1040.0	0.41	13.90
815	129.004	0.159	1.53	66	1.20	287	-0.054	1040.0	0.30	14.23
816	129.162	0.158	1.53	66	1.20	291	-0.057	1040.0	0.09	14.61
817	129.320	0.158	1.53	66	1.20	295	-0.056	1040.0	0.06	15.12
818	129.479	0.159	1.53	66	1.20	304	-0.058	1013.2	0.03	15.51
819	129.637	0.158	1.53	66	1.20	295	-0.056	1040.0	0.02	16.54
820	129.795	0.158	1.53	66	1.20	291	-0.058	787.6	0.01	15.64
821	129.953	0.158	1.53	66	1.20	297	-0.059	1040.0	0.07	15.27
822	130.111	0.158	1.53	66	1.20	298	-0.056	1040.0	0.09	14.71
823	130.270	0.159	1.53	66	1.20	299	-0.055	1040.0	0.06	14.45
824	130.428	0.158	1.53	66	1.20	300	-0.056	1040.0	0.05	14.45

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
825	130.586	0.158	1.53	66	1.20	301	-0.058	1040.0	0.06	14.73
826	130.745	0.159	1.53	66	1.20	303	-0.056	1040.0	0.08	14.43
827	130.903	0.158	1.53	66	1.20	300	-0.057	1040.0	0.11	14.03
828	131.060	0.157	1.53	66	1.20	301	-0.061	1040.0	0.10	14.78
829	131.220	0.160	1.53	66	1.20	305	-0.058	1040.0	0.15	14.44
830	131.378	0.158	1.53	66	1.20	307	-0.057	1040.0	0.12	14.26
831	131.535	0.157	1.53	66	1.20	304	-0.057	1040.0	0.12	14.05
832	131.694	0.159	1.53	66	1.20	305	-0.056	1040.0	0.15	13.95
833	131.852	0.158	1.53	66	1.20	308	-0.057	1040.0	0.20	13.60
834	132.010	0.158	1.53	66	1.20	306	-0.057	1040.0	0.17	13.77
835	132.168	0.158	1.53	66	1.20	306	-0.059	1040.0	0.20	13.99
836	132.326	0.158	1.54	66	1.20	280	-0.052	1040.0	0.30	11.30
837	132.484	0.158	1.53	66	1.20	261	-0.051	1040.0	0.32	7.82
838	132.642	0.158	1.53	66	1.20	249	-0.050	1040.0	0.29	7.30
839	132.800	0.158	1.53	66	1.20	239	-0.048	1040.0	0.28	6.92
840	132.958	0.158	1.53	66	1.20	233	-0.049	1040.0	0.31	5.31
841	133.117	0.159	1.53	66	1.20	227	-0.048	1040.0	0.24	8.16
842	133.275	0.158	1.53	66	1.20	222	-0.049	1040.0	0.24	7.04
843	133.433	0.158	1.53	66	1.20	217	-0.049	1040.0	0.24	5.63
844	133.592	0.159	1.53	66	1.20	213	-0.048	1040.0	0.22	4.82
845	133.750	0.158	1.53	66	1.20	212	-0.046	1040.0	0.19	3.79
846	133.909	0.159	1.53	66	1.20	210	-0.045	1040.0	0.13	2.70
847	134.067	0.158	1.53	66	1.20	207	-0.044	1040.0	0.28	2.72
848	134.225	0.158	1.53	66	1.20	204	-0.044	1040.0	0.43	3.02
849	134.384	0.159	1.53	66	1.20	200	-0.042	1040.0	0.48	2.96
850	134.542	0.158	1.53	66	1.20	196	-0.041	1040.0	0.57	3.21
851	134.700	0.158	1.53	66	1.20	193	-0.040	1040.0	0.66	3.59
852	134.858	0.158	1.53	66	1.20	189	-0.041	1040.0	0.66	3.56
853	135.016	0.158	1.53	66	1.20	186	-0.040	1040.0	0.61	3.33
854	135.174	0.158	1.53	66	1.20	183	-0.040	1040.0	0.65	3.54
855	135.333	0.159	1.53	66	1.20	180	-0.040	1040.0	0.64	3.53
856	135.492	0.159	1.53	66	1.20	176	-0.039	1040.0	0.62	3.47
857	135.649	0.157	1.53	66	1.20	174	-0.039	1040.0	0.64	3.60
858	135.809	0.160	1.53	66	1.20	171	-0.038	1040.0	0.61	3.50
859	135.967	0.158	1.53	66	1.20	168	-0.038	1040.0	0.68	3.84
860	136.125	0.158	1.53	66	1.20	166	-0.037	1040.0	0.65	3.72

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Meter Box Y Regression Offset: 1.016
Meter Box Y Regression Factor: 0
Meter Box Dynamic Y: 1.016
Sample Box ID: 372

Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
861	136.284	0.159	1.53	66	1.20	163	-0.037	1040.0	0.62	3.58
862	136.442	0.158	1.53	66	1.20	160	-0.036	1040.0	0.63	3.67
863	136.600	0.158	1.53	66	1.20	158	-0.036	1040.0	0.59	3.50
864	136.759	0.159	1.53	66	1.20	156	-0.036	1040.0	0.58	3.43
865	136.916	0.157	1.53	66	1.20	153	-0.035	1040.0	0.63	3.73
866	137.075	0.159	1.55	66	1.20	151	-0.035	1040.0	0.58	3.47
867	137.238	0.163	1.55	66	1.20	149	-0.034	1040.0	0.60	3.56
868	137.399	0.161	1.55	66	1.20	147	-0.033	1040.0	0.52	3.26
869	137.560	0.161	1.55	66	1.20	145	-0.033	1040.0	0.50	3.12
870	137.721	0.161	1.56	66	1.20	143	-0.033	1040.0	0.51	3.17
871	137.883	0.162	1.56	66	1.20	141	-0.033	1040.0	0.57	3.49
872	138.045	0.162	1.55	66	1.20	139	-0.032	1040.0	0.42	2.75
873	138.207	0.162	1.55	66	1.20	137	-0.031	1040.0	0.46	2.91
874	138.368	0.161	1.56	66	1.20	135	-0.031	1040.0	0.41	2.65
875	138.529	0.161	1.55	66	1.20	134	-0.031	1040.0	0.45	2.87
876	138.691	0.162	1.56	66	1.20	133	-0.030	1040.0	0.44	2.84
877	138.853	0.162	1.55	66	1.20	131	-0.030	1040.0	0.42	2.70
878	139.013	0.160	1.55	66	1.20	129	-0.029	1040.0	0.38	2.51
879	139.175	0.162	1.55	66	1.20	128	-0.029	1040.0	0.32	2.21
880	139.336	0.161	1.55	66	1.20	126	-0.029	1040.0	0.36	2.37
881	139.497	0.161	1.56	66	1.20	124	-0.029	1040.0	0.30	2.10
882	139.658	0.161	1.55	66	1.20	123	-0.028	1040.0	0.36	2.37
883	139.821	0.163	1.55	66	1.20	122	-0.029	1040.0	0.32	2.14
884	139.983	0.162	1.55	66	1.20	121	-0.028	1040.0	0.34	2.23
885	140.145	0.162	1.55	66	1.20	119	-0.026	1040.0	0.25	1.78
886	140.307	0.162	1.56	66	1.20	118	-0.026	1040.0	0.28	1.89
887	140.468	0.161	1.55	66	1.20	116	-0.025	1040.0	0.30	1.98
888	140.630	0.162	1.55	66	1.20	115	-0.025	1040.0	0.28	1.91
889	140.792	0.162	1.55	66	1.20	114	-0.028	1040.0	0.29	1.90
890	140.953	0.161	1.55	66	1.20	113	-0.027	1040.0	0.30	1.97
891	141.114	0.161	1.56	66	1.20	113	-0.026	1040.0	0.27	1.81
892	141.275	0.161	1.55	66	1.20	112	-0.027	1040.0	0.26	1.72
893	141.438	0.163	1.56	66	1.20	110	-0.027	1040.0	0.26	1.70
894	141.600	0.162	1.55	66	1.20	110	-0.026	1040.0	0.24	1.58
895	141.762	0.162	1.55	66	1.20	109	-0.026	1040.0	0.25	1.64
896	141.924	0.162	1.56	66	1.20	108	-0.026	1040.0	0.24	1.55

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
897	142.085	0.161	1.55	66	1.20	108	-0.026	1040.0	0.21	1.44
898	142.248	0.163	1.56	66	1.20	106	-0.026	1040.0	0.20	1.37
899	142.409	0.161	1.55	66	1.20	106	-0.026	1040.0	0.23	1.51
900	142.571	0.162	1.55	66	1.20	105	-0.026	1040.0	0.23	1.47
901	142.732	0.161	1.56	66	1.20	105	-0.025	1040.0	0.22	1.45
902	142.893	0.161	1.56	66	1.20	104	-0.026	1040.0	0.22	1.43
903	143.056	0.163	1.55	66	1.20	105	-0.026	399.4	0.11	0.92
904	143.218	0.162	1.55	66	1.20	105	-0.026	20.9	0.00	0.11
905	143.380	0.162	1.56	66	1.20	153	-0.048	176.3	0.00	0.39
906	143.541	0.161	1.55	66	1.20	148	-0.036	1040.0	0.54	3.22
907	143.703	0.162	1.55	66	1.20	139	-0.033	1040.0	0.48	2.90
908	143.865	0.162	1.55	66	1.20	132	-0.032	1040.0	0.42	2.59
909	144.026	0.161	1.55	66	1.20	128	-0.030	1040.0	0.42	2.55
910	144.187	0.161	1.55	66	1.20	125	-0.030	1040.0	0.36	2.22
911	144.347	0.160	1.55	66	1.20	121	-0.029	1040.0	0.29	1.85
912	144.510	0.163	1.56	66	1.20	118	-0.029	1040.0	0.27	1.74
913	144.672	0.162	1.55	66	1.20	116	-0.028	1040.0	0.24	1.62
914	144.833	0.161	1.55	66	1.20	113	-0.027	1040.0	0.23	1.56
915	144.994	0.161	1.56	66	1.20	112	-0.027	1040.0	0.23	1.56
916	145.155	0.161	1.55	66	1.20	110	-0.026	1040.0	0.19	1.38
917	145.318	0.163	1.55	66	1.20	108	-0.024	1040.0	0.18	1.32
918	145.480	0.162	1.55	66	1.20	108	-0.026	1040.0	0.18	1.32
919	145.642	0.162	1.55	66	1.20	107	-0.024	1040.0	0.17	1.26
920	145.803	0.161	1.55	66	1.20	106	-0.025	1040.0	0.16	1.19
921	145.964	0.161	1.55	66	1.20	104	-0.024	1040.0	0.17	1.26
922	146.127	0.163	1.56	66	1.20	102	-0.023	1040.0	0.14	1.06
923	146.289	0.162	1.55	66	1.20	101	-0.024	1040.0	0.15	1.12
924	146.450	0.161	1.55	66	1.20	101	-0.024	1040.0	0.12	1.00
925	146.611	0.161	1.56	66	1.20	100	-0.025	1040.0	0.14	1.09
926	146.772	0.161	1.55	66	1.20	98	-0.021	1040.0	0.10	0.88
927	146.934	0.162	1.55	66	1.20	97	-0.021	1040.0	0.11	0.93
928	147.095	0.161	1.55	66	1.20	97	-0.021	1040.0	0.12	0.98
929	147.256	0.161	1.56	66	1.20	96	-0.020	1040.0	0.11	0.90
930	147.417	0.161	1.56	66	1.20	96	-0.021	1040.0	0.09	0.84
931	147.579	0.162	1.56	66	1.20	94	-0.020	1040.0	0.11	0.92
932	147.741	0.162	1.55	66	1.20	92	-0.020	1040.0	0.09	0.80

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
933	147.902	0.161	1.55	66	1.20	92	-0.020	1040.0	0.08	0.78
934	148.063	0.161	1.56	66	1.20	92	-0.020	1040.0	0.09	0.81
935	148.224	0.161	1.55	66	1.20	92	-0.020	1040.0	0.09	0.82
936	148.386	0.162	1.55	66	1.20	132	-0.041	1040.0	0.54	3.00
937	148.547	0.161	1.55	66	1.20	127	-0.029	1040.0	0.11	1.21
938	148.709	0.162	1.55	66	1.20	121	-0.031	1040.0	0.09	1.05
939	148.870	0.161	1.56	66	1.20	118	-0.030	1040.0	0.08	0.95
940	149.031	0.161	1.56	66	1.20	116	-0.029	1040.0	0.08	0.94
941	149.193	0.162	1.55	66	1.20	113	-0.029	1040.0	0.06	0.84
942	149.354	0.161	1.55	66	1.20	111	-0.028	1040.0	0.05	0.75
943	149.515	0.161	1.55	66	1.20	108	-0.027	1040.0	0.05	0.71
944	149.676	0.161	1.56	66	1.20	107	-0.027	1040.0	0.04	0.69
945	149.838	0.162	1.55	66	1.20	106	-0.026	1037.1	0.03	0.60
946	150.000	0.162	1.55	66	1.20	105	-0.026	1024.8	0.03	0.62
947	150.161	0.161	1.55	66	1.20	103	-0.025	981.5	0.03	0.62
948	150.322	0.161	1.56	66	1.20	102	-0.025	942.3	0.02	0.56
949	150.483	0.161	1.56	66	1.20	102	-0.025	884.3	0.02	0.54
950	150.646	0.163	1.55	66	1.20	100	-0.024	900.5	0.02	0.55
951	150.808	0.162	1.55	66	1.20	99	-0.024	917.3	0.02	0.54
952	150.969	0.161	1.55	66	1.20	97	-0.023	818.0	0.01	0.50
953	151.130	0.161	1.56	66	1.20	97	-0.023	808.9	0.00	0.47
954	151.291	0.161	1.56	66	1.20	95	-0.022	822.4	0.01	0.51
955	151.454	0.163	1.55	66	1.20	95	-0.022	764.2	0.00	0.47
956	151.615	0.161	1.55	66	1.20	93	-0.023	697.8	0.00	0.43
957	151.776	0.161	1.56	66	1.20	93	-0.022	749.0	0.00	0.47
958	151.937	0.161	1.55	66	1.20	93	-0.021	721.8	0.00	0.45
959	152.098	0.161	1.55	66	1.20	93	-0.021	748.3	0.00	0.47
960	152.260	0.162	1.55	66	1.20	93	-0.022	724.6	0.01	0.47
961	152.421	0.161	1.55	66	1.20	92	-0.022	708.8	0.00	0.44
962	152.582	0.161	1.55	66	1.20	90	-0.022	660.0	0.07	0.41
963	152.742	0.160	1.55	66	1.20	90	-0.022	668.7	0.07	0.42
964	152.905	0.163	1.55	66	1.20	90	-0.022	692.7	0.00	0.45
965	153.066	0.161	1.55	66	1.20	90	-0.021	650.9	0.00	0.43
966	153.227	0.161	1.55	66	1.20	88	-0.021	773.3	0.00	0.46
967	153.388	0.161	1.55	66	1.20	125	-0.039	1040.0	0.21	2.05
968	153.549	0.161	1.55	66	1.20	120	-0.030	810.8	0.01	0.69

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
969	153.711	0.162	1.55	66	1.20	115	-0.027	670.0	0.07	0.58
970	153.872	0.161	1.55	66	1.20	112	-0.026	584.2	0.06	0.50
971	154.033	0.161	1.56	66	1.20	110	-0.026	536.0	0.05	0.46
972	154.194	0.161	1.55	66	1.20	107	-0.025	458.6	0.05	0.39
973	154.356	0.162	1.55	66	1.20	106	-0.024	424.6	0.04	0.39
974	154.518	0.162	1.55	66	1.20	104	-0.024	426.3	0.04	0.36
975	154.679	0.161	1.55	67	1.20	103	-0.024	413.9	0.04	0.35
976	154.840	0.161	1.55	67	1.20	101	-0.024	396.4	0.04	0.34
977	155.001	0.161	1.55	66	1.20	101	-0.023	355.6	0.04	0.33
978	155.164	0.163	1.55	66	1.20	99	-0.023	367.7	0.04	0.31
979	155.326	0.162	1.55	66	1.20	97	-0.022	360.5	0.04	0.32
980	155.487	0.161	1.55	66	1.20	97	-0.022	375.4	0.04	0.31
981	155.648	0.161	1.56	66	1.20	96	-0.021	387.4	0.04	0.32
982	155.809	0.161	1.56	66	1.20	94	-0.022	381.6	0.04	0.30
983	155.971	0.162	1.55	67	1.20	95	-0.021	347.6	0.03	0.30
984	156.133	0.162	1.55	67	1.20	95	-0.022	345.6	0.03	0.29
985	156.295	0.162	1.55	66	1.20	94	-0.022	397.4	0.04	0.33
986	156.457	0.162	1.56	66	1.20	93	-0.023	357.3	0.04	0.30
987	156.618	0.161	1.56	66	1.20	92	-0.022	346.6	0.03	0.28
988	156.781	0.163	1.56	66	1.20	91	-0.022	353.7	0.04	0.28
989	156.943	0.162	1.55	66	1.20	91	-0.022	366.7	0.04	0.30
990	157.105	0.162	1.55	66	1.20	90	-0.022	331.1	0.03	0.28
991	157.267	0.162	1.56	66	1.20	89	-0.022	366.9	0.04	0.30
992	157.429	0.162	1.56	66	1.20	89	-0.022	311.3	0.03	0.26
993	157.592	0.163	1.56	66	1.20	88	-0.022	334.9	0.03	0.27
994	157.755	0.163	1.56	66	1.20	88	-0.022	307.8	0.03	0.26
995	157.917	0.162	1.56	66	1.20	88	-0.022	329.8	0.03	0.27
996	158.079	0.162	1.56	66	1.20	86	-0.022	360.2	0.04	0.28
997	158.241	0.162	1.56	66	1.20	87	-0.022	313.9	0.03	0.25
998	158.403	0.162	1.56	66	1.20	119	-0.034	1040.0	0.07	1.16
999	158.566	0.163	1.55	66	1.20	113	-0.030	637.9	0.06	0.54
1000	158.729	0.163	1.56	66	1.20	110	-0.028	536.4	0.05	0.46
1001	158.891	0.162	1.56	66	1.20	127	-0.040	1040.0	0.09	1.01
1002	159.053	0.162	1.56	66	1.20	155	-0.042	1040.0	0.39	1.42
1003	159.215	0.162	1.56	65	1.20	172	-0.042	1040.0	0.48	2.10
1004	159.377	0.162	1.56	65	1.20	183	-0.044	1040.0	0.69	2.72

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1005	159.540	0.163	1.56	65	1.20	196	-0.045	1040.0	1.11	4.03
1006	159.702	0.162	1.55	65	1.20	211	-0.047	1040.0	1.57	6.44
1007	159.864	0.162	1.56	65	1.20	226	-0.048	1040.0	1.88	8.92
1008	160.025	0.161	1.56	65	1.20	241	-0.052	1040.0	1.51	11.15
1009	160.186	0.161	1.56	65	1.20	257	-0.056	1040.0	1.04	11.67
1010	160.349	0.163	1.56	65	1.20	275	-0.059	1040.0	0.03	14.80
1011	160.511	0.162	1.55	65	1.20	286	-0.059	816.7	0.01	15.10
1012	160.672	0.161	1.55	65	1.20	292	-0.059	697.8	0.00	14.75
1013	160.833	0.161	1.56	65	1.20	298	-0.061	766.8	0.01	15.38
1014	160.994	0.161	1.56	65	1.20	300	-0.061	793.2	0.00	15.20
1015	161.157	0.163	1.56	65	1.20	301	-0.059	881.8	0.02	15.01
1016	161.319	0.162	1.55	65	1.20	304	-0.059	1040.0	0.03	14.88
1017	161.480	0.161	1.56	65	1.20	302	-0.059	965.9	0.02	14.31
1018	161.641	0.161	1.56	65	1.20	300	-0.059	1040.0	0.06	14.86
1019	161.802	0.161	1.55	65	1.20	306	-0.059	1040.0	0.08	14.71
1020	161.964	0.162	1.55	65	1.20	304	-0.059	1040.0	0.06	14.45
1021	162.125	0.161	1.55	65	1.20	306	-0.059	1040.0	0.10	14.35
1022	162.286	0.161	1.56	65	1.20	305	-0.059	1040.0	0.07	14.65
1023	162.446	0.160	1.56	65	1.20	307	-0.060	1040.0	0.07	14.42
1024	162.609	0.163	1.56	65	1.20	308	-0.059	1040.0	0.09	13.97
1025	162.771	0.162	1.55	65	1.20	310	-0.058	1040.0	0.09	13.94
1026	162.932	0.161	1.55	65	1.20	307	-0.058	1040.0	0.09	14.19
1027	163.093	0.161	1.56	65	1.20	302	-0.058	1040.0	0.05	14.73
1028	163.254	0.161	1.55	65	1.20	301	-0.060	1040.0	0.14	14.24
1029	163.416	0.162	1.55	65	1.20	306	-0.060	1040.0	0.14	13.96
1030	163.577	0.161	1.55	65	1.20	309	-0.058	1040.0	0.12	13.78
1031	163.738	0.161	1.55	65	1.20	283	-0.053	1040.0	0.13	11.37
1032	163.898	0.160	1.56	65	1.20	264	-0.051	1040.0	0.18	7.96
1033	164.060	0.162	1.55	65	1.20	251	-0.051	1040.0	0.20	7.20
1034	164.222	0.162	1.55	65	1.20	241	-0.049	1040.0	0.24	6.69
1035	164.383	0.161	1.55	65	1.20	234	-0.048	1040.0	0.32	4.85
1036	164.544	0.161	1.56	65	1.20	228	-0.048	1040.0	0.20	7.73
1037	164.705	0.161	1.55	65	1.20	222	-0.047	1040.0	0.27	6.45
1038	164.867	0.162	1.56	65	1.20	218	-0.046	1040.0	0.28	4.75
1039	165.029	0.162	1.55	65	1.20	213	-0.045	1040.0	0.27	4.08
1040	165.190	0.161	1.55	65	1.20	211	-0.043	1040.0	0.21	3.08

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1041	165.351	0.161	1.56	65	1.20	210	-0.041	1040.0	0.12	2.03
1042	165.513	0.162	1.55	65	1.20	207	-0.041	1040.0	0.21	2.07
1043	165.675	0.162	1.55	65	1.20	203	-0.040	1040.0	0.30	2.19
1044	165.836	0.161	1.55	65	1.20	200	-0.039	1040.0	0.38	2.40
1045	165.997	0.161	1.56	65	1.20	196	-0.039	1040.0	0.41	2.43
1046	166.158	0.161	1.56	65	1.20	192	-0.038	1040.0	0.46	2.60
1047	166.320	0.162	1.55	65	1.20	189	-0.038	1040.0	0.43	2.44
1048	166.482	0.162	1.55	65	1.20	185	-0.037	1040.0	0.49	2.70
1049	166.643	0.161	1.55	65	1.20	182	-0.036	1040.0	0.50	2.72
1050	166.804	0.161	1.56	65	1.20	179	-0.036	1040.0	0.48	2.63
1051	166.965	0.161	1.56	65	1.20	176	-0.035	1040.0	0.50	2.70
1052	167.126	0.161	1.55	65	1.20	173	-0.035	1040.0	0.59	3.10
1053	167.287	0.161	1.55	65	1.20	170	-0.034	1040.0	0.54	2.85
1054	167.448	0.161	1.55	65	1.20	167	-0.034	1040.0	0.50	2.70
1055	167.609	0.161	1.55	66	1.20	164	-0.034	1040.0	0.53	2.81
1056	167.771	0.162	1.55	66	1.20	162	-0.033	1040.0	0.51	2.72
1057	167.932	0.161	1.55	65	1.20	160	-0.033	1040.0	0.50	2.70
1058	168.093	0.161	1.55	66	1.20	157	-0.032	1040.0	0.48	2.59
1059	168.254	0.161	1.55	66	1.20	155	-0.032	1040.0	0.53	2.80
1060	168.415	0.161	1.55	66	1.20	152	-0.031	1040.0	0.52	2.74
1061	168.577	0.162	1.55	66	1.20	151	-0.031	1040.0	0.51	2.71
1062	168.738	0.161	1.55	66	1.20	148	-0.031	1040.0	0.55	2.87
1063	168.899	0.161	1.56	66	1.20	146	-0.030	1040.0	0.51	2.68
1064	169.059	0.160	1.55	66	1.20	144	-0.030	1040.0	0.48	2.55
1065	169.222	0.163	1.55	66	1.20	143	-0.029	1040.0	0.38	2.12
1066	169.383	0.161	1.55	66	1.20	140	-0.028	1040.0	0.49	2.59
1067	169.544	0.161	1.55	66	1.20	138	-0.028	1040.0	0.43	2.34
1068	169.705	0.161	1.55	66	1.20	136	-0.028	1040.0	0.39	2.14
1069	169.866	0.161	1.55	66	1.20	135	-0.027	1040.0	0.46	2.43
1070	170.028	0.162	1.55	66	1.20	133	-0.028	1040.0	0.45	2.41
1071	170.189	0.161	1.55	66	1.20	131	-0.027	1040.0	0.41	2.19
1072	170.350	0.161	1.55	66	1.20	130	-0.026	1040.0	0.41	2.22
1073	170.510	0.160	1.55	66	1.20	128	-0.026	1040.0	0.39	2.13
1074	170.673	0.163	1.55	66	1.20	127	-0.026	1040.0	0.37	2.02
1075	170.834	0.161	1.55	66	1.20	126	-0.026	1040.0	0.32	1.79
1076	170.995	0.161	1.55	66	1.20	124	-0.026	1040.0	0.37	2.01

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1077	171.156	0.161	1.55	66	1.20	123	-0.024	1040.0	0.33	1.81
1078	171.317	0.161	1.55	66	1.20	121	-0.025	1040.0	0.32	1.77
1079	171.479	0.162	1.55	66	1.20	120	-0.024	1040.0	0.34	1.83
1080	171.640	0.161	1.55	66	1.20	119	-0.024	1040.0	0.31	1.72
1081	171.801	0.161	1.55	66	1.20	118	-0.024	1040.0	0.34	1.85
1082	171.961	0.160	1.55	66	1.20	117	-0.024	1040.0	0.34	1.81
1083	172.123	0.162	1.56	66	1.20	115	-0.024	1040.0	0.31	1.71
1084	172.285	0.162	1.55	66	1.20	114	-0.024	1040.0	0.34	1.84
1085	172.446	0.161	1.55	66	1.20	113	-0.023	1040.0	0.28	1.58
1086	172.607	0.161	1.55	66	1.20	112	-0.023	1040.0	0.26	1.48
1087	172.768	0.161	1.55	66	1.20	111	-0.023	1040.0	0.30	1.64
1088	172.930	0.162	1.55	66	1.20	110	-0.023	1040.0	0.32	1.72
1089	173.091	0.161	1.55	66	1.20	109	-0.023	1040.0	0.29	1.58
1090	173.252	0.161	1.55	66	1.20	109	-0.022	1040.0	0.29	1.58
1091	173.413	0.161	1.56	66	1.20	108	-0.022	1040.0	0.25	1.42
1092	173.574	0.161	1.55	66	1.20	107	-0.022	1040.0	0.24	1.34
1093	173.735	0.161	1.55	66	1.20	106	-0.022	1040.0	0.29	1.55
1094	173.896	0.161	1.55	66	1.20	105	-0.022	1040.0	0.24	1.34
1095	174.057	0.161	1.55	66	1.20	105	-0.022	1040.0	0.25	1.38
1096	174.218	0.161	1.55	66	1.20	103	-0.022	1040.0	0.30	1.60
1097	174.380	0.162	1.56	66	1.20	103	-0.022	1040.0	0.25	1.38
1098	174.542	0.162	1.55	66	1.20	102	-0.022	1040.0	0.26	1.44
1099	174.703	0.161	1.55	66	1.20	102	-0.022	1040.0	0.26	1.41
1100	174.865	0.162	1.56	66	1.20	150	-0.045	1040.0	0.25	1.46
1101	175.026	0.161	1.55	66	1.20	149	-0.034	1040.0	0.59	3.28
1102	175.188	0.162	1.55	66	1.20	141	-0.032	1040.0	0.51	2.87
1103	175.350	0.162	1.55	66	1.20	134	-0.030	1040.0	0.43	2.52
1104	175.512	0.162	1.55	66	1.20	130	-0.029	1040.0	0.43	2.52
1105	175.673	0.161	1.55	66	1.20	125	-0.028	1040.0	0.37	2.18
1106	175.835	0.162	1.55	66	1.20	122	-0.028	1040.0	0.34	2.04
1107	175.997	0.162	1.55	66	1.20	119	-0.027	1040.0	0.27	1.73
1108	176.158	0.161	1.55	66	1.20	117	-0.027	1040.0	0.26	1.67
1109	176.319	0.161	1.56	66	1.20	116	-0.026	1040.0	0.24	1.54
1110	176.480	0.161	1.55	66	1.20	115	-0.026	1040.0	0.23	1.51
1111	176.642	0.162	1.55	66	1.20	113	-0.025	1040.0	0.19	1.31
1112	176.804	0.162	1.55	66	1.20	110	-0.025	1040.0	0.21	1.43

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Meter Box Y Regression Offset: 1.016
Meter Box Y Regression Factor: 0
Meter Box Dynamic Y: 1.016
Sample Box ID: 372

Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1113	176.965	0.161	1.55	66	1.20	111	-0.025	1040.0	0.18	1.27
1114	177.127	0.162	1.55	66	1.20	108	-0.024	1040.0	0.18	1.27
1115	177.288	0.161	1.55	66	1.20	107	-0.024	1040.0	0.20	1.36
1116	177.450	0.162	1.55	66	1.20	104	-0.024	1040.0	0.18	1.26
1117	177.612	0.162	1.55	66	1.20	104	-0.023	1040.0	0.20	1.34
1118	177.773	0.161	1.55	66	1.20	104	-0.023	1040.0	0.17	1.20
1119	177.934	0.161	1.55	66	1.20	103	-0.023	1040.0	0.15	1.13
1120	178.095	0.161	1.55	66	1.20	101	-0.023	1040.0	0.14	1.06
1121	178.258	0.163	1.55	66	1.20	101	-0.023	1040.0	0.15	1.13
1122	178.420	0.162	1.55	66	1.20	100	-0.023	1040.0	0.12	0.96
1123	178.582	0.162	1.55	66	1.20	98	-0.022	1040.0	0.12	1.00
1124	178.743	0.161	1.56	66	1.20	99	-0.022	1040.0	0.13	1.01
1125	178.904	0.161	1.55	66	1.20	97	-0.022	1040.0	0.14	1.07
1126	179.067	0.163	1.55	66	1.20	96	-0.022	1040.0	0.13	1.04
1127	179.229	0.162	1.55	66	1.20	96	-0.022	1040.0	0.11	0.93
1128	179.391	0.162	1.55	66	1.20	95	-0.022	1040.0	0.13	1.02
1129	179.552	0.161	1.56	66	1.20	96	-0.022	1040.0	0.11	0.90
1130	179.713	0.161	1.56	66	1.20	95	-0.021	1040.0	0.10	0.89
1131	179.876	0.163	1.55	66	1.20	135	-0.042	1040.0	0.25	1.60
1132	180.038	0.162	1.55	66	1.20	128	-0.032	1040.0	0.16	1.50
1133	180.199	0.161	1.55	66	1.20	124	-0.030	1040.0	0.13	1.27
1134	180.360	0.161	1.55	66	1.20	120	-0.029	1040.0	0.11	1.12
1135	180.521	0.161	1.56	66	1.20	117	-0.027	1040.0	0.11	1.10
1136	180.684	0.163	1.56	66	1.20	114	-0.026	1040.0	0.09	0.95
1137	180.846	0.162	1.55	66	1.20	113	-0.026	1040.0	0.07	0.85
1138	181.008	0.162	1.55	66	1.20	111	-0.025	1040.0	0.09	0.93
1139	181.169	0.161	1.56	66	1.20	110	-0.025	1040.0	0.07	0.84
1140	181.330	0.161	1.56	66	1.20	108	-0.025	1040.0	0.06	0.79
1141	181.493	0.163	1.56	66	1.20	107	-0.024	1040.0	0.05	0.74
1142	181.655	0.162	1.55	66	1.20	105	-0.024	1040.0	0.03	0.62
1143	181.817	0.162	1.55	66	1.20	105	-0.024	997.9	0.03	0.63
1144	181.979	0.162	1.56	66	1.20	103	-0.023	1030.5	0.04	0.65
1145	182.140	0.161	1.56	66	1.20	101	-0.022	1040.0	0.04	0.65
1146	182.302	0.162	1.55	66	1.20	102	-0.022	955.5	0.02	0.59
1147	182.464	0.162	1.55	66	1.20	100	-0.022	1040.0	0.04	0.66
1148	182.625	0.161	1.55	66	1.20	99	-0.021	958.8	0.03	0.62

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1149	182.786	0.161	1.56	66	1.20	97	-0.021	983.4	0.03	0.62
1150	182.947	0.161	1.56	66	1.20	98	-0.021	906.3	0.02	0.54
1151	183.109	0.162	1.55	66	1.20	96	-0.021	934.5	0.03	0.60
1152	183.271	0.162	1.55	66	1.20	97	-0.021	934.7	0.03	0.62
1153	183.433	0.162	1.55	66	1.20	96	-0.021	872.3	0.01	0.51
1154	183.594	0.161	1.56	66	1.20	95	-0.021	841.9	0.01	0.54
1155	183.755	0.161	1.55	66	1.20	93	-0.020	877.5	0.01	0.53
1156	183.917	0.162	1.56	66	1.20	93	-0.020	811.4	0.01	0.52
1157	184.079	0.162	1.55	66	1.20	94	-0.020	720.5	0.00	0.47
1158	184.240	0.161	1.55	66	1.20	92	-0.020	826.7	0.01	0.54
1159	184.402	0.162	1.55	66	1.20	91	-0.020	785.3	0.00	0.49
1160	184.564	0.162	1.55	66	1.20	92	-0.020	767.6	0.00	0.49
1161	184.726	0.162	1.55	66	1.20	92	-0.019	750.2	0.00	0.47
1162	184.888	0.162	1.55	66	1.20	127	-0.040	1040.0	0.17	1.63
1163	185.049	0.161	1.55	66	1.20	121	-0.029	1040.0	0.06	0.97
1164	185.210	0.161	1.56	66	1.20	116	-0.028	1040.0	0.04	0.80
1165	185.372	0.162	1.56	66	1.20	113	-0.027	961.7	0.02	0.69
1166	185.534	0.162	1.55	66	1.20	110	-0.026	884.9	0.01	0.63
1167	185.696	0.162	1.55	66	1.20	109	-0.025	799.2	0.01	0.60
1168	185.858	0.162	1.56	66	1.20	106	-0.025	727.9	0.00	0.53
1169	186.020	0.162	1.56	66	1.20	105	-0.024	663.6	0.00	0.53
1170	186.182	0.162	1.56	66	1.20	103	-0.024	673.9	0.00	0.56
1171	186.345	0.163	1.55	66	1.20	102	-0.025	738.3	0.01	0.59
1172	186.507	0.162	1.55	66	1.20	101	-0.024	650.2	0.07	0.51
1173	186.669	0.162	1.55	66	1.20	100	-0.024	601.0	0.06	0.47
1174	186.830	0.161	1.56	66	1.20	98	-0.024	616.6	0.06	0.48
1175	186.991	0.161	1.55	66	1.20	99	-0.023	615.5	0.06	0.49
1176	187.154	0.163	1.55	66	1.20	97	-0.023	587.8	0.06	0.47
1177	187.315	0.161	1.55	66	1.20	96	-0.022	662.2	0.07	0.52
1178	187.477	0.162	1.55	66	1.20	95	-0.022	622.4	0.06	0.52
1179	187.638	0.161	1.55	66	1.20	95	-0.022	636.6	0.06	0.51
1180	187.799	0.161	1.55	66	1.20	95	-0.022	678.7	0.00	0.56
1181	187.961	0.162	1.55	66	1.20	94	-0.021	686.8	0.00	0.54
1182	188.122	0.161	1.55	66	1.20	93	-0.021	640.6	0.06	0.49
1183	188.283	0.161	1.55	66	1.20	92	-0.021	570.9	0.06	0.50
1184	188.444	0.161	1.55	66	1.20	92	-0.021	612.9	0.06	0.50

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1185	188.607	0.163	1.55	66	1.20	92	-0.021	589.1	0.06	0.49
1186	188.769	0.162	1.55	66	1.20	91	-0.021	598.3	0.06	0.47
1187	188.930	0.161	1.55	66	1.20	90	-0.021	613.7	0.06	0.52
1188	189.091	0.161	1.55	66	1.20	91	-0.021	667.7	0.07	0.51
1189	189.252	0.161	1.55	66	1.20	91	-0.021	658.3	0.00	0.54
1190	189.414	0.162	1.56	66	1.20	90	-0.021	663.5	0.07	0.53
1191	189.575	0.161	1.55	66	1.20	88	-0.020	652.2	0.07	0.52
1192	189.736	0.161	1.56	66	1.20	89	-0.021	679.1	0.00	0.57
1193	189.897	0.161	1.56	66	1.20	120	-0.038	1040.0	0.18	2.12
1194	190.058	0.161	1.55	66	1.20	114	-0.028	1040.0	0.06	1.02
1195	190.220	0.162	1.55	66	1.20	121	-0.039	1040.0	0.06	1.01
1196	190.381	0.161	1.55	66	1.20	142	-0.038	1040.0	0.21	1.40
1197	190.542	0.161	1.56	66	1.20	166	-0.039	1040.0	0.38	1.89
1198	190.703	0.161	1.56	66	1.20	183	-0.041	1040.0	0.76	3.59
1199	190.865	0.162	1.55	66	1.20	206	-0.046	1040.0	1.50	6.56
1200	191.027	0.162	1.55	66	1.20	224	-0.046	1040.0	2.05	9.37
1201	191.188	0.161	1.55	66	1.20	239	-0.048	1040.0	2.28	11.06
1202	191.349	0.161	1.56	66	1.20	253	-0.051	1040.0	1.66	11.69
1203	191.510	0.161	1.55	66	1.20	269	-0.054	1040.0	0.45	13.52
1204	191.672	0.162	1.55	66	1.20	282	-0.056	1040.0	0.08	14.55
1205	191.833	0.161	1.55	66	1.20	289	-0.056	1033.2	0.03	14.71
1206	191.994	0.161	1.55	66	1.20	293	-0.059	1040.0	0.06	14.61
1207	192.155	0.161	1.55	66	1.20	297	-0.059	1040.0	0.06	14.50
1208	192.317	0.162	1.55	66	1.20	301	-0.058	1040.0	0.04	14.89
1209	192.479	0.162	1.55	66	1.20	298	-0.057	1040.0	0.04	17.18
1210	192.640	0.161	1.55	66	1.20	293	-0.056	728.9	0.00	15.80
1211	192.802	0.162	1.55	66	1.20	291	-0.059	664.8	0.07	15.29
1212	192.963	0.161	1.56	66	1.20	295	-0.058	916.7	0.02	15.68
1213	193.126	0.163	1.55	66	1.20	298	-0.056	949.7	0.03	15.55
1214	193.288	0.162	1.55	66	1.20	299	-0.057	1013.1	0.03	15.14
1215	193.450	0.162	1.55	66	1.20	299	-0.058	1040.0	0.03	15.01
1216	193.611	0.161	1.55	66	1.20	300	-0.058	1040.0	0.04	15.09
1217	193.772	0.161	1.55	66	1.20	301	-0.060	1040.0	0.04	14.48
1218	193.934	0.162	1.55	66	1.20	306	-0.061	1040.0	0.06	14.16
1219	194.096	0.162	1.55	66	1.20	309	-0.058	1040.0	0.05	14.01
1220	194.257	0.161	1.55	66	1.20	310	-0.059	1040.0	0.04	14.00

Train D - Ambient Background and Flue Gas Data

Run:	4	Test Date:	12/5/2024
Manufacturer:	Central Boiler	Meter Box Y Regression Offset:	1.016
Model:	Classic Edge 560.1	Meter Box Y Regression Factor:	0
Tracking No.:	2495	Meter Box Dynamic Y:	1.016
Project No.:	0117WB043E	Sample Box ID:	372
Test Start Time:	17:03		
Total Sampling Time	2262 min		
Recording Interval	1 min		

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1221	194.418	0.161	1.55	66	1.20	308	-0.059	1001.4	0.02	14.08
1222	194.579	0.161	1.55	66	1.20	303	-0.059	843.8	0.01	14.43
1223	194.742	0.163	1.55	66	1.20	302	-0.059	869.1	0.02	14.29
1224	194.904	0.162	1.55	66	1.20	309	-0.061	1040.0	0.06	14.10
1225	195.066	0.162	1.55	66	1.20	305	-0.058	1040.0	0.04	14.07
1226	195.228	0.162	1.55	66	1.20	279	-0.054	1040.0	0.27	8.66
1227	195.389	0.161	1.55	66	1.20	263	-0.053	1040.0	0.07	10.34
1228	195.551	0.162	1.55	66	1.20	251	-0.052	966.9	0.01	11.12
1229	195.712	0.161	1.55	66	1.20	242	-0.052	976.5	0.04	10.30
1230	195.873	0.161	1.55	66	1.20	236	-0.051	1040.0	0.20	8.55
1231	196.033	0.160	1.55	66	1.20	229	-0.050	1040.0	0.27	12.94
1232	196.196	0.163	1.55	66	1.20	223	-0.049	1040.0	0.17	11.31
1233	196.358	0.162	1.55	66	1.20	219	-0.049	1040.0	0.11	9.57
1234	196.519	0.161	1.55	66	1.20	214	-0.048	1040.0	0.09	8.43
1235	196.680	0.161	1.56	66	1.20	213	-0.046	1040.0	0.10	6.82
1236	196.841	0.161	1.55	66	1.20	211	-0.045	1040.0	0.33	5.68
1237	197.003	0.162	1.55	66	1.20	208	-0.044	1040.0	0.83	5.89
1238	197.164	0.161	1.55	66	1.20	205	-0.045	1040.0	1.32	6.50
1239	197.325	0.161	1.55	66	1.20	201	-0.043	1040.0	1.76	7.26
1240	197.486	0.161	1.55	66	1.20	197	-0.043	1040.0	2.00	7.57
1241	197.648	0.162	1.55	66	1.20	194	-0.042	1040.0	2.24	7.95
1242	197.810	0.162	1.55	66	1.20	190	-0.042	1040.0	2.23	7.70
1243	197.971	0.161	1.55	66	1.20	187	-0.041	1040.0	2.38	7.98
1244	198.132	0.161	1.56	66	1.20	183	-0.041	1040.0	2.44	8.04
1245	198.293	0.161	1.55	66	1.20	180	-0.040	1040.0	2.40	7.87
1246	198.456	0.163	1.55	66	1.20	177	-0.039	1040.0	2.42	7.87
1247	198.618	0.162	1.55	66	1.20	174	-0.039	1040.0	2.64	8.47
1248	198.779	0.161	1.55	66	1.20	172	-0.039	1040.0	2.45	7.84
1249	198.940	0.161	1.56	66	1.20	169	-0.038	1040.0	2.52	8.05
1250	199.101	0.161	1.55	66	1.20	167	-0.037	1040.0	2.40	7.62
1251	199.264	0.163	1.55	66	1.20	164	-0.037	1040.0	2.44	7.67
1252	199.425	0.161	1.55	66	1.20	161	-0.037	1040.0	2.60	8.10
1253	199.587	0.162	1.55	66	1.20	158	-0.036	1040.0	2.51	7.83
1254	199.748	0.161	1.55	66	1.20	156	-0.035	1040.0	2.54	7.90
1255	199.909	0.161	1.55	66	1.20	153	-0.035	1040.0	2.56	7.89
1256	200.071	0.162	1.55	66	1.20	153	-0.035	1040.0	2.21	6.95

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1257	200.232	0.161	1.55	66	1.20	151	-0.034	1040.0	2.11	6.61
1258	200.393	0.161	1.55	66	1.20	147	-0.034	1040.0	2.11	6.59
1259	200.554	0.161	1.55	66	1.20	146	-0.033	1040.0	2.23	6.90
1260	200.716	0.162	1.55	66	1.20	143	-0.033	1040.0	2.12	6.61
1261	200.878	0.162	1.55	66	1.20	142	-0.032	1040.0	2.01	6.25
1262	201.039	0.161	1.55	66	1.20	141	-0.032	1040.0	2.05	6.38
1263	201.200	0.161	1.55	66	1.20	138	-0.032	1040.0	1.90	5.96
1264	201.361	0.161	1.55	66	1.20	138	-0.032	1040.0	2.10	6.48
1265	201.523	0.162	1.55	66	1.20	135	-0.031	1040.0	1.82	5.70
1266	201.684	0.161	1.55	66	1.20	132	-0.031	1040.0	1.78	5.57
1267	201.845	0.161	1.55	66	1.20	135	-0.031	1040.0	1.90	5.92
1268	202.006	0.161	1.55	66	1.20	132	-0.030	1040.0	1.79	5.59
1269	202.168	0.162	1.55	66	1.20	133	-0.030	1040.0	1.70	5.33
1270	202.330	0.162	1.55	66	1.20	130	-0.030	1040.0	1.79	5.57
1271	202.491	0.161	1.55	66	1.20	129	-0.029	1040.0	1.60	5.07
1272	202.652	0.161	1.56	66	1.20	126	-0.030	1040.0	1.63	5.12
1273	202.813	0.161	1.55	66	1.20	127	-0.029	1040.0	1.58	4.97
1274	202.975	0.162	1.55	66	1.20	124	-0.029	1040.0	1.59	4.99
1275	203.136	0.161	1.55	66	1.20	123	-0.029	1040.0	1.43	4.55
1276	203.297	0.161	1.55	66	1.20	124	-0.028	1040.0	1.50	4.75
1277	203.458	0.161	1.55	66	1.20	123	-0.028	1040.0	1.55	4.89
1278	203.619	0.161	1.55	66	1.20	121	-0.028	1040.0	1.51	4.79
1279	203.781	0.162	1.55	66	1.20	121	-0.027	1040.0	1.50	4.73
1280	203.942	0.161	1.55	66	1.20	120	-0.027	1040.0	1.38	4.43
1281	204.104	0.162	1.55	66	1.20	117	-0.027	1040.0	1.43	4.56
1282	204.265	0.161	1.55	66	1.20	118	-0.026	1040.0	1.32	4.25
1283	204.427	0.162	1.55	66	1.20	118	-0.027	1040.0	1.28	4.12
1284	204.589	0.162	1.55	66	1.20	116	-0.026	1040.0	1.33	4.28
1285	204.750	0.161	1.55	66	1.20	116	-0.026	1040.0	1.31	4.22
1286	204.911	0.161	1.55	66	1.20	113	-0.026	1040.0	1.28	4.16
1287	205.072	0.161	1.55	66	1.20	114	-0.026	1040.0	1.26	4.08
1288	205.235	0.163	1.56	66	1.20	113	-0.026	1040.0	1.09	3.61
1289	205.397	0.162	1.55	66	1.20	116	-0.026	1040.0	1.07	3.58
1290	205.558	0.161	1.55	66	1.20	115	-0.026	1040.0	0.71	2.44
1291	205.719	0.161	1.55	66	1.20	115	-0.025	1040.0	1.46	4.70
1292	205.880	0.161	1.55	66	1.20	113	-0.026	1040.0	1.28	4.18

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024
 Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1293	206.043	0.163	1.55	66	1.20	113	-0.025	1040.0	1.16	3.78
1294	206.204	0.161	1.55	66	1.20	110	-0.025	1040.0	1.11	3.65
1295	206.365	0.161	1.55	66	1.20	143	-0.046	1040.0	2.09	6.58
1296	206.526	0.161	1.55	66	1.20	138	-0.035	1040.0	0.57	2.89
1297	206.687	0.161	1.55	66	1.20	133	-0.033	1040.0	0.53	2.65
1298	206.849	0.162	1.55	66	1.20	130	-0.032	1040.0	0.52	2.57
1299	207.010	0.161	1.55	66	1.20	126	-0.031	1040.0	0.56	2.67
1300	207.171	0.161	1.55	66	1.20	123	-0.030	1040.0	0.51	2.47
1301	207.332	0.161	1.55	66	1.20	123	-0.029	1040.0	0.47	2.29
1302	207.495	0.163	1.55	66	1.20	121	-0.029	1040.0	0.44	2.16
1303	207.657	0.162	1.55	66	1.20	119	-0.028	1040.0	0.41	2.05
1304	207.818	0.161	1.55	66	1.20	118	-0.028	1040.0	0.40	1.99
1305	207.979	0.161	1.55	66	1.20	116	-0.027	1040.0	0.39	1.97
1306	208.140	0.161	1.55	66	1.20	115	-0.027	1040.0	0.32	1.68
1307	208.302	0.162	1.55	66	1.20	113	-0.027	1040.0	0.30	1.58
1308	208.463	0.161	1.55	66	1.20	112	-0.026	1040.0	0.31	1.62
1309	208.624	0.161	1.55	66	1.20	111	-0.026	1040.0	0.31	1.60
1310	208.785	0.161	1.56	66	1.20	110	-0.026	1040.0	0.30	1.61
1311	208.946	0.161	1.55	66	1.20	109	-0.026	1040.0	0.30	1.59
1312	209.107	0.161	1.55	66	1.20	110	-0.026	1040.0	0.27	1.45
1313	209.268	0.161	1.55	66	1.20	108	-0.025	1040.0	0.28	1.53
1314	209.429	0.161	1.55	66	1.20	105	-0.025	1040.0	0.29	1.53
1315	209.590	0.161	1.55	66	1.20	105	-0.024	1040.0	0.27	1.45
1316	209.752	0.162	1.55	66	1.20	107	-0.025	1040.0	0.24	1.38
1317	209.913	0.161	1.55	66	1.20	105	-0.024	1040.0	0.24	1.33
1318	210.074	0.161	1.55	66	1.20	104	-0.024	1040.0	0.22	1.27
1319	210.235	0.161	1.55	66	1.20	103	-0.024	1040.0	0.24	1.34
1320	210.396	0.161	1.55	66	1.20	104	-0.024	1040.0	0.24	1.38
1321	210.558	0.162	1.55	66	1.20	102	-0.023	1040.0	0.22	1.29
1322	210.719	0.161	1.55	66	1.20	101	-0.023	1040.0	0.23	1.30
1323	210.881	0.162	1.55	66	1.20	101	-0.023	1040.0	0.21	1.23
1324	211.042	0.161	1.55	66	1.20	100	-0.023	1040.0	0.21	1.23
1325	211.204	0.162	1.55	66	1.20	101	-0.023	1040.0	0.20	1.19
1326	211.366	0.162	1.55	66	1.20	130	-0.042	1040.0	0.73	3.50
1327	211.527	0.161	1.55	66	1.20	126	-0.031	1040.0	0.11	1.00
1328	211.688	0.161	1.55	66	1.20	123	-0.031	1040.0	0.09	0.89

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1329	211.849	0.161	1.56	66	1.20	118	-0.029	1040.0	0.07	0.77
1330	212.011	0.162	1.55	66	1.20	116	-0.028	1040.0	0.08	0.78
1331	212.173	0.162	1.55	66	1.20	115	-0.028	1040.0	0.07	0.73
1332	212.335	0.162	1.55	66	1.20	112	-0.027	1040.0	0.07	0.73
1333	212.497	0.162	1.56	66	1.20	111	-0.027	1040.0	0.06	0.69
1334	212.659	0.162	1.55	66	1.20	110	-0.026	1040.0	0.06	0.70
1335	212.822	0.163	1.55	66	1.20	108	-0.026	1040.0	0.06	0.67
1336	212.984	0.162	1.55	66	1.20	107	-0.026	1040.0	0.05	0.66
1337	213.146	0.162	1.55	66	1.20	106	-0.025	1040.0	0.05	0.66
1338	213.307	0.161	1.55	66	1.20	105	-0.025	1040.0	0.06	0.67
1339	213.468	0.161	1.55	66	1.20	104	-0.025	1040.0	0.05	0.64
1340	213.631	0.163	1.55	66	1.20	104	-0.024	1040.0	0.05	0.67
1341	213.793	0.162	1.55	66	1.20	102	-0.024	1040.0	0.05	0.65
1342	213.954	0.161	1.55	66	1.20	102	-0.024	1040.0	0.03	0.56
1343	214.115	0.161	1.55	66	1.20	101	-0.024	1040.0	0.04	0.62
1344	214.276	0.161	1.55	66	1.20	100	-0.024	1040.0	0.04	0.62
1345	214.439	0.163	1.55	66	1.20	100	-0.024	1040.0	0.05	0.65
1346	214.600	0.161	1.55	66	1.20	100	-0.024	1040.0	0.05	0.64
1347	214.761	0.161	1.55	66	1.20	99	-0.024	1040.0	0.06	0.71
1348	214.922	0.161	1.56	66	1.20	97	-0.024	1040.0	0.05	0.67
1349	215.083	0.161	1.55	66	1.20	95	-0.023	1040.0	0.03	0.58
1350	215.245	0.162	1.55	66	1.20	96	-0.023	1040.0	0.05	0.68
1351	215.406	0.161	1.55	66	1.20	96	-0.023	1040.0	0.04	0.61
1352	215.567	0.161	1.55	66	1.20	96	-0.023	1040.0	0.05	0.65
1353	215.727	0.160	1.55	66	1.20	94	-0.023	1040.0	0.05	0.67
1354	215.890	0.163	1.55	66	1.20	96	-0.022	1040.0	0.04	0.62
1355	216.052	0.162	1.55	66	1.20	94	-0.022	1040.0	0.03	0.59
1356	216.213	0.161	1.55	66	1.20	93	-0.022	1040.0	0.04	0.65
1357	216.374	0.161	1.55	66	1.20	125	-0.039	1040.0	0.31	2.33
1358	216.535	0.161	1.55	66	1.20	120	-0.030	1035.6	0.03	0.73
1359	216.698	0.163	1.55	66	1.20	116	-0.029	830.6	0.01	0.60
1360	216.860	0.162	1.55	66	1.20	113	-0.029	722.1	0.00	0.53
1361	217.021	0.161	1.55	66	1.20	111	-0.028	642.2	0.06	0.47
1362	217.182	0.161	1.56	66	1.20	108	-0.027	604.6	0.06	0.46
1363	217.343	0.161	1.55	66	1.20	107	-0.026	529.2	0.05	0.40
1364	217.505	0.162	1.55	66	1.20	105	-0.026	571.3	0.06	0.44

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1365	217.666	0.161	1.55	66	1.20	104	-0.025	563.8	0.06	0.40
1366	217.827	0.161	1.55	66	1.20	103	-0.025	516.3	0.05	0.39
1367	217.988	0.161	1.55	66	1.20	102	-0.024	560.0	0.06	0.42
1368	218.150	0.162	1.55	66	1.20	101	-0.024	550.6	0.06	0.40
1369	218.312	0.162	1.55	66	1.20	101	-0.023	568.9	0.06	0.43
1370	218.473	0.161	1.55	66	1.20	99	-0.023	577.1	0.06	0.41
1371	218.634	0.161	1.55	66	1.20	98	-0.023	562.9	0.06	0.42
1372	218.795	0.161	1.55	66	1.20	97	-0.023	540.8	0.05	0.39
1373	218.957	0.162	1.55	66	1.20	97	-0.023	600.1	0.06	0.41
1374	219.119	0.162	1.55	66	1.20	96	-0.023	641.2	0.06	0.44
1375	219.281	0.162	1.55	66	1.20	96	-0.023	579.1	0.06	0.43
1376	219.442	0.161	1.55	66	1.20	95	-0.022	652.8	0.07	0.45
1377	219.603	0.161	1.55	66	1.20	94	-0.022	625.0	0.06	0.44
1378	219.766	0.163	1.55	66	1.20	93	-0.022	581.3	0.06	0.41
1379	219.928	0.162	1.55	66	1.20	94	-0.022	583.9	0.06	0.41
1380	220.090	0.162	1.55	66	1.20	91	-0.022	608.8	0.06	0.42
1381	220.252	0.162	1.55	66	1.20	91	-0.022	588.7	0.06	0.39
1382	220.413	0.161	1.55	66	1.20	90	-0.022	650.6	0.07	0.44
1383	220.574	0.161	1.55	66	1.20	91	-0.022	629.2	0.06	0.44
1384	220.736	0.162	1.55	66	1.20	90	-0.022	636.3	0.06	0.44
1385	220.897	0.161	1.55	66	1.20	89	-0.022	601.4	0.06	0.43
1386	221.058	0.161	1.55	66	1.20	90	-0.022	636.6	0.06	0.42
1387	221.220	0.162	1.55	66	1.20	88	-0.022	636.6	0.06	0.42
1388	221.382	0.162	1.55	66	1.20	117	-0.032	1040.0	0.09	1.08
1389	221.544	0.162	1.55	66	1.20	112	-0.028	592.6	0.06	0.46
1390	221.706	0.162	1.55	66	1.20	109	-0.027	490.3	0.05	0.40
1391	221.867	0.161	1.55	66	1.20	107	-0.026	412.6	0.04	0.35
1392	222.030	0.163	1.55	66	1.20	105	-0.026	355.3	0.04	0.32
1393	222.192	0.162	1.55	66	1.20	103	-0.026	328.1	0.03	0.30
1394	222.353	0.161	1.55	66	1.20	101	-0.025	289.7	0.03	0.27
1395	222.514	0.161	1.55	66	1.20	100	-0.025	290.3	0.03	0.27
1396	222.675	0.161	1.55	66	1.20	99	-0.024	257.7	0.03	0.25
1397	222.838	0.163	1.55	66	1.20	98	-0.024	290.0	0.03	0.28
1398	222.999	0.161	1.55	66	1.20	97	-0.023	317.8	0.03	0.27
1399	223.160	0.161	1.55	66	1.20	109	-0.035	331.1	0.03	0.29
1400	223.321	0.161	1.55	66	1.20	117	-0.038	911.8	0.00	0.50

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1401	223.482	0.161	1.55	66	1.20	136	-0.037	1040.0	0.10	0.59
1402	223.644	0.162	1.55	66	1.20	158	-0.039	1040.0	0.26	1.23
1403	223.805	0.161	1.55	66	1.20	171	-0.041	1040.0	0.44	2.14
1404	223.966	0.161	1.55	66	1.20	182	-0.042	1040.0	0.65	3.22
1405	224.126	0.160	1.55	66	1.20	196	-0.045	1040.0	0.89	4.70
1406	224.289	0.163	1.55	66	1.20	215	-0.047	1040.0	1.35	7.44
1407	224.450	0.161	1.55	66	1.20	235	-0.049	1040.0	1.33	11.55
1408	224.611	0.161	1.55	66	1.20	253	-0.053	1040.0	0.95	12.62
1409	224.772	0.161	1.55	66	1.20	267	-0.054	1040.0	0.16	13.78
1410	224.933	0.161	1.55	66	1.20	278	-0.056	1040.0	0.13	14.19
1411	225.095	0.162	1.55	66	1.20	287	-0.058	819.3	0.01	14.57
1412	225.256	0.161	1.55	66	1.20	292	-0.059	770.0	0.01	14.45
1413	225.417	0.161	1.55	66	1.20	297	-0.059	924.5	0.02	14.54
1414	225.578	0.161	1.55	66	1.20	302	-0.060	885.0	0.02	14.72
1415	225.740	0.162	1.55	66	1.20	304	-0.058	832.2	0.01	14.56
1416	225.902	0.162	1.55	66	1.20	306	-0.057	865.2	0.02	14.50
1417	226.063	0.161	1.55	66	1.20	307	-0.059	827.3	0.01	14.86
1418	226.224	0.161	1.55	66	1.20	302	-0.058	718.5	0.00	14.84
1419	226.385	0.161	1.55	66	1.20	302	-0.059	759.0	0.01	15.44
1420	226.546	0.161	1.55	66	1.20	297	-0.060	762.3	0.01	14.63
1421	226.707	0.161	1.55	66	1.20	304	-0.061	1040.0	0.18	13.54
1422	226.868	0.161	1.55	66	1.20	308	-0.058	1040.0	0.16	13.80
1423	227.029	0.161	1.55	66	1.20	303	-0.059	1040.0	0.05	14.31
1424	227.191	0.162	1.55	66	1.20	303	-0.058	1040.0	0.15	13.78
1425	227.353	0.162	1.55	66	1.20	308	-0.060	1040.0	0.36	13.42
1426	227.514	0.161	1.55	66	1.20	309	-0.064	1040.0	0.16	13.91
1427	227.675	0.161	1.55	66	1.20	304	-0.059	1040.0	0.10	14.02
1428	227.836	0.161	1.55	66	1.20	301	-0.059	1040.0	0.18	13.67
1429	227.998	0.162	1.55	66	1.20	309	-0.060	1040.0	0.34	13.15
1430	228.160	0.162	1.55	66	1.20	309	-0.059	1040.0	0.07	14.51
1431	228.321	0.161	1.55	66	1.20	305	-0.059	1040.0	0.11	14.16
1432	228.482	0.161	1.55	66	1.20	282	-0.055	1040.0	0.34	11.80
1433	228.644	0.162	1.55	66	1.20	264	-0.054	1040.0	0.38	8.87
1434	228.806	0.162	1.55	66	1.20	252	-0.052	1040.0	0.18	9.36
1435	228.967	0.161	1.55	66	1.20	243	-0.052	1040.0	0.11	10.06
1436	229.128	0.161	1.55	66	1.20	237	-0.051	1040.0	0.19	8.71

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1437	229.289	0.161	1.55	66	1.20	230	-0.051	1040.0	0.39	14.04
1438	229.451	0.162	1.55	66	1.20	225	-0.050	1040.0	0.24	13.31
1439	229.613	0.162	1.55	66	1.20	220	-0.049	1040.0	0.15	11.95
1440	229.774	0.161	1.55	66	1.20	215	-0.049	1040.0	0.13	10.82
1441	229.935	0.161	1.55	66	1.20	213	-0.047	1040.0	0.16	8.60
1442	230.096	0.161	1.55	66	1.20	212	-0.047	1040.0	0.42	7.31
1443	230.259	0.163	1.55	66	1.20	210	-0.046	1040.0	1.42	8.62
1444	230.421	0.162	1.55	66	1.20	207	-0.046	1040.0	2.33	9.93
1445	230.583	0.162	1.55	66	1.20	203	-0.046	1040.0	2.94	10.64
1446	230.744	0.161	1.55	66	1.20	199	-0.046	1040.0	3.45	11.49
1447	230.905	0.161	1.55	66	1.20	196	-0.044	1040.0	3.68	11.56
1448	231.067	0.162	1.55	66	1.20	193	-0.044	1040.0	4.09	12.39
1449	231.228	0.161	1.55	66	1.20	189	-0.043	1040.0	4.37	12.87
1450	231.389	0.161	1.55	66	1.20	186	-0.043	1040.0	4.30	12.45
1451	231.549	0.160	1.55	66	1.20	182	-0.042	1040.0	4.25	12.14
1452	231.711	0.162	1.55	66	1.20	180	-0.042	1040.0	4.17	11.77
1453	231.873	0.162	1.55	66	1.20	176	-0.041	1040.0	4.67	12.99
1454	232.034	0.161	1.55	66	1.20	174	-0.041	1040.0	4.87	13.44
1455	232.195	0.161	1.55	66	1.20	171	-0.039	1040.0	4.72	12.96
1456	232.357	0.162	1.36	66	1.20	169	-0.039	1040.0	4.32	11.77
1457	232.518	0.161	1.55	66	1.20	165	-0.039	1040.0	4.42	11.94
1458	232.679	0.161	1.55	67	1.20	165	-0.039	1040.0	4.09	11.06
1459	232.840	0.161	1.55	67	1.20	163	-0.038	1040.0	4.11	11.06
1460	233.001	0.161	1.55	67	1.20	162	-0.038	1040.0	4.26	11.36
1461	233.164	0.163	1.55	67	1.20	158	-0.038	1040.0	4.39	11.64
1462	233.325	0.161	1.55	67	1.20	157	-0.037	1040.0	4.31	11.47
1463	233.486	0.161	1.55	67	1.20	156	-0.037	1040.0	4.45	11.75
1464	233.647	0.161	1.55	67	1.20	153	-0.037	1040.0	4.41	11.61
1465	233.808	0.161	1.55	67	1.20	155	-0.036	1040.0	4.02	10.68
1466	233.970	0.162	1.55	67	1.20	152	-0.036	1040.0	3.86	10.22
1467	234.131	0.161	1.55	67	1.20	149	-0.034	1040.0	4.01	10.56
1468	234.292	0.161	1.55	67	1.20	151	-0.035	1040.0	3.87	10.19
1469	234.453	0.161	1.55	67	1.20	149	-0.035	1040.0	3.99	10.48
1470	234.615	0.162	1.55	67	1.20	148	-0.035	1040.0	3.85	10.15
1471	234.777	0.162	1.55	67	1.20	147	-0.035	1040.0	3.80	9.98
1472	234.938	0.161	1.55	67	1.20	144	-0.034	1040.0	3.85	10.09

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Meter Box Y Regression Offset: 1.016
Meter Box Y Regression Factor: 0
Meter Box Dynamic Y: 1.016
Sample Box ID: 372

Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1473	235.099	0.161	1.55	67	1.20	144	-0.034	1040.0	3.71	9.78
1474	235.260	0.161	1.55	67	1.20	144	-0.034	1040.0	3.68	9.70
1475	235.422	0.162	1.55	67	1.20	141	-0.034	1040.0	3.55	9.41
1476	235.584	0.162	1.55	67	1.20	141	-0.033	1040.0	3.33	8.86
1477	235.745	0.161	1.55	67	1.20	140	-0.033	1040.0	3.28	8.72
1478	235.906	0.161	1.55	67	1.20	139	-0.033	1040.0	3.25	8.62
1479	236.067	0.161	1.55	67	1.20	138	-0.032	1040.0	3.20	8.48
1480	236.229	0.162	1.55	67	1.20	138	-0.033	1040.0	3.28	8.72
1481	236.391	0.162	1.55	67	1.20	138	-0.032	1040.0	3.06	8.17
1482	236.553	0.162	1.55	67	1.20	136	-0.032	1040.0	2.98	7.97
1483	236.714	0.161	1.55	67	1.20	135	-0.032	1040.0	2.99	8.00
1484	236.876	0.162	1.55	67	1.20	135	-0.032	1040.0	2.91	7.80
1485	237.038	0.162	1.55	67	1.20	133	-0.032	1040.0	2.96	7.91
1486	237.200	0.162	1.55	67	1.20	134	-0.031	1040.0	2.92	7.83
1487	237.362	0.162	1.55	67	1.20	133	-0.031	1040.0	2.79	7.53
1488	237.524	0.162	1.55	67	1.20	132	-0.031	1040.0	2.81	7.54
1489	237.686	0.162	1.55	67	1.20	132	-0.031	1040.0	2.65	7.20
1490	237.848	0.162	1.55	67	1.20	131	-0.031	1040.0	2.66	7.19
1491	238.009	0.161	1.55	67	1.20	131	-0.031	1040.0	2.78	7.47
1492	238.170	0.161	1.55	67	1.20	130	-0.031	1040.0	2.65	7.21
1493	238.331	0.161	1.55	67	1.20	129	-0.031	1040.0	2.60	7.08
1494	238.493	0.162	1.55	67	1.20	129	-0.031	1040.0	2.58	7.06
1495	238.655	0.162	1.55	67	1.20	129	-0.030	1040.0	2.58	7.05
1496	238.817	0.162	1.55	66	1.20	129	-0.030	1040.0	2.49	6.86
1497	238.978	0.161	1.55	66	1.20	128	-0.030	1040.0	2.46	6.78
1498	239.139	0.161	1.55	66	1.20	128	-0.030	1040.0	2.40	6.64
1499	239.302	0.163	1.55	66	1.20	125	-0.030	1040.0	2.40	6.65
1500	239.463	0.161	1.55	66	1.20	127	-0.030	1040.0	2.36	6.54
1501	239.624	0.161	1.55	66	1.20	144	-0.046	1040.0	2.32	6.43
1502	239.785	0.161	1.55	66	1.20	137	-0.037	1040.0	2.32	6.43
1503	239.946	0.161	1.55	66	1.20	133	-0.035	1040.0	2.24	6.53
1504	240.109	0.163	1.55	66	1.20	130	-0.034	1040.0	0.74	3.54
1505	240.270	0.161	1.55	66	1.20	129	-0.033	1040.0	0.58	2.93
1506	240.431	0.161	1.55	66	1.20	127	-0.032	1040.0	0.56	2.70
1507	240.592	0.161	1.55	66	1.20	125	-0.032	1040.0	0.56	2.59
1508	240.753	0.161	1.55	66	1.20	124	-0.032	1040.0	0.60	2.66

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1509	240.915	0.162	1.55	66	1.20	123	-0.030	1040.0	0.60	2.61
1510	241.076	0.161	1.55	66	1.20	122	-0.030	1040.0	0.64	2.72
1511	241.237	0.161	1.55	66	1.20	121	-0.030	1040.0	0.62	2.67
1512	241.397	0.160	1.55	66	1.20	121	-0.029	1040.0	0.64	2.73
1513	241.559	0.162	1.55	66	1.20	121	-0.029	1040.0	0.64	2.74
1514	241.721	0.162	1.55	66	1.20	119	-0.028	1040.0	0.64	2.75
1515	241.882	0.161	1.55	66	1.20	118	-0.028	1040.0	0.62	2.69
1516	242.043	0.161	1.55	66	1.20	118	-0.028	1040.0	0.61	2.67
1517	242.204	0.161	1.55	66	1.20	118	-0.028	1040.0	0.57	2.55
1518	242.366	0.162	1.55	66	1.20	116	-0.028	1040.0	0.56	2.53
1519	242.527	0.161	1.55	66	1.20	116	-0.028	1040.0	0.58	2.59
1520	242.688	0.161	1.55	66	1.20	117	-0.028	1040.0	0.58	2.59
1521	242.849	0.161	1.55	66	1.20	116	-0.027	1040.0	0.58	2.59
1522	243.011	0.162	1.55	66	1.20	115	-0.027	1040.0	0.58	2.62
1523	243.173	0.162	1.55	66	1.20	114	-0.027	1040.0	0.58	2.62
1524	243.334	0.161	1.55	66	1.20	114	-0.027	1040.0	0.58	2.65
1525	243.495	0.161	1.55	66	1.20	113	-0.027	1040.0	0.55	2.56
1526	243.656	0.161	1.55	66	1.20	112	-0.027	1040.0	0.57	2.61
1527	243.818	0.162	1.55	67	1.20	112	-0.027	1040.0	0.57	2.62
1528	243.979	0.161	1.55	67	1.20	112	-0.027	1040.0	0.54	2.55
1529	244.140	0.161	1.55	66	1.20	113	-0.027	1040.0	0.53	2.50
1530	244.300	0.160	1.55	67	1.20	112	-0.026	1040.0	0.53	2.52
1531	244.462	0.162	1.55	67	1.20	113	-0.026	1040.0	0.54	2.56
1532	244.624	0.162	1.55	67	1.20	134	-0.043	1040.0	0.55	2.58
1533	244.785	0.161	1.55	67	1.20	128	-0.033	1040.0	0.55	2.63
1534	244.946	0.161	1.55	67	1.20	125	-0.032	1040.0	0.65	3.14
1535	245.107	0.161	1.56	67	1.20	122	-0.030	1040.0	0.33	2.08
1536	245.269	0.162	1.55	67	1.20	120	-0.030	1040.0	0.24	1.68
1537	245.431	0.162	1.55	67	1.20	118	-0.030	1040.0	0.20	1.43
1538	245.592	0.161	1.55	67	1.20	115	-0.029	1040.0	0.17	1.30
1539	245.753	0.161	1.55	67	1.20	115	-0.029	1040.0	0.17	1.27
1540	245.914	0.161	1.55	67	1.20	114	-0.028	1040.0	0.16	1.23
1541	246.076	0.162	1.55	67	1.20	112	-0.028	1040.0	0.17	1.27
1542	246.238	0.162	1.55	67	1.20	112	-0.028	1040.0	0.17	1.29
1543	246.399	0.161	1.55	67	1.20	112	-0.028	1040.0	0.19	1.38
1544	246.560	0.161	1.55	67	1.20	111	-0.027	1040.0	0.20	1.45

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1545	246.721	0.161	1.55	67	1.20	110	-0.027	1040.0	0.22	1.56
1546	246.882	0.161	1.55	67	1.20	110	-0.027	1040.0	0.22	1.60
1547	247.044	0.162	1.55	67	1.20	109	-0.026	1040.0	0.23	1.67
1548	247.206	0.162	1.55	67	1.20	108	-0.026	1040.0	0.23	1.66
1549	247.368	0.162	1.55	67	1.20	108	-0.026	1040.0	0.24	1.72
1550	247.530	0.162	1.55	67	1.20	108	-0.026	1040.0	0.23	1.74
1551	247.693	0.163	1.55	67	1.20	107	-0.026	1040.0	0.23	1.75
1552	247.855	0.162	1.55	66	1.20	107	-0.026	1040.0	0.24	1.79
1553	248.017	0.162	1.55	67	1.20	107	-0.025	1040.0	0.25	1.86
1554	248.179	0.162	1.55	66	1.20	106	-0.025	1040.0	0.25	1.86
1555	248.340	0.161	1.55	66	1.20	106	-0.025	1040.0	0.25	1.92
1556	248.502	0.162	1.55	66	1.20	106	-0.025	1040.0	0.25	1.93
1557	248.664	0.162	1.55	66	1.20	104	-0.024	1040.0	0.25	1.94
1558	248.825	0.161	1.55	66	1.20	104	-0.024	1040.0	0.26	1.98
1559	248.986	0.161	1.55	66	1.20	103	-0.024	1040.0	0.25	1.97
1560	249.148	0.162	1.55	66	1.20	104	-0.024	1040.0	0.26	2.03
1561	249.310	0.162	1.55	66	1.20	104	-0.024	1040.0	0.26	2.05
1562	249.471	0.161	1.55	66	1.20	103	-0.024	1040.0	0.26	2.02
1563	249.632	0.161	1.55	66	1.20	121	-0.039	1040.0	0.26	2.04
1564	249.793	0.161	1.55	66	1.20	118	-0.030	1040.0	0.26	2.09
1565	249.956	0.163	1.55	66	1.20	114	-0.029	1040.0	0.30	2.39
1566	250.117	0.161	1.55	66	1.20	113	-0.028	1040.0	0.09	1.31
1567	250.278	0.161	1.55	66	1.20	111	-0.028	1040.0	0.05	0.98
1568	250.439	0.161	1.55	66	1.20	109	-0.027	1040.0	0.03	0.84
1569	250.600	0.161	1.55	66	1.20	108	-0.027	993.1	0.02	0.77
1570	250.762	0.162	1.55	66	1.20	107	-0.026	928.7	0.02	0.73
1571	250.923	0.161	1.55	66	1.20	106	-0.027	909.6	0.02	0.70
1572	251.084	0.161	1.55	66	1.20	105	-0.027	909.6	0.02	0.70
1573	251.245	0.161	1.55	66	1.20	104	-0.026	909.9	0.02	0.68
1574	251.407	0.162	1.55	66	1.20	103	-0.026	901.8	0.02	0.70
1575	251.569	0.162	1.54	66	1.20	103	-0.027	933.2	0.02	0.71
1576	251.730	0.161	1.55	66	1.20	101	-0.026	966.2	0.03	0.74
1577	251.891	0.161	1.55	66	1.20	101	-0.026	1032.6	0.04	0.78
1578	252.051	0.160	1.55	66	1.20	101	-0.025	1040.0	0.04	0.83
1579	252.213	0.162	1.55	66	1.20	100	-0.025	1040.0	0.06	0.95
1580	252.375	0.162	1.54	66	1.20	100	-0.024	1040.0	0.07	1.03

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1581	252.536	0.161	1.55	66	1.20	99	-0.024	1040.0	0.08	1.08
1582	252.697	0.161	1.55	66	1.20	99	-0.024	1040.0	0.09	1.21
1583	252.858	0.161	1.55	66	1.20	99	-0.024	1040.0	0.10	1.27
1584	253.020	0.162	1.55	66	1.20	99	-0.024	1040.0	0.10	1.30
1585	253.181	0.161	1.55	66	1.20	99	-0.024	1040.0	0.11	1.34
1586	253.342	0.161	1.55	66	1.20	99	-0.024	1040.0	0.11	1.39
1587	253.503	0.161	1.55	66	1.20	98	-0.024	1040.0	0.12	1.46
1588	253.665	0.162	1.55	66	1.20	97	-0.023	1040.0	0.12	1.48
1589	253.827	0.162	1.54	66	1.20	97	-0.023	1040.0	0.12	1.47
1590	253.988	0.161	1.55	66	1.20	97	-0.024	1040.0	0.13	1.52
1591	254.149	0.161	1.55	66	1.20	96	-0.023	1040.0	0.13	1.51
1592	254.310	0.161	1.55	66	1.20	96	-0.023	1040.0	0.13	1.55
1593	254.472	0.162	1.55	66	1.20	95	-0.023	1040.0	0.13	1.55
1594	254.633	0.161	1.55	66	1.20	114	-0.038	1040.0	0.13	1.56
1595	254.794	0.161	1.55	66	1.20	111	-0.028	1040.0	0.14	1.62
1596	254.955	0.161	1.55	66	1.20	108	-0.027	1040.0	0.17	1.93
1597	255.117	0.162	1.55	66	1.20	106	-0.027	1040.0	0.04	1.11
1598	255.279	0.162	1.55	66	1.20	104	-0.026	1040.0	0.02	0.90
1599	255.440	0.161	1.55	66	1.20	103	-0.026	892.4	0.01	0.80
1600	255.601	0.161	1.55	66	1.20	102	-0.025	798.6	0.00	0.72
1601	255.762	0.161	1.55	66	1.20	101	-0.025	740.2	0.00	0.67
1602	255.924	0.162	1.55	66	1.20	100	-0.025	697.2	0.00	0.64
1603	256.085	0.161	1.55	66	1.20	100	-0.025	672.9	0.07	0.61
1604	256.247	0.162	1.55	66	1.20	98	-0.025	645.4	0.06	0.59
1605	256.408	0.161	1.55	66	1.20	98	-0.024	636.3	0.06	0.59
1606	256.569	0.161	1.55	66	1.20	97	-0.024	659.0	0.00	0.61
1607	256.732	0.163	1.55	66	1.20	97	-0.023	689.7	0.00	0.62
1608	256.893	0.161	1.55	66	1.20	96	-0.023	691.0	0.00	0.62
1609	257.054	0.161	1.55	67	1.20	95	-0.023	716.0	0.00	0.67
1610	257.215	0.161	1.55	67	1.20	95	-0.023	780.8	0.01	0.69
1611	257.377	0.162	1.55	66	1.20	94	-0.023	808.6	0.01	0.71
1612	257.539	0.162	1.55	67	1.20	94	-0.023	832.5	0.02	0.74
1613	257.700	0.161	1.55	66	1.20	94	-0.023	905.7	0.02	0.80
1614	257.861	0.161	1.55	67	1.20	94	-0.023	943.2	0.02	0.82
1615	258.022	0.161	1.55	66	1.20	93	-0.023	1003.5	0.03	0.87
1616	258.185	0.163	1.55	66	1.20	93	-0.023	1040.0	0.04	0.95

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Meter Box Y Regression Offset: 1.016
Meter Box Y Regression Factor: 0
Meter Box Dynamic Y: 1.016
Sample Box ID: 372
Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1617	258.347	0.162	1.55	67	1.20	93	-0.021	1040.0	0.04	0.96
1618	258.508	0.161	1.55	66	1.20	92	-0.022	1040.0	0.05	1.03
1619	258.669	0.161	1.55	66	1.20	92	-0.023	1040.0	0.06	1.12
1620	258.830	0.161	1.55	66	1.20	92	-0.022	1040.0	0.07	1.16
1621	258.993	0.163	1.55	66	1.20	92	-0.021	1040.0	0.08	1.24
1622	259.155	0.162	1.55	66	1.20	91	-0.022	1040.0	0.08	1.25
1623	259.316	0.161	1.55	66	1.20	92	-0.022	1040.0	0.08	1.29
1624	259.477	0.161	1.55	66	1.20	92	-0.022	1040.0	0.10	1.39
1625	259.639	0.162	1.55	66	1.20	111	-0.037	1040.0	0.10	1.45
1626	259.801	0.162	1.55	66	1.20	128	-0.037	1040.0	0.11	1.53
1627	259.963	0.162	1.55	66	1.20	153	-0.038	1040.0	0.14	1.79
1628	260.125	0.162	1.55	66	1.20	170	-0.039	1040.0	0.15	1.23
1629	260.286	0.161	1.55	66	1.20	181	-0.042	1040.0	0.34	1.53
1630	260.448	0.162	1.55	66	1.20	195	-0.044	1040.0	0.49	2.22
1631	260.610	0.162	1.55	66	1.20	212	-0.046	1040.0	0.52	2.81
1632	260.772	0.162	1.55	66	1.20	226	-0.047	1040.0	0.62	3.54
1633	260.933	0.161	1.56	66	1.20	239	-0.049	1040.0	0.81	4.99
1634	261.094	0.161	1.55	66	1.20	254	-0.051	1040.0	1.07	7.39
1635	261.256	0.162	1.55	66	1.20	268	-0.055	1040.0	1.21	9.08
1636	261.418	0.162	1.54	66	1.20	280	-0.055	1040.0	1.08	10.09
1637	261.579	0.161	1.55	66	1.20	288	-0.056	1040.0	0.75	10.99
1638	261.740	0.161	1.55	66	1.20	293	-0.058	1040.0	0.43	11.77
1639	261.901	0.161	1.55	66	1.20	298	-0.058	1040.0	0.21	12.44
1640	262.063	0.162	1.55	66	1.20	302	-0.060	1040.0	0.08	12.92
1641	262.225	0.162	1.55	66	1.20	299	-0.058	1040.0	0.04	13.01
1642	262.387	0.162	1.55	66	1.20	297	-0.060	1040.0	0.03	13.05
1643	262.548	0.161	1.55	66	1.20	304	-0.061	1040.0	0.03	13.20
1644	262.709	0.161	1.55	66	1.20	303	-0.059	992.8	0.02	13.38
1645	262.871	0.162	1.55	66	1.20	304	-0.060	979.8	0.02	13.42
1646	263.032	0.161	1.55	66	1.20	305	-0.063	973.0	0.02	13.36
1647	263.193	0.161	1.55	66	1.20	303	-0.060	965.6	0.03	13.22
1648	263.354	0.161	1.55	66	1.20	299	-0.059	986.6	0.03	13.10
1649	263.516	0.162	1.55	66	1.20	297	-0.059	1001.9	0.02	13.02
1650	263.678	0.162	1.55	66	1.20	296	-0.058	981.1	0.02	12.97
1651	263.839	0.161	1.55	66	1.20	296	-0.059	944.5	0.02	12.91
1652	264.000	0.161	1.55	66	1.20	297	-0.059	920.3	0.02	12.87

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1653	264.161	0.161	1.55	66	1.20	297	-0.057	891.7	0.01	12.88
1654	264.323	0.162	1.55	66	1.20	297	-0.061	839.3	0.00	12.89
1655	264.485	0.162	1.55	66	1.20	297	-0.060	776.8	0.00	12.86
1656	264.646	0.161	1.55	66	1.20	299	-0.060	738.3	0.00	12.80
1657	264.807	0.161	1.55	66	1.20	281	-0.055	735.1	0.01	12.79
1658	264.968	0.161	1.55	66	1.20	262	-0.052	764.9	0.02	12.76
1659	265.130	0.162	1.55	66	1.20	250	-0.053	855.5	0.05	12.65
1660	265.291	0.161	1.55	66	1.20	241	-0.051	1040.0	0.11	12.44
1661	265.452	0.161	1.55	66	1.20	235	-0.050	1040.0	0.16	12.31
1662	265.612	0.160	1.55	66	1.20	228	-0.051	1040.0	0.22	11.72
1663	265.774	0.162	1.55	66	1.20	223	-0.050	1040.0	0.28	10.41
1664	265.936	0.162	1.55	66	1.20	218	-0.048	1040.0	0.23	9.49
1665	266.097	0.161	1.55	66	1.20	214	-0.047	1040.0	0.14	9.26
1666	266.258	0.161	1.55	66	1.20	211	-0.046	1040.0	0.13	9.27
1667	266.419	0.161	1.55	66	1.20	209	-0.046	1040.0	0.26	10.22
1668	266.582	0.163	1.55	66	1.20	207	-0.046	1040.0	0.34	11.48
1669	266.743	0.161	1.55	66	1.20	204	-0.045	1040.0	0.30	11.97
1670	266.904	0.161	1.55	66	1.20	200	-0.045	1040.0	0.22	11.88
1671	267.065	0.161	1.55	66	1.20	197	-0.045	1040.0	0.17	11.38
1672	267.226	0.161	1.55	66	1.20	193	-0.044	1040.0	0.37	10.76
1673	267.388	0.162	1.54	66	1.20	189	-0.044	1040.0	1.11	10.89
1674	267.549	0.161	1.55	66	1.20	187	-0.043	1040.0	2.19	11.74
1675	267.710	0.161	1.55	66	1.20	183	-0.042	1040.0	3.15	12.70
1676	267.870	0.160	1.55	66	1.20	181	-0.042	1040.0	3.85	13.33
1677	268.033	0.163	1.55	66	1.20	177	-0.041	1040.0	4.25	13.55
1678	268.194	0.161	1.55	66	1.20	174	-0.041	1040.0	4.44	13.50
1679	268.355	0.161	1.55	66	1.20	172	-0.041	1040.0	4.52	13.31
1680	268.516	0.161	1.55	66	1.20	170	-0.039	1040.0	4.55	13.09
1681	268.677	0.161	1.55	66	1.20	168	-0.039	1040.0	4.56	12.89
1682	268.839	0.162	1.55	66	1.20	166	-0.039	1040.0	4.56	12.71
1683	269.000	0.161	1.55	66	1.20	165	-0.039	1040.0	4.55	12.52
1684	269.161	0.161	1.55	66	1.20	162	-0.038	1040.0	4.52	12.32
1685	269.322	0.161	1.55	66	1.20	161	-0.037	1040.0	4.47	12.11
1686	269.484	0.162	1.55	66	1.20	159	-0.037	1040.0	4.41	11.88
1687	269.646	0.162	1.55	66	1.20	157	-0.037	1040.0	4.32	11.62
1688	269.807	0.161	1.55	66	1.20	155	-0.037	1040.0	4.23	11.34

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1689	269.968	0.161	1.55	66	1.20	154	-0.036	1040.0	4.13	11.09
1690	270.129	0.161	1.56	66	1.20	152	-0.036	1040.0	4.06	10.87
1691	270.291	0.162	1.54	66	1.20	149	-0.036	1040.0	4.01	10.70
1692	270.453	0.162	1.55	66	1.20	148	-0.035	1040.0	3.97	10.57
1693	270.615	0.162	1.55	66	1.20	146	-0.035	1040.0	3.92	10.44
1694	270.776	0.161	1.55	66	1.20	147	-0.034	1040.0	3.87	10.30
1695	270.937	0.161	1.55	66	1.20	145	-0.034	1040.0	3.82	10.16
1696	271.100	0.163	1.55	66	1.20	143	-0.034	1040.0	3.77	10.04
1697	271.262	0.162	1.55	66	1.20	144	-0.034	1040.0	3.73	9.93
1698	271.424	0.162	1.55	66	1.20	143	-0.034	1040.0	3.67	9.80
1699	271.585	0.161	1.55	66	1.20	141	-0.033	1040.0	3.60	9.66
1700	271.747	0.162	1.55	66	1.20	139	-0.033	1040.0	3.52	9.48
1701	271.909	0.162	1.55	66	1.20	139	-0.032	1040.0	3.43	9.27
1702	272.071	0.162	1.55	66	1.20	137	-0.033	1040.0	3.35	9.09
1703	272.233	0.162	1.55	66	1.20	137	-0.032	1040.0	3.27	8.89
1704	272.394	0.161	1.55	66	1.20	136	-0.032	1040.0	3.20	8.70
1705	272.556	0.162	1.55	66	1.20	136	-0.032	1040.0	3.12	8.51
1706	272.717	0.161	1.55	66	1.20	137	-0.032	1040.0	3.04	8.33
1707	272.878	0.161	1.55	66	1.20	134	-0.032	1040.0	2.97	8.14
1708	273.039	0.161	1.55	66	1.20	134	-0.031	1040.0	2.90	7.98
1709	273.200	0.161	1.55	66	1.20	132	-0.031	1040.0	2.85	7.84
1710	273.362	0.162	1.55	66	1.20	133	-0.031	1040.0	2.80	7.71
1711	273.524	0.162	1.55	66	1.20	131	-0.031	1040.0	2.76	7.60
1712	273.685	0.161	1.55	66	1.20	130	-0.031	1040.0	2.71	7.49
1713	273.847	0.162	1.55	66	1.20	129	-0.030	1040.0	2.66	7.37
1714	274.008	0.161	1.55	66	1.20	131	-0.030	1040.0	2.60	7.25
1715	274.171	0.163	1.55	66	1.20	129	-0.030	1040.0	2.54	7.12
1716	274.332	0.161	1.55	66	1.20	129	-0.030	1040.0	2.48	6.98
1717	274.493	0.161	1.55	66	1.20	129	-0.031	1040.0	2.43	6.86
1718	274.654	0.161	1.55	66	1.20	128	-0.031	1040.0	2.38	6.73
1719	274.815	0.161	1.55	66	1.20	126	-0.030	1040.0	2.33	6.61
1720	274.978	0.163	1.55	66	1.20	126	-0.029	1040.0	2.28	6.50
1721	275.139	0.161	1.55	66	1.20	127	-0.029	1040.0	2.24	6.39
1722	275.300	0.161	1.55	66	1.20	126	-0.029	1040.0	2.20	6.29
1723	275.461	0.161	1.55	66	1.20	125	-0.029	1040.0	2.16	6.20
1724	275.622	0.161	1.55	66	1.20	125	-0.030	1040.0	2.12	6.11

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1725	275.784	0.162	1.55	66	1.20	124	-0.029	1040.0	2.08	6.02
1726	275.945	0.161	1.55	66	1.20	146	-0.047	1040.0	2.04	5.93
1727	276.106	0.161	1.55	66	1.20	137	-0.036	1040.0	2.00	5.85
1728	276.266	0.160	1.55	66	1.20	132	-0.035	1040.0	1.96	5.76
1729	276.428	0.162	1.55	66	1.20	129	-0.033	1040.0	1.93	5.68
1730	276.590	0.162	1.55	66	1.20	127	-0.032	1040.0	1.90	5.62
1731	276.751	0.161	1.55	66	1.20	125	-0.031	1040.0	1.88	5.56
1732	276.912	0.161	1.55	66	1.20	123	-0.031	1040.0	1.86	5.50
1733	277.073	0.161	1.55	66	1.20	121	-0.030	1040.0	1.83	5.44
1734	277.235	0.162	1.55	66	1.20	120	-0.030	1040.0	1.80	5.37
1735	277.396	0.161	1.55	66	1.20	119	-0.029	1040.0	1.75	5.29
1736	277.557	0.161	1.55	66	1.20	117	-0.029	1040.0	1.67	5.16
1737	277.718	0.161	1.55	66	1.20	116	-0.028	1040.0	1.52	4.94
1738	277.880	0.162	1.55	66	1.20	116	-0.028	1040.0	1.33	4.62
1739	278.042	0.162	1.55	66	1.20	116	-0.028	1040.0	1.11	4.23
1740	278.203	0.161	1.55	66	1.20	114	-0.027	1040.0	0.93	3.83
1741	278.364	0.161	1.55	66	1.20	114	-0.028	1040.0	0.76	3.46
1742	278.525	0.161	1.55	66	1.20	114	-0.027	1040.0	0.64	3.15
1743	278.687	0.162	1.54	66	1.20	112	-0.027	1040.0	0.55	2.91
1744	278.849	0.162	1.55	66	1.20	113	-0.026	1040.0	0.49	2.74
1745	279.010	0.161	1.55	66	1.20	114	-0.026	1040.0	0.45	2.63
1746	279.171	0.161	1.55	66	1.20	112	-0.026	1040.0	0.43	2.54
1747	279.332	0.161	1.55	66	1.20	112	-0.026	1040.0	0.41	2.49
1748	279.494	0.162	1.55	66	1.20	110	-0.025	1040.0	0.41	2.45
1749	279.656	0.162	1.55	66	1.20	111	-0.026	1040.0	0.40	2.42
1750	279.817	0.161	1.55	66	1.20	110	-0.025	1040.0	0.40	2.39
1751	279.978	0.161	1.55	66	1.20	110	-0.024	1040.0	0.39	2.38
1752	280.140	0.162	1.55	66	1.20	109	-0.025	1040.0	0.39	2.36
1753	280.302	0.162	1.55	66	1.20	109	-0.025	1040.0	0.40	2.35
1754	280.463	0.161	1.55	66	1.20	108	-0.025	1040.0	0.41	2.40
1755	280.624	0.161	1.55	66	1.20	108	-0.025	1040.0	0.42	2.45
1756	280.785	0.161	1.55	66	1.20	108	-0.025	1040.0	0.41	2.42
1757	280.946	0.161	1.55	66	1.20	131	-0.042	1040.0	0.40	2.36
1758	281.109	0.163	1.55	66	1.20	124	-0.031	1040.0	0.32	2.43
1759	281.270	0.161	1.55	66	1.20	121	-0.030	1040.0	0.23	1.94
1760	281.431	0.161	1.55	66	1.20	118	-0.030	1040.0	0.20	1.71

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1761	281.592	0.161	1.55	66	1.20	116	-0.029	1040.0	0.19	1.71
1762	281.753	0.161	1.55	66	1.20	113	-0.028	1040.0	0.15	1.45
1763	281.915	0.162	1.55	66	1.20	111	-0.027	1040.0	0.12	1.23
1764	282.076	0.161	1.55	66	1.20	110	-0.027	1040.0	0.08	0.97
1765	282.237	0.161	1.55	66	1.20	108	-0.026	1040.0	0.08	0.94
1766	282.397	0.160	1.55	66	1.20	106	-0.026	1040.0	0.06	0.83
1767	282.559	0.162	1.55	66	1.20	105	-0.025	1040.0	0.06	0.83
1768	282.721	0.162	1.55	66	1.20	103	-0.025	1040.0	0.04	0.71
1769	282.882	0.161	1.55	66	1.20	102	-0.025	1040.0	0.07	0.91
1770	283.043	0.161	1.55	66	1.20	101	-0.025	1040.0	0.07	0.92
1771	283.204	0.161	1.55	66	1.20	100	-0.024	1040.0	0.05	0.80
1772	283.366	0.162	1.55	66	1.20	99	-0.024	1040.0	0.05	0.83
1773	283.527	0.161	1.55	66	1.20	98	-0.024	1040.0	0.08	1.04
1774	283.688	0.161	1.55	66	1.20	98	-0.023	1040.0	0.07	0.96
1775	283.849	0.161	1.55	66	1.20	97	-0.023	1040.0	0.09	1.12
1776	284.011	0.162	1.55	66	1.20	97	-0.023	1040.0	0.07	0.99
1777	284.173	0.162	1.55	66	1.20	96	-0.022	1040.0	0.08	1.06
1778	284.334	0.161	1.55	66	1.20	95	-0.022	1040.0	0.08	1.13
1779	284.495	0.161	1.55	66	1.20	94	-0.022	1040.0	0.10	1.22
1780	284.656	0.161	1.55	66	1.20	95	-0.022	1040.0	0.10	1.25
1781	284.818	0.162	1.54	66	1.20	94	-0.023	1040.0	0.10	1.23
1782	284.980	0.162	1.55	66	1.20	93	-0.023	1040.0	0.09	1.19
1783	285.141	0.161	1.55	66	1.20	92	-0.022	1040.0	0.10	1.27
1784	285.302	0.161	1.55	66	1.20	93	-0.022	1040.0	0.10	1.27
1785	285.463	0.161	1.55	66	1.20	91	-0.021	1040.0	0.10	1.29
1786	285.625	0.162	1.55	66	1.20	91	-0.021	1040.0	0.11	1.40
1787	285.787	0.162	1.55	66	1.20	89	-0.022	1040.0	0.11	1.34
1788	285.948	0.161	1.55	66	1.20	119	-0.039	1040.0	0.16	1.69
1789	286.109	0.161	1.55	66	1.20	112	-0.027	1040.0	0.13	1.84
1790	286.271	0.162	1.55	66	1.20	109	-0.026	1040.0	0.09	1.44
1791	286.433	0.162	1.55	66	1.20	106	-0.026	1040.0	0.06	1.15
1792	286.594	0.161	1.55	66	1.20	104	-0.025	1040.0	0.03	0.90
1793	286.755	0.161	1.55	66	1.20	101	-0.024	934.8	0.02	0.82
1794	286.913	0.158	1.55	66	1.20	100	-0.024	771.0	0.00	0.68
1795	287.074	0.161	1.55	66	1.20	100	-0.024	765.2	0.00	0.64
1796	287.236	0.162	1.55	66	1.20	97	-0.023	690.7	0.00	0.62

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1797	287.397	0.161	1.55	66	1.20	95	-0.023	665.8	0.07	0.56
1798	287.558	0.161	1.55	66	1.20	95	-0.023	642.8	0.06	0.58
1799	287.720	0.162	1.55	66	1.20	94	-0.023	615.3	0.06	0.54
1800	287.881	0.161	1.55	66	1.20	94	-0.023	619.5	0.06	0.58
1801	288.042	0.161	1.55	66	1.20	93	-0.023	579.1	0.06	0.49
1802	288.202	0.160	1.55	66	1.20	91	-0.022	566.5	0.06	0.52
1803	288.364	0.162	1.55	66	1.20	90	-0.022	554.8	0.06	0.52
1804	288.526	0.162	1.55	66	1.20	89	-0.022	629.6	0.06	0.52
1805	288.687	0.161	1.55	66	1.20	89	-0.022	562.0	0.06	0.51
1806	288.848	0.161	1.55	66	1.20	89	-0.021	572.6	0.06	0.52
1807	289.009	0.161	1.55	66	1.20	88	-0.021	512.4	0.05	0.47
1808	289.171	0.162	1.55	66	1.20	87	-0.021	590.7	0.06	0.52
1809	289.332	0.161	1.55	66	1.20	86	-0.021	595.5	0.06	0.50
1810	289.493	0.161	1.55	66	1.20	86	-0.021	575.5	0.06	0.51
1811	289.654	0.161	1.55	66	1.20	85	-0.021	547.7	0.05	0.50
1812	289.815	0.161	1.54	66	1.20	86	-0.021	618.9	0.06	0.52
1813	289.977	0.162	1.55	66	1.20	85	-0.021	534.4	0.05	0.48
1814	290.138	0.161	1.55	66	1.20	83	-0.020	602.0	0.06	0.49
1815	290.299	0.161	1.55	66	1.20	84	-0.021	601.4	0.06	0.52
1816	290.460	0.161	1.55	66	1.20	83	-0.020	587.8	0.06	0.50
1817	290.622	0.162	1.55	66	1.20	83	-0.021	693.6	0.00	0.58
1818	290.783	0.161	1.55	66	1.20	83	-0.020	558.0	0.06	0.47
1819	290.944	0.161	1.55	66	1.20	111	-0.036	997.3	0.26	2.65
1820	291.105	0.161	1.55	66	1.20	105	-0.025	1040.0	0.11	1.88
1821	291.266	0.161	1.55	66	1.20	101	-0.024	1040.0	0.08	1.50
1822	291.428	0.162	1.55	66	1.20	98	-0.024	1040.0	0.05	1.19
1823	291.589	0.161	1.55	66	1.20	96	-0.023	1040.0	0.03	0.99
1824	291.750	0.161	1.55	66	1.20	95	-0.024	825.4	0.00	0.78
1825	291.911	0.161	1.55	66	1.20	94	-0.023	729.8	0.00	0.74
1826	292.073	0.162	1.55	66	1.20	92	-0.022	643.2	0.06	0.64
1827	292.235	0.162	1.55	66	1.20	91	-0.022	614.0	0.06	0.61
1828	292.396	0.161	1.55	66	1.20	90	-0.021	550.9	0.06	0.55
1829	292.557	0.161	1.55	66	1.20	90	-0.022	557.1	0.06	0.54
1830	292.718	0.161	1.55	66	1.20	88	-0.022	437.9	0.04	0.44
1831	292.880	0.162	1.55	66	1.20	87	-0.020	454.8	0.05	0.47
1832	293.041	0.161	1.55	66	1.20	86	-0.022	467.4	0.05	0.49

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E
Meter Box Y Regression Offset: 1.016
Meter Box Y Regression Factor: 0
Meter Box Dynamic Y: 1.016
Sample Box ID: 372

Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1833	293.202	0.161	1.55	66	1.20	86	-0.021	414.9	0.04	0.43
1834	293.363	0.161	1.55	66	1.20	85	-0.022	470.0	0.05	0.47
1835	293.525	0.162	1.55	66	1.20	85	-0.021	392.6	0.04	0.40
1836	293.686	0.161	1.54	66	1.20	85	-0.021	380.9	0.04	0.40
1837	293.847	0.161	1.55	66	1.20	84	-0.020	355.6	0.04	0.38
1838	294.008	0.161	1.55	66	1.20	83	-0.021	374.1	0.04	0.36
1839	294.169	0.161	1.55	66	1.20	104	-0.034	365.4	0.04	0.37
1840	294.332	0.163	1.55	66	1.20	120	-0.040	1040.0	0.34	3.50
1841	294.494	0.162	1.55	66	1.20	156	-0.042	1040.0	1.18	3.78
1842	294.655	0.161	1.55	66	1.20	184	-0.042	1040.0	1.32	5.16
1843	294.816	0.161	1.55	66	1.20	205	-0.045	1040.0	1.86	6.96
1844	294.977	0.161	1.55	66	1.20	223	-0.047	1040.0	2.45	10.09
1845	295.139	0.162	1.55	66	1.20	241	-0.049	1040.0	1.49	11.84
1846	295.300	0.161	1.55	66	1.20	256	-0.052	1040.0	1.04	12.57
1847	295.461	0.161	1.55	66	1.20	270	-0.054	1040.0	0.61	12.98
1848	295.621	0.160	1.55	66	1.20	280	-0.054	1040.0	0.35	13.67
1849	295.784	0.163	1.55	66	1.20	287	-0.056	1040.0	0.20	13.99
1850	295.945	0.161	1.55	66	1.20	292	-0.057	1040.0	0.07	13.89
1851	296.106	0.161	1.55	66	1.20	298	-0.057	1040.0	0.09	14.16
1852	296.267	0.161	1.55	66	1.20	301	-0.058	1040.0	0.07	14.59
1853	296.428	0.161	1.55	66	1.20	303	-0.060	1040.0	0.04	14.04
1854	296.590	0.162	1.55	66	1.20	305	-0.058	1040.0	0.06	14.06
1855	296.751	0.161	1.55	66	1.20	302	-0.060	1040.0	0.06	13.35
1856	296.912	0.161	1.55	66	1.20	304	-0.060	1040.0	0.10	13.73
1857	297.072	0.160	1.55	66	1.20	307	-0.060	1040.0	0.09	13.80
1858	297.234	0.162	1.55	66	1.20	304	-0.059	1040.0	0.05	13.99
1859	297.396	0.162	1.55	66	1.20	305	-0.057	1040.0	0.07	14.03
1860	297.557	0.161	1.55	66	1.20	308	-0.063	1040.0	0.08	13.40
1861	297.718	0.161	1.55	66	1.20	308	-0.060	1040.0	0.05	13.42
1862	297.879	0.161	1.54	66	1.20	307	-0.062	1040.0	0.03	13.56
1863	298.041	0.162	1.55	66	1.20	308	-0.060	1040.0	0.05	13.18
1864	298.202	0.161	1.55	66	1.20	309	-0.061	1040.0	0.04	13.67
1865	298.364	0.162	1.55	66	1.20	309	-0.059	1040.0	0.03	13.50
1866	298.525	0.161	1.55	66	1.20	310	-0.061	1040.0	0.04	13.44
1867	298.687	0.162	1.55	66	1.20	308	-0.057	1040.0	0.05	13.44
1868	298.849	0.162	1.55	66	1.20	310	-0.061	1040.0	0.06	13.54

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1869	299.010	0.161	1.55	66	1.20	289	-0.055	1040.0	0.07	12.59
1870	299.172	0.162	1.55	66	1.20	268	-0.054	1040.0	0.14	7.11
1871	299.333	0.161	1.55	66	1.20	254	-0.053	1040.0	0.08	7.04
1872	299.495	0.162	1.55	66	1.20	244	-0.052	952.3	0.03	7.34
1873	299.657	0.162	1.54	66	1.20	238	-0.050	1040.0	0.05	6.37
1874	299.818	0.161	1.55	66	1.20	232	-0.051	1040.0	0.10	10.07
1875	299.979	0.161	1.55	66	1.20	226	-0.050	1040.0	0.04	9.83
1876	300.140	0.161	1.55	66	1.20	221	-0.049	679.7	0.07	8.83
1877	300.302	0.162	1.55	66	1.20	217	-0.047	614.0	0.06	8.36
1878	300.464	0.162	1.55	66	1.20	215	-0.046	576.5	0.06	7.20
1879	300.625	0.161	1.55	66	1.20	213	-0.045	946.1	0.09	5.51
1880	300.786	0.161	1.55	66	1.20	210	-0.045	1040.0	0.84	6.48
1881	300.947	0.161	1.55	66	1.20	206	-0.044	1040.0	1.48	7.29
1882	301.109	0.162	1.55	66	1.20	203	-0.044	1040.0	2.03	8.19
1883	301.270	0.161	1.55	66	1.20	199	-0.044	1040.0	2.32	8.51
1884	301.431	0.161	1.55	66	1.20	195	-0.044	1040.0	2.61	9.02
1885	301.592	0.161	1.55	66	1.20	192	-0.043	1040.0	2.68	8.92
1886	301.754	0.162	1.55	66	1.20	189	-0.041	1040.0	2.96	9.55
1887	301.916	0.162	1.55	66	1.20	184	-0.041	1040.0	2.92	9.28
1888	302.077	0.161	1.55	66	1.20	182	-0.040	1040.0	3.06	9.52
1889	302.238	0.161	1.55	66	1.20	178	-0.039	1040.0	2.96	9.23
1890	302.399	0.161	1.55	66	1.20	175	-0.038	1040.0	2.99	9.22
1891	302.560	0.161	1.55	66	1.20	173	-0.039	1040.0	2.76	8.57
1892	302.722	0.162	1.54	66	1.20	171	-0.039	1040.0	2.61	8.11
1893	302.883	0.161	1.55	66	1.20	167	-0.038	1040.0	3.08	9.37
1894	303.044	0.161	1.55	66	1.20	164	-0.037	1040.0	2.47	7.62
1895	303.205	0.161	1.54	66	1.20	161	-0.037	1040.0	2.49	7.62
1896	303.367	0.162	1.55	66	1.20	158	-0.036	1040.0	2.47	7.52
1897	303.528	0.161	1.55	66	1.20	157	-0.036	1040.0	2.11	6.48
1898	303.689	0.161	1.55	66	1.20	153	-0.035	1040.0	2.18	6.65
1899	303.849	0.160	1.55	66	1.20	152	-0.035	1040.0	2.05	6.30
1900	304.012	0.163	1.55	66	1.20	150	-0.034	1040.0	2.08	6.36
1901	304.174	0.162	1.55	66	1.20	148	-0.034	1040.0	2.10	6.37
1902	304.335	0.161	1.55	66	1.20	145	-0.034	1040.0	1.77	5.44
1903	304.496	0.161	1.55	66	1.20	143	-0.033	1040.0	1.62	5.01
1904	304.657	0.161	1.55	66	1.20	141	-0.032	1040.0	1.85	5.66

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1905	304.820	0.163	1.55	66	1.20	139	-0.032	1040.0	1.75	5.34
1906	304.981	0.161	1.55	66	1.20	139	-0.032	1040.0	1.67	5.10
1907	305.142	0.161	1.55	66	1.20	137	-0.031	1040.0	1.61	4.98
1908	305.303	0.161	1.55	66	1.20	135	-0.031	1040.0	1.46	4.56
1909	305.464	0.161	1.55	66	1.20	133	-0.031	1040.0	1.66	5.12
1910	305.626	0.162	1.55	66	1.20	134	-0.031	1040.0	1.63	5.01
1911	305.787	0.161	1.55	66	1.20	128	-0.030	1040.0	1.62	4.96
1912	305.948	0.161	1.55	66	1.20	130	-0.030	1040.0	1.47	4.58
1913	306.108	0.160	1.55	66	1.20	126	-0.030	1040.0	1.25	3.95
1914	306.270	0.162	1.54	66	1.20	127	-0.029	1040.0	1.31	4.11
1915	306.432	0.162	1.55	66	1.20	125	-0.028	1040.0	1.19	3.78
1916	306.593	0.161	1.55	66	1.20	124	-0.029	1040.0	1.25	3.94
1917	306.754	0.161	1.55	66	1.20	123	-0.028	1040.0	1.22	3.86
1918	306.915	0.161	1.55	66	1.20	122	-0.028	1040.0	1.18	3.74
1919	307.077	0.162	1.55	66	1.20	123	-0.028	1040.0	1.23	3.87
1920	307.238	0.161	1.55	66	1.20	119	-0.028	1040.0	1.22	3.82
1921	307.399	0.161	1.55	66	1.20	119	-0.027	1040.0	1.17	3.69
1922	307.560	0.161	1.55	66	1.20	117	-0.027	1040.0	1.20	3.78
1923	307.722	0.162	1.55	66	1.20	115	-0.027	1040.0	1.06	3.38
1924	307.884	0.162	1.54	66	1.20	114	-0.026	1040.0	1.00	3.19
1925	308.045	0.161	1.55	66	1.20	112	-0.027	1040.0	1.07	3.40
1926	308.206	0.161	1.55	66	1.20	111	-0.026	1040.0	1.18	3.72
1927	308.366	0.160	1.55	66	1.20	113	-0.026	1040.0	0.99	3.19
1928	308.527	0.161	1.54	66	1.20	111	-0.026	1040.0	1.00	3.20
1929	308.688	0.161	1.55	66	1.20	110	-0.026	1040.0	0.94	3.02
1930	308.849	0.161	1.55	66	1.20	108	-0.026	1040.0	0.95	3.08
1931	309.010	0.161	1.55	66	1.20	108	-0.025	1040.0	1.09	3.46
1932	309.172	0.162	1.55	66	1.20	107	-0.025	1040.0	0.77	2.57
1933	309.334	0.162	1.54	66	1.20	106	-0.025	1040.0	0.96	3.06
1934	309.495	0.161	1.55	66	1.20	107	-0.025	1040.0	0.96	3.11
1935	309.656	0.161	1.55	66	1.20	104	-0.025	1040.0	1.02	3.28
1936	309.817	0.161	1.55	66	1.20	104	-0.024	1040.0	0.73	2.48
1937	309.979	0.162	1.55	66	1.20	105	-0.025	1040.0	0.85	2.80
1938	310.140	0.161	1.55	66	1.20	142	-0.045	1040.0	0.92	2.99
1939	310.301	0.161	1.55	66	1.20	139	-0.034	1040.0	0.97	4.49
1940	310.462	0.161	1.55	66	1.20	133	-0.032	1040.0	0.71	3.39

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1941	310.624	0.162	1.55	66	1.20	128	-0.031	1040.0	0.59	2.87
1942	310.786	0.162	1.55	66	1.20	124	-0.030	1040.0	0.54	2.62
1943	310.947	0.161	1.55	66	1.20	121	-0.029	1040.0	0.44	2.24
1944	311.108	0.161	1.55	66	1.20	118	-0.029	1040.0	0.35	1.87
1945	311.269	0.161	1.55	66	1.20	116	-0.028	1040.0	0.34	1.81
1946	311.431	0.162	1.54	66	1.20	113	-0.027	1040.0	0.28	1.58
1947	311.593	0.162	1.55	66	1.20	111	-0.027	1040.0	0.23	1.40
1948	311.754	0.161	1.55	66	1.20	109	-0.027	1040.0	0.28	1.60
1949	311.915	0.161	1.55	66	1.20	107	-0.026	1040.0	0.25	1.49
1950	312.076	0.161	1.55	66	1.20	107	-0.026	1040.0	0.24	1.46
1951	312.239	0.163	1.55	66	1.20	105	-0.026	1040.0	0.20	1.32
1952	312.401	0.162	1.55	66	1.20	105	-0.025	1040.0	0.24	1.47
1953	312.562	0.161	1.55	66	1.20	103	-0.025	1040.0	0.26	1.58
1954	312.723	0.161	1.55	66	1.20	102	-0.024	1040.0	0.22	1.43
1955	312.885	0.162	1.55	66	1.20	101	-0.025	1040.0	0.21	1.38
1956	313.047	0.162	1.55	66	1.20	102	-0.025	1040.0	0.22	1.47
1957	313.208	0.161	1.55	66	1.20	100	-0.024	1040.0	0.21	1.42
1958	313.369	0.161	1.55	66	1.20	98	-0.024	1040.0	0.22	1.49
1959	313.530	0.161	1.55	66	1.20	98	-0.023	1040.0	0.23	1.55
1960	313.693	0.163	1.55	66	1.20	98	-0.023	1040.0	0.20	1.39
1961	313.855	0.162	1.55	66	1.20	96	-0.023	1040.0	0.19	1.37
1962	314.016	0.161	1.55	66	1.20	96	-0.024	1040.0	0.23	1.56
1963	314.177	0.161	1.55	66	1.20	93	-0.022	1040.0	0.18	1.34
1964	314.338	0.161	1.55	66	1.20	92	-0.023	1040.0	0.21	1.49
1965	314.500	0.162	1.55	66	1.20	92	-0.023	1040.0	0.21	1.49
1966	314.661	0.161	1.55	66	1.20	91	-0.022	1040.0	0.20	1.45
1967	314.822	0.161	1.55	66	1.20	93	-0.020	1040.0	0.23	1.62
1968	314.983	0.161	1.55	66	1.20	92	-0.020	1040.0	0.21	1.51
1969	315.144	0.161	1.55	66	1.20	126	-0.041	1040.0	0.29	1.89
1970	315.306	0.162	1.55	66	1.20	120	-0.029	1040.0	0.27	2.33
1971	315.467	0.161	1.55	66	1.20	115	-0.027	1040.0	0.19	1.84
1972	315.628	0.161	1.55	66	1.20	112	-0.027	1040.0	0.15	1.52
1973	315.789	0.161	1.55	66	1.20	108	-0.027	1040.0	0.11	1.29
1974	315.952	0.163	1.55	66	1.20	107	-0.025	1040.0	0.08	1.06
1975	316.113	0.161	1.55	66	1.20	105	-0.025	1040.0	0.05	0.87
1976	316.274	0.161	1.55	66	1.20	102	-0.023	1040.0	0.03	0.74

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
1977	316.435	0.161	1.55	66	1.20	101	-0.024	1040.0	0.04	0.77
1978	316.596	0.161	1.55	66	1.20	100	-0.023	938.4	0.02	0.67
1979	316.758	0.162	1.55	66	1.20	98	-0.022	895.0	0.02	0.69
1980	316.919	0.161	1.55	66	1.20	97	-0.022	895.3	0.02	0.71
1981	317.080	0.161	1.55	66	1.20	96	-0.023	802.8	0.01	0.62
1982	317.240	0.160	1.55	66	1.20	95	-0.023	887.9	0.02	0.69
1983	317.401	0.161	1.55	66	1.20	93	-0.022	809.5	0.00	0.60
1984	317.562	0.161	1.54	66	1.20	93	-0.022	897.3	0.02	0.71
1985	317.723	0.161	1.55	66	1.20	92	-0.022	778.4	0.01	0.68
1986	317.883	0.160	1.55	66	1.20	91	-0.022	808.9	0.01	0.64
1987	318.045	0.162	1.55	66	1.20	91	-0.021	945.6	0.03	0.80
1988	318.207	0.162	1.54	66	1.20	91	-0.022	986.0	0.03	0.78
1989	318.368	0.161	1.55	66	1.20	89	-0.022	912.1	0.02	0.77
1990	318.529	0.161	1.55	66	1.20	88	-0.021	932.5	0.02	0.78
1991	318.690	0.161	1.55	66	1.20	87	-0.021	1006.7	0.03	0.81
1992	318.852	0.162	1.55	66	1.20	87	-0.020	1015.4	0.03	0.86
1993	319.013	0.161	1.55	66	1.20	86	-0.021	961.2	0.04	0.91
1994	319.174	0.161	1.55	66	1.20	86	-0.021	1040.0	0.04	0.90
1995	319.335	0.161	1.55	66	1.20	85	-0.020	1040.0	0.03	0.86
1996	319.497	0.162	1.54	66	1.20	85	-0.020	1040.0	0.03	0.85
1997	319.659	0.162	1.55	66	1.20	83	-0.020	1040.0	0.03	0.88
1998	319.820	0.161	1.55	66	1.20	84	-0.020	1040.0	0.05	0.98
1999	319.981	0.161	1.55	66	1.20	82	-0.020	1040.0	0.06	1.06
2000	320.142	0.161	1.55	66	1.20	114	-0.037	1040.0	0.06	1.10
2001	320.303	0.161	1.55	66	1.20	109	-0.026	991.5	0.06	1.08
2002	320.465	0.162	1.55	66	1.20	104	-0.024	1040.0	0.07	1.41
2003	320.626	0.161	1.55	66	1.20	100	-0.023	1040.0	0.04	1.14
2004	320.787	0.161	1.55	66	1.20	98	-0.023	917.0	0.02	0.92
2005	320.949	0.162	1.55	66	1.20	97	-0.023	776.5	0.00	0.77
2006	321.111	0.162	1.54	66	1.20	95	-0.023	678.4	0.07	0.66
2007	321.272	0.161	1.55	66	1.20	93	-0.022	583.9	0.06	0.64
2008	321.433	0.161	1.55	66	1.20	92	-0.022	534.9	0.05	0.54
2009	321.593	0.160	1.55	66	1.20	91	-0.022	470.0	0.05	0.51
2010	321.756	0.163	1.55	66	1.20	90	-0.021	499.1	0.05	0.51
2011	321.917	0.161	1.55	66	1.20	89	-0.021	416.2	0.04	0.47
2012	322.078	0.161	1.55	66	1.20	88	-0.021	408.4	0.04	0.42

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
2013	322.239	0.161	1.55	66	1.20	87	-0.021	427.6	0.04	0.47
2014	322.400	0.161	1.55	66	1.20	86	-0.021	405.6	0.04	0.46
2015	322.562	0.162	1.55	66	1.20	86	-0.021	421.4	0.04	0.45
2016	322.723	0.161	1.55	66	1.20	85	-0.020	373.8	0.04	0.42
2017	322.884	0.161	1.55	66	1.20	84	-0.021	398.4	0.04	0.45
2018	323.044	0.160	1.55	66	1.20	83	-0.020	382.9	0.04	0.41
2019	323.206	0.162	1.55	66	1.20	83	-0.020	456.0	0.05	0.47
2020	323.367	0.161	1.54	66	1.20	82	-0.020	398.1	0.04	0.41
2021	323.528	0.161	1.55	66	1.20	81	-0.020	431.1	0.04	0.45
2022	323.689	0.161	1.55	66	1.20	80	-0.020	440.5	0.04	0.46
2023	323.850	0.161	1.55	66	1.20	79	-0.020	425.1	0.04	0.45
2024	324.012	0.162	1.55	66	1.20	78	-0.020	448.9	0.04	0.46
2025	324.173	0.161	1.55	66	1.20	79	-0.020	418.5	0.04	0.43
2026	324.334	0.161	1.55	66	1.20	78	-0.020	439.8	0.04	0.44
2027	324.494	0.160	1.55	66	1.20	77	-0.020	432.1	0.04	0.43
2028	324.656	0.162	1.55	66	1.20	78	-0.019	431.4	0.04	0.45
2029	324.817	0.161	1.55	66	1.20	77	-0.019	427.2	0.04	0.41
2030	324.978	0.161	1.55	66	1.20	77	-0.020	446.3	0.04	0.46
2031	325.139	0.161	1.55	66	1.20	119	-0.036	1040.0	0.43	4.21
2032	325.300	0.161	1.55	66	1.20	109	-0.023	1040.0	0.11	1.78
2033	325.462	0.162	1.54	66	1.20	102	-0.023	1040.0	0.08	1.53
2034	325.623	0.161	1.54	66	1.20	98	-0.022	1040.0	0.05	1.19
2035	325.784	0.161	1.55	66	1.20	95	-0.022	994.1	0.02	0.94
2036	325.944	0.160	1.55	66	1.20	94	-0.022	797.6	0.01	0.82
2037	326.106	0.162	1.55	66	1.20	92	-0.022	746.7	0.00	0.75
2038	326.267	0.161	1.54	66	1.20	90	-0.021	584.2	0.06	0.62
2039	326.428	0.161	1.55	66	1.20	89	-0.021	469.3	0.05	0.55
2040	326.588	0.160	1.55	66	1.20	88	-0.021	493.9	0.05	0.54
2041	326.749	0.161	1.55	66	1.20	87	-0.021	440.2	0.04	0.49
2042	326.911	0.162	1.54	66	1.20	86	-0.021	448.3	0.04	0.47
2043	327.072	0.161	1.55	66	1.20	85	-0.021	402.6	0.04	0.45
2044	327.233	0.161	1.55	66	1.20	83	-0.021	355.9	0.04	0.44
2045	327.394	0.161	1.54	66	1.20	82	-0.021	378.3	0.04	0.41
2046	327.556	0.162	1.54	66	1.20	82	-0.020	341.1	0.03	0.41
2047	327.717	0.161	1.55	66	1.20	81	-0.020	338.2	0.03	0.37
2048	327.878	0.161	1.55	67	1.20	81	-0.020	361.8	0.04	0.41

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time: 2262 min
 Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
2049	328.039	0.161	1.55	67	1.20	115	-0.035	376.4	0.04	0.43
2050	328.201	0.162	1.55	67	1.20	148	-0.037	1040.0	0.24	2.40
2051	328.363	0.162	1.55	67	1.20	169	-0.041	1040.0	0.92	2.64
2052	328.524	0.161	1.55	67	1.20	186	-0.043	1040.0	1.39	4.47
2053	328.685	0.161	1.55	67	1.20	207	-0.046	1040.0	1.61	6.62
2054	328.846	0.161	1.55	67	1.20	225	-0.047	1040.0	1.98	9.30
2055	329.008	0.162	1.55	67	1.20	237	-0.049	1040.0	1.63	10.61
2056	329.170	0.162	1.55	67	1.20	248	-0.050	1040.0	1.47	11.64
2057	329.331	0.161	1.55	67	1.20	256	-0.053	1040.0	1.15	11.32
2058	329.492	0.161	1.55	67	1.20	264	-0.053	1040.0	1.17	11.46
2059	329.653	0.161	1.55	67	1.20	271	-0.054	1040.0	1.01	11.76
2060	329.816	0.163	1.55	67	1.20	277	-0.055	1040.0	0.93	12.03
2061	329.978	0.162	1.55	67	1.20	280	-0.055	1040.0	1.07	11.88
2062	330.140	0.162	1.55	67	1.20	285	-0.055	1040.0	1.07	11.80
2063	330.301	0.161	1.55	67	1.20	291	-0.057	1040.0	0.67	12.24
2064	330.463	0.162	1.55	67	1.20	295	-0.058	1040.0	0.59	12.41
2065	330.625	0.162	1.55	67	1.20	299	-0.057	1040.0	0.52	12.79
2066	330.786	0.161	1.55	67	1.20	300	-0.057	1040.0	0.40	12.55
2067	330.948	0.162	1.55	67	1.20	302	-0.059	1040.0	0.27	12.77
2068	331.109	0.161	1.55	67	1.20	305	-0.059	1040.0	0.46	12.55
2069	331.272	0.163	1.55	67	1.20	309	-0.060	1040.0	0.20	13.29
2070	331.434	0.162	1.55	67	1.20	313	-0.059	1040.0	0.10	13.93
2071	331.595	0.161	1.55	66	1.20	308	-0.062	1040.0	0.04	13.85
2072	331.756	0.161	1.55	66	1.20	312	-0.059	1040.0	0.06	13.34
2073	331.917	0.161	1.55	66	1.20	310	-0.057	1040.0	0.04	13.75
2074	332.079	0.162	1.55	66	1.20	310	-0.057	627.3	0.00	13.40
2075	332.240	0.161	1.55	66	1.20	311	-0.058	672.3	0.00	13.33
2076	332.401	0.161	1.55	66	1.20	312	-0.060	701.1	0.00	13.15
2077	332.562	0.161	1.55	66	1.20	312	-0.059	949.7	0.02	13.07
2078	332.723	0.161	1.55	66	1.20	312	-0.059	816.7	0.00	13.42
2079	332.885	0.162	1.55	66	1.20	314	-0.059	778.9	0.00	13.22
2080	333.046	0.161	1.55	66	1.20	296	-0.054	478.7	0.05	14.81
2081	333.207	0.161	1.55	66	1.20	271	-0.053	757.1	0.00	5.98
2082	333.368	0.161	1.55	66	1.20	256	-0.052	733.5	0.00	5.23
2083	333.531	0.163	1.55	66	1.20	246	-0.050	615.3	0.06	5.29
2084	333.692	0.161	1.55	66	1.20	239	-0.049	763.3	0.01	4.64

Train D - Ambient Background and Flue Gas Data**Run:** 4**Test Date:** 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time 2262 min

Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
2085	333.853	0.161	1.55	66	1.20	233	-0.049	799.2	0.01	6.87
2086	334.014	0.161	1.55	66	1.20	228	-0.048	507.2	0.05	7.04
2087	334.175	0.161	1.55	66	1.20	223	-0.047	446.0	0.04	6.14
2088	334.337	0.162	1.55	66	1.20	218	-0.047	478.1	0.05	5.55
2089	334.498	0.161	1.55	66	1.20	215	-0.045	511.4	0.05	4.99
2090	334.659	0.161	1.55	66	1.20	214	-0.044	393.5	0.04	3.38
2091	334.820	0.161	1.55	66	1.20	211	-0.044	1040.0	0.12	3.05
2092	334.982	0.162	1.55	66	1.20	208	-0.043	1040.0	0.43	3.69
2093	335.143	0.161	1.54	66	1.20	204	-0.043	1040.0	0.75	4.32
2094	335.304	0.161	1.55	66	1.20	200	-0.042	1040.0	0.91	4.49
2095	335.465	0.161	1.55	66	1.20	197	-0.042	1040.0	1.13	4.99
2096	335.625	0.160	1.55	66	1.20	193	-0.041	1040.0	1.18	4.96
2097	335.787	0.162	1.55	66	1.20	190	-0.040	1040.0	1.37	5.46
2098	335.948	0.161	1.55	66	1.20	186	-0.039	1040.0	1.43	5.53
2099	336.109	0.161	1.55	66	1.20	183	-0.039	1040.0	1.43	5.46
2100	336.269	0.160	1.55	66	1.20	180	-0.039	1040.0	1.47	5.53
2101	336.431	0.162	1.55	66	1.20	177	-0.038	1040.0	1.40	5.25
2102	336.593	0.162	1.54	66	1.20	173	-0.037	1040.0	1.50	5.53
2103	336.754	0.161	1.54	66	1.20	171	-0.037	1040.0	1.55	5.61
2104	336.915	0.161	1.55	66	1.20	168	-0.036	1040.0	1.46	5.30
2105	337.076	0.161	1.55	66	1.20	165	-0.036	1040.0	1.40	5.12
2106	337.238	0.162	1.55	66	1.20	162	-0.036	1040.0	1.43	5.19
2107	337.399	0.161	1.55	66	1.20	160	-0.035	1040.0	1.36	4.93
2108	337.560	0.161	1.55	66	1.20	157	-0.034	1040.0	1.25	4.59
2109	337.721	0.161	1.55	66	1.20	155	-0.034	1040.0	1.43	5.12
2110	337.883	0.162	1.54	66	1.20	153	-0.032	1040.0	1.20	4.40
2111	338.044	0.161	1.55	66	1.20	151	-0.033	1040.0	1.35	4.83
2112	338.205	0.161	1.55	66	1.20	149	-0.032	1040.0	1.16	4.24
2113	338.365	0.160	1.55	66	1.20	146	-0.032	1040.0	1.16	4.23
2114	338.526	0.161	1.54	66	1.20	144	-0.031	1040.0	1.01	3.71
2115	338.688	0.162	1.55	66	1.20	142	-0.031	1040.0	1.04	3.79
2116	338.849	0.161	1.55	66	1.20	141	-0.031	1040.0	0.94	3.47
2117	339.010	0.161	1.55	66	1.20	139	-0.030	1040.0	1.03	3.77
2118	339.170	0.160	1.55	66	1.20	136	-0.030	1040.0	1.01	3.70
2119	339.332	0.162	1.55	66	1.20	135	-0.030	1040.0	0.92	3.36
2120	339.494	0.162	1.55	66	1.20	134	-0.030	1040.0	0.79	2.93

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
2121	339.655	0.161	1.54	66	1.20	131	-0.029	1040.0	0.81	2.98
2122	339.816	0.161	1.55	66	1.20	130	-0.029	1040.0	0.75	2.83
2123	339.977	0.161	1.55	66	1.20	128	-0.029	1040.0	0.87	3.19
2124	340.139	0.162	1.55	66	1.20	127	-0.028	1040.0	0.86	3.14
2125	340.300	0.161	1.55	66	1.20	125	-0.028	1040.0	0.71	2.67
2126	340.461	0.161	1.55	66	1.20	124	-0.028	1040.0	0.80	2.94
2127	340.622	0.161	1.55	66	1.20	123	-0.028	1040.0	0.79	2.87
2128	340.784	0.162	1.55	66	1.20	120	-0.027	1040.0	0.69	2.61
2129	340.945	0.161	1.55	66	1.20	119	-0.027	1040.0	0.64	2.42
2130	341.106	0.161	1.55	66	1.20	119	-0.027	1040.0	0.64	2.42
2131	341.266	0.160	1.55	66	1.20	116	-0.027	1040.0	0.55	2.17
2132	341.428	0.162	1.55	67	1.20	115	-0.026	1040.0	0.58	2.22
2133	341.589	0.161	1.55	66	1.20	115	-0.026	1040.0	0.56	2.16
2134	341.750	0.161	1.54	66	1.20	114	-0.026	1040.0	0.47	1.86
2135	341.911	0.161	1.55	66	1.20	113	-0.026	1040.0	0.57	2.20
2136	342.072	0.161	1.55	67	1.20	112	-0.026	1040.0	0.55	2.11
2137	342.234	0.162	1.55	67	1.20	111	-0.026	1040.0	0.56	2.15
2138	342.395	0.161	1.55	66	1.20	110	-0.025	1040.0	0.47	1.86
2139	342.556	0.161	1.55	66	1.20	109	-0.025	1040.0	0.50	1.97
2140	342.716	0.160	1.55	66	1.20	109	-0.025	1040.0	0.51	1.99
2141	342.878	0.162	1.55	66	1.20	107	-0.026	1040.0	0.46	1.83
2142	343.040	0.162	1.54	67	1.20	107	-0.024	1040.0	0.44	1.77
2143	343.201	0.161	1.55	66	1.20	104	-0.024	1040.0	0.45	1.80
2144	343.362	0.161	1.55	66	1.20	104	-0.025	1040.0	0.42	1.70
2145	343.523	0.161	1.54	66	1.20	103	-0.024	1040.0	0.45	1.81
2146	343.685	0.162	1.55	66	1.20	102	-0.024	1040.0	0.42	1.72
2147	343.846	0.161	1.55	66	1.20	102	-0.024	1040.0	0.46	1.83
2148	344.007	0.161	1.55	66	1.20	101	-0.023	1040.0	0.44	1.78
2149	344.168	0.161	1.55	66	1.20	134	-0.042	1040.0	0.40	1.62
2150	344.330	0.162	1.55	66	1.20	149	-0.032	1040.0	1.47	6.28
2151	344.492	0.162	1.54	66	1.20	138	-0.030	1040.0	0.95	4.68
2152	344.653	0.161	1.55	66	1.20	130	-0.029	1040.0	0.81	4.08
2153	344.814	0.161	1.55	66	1.20	124	-0.028	1040.0	0.70	3.55
2154	344.975	0.161	1.55	66	1.20	120	-0.027	1040.0	0.55	2.92
2155	345.137	0.162	1.55	66	1.20	116	-0.026	1040.0	0.43	2.40
2156	345.298	0.161	1.55	66	1.20	114	-0.026	1040.0	0.34	2.00

Train D - Ambient Background and Flue Gas Data

Run: 4 **Test Date:** 12/5/2024
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016
Meter Box Y Regression Factor: 0
Meter Box Dynamic Y: 1.016
Sample Box ID: 372

Test Start Time: 17:03
Total Sampling Time: 2262 min
Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
2157	345.459	0.161	1.55	66	1.20	111	-0.025	1040.0	0.34	1.99
2158	345.620	0.161	1.55	66	1.20	109	-0.025	1040.0	0.25	1.60
2159	345.782	0.162	1.55	66	1.20	107	-0.025	1040.0	0.27	1.64
2160	345.944	0.162	1.54	66	1.20	105	-0.025	1040.0	0.21	1.38
2161	346.105	0.161	1.55	66	1.20	104	-0.024	1040.0	0.19	1.32
2162	346.266	0.161	1.55	66	1.20	101	-0.023	1040.0	0.18	1.26
2163	346.427	0.161	1.54	66	1.20	100	-0.023	1040.0	0.17	1.23
2164	346.589	0.162	1.55	66	1.20	98	-0.023	1040.0	0.14	1.11
2165	346.750	0.161	1.55	66	1.20	97	-0.023	1040.0	0.13	1.03
2166	346.911	0.161	1.55	66	1.20	96	-0.022	1040.0	0.10	0.89
2167	347.072	0.161	1.55	66	1.20	94	-0.023	1040.0	0.13	1.06
2168	347.234	0.162	1.54	66	1.20	94	-0.022	1040.0	0.11	0.94
2169	347.395	0.161	1.55	66	1.20	93	-0.022	1040.0	0.14	1.07
2170	347.556	0.161	1.55	66	1.20	92	-0.022	1040.0	0.14	1.10
2171	347.717	0.161	1.55	66	1.20	91	-0.022	1040.0	0.13	1.05
2172	347.878	0.161	1.55	66	1.20	90	-0.022	1040.0	0.11	0.95
2173	348.039	0.161	1.55	66	1.20	89	-0.022	1040.0	0.12	0.99
2174	348.200	0.161	1.55	66	1.20	89	-0.021	1040.0	0.12	1.01
2175	348.361	0.161	1.55	66	1.20	90	-0.022	1040.0	0.12	1.00
2176	348.522	0.161	1.55	66	1.20	88	-0.021	1040.0	0.11	0.98
2177	348.684	0.162	1.55	66	1.20	88	-0.021	1040.0	0.11	0.95
2178	348.846	0.162	1.54	66	1.20	88	-0.021	1040.0	0.12	1.01
2179	349.007	0.161	1.55	66	1.20	88	-0.022	1040.0	0.11	0.98
2180	349.168	0.161	1.55	66	1.20	128	-0.039	1040.0	0.12	1.01
2181	349.329	0.161	1.55	66	1.20	131	-0.028	1040.0	0.39	2.98
2182	349.491	0.162	1.55	66	1.20	122	-0.027	1040.0	0.34	2.44
2183	349.652	0.161	1.55	66	1.20	115	-0.026	1040.0	0.29	2.11
2184	349.813	0.161	1.55	66	1.20	111	-0.025	1040.0	0.20	1.62
2185	349.973	0.160	1.55	66	1.20	108	-0.025	1040.0	0.18	1.50
2186	350.135	0.162	1.54	66	1.20	105	-0.024	1040.0	0.15	1.32
2187	350.296	0.161	1.55	66	1.20	103	-0.024	1040.0	0.10	1.05
2188	350.457	0.161	1.55	66	1.20	101	-0.024	1040.0	0.11	1.12
2189	350.618	0.161	1.55	66	1.20	100	-0.024	1040.0	0.07	0.86
2190	350.779	0.161	1.54	66	1.20	98	-0.023	1040.0	0.07	0.90
2191	350.941	0.162	1.55	66	1.20	96	-0.023	1040.0	0.05	0.81
2192	351.102	0.161	1.55	66	1.20	95	-0.022	1040.0	0.04	0.71

Train D - Ambient Background and Flue Gas Data

Run: 4

Test Date: 12/5/2024

Manufacturer: Central Boiler

Model: Classic Edge 560.1

Tracking No.: 2495

Project No.: 0117WB043E

Meter Box Y Regression Offset: 1.016

Meter Box Y Regression Factor: 0

Meter Box Dynamic Y: 1.016

Sample Box ID: 372

Test Start Time: 17:03

Total Sampling Time: 2262 min

Recording Interval: 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
2193	351.263	0.161	1.55	66	1.20	94	-0.022	1040.0	0.04	0.74
2194	351.423	0.160	1.55	66	1.20	93	-0.022	1040.0	0.04	0.74
2195	351.585	0.162	1.55	66	1.20	92	-0.022	987.3	0.02	0.67
2196	351.746	0.161	1.55	66	1.20	91	-0.022	928.4	0.02	0.63
2197	351.907	0.161	1.55	66	1.20	90	-0.021	899.5	0.01	0.62
2198	352.068	0.161	1.55	66	1.20	88	-0.022	836.1	0.01	0.63
2199	352.229	0.161	1.54	66	1.20	88	-0.022	815.1	0.01	0.63
2200	352.391	0.162	1.54	66	1.20	87	-0.021	804.4	0.01	0.62
2201	352.552	0.161	1.55	66	1.20	86	-0.021	796.9	0.01	0.62
2202	352.713	0.161	1.55	66	1.20	85	-0.021	755.5	0.00	0.59
2203	352.873	0.160	1.55	66	1.20	85	-0.021	762.0	0.01	0.60
2204	353.035	0.162	1.54	67	1.20	84	-0.021	707.2	0.00	0.55
2205	353.196	0.161	1.54	67	1.20	84	-0.021	770.3	0.01	0.63
2206	353.357	0.161	1.55	66	1.20	83	-0.021	671.7	0.07	0.54
2207	353.518	0.161	1.55	67	1.20	84	-0.021	731.2	0.00	0.60
2208	353.680	0.162	1.54	67	1.20	83	-0.020	673.7	0.07	0.56
2209	353.841	0.161	1.54	67	1.20	83	-0.021	727.6	0.00	0.63
2210	354.002	0.161	1.55	67	1.20	83	-0.021	767.4	0.00	0.64
2211	354.163	0.161	1.55	67	1.20	121	-0.037	805.4	0.01	0.66
2212	354.324	0.161	1.55	67	1.20	124	-0.025	1040.0	0.16	2.44
2213	354.486	0.162	1.55	67	1.20	113	-0.024	1040.0	0.12	1.96
2214	354.647	0.161	1.55	67	1.20	107	-0.024	1040.0	0.09	1.61
2215	354.808	0.161	1.55	67	1.20	103	-0.023	1040.0	0.06	1.34
2216	354.969	0.161	1.55	67	1.20	100	-0.023	1040.0	0.04	1.11
2217	355.131	0.162	1.55	67	1.20	98	-0.023	1015.5	0.03	1.05
2218	355.293	0.162	1.54	67	1.20	96	-0.023	863.8	0.01	0.88
2219	355.454	0.161	1.54	67	1.20	94	-0.022	734.1	0.00	0.79
2220	355.615	0.161	1.55	67	1.20	93	-0.022	662.2	0.07	0.69
2221	355.776	0.161	1.55	67	1.20	92	-0.022	630.8	0.06	0.64
2222	355.938	0.162	1.54	67	1.20	90	-0.022	561.6	0.06	0.60
2223	356.099	0.161	1.55	67	1.20	89	-0.021	557.1	0.06	0.60
2224	356.260	0.161	1.55	67	1.20	88	-0.022	551.9	0.06	0.58
2225	356.421	0.161	1.55	67	1.20	87	-0.022	484.0	0.05	0.52
2226	356.583	0.162	1.54	67	1.20	86	-0.021	478.1	0.05	0.52
2227	356.745	0.162	1.54	67	1.20	85	-0.021	423.3	0.04	0.49
2228	356.906	0.161	1.55	67	1.20	85	-0.021	435.3	0.04	0.50

Train D - Ambient Background and Flue Gas Data

Run: 4
 Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E

Test Date: 12/5/2024

Meter Box Y Regression Offset: 1.016
 Meter Box Y Regression Factor: 0
 Meter Box Dynamic Y: 1.016
 Sample Box ID: 372

Test Start Time: 17:03
 Total Sampling Time 2262 min
 Recording Interval 1 min

Elapsed Time (min)	Ambient Sampling System					Flue Gas Data				
	Meter Volume (ft ³)	Sample Rate (CFM)	Meter ΔH	Meter Temp (°F)	Filter Vac (in. Hg)	Stack Temp (°F)	Draft (In. H ₂ O)	CO (ppm)	CO (%)	CO ₂ (%)
2229	357.067	0.161	1.55	67	1.20	84	-0.021	388.7	0.04	0.47
2230	357.228	0.161	1.55	66	1.20	84	-0.021	340.2	0.03	0.43
2231	357.389	0.161	1.55	66	1.20	83	-0.021	360.5	0.04	0.42
2232	357.551	0.162	1.54	66	1.20	83	-0.021	373.8	0.04	0.46
2233	357.712	0.161	1.54	66	1.20	83	-0.020	335.9	0.03	0.41
2234	357.873	0.161	1.55	66	1.20	83	-0.021	328.2	0.03	0.41
2235	358.034	0.161	1.54	66	1.20	83	-0.020	324.3	0.03	0.40
2236	358.196	0.162	1.55	66	1.20	82	-0.020	281.9	0.03	0.38
2237	358.357	0.161	1.55	66	1.20	82	-0.021	284.8	0.03	0.38
2238	358.518	0.161	1.55	66	1.20	82	-0.020	279.0	0.03	0.38
2239	358.678	0.160	1.55	66	1.20	82	-0.021	279.6	0.03	0.39
2240	358.840	0.162	1.54	66	1.20	81	-0.020	272.2	0.03	0.36
2241	359.002	0.162	1.54	66	1.20	82	-0.020	262.7	0.03	0.36
2242	359.163	0.161	1.55	66	1.20	120	-0.035	269.3	0.03	0.47
2243	359.324	0.161	1.55	66	1.20	120	-0.023	1040.0	0.14	2.61
2244	359.485	0.161	1.54	66	1.20	109	-0.023	1040.0	0.11	2.20
2245	359.647	0.162	1.55	66	1.20	103	-0.022	1040.0	0.08	1.83
2246	359.808	0.161	1.55	66	1.20	99	-0.022	1040.0	0.05	1.52
2247	359.969	0.161	1.55	66	1.20	96	-0.022	1040.0	0.03	1.32
2248	360.129	0.160	1.54	66	1.20	93	-0.021	890.2	0.02	1.14
2249	360.291	0.162	1.55	66	1.20	92	-0.021	799.2	0.01	0.99
2250	360.452	0.161	1.55	66	1.20	150	-0.038	1040.0	0.55	5.20
2251	360.613	0.161	1.55	66	1.20	179	-0.042	1040.0	1.36	4.88
2252	360.773	0.160	1.55	66	1.20	202	-0.044	1040.0	1.77	6.26
2253	360.935	0.162	1.54	66	1.20	227	-0.047	1040.0	3.02	10.82
2254	361.096	0.161	1.54	66	1.20	247	-0.048	1040.0	1.73	13.32
2255	361.257	0.161	1.55	66	1.20	262	-0.050	1040.0	1.55	12.88
2256	361.418	0.161	1.55	66	1.20	274	-0.052	1040.0	0.64	13.92
2257	361.579	0.161	1.55	66	1.20	283	-0.053	1040.0	0.60	13.89
2258	361.741	0.162	1.55	66	1.20	288	-0.052	1040.0	0.79	13.48
2259	361.902	0.161	1.55	66	1.20	290	-0.056	1040.0	0.48	13.46
2260	362.063	0.161	1.55	66	1.20	289	-0.055	1040.0	1.08	12.46
2261	362.223	0.160	1.55	66	1.20	294	-0.056	1040.0	1.00	12.42
2262	362.385	0.162	1.55	66	1.20	296	-0.056	1040.0	0.54	13.07

Water Flow Data

ASTM E2618-13

Run: 4
Manufacturer: Central Boiler
Model: Classic Edge 560.1
Tracking No.: 2495
Project No.: 0117WB043E

Test Date: 12/5/2024

Boiler Dry Weight, Lb. 1822.5
Boiler Water Weight, Lb. 1663

TI_{avg} - Initial Average Boiler Temp, °F 165.15
TF_{avg} - Final Average Boiler Temp, °F 166.41

Test Start Time: 17:03
Total Sampling Time 2262 min
Recording Interval 1 min

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
Tot / Avg	172.4	173.0	0.69	56.0	172.8	116.88	0.420	1.0012	8.336	3.503	926062.8
Minimum	158.9	159.4	0.37	53.9	159.2	101.72	0.302	1.0012	8.333	2.518	313.406
Max	184.2	185.1	1.11	58.3	184.9	130.29	0.520	1.0012	8.338	4.337	529.251
0	164.8	165.5	0.69	55.3	164.9	109.68	0.453	1.0012	8.336	3.78	414.7
1	165.6	166.2	0.65	55.2	165.8	110.60	0.436	1.0012	8.336	3.64	402.8
2	166.0	166.7	0.69	55.2	166.2	110.99	0.453	1.0012	8.336	3.78	419.7
3	166.9	167.6	0.70	55.2	167.1	111.85	0.436	1.0012	8.336	3.64	407.3
4	167.7	168.4	0.69	55.3	167.9	112.62	0.453	1.0012	8.336	3.78	425.9
5	168.3	169.0	0.72	55.3	168.5	113.28	0.453	1.0012	8.336	3.78	428.4
6	169.0	169.8	0.76	55.3	169.3	114.00	0.436	1.0012	8.336	3.64	415.1
7	170.0	170.7	0.74	55.3	170.2	114.89	0.436	1.0012	8.336	3.64	418.4
8	170.9	171.7	0.77	55.3	171.1	115.81	0.436	1.0012	8.336	3.64	421.7
9	171.8	172.5	0.78	55.3	172.0	116.69	0.453	1.0012	8.336	3.78	441.3
10	172.6	173.3	0.71	55.3	172.8	117.51	0.403	1.0012	8.336	3.36	395.0
11	173.4	174.1	0.73	55.3	173.6	118.30	0.420	1.0012	8.336	3.50	414.2
12	174.3	175.0	0.74	55.3	174.5	119.17	0.403	1.0012	8.336	3.36	400.6
13	175.2	175.9	0.77	55.3	175.3	120.05	0.420	1.0012	8.336	3.50	420.4
14	176.0	176.8	0.76	55.3	176.2	120.94	0.403	1.0012	8.336	3.36	406.5
15	176.9	177.7	0.78	55.3	177.2	121.86	0.403	1.0012	8.336	3.36	409.6
16	177.9	178.7	0.80	55.3	178.1	122.78	0.420	1.0012	8.336	3.50	429.9
17	178.7	179.5	0.81	55.3	178.9	123.62	0.386	1.0012	8.336	3.22	398.2
18	179.5	180.4	0.83	55.3	179.8	124.52	0.403	1.0012	8.336	3.36	418.6
19	180.4	181.1	0.74	55.3	180.7	125.33	0.386	1.0012	8.336	3.22	403.7
20	180.7	181.5	0.83	55.3	181.1	125.81	0.386	1.0012	8.336	3.22	405.3
21	181.0	181.8	0.85	55.3	181.5	126.14	0.403	1.0012	8.336	3.36	424.0
22	181.1	182.0	0.86	55.3	181.7	126.40	0.420	1.0012	8.336	3.50	442.6
23	181.2	182.1	0.84	55.3	181.9	126.54	0.403	1.0012	8.336	3.36	425.4
24	181.2	182.0	0.84	55.3	181.9	126.53	0.420	1.0012	8.336	3.50	443.1
25	181.3	182.1	0.77	55.3	181.8	126.55	0.386	1.0012	8.336	3.22	407.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
26	181.3	182.1	0.79	55.3	181.9	126.58	0.386	1.0012	8.336	3.22	407.8
27	181.3	182.1	0.77	55.3	181.9	126.61	0.369	1.0012	8.336	3.08	390.1
28	181.3	182.1	0.76	55.3	181.9	126.57	0.386	1.0012	8.336	3.22	407.7
29	181.3	182.1	0.76	55.3	181.9	126.60	0.369	1.0012	8.336	3.08	390.1
30	181.3	182.1	0.78	55.3	181.9	126.58	0.386	1.0012	8.336	3.22	407.7
31	181.3	182.0	0.77	55.3	181.8	126.56	0.369	1.0012	8.336	3.08	390.0
32	181.3	182.0	0.69	55.3	181.8	126.51	0.352	1.0012	8.336	2.94	372.1
33	181.2	181.9	0.77	55.3	181.7	126.45	0.369	1.0012	8.336	3.08	389.6
34	181.1	181.9	0.76	55.3	181.7	126.44	0.369	1.0012	8.336	3.08	389.6
35	181.1	181.8	0.76	55.3	181.7	126.41	0.386	1.0012	8.336	3.22	407.2
36	181.0	181.8	0.75	55.2	181.6	126.36	0.369	1.0012	8.336	3.08	389.4
37	180.9	181.7	0.75	55.2	181.5	126.26	0.386	1.0012	8.336	3.22	406.7
38	180.8	181.6	0.76	55.2	181.4	126.18	0.369	1.0012	8.336	3.08	388.8
39	180.8	181.6	0.73	55.2	181.3	126.12	0.369	1.0012	8.336	3.08	388.6
40	180.7	181.5	0.74	55.2	181.3	126.10	0.386	1.0012	8.336	3.22	406.2
41	180.6	181.4	0.76	55.2	181.2	125.98	0.369	1.0012	8.336	3.08	388.2
42	180.6	181.3	0.75	55.2	181.1	125.91	0.386	1.0012	8.336	3.22	405.6
43	180.5	181.3	0.75	55.2	181.1	125.88	0.369	1.0012	8.336	3.08	387.9
44	180.4	181.2	0.73	55.2	181.0	125.72	0.386	1.0012	8.336	3.22	405.0
45	180.3	181.1	0.75	55.3	180.9	125.62	0.369	1.0012	8.336	3.08	387.1
46	180.2	181.0	0.76	55.3	180.8	125.52	0.403	1.0012	8.336	3.36	421.9
47	180.1	180.9	0.76	55.3	180.7	125.46	0.386	1.0012	8.336	3.22	404.1
48	180.0	180.8	0.74	55.3	180.6	125.34	0.386	1.0012	8.336	3.22	403.8
49	179.9	180.6	0.75	55.3	180.4	125.16	0.386	1.0012	8.336	3.22	403.2
50	179.8	180.5	0.73	55.3	180.4	125.08	0.386	1.0012	8.336	3.22	402.9
51	179.7	180.4	0.74	55.3	180.2	124.97	0.386	1.0012	8.336	3.22	402.6
52	179.6	180.3	0.73	55.3	180.2	124.87	0.403	1.0012	8.336	3.36	419.7
53	179.5	180.2	0.72	55.3	180.0	124.76	0.386	1.0012	8.336	3.22	401.9
54	179.4	180.1	0.73	55.3	179.9	124.64	0.386	1.0012	8.336	3.22	401.5
55	179.3	180.0	0.73	55.3	179.8	124.52	0.386	1.0012	8.336	3.22	401.1
56	179.2	179.9	0.71	55.3	179.7	124.43	0.386	1.0012	8.336	3.22	400.8
57	179.0	179.7	0.72	55.3	179.6	124.23	0.386	1.0012	8.336	3.22	400.2
58	178.8	179.6	0.72	55.3	179.4	124.07	0.386	1.0012	8.336	3.22	399.7
59	178.8	179.5	0.72	55.3	179.3	123.98	0.386	1.0012	8.336	3.22	399.4
60	178.7	179.4	0.70	55.3	179.2	123.90	0.386	1.0012	8.336	3.22	399.1
61	178.5	179.3	0.72	55.3	179.1	123.78	0.386	1.0012	8.336	3.22	398.7
62	178.4	179.1	0.71	55.3	178.9	123.64	0.386	1.0012	8.336	3.22	398.3
63	178.3	179.0	0.71	55.3	178.8	123.56	0.386	1.0012	8.336	3.22	398.0
64	178.2	178.9	0.71	55.3	178.7	123.43	0.386	1.0012	8.336	3.22	397.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
65	178.1	178.8	0.70	55.3	178.6	123.29	0.386	1.0012	8.336	3.22	397.2
66	177.9	178.6	0.69	55.3	178.5	123.21	0.386	1.0012	8.336	3.22	396.9
67	177.8	178.5	0.69	55.3	178.3	123.06	0.386	1.0012	8.336	3.22	396.4
68	177.6	178.3	0.70	55.3	178.2	122.92	0.386	1.0012	8.336	3.22	396.0
69	177.6	178.3	0.70	55.2	178.1	122.84	0.403	1.0012	8.336	3.36	412.9
70	177.4	178.1	0.68	55.2	177.9	122.68	0.369	1.0012	8.336	3.08	378.0
71	177.3	177.9	0.67	55.2	177.8	122.53	0.386	1.0012	8.336	3.22	394.7
72	177.1	177.8	0.68	55.2	177.6	122.36	0.403	1.0012	8.336	3.36	411.3
73	177.0	177.7	0.69	55.2	177.5	122.26	0.386	1.0012	8.336	3.22	393.8
74	176.8	177.5	0.68	55.2	177.4	122.13	0.386	1.0012	8.336	3.22	393.4
75	176.7	177.4	0.67	55.2	177.2	121.98	0.386	1.0012	8.336	3.22	393.0
76	176.6	177.2	0.66	55.2	177.0	121.83	0.386	1.0012	8.336	3.22	392.4
77	176.4	177.1	0.67	55.2	176.9	121.69	0.386	1.0012	8.336	3.22	392.0
78	176.3	176.9	0.67	55.2	176.8	121.56	0.386	1.0012	8.336	3.22	391.6
79	176.1	176.8	0.67	55.2	176.6	121.40	0.386	1.0012	8.336	3.22	391.1
80	176.0	176.6	0.66	55.2	176.5	121.32	0.386	1.0012	8.336	3.22	390.8
81	175.9	176.5	0.66	55.2	176.3	121.15	0.386	1.0012	8.336	3.22	390.3
82	175.7	176.4	0.66	55.2	176.2	121.04	0.403	1.0012	8.336	3.36	406.9
83	175.6	176.3	0.65	55.2	176.1	120.96	0.386	1.0012	8.336	3.22	389.7
84	175.4	176.1	0.65	55.1	175.9	120.76	0.386	1.0012	8.336	3.22	389.0
85	175.3	175.9	0.65	55.1	175.8	120.62	0.386	1.0012	8.336	3.22	388.6
86	175.1	175.8	0.66	55.1	175.6	120.49	0.386	1.0012	8.336	3.22	388.1
87	175.0	175.6	0.63	55.1	175.5	120.35	0.386	1.0012	8.336	3.22	387.7
88	174.8	175.5	0.64	55.1	175.3	120.23	0.386	1.0012	8.336	3.22	387.3
89	174.7	175.3	0.65	55.1	175.2	120.07	0.386	1.0012	8.337	3.22	386.8
90	174.6	175.3	0.65	55.1	175.1	120.02	0.386	1.0012	8.337	3.22	386.6
91	174.5	175.2	0.64	55.1	175.0	119.92	0.386	1.0012	8.337	3.22	386.3
92	174.4	175.0	0.64	55.0	174.9	119.82	0.386	1.0012	8.337	3.22	386.0
93	174.2	174.8	0.64	55.0	174.7	119.64	0.403	1.0012	8.337	3.36	402.2
94	174.0	174.7	0.64	55.0	174.5	119.50	0.386	1.0012	8.337	3.22	385.0
95	173.9	174.6	0.64	55.0	174.4	119.39	0.386	1.0012	8.337	3.22	384.6
96	173.8	174.4	0.64	55.0	174.2	119.24	0.386	1.0012	8.337	3.22	384.1
97	173.6	174.2	0.63	55.0	174.1	119.10	0.386	1.0012	8.337	3.22	383.7
98	173.4	174.1	0.63	55.0	173.9	118.93	0.386	1.0012	8.337	3.22	383.1
99	173.3	174.0	0.62	55.0	173.8	118.80	0.386	1.0012	8.337	3.22	382.7
100	173.2	173.8	0.58	55.0	173.6	118.67	0.369	1.0012	8.337	3.08	365.7
101	173.0	173.7	0.63	55.0	173.5	118.58	0.386	1.0012	8.337	3.22	382.0
102	172.9	173.5	0.62	55.0	173.3	118.37	0.386	1.0012	8.337	3.22	381.3
103	172.7	173.4	0.63	54.9	173.2	118.25	0.386	1.0012	8.337	3.22	380.9

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
104	172.6	173.2	0.64	54.9	173.0	118.11	0.403	1.0012	8.337	3.36	397.0
105	172.5	173.1	0.61	54.9	172.9	117.97	0.386	1.0012	8.337	3.22	380.0
106	172.3	172.9	0.62	54.9	172.7	117.82	0.386	1.0012	8.337	3.22	379.6
107	172.2	172.8	0.62	54.9	172.6	117.72	0.386	1.0012	8.337	3.22	379.2
108	172.0	172.6	0.62	54.9	172.5	117.57	0.403	1.0012	8.337	3.36	395.2
109	171.8	172.5	0.61	54.9	172.3	117.37	0.386	1.0012	8.337	3.22	378.1
110	171.7	172.3	0.61	54.9	172.1	117.26	0.386	1.0012	8.337	3.22	377.8
111	171.5	172.2	0.62	54.9	172.0	117.13	0.403	1.0012	8.337	3.36	393.7
112	171.4	172.0	0.62	54.9	171.9	116.98	0.386	1.0012	8.337	3.22	376.9
113	171.3	171.8	0.58	54.9	171.7	116.82	0.386	1.0012	8.337	3.22	376.3
114	171.1	171.7	0.61	54.9	171.5	116.66	0.403	1.0012	8.337	3.36	392.2
115	171.0	171.5	0.59	54.9	171.4	116.51	0.386	1.0012	8.337	3.22	375.3
116	170.8	171.4	0.60	54.9	171.2	116.36	0.386	1.0012	8.337	3.22	374.8
117	170.7	171.3	0.59	55.0	171.1	116.15	0.386	1.0012	8.337	3.22	374.2
118	170.5	171.1	0.58	55.1	170.9	115.84	0.386	1.0012	8.336	3.22	373.2
119	170.4	170.9	0.57	55.3	170.8	115.52	0.403	1.0012	8.336	3.36	388.3
120	170.3	170.8	0.58	55.4	170.7	115.23	0.386	1.0012	8.336	3.22	371.2
121	170.1	170.7	0.58	55.6	170.6	114.98	0.386	1.0012	8.336	3.22	370.4
122	170.0	170.6	0.59	55.7	170.4	114.68	0.386	1.0012	8.336	3.22	369.4
123	169.8	170.4	0.58	55.9	170.2	114.33	0.403	1.0012	8.336	3.36	384.3
124	169.7	170.3	0.57	56.1	170.1	114.03	0.386	1.0012	8.336	3.22	367.3
125	169.5	170.1	0.57	56.2	169.9	113.72	0.386	1.0012	8.335	3.22	366.3
126	169.4	169.9	0.56	56.4	169.8	113.43	0.386	1.0012	8.335	3.22	365.4
127	169.2	169.8	0.56	56.5	169.7	113.20	0.403	1.0012	8.335	3.36	380.5
128	169.1	169.7	0.55	56.6	169.5	112.93	0.386	1.0012	8.335	3.22	363.7
129	168.9	169.5	0.56	56.7	169.3	112.65	0.386	1.0012	8.335	3.22	362.8
130	168.8	169.3	0.55	56.8	169.2	112.41	0.386	1.0012	8.335	3.22	362.1
131	168.7	169.2	0.54	56.9	169.0	112.17	0.403	1.0012	8.335	3.36	377.0
132	168.5	169.0	0.54	57.0	168.9	111.90	0.386	1.0012	8.335	3.22	360.4
133	168.3	168.9	0.54	57.1	168.7	111.64	0.386	1.0012	8.335	3.22	359.6
134	168.2	168.7	0.54	57.1	168.5	111.41	0.386	1.0012	8.334	3.22	358.8
135	168.0	168.5	0.54	57.2	168.4	111.21	0.386	1.0012	8.334	3.22	358.2
136	167.9	168.4	0.54	57.3	168.2	110.98	0.403	1.0012	8.334	3.36	372.9
137	167.7	168.3	0.53	57.3	168.1	110.76	0.386	1.0012	8.334	3.22	356.7
138	167.6	168.2	0.53	57.4	168.0	110.57	0.386	1.0012	8.334	3.22	356.1
139	167.4	168.0	0.53	57.5	167.8	110.35	0.386	1.0012	8.334	3.22	355.4
140	167.3	167.8	0.52	57.5	167.6	110.13	0.386	1.0012	8.334	3.22	354.7
141	167.2	167.7	0.52	57.6	167.5	109.93	0.386	1.0012	8.334	3.22	354.0
142	167.0	167.5	0.52	57.6	167.4	109.74	0.403	1.0012	8.334	3.36	368.8

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
143	166.8	167.3	0.51	57.7	167.2	109.54	0.386	1.0012	8.334	3.22	352.8
144	166.7	167.2	0.52	57.7	167.1	109.35	0.386	1.0012	8.334	3.22	352.1
145	166.5	167.0	0.51	57.7	166.9	109.13	0.386	1.0012	8.334	3.22	351.5
146	166.4	166.9	0.52	57.8	166.7	108.95	0.386	1.0012	8.334	3.22	350.9
147	166.3	166.8	0.50	57.8	166.6	108.76	0.386	1.0012	8.334	3.22	350.2
148	166.1	166.6	0.51	57.9	166.5	108.59	0.386	1.0012	8.334	3.22	349.7
149	166.0	166.5	0.50	57.9	166.3	108.42	0.386	1.0012	8.334	3.22	349.1
150	165.8	166.3	0.48	57.9	166.2	108.26	0.369	1.0012	8.334	3.08	333.5
151	165.7	166.2	0.49	58.0	166.0	108.05	0.386	1.0012	8.334	3.22	348.0
152	165.6	166.1	0.49	58.0	165.9	107.94	0.386	1.0012	8.334	3.22	347.6
153	165.5	165.9	0.48	58.0	165.8	107.79	0.386	1.0012	8.334	3.22	347.1
154	165.3	165.8	0.48	58.0	165.7	107.64	0.386	1.0012	8.334	3.22	346.6
155	165.2	165.6	0.48	58.0	165.5	107.45	0.403	1.0012	8.334	3.36	361.1
156	165.0	165.5	0.48	58.1	165.3	107.25	0.386	1.0012	8.334	3.22	345.4
157	164.9	165.4	0.48	58.1	165.2	107.12	0.386	1.0012	8.334	3.22	345.0
158	164.7	165.2	0.49	58.1	165.0	106.94	0.386	1.0012	8.334	3.22	344.4
159	164.6	165.1	0.47	58.1	164.9	106.79	0.386	1.0012	8.334	3.22	343.9
160	164.4	164.9	0.47	58.1	164.8	106.62	0.386	1.0012	8.333	3.22	343.3
161	164.3	164.7	0.48	58.2	164.6	106.45	0.386	1.0012	8.333	3.22	342.8
162	164.1	164.6	0.47	58.2	164.4	106.26	0.403	1.0012	8.333	3.36	357.1
163	164.0	164.5	0.46	58.2	164.3	106.11	0.386	1.0012	8.333	3.22	341.7
164	163.8	164.3	0.46	58.2	164.1	105.94	0.386	1.0012	8.333	3.22	341.2
165	163.7	164.2	0.46	58.2	164.0	105.78	0.386	1.0012	8.333	3.22	340.6
166	163.5	164.0	0.46	58.2	163.9	105.65	0.386	1.0012	8.333	3.22	340.2
167	163.4	163.8	0.44	58.2	163.7	105.46	0.386	1.0012	8.333	3.22	339.6
168	163.3	163.7	0.46	58.2	163.6	105.32	0.403	1.0012	8.333	3.36	353.9
169	163.1	163.6	0.44	58.3	163.4	105.18	0.386	1.0012	8.333	3.22	338.7
170	163.0	163.4	0.43	58.3	163.3	105.00	0.386	1.0012	8.333	3.22	338.1
171	162.8	163.3	0.45	58.3	163.1	104.83	0.386	1.0012	8.333	3.22	337.6
172	162.7	163.2	0.43	58.3	163.0	104.73	0.386	1.0012	8.333	3.22	337.3
173	162.6	163.0	0.45	58.1	162.8	104.74	0.386	1.0012	8.334	3.22	337.3
174	162.4	162.8	0.44	57.8	162.7	104.85	0.386	1.0012	8.334	3.22	337.6
175	162.3	162.7	0.44	57.6	162.5	104.92	0.386	1.0012	8.334	3.22	337.9
176	162.1	162.6	0.45	57.4	162.4	105.01	0.403	1.0012	8.334	3.36	352.9
177	162.0	162.4	0.45	57.2	162.3	105.04	0.386	1.0012	8.334	3.22	338.3
178	161.8	162.2	0.45	57.1	162.1	105.03	0.386	1.0012	8.335	3.22	338.3
179	161.7	162.1	0.44	56.9	161.9	105.02	0.386	1.0012	8.335	3.22	338.3
180	161.5	162.0	0.44	56.8	161.8	105.02	0.386	1.0012	8.335	3.22	338.3
181	161.4	161.8	0.43	56.7	161.7	104.99	0.386	1.0012	8.335	3.22	338.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
182	161.3	161.7	0.44	56.6	161.5	104.94	0.386	1.0012	8.335	3.22	338.0
183	161.1	161.6	0.44	56.5	161.4	104.92	0.403	1.0012	8.335	3.36	352.6
184	161.0	161.4	0.43	56.4	161.2	104.82	0.386	1.0012	8.335	3.22	337.6
185	160.8	161.3	0.44	56.3	161.1	104.75	0.386	1.0012	8.335	3.22	337.4
186	160.7	161.1	0.42	56.3	160.9	104.68	0.386	1.0012	8.335	3.22	337.2
187	160.5	161.0	0.43	56.2	160.8	104.61	0.386	1.0012	8.335	3.22	336.9
188	160.4	160.8	0.44	56.1	160.6	104.53	0.403	1.0012	8.336	3.36	351.3
189	160.3	160.7	0.42	56.0	160.5	104.51	0.386	1.0012	8.336	3.22	336.6
190	160.1	160.5	0.42	55.9	160.4	104.41	0.386	1.0012	8.336	3.22	336.3
191	160.0	160.4	0.43	55.9	160.2	104.34	0.386	1.0012	8.336	3.22	336.1
192	159.8	160.2	0.43	55.8	160.1	104.28	0.386	1.0012	8.336	3.22	335.9
193	159.7	160.1	0.43	55.7	159.9	104.18	0.386	1.0012	8.336	3.22	335.6
194	159.8	160.3	0.47	55.7	160.0	104.28	0.403	1.0012	8.336	3.36	350.5
195	160.2	160.7	0.47	55.6	160.3	104.68	0.386	1.0012	8.336	3.22	337.2
196	160.9	161.4	0.49	55.6	160.9	105.30	0.386	1.0012	8.336	3.22	339.2
197	161.7	162.2	0.52	55.5	161.7	106.17	0.386	1.0012	8.336	3.22	342.0
198	162.6	163.2	0.54	55.5	162.5	107.06	0.386	1.0012	8.336	3.22	344.9
199	163.4	163.9	0.53	55.4	163.4	108.00	0.403	1.0012	8.336	3.36	363.0
200	164.2	164.8	0.56	55.4	164.2	108.81	0.386	1.0012	8.336	3.22	350.5
201	165.0	165.6	0.54	55.4	165.1	109.69	0.386	1.0012	8.336	3.22	353.3
202	165.9	166.5	0.57	55.4	165.9	110.52	0.386	1.0012	8.336	3.22	356.0
203	166.8	167.4	0.60	55.3	166.8	111.45	0.386	1.0012	8.336	3.22	359.0
204	167.6	168.2	0.61	55.3	167.7	112.34	0.386	1.0012	8.336	3.22	361.9
205	168.5	169.1	0.61	55.3	168.6	113.27	0.386	1.0012	8.336	3.22	364.9
206	169.4	170.0	0.62	55.3	169.4	114.13	0.386	1.0012	8.336	3.22	367.6
207	170.3	170.9	0.65	55.3	170.3	115.04	0.386	1.0012	8.336	3.22	370.6
208	171.1	171.8	0.65	55.2	171.2	115.99	0.386	1.0012	8.336	3.22	373.7
209	172.0	172.6	0.66	55.2	172.0	116.79	0.386	1.0012	8.336	3.22	376.2
210	172.8	173.5	0.68	55.2	172.9	117.67	0.386	1.0012	8.336	3.22	379.1
211	173.8	174.5	0.69	55.2	173.9	118.65	0.386	1.0012	8.336	3.22	382.2
212	174.7	175.4	0.70	55.2	174.8	119.62	0.386	1.0012	8.336	3.22	385.4
213	175.6	176.3	0.73	55.2	175.7	120.49	0.386	1.0012	8.336	3.22	388.2
214	176.5	177.3	0.73	55.2	176.7	121.50	0.386	1.0012	8.336	3.22	391.4
215	177.5	178.2	0.72	55.2	177.6	122.45	0.386	1.0012	8.336	3.22	394.4
216	178.4	179.1	0.75	55.2	178.5	123.31	0.386	1.0012	8.336	3.22	397.2
217	179.2	180.0	0.77	55.2	179.4	124.23	0.386	1.0012	8.336	3.22	400.2
218	180.1	180.9	0.80	55.2	180.3	125.12	0.386	1.0012	8.336	3.22	403.1
219	180.7	181.5	0.80	55.2	181.1	125.91	0.369	1.0012	8.336	3.08	388.0
220	181.1	181.9	0.81	55.2	181.5	126.37	0.386	1.0012	8.336	3.22	407.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
221	181.5	182.3	0.81	55.1	181.9	126.78	0.386	1.0012	8.336	3.22	408.4
222	181.7	182.5	0.80	55.1	182.2	127.03	0.386	1.0012	8.336	3.22	409.2
223	181.8	182.6	0.79	55.1	182.3	127.21	0.386	1.0012	8.336	3.22	409.8
224	182.0	182.8	0.81	55.1	182.5	127.39	0.386	1.0012	8.336	3.22	410.4
225	182.1	182.9	0.82	55.1	182.6	127.54	0.386	1.0012	8.337	3.22	410.9
226	182.1	182.9	0.80	55.1	182.7	127.62	0.369	1.0012	8.337	3.08	393.2
227	182.2	183.0	0.81	55.1	182.7	127.69	0.386	1.0012	8.337	3.22	411.3
228	182.2	183.0	0.78	55.0	182.7	127.71	0.403	1.0012	8.337	3.36	429.3
229	182.2	183.0	0.80	55.0	182.7	127.71	0.386	1.0012	8.337	3.22	411.4
230	182.3	183.0	0.79	55.0	182.8	127.80	0.386	1.0012	8.337	3.22	411.7
231	182.2	183.0	0.81	55.0	182.8	127.81	0.369	1.0012	8.337	3.08	393.8
232	182.2	183.0	0.80	55.0	182.8	127.83	0.386	1.0012	8.337	3.22	411.8
233	182.2	183.0	0.80	55.0	182.8	127.82	0.386	1.0012	8.337	3.22	411.8
234	182.2	183.0	0.81	55.0	182.8	127.81	0.386	1.0012	8.337	3.22	411.7
235	182.2	183.0	0.81	54.9	182.7	127.80	0.386	1.0012	8.337	3.22	411.7
236	182.1	182.9	0.81	54.9	182.7	127.79	0.386	1.0012	8.337	3.22	411.7
237	182.1	182.9	0.80	54.9	182.7	127.75	0.386	1.0012	8.337	3.22	411.5
238	182.0	182.8	0.81	54.9	182.6	127.65	0.369	1.0012	8.337	3.08	393.3
239	181.9	182.7	0.80	54.9	182.5	127.60	0.386	1.0012	8.337	3.22	411.1
240	181.9	182.7	0.79	54.9	182.5	127.57	0.386	1.0012	8.337	3.22	411.0
241	181.9	182.7	0.80	54.9	182.5	127.54	0.386	1.0012	8.337	3.22	410.9
242	181.8	182.6	0.77	54.9	182.4	127.51	0.386	1.0012	8.337	3.22	410.8
243	181.7	182.5	0.80	54.9	182.3	127.41	0.386	1.0012	8.337	3.22	410.4
244	181.7	182.5	0.78	54.9	182.3	127.38	0.369	1.0012	8.337	3.08	392.5
245	181.6	182.4	0.78	54.9	182.2	127.33	0.386	1.0012	8.337	3.22	410.2
246	181.5	182.3	0.80	54.9	182.1	127.24	0.386	1.0012	8.337	3.22	409.9
247	181.4	182.2	0.76	54.9	182.0	127.14	0.386	1.0012	8.337	3.22	409.6
248	181.3	182.1	0.78	54.9	181.9	127.06	0.369	1.0012	8.337	3.08	391.5
249	181.2	182.0	0.77	54.9	181.8	126.92	0.386	1.0012	8.337	3.22	408.9
250	181.2	182.0	0.77	54.9	181.7	126.83	0.386	1.0012	8.337	3.22	408.6
251	181.1	181.9	0.76	54.9	181.7	126.82	0.369	1.0012	8.337	3.08	390.8
252	181.0	181.8	0.77	54.9	181.6	126.71	0.386	1.0012	8.337	3.22	408.2
253	180.9	181.7	0.75	54.8	181.5	126.62	0.386	1.0012	8.337	3.22	407.9
254	180.8	181.6	0.77	54.8	181.3	126.50	0.386	1.0012	8.337	3.22	407.5
255	180.7	181.5	0.74	54.8	181.3	126.44	0.369	1.0012	8.337	3.08	389.6
256	180.6	181.3	0.75	54.8	181.2	126.33	0.386	1.0012	8.337	3.22	407.0
257	180.5	181.2	0.75	54.9	181.0	126.17	0.386	1.0012	8.337	3.22	406.5
258	180.4	181.2	0.73	55.0	181.0	125.95	0.369	1.0012	8.337	3.08	388.1
259	180.3	181.0	0.73	55.1	180.9	125.75	0.386	1.0012	8.336	3.22	405.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
260	180.2	180.9	0.73	55.3	180.8	125.46	0.386	1.0012	8.336	3.22	404.1
261	180.0	180.8	0.73	55.5	180.6	125.14	0.369	1.0012	8.336	3.08	385.6
262	180.0	180.7	0.73	55.6	180.5	124.89	0.386	1.0012	8.336	3.22	402.3
263	179.8	180.6	0.71	55.8	180.4	124.65	0.386	1.0012	8.336	3.22	401.5
264	179.7	180.4	0.72	55.9	180.3	124.35	0.386	1.0012	8.336	3.22	400.6
265	179.6	180.3	0.73	56.1	180.2	124.10	0.369	1.0012	8.336	3.08	382.4
266	179.5	180.2	0.73	56.2	180.0	123.80	0.386	1.0012	8.335	3.22	398.8
267	179.4	180.1	0.72	56.3	179.9	123.60	0.386	1.0012	8.335	3.22	398.1
268	179.2	180.0	0.70	56.4	179.8	123.42	0.369	1.0012	8.335	3.08	380.2
269	179.1	179.8	0.71	56.5	179.6	123.15	0.386	1.0012	8.335	3.22	396.6
270	179.0	179.7	0.72	56.6	179.5	122.94	0.386	1.0012	8.335	3.22	396.0
271	178.9	179.6	0.70	56.7	179.4	122.74	0.369	1.0012	8.335	3.08	378.1
272	178.8	179.5	0.70	56.8	179.3	122.55	0.386	1.0012	8.335	3.22	394.7
273	178.7	179.4	0.70	56.9	179.2	122.33	0.369	1.0012	8.335	3.08	376.9
274	178.6	179.2	0.69	56.9	179.1	122.15	0.386	1.0012	8.335	3.22	393.4
275	178.4	179.1	0.69	57.0	178.9	121.90	0.386	1.0012	8.335	3.22	392.6
276	178.3	178.9	0.67	57.1	178.8	121.65	0.369	1.0012	8.335	3.08	374.8
277	178.1	178.8	0.67	57.2	178.6	121.45	0.386	1.0012	8.334	3.22	391.1
278	178.0	178.7	0.67	57.3	178.5	121.27	0.369	1.0012	8.334	3.08	373.6
279	177.8	178.5	0.67	57.3	178.4	121.05	0.386	1.0012	8.334	3.22	389.8
280	177.8	178.4	0.65	57.4	178.3	120.89	0.386	1.0012	8.334	3.22	389.3
281	177.6	178.3	0.66	57.4	178.1	120.73	0.369	1.0012	8.334	3.08	371.9
282	177.5	178.2	0.64	57.4	178.0	120.57	0.386	1.0012	8.334	3.22	388.3
283	177.4	178.0	0.66	57.5	177.8	120.39	0.369	1.0012	8.334	3.08	370.9
284	177.2	177.9	0.65	57.5	177.7	120.19	0.386	1.0012	8.334	3.22	387.1
285	177.2	177.8	0.65	57.5	177.6	120.07	0.369	1.0012	8.334	3.08	369.9
286	177.1	177.7	0.60	57.6	177.5	119.92	0.369	1.0012	8.334	3.08	369.4
287	176.9	177.6	0.65	57.6	177.4	119.77	0.386	1.0012	8.334	3.22	385.7
288	176.7	177.4	0.64	57.7	177.2	119.56	0.386	1.0012	8.334	3.22	385.0
289	176.6	177.3	0.64	57.7	177.1	119.39	0.369	1.0012	8.334	3.08	367.8
290	176.5	177.1	0.64	57.7	177.0	119.25	0.386	1.0012	8.334	3.22	384.0
291	176.4	177.0	0.65	57.8	176.8	119.04	0.386	1.0012	8.334	3.22	383.4
292	176.2	176.9	0.63	57.8	176.7	118.89	0.386	1.0012	8.334	3.22	382.9
293	176.1	176.7	0.64	57.8	176.5	118.71	0.369	1.0012	8.334	3.08	365.7
294	175.9	176.6	0.64	57.9	176.4	118.55	0.386	1.0012	8.334	3.22	381.8
295	175.8	176.4	0.63	57.9	176.3	118.39	0.369	1.0012	8.334	3.08	364.7
296	175.7	176.3	0.62	57.9	176.2	118.27	0.386	1.0012	8.334	3.22	380.9
297	175.5	176.1	0.63	57.9	176.0	118.09	0.386	1.0012	8.334	3.22	380.3
298	175.4	176.0	0.62	57.9	175.8	117.91	0.386	1.0012	8.334	3.22	379.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
299	175.2	175.9	0.63	57.9	175.7	117.79	0.369	1.0012	8.334	3.08	362.8
300	175.1	175.7	0.63	57.9	175.6	117.64	0.386	1.0012	8.334	3.22	378.8
301	174.9	175.6	0.62	57.9	175.4	117.46	0.386	1.0012	8.334	3.22	378.3
302	174.8	175.4	0.61	58.0	175.3	117.29	0.386	1.0012	8.334	3.22	377.7
303	174.6	175.3	0.61	58.0	175.1	117.13	0.369	1.0012	8.334	3.08	360.8
304	174.5	175.1	0.60	57.9	175.0	117.08	0.386	1.0012	8.334	3.22	377.0
305	174.5	175.1	0.60	57.7	174.9	117.21	0.386	1.0012	8.334	3.22	377.5
306	174.3	174.9	0.61	57.4	174.8	117.32	0.369	1.0012	8.334	3.08	361.4
307	174.1	174.7	0.60	57.2	174.6	117.37	0.386	1.0012	8.334	3.22	378.0
308	174.0	174.6	0.60	57.0	174.4	117.41	0.369	1.0012	8.335	3.08	361.7
309	173.8	174.4	0.61	56.9	174.3	117.42	0.386	1.0012	8.335	3.22	378.2
310	173.7	174.3	0.60	56.7	174.1	117.42	0.386	1.0012	8.335	3.22	378.2
311	173.5	174.1	0.60	56.6	174.0	117.37	0.369	1.0012	8.335	3.08	361.6
312	173.4	174.0	0.60	56.5	173.8	117.34	0.386	1.0012	8.335	3.22	377.9
313	173.2	173.8	0.60	56.4	173.7	117.27	0.386	1.0012	8.335	3.22	377.7
314	173.1	173.7	0.60	56.3	173.5	117.19	0.369	1.0012	8.335	3.08	361.1
315	172.9	173.6	0.61	56.2	173.4	117.13	0.386	1.0012	8.335	3.22	377.3
316	172.8	173.4	0.59	56.2	173.3	117.10	0.386	1.0012	8.335	3.22	377.2
317	172.7	173.2	0.59	56.1	173.1	117.02	0.369	1.0012	8.336	3.08	360.5
318	172.5	173.1	0.60	56.0	172.9	116.93	0.386	1.0012	8.336	3.22	376.6
319	172.3	172.9	0.60	55.9	172.8	116.83	0.369	1.0012	8.336	3.08	360.0
320	172.2	172.8	0.59	55.9	172.6	116.78	0.386	1.0012	8.336	3.22	376.2
321	172.1	172.7	0.60	55.8	172.5	116.68	0.386	1.0012	8.336	3.22	375.9
322	171.9	172.5	0.58	55.7	172.3	116.62	0.369	1.0012	8.336	3.08	359.3
323	171.7	172.3	0.60	55.6	172.2	116.53	0.386	1.0012	8.336	3.22	375.4
324	171.6	172.2	0.58	55.6	172.0	116.45	0.369	1.0012	8.336	3.08	358.8
325	171.4	172.0	0.58	55.5	171.8	116.35	0.386	1.0012	8.336	3.22	374.8
326	171.2	171.8	0.58	55.4	171.6	116.22	0.386	1.0012	8.336	3.22	374.4
327	171.1	171.7	0.59	55.4	171.5	116.15	0.369	1.0012	8.336	3.08	357.9
328	170.9	171.5	0.58	55.3	171.3	116.03	0.386	1.0012	8.336	3.22	373.8
329	170.8	171.4	0.58	55.2	171.2	115.96	0.386	1.0012	8.336	3.22	373.6
330	170.6	171.2	0.57	55.2	171.1	115.86	0.369	1.0012	8.336	3.08	357.0
331	170.5	171.1	0.59	55.2	170.9	115.73	0.386	1.0012	8.336	3.22	372.8
332	170.3	170.9	0.57	55.1	170.8	115.64	0.386	1.0012	8.336	3.22	372.5
333	170.2	170.7	0.58	55.1	170.6	115.50	0.369	1.0012	8.337	3.08	355.9
334	170.0	170.6	0.57	55.1	170.4	115.33	0.369	1.0012	8.337	3.08	355.4
335	169.9	170.4	0.55	55.0	170.3	115.26	0.386	1.0012	8.337	3.22	371.3
336	169.7	170.3	0.56	55.0	170.1	115.06	0.386	1.0012	8.337	3.22	370.7
337	169.6	170.1	0.55	55.0	170.0	114.97	0.369	1.0012	8.337	3.08	354.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
338	169.4	170.0	0.56	55.0	169.8	114.82	0.386	1.0012	8.337	3.22	369.9
339	169.2	169.8	0.55	55.0	169.6	114.67	0.369	1.0012	8.337	3.08	353.3
340	169.1	169.7	0.56	55.0	169.5	114.56	0.386	1.0012	8.337	3.22	369.1
341	169.0	169.5	0.55	54.9	169.4	114.42	0.386	1.0012	8.337	3.22	368.6
342	168.8	169.3	0.55	54.9	169.2	114.28	0.369	1.0012	8.337	3.08	352.2
343	168.6	169.2	0.54	54.9	169.0	114.09	0.386	1.0012	8.337	3.22	367.5
344	168.5	169.0	0.54	54.9	168.8	113.95	0.369	1.0012	8.337	3.08	351.1
345	168.3	168.9	0.54	54.9	168.7	113.86	0.386	1.0012	8.337	3.22	366.8
346	168.2	168.7	0.54	54.9	168.6	113.73	0.369	1.0012	8.337	3.08	350.4
347	168.0	168.6	0.54	54.9	168.4	113.58	0.386	1.0012	8.337	3.22	365.9
348	167.9	168.4	0.53	54.8	168.3	113.43	0.369	1.0012	8.337	3.08	349.5
349	167.7	168.3	0.54	54.8	168.1	113.30	0.386	1.0012	8.337	3.22	365.0
350	167.6	168.1	0.53	54.8	167.9	113.13	0.369	1.0012	8.337	3.08	348.6
351	167.4	168.0	0.53	54.8	167.8	112.97	0.369	1.0012	8.337	3.08	348.1
352	167.3	167.8	0.53	54.8	167.6	112.83	0.386	1.0012	8.337	3.22	363.5
353	167.1	167.6	0.52	54.8	167.5	112.67	0.386	1.0012	8.337	3.22	363.0
354	166.9	167.4	0.52	54.8	167.3	112.49	0.369	1.0012	8.337	3.08	346.6
355	166.8	167.3	0.53	54.8	167.1	112.34	0.386	1.0012	8.337	3.22	361.9
356	166.6	167.1	0.53	54.8	167.0	112.21	0.369	1.0012	8.337	3.08	345.8
357	166.4	167.0	0.52	54.8	166.8	112.05	0.386	1.0012	8.337	3.22	361.0
358	166.3	166.8	0.53	54.7	166.6	111.91	0.369	1.0012	8.337	3.08	344.8
359	166.2	166.7	0.50	54.7	166.5	111.75	0.386	1.0012	8.337	3.22	360.0
360	166.0	166.5	0.51	54.8	166.4	111.57	0.386	1.0012	8.337	3.22	359.4
361	165.8	166.4	0.51	54.9	166.2	111.32	0.369	1.0012	8.337	3.08	343.0
362	165.7	166.2	0.50	55.0	166.0	111.03	0.386	1.0012	8.337	3.22	357.7
363	165.5	166.0	0.49	55.1	165.9	110.74	0.369	1.0012	8.336	3.08	341.2
364	165.4	165.9	0.49	55.3	165.7	110.41	0.386	1.0012	8.336	3.22	355.7
365	165.2	165.7	0.50	55.4	165.6	110.12	0.369	1.0012	8.336	3.08	339.3
366	165.1	165.6	0.49	55.6	165.4	109.83	0.386	1.0012	8.336	3.22	353.8
367	164.9	165.4	0.49	55.7	165.3	109.53	0.369	1.0012	8.336	3.08	337.5
368	164.8	165.3	0.48	55.9	165.1	109.25	0.386	1.0012	8.336	3.22	351.9
369	164.6	165.1	0.49	56.0	164.9	108.96	0.369	1.0012	8.336	3.08	335.7
370	164.5	165.0	0.48	56.1	164.8	108.68	0.386	1.0012	8.336	3.22	350.1
371	164.4	164.8	0.47	56.2	164.7	108.44	0.369	1.0012	8.335	3.08	334.1
372	164.2	164.7	0.48	56.4	164.5	108.13	0.386	1.0012	8.335	3.22	348.3
373	164.0	164.5	0.47	56.5	164.4	107.91	0.369	1.0012	8.335	3.08	332.5
374	163.9	164.3	0.47	56.5	164.2	107.64	0.386	1.0012	8.335	3.22	346.7
375	163.7	164.2	0.46	56.6	164.1	107.45	0.386	1.0012	8.335	3.22	346.1
376	163.6	164.1	0.46	56.7	163.9	107.20	0.369	1.0012	8.335	3.08	330.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
377	163.4	163.9	0.46	56.8	163.7	106.96	0.386	1.0012	8.335	3.22	344.5
378	163.3	163.7	0.45	56.9	163.6	106.75	0.386	1.0012	8.335	3.22	343.8
379	163.1	163.6	0.45	56.9	163.4	106.52	0.369	1.0012	8.335	3.08	328.1
380	163.0	163.4	0.44	57.0	163.3	106.32	0.386	1.0012	8.335	3.22	342.4
381	162.8	163.3	0.45	57.0	163.1	106.08	0.386	1.0012	8.335	3.22	341.6
382	162.7	163.2	0.45	57.1	163.0	105.90	0.386	1.0012	8.335	3.22	341.1
383	162.6	163.0	0.45	57.2	162.9	105.69	0.369	1.0012	8.334	3.08	325.6
384	162.4	162.8	0.44	57.2	162.7	105.48	0.386	1.0012	8.334	3.22	339.7
385	162.2	162.7	0.43	57.3	162.5	105.25	0.369	1.0012	8.334	3.08	324.2
386	162.1	162.5	0.44	57.3	162.4	105.08	0.386	1.0012	8.334	3.22	338.4
387	161.9	162.4	0.44	57.3	162.2	104.89	0.386	1.0012	8.334	3.22	337.8
388	161.8	162.2	0.44	57.4	162.1	104.69	0.369	1.0012	8.334	3.08	322.5
389	161.7	162.1	0.42	57.4	161.9	104.51	0.386	1.0012	8.334	3.22	336.6
390	161.5	161.9	0.43	57.4	161.8	104.32	0.386	1.0012	8.334	3.22	336.0
391	161.4	161.8	0.42	57.5	161.6	104.12	0.386	1.0012	8.334	3.22	335.3
392	161.2	161.6	0.42	57.5	161.5	103.93	0.369	1.0012	8.334	3.08	320.2
393	161.0	161.5	0.42	57.5	161.3	103.74	0.386	1.0012	8.334	3.22	334.1
394	160.9	161.3	0.42	57.6	161.2	103.60	0.386	1.0012	8.334	3.22	333.6
395	160.8	161.2	0.41	57.6	161.0	103.44	0.369	1.0012	8.334	3.08	318.6
396	160.6	161.0	0.41	57.6	160.9	103.28	0.386	1.0012	8.334	3.22	332.6
397	160.5	160.9	0.40	57.7	160.7	103.07	0.386	1.0012	8.334	3.22	331.9
398	160.3	160.7	0.40	57.7	160.6	102.90	0.386	1.0012	8.334	3.22	331.4
399	160.2	160.6	0.41	57.7	160.4	102.74	0.386	1.0012	8.334	3.22	330.9
400	160.0	160.4	0.40	57.7	160.3	102.58	0.369	1.0012	8.334	3.08	316.0
401	159.9	160.3	0.41	57.7	160.1	102.42	0.386	1.0012	8.334	3.22	329.8
402	159.8	160.2	0.39	57.7	160.0	102.26	0.386	1.0012	8.334	3.22	329.3
403	159.6	160.0	0.40	57.8	159.8	102.08	0.369	1.0012	8.334	3.08	314.5
404	159.5	159.9	0.39	57.8	159.7	101.93	0.386	1.0012	8.334	3.22	328.2
405	159.4	159.8	0.38	57.8	159.6	101.82	0.386	1.0012	8.334	3.22	327.9
406	159.3	159.7	0.40	57.8	159.5	101.72	0.386	1.0012	8.334	3.22	327.6
407	159.4	159.8	0.40	57.8	159.6	101.74	0.369	1.0012	8.334	3.08	313.4
408	159.6	160.1	0.42	57.8	159.7	101.91	0.386	1.0012	8.334	3.22	328.2
409	160.1	160.5	0.47	57.8	160.2	102.35	0.403	1.0012	8.334	3.36	343.9
410	160.5	161.0	0.54	57.8	160.6	102.80	0.420	1.0012	8.334	3.50	359.8
411	161.0	161.5	0.56	57.8	161.1	103.29	0.436	1.0012	8.334	3.64	376.0
412	161.7	162.3	0.56	57.8	161.8	103.98	0.436	1.0012	8.334	3.64	378.5
413	162.5	163.1	0.58	57.8	162.6	104.78	0.436	1.0012	8.334	3.64	381.4
414	163.3	163.9	0.58	57.8	163.4	105.58	0.436	1.0012	8.334	3.64	384.4
415	164.1	164.7	0.61	57.8	164.2	106.42	0.436	1.0012	8.334	3.64	387.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
416	164.9	165.5	0.61	57.8	165.0	107.22	0.436	1.0012	8.334	3.64	390.3
417	165.7	166.4	0.63	57.8	165.8	108.06	0.436	1.0012	8.334	3.64	393.4
418	166.5	167.2	0.66	57.8	166.7	108.95	0.436	1.0012	8.334	3.64	396.6
419	167.3	167.9	0.65	57.7	167.5	109.74	0.436	1.0012	8.334	3.64	399.5
420	168.1	168.8	0.68	57.7	168.2	110.47	0.436	1.0012	8.334	3.64	402.1
421	168.9	169.6	0.67	57.7	169.1	111.37	0.436	1.0012	8.334	3.64	405.4
422	169.8	170.5	0.71	57.7	169.9	112.17	0.420	1.0012	8.334	3.50	392.7
423	170.6	171.3	0.72	57.7	170.8	113.08	0.436	1.0012	8.334	3.64	411.7
424	171.5	172.2	0.72	57.7	171.7	114.04	0.420	1.0012	8.334	3.50	399.2
425	172.3	173.1	0.73	57.5	172.5	115.07	0.436	1.0012	8.334	3.64	418.9
426	173.2	174.0	0.75	57.2	173.4	116.21	0.436	1.0012	8.334	3.64	423.1
427	174.0	174.8	0.78	57.0	174.3	117.33	0.436	1.0012	8.335	3.64	427.2
428	174.9	175.7	0.81	56.8	175.2	118.41	0.436	1.0012	8.335	3.64	431.1
429	175.8	176.6	0.81	56.6	176.0	119.45	0.436	1.0012	8.335	3.64	434.9
430	176.6	177.5	0.82	56.4	176.9	120.51	0.436	1.0012	8.335	3.64	438.8
431	177.6	178.4	0.85	56.3	177.8	121.52	0.420	1.0012	8.335	3.50	425.4
432	178.5	179.3	0.85	56.2	178.8	122.61	0.453	1.0012	8.335	3.78	463.6
433	179.3	180.2	0.88	56.1	179.7	123.56	0.420	1.0012	8.336	3.50	432.6
434	180.1	181.0	0.88	56.0	180.5	124.49	0.436	1.0012	8.336	3.64	453.3
435	180.6	181.5	0.89	55.9	181.1	125.17	0.436	1.0012	8.336	3.64	455.8
436	181.0	181.9	0.90	55.9	181.5	125.65	0.420	1.0012	8.336	3.50	439.9
437	181.4	182.3	0.90	55.8	181.9	126.14	0.436	1.0012	8.336	3.64	459.3
438	181.6	182.5	0.92	55.7	182.2	126.50	0.436	1.0012	8.336	3.64	460.6
439	181.8	182.7	0.91	55.6	182.5	126.86	0.420	1.0012	8.336	3.50	444.2
440	182.0	182.9	0.92	55.5	182.6	127.10	0.436	1.0012	8.336	3.64	462.8
441	182.1	183.0	0.92	55.5	182.8	127.28	0.420	1.0012	8.336	3.50	445.7
442	182.1	183.1	0.93	55.4	182.8	127.42	0.436	1.0012	8.336	3.64	464.0
443	182.2	183.2	0.94	55.3	182.9	127.61	0.420	1.0012	8.336	3.50	446.8
444	182.3	183.2	0.91	55.3	183.0	127.73	0.436	1.0012	8.336	3.64	465.1
445	182.3	183.2	0.92	55.2	183.0	127.79	0.420	1.0012	8.336	3.50	447.5
446	182.3	183.2	0.92	55.1	183.0	127.85	0.436	1.0012	8.336	3.64	465.6
447	182.3	183.2	0.90	55.1	183.0	127.92	0.403	1.0012	8.337	3.36	430.0
448	182.3	183.2	0.91	55.0	183.0	127.97	0.420	1.0012	8.337	3.50	448.1
449	182.3	183.2	0.91	55.0	183.0	127.99	0.436	1.0012	8.337	3.64	466.1
450	182.2	183.1	0.92	54.9	182.9	127.98	0.436	1.0012	8.337	3.64	466.1
451	182.2	183.1	0.91	54.9	182.9	128.04	0.420	1.0012	8.337	3.50	448.3
452	182.2	183.1	0.93	54.9	182.9	128.00	0.436	1.0012	8.337	3.64	466.1
453	182.1	183.0	0.91	54.9	182.8	127.97	0.420	1.0012	8.337	3.50	448.1
454	182.1	183.0	0.90	54.8	182.8	127.95	0.436	1.0012	8.337	3.64	466.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
455	182.0	182.9	0.91	54.8	182.8	127.95	0.436	1.0012	8.337	3.64	466.0
456	181.9	182.9	0.92	54.8	182.7	127.88	0.436	1.0012	8.337	3.64	465.7
457	181.9	182.8	0.92	54.8	182.6	127.84	0.420	1.0012	8.337	3.50	447.7
458	181.8	182.7	0.90	54.8	182.6	127.79	0.436	1.0012	8.337	3.64	465.4
459	181.7	182.6	0.90	54.7	182.4	127.71	0.436	1.0012	8.337	3.64	465.1
460	181.6	182.5	0.90	54.7	182.4	127.67	0.420	1.0012	8.337	3.50	447.0
461	181.6	182.5	0.90	54.7	182.3	127.58	0.436	1.0012	8.337	3.64	464.6
462	181.5	182.4	0.89	54.7	182.2	127.50	0.436	1.0012	8.337	3.64	464.3
463	181.3	182.2	0.90	54.7	182.0	127.36	0.420	1.0012	8.337	3.50	446.0
464	181.2	182.1	0.89	54.7	181.9	127.27	0.436	1.0012	8.337	3.64	463.5
465	181.2	182.0	0.87	54.7	181.8	127.18	0.420	1.0012	8.337	3.50	445.3
466	181.1	181.9	0.88	54.7	181.8	127.11	0.436	1.0012	8.337	3.64	462.9
467	181.0	181.8	0.87	54.6	181.6	127.01	0.420	1.0012	8.337	3.50	444.8
468	180.9	181.7	0.85	54.7	181.5	126.87	0.436	1.0012	8.337	3.64	462.0
469	180.7	181.6	0.87	54.8	181.4	126.65	0.420	1.0012	8.337	3.50	443.5
470	180.7	181.5	0.86	54.9	181.3	126.38	0.436	1.0012	8.337	3.64	460.2
471	180.5	181.4	0.85	55.1	181.2	126.12	0.420	1.0012	8.336	3.50	441.6
472	180.4	181.3	0.86	55.2	181.1	125.86	0.436	1.0012	8.336	3.64	458.3
473	180.3	181.2	0.86	55.4	181.0	125.59	0.436	1.0012	8.336	3.64	457.3
474	180.2	181.0	0.85	55.6	180.9	125.32	0.420	1.0012	8.336	3.50	438.8
475	180.1	180.9	0.84	55.7	180.7	125.06	0.436	1.0012	8.336	3.64	455.4
476	179.9	180.7	0.84	55.8	180.6	124.77	0.436	1.0012	8.336	3.64	454.3
477	179.8	180.6	0.83	55.9	180.5	124.53	0.420	1.0012	8.336	3.50	436.0
478	179.7	180.5	0.83	56.1	180.3	124.27	0.436	1.0012	8.336	3.64	452.5
479	179.6	180.4	0.81	56.2	180.2	124.05	0.436	1.0012	8.335	3.64	451.7
480	179.4	180.2	0.82	56.3	180.1	123.81	0.420	1.0012	8.335	3.50	433.4
481	179.3	180.1	0.82	56.4	179.9	123.55	0.420	1.0012	8.335	3.50	432.6
482	179.2	180.0	0.82	56.5	179.9	123.41	0.436	1.0012	8.335	3.64	449.3
483	179.1	179.9	0.81	56.5	179.8	123.26	0.436	1.0012	8.335	3.64	448.8
484	179.0	179.8	0.80	56.6	179.6	123.02	0.420	1.0012	8.335	3.50	430.7
485	178.8	179.6	0.79	56.7	179.5	122.77	0.436	1.0012	8.335	3.64	447.0
486	178.6	179.4	0.79	56.8	179.2	122.50	0.420	1.0012	8.335	3.50	428.8
487	178.5	179.3	0.79	56.8	179.1	122.29	0.436	1.0012	8.335	3.64	445.2
488	178.4	179.2	0.79	56.9	179.0	122.13	0.436	1.0012	8.335	3.64	444.6
489	178.3	179.0	0.77	56.9	178.9	121.95	0.420	1.0012	8.335	3.50	426.9
490	178.1	178.9	0.76	57.0	178.8	121.80	0.436	1.0012	8.335	3.64	443.4
491	178.0	178.8	0.77	57.0	178.7	121.65	0.420	1.0012	8.335	3.50	425.9
492	177.8	178.6	0.78	57.0	178.5	121.42	0.436	1.0012	8.335	3.64	442.1
493	177.7	178.5	0.77	57.0	178.3	121.25	0.420	1.0012	8.335	3.50	424.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
494	177.6	178.4	0.76	57.1	178.2	121.11	0.436	1.0012	8.335	3.64	440.9
495	177.4	178.2	0.77	57.1	178.1	120.92	0.436	1.0012	8.334	3.64	440.2
496	177.3	178.1	0.76	57.2	177.9	120.73	0.420	1.0012	8.334	3.50	422.6
497	177.1	177.9	0.75	57.2	177.7	120.54	0.436	1.0012	8.334	3.64	438.9
498	177.0	177.7	0.75	57.2	177.6	120.37	0.436	1.0012	8.334	3.64	438.2
499	176.8	177.5	0.75	57.2	177.4	120.18	0.420	1.0012	8.334	3.50	420.7
500	176.6	177.4	0.76	57.2	177.2	119.98	0.436	1.0012	8.334	3.64	436.8
501	176.5	177.3	0.74	57.3	177.1	119.87	0.420	1.0012	8.334	3.50	419.6
502	176.4	177.1	0.74	57.3	177.0	119.70	0.436	1.0012	8.334	3.64	435.8
503	176.2	176.9	0.72	57.3	176.8	119.50	0.436	1.0012	8.334	3.64	435.0
504	175.9	176.7	0.73	57.3	176.5	119.22	0.420	1.0012	8.334	3.50	417.3
505	175.8	176.5	0.73	57.4	176.4	119.04	0.436	1.0012	8.334	3.64	433.4
506	175.7	176.5	0.72	57.4	176.3	118.95	0.436	1.0012	8.334	3.64	433.1
507	175.6	176.3	0.73	57.4	176.2	118.82	0.436	1.0012	8.334	3.64	432.6
508	175.4	176.1	0.72	57.4	176.0	118.65	0.420	1.0012	8.334	3.50	415.4
509	175.2	176.0	0.72	57.4	175.8	118.45	0.436	1.0012	8.334	3.64	431.2
510	175.1	175.8	0.72	57.2	175.7	118.45	0.420	1.0012	8.334	3.50	414.6
511	174.9	175.6	0.72	57.0	175.5	118.50	0.436	1.0012	8.335	3.64	431.4
512	174.7	175.5	0.74	56.8	175.3	118.57	0.436	1.0012	8.335	3.64	431.7
513	174.6	175.3	0.72	56.5	175.2	118.63	0.436	1.0012	8.335	3.64	431.9
514	174.4	175.2	0.72	56.4	175.0	118.66	0.420	1.0012	8.335	3.50	415.4
515	174.3	175.0	0.73	56.2	174.9	118.64	0.436	1.0012	8.335	3.64	432.0
516	174.1	174.9	0.73	56.1	174.7	118.63	0.436	1.0012	8.336	3.64	431.9
517	174.0	174.7	0.72	56.0	174.6	118.60	0.420	1.0012	8.336	3.50	415.2
518	173.8	174.5	0.71	55.9	174.4	118.52	0.436	1.0012	8.336	3.64	431.6
519	173.7	174.4	0.70	55.8	174.2	118.45	0.420	1.0012	8.336	3.50	414.7
520	173.5	174.2	0.71	55.7	174.1	118.41	0.436	1.0012	8.336	3.64	431.2
521	173.4	174.1	0.71	55.6	173.9	118.29	0.436	1.0012	8.336	3.64	430.8
522	173.2	173.9	0.70	55.5	173.8	118.26	0.420	1.0012	8.336	3.50	414.1
523	173.0	173.8	0.71	55.4	173.6	118.15	0.436	1.0012	8.336	3.64	430.2
524	172.9	173.6	0.70	55.4	173.5	118.10	0.436	1.0012	8.336	3.64	430.1
525	172.7	173.4	0.71	55.3	173.3	118.00	0.420	1.0012	8.336	3.50	413.2
526	172.5	173.2	0.70	55.2	173.1	117.88	0.436	1.0012	8.336	3.64	429.3
527	172.4	173.1	0.71	55.1	172.9	117.82	0.436	1.0012	8.336	3.64	429.0
528	172.3	173.0	0.71	55.1	172.8	117.75	0.436	1.0012	8.337	3.64	428.8
529	172.1	172.8	0.70	55.0	172.7	117.68	0.420	1.0012	8.337	3.50	412.1
530	171.9	172.6	0.71	54.9	172.5	117.57	0.436	1.0012	8.337	3.64	428.2
531	171.8	172.5	0.70	54.8	172.3	117.48	0.436	1.0012	8.337	3.64	427.8
532	171.6	172.3	0.70	54.8	172.2	117.41	0.420	1.0012	8.337	3.50	411.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
533	171.5	172.1	0.69	54.7	172.0	117.27	0.436	1.0012	8.337	3.64	427.1
534	171.3	172.0	0.68	54.7	171.8	117.16	0.436	1.0012	8.337	3.64	426.7
535	171.1	171.8	0.70	54.6	171.6	116.98	0.436	1.0012	8.337	3.64	426.0
536	170.9	171.6	0.69	54.6	171.5	116.87	0.420	1.0012	8.337	3.50	409.2
537	170.7	171.4	0.68	54.6	171.3	116.68	0.436	1.0012	8.337	3.64	424.9
538	170.5	171.2	0.68	54.5	171.1	116.54	0.436	1.0012	8.337	3.64	424.4
539	170.4	171.1	0.68	54.5	170.9	116.38	0.436	1.0012	8.337	3.64	423.8
540	170.3	170.9	0.67	54.5	170.8	116.30	0.420	1.0012	8.337	3.50	407.2
541	170.1	170.7	0.66	54.5	170.6	116.12	0.436	1.0012	8.337	3.64	422.9
542	169.9	170.6	0.67	54.4	170.4	115.98	0.436	1.0012	8.337	3.64	422.4
543	169.7	170.4	0.67	54.4	170.3	115.83	0.436	1.0012	8.337	3.64	421.9
544	169.6	170.2	0.67	54.4	170.1	115.66	0.420	1.0012	8.337	3.50	405.0
545	169.4	170.0	0.66	54.4	169.9	115.48	0.436	1.0012	8.337	3.64	420.6
546	169.2	169.9	0.66	54.4	169.7	115.31	0.436	1.0012	8.337	3.64	419.9
547	169.0	169.7	0.66	54.4	169.5	115.15	0.436	1.0012	8.337	3.64	419.4
548	168.9	169.5	0.65	54.4	169.4	115.02	0.436	1.0012	8.337	3.64	418.9
549	168.7	169.4	0.65	54.4	169.2	114.83	0.420	1.0012	8.337	3.50	402.1
550	168.5	169.2	0.66	54.3	169.0	114.69	0.436	1.0012	8.337	3.64	417.7
551	168.4	169.0	0.65	54.3	168.9	114.53	0.436	1.0012	8.337	3.64	417.1
552	168.2	168.8	0.64	54.3	168.7	114.35	0.420	1.0012	8.337	3.50	400.4
553	168.0	168.7	0.65	54.3	168.5	114.20	0.436	1.0012	8.337	3.64	415.9
554	167.8	168.5	0.64	54.3	168.3	114.04	0.436	1.0012	8.337	3.64	415.3
555	167.7	168.3	0.66	54.3	168.2	113.87	0.436	1.0012	8.337	3.64	414.7
556	167.5	168.2	0.63	54.3	168.0	113.72	0.420	1.0012	8.337	3.50	398.2
557	167.4	168.0	0.63	54.3	167.8	113.53	0.436	1.0012	8.337	3.64	413.5
558	167.2	167.8	0.63	54.3	167.7	113.34	0.420	1.0012	8.337	3.50	396.9
559	167.0	167.7	0.63	54.4	167.5	113.07	0.436	1.0012	8.337	3.64	411.8
560	166.9	167.5	0.62	54.6	167.3	112.75	0.436	1.0012	8.337	3.64	410.6
561	166.7	167.3	0.61	54.7	167.1	112.43	0.420	1.0012	8.337	3.50	393.7
562	166.5	167.2	0.61	54.8	167.0	112.16	0.436	1.0012	8.337	3.64	408.5
563	166.3	167.0	0.63	55.0	166.8	111.84	0.436	1.0012	8.337	3.64	407.3
564	166.2	166.8	0.61	55.1	166.6	111.50	0.420	1.0012	8.336	3.50	390.4
565	166.0	166.6	0.60	55.3	166.5	111.21	0.436	1.0012	8.336	3.64	405.0
566	165.8	166.4	0.62	55.4	166.3	110.91	0.436	1.0012	8.336	3.64	403.9
567	165.7	166.3	0.61	55.5	166.1	110.60	0.420	1.0012	8.336	3.50	387.3
568	165.5	166.1	0.59	55.6	166.0	110.33	0.436	1.0012	8.336	3.64	401.7
569	165.3	165.9	0.59	55.7	165.8	110.02	0.420	1.0012	8.336	3.50	385.2
570	165.1	165.7	0.58	55.8	165.6	109.73	0.436	1.0012	8.336	3.64	399.6
571	165.0	165.6	0.58	55.9	165.4	109.52	0.420	1.0012	8.336	3.50	383.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
572	164.8	165.3	0.57	56.0	165.2	109.20	0.436	1.0012	8.336	3.64	397.6
573	164.6	165.2	0.58	56.1	165.0	108.95	0.436	1.0012	8.336	3.64	396.7
574	164.5	165.0	0.57	56.2	164.9	108.75	0.436	1.0012	8.335	3.64	396.0
575	164.3	164.9	0.57	56.2	164.7	108.50	0.420	1.0012	8.335	3.50	379.9
576	164.2	164.7	0.56	56.3	164.6	108.21	0.436	1.0012	8.335	3.64	394.0
577	164.0	164.5	0.56	56.4	164.4	107.99	0.436	1.0012	8.335	3.64	393.2
578	163.8	164.4	0.55	56.5	164.2	107.75	0.436	1.0012	8.335	3.64	392.3
579	163.7	164.2	0.56	56.5	164.1	107.54	0.420	1.0012	8.335	3.50	376.5
580	163.5	164.1	0.55	56.6	163.9	107.36	0.436	1.0012	8.335	3.64	390.9
581	163.3	163.9	0.56	56.6	163.7	107.14	0.420	1.0012	8.335	3.50	375.1
582	163.2	163.7	0.54	56.6	163.6	106.96	0.436	1.0012	8.335	3.64	389.5
583	163.0	163.6	0.55	56.7	163.4	106.78	0.436	1.0012	8.335	3.64	388.8
584	162.9	163.4	0.53	56.7	163.3	106.57	0.436	1.0012	8.335	3.64	388.0
585	162.7	163.2	0.55	56.7	163.1	106.35	0.436	1.0012	8.335	3.64	387.2
586	162.5	163.1	0.54	56.8	162.9	106.16	0.436	1.0012	8.335	3.64	386.5
587	162.4	162.9	0.54	56.8	162.8	105.97	0.436	1.0012	8.335	3.64	385.8
588	162.2	162.7	0.54	56.8	162.6	105.79	0.420	1.0012	8.335	3.50	370.3
589	162.0	162.6	0.54	56.8	162.4	105.58	0.436	1.0012	8.335	3.64	384.4
590	161.9	162.4	0.54	56.8	162.3	105.42	0.436	1.0012	8.335	3.64	383.8
591	161.7	162.2	0.53	56.9	162.1	105.22	0.436	1.0012	8.335	3.64	383.1
592	161.5	162.1	0.54	56.9	161.9	105.03	0.436	1.0012	8.335	3.64	382.4
593	161.4	161.9	0.52	56.9	161.8	104.87	0.436	1.0012	8.335	3.64	381.8
594	161.2	161.8	0.51	56.9	161.6	104.70	0.436	1.0012	8.335	3.64	381.2
595	161.1	161.6	0.52	56.9	161.4	104.49	0.420	1.0012	8.335	3.50	365.8
596	160.9	161.4	0.50	57.0	161.3	104.32	0.436	1.0012	8.335	3.64	379.8
597	160.7	161.2	0.52	57.0	161.1	104.11	0.436	1.0012	8.335	3.64	379.0
598	160.6	161.1	0.51	57.0	160.9	103.94	0.436	1.0012	8.335	3.64	378.4
599	160.4	160.9	0.52	57.0	160.8	103.77	0.436	1.0012	8.335	3.64	377.8
600	160.2	160.7	0.50	57.0	160.6	103.57	0.436	1.0012	8.335	3.64	377.1
601	160.1	160.6	0.50	57.0	160.4	103.37	0.436	1.0012	8.335	3.64	376.4
602	159.9	160.4	0.50	57.0	160.2	103.21	0.436	1.0012	8.335	3.64	375.7
603	159.7	160.2	0.49	57.1	160.1	103.05	0.420	1.0012	8.335	3.50	360.7
604	159.6	160.1	0.49	57.1	159.9	102.84	0.436	1.0012	8.335	3.64	374.4
605	159.4	159.9	0.49	57.1	159.7	102.64	0.436	1.0012	8.335	3.64	373.7
606	159.3	159.8	0.49	57.1	159.6	102.50	0.436	1.0012	8.335	3.64	373.2
607	159.1	159.6	0.49	57.1	159.4	102.36	0.436	1.0012	8.335	3.64	372.7
608	159.0	159.5	0.48	57.1	159.3	102.23	0.436	1.0012	8.335	3.64	372.2
609	159.0	159.5	0.50	57.1	159.3	102.11	0.420	1.0012	8.334	3.50	357.5
610	159.1	159.6	0.50	57.2	159.4	102.19	0.436	1.0012	8.334	3.64	372.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
611	159.3	159.8	0.51	57.2	159.5	102.35	0.436	1.0012	8.334	3.64	372.6
612	159.5	160.0	0.51	57.2	159.7	102.51	0.436	1.0012	8.334	3.64	373.2
613	159.8	160.3	0.52	57.2	160.0	102.77	0.420	1.0012	8.334	3.50	359.8
614	160.3	160.8	0.54	57.2	160.5	103.25	0.436	1.0012	8.334	3.64	375.9
615	161.0	161.5	0.56	57.2	161.0	103.82	0.436	1.0012	8.334	3.64	378.0
616	161.6	162.2	0.57	57.2	161.7	104.49	0.436	1.0012	8.334	3.64	380.4
617	162.4	163.0	0.58	57.2	162.5	105.25	0.436	1.0012	8.334	3.64	383.2
618	163.3	163.8	0.56	57.3	163.3	106.05	0.420	1.0012	8.334	3.50	371.3
619	164.2	164.8	0.61	57.3	164.3	107.02	0.420	1.0012	8.334	3.50	374.7
620	165.1	165.7	0.63	57.3	165.1	107.87	0.436	1.0012	8.334	3.64	392.7
621	165.9	166.5	0.63	57.3	166.0	108.67	0.436	1.0012	8.334	3.64	395.6
622	166.7	167.4	0.66	57.3	166.8	109.52	0.420	1.0012	8.334	3.50	383.4
623	167.6	168.3	0.66	57.3	167.7	110.42	0.436	1.0012	8.334	3.64	402.0
624	168.3	169.0	0.68	57.3	168.5	111.17	0.420	1.0012	8.334	3.50	389.2
625	169.1	169.8	0.69	57.3	169.3	111.98	0.436	1.0012	8.334	3.64	407.7
626	169.9	170.6	0.70	57.3	170.1	112.81	0.436	1.0012	8.334	3.64	410.7
627	170.8	171.6	0.72	57.3	171.0	113.64	0.420	1.0012	8.334	3.50	397.8
628	171.7	172.5	0.74	57.4	171.9	114.57	0.436	1.0012	8.334	3.64	417.1
629	172.7	173.4	0.75	57.4	172.8	115.45	0.436	1.0012	8.334	3.64	420.3
630	173.6	174.4	0.76	57.4	173.8	116.39	0.436	1.0012	8.334	3.64	423.7
631	174.5	175.2	0.76	57.4	174.7	117.30	0.420	1.0012	8.334	3.50	410.6
632	175.4	176.2	0.80	57.2	175.6	118.45	0.436	1.0012	8.334	3.64	431.3
633	176.3	177.1	0.79	56.9	176.6	119.67	0.436	1.0012	8.335	3.64	435.7
634	177.2	178.0	0.82	56.7	177.5	120.79	0.436	1.0012	8.335	3.64	439.8
635	178.2	179.0	0.84	56.5	178.4	121.95	0.420	1.0012	8.335	3.50	426.9
636	179.0	179.9	0.86	56.3	179.3	123.03	0.436	1.0012	8.335	3.64	448.0
637	179.8	180.7	0.87	56.1	180.2	124.05	0.436	1.0012	8.335	3.64	451.7
638	180.3	181.1	0.87	56.0	180.7	124.72	0.420	1.0012	8.336	3.50	436.7
639	180.6	181.5	0.88	55.9	181.2	125.26	0.436	1.0012	8.336	3.64	456.1
640	181.1	182.0	0.90	55.8	181.6	125.77	0.420	1.0012	8.336	3.50	440.3
641	181.3	182.2	0.91	55.7	182.0	126.22	0.436	1.0012	8.336	3.64	459.6
642	181.6	182.5	0.90	55.7	182.2	126.55	0.420	1.0012	8.336	3.50	443.1
643	181.7	182.6	0.89	55.6	182.3	126.77	0.436	1.0012	8.336	3.64	461.6
644	181.8	182.7	0.90	55.5	182.5	126.97	0.420	1.0012	8.336	3.50	444.6
645	182.0	182.9	0.89	55.4	182.6	127.16	0.436	1.0012	8.336	3.64	463.1
646	182.0	182.9	0.91	55.4	182.7	127.34	0.420	1.0012	8.336	3.50	445.9
647	182.1	183.0	0.91	55.3	182.8	127.47	0.436	1.0012	8.336	3.64	464.2
648	182.1	183.0	0.90	55.2	182.8	127.57	0.420	1.0012	8.336	3.50	446.7
649	182.1	183.0	0.90	55.1	182.8	127.64	0.420	1.0012	8.336	3.50	447.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
650	182.1	183.0	0.90	55.1	182.8	127.75	0.436	1.0012	8.337	3.64	465.2
651	182.1	183.0	0.91	55.0	182.8	127.82	0.420	1.0012	8.337	3.50	447.6
652	182.1	183.0	0.91	55.0	182.8	127.84	0.436	1.0012	8.337	3.64	465.6
653	182.1	183.0	0.91	54.9	182.7	127.84	0.420	1.0012	8.337	3.50	447.7
654	182.0	182.9	0.90	54.8	182.7	127.91	0.420	1.0012	8.337	3.50	447.9
655	182.0	182.9	0.89	54.8	182.7	127.95	0.436	1.0012	8.337	3.64	466.0
656	182.0	182.8	0.89	54.7	182.6	127.92	0.420	1.0012	8.337	3.50	448.0
657	181.9	182.8	0.90	54.7	182.6	127.95	0.420	1.0012	8.337	3.50	448.0
658	181.8	182.7	0.91	54.6	182.5	127.88	0.436	1.0012	8.337	3.64	465.7
659	181.8	182.7	0.90	54.6	182.5	127.90	0.420	1.0012	8.337	3.50	447.9
660	181.7	182.6	0.89	54.5	182.4	127.89	0.420	1.0012	8.337	3.50	447.9
661	181.7	182.6	0.90	54.5	182.4	127.87	0.436	1.0012	8.337	3.64	465.7
662	181.6	182.4	0.88	54.5	182.3	127.78	0.420	1.0012	8.337	3.50	447.5
663	181.5	182.4	0.90	54.5	182.2	127.74	0.420	1.0012	8.337	3.50	447.3
664	181.4	182.3	0.87	54.4	182.1	127.65	0.436	1.0012	8.337	3.64	464.9
665	181.3	182.2	0.89	54.4	182.0	127.58	0.420	1.0012	8.337	3.50	446.8
666	181.2	182.1	0.88	54.4	181.9	127.55	0.420	1.0012	8.337	3.50	446.7
667	181.2	182.0	0.89	54.4	181.8	127.46	0.420	1.0012	8.337	3.50	446.3
668	181.1	181.9	0.87	54.4	181.7	127.39	0.436	1.0012	8.337	3.64	463.9
669	181.0	181.9	0.86	54.3	181.7	127.34	0.420	1.0012	8.337	3.50	445.9
670	180.9	181.8	0.87	54.3	181.6	127.25	0.420	1.0012	8.337	3.50	445.6
671	180.8	181.6	0.86	54.3	181.5	127.17	0.436	1.0012	8.337	3.64	463.1
672	180.6	181.5	0.87	54.3	181.3	127.04	0.420	1.0012	8.337	3.50	444.9
673	180.5	181.4	0.86	54.3	181.2	126.93	0.420	1.0012	8.337	3.50	444.5
674	180.4	181.3	0.85	54.3	181.1	126.82	0.420	1.0012	8.337	3.50	444.1
675	180.3	181.2	0.85	54.3	181.0	126.71	0.436	1.0012	8.337	3.64	461.5
676	180.2	181.0	0.83	54.3	180.9	126.60	0.420	1.0012	8.337	3.50	443.3
677	180.1	180.9	0.84	54.3	180.8	126.50	0.403	1.0012	8.337	3.36	425.3
678	180.0	180.8	0.84	54.3	180.6	126.39	0.420	1.0012	8.337	3.50	442.6
679	179.9	180.7	0.82	54.3	180.5	126.21	0.436	1.0012	8.337	3.64	459.7
680	179.8	180.6	0.81	54.5	180.4	125.95	0.420	1.0012	8.337	3.50	441.1
681	179.6	180.5	0.82	54.6	180.3	125.68	0.420	1.0012	8.337	3.50	440.1
682	179.5	180.3	0.81	54.8	180.2	125.43	0.420	1.0012	8.337	3.50	439.2
683	179.4	180.2	0.83	54.9	180.0	125.15	0.436	1.0012	8.337	3.64	455.8
684	179.2	180.1	0.83	55.0	179.9	124.86	0.420	1.0012	8.337	3.50	437.2
685	179.1	179.9	0.80	55.2	179.8	124.60	0.420	1.0012	8.336	3.50	436.3
686	179.0	179.8	0.80	55.3	179.6	124.32	0.436	1.0012	8.336	3.64	452.7
687	178.8	179.6	0.81	55.4	179.5	124.09	0.420	1.0012	8.336	3.50	434.5
688	178.7	179.5	0.81	55.5	179.4	123.85	0.420	1.0012	8.336	3.50	433.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
689	178.6	179.4	0.79	55.6	179.2	123.63	0.420	1.0012	8.336	3.50	432.9
690	178.4	179.2	0.79	55.7	179.1	123.40	0.436	1.0012	8.336	3.64	449.3
691	178.3	179.1	0.80	55.8	179.0	123.17	0.420	1.0012	8.336	3.50	431.2
692	178.2	179.0	0.77	55.9	178.8	122.96	0.420	1.0012	8.336	3.50	430.5
693	178.1	178.8	0.78	55.9	178.7	122.74	0.420	1.0012	8.336	3.50	429.7
694	177.9	178.7	0.77	56.0	178.5	122.50	0.420	1.0012	8.336	3.50	428.9
695	177.8	178.6	0.77	56.1	178.5	122.35	0.420	1.0012	8.336	3.50	428.4
696	177.7	178.5	0.76	56.2	178.3	122.14	0.436	1.0012	8.335	3.64	444.7
697	177.6	178.3	0.75	56.2	178.2	121.93	0.420	1.0012	8.335	3.50	426.9
698	177.4	178.1	0.75	56.3	178.0	121.65	0.420	1.0012	8.335	3.50	425.9
699	177.2	178.0	0.76	56.4	177.8	121.48	0.420	1.0012	8.335	3.50	425.3
700	177.1	177.8	0.75	56.4	177.7	121.29	0.436	1.0012	8.335	3.64	441.6
701	176.9	177.7	0.76	56.5	177.5	121.07	0.420	1.0012	8.335	3.50	423.8
702	176.8	177.5	0.73	56.5	177.4	120.86	0.420	1.0012	8.335	3.50	423.1
703	176.6	177.4	0.74	56.6	177.2	120.64	0.436	1.0012	8.335	3.64	439.2
704	176.5	177.2	0.74	56.6	177.1	120.44	0.420	1.0012	8.335	3.50	421.7
705	176.3	177.0	0.75	56.6	176.9	120.26	0.436	1.0012	8.335	3.64	437.9
706	176.2	176.9	0.75	56.7	176.8	120.09	0.420	1.0012	8.335	3.50	420.4
707	176.0	176.7	0.74	56.7	176.6	119.85	0.420	1.0012	8.335	3.50	419.6
708	175.9	176.6	0.72	56.8	176.5	119.71	0.436	1.0012	8.335	3.64	435.8
709	175.8	176.5	0.72	56.8	176.3	119.56	0.420	1.0012	8.335	3.50	418.6
710	175.6	176.3	0.74	56.8	176.2	119.37	0.420	1.0012	8.335	3.50	417.9
711	175.5	176.2	0.72	56.8	176.0	119.19	0.436	1.0012	8.335	3.64	434.0
712	175.3	176.0	0.71	56.9	175.9	119.03	0.420	1.0012	8.335	3.50	416.7
713	175.2	175.9	0.72	56.9	175.7	118.87	0.436	1.0012	8.335	3.64	432.8
714	175.1	175.8	0.72	56.9	175.6	118.75	0.420	1.0012	8.335	3.50	415.7
715	174.9	175.6	0.71	56.9	175.5	118.59	0.436	1.0012	8.335	3.64	431.8
716	174.7	175.4	0.71	56.9	175.3	118.34	0.420	1.0012	8.335	3.50	414.3
717	174.6	175.3	0.71	57.0	175.1	118.16	0.420	1.0012	8.335	3.50	413.6
718	174.4	175.1	0.70	57.0	175.0	117.97	0.436	1.0012	8.335	3.64	429.5
719	174.2	174.9	0.70	57.0	174.8	117.75	0.420	1.0012	8.335	3.50	412.2
720	174.1	174.8	0.70	57.0	174.7	117.62	0.436	1.0012	8.335	3.64	428.2
721	174.0	174.7	0.70	57.0	174.5	117.50	0.420	1.0012	8.335	3.50	411.3
722	173.9	174.6	0.69	57.0	174.4	117.35	0.436	1.0012	8.335	3.64	427.2
723	173.7	174.4	0.69	57.0	174.3	117.22	0.420	1.0012	8.335	3.50	410.4
724	173.5	174.2	0.69	57.1	174.1	117.02	0.436	1.0012	8.335	3.64	426.1
725	173.4	174.1	0.68	57.1	173.9	116.83	0.420	1.0012	8.335	3.50	409.0
726	173.2	173.9	0.68	57.1	173.8	116.69	0.420	1.0012	8.335	3.50	408.5
727	173.1	173.8	0.69	57.1	173.6	116.53	0.420	1.0012	8.335	3.50	408.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
728	172.9	173.6	0.67	57.1	173.5	116.40	0.436	1.0012	8.335	3.64	423.8
729	172.7	173.4	0.67	57.1	173.3	116.20	0.420	1.0012	8.335	3.50	406.8
730	172.6	173.2	0.66	57.1	173.1	115.98	0.420	1.0012	8.335	3.50	406.0
731	172.4	173.1	0.68	57.1	172.9	115.79	0.420	1.0012	8.334	3.50	405.3
732	172.3	172.9	0.66	57.1	172.8	115.67	0.436	1.0012	8.334	3.64	421.1
733	172.1	172.8	0.68	57.2	172.6	115.48	0.436	1.0012	8.334	3.64	420.4
734	171.9	172.6	0.67	57.1	172.5	115.31	0.420	1.0012	8.334	3.50	403.6
735	171.8	172.5	0.67	57.1	172.3	115.17	0.436	1.0012	8.334	3.64	419.3
736	171.6	172.3	0.67	57.2	172.2	115.00	0.420	1.0012	8.334	3.50	402.6
737	171.4	172.1	0.66	57.2	172.0	114.80	0.436	1.0012	8.334	3.64	418.0
738	171.3	172.0	0.67	57.2	171.8	114.56	0.420	1.0012	8.334	3.50	401.0
739	171.2	171.9	0.66	57.2	171.7	114.47	0.436	1.0012	8.334	3.64	416.7
740	171.0	171.7	0.65	57.2	171.5	114.30	0.420	1.0012	8.334	3.50	400.1
741	170.8	171.5	0.65	57.2	171.3	114.12	0.436	1.0012	8.334	3.64	415.5
742	170.6	171.3	0.65	57.2	171.1	113.92	0.420	1.0012	8.334	3.50	398.8
743	170.5	171.1	0.65	57.2	171.0	113.79	0.436	1.0012	8.334	3.64	414.3
744	170.3	171.0	0.64	57.2	170.8	113.66	0.420	1.0012	8.334	3.50	397.9
745	170.2	170.8	0.64	57.2	170.7	113.48	0.436	1.0012	8.334	3.64	413.2
746	170.0	170.6	0.64	57.2	170.5	113.32	0.436	1.0012	8.334	3.64	412.5
747	169.8	170.5	0.65	57.2	170.3	113.12	0.420	1.0012	8.334	3.50	396.0
748	169.7	170.3	0.63	57.2	170.2	112.95	0.436	1.0012	8.334	3.64	411.2
749	169.5	170.2	0.64	57.2	170.0	112.77	0.436	1.0012	8.334	3.64	410.6
750	169.4	170.0	0.63	57.2	169.8	112.62	0.420	1.0012	8.334	3.50	394.2
751	169.2	169.8	0.62	57.1	169.7	112.54	0.436	1.0012	8.334	3.64	409.7
752	169.0	169.6	0.62	56.9	169.5	112.62	0.436	1.0012	8.335	3.64	410.0
753	168.8	169.5	0.64	56.6	169.3	112.69	0.420	1.0012	8.335	3.50	394.5
754	168.7	169.3	0.61	56.4	169.2	112.79	0.436	1.0012	8.335	3.64	410.7
755	168.5	169.2	0.62	56.2	169.0	112.80	0.436	1.0012	8.335	3.64	410.7
756	168.4	169.0	0.62	56.0	168.8	112.81	0.420	1.0012	8.336	3.50	395.0
757	168.2	168.8	0.63	55.9	168.7	112.80	0.436	1.0012	8.336	3.64	410.8
758	168.0	168.6	0.63	55.8	168.5	112.75	0.420	1.0012	8.336	3.50	394.8
759	167.9	168.5	0.64	55.6	168.3	112.69	0.436	1.0012	8.336	3.64	410.3
760	167.7	168.3	0.62	55.5	168.2	112.65	0.436	1.0012	8.336	3.64	410.2
761	167.6	168.2	0.61	55.5	168.0	112.58	0.420	1.0012	8.336	3.50	394.2
762	167.4	168.0	0.61	55.4	167.8	112.47	0.436	1.0012	8.336	3.64	409.6
763	167.2	167.8	0.62	55.3	167.6	112.34	0.420	1.0012	8.336	3.50	393.3
764	167.0	167.6	0.61	55.2	167.5	112.24	0.420	1.0012	8.336	3.50	393.0
765	166.9	167.5	0.60	55.2	167.4	112.20	0.436	1.0012	8.336	3.64	408.6
766	166.7	167.3	0.62	55.1	167.2	112.09	0.436	1.0012	8.337	3.64	408.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
767	166.5	167.1	0.61	55.0	167.0	111.98	0.420	1.0012	8.337	3.50	392.1
768	166.3	167.0	0.64	54.9	166.8	111.91	0.436	1.0012	8.337	3.64	407.5
769	166.1	166.8	0.64	54.8	166.6	111.77	0.453	1.0012	8.337	3.78	422.7
770	166.0	166.6	0.63	54.8	166.5	111.69	0.453	1.0012	8.337	3.78	422.4
771	165.8	166.4	0.63	54.7	166.3	111.58	0.453	1.0012	8.337	3.78	422.0
772	165.6	166.2	0.64	54.6	166.1	111.45	0.436	1.0012	8.337	3.64	405.9
773	165.4	166.0	0.64	54.6	165.9	111.34	0.453	1.0012	8.337	3.78	421.1
774	165.2	165.9	0.63	54.5	165.7	111.21	0.453	1.0012	8.337	3.78	420.6
775	165.1	165.7	0.62	54.4	165.5	111.10	0.453	1.0012	8.337	3.78	420.2
776	164.8	165.5	0.63	54.4	165.3	110.97	0.436	1.0012	8.337	3.64	404.2
777	164.7	165.3	0.63	54.3	165.2	110.83	0.453	1.0012	8.337	3.78	419.2
778	164.5	165.1	0.63	54.3	165.0	110.68	0.453	1.0012	8.337	3.78	418.6
779	164.3	165.0	0.62	54.2	164.8	110.57	0.453	1.0012	8.337	3.78	418.2
780	164.2	164.8	0.63	54.2	164.7	110.45	0.453	1.0012	8.337	3.78	417.7
781	164.0	164.6	0.63	54.2	164.5	110.31	0.436	1.0012	8.337	3.64	401.7
782	163.8	164.4	0.62	54.1	164.3	110.15	0.453	1.0012	8.337	3.78	416.6
783	163.7	164.3	0.61	54.1	164.1	110.01	0.453	1.0012	8.337	3.78	416.1
784	163.5	164.1	0.61	54.1	163.9	109.85	0.436	1.0012	8.337	3.64	400.1
785	163.3	163.9	0.61	54.1	163.8	109.73	0.453	1.0012	8.337	3.78	415.0
786	163.2	163.8	0.62	54.0	163.6	109.57	0.453	1.0012	8.338	3.78	414.4
787	163.0	163.6	0.60	54.0	163.4	109.43	0.436	1.0012	8.338	3.64	398.6
788	162.8	163.4	0.59	54.0	163.3	109.25	0.453	1.0012	8.338	3.78	413.2
789	162.7	163.3	0.60	54.0	163.1	109.11	0.453	1.0012	8.338	3.78	412.7
790	162.5	163.1	0.59	54.0	162.9	108.93	0.436	1.0012	8.338	3.64	396.7
791	162.3	162.9	0.60	54.0	162.7	108.77	0.453	1.0012	8.338	3.78	411.4
792	162.1	162.7	0.58	54.0	162.6	108.60	0.436	1.0012	8.338	3.64	395.5
793	162.0	162.5	0.59	54.0	162.4	108.44	0.453	1.0012	8.338	3.78	410.1
794	161.8	162.3	0.58	53.9	162.2	108.25	0.453	1.0012	8.338	3.78	409.4
795	161.6	162.2	0.58	53.9	162.0	108.11	0.436	1.0012	8.338	3.64	393.8
796	161.4	162.0	0.58	53.9	161.8	107.91	0.453	1.0012	8.338	3.78	408.1
797	161.3	161.8	0.58	53.9	161.7	107.77	0.436	1.0012	8.338	3.64	392.5
798	161.1	161.7	0.58	53.9	161.5	107.59	0.453	1.0012	8.338	3.78	406.9
799	160.9	161.5	0.56	54.0	161.3	107.35	0.453	1.0012	8.338	3.78	406.0
800	160.7	161.3	0.56	54.1	161.1	107.05	0.436	1.0012	8.337	3.64	389.9
801	160.6	161.2	0.56	54.2	161.0	106.77	0.453	1.0012	8.337	3.78	403.8
802	160.4	160.9	0.56	54.4	160.8	106.39	0.453	1.0012	8.337	3.78	402.3
803	160.2	160.8	0.56	54.6	160.6	106.06	0.436	1.0012	8.337	3.64	386.2
804	160.0	160.6	0.55	54.7	160.4	105.75	0.453	1.0012	8.337	3.78	399.9
805	159.9	160.4	0.54	54.8	160.3	105.46	0.436	1.0012	8.337	3.64	384.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
806	159.7	160.3	0.54	54.9	160.1	105.15	0.453	1.0012	8.337	3.78	397.6
807	159.5	160.1	0.54	55.1	159.9	104.87	0.453	1.0012	8.337	3.78	396.6
808	159.4	160.0	0.54	55.2	159.8	104.58	0.453	1.0012	8.336	3.78	395.5
809	159.4	159.9	0.55	55.3	159.7	104.43	0.436	1.0012	8.336	3.64	380.3
810	159.5	160.1	0.56	55.4	159.8	104.40	0.453	1.0012	8.336	3.78	394.8
811	159.7	160.2	0.57	55.5	160.0	104.45	0.453	1.0012	8.336	3.78	395.0
812	160.0	160.6	0.57	55.6	160.2	104.64	0.436	1.0012	8.336	3.64	381.0
813	160.4	161.0	0.56	55.7	160.7	105.00	0.453	1.0012	8.336	3.78	397.0
814	160.8	161.4	0.59	55.8	161.0	105.28	0.453	1.0012	8.336	3.78	398.1
815	161.4	162.0	0.60	55.8	161.6	105.74	0.436	1.0012	8.336	3.64	385.0
816	162.1	162.7	0.62	55.9	162.2	106.33	0.453	1.0012	8.336	3.78	402.1
817	162.9	163.5	0.62	56.0	163.0	107.03	0.453	1.0012	8.336	3.78	404.7
818	163.7	164.3	0.64	56.0	163.8	107.77	0.436	1.0012	8.336	3.64	392.4
819	164.7	165.4	0.65	56.1	164.8	108.69	0.453	1.0012	8.336	3.78	411.0
820	165.5	166.2	0.69	56.2	165.7	109.52	0.453	1.0012	8.335	3.78	414.1
821	166.4	167.0	0.69	56.2	166.5	110.28	0.436	1.0012	8.335	3.64	401.5
822	167.3	168.0	0.71	56.3	167.4	111.16	0.453	1.0012	8.335	3.78	420.3
823	168.2	168.9	0.70	56.3	168.4	112.04	0.436	1.0012	8.335	3.64	407.9
824	169.1	169.8	0.73	56.4	169.2	112.88	0.453	1.0012	8.335	3.78	426.8
825	170.0	170.8	0.75	56.4	170.2	113.83	0.436	1.0012	8.335	3.64	414.5
826	171.0	171.8	0.76	56.4	171.2	114.82	0.453	1.0012	8.335	3.78	434.1
827	171.9	172.7	0.77	56.4	172.2	115.74	0.453	1.0012	8.335	3.78	437.6
828	172.8	173.6	0.80	56.5	173.0	116.56	0.436	1.0012	8.335	3.64	424.4
829	173.8	174.7	0.81	56.5	174.0	117.48	0.453	1.0012	8.335	3.78	444.2
830	174.9	175.7	0.82	56.5	175.1	118.51	0.436	1.0012	8.335	3.64	431.5
831	175.8	176.6	0.84	56.6	176.0	119.47	0.453	1.0012	8.335	3.78	451.7
832	176.7	177.6	0.84	56.6	177.0	120.41	0.436	1.0012	8.335	3.64	438.4
833	177.7	178.5	0.87	56.6	177.9	121.32	0.436	1.0012	8.335	3.64	441.7
834	178.7	179.6	0.90	56.6	179.0	122.37	0.453	1.0012	8.335	3.78	462.7
835	179.5	180.4	0.91	56.7	179.9	123.26	0.436	1.0012	8.335	3.64	448.8
836	180.4	181.4	0.92	56.7	180.9	124.21	0.436	1.0012	8.335	3.64	452.3
837	180.9	181.8	0.93	56.7	181.4	124.74	0.453	1.0012	8.335	3.78	471.6
838	181.3	182.2	0.92	56.7	181.9	125.15	0.436	1.0012	8.335	3.64	455.7
839	181.6	182.5	0.92	56.7	182.2	125.47	0.436	1.0012	8.335	3.64	456.8
840	181.8	182.8	0.95	56.7	182.5	125.72	0.453	1.0012	8.335	3.78	475.3
841	181.9	182.9	1.00	56.7	182.7	125.92	0.436	1.0012	8.335	3.64	458.5
842	182.0	183.0	1.01	56.8	182.8	126.02	0.436	1.0012	8.335	3.64	458.8
843	182.3	183.2	0.87	56.8	182.9	126.16	0.420	1.0012	8.335	3.50	441.7
844	182.4	183.3	0.89	56.8	183.0	126.23	0.420	1.0012	8.335	3.50	441.9

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
845	182.4	183.3	0.89	56.8	183.1	126.27	0.403	1.0012	8.335	3.36	424.4
846	182.4	183.3	0.87	56.8	183.1	126.22	0.420	1.0012	8.335	3.50	441.9
847	182.4	183.3	0.86	56.9	183.1	126.21	0.420	1.0012	8.335	3.50	441.8
848	182.4	183.3	0.88	56.9	183.1	126.19	0.420	1.0012	8.335	3.50	441.7
849	182.4	183.3	0.87	56.9	183.1	126.15	0.403	1.0012	8.335	3.36	424.0
850	182.4	183.2	0.87	56.9	183.0	126.10	0.420	1.0012	8.335	3.50	441.4
851	182.3	183.2	0.87	57.0	183.0	126.02	0.420	1.0012	8.335	3.50	441.1
852	182.3	183.2	0.87	57.0	183.0	125.98	0.420	1.0012	8.335	3.50	441.0
853	182.3	183.1	0.87	57.0	182.9	125.93	0.403	1.0012	8.335	3.36	423.2
854	182.2	183.1	0.88	57.0	182.8	125.83	0.420	1.0012	8.335	3.50	440.5
855	182.2	183.0	0.85	57.0	182.8	125.76	0.403	1.0012	8.335	3.36	422.7
856	182.1	182.9	0.85	57.1	182.8	125.70	0.420	1.0012	8.335	3.50	440.0
857	182.0	182.9	0.86	57.1	182.7	125.62	0.420	1.0012	8.335	3.50	439.7
858	182.0	182.8	0.85	57.1	182.6	125.54	0.403	1.0012	8.335	3.36	421.9
859	181.9	182.8	0.84	57.1	182.6	125.43	0.420	1.0012	8.334	3.50	439.1
860	181.8	182.7	0.83	57.2	182.5	125.33	0.420	1.0012	8.334	3.50	438.8
861	181.8	182.6	0.83	57.2	182.4	125.24	0.420	1.0012	8.334	3.50	438.4
862	181.7	182.5	0.83	57.2	182.3	125.17	0.403	1.0012	8.334	3.36	420.6
863	181.6	182.4	0.84	57.2	182.3	125.09	0.420	1.0012	8.334	3.50	437.9
864	181.5	182.3	0.82	57.2	182.2	124.98	0.420	1.0012	8.334	3.50	437.5
865	181.4	182.2	0.83	57.2	182.1	124.88	0.403	1.0012	8.334	3.36	419.7
866	181.3	182.1	0.81	57.2	182.0	124.79	0.420	1.0012	8.334	3.50	436.8
867	181.2	182.0	0.82	57.2	181.8	124.62	0.420	1.0012	8.334	3.50	436.3
868	181.2	182.0	0.81	57.2	181.8	124.56	0.403	1.0012	8.334	3.36	418.6
869	181.0	181.9	0.82	57.2	181.7	124.47	0.420	1.0012	8.334	3.50	435.7
870	180.9	181.7	0.80	57.2	181.6	124.33	0.403	1.0012	8.334	3.36	417.8
871	180.8	181.6	0.81	57.2	181.4	124.18	0.420	1.0012	8.334	3.50	434.7
872	180.7	181.5	0.81	57.3	181.3	124.06	0.403	1.0012	8.334	3.36	416.9
873	180.6	181.4	0.81	57.2	181.2	123.96	0.420	1.0012	8.334	3.50	433.9
874	180.5	181.3	0.80	57.2	181.1	123.87	0.420	1.0012	8.334	3.50	433.6
875	180.3	181.1	0.80	57.3	181.0	123.70	0.403	1.0012	8.334	3.36	415.7
876	180.2	181.0	0.79	57.3	180.8	123.57	0.403	1.0012	8.334	3.36	415.3
877	180.1	180.9	0.78	57.3	180.7	123.44	0.420	1.0012	8.334	3.50	432.1
878	179.9	180.7	0.79	57.3	180.6	123.30	0.420	1.0012	8.334	3.50	431.6
879	179.9	180.6	0.79	57.3	180.5	123.17	0.403	1.0012	8.334	3.36	413.9
880	179.7	180.5	0.78	57.3	180.3	123.01	0.420	1.0012	8.334	3.50	430.6
881	179.6	180.4	0.77	57.3	180.2	122.91	0.403	1.0012	8.334	3.36	413.1
882	179.5	180.2	0.76	57.3	180.1	122.77	0.420	1.0012	8.334	3.50	429.8
883	179.4	180.1	0.76	57.3	180.0	122.64	0.403	1.0012	8.334	3.36	412.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
884	179.2	180.0	0.77	57.3	179.8	122.52	0.420	1.0012	8.334	3.50	428.9
885	179.1	179.9	0.78	57.3	179.7	122.36	0.403	1.0012	8.334	3.36	411.2
886	179.0	179.7	0.74	57.3	179.6	122.27	0.420	1.0012	8.334	3.50	428.0
887	178.8	179.6	0.76	57.3	179.4	122.11	0.403	1.0012	8.334	3.36	410.4
888	178.7	179.4	0.76	57.3	179.3	122.00	0.420	1.0012	8.334	3.50	427.1
889	178.6	179.3	0.74	57.3	179.2	121.87	0.420	1.0012	8.334	3.50	426.6
890	178.4	179.2	0.75	57.3	179.0	121.65	0.403	1.0012	8.334	3.36	408.8
891	178.3	179.0	0.74	57.4	178.8	121.47	0.420	1.0012	8.334	3.50	425.2
892	178.1	178.9	0.73	57.4	178.7	121.34	0.420	1.0012	8.334	3.50	424.8
893	178.0	178.7	0.73	57.4	178.6	121.19	0.403	1.0012	8.334	3.36	407.3
894	177.9	178.6	0.72	57.3	178.5	121.15	0.420	1.0012	8.334	3.50	424.1
895	177.7	178.5	0.72	57.1	178.3	121.20	0.420	1.0012	8.335	3.50	424.3
896	177.6	178.3	0.72	56.8	178.1	121.30	0.420	1.0012	8.335	3.50	424.6
897	177.4	178.1	0.74	56.6	178.0	121.40	0.403	1.0012	8.335	3.36	408.0
898	177.2	178.0	0.74	56.4	177.8	121.47	0.420	1.0012	8.335	3.50	425.3
899	177.1	177.8	0.73	56.2	177.7	121.52	0.420	1.0012	8.335	3.50	425.4
900	176.9	177.7	0.74	56.0	177.5	121.51	0.403	1.0012	8.336	3.36	408.4
901	176.7	177.5	0.78	55.9	177.4	121.49	0.420	1.0012	8.336	3.50	425.4
902	176.6	177.4	0.76	55.8	177.2	121.46	0.436	1.0012	8.336	3.64	442.3
903	176.4	177.2	0.76	55.6	177.0	121.40	0.436	1.0012	8.336	3.64	442.0
904	176.3	177.1	0.74	55.6	176.9	121.37	0.420	1.0012	8.336	3.50	425.0
905	176.1	176.8	0.76	55.5	176.7	121.26	0.436	1.0012	8.336	3.64	441.5
906	175.9	176.6	0.75	55.4	176.5	121.12	0.420	1.0012	8.336	3.50	424.1
907	175.8	176.5	0.75	55.3	176.4	121.08	0.436	1.0012	8.336	3.64	440.9
908	175.7	176.4	0.73	55.2	176.3	121.05	0.420	1.0012	8.336	3.50	423.8
909	175.5	176.2	0.75	55.1	176.1	120.97	0.436	1.0012	8.336	3.64	440.5
910	175.3	176.1	0.73	55.0	175.9	120.86	0.420	1.0012	8.337	3.50	423.2
911	175.1	175.9	0.76	55.0	175.7	120.75	0.436	1.0012	8.337	3.64	439.7
912	175.0	175.7	0.75	54.9	175.6	120.71	0.436	1.0012	8.337	3.64	439.6
913	174.8	175.6	0.75	54.8	175.4	120.58	0.420	1.0012	8.337	3.50	422.2
914	174.6	175.4	0.73	54.7	175.2	120.50	0.436	1.0012	8.337	3.64	438.8
915	174.5	175.2	0.75	54.7	175.1	120.40	0.436	1.0012	8.337	3.64	438.5
916	174.3	175.1	0.73	54.6	174.9	120.32	0.420	1.0012	8.337	3.50	421.3
917	174.1	174.9	0.73	54.5	174.7	120.20	0.436	1.0012	8.337	3.64	437.8
918	174.0	174.7	0.75	54.5	174.5	120.09	0.436	1.0012	8.337	3.64	437.4
919	173.8	174.5	0.74	54.4	174.4	120.01	0.436	1.0012	8.337	3.64	437.1
920	173.7	174.4	0.73	54.3	174.2	119.89	0.436	1.0012	8.337	3.64	436.6
921	173.5	174.2	0.74	54.3	174.1	119.76	0.436	1.0012	8.337	3.64	436.2
922	173.3	174.0	0.73	54.3	173.9	119.62	0.436	1.0012	8.337	3.64	435.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
923	173.1	173.9	0.72	54.2	173.7	119.52	0.420	1.0012	8.337	3.50	418.5
924	173.0	173.7	0.72	54.2	173.5	119.38	0.453	1.0012	8.337	3.78	451.5
925	172.8	173.5	0.72	54.2	173.4	119.20	0.420	1.0012	8.337	3.50	417.4
926	172.7	173.4	0.72	54.3	173.2	118.93	0.436	1.0012	8.337	3.64	433.1
927	172.5	173.2	0.71	54.5	173.1	118.61	0.436	1.0012	8.337	3.64	431.9
928	172.3	173.0	0.70	54.6	172.9	118.28	0.436	1.0012	8.337	3.64	430.7
929	172.2	172.9	0.71	54.8	172.7	117.91	0.420	1.0012	8.337	3.50	412.9
930	172.0	172.7	0.71	54.9	172.5	117.65	0.453	1.0012	8.337	3.78	444.9
931	171.8	172.5	0.73	55.1	172.3	117.29	0.436	1.0012	8.337	3.64	427.1
932	171.6	172.3	0.71	55.2	172.2	117.00	0.436	1.0012	8.336	3.64	426.1
933	171.5	172.2	0.69	55.3	172.0	116.72	0.436	1.0012	8.336	3.64	425.0
934	171.3	172.0	0.70	55.4	171.8	116.43	0.436	1.0012	8.336	3.64	424.0
935	171.1	171.8	0.70	55.5	171.7	116.15	0.453	1.0012	8.336	3.78	439.2
936	171.0	171.7	0.69	55.6	171.5	115.92	0.436	1.0012	8.336	3.64	422.1
937	170.7	171.4	0.69	55.7	171.3	115.58	0.436	1.0012	8.336	3.64	420.9
938	170.7	171.3	0.64	55.8	171.1	115.35	0.420	1.0012	8.336	3.50	403.9
939	170.4	171.1	0.68	55.9	171.0	115.12	0.436	1.0012	8.336	3.64	419.2
940	170.3	170.9	0.68	56.0	170.8	114.80	0.436	1.0012	8.336	3.64	418.0
941	170.0	170.7	0.69	56.1	170.6	114.51	0.436	1.0012	8.336	3.64	416.9
942	169.9	170.6	0.67	56.2	170.5	114.27	0.436	1.0012	8.335	3.64	416.1
943	169.7	170.4	0.68	56.2	170.2	114.00	0.453	1.0012	8.335	3.78	431.0
944	169.5	170.2	0.67	56.3	170.1	113.76	0.436	1.0012	8.335	3.64	414.2
945	169.4	170.1	0.67	56.4	169.9	113.54	0.453	1.0012	8.335	3.78	429.3
946	169.2	169.9	0.66	56.4	169.7	113.33	0.436	1.0012	8.335	3.64	412.7
947	169.1	169.7	0.66	56.4	169.6	113.13	0.453	1.0012	8.335	3.78	427.7
948	168.9	169.5	0.65	56.5	169.4	112.89	0.436	1.0012	8.335	3.64	411.0
949	168.7	169.3	0.66	56.5	169.2	112.68	0.453	1.0012	8.335	3.78	426.0
950	168.5	169.2	0.65	56.6	169.0	112.46	0.453	1.0012	8.335	3.78	425.2
951	168.3	169.0	0.65	56.6	168.9	112.26	0.436	1.0012	8.335	3.64	408.7
952	168.2	168.8	0.65	56.6	168.7	112.03	0.453	1.0012	8.335	3.78	423.6
953	168.0	168.6	0.64	56.7	168.5	111.83	0.436	1.0012	8.335	3.64	407.1
954	167.8	168.5	0.64	56.7	168.3	111.64	0.436	1.0012	8.335	3.64	406.5
955	167.7	168.3	0.64	56.7	168.2	111.48	0.453	1.0012	8.335	3.78	421.5
956	167.5	168.1	0.63	56.7	168.0	111.27	0.436	1.0012	8.335	3.64	405.1
957	167.3	167.9	0.63	56.7	167.8	111.06	0.453	1.0012	8.335	3.78	419.9
958	167.1	167.8	0.63	56.8	167.6	110.87	0.436	1.0012	8.335	3.64	403.7
959	167.0	167.6	0.63	56.8	167.5	110.69	0.453	1.0012	8.335	3.78	418.5
960	166.8	167.4	0.62	56.8	167.3	110.46	0.436	1.0012	8.335	3.64	402.2
961	166.6	167.3	0.61	56.8	167.1	110.26	0.453	1.0012	8.335	3.78	416.9

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
962	166.5	167.1	0.62	56.9	167.0	110.06	0.453	1.0012	8.335	3.78	416.1
963	166.3	166.9	0.62	56.9	166.8	109.85	0.436	1.0012	8.335	3.64	399.9
964	166.1	166.7	0.62	56.9	166.6	109.65	0.453	1.0012	8.335	3.78	414.6
965	166.0	166.6	0.62	57.0	166.4	109.48	0.453	1.0012	8.335	3.78	413.9
966	165.8	166.4	0.63	57.0	166.3	109.28	0.453	1.0012	8.335	3.78	413.2
967	165.6	166.2	0.60	57.0	166.1	109.09	0.453	1.0012	8.335	3.78	412.4
968	165.4	166.0	0.61	57.0	165.9	108.86	0.453	1.0012	8.335	3.78	411.6
969	165.3	165.9	0.60	57.0	165.7	108.70	0.453	1.0012	8.335	3.78	411.0
970	165.1	165.7	0.61	57.0	165.5	108.52	0.453	1.0012	8.335	3.78	410.3
971	164.9	165.5	0.59	57.0	165.3	108.35	0.453	1.0012	8.335	3.78	409.6
972	164.7	165.3	0.60	57.0	165.1	108.13	0.470	1.0012	8.335	3.92	424.0
973	164.5	165.1	0.61	57.0	165.0	107.94	0.453	1.0012	8.335	3.78	408.1
974	164.4	165.0	0.61	57.0	164.8	107.78	0.453	1.0012	8.335	3.78	407.5
975	164.2	164.8	0.60	57.0	164.6	107.59	0.453	1.0012	8.335	3.78	406.8
976	164.0	164.6	0.60	57.0	164.5	107.42	0.470	1.0012	8.335	3.92	421.2
977	163.8	164.4	0.59	57.0	164.3	107.26	0.453	1.0012	8.335	3.78	405.5
978	163.6	164.2	0.59	57.0	164.1	107.05	0.453	1.0012	8.335	3.78	404.7
979	163.5	164.1	0.59	57.0	163.9	106.85	0.453	1.0012	8.335	3.78	404.0
980	163.4	163.9	0.54	57.0	163.8	106.71	0.453	1.0012	8.335	3.78	403.4
981	163.2	163.7	0.53	57.1	163.6	106.52	0.420	1.0012	8.335	3.50	372.9
982	163.0	163.6	0.57	57.1	163.4	106.35	0.470	1.0012	8.335	3.92	417.0
983	162.8	163.4	0.58	57.1	163.2	106.16	0.453	1.0012	8.335	3.78	401.3
984	162.6	163.2	0.59	57.0	163.1	106.08	0.453	1.0012	8.335	3.78	401.1
985	162.4	163.0	0.58	56.7	162.9	106.15	0.470	1.0012	8.335	3.92	416.2
986	162.2	162.8	0.59	56.5	162.7	106.19	0.470	1.0012	8.335	3.92	416.4
987	162.0	162.6	0.60	56.3	162.5	106.24	0.470	1.0012	8.335	3.92	416.6
988	161.9	162.5	0.60	56.1	162.3	106.25	0.470	1.0012	8.336	3.92	416.6
989	161.7	162.3	0.59	55.9	162.1	106.23	0.470	1.0012	8.336	3.92	416.6
990	161.5	162.1	0.59	55.8	161.9	106.19	0.470	1.0012	8.336	3.92	416.4
991	161.3	161.9	0.60	55.6	161.8	106.13	0.470	1.0012	8.336	3.92	416.2
992	161.2	161.8	0.60	55.5	161.6	106.07	0.470	1.0012	8.336	3.92	415.9
993	161.0	161.6	0.60	55.4	161.5	106.01	0.470	1.0012	8.336	3.92	415.7
994	160.8	161.4	0.58	55.4	161.2	105.88	0.470	1.0012	8.336	3.92	415.2
995	160.6	161.2	0.58	55.3	161.1	105.79	0.470	1.0012	8.336	3.92	414.9
996	160.5	161.0	0.58	55.2	160.9	105.70	0.470	1.0012	8.336	3.92	414.5
997	160.3	160.8	0.57	55.1	160.7	105.61	0.470	1.0012	8.336	3.92	414.2
998	160.1	160.7	0.56	55.0	160.5	105.52	0.470	1.0012	8.337	3.92	413.8
999	159.9	160.5	0.57	54.9	160.3	105.41	0.470	1.0012	8.337	3.92	413.4
1000	159.7	160.3	0.57	54.8	160.2	105.33	0.470	1.0012	8.337	3.92	413.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1001	159.5	160.1	0.57	54.7	160.0	105.23	0.470	1.0012	8.337	3.92	412.7
1002	159.3	159.9	0.56	54.6	159.8	105.11	0.470	1.0012	8.337	3.92	412.2
1003	159.2	159.8	0.57	54.6	159.6	105.00	0.470	1.0012	8.337	3.92	411.8
1004	159.1	159.7	0.57	54.7	159.5	104.84	0.470	1.0012	8.337	3.92	411.2
1005	159.0	159.6	0.56	54.8	159.4	104.63	0.470	1.0012	8.337	3.92	410.3
1006	159.0	159.6	0.57	55.0	159.4	104.44	0.453	1.0012	8.337	3.78	395.0
1007	159.1	159.7	0.58	55.1	159.5	104.33	0.470	1.0012	8.336	3.92	409.1
1008	159.3	159.9	0.58	55.3	159.6	104.28	0.470	1.0012	8.336	3.92	409.0
1009	159.6	160.1	0.58	55.4	159.8	104.45	0.470	1.0012	8.336	3.92	409.6
1010	159.9	160.5	0.60	55.4	160.2	104.72	0.470	1.0012	8.336	3.92	410.7
1011	160.5	161.1	0.63	55.5	160.7	105.22	0.470	1.0012	8.336	3.92	412.6
1012	161.2	161.9	0.65	55.5	161.4	105.90	0.453	1.0012	8.336	3.78	400.5
1013	162.0	162.7	0.67	55.5	162.2	106.64	0.470	1.0012	8.336	3.92	418.2
1014	163.0	163.7	0.67	55.5	163.1	107.59	0.470	1.0012	8.336	3.92	421.9
1015	163.9	164.6	0.69	55.6	164.0	108.42	0.470	1.0012	8.336	3.92	425.2
1016	164.8	165.5	0.69	55.6	165.0	109.40	0.470	1.0012	8.336	3.92	429.0
1017	165.8	166.5	0.72	55.6	165.9	110.33	0.470	1.0012	8.336	3.92	432.6
1018	166.8	167.5	0.70	55.6	166.9	111.27	0.453	1.0012	8.336	3.78	420.8
1019	167.7	168.5	0.75	55.7	167.9	112.21	0.470	1.0012	8.336	3.92	440.0
1020	168.8	169.6	0.76	55.8	168.9	113.15	0.470	1.0012	8.336	3.92	443.7
1021	169.9	170.7	0.78	55.9	170.1	114.20	0.470	1.0012	8.336	3.92	447.8
1022	171.0	171.7	0.74	56.0	171.0	115.07	0.420	1.0012	8.336	3.50	402.9
1023	172.1	172.9	0.80	56.1	172.3	116.18	0.470	1.0012	8.336	3.92	455.6
1024	173.0	173.8	0.82	56.2	173.2	117.09	0.470	1.0012	8.335	3.92	459.1
1025	174.1	174.9	0.78	56.2	174.3	118.06	0.436	1.0012	8.335	3.64	429.9
1026	175.4	176.0	0.62	56.3	175.3	119.07	0.336	1.0012	8.335	2.80	333.5
1027	176.4	177.1	0.65	56.4	176.4	120.03	0.352	1.0012	8.335	2.94	353.0
1028	177.4	178.1	0.64	56.4	177.4	121.01	0.336	1.0012	8.335	2.80	338.9
1029	178.3	179.1	0.72	56.6	178.4	121.88	0.352	1.0012	8.335	2.94	358.4
1030	179.3	180.0	0.79	56.7	179.4	122.74	0.386	1.0012	8.335	3.22	395.3
1031	180.2	181.0	0.83	56.8	180.4	123.58	0.403	1.0012	8.335	3.36	415.3
1032	180.7	181.5	0.80	56.9	181.2	124.26	0.403	1.0012	8.335	3.36	417.6
1033	181.1	182.0	0.81	57.0	181.6	124.64	0.403	1.0012	8.335	3.36	418.9
1034	181.5	182.3	0.82	57.0	181.9	124.91	0.403	1.0012	8.335	3.36	419.8
1035	181.7	182.5	0.83	57.1	182.2	125.14	0.403	1.0012	8.335	3.36	420.6
1036	181.9	182.8	0.83	57.1	182.5	125.35	0.403	1.0012	8.335	3.36	421.3
1037	182.1	182.9	0.83	57.2	182.6	125.45	0.403	1.0012	8.334	3.36	421.6
1038	182.2	183.0	0.84	57.3	182.7	125.48	0.403	1.0012	8.334	3.36	421.7
1039	182.2	183.1	0.83	57.3	182.8	125.52	0.403	1.0012	8.334	3.36	421.8

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1040	182.3	183.1	0.84	57.4	182.9	125.54	0.420	1.0012	8.334	3.50	439.5
1041	182.3	183.1	0.84	57.4	182.9	125.51	0.403	1.0012	8.334	3.36	421.8
1042	182.3	183.1	0.84	57.4	182.9	125.50	0.403	1.0012	8.334	3.36	421.7
1043	182.3	183.1	0.83	57.4	182.9	125.51	0.403	1.0012	8.334	3.36	421.8
1044	182.3	183.1	0.83	57.4	182.9	125.46	0.403	1.0012	8.334	3.36	421.6
1045	182.3	183.1	0.82	57.5	182.9	125.40	0.386	1.0012	8.334	3.22	403.9
1046	182.2	183.1	0.82	57.5	182.8	125.39	0.403	1.0012	8.334	3.36	421.4
1047	182.3	183.1	0.78	57.5	182.9	125.39	0.369	1.0012	8.334	3.08	386.3
1048	182.2	183.0	0.82	57.5	182.8	125.31	0.420	1.0012	8.334	3.50	438.6
1049	182.1	182.9	0.84	57.5	182.7	125.18	0.403	1.0012	8.334	3.36	420.7
1050	182.0	182.8	0.84	57.6	182.7	125.10	0.403	1.0012	8.334	3.36	420.4
1051	182.0	182.8	0.82	57.6	182.6	125.00	0.403	1.0012	8.334	3.36	420.1
1052	181.9	182.7	0.82	57.6	182.5	124.92	0.403	1.0012	8.334	3.36	419.8
1053	181.8	182.6	0.81	57.6	182.4	124.79	0.403	1.0012	8.334	3.36	419.4
1054	181.7	182.5	0.81	57.6	182.3	124.68	0.403	1.0012	8.334	3.36	419.0
1055	181.7	182.5	0.81	57.6	182.3	124.67	0.403	1.0012	8.334	3.36	419.0
1056	181.6	182.4	0.80	57.6	182.2	124.57	0.403	1.0012	8.334	3.36	418.6
1057	181.5	182.3	0.81	57.6	182.1	124.47	0.403	1.0012	8.334	3.36	418.3
1058	181.5	182.3	0.80	57.7	182.1	124.40	0.420	1.0012	8.334	3.50	435.5
1059	181.4	182.2	0.80	57.7	182.0	124.30	0.403	1.0012	8.334	3.36	417.7
1060	181.3	182.0	0.78	57.7	181.9	124.19	0.403	1.0012	8.334	3.36	417.3
1061	181.2	182.0	0.80	57.7	181.8	124.05	0.403	1.0012	8.334	3.36	416.9
1062	181.1	181.9	0.78	57.7	181.7	123.99	0.403	1.0012	8.334	3.36	416.6
1063	181.0	181.8	0.77	57.8	181.6	123.83	0.403	1.0012	8.334	3.36	416.1
1064	180.9	181.7	0.79	57.8	181.5	123.68	0.403	1.0012	8.334	3.36	415.6
1065	180.8	181.5	0.77	57.8	181.4	123.56	0.420	1.0012	8.334	3.50	432.5
1066	180.6	181.4	0.79	57.8	181.3	123.46	0.403	1.0012	8.334	3.36	414.9
1067	180.5	181.3	0.77	57.8	181.2	123.34	0.403	1.0012	8.334	3.36	414.5
1068	180.4	181.2	0.77	57.8	181.0	123.21	0.403	1.0012	8.334	3.36	414.0
1069	180.3	181.1	0.76	57.9	180.9	123.07	0.403	1.0012	8.334	3.36	413.6
1070	180.2	181.0	0.76	57.9	180.8	122.95	0.403	1.0012	8.334	3.36	413.2
1071	180.1	180.9	0.75	57.9	180.7	122.80	0.403	1.0012	8.334	3.36	412.7
1072	180.0	180.8	0.75	57.9	180.6	122.67	0.403	1.0012	8.334	3.36	412.2
1073	179.9	180.6	0.76	57.9	180.4	122.51	0.403	1.0012	8.334	3.36	411.7
1074	179.8	180.5	0.75	58.0	180.3	122.38	0.403	1.0012	8.334	3.36	411.2
1075	179.7	180.4	0.73	58.0	180.2	122.25	0.403	1.0012	8.334	3.36	410.8
1076	179.5	180.3	0.76	58.0	180.1	122.10	0.420	1.0012	8.334	3.50	427.4
1077	179.4	180.1	0.73	58.0	180.0	121.97	0.403	1.0012	8.334	3.36	409.9
1078	179.3	180.0	0.72	58.0	179.8	121.83	0.403	1.0012	8.334	3.36	409.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1079	179.1	179.9	0.72	58.0	179.7	121.71	0.403	1.0012	8.334	3.36	409.0
1080	179.0	179.7	0.72	57.9	179.6	121.65	0.403	1.0012	8.334	3.36	408.8
1081	178.9	179.6	0.72	57.7	179.5	121.75	0.403	1.0012	8.334	3.36	409.1
1082	178.7	179.5	0.72	57.4	179.3	121.87	0.403	1.0012	8.334	3.36	409.5
1083	178.6	179.4	0.72	57.2	179.2	121.99	0.403	1.0012	8.334	3.36	409.9
1084	178.5	179.2	0.74	57.0	179.1	122.08	0.403	1.0012	8.335	3.36	410.3
1085	178.4	179.1	0.72	56.8	178.9	122.13	0.403	1.0012	8.335	3.36	410.5
1086	178.2	178.9	0.72	56.6	178.8	122.13	0.420	1.0012	8.335	3.50	427.6
1087	178.0	178.8	0.73	56.5	178.6	122.10	0.403	1.0012	8.335	3.36	410.4
1088	177.9	178.6	0.70	56.4	178.5	122.08	0.403	1.0012	8.335	3.36	410.3
1089	177.8	178.5	0.71	56.3	178.3	122.03	0.403	1.0012	8.335	3.36	410.2
1090	177.6	178.3	0.72	56.2	178.2	122.01	0.403	1.0012	8.335	3.36	410.1
1091	177.4	178.2	0.72	56.1	178.0	121.92	0.420	1.0012	8.336	3.50	426.9
1092	177.3	178.0	0.71	56.0	177.9	121.89	0.403	1.0012	8.336	3.36	409.7
1093	177.2	177.9	0.71	55.9	177.7	121.82	0.403	1.0012	8.336	3.36	409.5
1094	177.0	177.7	0.72	55.8	177.5	121.72	0.403	1.0012	8.336	3.36	409.1
1095	176.9	177.6	0.73	55.7	177.5	121.72	0.403	1.0012	8.336	3.36	409.1
1096	176.7	177.4	0.71	55.7	177.3	121.63	0.403	1.0012	8.336	3.36	408.8
1097	176.6	177.3	0.71	55.6	177.1	121.53	0.403	1.0012	8.336	3.36	408.5
1098	176.4	177.1	0.70	55.5	177.0	121.47	0.403	1.0012	8.336	3.36	408.3
1099	176.3	177.0	0.70	55.5	176.8	121.35	0.403	1.0012	8.336	3.36	407.9
1100	176.1	176.8	0.70	55.4	176.7	121.25	0.420	1.0012	8.336	3.50	424.5
1101	175.9	176.6	0.70	55.3	176.4	121.09	0.403	1.0012	8.336	3.36	407.0
1102	175.8	176.5	0.70	55.3	176.3	121.05	0.403	1.0012	8.336	3.36	406.9
1103	175.7	176.4	0.71	55.2	176.2	120.95	0.403	1.0012	8.336	3.36	406.6
1104	175.5	176.2	0.69	55.2	176.0	120.83	0.403	1.0012	8.336	3.36	406.2
1105	175.3	176.0	0.70	55.1	175.8	120.70	0.403	1.0012	8.336	3.36	405.7
1106	175.2	175.9	0.70	55.1	175.7	120.61	0.403	1.0012	8.336	3.36	405.4
1107	175.0	175.7	0.70	55.1	175.6	120.51	0.420	1.0012	8.337	3.50	422.0
1108	174.8	175.5	0.70	55.0	175.4	120.34	0.403	1.0012	8.337	3.36	404.5
1109	174.7	175.4	0.69	55.0	175.2	120.30	0.403	1.0012	8.337	3.36	404.4
1110	174.5	175.2	0.69	54.9	175.1	120.16	0.403	1.0012	8.337	3.36	403.9
1111	174.4	175.1	0.69	54.9	174.9	120.04	0.403	1.0012	8.337	3.36	403.5
1112	174.3	175.0	0.69	54.8	174.8	119.94	0.420	1.0012	8.337	3.50	420.0
1113	174.1	174.8	0.67	54.8	174.6	119.85	0.403	1.0012	8.337	3.36	402.9
1114	173.9	174.6	0.68	54.8	174.5	119.68	0.403	1.0012	8.337	3.36	402.3
1115	173.7	174.4	0.69	54.7	174.3	119.52	0.403	1.0012	8.337	3.36	401.8
1116	173.6	174.3	0.68	54.7	174.1	119.41	0.403	1.0012	8.337	3.36	401.4
1117	173.5	174.2	0.67	54.7	174.0	119.30	0.403	1.0012	8.337	3.36	401.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1118	173.3	174.0	0.67	54.6	173.8	119.18	0.420	1.0012	8.337	3.50	417.4
1119	173.2	173.8	0.66	54.6	173.7	119.04	0.403	1.0012	8.337	3.36	400.2
1120	173.0	173.7	0.68	54.6	173.5	118.92	0.403	1.0012	8.337	3.36	399.8
1121	172.8	173.5	0.66	54.6	173.4	118.78	0.403	1.0012	8.337	3.36	399.3
1122	172.7	173.3	0.67	54.6	173.2	118.61	0.403	1.0012	8.337	3.36	398.7
1123	172.5	173.2	0.66	54.5	173.0	118.46	0.403	1.0012	8.337	3.36	398.2
1124	172.3	173.0	0.67	54.5	172.9	118.33	0.420	1.0012	8.337	3.50	414.4
1125	172.2	172.9	0.63	54.5	172.7	118.23	0.386	1.0012	8.337	3.22	380.9
1126	172.0	172.7	0.70	54.5	172.5	118.04	0.436	1.0012	8.337	3.64	429.9
1127	171.8	172.5	0.70	54.5	172.4	117.90	0.436	1.0012	8.337	3.64	429.4
1128	171.6	172.3	0.69	54.5	172.2	117.72	0.436	1.0012	8.337	3.64	428.7
1129	171.5	172.2	0.71	54.4	172.0	117.57	0.436	1.0012	8.337	3.64	428.2
1130	171.3	172.0	0.70	54.4	171.8	117.40	0.436	1.0012	8.337	3.64	427.5
1131	171.2	171.8	0.66	54.4	171.7	117.25	0.420	1.0012	8.337	3.50	410.6
1132	170.9	171.6	0.69	54.4	171.4	117.06	0.420	1.0012	8.337	3.50	409.9
1133	170.7	171.4	0.68	54.4	171.3	116.88	0.436	1.0012	8.337	3.64	425.7
1134	170.5	171.2	0.68	54.4	171.1	116.73	0.436	1.0012	8.337	3.64	425.1
1135	170.4	171.0	0.68	54.4	170.9	116.55	0.436	1.0012	8.337	3.64	424.5
1136	170.2	170.8	0.69	54.3	170.7	116.37	0.436	1.0012	8.337	3.64	423.8
1137	170.0	170.6	0.68	54.3	170.5	116.20	0.436	1.0012	8.337	3.64	423.2
1138	169.8	170.5	0.69	54.3	170.3	116.02	0.436	1.0012	8.337	3.64	422.5
1139	169.7	170.3	0.62	54.3	170.2	115.86	0.420	1.0012	8.337	3.50	405.7
1140	169.5	170.1	0.68	54.3	170.0	115.69	0.436	1.0012	8.337	3.64	421.4
1141	169.3	170.0	0.67	54.3	169.8	115.55	0.436	1.0012	8.337	3.64	420.8
1142	169.2	169.8	0.65	54.3	169.7	115.37	0.436	1.0012	8.337	3.64	420.2
1143	169.0	169.6	0.66	54.3	169.5	115.22	0.436	1.0012	8.337	3.64	419.6
1144	168.8	169.4	0.66	54.3	169.3	115.01	0.436	1.0012	8.337	3.64	418.9
1145	168.6	169.3	0.65	54.3	169.1	114.86	0.436	1.0012	8.337	3.64	418.3
1146	168.4	169.1	0.65	54.3	168.9	114.65	0.436	1.0012	8.337	3.64	417.5
1147	168.2	168.9	0.65	54.3	168.7	114.47	0.436	1.0012	8.337	3.64	416.9
1148	168.1	168.7	0.63	54.3	168.6	114.30	0.436	1.0012	8.337	3.64	416.3
1149	167.9	168.6	0.66	54.3	168.4	114.13	0.436	1.0012	8.337	3.64	415.7
1150	167.8	168.4	0.66	54.3	168.3	114.00	0.420	1.0012	8.337	3.50	399.2
1151	167.5	168.2	0.68	54.3	168.1	113.80	0.453	1.0012	8.337	3.78	430.4
1152	167.3	168.0	0.68	54.3	167.9	113.56	0.453	1.0012	8.337	3.78	429.5
1153	167.1	167.8	0.67	54.3	167.7	113.35	0.453	1.0012	8.337	3.78	428.7
1154	167.0	167.7	0.68	54.3	167.5	113.18	0.453	1.0012	8.337	3.78	428.1
1155	166.8	167.5	0.67	54.3	167.3	113.00	0.453	1.0012	8.337	3.78	427.4
1156	166.6	167.3	0.67	54.3	167.1	112.81	0.453	1.0012	8.337	3.78	426.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1157	166.5	167.1	0.67	54.3	167.0	112.63	0.453	1.0012	8.337	3.78	426.0
1158	166.2	166.9	0.66	54.3	166.8	112.44	0.453	1.0012	8.337	3.78	425.2
1159	166.1	166.7	0.67	54.3	166.6	112.26	0.453	1.0012	8.337	3.78	424.6
1160	166.0	166.5	0.60	54.3	166.4	112.06	0.436	1.0012	8.337	3.64	408.1
1161	165.7	166.4	0.65	54.3	166.2	111.88	0.453	1.0012	8.337	3.78	423.1
1162	165.5	166.2	0.65	54.4	166.0	111.67	0.453	1.0012	8.337	3.78	422.3
1163	165.3	166.0	0.64	54.4	165.8	111.44	0.453	1.0012	8.337	3.78	421.5
1164	165.2	165.8	0.64	54.4	165.7	111.25	0.453	1.0012	8.337	3.78	420.7
1165	165.0	165.6	0.63	54.4	165.5	111.09	0.453	1.0012	8.337	3.78	420.2
1166	164.8	165.4	0.63	54.4	165.3	110.87	0.453	1.0012	8.337	3.78	419.3
1167	164.6	165.3	0.63	54.4	165.1	110.68	0.453	1.0012	8.337	3.78	418.6
1168	164.4	165.1	0.62	54.4	164.9	110.50	0.453	1.0012	8.337	3.78	417.9
1169	164.3	164.9	0.62	54.5	164.7	110.25	0.453	1.0012	8.337	3.78	416.9
1170	164.1	164.7	0.61	54.6	164.6	109.98	0.453	1.0012	8.337	3.78	415.9
1171	163.9	164.5	0.61	54.8	164.4	109.60	0.470	1.0012	8.337	3.92	429.8
1172	163.7	164.3	0.62	54.9	164.2	109.26	0.453	1.0012	8.337	3.78	413.2
1173	163.6	164.2	0.61	55.1	164.0	108.93	0.453	1.0012	8.336	3.78	411.9
1174	163.4	164.0	0.60	55.3	163.9	108.60	0.453	1.0012	8.336	3.78	410.7
1175	163.2	163.8	0.59	55.4	163.7	108.29	0.453	1.0012	8.336	3.78	409.5
1176	163.0	163.6	0.60	55.5	163.5	107.92	0.453	1.0012	8.336	3.78	408.1
1177	162.8	163.4	0.60	55.7	163.3	107.61	0.470	1.0012	8.336	3.92	422.0
1178	162.7	163.3	0.60	55.8	163.1	107.30	0.453	1.0012	8.336	3.78	405.8
1179	162.5	163.1	0.58	55.9	162.9	107.01	0.453	1.0012	8.336	3.78	404.6
1180	162.3	162.9	0.59	56.0	162.8	106.73	0.453	1.0012	8.336	3.78	403.6
1181	162.1	162.7	0.58	56.2	162.6	106.43	0.453	1.0012	8.335	3.78	402.4
1182	162.0	162.6	0.55	56.3	162.4	106.14	0.436	1.0012	8.335	3.64	386.5
1183	161.8	162.4	0.56	56.4	162.3	105.88	0.470	1.0012	8.335	3.92	415.2
1184	161.7	162.2	0.56	56.5	162.1	105.60	0.453	1.0012	8.335	3.78	399.3
1185	161.5	162.0	0.55	56.6	161.9	105.32	0.453	1.0012	8.335	3.78	398.2
1186	161.3	161.9	0.56	56.6	161.7	105.08	0.453	1.0012	8.335	3.78	397.3
1187	161.1	161.7	0.55	56.7	161.5	104.83	0.470	1.0012	8.335	3.92	411.0
1188	161.0	161.5	0.55	56.8	161.4	104.61	0.453	1.0012	8.335	3.78	395.5
1189	160.8	161.3	0.54	56.8	161.2	104.37	0.453	1.0012	8.335	3.78	394.6
1190	160.6	161.2	0.54	56.9	161.0	104.15	0.453	1.0012	8.335	3.78	393.8
1191	160.4	161.0	0.57	56.9	160.9	103.92	0.470	1.0012	8.335	3.92	407.5
1192	160.3	160.8	0.56	57.0	160.7	103.67	0.470	1.0012	8.335	3.92	406.5
1193	160.1	160.6	0.56	57.1	160.5	103.42	0.470	1.0012	8.335	3.92	405.5
1194	159.9	160.4	0.55	57.1	160.3	103.16	0.470	1.0012	8.334	3.92	404.5
1195	159.8	160.3	0.51	57.2	160.1	102.97	0.470	1.0012	8.334	3.92	403.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1196	159.6	160.1	0.55	57.2	160.0	102.74	0.453	1.0012	8.334	3.78	388.4
1197	159.4	160.0	0.56	57.2	159.8	102.54	0.470	1.0012	8.334	3.92	402.0
1198	159.3	159.9	0.56	57.3	159.7	102.43	0.470	1.0012	8.334	3.92	401.6
1199	159.2	159.8	0.55	57.3	159.6	102.36	0.470	1.0012	8.334	3.92	401.3
1200	159.3	159.9	0.58	57.1	159.7	102.55	0.487	1.0012	8.335	4.06	416.4
1201	159.5	160.1	0.59	56.9	159.8	102.92	0.470	1.0012	8.335	3.92	403.6
1202	159.8	160.4	0.59	56.6	160.1	103.42	0.487	1.0012	8.335	4.06	420.0
1203	160.1	160.7	0.62	56.4	160.4	103.93	0.470	1.0012	8.335	3.92	407.5
1204	160.6	161.3	0.63	56.3	160.8	104.56	0.487	1.0012	8.335	4.06	424.6
1205	161.3	161.9	0.65	56.2	161.4	105.29	0.470	1.0012	8.335	3.92	412.9
1206	162.0	162.7	0.66	56.0	162.2	106.16	0.470	1.0012	8.336	3.92	416.3
1207	162.8	163.5	0.69	56.0	163.0	107.01	0.487	1.0012	8.336	4.06	434.6
1208	163.6	164.3	0.70	55.9	163.8	107.95	0.470	1.0012	8.336	3.92	423.3
1209	164.5	165.2	0.70	55.8	164.7	108.84	0.470	1.0012	8.336	3.92	426.8
1210	165.3	166.0	0.72	55.7	165.5	109.78	0.487	1.0012	8.336	4.06	445.9
1211	166.1	166.9	0.75	55.7	166.4	110.67	0.470	1.0012	8.336	3.92	434.0
1212	167.1	167.9	0.78	55.6	167.3	111.62	0.470	1.0012	8.336	3.92	437.7
1213	168.0	168.8	0.76	55.6	168.3	112.71	0.470	1.0012	8.336	3.92	442.0
1214	168.9	169.7	0.78	55.5	169.2	113.65	0.470	1.0012	8.336	3.92	445.7
1215	169.8	170.6	0.78	55.5	170.0	114.57	0.453	1.0012	8.336	3.78	433.2
1216	170.9	171.7	0.75	55.4	171.1	115.64	0.436	1.0012	8.336	3.64	421.1
1217	171.8	172.6	0.80	55.4	172.0	116.66	0.436	1.0012	8.336	3.64	424.8
1218	172.8	173.6	0.82	55.3	173.0	117.70	0.470	1.0012	8.336	3.92	461.6
1219	173.8	174.6	0.81	55.3	174.0	118.65	0.453	1.0012	8.336	3.78	448.7
1220	174.7	175.5	0.80	55.3	174.9	119.65	0.420	1.0012	8.336	3.50	419.0
1221	175.7	176.5	0.81	55.3	175.9	120.65	0.436	1.0012	8.336	3.64	439.3
1222	176.6	177.5	0.81	55.2	176.9	121.63	0.436	1.0012	8.336	3.64	442.9
1223	177.6	178.5	0.84	55.2	177.8	122.64	0.436	1.0012	8.336	3.64	446.6
1224	178.5	179.4	0.84	55.2	178.8	123.64	0.436	1.0012	8.336	3.64	450.3
1225	179.5	180.4	0.88	55.1	179.8	124.65	0.420	1.0012	8.336	3.50	436.5
1226	180.5	181.4	0.83	55.1	180.8	125.71	0.403	1.0012	8.336	3.36	422.6
1227	181.0	181.8	0.83	55.1	181.4	126.33	0.386	1.0012	8.336	3.22	407.0
1228	181.4	182.3	0.85	55.1	181.9	126.80	0.403	1.0012	8.336	3.36	426.2
1229	181.8	182.7	0.85	55.1	182.3	127.21	0.403	1.0012	8.336	3.36	427.6
1230	182.1	182.9	0.86	55.1	182.6	127.54	0.403	1.0012	8.337	3.36	428.7
1231	182.3	183.2	0.85	55.0	182.9	127.84	0.386	1.0012	8.337	3.22	411.8
1232	182.5	183.3	0.86	55.0	183.0	128.00	0.403	1.0012	8.337	3.36	430.3
1233	182.6	183.5	0.86	55.0	183.1	128.12	0.403	1.0012	8.337	3.36	430.7
1234	182.7	183.6	0.88	55.0	183.3	128.30	0.386	1.0012	8.337	3.22	413.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1235	182.7	183.6	0.88	55.0	183.4	128.38	0.403	1.0012	8.337	3.36	431.6
1236	182.8	183.7	0.88	55.0	183.4	128.44	0.403	1.0012	8.337	3.36	431.7
1237	182.8	183.7	0.88	55.0	183.4	128.42	0.386	1.0012	8.337	3.22	413.7
1238	182.8	183.7	0.88	55.0	183.5	128.48	0.403	1.0012	8.337	3.36	431.9
1239	182.8	183.6	0.88	55.0	183.4	128.44	0.386	1.0012	8.337	3.22	413.8
1240	182.8	183.7	0.88	55.0	183.4	128.41	0.403	1.0012	8.337	3.36	431.6
1241	182.8	183.6	0.89	55.1	183.4	128.28	0.386	1.0012	8.336	3.22	413.3
1242	182.8	183.6	0.82	55.3	183.4	128.10	0.369	1.0012	8.336	3.08	394.7
1243	182.8	183.6	0.86	55.5	183.4	127.93	0.403	1.0012	8.336	3.36	430.0
1244	182.7	183.5	0.86	55.7	183.4	127.69	0.386	1.0012	8.336	3.22	411.3
1245	182.6	183.5	0.87	55.8	183.3	127.47	0.403	1.0012	8.336	3.36	428.4
1246	182.6	183.5	0.86	56.0	183.3	127.25	0.386	1.0012	8.336	3.22	409.9
1247	182.6	183.4	0.84	56.1	183.2	127.08	0.403	1.0012	8.335	3.36	427.1
1248	182.5	183.4	0.85	56.3	183.2	126.92	0.386	1.0012	8.335	3.22	408.8
1249	182.5	183.3	0.87	56.3	183.1	126.79	0.403	1.0012	8.335	3.36	426.1
1250	182.4	183.3	0.85	56.3	183.1	126.76	0.386	1.0012	8.335	3.22	408.3
1251	182.4	183.2	0.84	56.2	183.0	126.85	0.403	1.0012	8.335	3.36	426.4
1252	182.3	183.2	0.86	56.0	182.9	126.90	0.386	1.0012	8.336	3.22	408.8
1253	182.3	183.1	0.85	55.9	182.9	127.00	0.386	1.0012	8.336	3.22	409.1
1254	182.1	183.0	0.85	55.8	182.8	127.00	0.403	1.0012	8.336	3.36	426.9
1255	182.1	182.9	0.82	55.8	182.8	127.01	0.386	1.0012	8.336	3.22	409.1
1256	182.1	182.9	0.81	55.7	182.7	127.00	0.403	1.0012	8.336	3.36	426.9
1257	182.0	182.8	0.82	55.7	182.6	126.95	0.386	1.0012	8.336	3.22	408.9
1258	181.9	182.7	0.81	55.6	182.5	126.91	0.386	1.0012	8.336	3.22	408.8
1259	181.8	182.6	0.81	55.6	182.4	126.86	0.386	1.0012	8.336	3.22	408.6
1260	181.7	182.5	0.79	55.6	182.3	126.76	0.403	1.0012	8.336	3.36	426.1
1261	181.6	182.4	0.80	55.6	182.3	126.71	0.386	1.0012	8.336	3.22	408.2
1262	181.5	182.3	0.80	55.5	182.1	126.62	0.403	1.0012	8.336	3.36	425.6
1263	181.4	182.2	0.78	55.5	182.0	126.51	0.386	1.0012	8.336	3.22	407.5
1264	181.3	182.1	0.78	55.5	181.9	126.45	0.386	1.0012	8.336	3.22	407.3
1265	181.2	182.0	0.79	55.4	181.8	126.36	0.386	1.0012	8.336	3.22	407.1
1266	181.1	181.9	0.78	55.4	181.7	126.30	0.403	1.0012	8.336	3.36	424.6
1267	181.1	181.9	0.79	55.4	181.6	126.30	0.386	1.0012	8.336	3.22	406.8
1268	180.9	181.7	0.78	55.3	181.5	126.24	0.386	1.0012	8.336	3.22	406.7
1269	180.8	181.6	0.77	55.3	181.4	126.10	0.403	1.0012	8.336	3.36	423.9
1270	180.7	181.5	0.77	55.2	181.3	126.05	0.386	1.0012	8.336	3.22	406.0
1271	180.6	181.3	0.75	55.2	181.2	126.00	0.386	1.0012	8.336	3.22	405.9
1272	180.5	181.3	0.76	55.2	181.1	125.93	0.386	1.0012	8.336	3.22	405.7
1273	180.4	181.1	0.74	55.1	181.0	125.85	0.403	1.0012	8.336	3.36	423.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1274	180.3	181.0	0.70	55.2	180.8	125.62	0.369	1.0012	8.336	3.08	387.1
1275	180.2	180.9	0.74	55.2	180.7	125.47	0.369	1.0012	8.336	3.08	386.6
1276	180.0	180.7	0.73	55.4	180.6	125.21	0.386	1.0012	8.336	3.22	403.3
1277	179.9	180.6	0.73	55.5	180.5	124.98	0.386	1.0012	8.336	3.22	402.6
1278	179.8	180.5	0.73	55.6	180.3	124.69	0.386	1.0012	8.336	3.22	401.7
1279	179.6	180.4	0.74	55.8	180.2	124.38	0.403	1.0012	8.336	3.36	418.1
1280	179.5	180.3	0.73	55.9	180.1	124.11	0.386	1.0012	8.336	3.22	399.8
1281	179.4	180.1	0.73	56.1	179.9	123.84	0.386	1.0012	8.336	3.22	398.9
1282	179.2	180.0	0.73	56.2	179.8	123.60	0.386	1.0012	8.335	3.22	398.1
1283	179.1	179.9	0.72	56.3	179.7	123.40	0.386	1.0012	8.335	3.22	397.5
1284	179.0	179.7	0.71	56.4	179.6	123.16	0.386	1.0012	8.335	3.22	396.7
1285	178.9	179.6	0.71	56.4	179.4	122.98	0.386	1.0012	8.335	3.22	396.1
1286	178.6	179.4	0.76	56.3	179.2	122.90	0.403	1.0012	8.335	3.36	413.1
1287	178.5	179.2	0.78	56.2	179.1	122.88	0.436	1.0012	8.335	3.64	447.4
1288	178.3	179.1	0.78	56.1	179.0	122.92	0.420	1.0012	8.336	3.50	430.4
1289	178.1	178.9	0.79	55.9	178.8	122.83	0.436	1.0012	8.336	3.64	447.2
1290	178.0	178.8	0.78	55.8	178.6	122.80	0.420	1.0012	8.336	3.50	430.0
1291	177.9	178.7	0.77	55.8	178.5	122.77	0.436	1.0012	8.336	3.64	447.1
1292	177.7	178.5	0.78	55.7	178.4	122.68	0.436	1.0012	8.336	3.64	446.7
1293	177.6	178.3	0.76	55.7	178.2	122.51	0.420	1.0012	8.336	3.50	428.9
1294	177.4	178.2	0.77	55.6	178.0	122.41	0.436	1.0012	8.336	3.64	445.8
1295	177.3	178.0	0.77	55.6	177.9	122.30	0.420	1.0012	8.336	3.50	428.2
1296	177.0	177.8	0.76	55.5	177.7	122.11	0.436	1.0012	8.336	3.64	444.7
1297	176.9	177.6	0.75	55.5	177.5	121.98	0.436	1.0012	8.336	3.64	444.2
1298	176.7	177.5	0.76	55.5	177.3	121.86	0.420	1.0012	8.336	3.50	426.7
1299	176.5	177.3	0.76	55.4	177.2	121.75	0.436	1.0012	8.336	3.64	443.4
1300	176.4	177.2	0.75	55.4	177.0	121.66	0.436	1.0012	8.336	3.64	443.0
1301	176.3	177.0	0.75	55.3	176.9	121.54	0.420	1.0012	8.336	3.50	425.6
1302	176.1	176.8	0.74	55.3	176.7	121.46	0.436	1.0012	8.336	3.64	442.3
1303	175.9	176.7	0.76	55.2	176.5	121.29	0.436	1.0012	8.336	3.64	441.7
1304	175.7	176.5	0.74	55.1	176.3	121.18	0.420	1.0012	8.336	3.50	424.3
1305	175.6	176.3	0.74	55.1	176.2	121.08	0.436	1.0012	8.336	3.64	440.9
1306	175.5	176.2	0.75	55.0	176.0	121.01	0.436	1.0012	8.337	3.64	440.7
1307	175.3	176.0	0.74	55.0	175.9	120.90	0.420	1.0012	8.337	3.50	423.3
1308	175.1	175.8	0.73	55.0	175.7	120.73	0.436	1.0012	8.337	3.64	439.7
1309	175.0	175.7	0.73	54.9	175.5	120.63	0.436	1.0012	8.337	3.64	439.3
1310	174.8	175.6	0.73	54.9	175.4	120.56	0.436	1.0012	8.337	3.64	439.0
1311	174.7	175.4	0.72	54.9	175.3	120.34	0.420	1.0012	8.337	3.50	421.4
1312	174.5	175.2	0.73	55.0	175.1	120.04	0.436	1.0012	8.337	3.64	437.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1313	174.3	175.1	0.71	55.2	174.9	119.71	0.436	1.0012	8.336	3.64	435.9
1314	174.2	174.9	0.72	55.3	174.7	119.40	0.420	1.0012	8.336	3.50	418.1
1315	174.0	174.7	0.73	55.5	174.6	119.13	0.436	1.0012	8.336	3.64	433.8
1316	173.8	174.6	0.72	55.6	174.4	118.80	0.436	1.0012	8.336	3.64	432.6
1317	173.7	174.4	0.71	55.8	174.3	118.51	0.436	1.0012	8.336	3.64	431.5
1318	173.6	174.3	0.72	55.9	174.1	118.22	0.420	1.0012	8.336	3.50	413.9
1319	173.4	174.1	0.70	56.0	174.0	117.94	0.436	1.0012	8.336	3.64	429.4
1320	173.2	173.9	0.70	56.1	173.8	117.62	0.436	1.0012	8.335	3.64	428.3
1321	173.0	173.7	0.71	56.3	173.6	117.33	0.420	1.0012	8.335	3.50	410.8
1322	172.9	173.5	0.69	56.4	173.4	117.02	0.436	1.0012	8.335	3.64	426.1
1323	172.7	173.4	0.69	56.5	173.3	116.77	0.436	1.0012	8.335	3.64	425.2
1324	172.6	173.2	0.68	56.6	173.1	116.50	0.436	1.0012	8.335	3.64	424.2
1325	172.4	173.1	0.69	56.7	172.9	116.26	0.436	1.0012	8.335	3.64	423.3
1326	172.2	172.9	0.68	56.8	172.8	115.99	0.420	1.0012	8.335	3.50	406.1
1327	172.0	172.7	0.67	56.9	172.6	115.66	0.436	1.0012	8.335	3.64	421.1
1328	171.9	172.6	0.67	57.0	172.4	115.43	0.436	1.0012	8.335	3.64	420.3
1329	171.7	172.4	0.66	57.0	172.2	115.21	0.436	1.0012	8.335	3.64	419.4
1330	171.6	172.2	0.65	57.0	172.1	115.08	0.420	1.0012	8.335	3.50	402.9
1331	171.4	172.0	0.67	56.8	171.9	115.12	0.436	1.0012	8.335	3.64	419.1
1332	171.2	171.9	0.66	56.6	171.8	115.14	0.436	1.0012	8.335	3.64	419.2
1333	171.2	171.7	0.57	56.5	171.6	115.13	0.403	1.0012	8.335	3.36	386.9
1334	170.9	171.6	0.62	56.3	171.4	115.09	0.420	1.0012	8.335	3.50	402.9
1335	170.8	171.4	0.63	56.2	171.3	115.06	0.420	1.0012	8.335	3.50	402.8
1336	170.6	171.2	0.64	56.1	171.1	114.97	0.420	1.0012	8.336	3.50	402.5
1337	170.4	171.0	0.68	56.0	170.9	114.86	0.436	1.0012	8.336	3.64	418.2
1338	170.2	170.9	0.66	56.0	170.8	114.79	0.436	1.0012	8.336	3.64	418.0
1339	170.1	170.7	0.66	55.9	170.6	114.72	0.436	1.0012	8.336	3.64	417.7
1340	169.9	170.5	0.66	55.8	170.4	114.61	0.436	1.0012	8.336	3.64	417.3
1341	169.7	170.3	0.66	55.7	170.2	114.46	0.436	1.0012	8.336	3.64	416.8
1342	169.5	170.2	0.66	55.7	170.0	114.36	0.436	1.0012	8.336	3.64	416.4
1343	169.3	170.0	0.66	55.6	169.8	114.24	0.436	1.0012	8.336	3.64	416.0
1344	169.2	169.8	0.65	55.5	169.7	114.15	0.436	1.0012	8.336	3.64	415.7
1345	169.1	169.7	0.59	55.5	169.5	114.07	0.420	1.0012	8.336	3.50	399.4
1346	168.9	169.5	0.65	55.4	169.4	114.00	0.436	1.0012	8.336	3.64	415.1
1347	168.7	169.3	0.65	55.3	169.2	113.85	0.436	1.0012	8.336	3.64	414.6
1348	168.5	169.1	0.65	55.3	169.0	113.73	0.436	1.0012	8.336	3.64	414.1
1349	168.3	168.9	0.63	55.2	168.8	113.61	0.436	1.0012	8.336	3.64	413.7
1350	168.1	168.8	0.63	55.2	168.6	113.47	0.436	1.0012	8.336	3.64	413.2
1351	168.0	168.6	0.63	55.1	168.4	113.33	0.436	1.0012	8.336	3.64	412.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1352	167.8	168.4	0.64	55.1	168.3	113.23	0.436	1.0012	8.337	3.64	412.3
1353	167.7	168.3	0.63	55.0	168.1	113.11	0.436	1.0012	8.337	3.64	411.9
1354	167.5	168.1	0.64	55.0	168.0	113.00	0.436	1.0012	8.337	3.64	411.5
1355	167.4	168.0	0.58	55.0	167.8	112.84	0.436	1.0012	8.337	3.64	410.9
1356	167.1	167.8	0.63	54.9	167.6	112.70	0.436	1.0012	8.337	3.64	410.4
1357	167.0	167.6	0.62	54.9	167.4	112.53	0.436	1.0012	8.337	3.64	409.8
1358	166.8	167.4	0.63	54.9	167.2	112.33	0.436	1.0012	8.337	3.64	409.1
1359	166.6	167.3	0.61	54.9	167.1	112.16	0.436	1.0012	8.337	3.64	408.5
1360	166.5	167.1	0.62	55.1	167.0	111.87	0.436	1.0012	8.337	3.64	407.4
1361	166.3	166.9	0.61	55.3	166.7	111.48	0.436	1.0012	8.336	3.64	406.0
1362	166.1	166.7	0.60	55.4	166.6	111.12	0.436	1.0012	8.336	3.64	404.7
1363	165.9	166.5	0.61	55.6	166.4	110.78	0.436	1.0012	8.336	3.64	403.4
1364	165.8	166.4	0.57	55.7	166.2	110.47	0.420	1.0012	8.336	3.50	386.8
1365	165.6	166.2	0.60	55.9	166.0	110.13	0.436	1.0012	8.336	3.64	401.0
1366	165.4	166.0	0.59	56.1	165.9	109.79	0.436	1.0012	8.336	3.64	399.8
1367	165.2	165.8	0.58	56.2	165.7	109.45	0.436	1.0012	8.335	3.64	398.5
1368	165.2	165.7	0.52	56.4	165.5	109.17	0.420	1.0012	8.335	3.50	382.2
1369	164.9	165.5	0.58	56.4	165.4	108.93	0.436	1.0012	8.335	3.64	396.6
1370	164.8	165.3	0.58	56.6	165.2	108.63	0.436	1.0012	8.335	3.64	395.5
1371	164.6	165.1	0.58	56.6	165.0	108.36	0.436	1.0012	8.335	3.64	394.5
1372	164.4	165.0	0.58	56.6	164.8	108.19	0.453	1.0012	8.335	3.78	409.1
1373	164.2	164.8	0.57	56.5	164.7	108.13	0.436	1.0012	8.335	3.64	393.7
1374	164.1	164.6	0.57	56.4	164.5	108.09	0.436	1.0012	8.335	3.64	393.6
1375	163.9	164.5	0.57	56.3	164.3	108.04	0.436	1.0012	8.335	3.64	393.4
1376	163.7	164.3	0.56	56.2	164.2	108.00	0.436	1.0012	8.335	3.64	393.2
1377	163.5	164.1	0.57	56.1	164.0	107.89	0.436	1.0012	8.336	3.64	392.8
1378	163.4	163.9	0.57	56.0	163.8	107.81	0.453	1.0012	8.336	3.78	407.7
1379	163.2	163.8	0.56	55.9	163.6	107.70	0.436	1.0012	8.336	3.64	392.1
1380	163.0	163.6	0.56	55.9	163.5	107.60	0.436	1.0012	8.336	3.64	391.8
1381	162.9	163.4	0.57	55.8	163.3	107.47	0.436	1.0012	8.336	3.64	391.3
1382	162.7	163.3	0.57	55.7	163.1	107.38	0.436	1.0012	8.336	3.64	391.0
1383	162.5	163.1	0.55	55.7	163.0	107.30	0.453	1.0012	8.336	3.78	405.8
1384	162.4	162.9	0.55	55.6	162.8	107.19	0.436	1.0012	8.336	3.64	390.3
1385	162.2	162.7	0.55	55.5	162.6	107.09	0.436	1.0012	8.336	3.64	390.0
1386	162.0	162.6	0.55	55.4	162.4	107.02	0.453	1.0012	8.336	3.78	404.7
1387	161.9	162.4	0.55	55.4	162.3	106.90	0.436	1.0012	8.336	3.64	389.3
1388	161.7	162.2	0.55	55.3	162.1	106.79	0.436	1.0012	8.336	3.64	388.9
1389	161.5	162.0	0.54	55.2	161.9	106.68	0.436	1.0012	8.336	3.64	388.5
1390	161.3	161.9	0.54	55.2	161.7	106.59	0.453	1.0012	8.336	3.78	403.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1391	161.2	161.7	0.54	55.1	161.6	106.48	0.436	1.0012	8.337	3.64	387.8
1392	161.0	161.5	0.53	55.0	161.4	106.39	0.436	1.0012	8.337	3.64	387.4
1393	160.8	161.4	0.53	54.9	161.2	106.29	0.436	1.0012	8.337	3.64	387.1
1394	160.7	161.2	0.52	54.9	161.1	106.18	0.436	1.0012	8.337	3.64	386.7
1395	160.5	161.0	0.52	54.8	160.9	106.03	0.436	1.0012	8.337	3.64	386.1
1396	160.3	160.8	0.53	54.8	160.7	105.91	0.453	1.0012	8.337	3.78	400.5
1397	160.1	160.7	0.53	54.7	160.5	105.78	0.436	1.0012	8.337	3.64	385.2
1398	160.0	160.5	0.52	54.7	160.3	105.64	0.436	1.0012	8.337	3.64	384.7
1399	159.8	160.3	0.52	54.7	160.2	105.49	0.436	1.0012	8.337	3.64	384.2
1400	159.6	160.1	0.51	54.7	160.0	105.35	0.436	1.0012	8.337	3.64	383.7
1401	159.5	160.0	0.52	54.6	159.8	105.18	0.436	1.0012	8.337	3.64	383.0
1402	159.3	159.8	0.51	54.6	159.7	105.07	0.453	1.0012	8.337	3.78	397.4
1403	159.2	159.7	0.51	54.6	159.5	104.90	0.436	1.0012	8.337	3.64	382.0
1404	159.1	159.6	0.51	54.6	159.4	104.79	0.436	1.0012	8.337	3.64	381.6
1405	159.0	159.5	0.50	54.7	159.3	104.65	0.436	1.0012	8.337	3.64	381.1
1406	159.0	159.5	0.52	54.8	159.3	104.51	0.436	1.0012	8.337	3.64	380.6
1407	159.1	159.6	0.53	54.9	159.4	104.42	0.436	1.0012	8.337	3.64	380.3
1408	159.4	160.0	0.53	55.1	159.6	104.53	0.436	1.0012	8.336	3.64	380.7
1409	159.8	160.3	0.56	55.2	160.0	104.73	0.436	1.0012	8.336	3.64	381.4
1410	160.3	160.9	0.55	55.4	160.4	105.05	0.436	1.0012	8.336	3.64	382.5
1411	160.9	161.4	0.58	55.5	161.0	105.45	0.436	1.0012	8.336	3.64	384.0
1412	161.6	162.2	0.59	55.7	161.7	105.98	0.436	1.0012	8.336	3.64	385.9
1413	162.4	163.0	0.60	55.8	162.5	106.64	0.436	1.0012	8.336	3.64	388.3
1414	163.3	163.9	0.61	55.9	163.4	107.43	0.436	1.0012	8.336	3.64	391.2
1415	164.2	164.8	0.62	56.0	164.3	108.25	0.436	1.0012	8.336	3.64	394.1
1416	165.1	165.8	0.64	56.1	165.2	109.04	0.436	1.0012	8.335	3.64	397.0
1417	166.1	166.7	0.66	56.3	166.1	109.89	0.436	1.0012	8.335	3.64	400.1
1418	167.2	167.9	0.67	56.4	167.2	110.85	0.436	1.0012	8.335	3.64	403.6
1419	168.1	168.8	0.67	56.5	168.2	111.79	0.436	1.0012	8.335	3.64	407.0
1420	169.2	169.9	0.72	56.6	169.3	112.70	0.436	1.0012	8.335	3.64	410.3
1421	170.1	170.9	0.72	56.6	170.3	113.62	0.420	1.0012	8.335	3.50	397.8
1422	171.2	171.9	0.73	56.7	171.3	114.53	0.436	1.0012	8.335	3.64	417.0
1423	172.2	173.0	0.74	56.8	172.4	115.58	0.436	1.0012	8.335	3.64	420.8
1424	173.2	173.9	0.75	56.9	173.4	116.51	0.436	1.0012	8.335	3.64	424.2
1425	174.2	174.9	0.77	56.9	174.4	117.44	0.420	1.0012	8.335	3.50	411.1
1426	175.1	175.9	0.79	57.0	175.3	118.34	0.436	1.0012	8.335	3.64	430.8
1427	176.2	177.0	0.80	57.0	176.4	119.40	0.420	1.0012	8.335	3.50	418.0
1428	177.2	178.0	0.79	57.1	177.4	120.36	0.436	1.0012	8.335	3.64	438.2
1429	178.1	179.0	0.85	57.1	178.4	121.28	0.436	1.0012	8.335	3.64	441.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1430	179.2	180.0	0.87	57.2	179.4	122.22	0.420	1.0012	8.334	3.50	427.8
1431	180.2	181.1	0.88	57.2	180.5	123.37	0.436	1.0012	8.334	3.64	449.1
1432	181.3	182.2	0.90	57.1	181.6	124.45	0.420	1.0012	8.334	3.50	435.7
1433	181.8	182.7	0.92	57.0	182.3	125.31	0.436	1.0012	8.335	3.64	456.2
1434	182.1	183.1	0.91	56.7	182.7	125.94	0.420	1.0012	8.335	3.50	440.9
1435	182.5	183.4	0.94	56.6	183.1	126.52	0.436	1.0012	8.335	3.64	460.7
1436	182.7	183.7	0.96	56.4	183.4	126.99	0.436	1.0012	8.335	3.64	462.4
1437	183.0	184.0	0.98	56.2	183.7	127.46	0.420	1.0012	8.335	3.50	446.2
1438	183.2	184.2	0.97	56.1	183.9	127.79	0.436	1.0012	8.336	3.64	465.3
1439	183.3	184.3	0.98	56.0	184.0	128.04	0.436	1.0012	8.336	3.64	466.2
1440	183.4	184.4	0.98	55.9	184.1	128.24	0.436	1.0012	8.336	3.64	467.0
1441	183.5	184.5	0.92	55.8	184.2	128.43	0.403	1.0012	8.336	3.36	431.7
1442	183.7	184.6	0.83	55.8	184.3	128.53	0.369	1.0012	8.336	3.08	396.0
1443	183.8	184.6	0.84	55.8	184.4	128.56	0.369	1.0012	8.336	3.08	396.1
1444	183.7	184.6	0.88	56.0	184.4	128.45	0.386	1.0012	8.336	3.22	413.7
1445	183.8	184.6	0.87	56.1	184.4	128.33	0.386	1.0012	8.336	3.22	413.4
1446	183.8	184.7	0.87	56.3	184.4	128.18	0.386	1.0012	8.335	3.22	412.9
1447	183.8	184.6	0.85	56.4	184.4	128.06	0.369	1.0012	8.335	3.08	394.5
1448	183.8	184.6	0.86	56.5	184.4	127.89	0.386	1.0012	8.335	3.22	411.9
1449	183.7	184.6	0.87	56.6	184.4	127.80	0.386	1.0012	8.335	3.22	411.6
1450	183.7	184.6	0.88	56.7	184.4	127.66	0.386	1.0012	8.335	3.22	411.2
1451	183.6	184.5	0.87	56.8	184.3	127.51	0.386	1.0012	8.335	3.22	410.7
1452	183.6	184.5	0.86	56.9	184.2	127.39	0.386	1.0012	8.335	3.22	410.3
1453	183.6	184.4	0.85	56.9	184.2	127.34	0.369	1.0012	8.335	3.08	392.3
1454	183.5	184.4	0.85	57.0	184.1	127.17	0.386	1.0012	8.335	3.22	409.6
1455	183.5	184.3	0.84	57.0	184.1	127.10	0.386	1.0012	8.335	3.22	409.3
1456	183.4	184.2	0.85	57.1	184.1	126.97	0.386	1.0012	8.335	3.22	408.9
1457	183.3	184.2	0.85	57.2	184.0	126.83	0.369	1.0012	8.334	3.08	390.7
1458	183.3	184.1	0.83	57.2	183.9	126.73	0.386	1.0012	8.334	3.22	408.2
1459	183.2	184.1	0.85	57.3	183.9	126.60	0.386	1.0012	8.334	3.22	407.7
1460	183.2	184.0	0.83	57.3	183.8	126.47	0.386	1.0012	8.334	3.22	407.3
1461	183.1	183.9	0.84	57.4	183.7	126.34	0.369	1.0012	8.334	3.08	389.2
1462	183.1	183.9	0.81	57.5	183.7	126.21	0.386	1.0012	8.334	3.22	406.5
1463	182.9	183.8	0.81	57.5	183.6	126.07	0.386	1.0012	8.334	3.22	406.0
1464	182.8	183.6	0.80	57.6	183.5	125.88	0.386	1.0012	8.334	3.22	405.4
1465	182.7	183.6	0.82	57.6	183.4	125.73	0.369	1.0012	8.334	3.08	387.3
1466	182.7	183.5	0.80	57.7	183.3	125.59	0.386	1.0012	8.334	3.22	404.4
1467	182.6	183.4	0.82	57.7	183.2	125.46	0.386	1.0012	8.334	3.22	404.0
1468	182.5	183.3	0.81	57.8	183.1	125.37	0.369	1.0012	8.334	3.08	386.2

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1469	182.4	183.2	0.81	57.8	183.0	125.20	0.386	1.0012	8.334	3.22	403.2
1470	182.3	183.1	0.80	57.8	182.9	125.15	0.386	1.0012	8.334	3.22	403.0
1471	182.2	183.0	0.79	57.6	182.8	125.21	0.386	1.0012	8.334	3.22	403.2
1472	182.1	182.9	0.81	57.4	182.7	125.33	0.386	1.0012	8.334	3.22	403.6
1473	182.0	182.8	0.78	57.2	182.6	125.40	0.369	1.0012	8.334	3.08	386.3
1474	181.9	182.7	0.75	57.0	182.5	125.53	0.386	1.0012	8.335	3.22	404.3
1475	181.8	182.5	0.78	56.8	182.4	125.58	0.386	1.0012	8.335	3.22	404.4
1476	181.7	182.4	0.75	56.7	182.2	125.59	0.386	1.0012	8.335	3.22	404.5
1477	181.6	182.3	0.76	56.5	182.1	125.60	0.386	1.0012	8.335	3.22	404.6
1478	181.4	182.2	0.76	56.4	182.0	125.59	0.369	1.0012	8.335	3.08	386.9
1479	181.3	182.1	0.76	56.3	181.9	125.59	0.386	1.0012	8.335	3.22	404.5
1480	181.2	182.0	0.75	56.2	181.8	125.54	0.386	1.0012	8.335	3.22	404.4
1481	181.1	181.8	0.73	56.2	181.6	125.46	0.386	1.0012	8.335	3.22	404.1
1482	181.0	181.7	0.74	56.1	181.6	125.45	0.369	1.0012	8.336	3.08	386.5
1483	180.8	181.6	0.75	56.0	181.4	125.42	0.386	1.0012	8.336	3.22	404.0
1484	180.7	181.5	0.74	55.9	181.3	125.34	0.386	1.0012	8.336	3.22	403.7
1485	180.6	181.4	0.74	55.9	181.2	125.31	0.386	1.0012	8.336	3.22	403.6
1486	180.5	181.2	0.73	55.8	181.0	125.21	0.369	1.0012	8.336	3.08	385.8
1487	180.3	181.0	0.73	55.7	180.9	125.15	0.386	1.0012	8.336	3.22	403.1
1488	180.2	181.0	0.74	55.7	180.8	125.10	0.386	1.0012	8.336	3.22	403.0
1489	180.1	180.8	0.72	55.6	180.7	125.09	0.386	1.0012	8.336	3.22	403.0
1490	180.0	180.7	0.73	55.5	180.5	125.01	0.386	1.0012	8.336	3.22	402.7
1491	179.8	180.5	0.73	55.5	180.3	124.89	0.386	1.0012	8.336	3.22	402.3
1492	179.7	180.4	0.71	55.4	180.2	124.83	0.386	1.0012	8.336	3.22	402.1
1493	179.5	180.3	0.71	55.3	180.1	124.75	0.386	1.0012	8.336	3.22	401.9
1494	179.4	180.1	0.71	55.3	180.0	124.71	0.369	1.0012	8.336	3.08	384.3
1495	179.3	180.0	0.72	55.2	179.8	124.59	0.386	1.0012	8.336	3.22	401.4
1496	179.1	179.9	0.71	55.2	179.7	124.50	0.386	1.0012	8.336	3.22	401.1
1497	179.0	179.7	0.70	55.1	179.6	124.44	0.386	1.0012	8.336	3.22	400.9
1498	178.9	179.6	0.69	55.1	179.4	124.34	0.386	1.0012	8.336	3.22	400.6
1499	178.7	179.4	0.70	55.1	179.3	124.22	0.386	1.0012	8.337	3.22	400.2
1500	178.6	179.3	0.69	55.0	179.1	124.09	0.386	1.0012	8.337	3.22	399.7
1501	178.5	179.1	0.69	55.0	179.0	124.00	0.369	1.0012	8.337	3.08	382.1
1502	178.2	178.9	0.69	55.0	178.8	123.82	0.386	1.0012	8.337	3.22	398.9
1503	178.1	178.8	0.70	54.9	178.6	123.71	0.386	1.0012	8.337	3.22	398.5
1504	178.0	178.7	0.68	54.9	178.5	123.61	0.386	1.0012	8.337	3.22	398.2
1505	177.9	178.5	0.68	54.9	178.4	123.47	0.386	1.0012	8.337	3.22	397.8
1506	177.7	178.4	0.68	54.9	178.2	123.35	0.386	1.0012	8.337	3.22	397.4
1507	177.6	178.3	0.66	54.9	178.1	123.23	0.386	1.0012	8.337	3.22	397.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1508	177.4	178.1	0.67	54.8	177.9	123.09	0.369	1.0012	8.337	3.08	379.3
1509	177.3	177.9	0.66	54.9	177.8	122.92	0.386	1.0012	8.337	3.22	396.0
1510	177.1	177.8	0.66	54.9	177.6	122.66	0.386	1.0012	8.337	3.22	395.1
1511	177.0	177.6	0.65	55.1	177.5	122.40	0.386	1.0012	8.337	3.22	394.3
1512	176.9	177.5	0.66	55.3	177.4	122.12	0.386	1.0012	8.336	3.22	393.4
1513	176.8	177.4	0.67	55.4	177.3	121.85	0.386	1.0012	8.336	3.22	392.5
1514	176.6	177.3	0.67	55.6	177.1	121.53	0.386	1.0012	8.336	3.22	391.5
1515	176.5	177.1	0.65	55.7	177.0	121.25	0.369	1.0012	8.336	3.08	373.6
1516	176.3	177.0	0.64	55.9	176.8	120.96	0.386	1.0012	8.336	3.22	389.6
1517	176.2	176.8	0.65	56.0	176.7	120.69	0.386	1.0012	8.336	3.22	388.7
1518	176.0	176.6	0.64	56.1	176.5	120.39	0.386	1.0012	8.336	3.22	387.8
1519	175.9	176.5	0.64	56.2	176.4	120.13	0.386	1.0012	8.335	3.22	387.0
1520	175.8	176.4	0.64	56.3	176.2	119.91	0.386	1.0012	8.335	3.22	386.2
1521	175.6	176.3	0.64	56.4	176.1	119.69	0.386	1.0012	8.335	3.22	385.5
1522	175.4	176.1	0.65	56.5	175.9	119.41	0.386	1.0012	8.335	3.22	384.6
1523	175.3	175.9	0.64	56.6	175.8	119.17	0.386	1.0012	8.335	3.22	383.8
1524	175.2	175.8	0.63	56.7	175.7	118.96	0.386	1.0012	8.335	3.22	383.1
1525	175.0	175.6	0.63	56.8	175.5	118.72	0.386	1.0012	8.335	3.22	382.4
1526	174.8	175.5	0.62	56.9	175.3	118.44	0.386	1.0012	8.335	3.22	381.5
1527	174.7	175.3	0.62	57.0	175.1	118.18	0.386	1.0012	8.335	3.22	380.6
1528	174.6	175.2	0.61	57.0	175.0	117.96	0.386	1.0012	8.335	3.22	379.9
1529	174.4	175.0	0.61	57.1	174.9	117.73	0.386	1.0012	8.334	3.22	379.2
1530	174.2	174.8	0.62	57.2	174.7	117.49	0.386	1.0012	8.334	3.22	378.4
1531	174.1	174.7	0.61	57.3	174.5	117.23	0.386	1.0012	8.334	3.22	377.5
1532	174.0	174.6	0.60	57.3	174.4	117.06	0.386	1.0012	8.334	3.22	377.0
1533	173.8	174.4	0.59	57.4	174.2	116.85	0.369	1.0012	8.334	3.08	360.0
1534	173.7	174.3	0.59	57.4	174.1	116.72	0.386	1.0012	8.334	3.22	375.9
1535	173.5	174.1	0.59	57.4	173.9	116.48	0.386	1.0012	8.334	3.22	375.1
1536	173.4	174.0	0.59	57.5	173.8	116.31	0.386	1.0012	8.334	3.22	374.6
1537	173.2	173.8	0.58	57.5	173.6	116.11	0.386	1.0012	8.334	3.22	373.9
1538	173.0	173.6	0.58	57.5	173.5	115.94	0.386	1.0012	8.334	3.22	373.4
1539	172.9	173.5	0.59	57.4	173.3	115.86	0.369	1.0012	8.334	3.08	356.9
1540	172.8	173.4	0.60	57.2	173.2	115.96	0.386	1.0012	8.334	3.22	373.5
1541	172.6	173.2	0.59	57.0	173.1	116.08	0.386	1.0012	8.335	3.22	373.9
1542	172.5	173.1	0.58	56.8	172.9	116.10	0.386	1.0012	8.335	3.22	373.9
1543	172.3	172.9	0.59	56.6	172.7	116.09	0.386	1.0012	8.335	3.22	373.9
1544	172.2	172.7	0.58	56.5	172.6	116.10	0.386	1.0012	8.335	3.22	373.9
1545	172.0	172.5	0.57	56.4	172.4	116.01	0.386	1.0012	8.335	3.22	373.7
1546	171.8	172.4	0.58	56.3	172.2	115.96	0.386	1.0012	8.335	3.22	373.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1547	171.7	172.3	0.58	56.2	172.1	115.93	0.386	1.0012	8.335	3.22	373.4
1548	171.5	172.1	0.59	56.1	172.0	115.90	0.386	1.0012	8.336	3.22	373.3
1549	171.3	171.9	0.58	56.0	171.8	115.81	0.386	1.0012	8.336	3.22	373.0
1550	171.2	171.8	0.56	55.9	171.6	115.71	0.386	1.0012	8.336	3.22	372.7
1551	171.0	171.6	0.58	55.8	171.4	115.60	0.386	1.0012	8.336	3.22	372.4
1552	170.9	171.5	0.58	55.8	171.3	115.56	0.386	1.0012	8.336	3.22	372.2
1553	170.8	171.3	0.58	55.7	171.2	115.48	0.386	1.0012	8.336	3.22	372.0
1554	170.6	171.2	0.57	55.6	171.0	115.39	0.386	1.0012	8.336	3.22	371.7
1555	170.4	171.0	0.58	55.6	170.8	115.27	0.386	1.0012	8.336	3.22	371.3
1556	170.3	170.8	0.57	55.5	170.7	115.18	0.386	1.0012	8.336	3.22	371.0
1557	170.1	170.7	0.57	55.4	170.5	115.06	0.386	1.0012	8.336	3.22	370.7
1558	170.0	170.5	0.58	55.4	170.4	114.99	0.386	1.0012	8.336	3.22	370.4
1559	169.8	170.4	0.56	55.3	170.2	114.93	0.386	1.0012	8.336	3.22	370.2
1560	169.6	170.2	0.56	55.2	170.1	114.84	0.386	1.0012	8.336	3.22	369.9
1561	169.5	170.1	0.57	55.2	169.9	114.70	0.386	1.0012	8.336	3.22	369.5
1562	169.4	169.9	0.56	55.1	169.8	114.66	0.386	1.0012	8.336	3.22	369.4
1563	169.2	169.8	0.55	55.0	169.6	114.55	0.386	1.0012	8.337	3.22	369.0
1564	169.0	169.6	0.56	55.0	169.4	114.42	0.386	1.0012	8.337	3.22	368.6
1565	168.9	169.4	0.55	54.9	169.2	114.30	0.386	1.0012	8.337	3.22	368.2
1566	168.7	169.2	0.54	54.9	169.1	114.18	0.386	1.0012	8.337	3.22	367.8
1567	168.5	169.1	0.54	54.9	168.9	114.06	0.386	1.0012	8.337	3.22	367.4
1568	168.4	168.9	0.54	54.8	168.7	113.89	0.386	1.0012	8.337	3.22	366.9
1569	168.2	168.7	0.55	54.8	168.6	113.75	0.403	1.0012	8.337	3.36	382.4
1570	168.0	168.6	0.56	54.8	168.4	113.61	0.386	1.0012	8.337	3.22	366.0
1571	167.9	168.4	0.53	54.8	168.3	113.48	0.386	1.0012	8.337	3.22	365.6
1572	167.7	168.2	0.54	54.8	168.1	113.34	0.386	1.0012	8.337	3.22	365.1
1573	167.6	168.1	0.54	54.8	167.9	113.13	0.386	1.0012	8.337	3.22	364.5
1574	167.4	167.9	0.54	54.9	167.8	112.93	0.386	1.0012	8.337	3.22	363.8
1575	167.3	167.8	0.51	55.0	167.6	112.63	0.386	1.0012	8.337	3.22	362.8
1576	167.1	167.6	0.52	55.1	167.5	112.33	0.386	1.0012	8.336	3.22	361.9
1577	167.0	167.5	0.52	55.3	167.3	112.03	0.386	1.0012	8.336	3.22	360.9
1578	166.8	167.3	0.52	55.5	167.2	111.71	0.386	1.0012	8.336	3.22	359.9
1579	166.6	167.2	0.52	55.6	167.0	111.38	0.386	1.0012	8.336	3.22	358.8
1580	166.5	167.0	0.51	55.7	166.8	111.09	0.386	1.0012	8.336	3.22	357.9
1581	166.3	166.8	0.51	55.9	166.7	110.79	0.369	1.0012	8.336	3.08	341.4
1582	166.2	166.7	0.52	56.0	166.5	110.54	0.403	1.0012	8.336	3.36	371.5
1583	166.0	166.5	0.51	56.1	166.4	110.24	0.369	1.0012	8.335	3.08	339.7
1584	165.9	166.4	0.50	56.2	166.2	109.99	0.386	1.0012	8.335	3.22	354.3
1585	165.7	166.2	0.50	56.3	166.0	109.73	0.386	1.0012	8.335	3.22	353.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1586	165.5	166.0	0.48	56.4	165.9	109.44	0.386	1.0012	8.335	3.22	352.5
1587	165.4	165.9	0.50	56.5	165.7	109.21	0.386	1.0012	8.335	3.22	351.7
1588	165.3	165.7	0.49	56.7	165.6	108.97	0.386	1.0012	8.335	3.22	351.0
1589	165.1	165.6	0.49	56.7	165.4	108.68	0.386	1.0012	8.335	3.22	350.0
1590	164.9	165.4	0.49	56.8	165.3	108.44	0.386	1.0012	8.335	3.22	349.3
1591	164.8	165.3	0.48	56.9	165.1	108.24	0.386	1.0012	8.335	3.22	348.6
1592	164.6	165.1	0.48	57.0	165.0	108.03	0.386	1.0012	8.335	3.22	347.9
1593	164.5	165.0	0.48	57.0	164.8	107.78	0.386	1.0012	8.335	3.22	347.1
1594	164.3	164.8	0.47	57.1	164.7	107.57	0.386	1.0012	8.335	3.22	346.4
1595	164.2	164.7	0.46	57.2	164.5	107.35	0.386	1.0012	8.334	3.22	345.7
1596	164.0	164.5	0.46	57.2	164.3	107.13	0.386	1.0012	8.334	3.22	345.0
1597	163.9	164.3	0.46	57.3	164.2	106.93	0.386	1.0012	8.334	3.22	344.4
1598	163.7	164.2	0.46	57.3	164.0	106.75	0.369	1.0012	8.334	3.08	328.8
1599	163.6	164.0	0.46	57.3	163.9	106.58	0.386	1.0012	8.334	3.22	343.2
1600	163.4	163.9	0.45	57.3	163.7	106.41	0.386	1.0012	8.334	3.22	342.7
1601	163.3	163.7	0.45	57.4	163.6	106.21	0.386	1.0012	8.334	3.22	342.1
1602	163.1	163.6	0.45	57.4	163.4	106.02	0.386	1.0012	8.334	3.22	341.5
1603	163.0	163.4	0.44	57.4	163.3	105.83	0.386	1.0012	8.334	3.22	340.8
1604	162.8	163.2	0.44	57.5	163.1	105.64	0.386	1.0012	8.334	3.22	340.2
1605	162.7	163.1	0.44	57.5	162.9	105.46	0.369	1.0012	8.334	3.08	324.9
1606	162.5	163.0	0.44	57.5	162.8	105.28	0.386	1.0012	8.334	3.22	339.1
1607	162.4	162.8	0.44	57.5	162.7	105.11	0.386	1.0012	8.334	3.22	338.5
1608	162.2	162.7	0.43	57.6	162.5	104.95	0.386	1.0012	8.334	3.22	338.0
1609	162.1	162.5	0.43	57.6	162.3	104.77	0.386	1.0012	8.334	3.22	337.4
1610	161.9	162.3	0.43	57.5	162.2	104.65	0.386	1.0012	8.334	3.22	337.0
1611	161.8	162.2	0.43	57.3	162.0	104.71	0.386	1.0012	8.334	3.22	337.2
1612	161.6	162.0	0.42	57.1	161.9	104.77	0.369	1.0012	8.335	3.08	322.7
1613	161.5	161.9	0.42	56.9	161.7	104.83	0.386	1.0012	8.335	3.22	337.6
1614	161.3	161.7	0.42	56.7	161.6	104.88	0.386	1.0012	8.335	3.22	337.8
1615	161.1	161.6	0.42	56.5	161.4	104.87	0.386	1.0012	8.335	3.22	337.8
1616	161.0	161.4	0.41	56.4	161.3	104.86	0.369	1.0012	8.335	3.08	323.1
1617	160.9	161.3	0.42	56.3	161.1	104.84	0.386	1.0012	8.335	3.22	337.7
1618	160.7	161.1	0.42	56.2	161.0	104.77	0.386	1.0012	8.335	3.22	337.5
1619	160.5	161.0	0.42	56.1	160.8	104.74	0.386	1.0012	8.336	3.22	337.4
1620	160.4	160.8	0.42	56.0	160.7	104.68	0.369	1.0012	8.336	3.08	322.5
1621	160.2	160.6	0.41	55.9	160.5	104.59	0.386	1.0012	8.336	3.22	336.9
1622	160.1	160.5	0.41	55.8	160.3	104.50	0.386	1.0012	8.336	3.22	336.6
1623	159.9	160.3	0.42	55.8	160.2	104.43	0.369	1.0012	8.336	3.08	321.8
1624	159.8	160.2	0.37	55.7	160.1	104.36	0.369	1.0012	8.336	3.08	321.6

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1625	159.5	160.0	0.52	55.6	159.9	104.29	0.436	1.0012	8.336	3.64	379.8
1626	159.3	159.8	0.53	55.5	159.7	104.16	0.453	1.0012	8.336	3.78	393.9
1627	159.1	159.7	0.53	55.4	159.5	104.07	0.453	1.0012	8.336	3.78	393.5
1628	159.0	159.5	0.54	55.3	159.3	104.02	0.453	1.0012	8.336	3.78	393.3
1629	158.9	159.4	0.54	55.2	159.3	104.01	0.453	1.0012	8.336	3.78	393.3
1630	158.9	159.4	0.54	55.2	159.2	104.03	0.453	1.0012	8.336	3.78	393.4
1631	158.9	159.4	0.54	55.1	159.2	104.16	0.453	1.0012	8.337	3.78	393.9
1632	159.1	159.6	0.55	55.0	159.3	104.33	0.453	1.0012	8.337	3.78	394.6
1633	159.3	159.8	0.56	54.9	159.5	104.65	0.453	1.0012	8.337	3.78	395.8
1634	159.6	160.2	0.58	54.8	159.8	105.03	0.436	1.0012	8.337	3.64	382.5
1635	160.1	160.7	0.58	54.7	160.3	105.53	0.453	1.0012	8.337	3.78	399.1
1636	160.7	161.3	0.61	54.7	160.9	106.17	0.453	1.0012	8.337	3.78	401.5
1637	161.5	162.1	0.61	54.6	161.6	106.95	0.453	1.0012	8.337	3.78	404.5
1638	162.3	163.0	0.64	54.6	162.4	107.84	0.453	1.0012	8.337	3.78	407.8
1639	163.3	164.0	0.66	54.6	163.4	108.80	0.436	1.0012	8.337	3.64	396.2
1640	164.3	164.9	0.67	54.5	164.4	109.81	0.453	1.0012	8.337	3.78	415.3
1641	165.3	166.0	0.69	54.5	165.4	110.88	0.453	1.0012	8.337	3.78	419.3
1642	166.3	167.1	0.72	54.5	166.5	111.98	0.436	1.0012	8.337	3.64	407.8
1643	167.3	168.0	0.72	54.5	167.5	113.00	0.453	1.0012	8.337	3.78	427.4
1644	168.4	169.1	0.74	54.4	168.5	114.06	0.436	1.0012	8.337	3.64	415.4
1645	169.4	170.1	0.76	54.4	169.5	115.08	0.453	1.0012	8.337	3.78	435.2
1646	170.4	171.1	0.77	54.4	170.5	116.11	0.436	1.0012	8.337	3.64	422.9
1647	171.4	172.1	0.78	54.4	171.5	117.09	0.453	1.0012	8.337	3.78	442.9
1648	172.3	173.1	0.79	54.4	172.6	118.14	0.436	1.0012	8.337	3.64	430.2
1649	173.2	174.0	0.80	54.5	173.5	118.96	0.436	1.0012	8.337	3.64	433.2
1650	174.2	175.0	0.80	54.6	174.4	119.80	0.453	1.0012	8.337	3.78	453.1
1651	175.1	175.9	0.81	54.8	175.4	120.59	0.436	1.0012	8.337	3.64	439.2
1652	176.1	176.9	0.82	54.9	176.3	121.35	0.453	1.0012	8.337	3.78	458.9
1653	177.0	177.9	0.85	55.1	177.3	122.21	0.436	1.0012	8.336	3.64	445.0
1654	178.0	178.8	0.87	55.2	178.3	123.05	0.436	1.0012	8.336	3.64	448.1
1655	178.9	179.8	0.90	55.4	179.2	123.81	0.453	1.0012	8.336	3.78	468.2
1656	179.8	180.8	0.95	55.5	180.2	124.70	0.436	1.0012	8.336	3.64	454.1
1657	180.9	181.8	0.95	55.6	181.2	125.60	0.436	1.0012	8.336	3.64	457.3
1658	181.5	182.4	0.93	55.7	182.0	126.30	0.436	1.0012	8.336	3.64	459.9
1659	182.0	182.9	0.88	55.9	182.5	126.62	0.420	1.0012	8.336	3.50	443.3
1660	182.4	183.3	0.88	56.0	182.9	126.95	0.403	1.0012	8.336	3.36	426.7
1661	182.7	183.6	0.91	56.1	183.3	127.20	0.403	1.0012	8.336	3.36	427.5
1662	183.0	183.9	0.91	56.2	183.6	127.38	0.403	1.0012	8.335	3.36	428.1
1663	183.2	184.1	0.91	56.3	183.8	127.49	0.403	1.0012	8.335	3.36	428.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1664	183.3	184.2	0.92	56.4	183.9	127.52	0.403	1.0012	8.335	3.36	428.6
1665	183.4	184.4	0.91	56.5	184.1	127.54	0.403	1.0012	8.335	3.36	428.6
1666	183.6	184.5	0.90	56.6	184.3	127.63	0.386	1.0012	8.335	3.22	411.1
1667	183.6	184.5	0.90	56.7	184.3	127.62	0.403	1.0012	8.335	3.36	428.9
1668	183.7	184.6	0.92	56.8	184.4	127.63	0.403	1.0012	8.335	3.36	428.9
1669	183.7	184.6	0.91	56.8	184.4	127.54	0.386	1.0012	8.335	3.22	410.8
1670	183.7	184.6	0.91	56.9	184.4	127.48	0.403	1.0012	8.335	3.36	428.4
1671	183.7	184.6	0.90	57.0	184.4	127.43	0.403	1.0012	8.335	3.36	428.3
1672	183.7	184.6	0.91	57.0	184.4	127.38	0.403	1.0012	8.335	3.36	428.1
1673	183.7	184.6	0.88	57.1	184.4	127.29	0.386	1.0012	8.335	3.22	409.9
1674	183.7	184.6	0.90	57.2	184.4	127.22	0.403	1.0012	8.334	3.36	427.5
1675	183.6	184.5	0.89	57.2	184.3	127.11	0.403	1.0012	8.334	3.36	427.2
1676	183.6	184.5	0.88	57.2	184.3	127.04	0.386	1.0012	8.334	3.22	409.1
1677	183.5	184.4	0.89	57.3	184.2	126.94	0.403	1.0012	8.334	3.36	426.6
1678	183.4	184.3	0.88	57.3	184.2	126.85	0.403	1.0012	8.334	3.36	426.3
1679	183.4	184.2	0.88	57.3	184.1	126.71	0.403	1.0012	8.334	3.36	425.8
1680	183.3	184.2	0.88	57.4	184.0	126.63	0.386	1.0012	8.334	3.22	407.8
1681	183.2	184.1	0.89	57.4	183.9	126.49	0.403	1.0012	8.334	3.36	425.1
1682	183.2	184.1	0.87	57.4	183.9	126.46	0.386	1.0012	8.334	3.22	407.3
1683	183.1	184.0	0.87	57.4	183.8	126.36	0.403	1.0012	8.334	3.36	424.6
1684	183.1	183.9	0.87	57.4	183.7	126.37	0.403	1.0012	8.334	3.36	424.7
1685	183.0	183.8	0.87	57.2	183.6	126.49	0.386	1.0012	8.334	3.22	407.4
1686	182.9	183.8	0.86	56.9	183.6	126.63	0.403	1.0012	8.335	3.36	425.6
1687	182.8	183.7	0.86	56.7	183.5	126.76	0.386	1.0012	8.335	3.22	408.3
1688	182.7	183.6	0.88	56.5	183.4	126.85	0.403	1.0012	8.335	3.36	426.3
1689	182.6	183.5	0.86	56.4	183.3	126.91	0.403	1.0012	8.335	3.36	426.6
1690	182.5	183.4	0.86	56.3	183.2	126.95	0.403	1.0012	8.335	3.36	426.7
1691	182.4	183.3	0.86	56.1	183.1	126.96	0.386	1.0012	8.335	3.22	409.0
1692	182.3	183.2	0.85	56.0	183.0	126.96	0.403	1.0012	8.336	3.36	426.7
1693	182.2	183.1	0.86	55.9	182.9	126.97	0.403	1.0012	8.336	3.36	426.8
1694	182.1	183.0	0.86	55.8	182.8	126.95	0.403	1.0012	8.336	3.36	426.7
1695	182.0	182.9	0.82	55.8	182.7	126.93	0.386	1.0012	8.336	3.22	408.9
1696	181.9	182.7	0.82	55.7	182.6	126.89	0.403	1.0012	8.336	3.36	426.5
1697	181.8	182.7	0.83	55.6	182.5	126.86	0.403	1.0012	8.336	3.36	426.4
1698	181.8	182.6	0.82	55.5	182.4	126.86	0.386	1.0012	8.336	3.22	408.7
1699	181.6	182.5	0.81	55.5	182.3	126.84	0.403	1.0012	8.336	3.36	426.3
1700	181.5	182.3	0.81	55.4	182.1	126.77	0.403	1.0012	8.336	3.36	426.1
1701	181.4	182.2	0.79	55.3	182.1	126.75	0.386	1.0012	8.336	3.22	408.3
1702	181.3	182.1	0.79	55.2	182.0	126.73	0.403	1.0012	8.336	3.36	426.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1703	181.2	181.9	0.79	55.2	181.8	126.62	0.403	1.0012	8.336	3.36	425.6
1704	181.0	181.8	0.80	55.1	181.6	126.53	0.386	1.0012	8.336	3.22	407.6
1705	180.9	181.7	0.80	55.0	181.6	126.55	0.403	1.0012	8.337	3.36	425.4
1706	180.8	181.6	0.80	55.0	181.4	126.44	0.403	1.0012	8.337	3.36	425.0
1707	180.6	181.4	0.79	54.9	181.3	126.37	0.403	1.0012	8.337	3.36	424.8
1708	180.5	181.3	0.80	54.8	181.1	126.25	0.386	1.0012	8.337	3.22	406.7
1709	180.4	181.1	0.78	54.8	181.0	126.20	0.403	1.0012	8.337	3.36	424.2
1710	180.2	181.0	0.78	54.7	180.8	126.11	0.403	1.0012	8.337	3.36	423.9
1711	180.1	180.9	0.77	54.7	180.7	126.01	0.403	1.0012	8.337	3.36	423.6
1712	180.0	180.8	0.78	54.6	180.6	125.93	0.386	1.0012	8.337	3.22	405.7
1713	179.8	180.6	0.76	54.6	180.4	125.82	0.403	1.0012	8.337	3.36	423.0
1714	179.7	180.5	0.76	54.6	180.3	125.73	0.403	1.0012	8.337	3.36	422.7
1715	179.6	180.3	0.76	54.5	180.1	125.60	0.403	1.0012	8.337	3.36	422.2
1716	179.4	180.1	0.74	54.5	180.0	125.46	0.386	1.0012	8.337	3.22	404.2
1717	179.3	180.0	0.76	54.6	179.8	125.25	0.403	1.0012	8.337	3.36	421.1
1718	179.2	179.9	0.73	54.7	179.7	125.02	0.403	1.0012	8.337	3.36	420.3
1719	179.0	179.8	0.74	54.8	179.6	124.76	0.403	1.0012	8.337	3.36	419.4
1720	178.9	179.6	0.73	55.0	179.5	124.45	0.386	1.0012	8.337	3.22	400.9
1721	178.7	179.5	0.73	55.2	179.3	124.14	0.403	1.0012	8.336	3.36	417.3
1722	178.6	179.3	0.73	55.3	179.2	123.88	0.403	1.0012	8.336	3.36	416.4
1723	178.4	179.2	0.73	55.4	179.0	123.60	0.386	1.0012	8.336	3.22	398.1
1724	178.3	179.0	0.73	55.6	178.8	123.26	0.403	1.0012	8.336	3.36	414.3
1725	178.2	178.9	0.71	55.7	178.7	123.01	0.403	1.0012	8.336	3.36	413.5
1726	178.0	178.7	0.71	55.8	178.6	122.75	0.386	1.0012	8.336	3.22	395.4
1727	177.8	178.5	0.71	55.9	178.4	122.45	0.403	1.0012	8.336	3.36	411.6
1728	177.7	178.4	0.70	56.0	178.2	122.21	0.403	1.0012	8.336	3.36	410.8
1729	177.7	178.4	0.69	56.1	178.2	122.06	0.386	1.0012	8.335	3.22	393.1
1730	177.5	178.2	0.70	56.2	178.1	121.85	0.403	1.0012	8.335	3.36	409.5
1731	177.4	178.1	0.69	56.3	177.9	121.63	0.403	1.0012	8.335	3.36	408.8
1732	177.2	177.9	0.69	56.4	177.8	121.36	0.386	1.0012	8.335	3.22	390.9
1733	177.1	177.8	0.69	56.5	177.6	121.09	0.403	1.0012	8.335	3.36	407.0
1734	176.9	177.6	0.69	56.6	177.5	120.88	0.386	1.0012	8.335	3.22	389.3
1735	176.8	177.5	0.68	56.6	177.4	120.72	0.403	1.0012	8.335	3.36	405.7
1736	176.7	177.3	0.68	56.7	177.2	120.48	0.403	1.0012	8.335	3.36	404.9
1737	176.5	177.2	0.67	56.8	177.1	120.29	0.386	1.0012	8.335	3.22	387.4
1738	176.3	177.0	0.67	56.8	176.9	120.03	0.403	1.0012	8.335	3.36	403.4
1739	176.2	176.9	0.67	56.9	176.7	119.80	0.403	1.0012	8.335	3.36	402.6
1740	176.1	176.8	0.66	57.0	176.6	119.65	0.386	1.0012	8.335	3.22	385.3
1741	175.9	176.6	0.67	57.0	176.4	119.41	0.403	1.0012	8.335	3.36	401.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1742	175.8	176.4	0.67	57.1	176.3	119.23	0.386	1.0012	8.335	3.22	384.0
1743	175.6	176.3	0.66	57.1	176.1	118.99	0.403	1.0012	8.335	3.36	399.9
1744	175.5	176.1	0.65	57.1	176.0	118.82	0.403	1.0012	8.334	3.36	399.3
1745	175.3	176.0	0.64	57.2	175.8	118.65	0.386	1.0012	8.334	3.22	382.1
1746	175.1	175.8	0.65	57.2	175.6	118.45	0.403	1.0012	8.334	3.36	398.1
1747	175.0	175.7	0.65	57.2	175.5	118.28	0.386	1.0012	8.334	3.22	380.9
1748	174.9	175.5	0.65	57.2	175.4	118.13	0.403	1.0012	8.334	3.36	397.0
1749	174.8	175.4	0.65	57.3	175.2	117.98	0.403	1.0012	8.334	3.36	396.5
1750	174.6	175.3	0.64	57.3	175.1	117.81	0.403	1.0012	8.334	3.36	395.9
1751	174.5	175.1	0.65	57.3	174.9	117.64	0.403	1.0012	8.334	3.36	395.3
1752	174.3	174.9	0.62	57.3	174.8	117.47	0.386	1.0012	8.334	3.22	378.3
1753	174.1	174.8	0.63	57.4	174.6	117.27	0.403	1.0012	8.334	3.36	394.1
1754	174.0	174.7	0.65	57.4	174.5	117.10	0.403	1.0012	8.334	3.36	393.5
1755	173.9	174.5	0.63	57.3	174.3	117.04	0.403	1.0012	8.334	3.36	393.3
1756	173.7	174.3	0.63	57.1	174.2	117.13	0.386	1.0012	8.335	3.22	377.2
1757	173.5	174.1	0.63	56.8	174.0	117.17	0.403	1.0012	8.335	3.36	393.8
1758	173.3	174.0	0.63	56.6	173.8	117.22	0.403	1.0012	8.335	3.36	394.0
1759	173.2	173.8	0.62	56.4	173.7	117.26	0.403	1.0012	8.335	3.36	394.1
1760	173.0	173.7	0.62	56.3	173.5	117.23	0.403	1.0012	8.335	3.36	394.0
1761	172.9	173.6	0.63	56.2	173.4	117.25	0.386	1.0012	8.335	3.22	377.7
1762	172.8	173.4	0.62	56.0	173.3	117.24	0.403	1.0012	8.336	3.36	394.0
1763	172.6	173.2	0.61	55.9	173.1	117.17	0.403	1.0012	8.336	3.36	393.8
1764	172.5	173.1	0.62	55.8	172.9	117.09	0.403	1.0012	8.336	3.36	393.6
1765	172.3	172.9	0.63	55.8	172.8	117.02	0.403	1.0012	8.336	3.36	393.3
1766	172.1	172.8	0.62	55.7	172.6	116.96	0.386	1.0012	8.336	3.22	376.7
1767	172.0	172.6	0.62	55.6	172.5	116.88	0.403	1.0012	8.336	3.36	392.9
1768	171.8	172.5	0.62	55.5	172.3	116.78	0.403	1.0012	8.336	3.36	392.5
1769	171.7	172.3	0.61	55.5	172.2	116.70	0.403	1.0012	8.336	3.36	392.3
1770	171.5	172.1	0.61	55.4	172.0	116.62	0.386	1.0012	8.336	3.22	375.7
1771	171.4	172.0	0.61	55.3	171.8	116.52	0.403	1.0012	8.336	3.36	391.7
1772	171.2	171.8	0.62	55.2	171.7	116.45	0.403	1.0012	8.336	3.36	391.5
1773	171.1	171.7	0.61	55.1	171.5	116.37	0.403	1.0012	8.336	3.36	391.2
1774	170.9	171.5	0.61	55.1	171.4	116.30	0.386	1.0012	8.337	3.22	374.7
1775	170.8	171.4	0.61	55.0	171.2	116.20	0.403	1.0012	8.337	3.36	390.6
1776	170.6	171.2	0.61	54.9	171.0	116.11	0.403	1.0012	8.337	3.36	390.3
1777	170.4	171.0	0.60	54.9	170.9	116.01	0.403	1.0012	8.337	3.36	390.0
1778	170.3	170.9	0.60	54.8	170.7	115.92	0.403	1.0012	8.337	3.36	389.7
1779	170.1	170.7	0.60	54.8	170.5	115.78	0.403	1.0012	8.337	3.36	389.2
1780	169.9	170.5	0.59	54.7	170.4	115.69	0.386	1.0012	8.337	3.22	372.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1781	169.8	170.4	0.59	54.6	170.2	115.58	0.403	1.0012	8.337	3.36	388.6
1782	169.6	170.2	0.58	54.6	170.1	115.45	0.403	1.0012	8.337	3.36	388.1
1783	169.5	170.1	0.59	54.7	169.9	115.22	0.403	1.0012	8.337	3.36	387.3
1784	169.3	169.9	0.60	54.8	169.8	114.97	0.403	1.0012	8.337	3.36	386.5
1785	169.2	169.7	0.57	54.9	169.6	114.64	0.386	1.0012	8.337	3.22	369.3
1786	169.0	169.6	0.58	55.1	169.4	114.30	0.403	1.0012	8.336	3.36	384.2
1787	168.8	169.4	0.59	55.2	169.3	114.03	0.403	1.0012	8.336	3.36	383.3
1788	168.7	169.3	0.57	55.4	169.1	113.70	0.403	1.0012	8.336	3.36	382.2
1789	168.5	169.1	0.56	55.5	168.9	113.40	0.386	1.0012	8.336	3.22	365.3
1790	168.4	169.0	0.57	55.7	168.8	113.11	0.403	1.0012	8.336	3.36	380.2
1791	168.2	168.8	0.55	55.8	168.6	112.82	0.403	1.0012	8.336	3.36	379.2
1792	168.1	168.6	0.57	55.9	168.5	112.54	0.386	1.0012	8.336	3.22	362.5
1793	167.9	168.5	0.56	56.0	168.3	112.28	0.403	1.0012	8.336	3.36	377.4
1794	167.7	168.3	0.56	56.1	168.1	112.00	0.403	1.0012	8.335	3.36	376.4
1795	167.6	168.2	0.54	56.2	168.0	111.76	0.386	1.0012	8.335	3.22	360.0
1796	167.5	168.0	0.54	56.3	167.8	111.50	0.403	1.0012	8.335	3.36	374.8
1797	167.3	167.8	0.55	56.4	167.7	111.25	0.403	1.0012	8.335	3.36	373.9
1798	167.1	167.7	0.53	56.5	167.5	111.01	0.403	1.0012	8.335	3.36	373.1
1799	167.0	167.5	0.55	56.6	167.4	110.76	0.386	1.0012	8.335	3.22	356.7
1800	166.8	167.4	0.52	56.7	167.2	110.55	0.403	1.0012	8.335	3.36	371.6
1801	166.5	167.2	0.66	56.7	167.0	110.30	0.453	1.0012	8.335	3.78	417.0
1802	166.3	167.0	0.65	56.8	166.8	110.03	0.470	1.0012	8.335	3.92	431.4
1803	166.2	166.8	0.65	56.8	166.7	109.84	0.470	1.0012	8.335	3.92	430.7
1804	166.0	166.6	0.65	56.8	166.5	109.66	0.470	1.0012	8.335	3.92	430.0
1805	165.8	166.4	0.65	56.8	166.3	109.45	0.470	1.0012	8.335	3.92	429.2
1806	165.6	166.2	0.65	56.9	166.1	109.26	0.470	1.0012	8.335	3.92	428.4
1807	165.4	166.1	0.65	56.9	165.9	109.06	0.470	1.0012	8.335	3.92	427.6
1808	165.3	165.9	0.64	56.9	165.8	108.89	0.470	1.0012	8.335	3.92	426.9
1809	165.1	165.7	0.65	56.9	165.6	108.71	0.470	1.0012	8.335	3.92	426.2
1810	164.9	165.5	0.63	56.9	165.4	108.48	0.470	1.0012	8.335	3.92	425.3
1811	164.7	165.3	0.64	56.9	165.2	108.27	0.487	1.0012	8.335	4.06	439.7
1812	164.6	165.2	0.64	56.9	165.0	108.12	0.453	1.0012	8.335	3.78	408.8
1813	164.4	165.0	0.64	56.9	164.9	107.99	0.487	1.0012	8.335	4.06	438.5
1814	164.2	164.9	0.63	56.9	164.7	107.81	0.470	1.0012	8.335	3.92	422.7
1815	164.1	164.7	0.63	56.9	164.5	107.61	0.470	1.0012	8.335	3.92	421.9
1816	163.9	164.5	0.61	56.9	164.3	107.42	0.470	1.0012	8.335	3.92	421.2
1817	163.7	164.3	0.63	56.9	164.2	107.26	0.470	1.0012	8.335	3.92	420.5
1818	163.5	164.1	0.62	56.9	164.0	107.06	0.470	1.0012	8.335	3.92	419.8
1819	163.4	164.0	0.61	56.9	163.8	106.86	0.470	1.0012	8.335	3.92	419.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1820	163.1	163.8	0.61	57.0	163.6	106.65	0.470	1.0012	8.335	3.92	418.2
1821	163.0	163.6	0.62	57.0	163.4	106.47	0.470	1.0012	8.335	3.92	417.5
1822	162.8	163.4	0.60	57.0	163.3	106.29	0.453	1.0012	8.335	3.78	401.8
1823	162.7	163.3	0.61	57.0	163.1	106.12	0.470	1.0012	8.335	3.92	416.1
1824	162.5	163.1	0.60	57.0	162.9	105.91	0.470	1.0012	8.335	3.92	415.3
1825	162.3	162.9	0.59	57.0	162.7	105.71	0.470	1.0012	8.335	3.92	414.5
1826	162.1	162.7	0.60	57.1	162.5	105.46	0.470	1.0012	8.335	3.92	413.5
1827	161.9	162.5	0.58	57.1	162.4	105.31	0.470	1.0012	8.335	3.92	412.9
1828	161.8	162.4	0.57	57.1	162.2	105.13	0.470	1.0012	8.335	3.92	412.2
1829	161.6	162.2	0.59	57.1	162.1	104.96	0.470	1.0012	8.335	3.92	411.5
1830	161.4	162.0	0.59	57.1	161.9	104.76	0.470	1.0012	8.335	3.92	410.8
1831	161.3	161.9	0.59	57.1	161.7	104.60	0.470	1.0012	8.335	3.92	410.1
1832	161.1	161.7	0.57	57.1	161.6	104.44	0.470	1.0012	8.334	3.92	409.5
1833	160.9	161.5	0.59	57.1	161.4	104.24	0.470	1.0012	8.334	3.92	408.7
1834	160.7	161.3	0.62	57.2	161.2	104.03	0.487	1.0012	8.334	4.06	422.5
1835	160.5	161.1	0.63	57.2	161.0	103.84	0.503	1.0012	8.334	4.20	436.2
1836	160.3	160.9	0.62	57.1	160.8	103.65	0.487	1.0012	8.334	4.06	420.9
1837	160.2	160.8	0.56	57.1	160.6	103.50	0.470	1.0012	8.334	3.92	405.8
1838	160.0	160.6	0.62	57.1	160.5	103.40	0.487	1.0012	8.335	4.06	419.9
1839	159.8	160.4	0.62	56.8	160.3	103.42	0.487	1.0012	8.335	4.06	420.0
1840	159.6	160.3	0.63	56.6	160.1	103.52	0.503	1.0012	8.335	4.20	434.9
1841	159.5	160.1	0.62	56.3	160.0	103.63	0.487	1.0012	8.335	4.06	420.9
1842	159.4	160.0	0.63	56.1	159.8	103.72	0.487	1.0012	8.335	4.06	421.2
1843	159.4	160.0	0.63	55.9	159.8	103.86	0.503	1.0012	8.336	4.20	436.4
1844	159.5	160.2	0.65	55.8	159.9	104.09	0.487	1.0012	8.336	4.06	422.7
1845	159.7	160.3	0.66	55.7	160.0	104.38	0.503	1.0012	8.336	4.20	438.6
1846	160.1	160.8	0.68	55.6	160.4	104.84	0.487	1.0012	8.336	4.06	425.8
1847	160.6	161.3	0.68	55.5	160.9	105.42	0.503	1.0012	8.336	4.20	442.9
1848	161.2	161.9	0.69	55.4	161.4	106.01	0.487	1.0012	8.336	4.06	430.6
1849	161.8	162.5	0.71	55.3	162.0	106.72	0.487	1.0012	8.336	4.06	433.5
1850	162.5	163.2	0.72	55.2	162.7	107.49	0.503	1.0012	8.336	4.20	451.7
1851	163.4	164.1	0.74	55.2	163.6	108.42	0.487	1.0012	8.336	4.06	440.4
1852	164.2	165.0	0.77	55.1	164.4	109.35	0.487	1.0012	8.337	4.06	444.1
1853	165.2	165.9	0.77	55.0	165.4	110.37	0.487	1.0012	8.337	4.06	448.3
1854	166.0	166.8	0.79	54.9	166.3	111.38	0.503	1.0012	8.337	4.20	468.0
1855	167.0	167.8	0.82	54.9	167.2	112.36	0.487	1.0012	8.337	4.06	456.4
1856	168.0	168.9	0.84	54.8	168.3	113.47	0.487	1.0012	8.337	4.06	460.9
1857	169.0	169.9	0.86	54.8	169.4	114.59	0.487	1.0012	8.337	4.06	465.5
1858	170.1	170.9	0.87	54.7	170.3	115.59	0.487	1.0012	8.337	4.06	469.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1859	171.1	172.0	0.90	54.7	171.4	116.71	0.487	1.0012	8.337	4.06	474.1
1860	172.1	173.0	0.89	54.6	172.5	117.86	0.487	1.0012	8.337	4.06	478.7
1861	173.1	174.0	0.92	54.6	173.5	118.92	0.487	1.0012	8.337	4.06	483.1
1862	174.2	175.1	0.91	54.6	174.5	119.97	0.487	1.0012	8.337	4.06	487.3
1863	175.2	176.1	0.93	54.5	175.5	121.00	0.470	1.0012	8.337	3.92	474.6
1864	176.2	177.1	0.93	54.5	176.6	122.09	0.487	1.0012	8.337	4.06	495.9
1865	177.3	178.3	0.95	54.5	177.7	123.21	0.470	1.0012	8.337	3.92	483.2
1866	178.3	179.3	0.96	54.5	178.7	124.26	0.487	1.0012	8.337	4.06	504.8
1867	179.3	180.4	1.02	54.4	179.7	125.30	0.470	1.0012	8.337	3.92	491.5
1868	180.4	181.4	1.03	54.4	180.8	126.37	0.470	1.0012	8.337	3.92	495.6
1869	181.5	182.5	1.07	54.4	181.9	127.51	0.470	1.0012	8.337	3.92	500.1
1870	182.0	183.1	1.06	54.4	182.7	128.30	0.487	1.0012	8.337	4.06	521.2
1871	182.4	183.5	1.09	54.4	183.2	128.83	0.470	1.0012	8.337	3.92	505.3
1872	182.8	183.9	1.10	54.4	183.5	129.18	0.470	1.0012	8.337	3.92	506.6
1873	183.1	184.2	1.11	54.3	183.9	129.54	0.470	1.0012	8.337	3.92	508.1
1874	183.8	184.6	0.77	54.4	184.2	129.83	0.319	1.0012	8.337	2.66	345.5
1875	184.0	184.8	0.75	54.4	184.4	130.08	0.302	1.0012	8.337	2.52	328.0
1876	184.2	185.0	0.76	54.4	184.6	130.20	0.319	1.0012	8.337	2.66	346.5
1877	184.2	185.1	0.92	54.6	184.8	130.29	0.352	1.0012	8.337	2.94	383.3
1878	184.0	185.1	1.10	54.7	184.9	130.19	0.453	1.0012	8.337	3.78	492.4
1879	184.0	185.1	1.11	54.9	184.9	129.95	0.470	1.0012	8.337	3.92	509.7
1880	184.0	185.1	1.10	55.1	184.9	129.76	0.470	1.0012	8.336	3.92	508.9
1881	183.9	185.0	1.10	55.3	184.8	129.55	0.470	1.0012	8.336	3.92	508.1
1882	183.9	185.0	1.11	55.4	184.9	129.47	0.470	1.0012	8.336	3.92	507.7
1883	183.9	185.0	1.11	55.5	184.8	129.34	0.470	1.0012	8.336	3.92	507.2
1884	183.9	185.0	1.11	55.6	184.8	129.18	0.470	1.0012	8.336	3.92	506.6
1885	183.8	184.9	1.09	55.7	184.7	128.99	0.470	1.0012	8.336	3.92	505.8
1886	183.7	184.8	1.09	55.8	184.6	128.80	0.470	1.0012	8.336	3.92	505.1
1887	183.7	184.7	1.08	55.9	184.5	128.63	0.487	1.0012	8.336	4.06	522.4
1888	183.5	184.6	1.08	56.0	184.5	128.45	0.470	1.0012	8.336	3.92	503.7
1889	183.5	184.5	1.08	56.1	184.4	128.25	0.470	1.0012	8.336	3.92	502.9
1890	183.4	184.5	1.06	56.2	184.3	128.07	0.470	1.0012	8.335	3.92	502.2
1891	183.3	184.3	1.07	56.3	184.2	127.90	0.470	1.0012	8.335	3.92	501.5
1892	183.2	184.3	1.06	56.3	184.1	127.80	0.470	1.0012	8.335	3.92	501.1
1893	183.3	184.2	0.91	56.3	184.0	127.71	0.420	1.0012	8.335	3.50	447.1
1894	183.2	184.1	0.91	56.2	184.0	127.78	0.403	1.0012	8.335	3.36	429.5
1895	183.2	184.1	0.91	56.0	183.9	127.90	0.403	1.0012	8.336	3.36	429.9
1896	183.1	184.0	0.92	55.8	183.8	127.96	0.420	1.0012	8.336	3.50	448.0
1897	183.0	183.9	0.93	55.7	183.7	128.04	0.403	1.0012	8.336	3.36	430.4

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1898	182.9	183.8	0.91	55.6	183.7	128.05	0.403	1.0012	8.336	3.36	430.4
1899	182.9	183.7	0.88	55.5	183.6	128.06	0.403	1.0012	8.336	3.36	430.4
1900	182.7	183.6	0.89	55.5	183.4	127.97	0.403	1.0012	8.336	3.36	430.2
1901	182.7	183.6	0.88	55.4	183.4	127.96	0.420	1.0012	8.336	3.50	448.0
1902	182.6	183.5	0.88	55.4	183.3	127.93	0.403	1.0012	8.336	3.36	430.0
1903	182.5	183.4	0.89	55.3	183.2	127.92	0.403	1.0012	8.336	3.36	430.0
1904	182.4	183.2	0.87	55.2	183.1	127.83	0.403	1.0012	8.336	3.36	429.7
1905	182.2	183.1	0.88	55.2	182.9	127.75	0.403	1.0012	8.336	3.36	429.4
1906	182.1	183.0	0.88	55.1	182.9	127.74	0.420	1.0012	8.336	3.50	447.3
1907	182.0	182.9	0.87	55.1	182.7	127.60	0.403	1.0012	8.336	3.36	428.9
1908	181.9	182.8	0.87	55.2	182.6	127.42	0.403	1.0012	8.336	3.36	428.3
1909	181.8	182.7	0.87	55.3	182.5	127.22	0.403	1.0012	8.336	3.36	427.7
1910	181.8	182.6	0.85	55.4	182.5	127.03	0.403	1.0012	8.336	3.36	427.0
1911	181.7	182.5	0.83	55.6	182.3	126.77	0.403	1.0012	8.336	3.36	426.1
1912	181.6	182.4	0.81	55.7	182.2	126.52	0.403	1.0012	8.336	3.36	425.3
1913	181.4	182.2	0.81	55.8	182.1	126.30	0.403	1.0012	8.336	3.36	424.5
1914	181.3	182.1	0.81	55.9	182.0	126.09	0.403	1.0012	8.336	3.36	423.8
1915	181.2	182.0	0.81	56.0	181.8	125.87	0.403	1.0012	8.336	3.36	423.1
1916	181.0	181.8	0.81	56.0	181.7	125.65	0.403	1.0012	8.336	3.36	422.3
1917	180.9	181.7	0.79	56.1	181.5	125.41	0.386	1.0012	8.336	3.22	404.0
1918	180.8	181.6	0.77	56.2	181.4	125.25	0.403	1.0012	8.335	3.36	421.0
1919	180.7	181.5	0.77	56.3	181.3	125.00	0.403	1.0012	8.335	3.36	420.1
1920	180.6	181.4	0.78	56.4	181.2	124.82	0.403	1.0012	8.335	3.36	419.5
1921	180.5	181.2	0.77	56.5	181.1	124.66	0.403	1.0012	8.335	3.36	419.0
1922	180.3	181.1	0.77	56.5	180.9	124.41	0.403	1.0012	8.335	3.36	418.1
1923	180.2	181.0	0.76	56.6	180.8	124.21	0.386	1.0012	8.335	3.22	400.1
1924	180.0	180.8	0.76	56.6	180.6	123.99	0.403	1.0012	8.335	3.36	416.7
1925	179.9	180.6	0.76	56.7	180.5	123.75	0.403	1.0012	8.335	3.36	415.9
1926	179.8	180.5	0.74	56.8	180.3	123.53	0.403	1.0012	8.335	3.36	415.2
1927	179.6	180.4	0.75	56.8	180.2	123.37	0.403	1.0012	8.335	3.36	414.6
1928	179.5	180.3	0.75	56.7	180.1	123.33	0.386	1.0012	8.335	3.22	397.2
1929	179.4	180.1	0.73	56.5	180.0	123.46	0.403	1.0012	8.335	3.36	415.0
1930	179.3	180.0	0.74	56.3	179.9	123.53	0.403	1.0012	8.335	3.36	415.2
1931	179.1	179.8	0.74	56.1	179.7	123.52	0.386	1.0012	8.335	3.22	397.9
1932	178.9	179.7	0.75	56.0	179.5	123.52	0.403	1.0012	8.336	3.36	415.2
1933	178.8	179.5	0.74	55.9	179.4	123.52	0.403	1.0012	8.336	3.36	415.2
1934	178.6	179.4	0.74	55.7	179.2	123.47	0.403	1.0012	8.336	3.36	415.0
1935	178.6	179.3	0.74	55.6	179.1	123.46	0.403	1.0012	8.336	3.36	415.0
1936	178.4	179.2	0.73	55.5	179.0	123.45	0.403	1.0012	8.336	3.36	415.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
1937	178.3	179.0	0.73	55.5	178.8	123.38	0.386	1.0012	8.336	3.22	397.4
1938	178.1	178.9	0.73	55.4	178.7	123.30	0.403	1.0012	8.336	3.36	414.5
1939	178.0	178.7	0.73	55.3	178.6	123.24	0.403	1.0012	8.336	3.36	414.2
1940	177.9	178.6	0.71	55.3	178.4	123.18	0.403	1.0012	8.336	3.36	414.1
1941	177.7	178.4	0.72	55.2	178.3	123.08	0.403	1.0012	8.336	3.36	413.7
1942	177.6	178.3	0.72	55.1	178.1	123.01	0.403	1.0012	8.336	3.36	413.5
1943	177.4	178.2	0.72	55.1	178.0	122.91	0.386	1.0012	8.337	3.22	396.0
1944	177.3	178.0	0.70	55.0	177.8	122.80	0.403	1.0012	8.337	3.36	412.8
1945	177.1	177.8	0.70	55.0	177.7	122.74	0.403	1.0012	8.337	3.36	412.6
1946	177.0	177.7	0.70	54.9	177.6	122.66	0.403	1.0012	8.337	3.36	412.3
1947	176.9	177.6	0.70	54.9	177.4	122.58	0.386	1.0012	8.337	3.22	394.9
1948	176.7	177.4	0.70	54.8	177.3	122.49	0.403	1.0012	8.337	3.36	411.8
1949	176.6	177.3	0.70	54.7	177.1	122.39	0.403	1.0012	8.337	3.36	411.4
1950	176.5	177.2	0.70	54.7	177.0	122.33	0.403	1.0012	8.337	3.36	411.2
1951	176.3	177.0	0.69	54.6	176.8	122.22	0.386	1.0012	8.337	3.22	393.7
1952	176.2	176.9	0.69	54.6	176.7	122.15	0.403	1.0012	8.337	3.36	410.6
1953	176.0	176.7	0.68	54.5	176.5	122.04	0.403	1.0012	8.337	3.36	410.3
1954	175.8	176.5	0.69	54.5	176.4	121.90	0.386	1.0012	8.337	3.22	392.7
1955	175.7	176.4	0.68	54.4	176.2	121.78	0.403	1.0012	8.337	3.36	409.4
1956	175.5	176.2	0.68	54.4	176.1	121.69	0.403	1.0012	8.337	3.36	409.1
1957	175.4	176.1	0.68	54.4	175.9	121.51	0.403	1.0012	8.337	3.36	408.5
1958	175.2	175.9	0.67	54.5	175.8	121.24	0.386	1.0012	8.337	3.22	390.6
1959	175.1	175.8	0.67	54.7	175.6	120.93	0.403	1.0012	8.337	3.36	406.5
1960	174.9	175.6	0.67	54.8	175.4	120.62	0.403	1.0012	8.337	3.36	405.5
1961	174.7	175.4	0.67	54.9	175.3	120.32	0.386	1.0012	8.337	3.22	387.6
1962	174.6	175.3	0.66	55.1	175.1	120.01	0.403	1.0012	8.336	3.36	403.4
1963	174.5	175.1	0.66	55.2	175.0	119.71	0.386	1.0012	8.336	3.22	385.6
1964	174.3	175.0	0.66	55.4	174.8	119.40	0.403	1.0012	8.336	3.36	401.4
1965	174.1	174.8	0.67	55.5	174.6	119.11	0.403	1.0012	8.336	3.36	400.4
1966	174.0	174.6	0.65	55.6	174.5	118.83	0.386	1.0012	8.336	3.22	382.8
1967	173.8	174.5	0.65	55.8	174.3	118.53	0.403	1.0012	8.336	3.36	398.4
1968	173.7	174.3	0.64	55.9	174.2	118.28	0.403	1.0012	8.336	3.36	397.5
1969	173.6	174.2	0.64	56.0	174.1	118.08	0.386	1.0012	8.336	3.22	380.4
1970	173.4	174.0	0.64	56.1	173.9	117.79	0.403	1.0012	8.336	3.36	395.9
1971	173.2	173.8	0.69	56.2	173.7	117.55	0.436	1.0012	8.335	3.64	428.0
1972	173.0	173.7	0.70	56.3	173.5	117.24	0.420	1.0012	8.335	3.50	410.5
1973	172.8	173.5	0.70	56.4	173.3	116.99	0.436	1.0012	8.335	3.64	426.0
1974	172.6	173.3	0.70	56.4	173.1	116.75	0.436	1.0012	8.335	3.64	425.1
1975	172.4	173.1	0.70	56.5	173.0	116.54	0.436	1.0012	8.335	3.64	424.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
1976	172.3	172.9	0.69	56.5	172.8	116.31	0.436	1.0012	8.335	3.64	423.5
1977	172.1	172.8	0.70	56.6	172.6	116.07	0.436	1.0012	8.335	3.64	422.6
1978	171.9	172.6	0.70	56.6	172.5	115.86	0.436	1.0012	8.335	3.64	421.8
1979	171.8	172.5	0.69	56.7	172.3	115.69	0.436	1.0012	8.335	3.64	421.2
1980	171.6	172.3	0.68	56.7	172.2	115.49	0.436	1.0012	8.335	3.64	420.5
1981	171.5	172.1	0.67	56.7	172.0	115.30	0.436	1.0012	8.335	3.64	419.8
1982	171.3	172.0	0.67	56.7	171.8	115.09	0.436	1.0012	8.335	3.64	419.0
1983	171.1	171.8	0.67	56.8	171.7	114.89	0.436	1.0012	8.335	3.64	418.3
1984	170.9	171.6	0.67	56.8	171.5	114.68	0.436	1.0012	8.335	3.64	417.5
1985	170.8	171.5	0.67	56.8	171.3	114.54	0.436	1.0012	8.335	3.64	417.0
1986	170.6	171.3	0.66	56.8	171.2	114.35	0.436	1.0012	8.335	3.64	416.3
1987	170.4	171.1	0.68	56.8	171.0	114.15	0.436	1.0012	8.335	3.64	415.6
1988	170.3	170.9	0.65	56.9	170.8	113.94	0.436	1.0012	8.335	3.64	414.8
1989	170.1	170.8	0.65	56.9	170.6	113.70	0.436	1.0012	8.335	3.64	413.9
1990	170.0	170.6	0.66	56.9	170.5	113.52	0.453	1.0012	8.335	3.78	429.2
1991	169.8	170.4	0.66	57.0	170.3	113.28	0.436	1.0012	8.335	3.64	412.4
1992	169.6	170.2	0.64	57.0	170.1	113.09	0.420	1.0012	8.335	3.50	395.9
1993	169.5	170.1	0.63	57.0	170.0	112.93	0.436	1.0012	8.335	3.64	411.1
1994	169.3	169.9	0.64	57.0	169.8	112.78	0.453	1.0012	8.335	3.78	426.4
1995	169.1	169.8	0.64	57.0	169.6	112.59	0.436	1.0012	8.335	3.64	409.9
1996	169.0	169.6	0.64	57.0	169.5	112.42	0.436	1.0012	8.335	3.64	409.3
1997	168.8	169.4	0.64	57.1	169.3	112.23	0.436	1.0012	8.335	3.64	408.6
1998	168.6	169.3	0.63	57.1	169.1	112.02	0.436	1.0012	8.335	3.64	407.8
1999	168.4	169.1	0.64	57.1	169.0	111.86	0.436	1.0012	8.335	3.64	407.2
2000	168.3	168.9	0.62	57.1	168.8	111.64	0.436	1.0012	8.335	3.64	406.5
2001	168.1	168.7	0.62	57.1	168.6	111.45	0.436	1.0012	8.334	3.64	405.8
2002	167.9	168.5	0.61	57.2	168.4	111.25	0.436	1.0012	8.334	3.64	405.0
2003	167.8	168.4	0.61	57.2	168.3	111.07	0.436	1.0012	8.334	3.64	404.4
2004	167.6	168.2	0.61	57.2	168.1	110.88	0.436	1.0012	8.334	3.64	403.7
2005	167.4	168.1	0.62	57.2	167.9	110.69	0.436	1.0012	8.334	3.64	403.0
2006	167.3	167.9	0.60	57.2	167.7	110.52	0.436	1.0012	8.334	3.64	402.4
2007	167.1	167.7	0.61	57.2	167.6	110.34	0.436	1.0012	8.334	3.64	401.7
2008	166.9	167.5	0.61	57.2	167.4	110.17	0.436	1.0012	8.334	3.64	401.1
2009	166.8	167.4	0.60	57.2	167.2	110.00	0.436	1.0012	8.334	3.64	400.5
2010	166.6	167.2	0.61	57.3	167.1	109.81	0.436	1.0012	8.334	3.64	399.8
2011	166.5	167.1	0.59	57.3	166.9	109.64	0.436	1.0012	8.334	3.64	399.2
2012	166.3	166.9	0.59	57.3	166.7	109.46	0.436	1.0012	8.334	3.64	398.5
2013	166.2	166.8	0.60	57.3	166.6	109.30	0.436	1.0012	8.334	3.64	397.9
2014	166.0	166.6	0.59	57.3	166.4	109.13	0.436	1.0012	8.334	3.64	397.3

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
2015	165.8	166.4	0.59	57.3	166.2	108.93	0.436	1.0012	8.334	3.64	396.6
2016	165.7	166.2	0.59	57.3	166.1	108.78	0.436	1.0012	8.334	3.64	396.0
2017	165.4	166.1	0.64	57.3	165.9	108.59	0.453	1.0012	8.334	3.78	410.5
2018	165.2	165.8	0.65	57.3	165.7	108.36	0.487	1.0012	8.334	4.06	440.0
2019	165.0	165.7	0.65	57.3	165.5	108.19	0.487	1.0012	8.334	4.06	439.3
2020	164.8	165.5	0.65	57.3	165.3	108.02	0.487	1.0012	8.334	4.06	438.6
2021	164.6	165.3	0.66	57.3	165.1	107.84	0.487	1.0012	8.334	4.06	437.9
2022	164.5	165.1	0.66	57.3	165.0	107.74	0.470	1.0012	8.334	3.92	422.4
2023	164.3	165.0	0.66	57.2	164.8	107.61	0.487	1.0012	8.334	4.06	437.0
2024	164.1	164.8	0.66	57.2	164.6	107.41	0.487	1.0012	8.334	4.06	436.2
2025	163.9	164.6	0.65	57.2	164.4	107.26	0.487	1.0012	8.334	4.06	435.6
2026	163.8	164.4	0.65	57.2	164.3	107.10	0.470	1.0012	8.334	3.92	419.9
2027	163.6	164.2	0.66	57.2	164.1	106.90	0.487	1.0012	8.334	4.06	434.1
2028	163.3	164.0	0.64	57.2	163.9	106.69	0.487	1.0012	8.334	4.06	433.2
2029	163.2	163.8	0.64	57.2	163.7	106.50	0.487	1.0012	8.334	4.06	432.5
2030	163.1	163.7	0.59	57.2	163.5	106.33	0.470	1.0012	8.334	3.92	416.9
2031	162.8	163.4	0.62	57.1	163.3	106.23	0.470	1.0012	8.335	3.92	416.5
2032	162.7	163.3	0.64	56.9	163.1	106.28	0.487	1.0012	8.335	4.06	431.6
2033	162.5	163.1	0.63	56.6	163.0	106.39	0.487	1.0012	8.335	4.06	432.0
2034	162.3	162.9	0.63	56.4	162.8	106.43	0.487	1.0012	8.335	4.06	432.2
2035	162.1	162.7	0.64	56.2	162.6	106.44	0.487	1.0012	8.335	4.06	432.3
2036	161.9	162.5	0.64	56.0	162.4	106.40	0.487	1.0012	8.336	4.06	432.1
2037	161.7	162.4	0.65	55.9	162.2	106.36	0.487	1.0012	8.336	4.06	432.0
2038	161.6	162.2	0.64	55.7	162.1	106.33	0.487	1.0012	8.336	4.06	431.9
2039	161.4	162.0	0.64	55.6	161.9	106.27	0.487	1.0012	8.336	4.06	431.6
2040	161.2	161.8	0.62	55.5	161.7	106.16	0.487	1.0012	8.336	4.06	431.2
2041	161.0	161.6	0.63	55.4	161.5	106.05	0.487	1.0012	8.336	4.06	430.7
2042	160.8	161.5	0.63	55.3	161.3	105.98	0.487	1.0012	8.336	4.06	430.4
2043	160.7	161.3	0.62	55.3	161.1	105.87	0.487	1.0012	8.336	4.06	430.0
2044	160.5	161.1	0.62	55.2	161.0	105.77	0.487	1.0012	8.336	4.06	429.6
2045	160.3	160.9	0.61	55.1	160.8	105.68	0.487	1.0012	8.336	4.06	429.3
2046	160.1	160.7	0.62	55.0	160.6	105.58	0.487	1.0012	8.337	4.06	428.9
2047	159.9	160.5	0.61	55.0	160.4	105.45	0.487	1.0012	8.337	4.06	428.3
2048	159.7	160.4	0.62	54.9	160.2	105.32	0.487	1.0012	8.337	4.06	427.8
2049	159.6	160.2	0.61	54.8	160.0	105.19	0.487	1.0012	8.337	4.06	427.3
2050	159.4	160.0	0.60	54.8	159.9	105.10	0.487	1.0012	8.337	4.06	426.9
2051	159.2	159.9	0.60	54.7	159.7	104.96	0.487	1.0012	8.337	4.06	426.4
2052	159.1	159.7	0.61	54.7	159.6	104.89	0.487	1.0012	8.337	4.06	426.1
2053	159.1	159.7	0.60	54.6	159.5	104.87	0.487	1.0012	8.337	4.06	426.0

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
2054	159.2	159.8	0.63	54.6	159.6	105.01	0.487	1.0012	8.337	4.06	426.5
2055	159.5	160.1	0.65	54.5	159.8	105.24	0.487	1.0012	8.337	4.06	427.5
2056	159.7	160.4	0.66	54.5	160.1	105.62	0.487	1.0012	8.337	4.06	429.0
2057	160.2	160.9	0.67	54.4	160.5	106.05	0.487	1.0012	8.337	4.06	430.8
2058	160.7	161.3	0.67	54.4	161.0	106.54	0.487	1.0012	8.337	4.06	432.8
2059	161.2	161.9	0.68	54.4	161.5	107.07	0.487	1.0012	8.337	4.06	434.9
2060	161.8	162.5	0.69	54.4	162.1	107.69	0.487	1.0012	8.337	4.06	437.5
2061	162.4	163.1	0.70	54.3	162.7	108.36	0.487	1.0012	8.337	4.06	440.2
2062	163.1	163.9	0.72	54.3	163.4	109.05	0.487	1.0012	8.337	4.06	443.0
2063	163.9	164.6	0.73	54.3	164.2	109.86	0.487	1.0012	8.337	4.06	446.3
2064	164.8	165.5	0.75	54.3	165.0	110.70	0.487	1.0012	8.337	4.06	449.7
2065	165.6	166.4	0.83	54.3	165.9	111.61	0.503	1.0012	8.337	4.20	469.0
2066	166.5	167.4	0.87	54.2	166.8	112.61	0.503	1.0012	8.337	4.20	473.2
2067	167.4	168.3	0.89	54.2	167.8	113.53	0.520	1.0012	8.337	4.34	493.0
2068	168.3	169.2	0.90	54.2	168.7	114.47	0.520	1.0012	8.337	4.34	497.1
2069	169.4	170.3	0.91	54.2	169.7	115.49	0.520	1.0012	8.337	4.34	501.5
2070	170.4	171.3	0.94	54.3	170.8	116.43	0.520	1.0012	8.337	4.34	505.6
2071	171.5	172.5	0.96	54.5	171.9	117.40	0.520	1.0012	8.337	4.34	509.8
2072	172.5	173.5	0.96	54.6	172.9	118.32	0.520	1.0012	8.337	4.34	513.8
2073	173.6	174.6	0.98	54.7	174.0	119.25	0.520	1.0012	8.337	4.34	517.8
2074	174.5	175.5	0.99	54.9	175.0	120.14	0.520	1.0012	8.337	4.34	521.7
2075	175.5	176.5	1.00	55.0	176.0	120.96	0.503	1.0012	8.337	4.20	508.2
2076	176.6	177.6	1.01	55.1	177.0	121.89	0.520	1.0012	8.336	4.34	529.3
2077	177.7	178.6	0.94	55.2	178.0	122.76	0.487	1.0012	8.336	4.06	498.6
2078	178.8	179.7	0.96	55.4	179.1	123.75	0.470	1.0012	8.336	3.92	485.3
2079	179.8	180.8	0.98	55.5	180.2	124.71	0.470	1.0012	8.336	3.92	489.1
2080	180.8	181.9	1.02	55.6	181.2	125.64	0.453	1.0012	8.336	3.78	475.1
2081	181.7	182.7	1.01	55.7	182.2	126.54	0.470	1.0012	8.336	3.92	496.2
2082	182.1	183.1	1.01	55.8	182.7	126.91	0.470	1.0012	8.336	3.92	497.7
2083	182.4	183.4	1.06	55.9	183.1	127.17	0.453	1.0012	8.336	3.78	480.9
2084	182.7	183.7	1.04	56.0	183.4	127.35	0.453	1.0012	8.336	3.78	481.6
2085	182.9	183.9	1.05	56.2	183.6	127.50	0.453	1.0012	8.335	3.78	482.1
2086	183.0	184.1	1.05	56.2	183.8	127.60	0.453	1.0012	8.335	3.78	482.5
2087	183.1	184.2	1.03	56.3	184.0	127.63	0.470	1.0012	8.335	3.92	500.5
2088	183.2	184.2	1.05	56.4	184.0	127.61	0.453	1.0012	8.335	3.78	482.5
2089	183.2	184.3	1.04	56.5	184.1	127.61	0.453	1.0012	8.335	3.78	482.5
2090	183.3	184.3	1.04	56.5	184.1	127.61	0.453	1.0012	8.335	3.78	482.5
2091	183.3	184.3	1.04	56.6	184.1	127.56	0.470	1.0012	8.335	3.92	500.2
2092	183.2	184.3	1.03	56.6	184.1	127.51	0.453	1.0012	8.335	3.78	482.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
2093	183.2	184.2	1.04	56.6	184.1	127.43	0.453	1.0012	8.335	3.78	481.8
2094	183.1	184.2	1.05	56.7	184.0	127.31	0.470	1.0012	8.335	3.92	499.2
2095	183.1	184.1	1.03	56.7	183.9	127.21	0.453	1.0012	8.335	3.78	481.0
2096	183.0	184.1	1.04	56.7	183.8	127.11	0.453	1.0012	8.335	3.78	480.6
2097	183.0	184.0	1.02	56.7	183.8	127.07	0.453	1.0012	8.335	3.78	480.4
2098	182.9	183.9	1.02	56.8	183.7	126.96	0.470	1.0012	8.335	3.92	497.8
2099	182.8	183.8	1.01	56.8	183.6	126.83	0.453	1.0012	8.335	3.78	479.5
2100	182.7	183.7	1.02	56.8	183.5	126.67	0.453	1.0012	8.335	3.78	478.9
2101	182.6	183.6	1.01	56.9	183.4	126.58	0.453	1.0012	8.335	3.78	478.6
2102	182.5	183.5	1.00	56.9	183.3	126.44	0.470	1.0012	8.335	3.92	495.8
2103	182.4	183.4	1.01	56.9	183.2	126.33	0.453	1.0012	8.335	3.78	477.6
2104	182.3	183.3	1.00	56.9	183.1	126.16	0.453	1.0012	8.335	3.78	477.0
2105	182.2	183.2	1.00	56.9	183.0	126.09	0.470	1.0012	8.335	3.92	494.4
2106	182.1	183.1	0.97	57.0	182.9	125.96	0.453	1.0012	8.335	3.78	476.2
2107	182.0	183.0	0.99	57.0	182.9	125.88	0.453	1.0012	8.335	3.78	475.9
2108	181.9	182.9	0.99	57.0	182.7	125.71	0.470	1.0012	8.335	3.92	492.9
2109	181.8	182.8	0.97	57.0	182.6	125.58	0.453	1.0012	8.335	3.78	474.8
2110	181.7	182.6	0.98	57.0	182.5	125.44	0.453	1.0012	8.335	3.78	474.3
2111	181.6	182.5	0.97	57.0	182.4	125.34	0.453	1.0012	8.335	3.78	473.9
2112	181.5	182.4	0.92	57.0	182.3	125.23	0.453	1.0012	8.335	3.78	473.5
2113	181.4	182.3	0.93	56.9	182.1	125.20	0.470	1.0012	8.335	3.92	490.9
2114	181.2	182.2	0.93	56.7	182.0	125.27	0.453	1.0012	8.335	3.78	473.6
2115	181.1	182.1	0.93	56.5	181.9	125.40	0.453	1.0012	8.335	3.78	474.1
2116	181.0	181.9	0.93	56.3	181.8	125.48	0.453	1.0012	8.335	3.78	474.5
2117	180.9	181.8	0.91	56.1	181.7	125.58	0.453	1.0012	8.336	3.78	474.8
2118	180.8	181.7	0.92	55.9	181.5	125.61	0.470	1.0012	8.336	3.92	492.6
2119	180.6	181.6	0.92	55.8	181.4	125.63	0.453	1.0012	8.336	3.78	475.1
2120	180.5	181.4	0.92	55.7	181.3	125.59	0.453	1.0012	8.336	3.78	474.9
2121	180.3	181.3	0.93	55.6	181.1	125.55	0.470	1.0012	8.336	3.92	492.3
2122	180.2	181.1	0.91	55.5	181.0	125.50	0.453	1.0012	8.336	3.78	474.6
2123	180.1	181.0	0.92	55.4	180.8	125.45	0.453	1.0012	8.336	3.78	474.4
2124	179.9	180.8	0.91	55.3	180.6	125.34	0.453	1.0012	8.336	3.78	474.0
2125	179.8	180.7	0.91	55.2	180.5	125.30	0.470	1.0012	8.336	3.92	491.4
2126	179.7	180.6	0.90	55.2	180.4	125.26	0.453	1.0012	8.336	3.78	473.7
2127	179.5	180.4	0.90	55.1	180.2	125.14	0.470	1.0012	8.337	3.92	490.8
2128	179.3	180.2	0.89	55.0	180.1	125.06	0.453	1.0012	8.337	3.78	472.9
2129	179.2	180.1	0.90	54.9	179.9	124.96	0.453	1.0012	8.337	3.78	472.6
2130	179.0	179.9	0.89	54.9	179.8	124.88	0.453	1.0012	8.337	3.78	472.3
2131	178.9	179.8	0.88	54.8	179.6	124.81	0.470	1.0012	8.337	3.92	489.5

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
2132	178.7	179.6	0.89	54.7	179.5	124.71	0.453	1.0012	8.337	3.78	471.6
2133	178.6	179.4	0.82	54.7	179.3	124.60	0.420	1.0012	8.337	3.50	436.3
2134	178.5	179.3	0.77	54.6	179.1	124.47	0.420	1.0012	8.337	3.50	435.9
2135	178.4	179.2	0.77	54.6	179.0	124.44	0.403	1.0012	8.337	3.36	418.3
2136	178.3	179.0	0.75	54.6	178.8	124.28	0.420	1.0012	8.337	3.50	435.2
2137	178.1	178.9	0.76	54.5	178.7	124.19	0.403	1.0012	8.337	3.36	417.5
2138	178.0	178.8	0.76	54.5	178.6	124.12	0.403	1.0012	8.337	3.36	417.2
2139	177.9	178.7	0.75	54.5	178.5	124.05	0.420	1.0012	8.337	3.50	434.4
2140	177.8	178.5	0.74	54.4	178.4	123.93	0.403	1.0012	8.337	3.36	416.6
2141	177.6	178.3	0.75	54.4	178.2	123.75	0.403	1.0012	8.337	3.36	416.0
2142	177.4	178.1	0.74	54.4	178.0	123.63	0.420	1.0012	8.337	3.50	432.9
2143	177.2	178.0	0.73	54.3	177.8	123.48	0.403	1.0012	8.337	3.36	415.1
2144	177.1	177.8	0.74	54.4	177.7	123.24	0.420	1.0012	8.337	3.50	431.6
2145	176.9	177.7	0.73	54.6	177.5	122.94	0.403	1.0012	8.337	3.36	413.3
2146	176.8	177.6	0.73	54.7	177.4	122.66	0.420	1.0012	8.337	3.50	429.5
2147	176.7	177.4	0.72	54.9	177.3	122.38	0.403	1.0012	8.337	3.36	411.4
2148	176.5	177.3	0.73	55.0	177.1	122.09	0.420	1.0012	8.337	3.50	427.5
2149	176.4	177.1	0.72	55.2	176.9	121.77	0.403	1.0012	8.336	3.36	409.3
2150	176.2	176.9	0.71	55.3	176.7	121.43	0.403	1.0012	8.336	3.36	408.2
2151	176.1	176.8	0.70	55.5	176.6	121.18	0.420	1.0012	8.336	3.50	424.3
2152	176.0	176.7	0.71	55.6	176.6	121.01	0.403	1.0012	8.336	3.36	406.8
2153	175.8	176.5	0.70	55.7	176.4	120.71	0.420	1.0012	8.336	3.50	422.7
2154	175.7	176.4	0.71	55.8	176.2	120.43	0.403	1.0012	8.336	3.36	404.8
2155	175.6	176.3	0.71	55.9	176.1	120.26	0.403	1.0012	8.336	3.36	404.2
2156	175.5	176.1	0.69	56.0	176.0	120.00	0.420	1.0012	8.336	3.50	420.1
2157	175.3	176.0	0.69	56.1	175.9	119.77	0.403	1.0012	8.336	3.36	402.6
2158	175.2	175.9	0.69	56.2	175.7	119.54	0.403	1.0012	8.335	3.36	401.8
2159	175.1	175.7	0.67	56.3	175.6	119.30	0.420	1.0012	8.335	3.50	417.7
2160	174.9	175.6	0.70	56.4	175.4	119.05	0.403	1.0012	8.335	3.36	400.1
2161	174.7	175.4	0.68	56.5	175.3	118.80	0.420	1.0012	8.335	3.50	415.9
2162	174.6	175.2	0.67	56.5	175.1	118.57	0.403	1.0012	8.335	3.36	398.5
2163	174.4	175.1	0.69	56.6	174.9	118.33	0.420	1.0012	8.335	3.50	414.3
2164	174.3	175.0	0.67	56.7	174.8	118.10	0.403	1.0012	8.335	3.36	396.9
2165	174.1	174.8	0.67	56.7	174.6	117.89	0.403	1.0012	8.335	3.36	396.2
2166	174.0	174.6	0.67	56.8	174.5	117.69	0.420	1.0012	8.335	3.50	412.0
2167	173.9	174.5	0.66	56.8	174.4	117.51	0.403	1.0012	8.335	3.36	394.9
2168	173.7	174.3	0.65	56.9	174.2	117.34	0.403	1.0012	8.335	3.36	394.3
2169	173.5	174.2	0.66	56.9	174.0	117.15	0.420	1.0012	8.335	3.50	410.1
2170	173.4	174.0	0.64	56.9	173.9	116.98	0.403	1.0012	8.335	3.36	393.1

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp _i	σ _i	M _i Mass lb/min	Heat Output Btu
2171	173.3	173.9	0.65	57.0	173.7	116.78	0.403	1.0012	8.335	3.36	392.5
2172	173.1	173.7	0.64	57.0	173.6	116.58	0.420	1.0012	8.335	3.50	408.1
2173	172.9	173.6	0.65	57.0	173.4	116.36	0.403	1.0012	8.335	3.36	391.1
2174	172.8	173.4	0.65	57.0	173.2	116.20	0.403	1.0012	8.335	3.36	390.5
2175	172.6	173.2	0.64	57.1	173.1	116.01	0.403	1.0012	8.335	3.36	389.9
2176	172.4	173.1	0.64	57.1	172.9	115.85	0.420	1.0012	8.335	3.50	405.5
2177	172.3	172.9	0.64	57.1	172.8	115.68	0.403	1.0012	8.335	3.36	388.8
2178	172.1	172.8	0.64	57.1	172.6	115.50	0.403	1.0012	8.335	3.36	388.1
2179	172.0	172.6	0.64	57.1	172.5	115.31	0.420	1.0012	8.334	3.50	403.7
2180	171.8	172.5	0.64	57.2	172.3	115.13	0.403	1.0012	8.334	3.36	386.9
2181	171.7	172.3	0.63	57.2	172.1	114.96	0.403	1.0012	8.334	3.36	386.3
2182	171.6	172.2	0.62	57.2	172.0	114.82	0.403	1.0012	8.334	3.36	385.9
2183	171.4	172.0	0.60	57.2	171.9	114.66	0.420	1.0012	8.334	3.50	401.4
2184	171.2	171.8	0.62	57.2	171.7	114.48	0.403	1.0012	8.334	3.36	384.7
2185	171.1	171.7	0.60	57.2	171.5	114.32	0.403	1.0012	8.334	3.36	384.2
2186	170.9	171.5	0.61	57.2	171.4	114.14	0.420	1.0012	8.334	3.50	399.6
2187	170.8	171.4	0.60	57.3	171.2	113.97	0.403	1.0012	8.334	3.36	383.0
2188	170.6	171.2	0.61	57.3	171.1	113.83	0.403	1.0012	8.334	3.36	382.5
2189	170.5	171.1	0.60	57.3	170.9	113.66	0.420	1.0012	8.334	3.50	397.9
2190	170.3	170.9	0.60	57.3	170.8	113.47	0.403	1.0012	8.334	3.36	381.3
2191	170.2	170.7	0.59	57.3	170.6	113.27	0.403	1.0012	8.334	3.36	380.6
2192	170.0	170.6	0.59	57.3	170.5	113.13	0.420	1.0012	8.334	3.50	396.0
2193	169.9	170.5	0.59	57.4	170.3	112.95	0.403	1.0012	8.334	3.36	379.6
2194	169.7	170.3	0.61	57.4	170.2	112.78	0.403	1.0012	8.334	3.36	379.0
2195	169.4	170.1	0.69	57.3	170.0	112.64	0.453	1.0012	8.334	3.78	425.8
2196	169.2	169.9	0.71	57.2	169.8	112.60	0.470	1.0012	8.334	3.92	441.5
2197	169.0	169.7	0.71	56.9	169.6	112.71	0.470	1.0012	8.335	3.92	441.9
2198	168.8	169.5	0.71	56.6	169.4	112.79	0.470	1.0012	8.335	3.92	442.3
2199	168.6	169.3	0.71	56.3	169.2	112.90	0.470	1.0012	8.335	3.92	442.7
2200	168.5	169.2	0.70	56.1	169.0	112.94	0.470	1.0012	8.336	3.92	442.9
2201	168.3	169.0	0.72	55.9	168.9	112.94	0.487	1.0012	8.336	4.06	458.7
2202	168.1	168.8	0.71	55.7	168.7	112.92	0.470	1.0012	8.336	3.92	442.8
2203	167.9	168.6	0.70	55.6	168.5	112.87	0.470	1.0012	8.336	3.92	442.6
2204	167.7	168.4	0.71	55.5	168.3	112.80	0.470	1.0012	8.336	3.92	442.4
2205	167.6	168.3	0.70	55.4	168.1	112.77	0.470	1.0012	8.336	3.92	442.2
2206	167.4	168.1	0.70	55.3	168.0	112.69	0.470	1.0012	8.336	3.92	441.9
2207	167.2	167.9	0.70	55.2	167.8	112.60	0.470	1.0012	8.336	3.92	441.6
2208	167.0	167.7	0.69	55.1	167.6	112.49	0.487	1.0012	8.337	4.06	456.9
2209	166.8	167.5	0.70	55.0	167.4	112.37	0.470	1.0012	8.337	3.92	440.7

Elapsed Time (min)	Appliance			Load							
	T2 Return Temp °F	T1 Supply Temp °F	ΔT across Appliance	T3 Load IN Temp °F	Load Out Temp °F	Delta - T °F	Flow-Rate GPM	cp_i	σ_i	M_i Mass lb/min	Heat Output Btu
2210	166.6	167.3	0.71	54.9	167.2	112.30	0.470	1.0012	8.337	3.92	440.4
2211	166.5	167.1	0.69	54.8	167.0	112.19	0.470	1.0012	8.337	3.92	440.0
2212	166.3	167.0	0.69	54.7	166.8	112.07	0.487	1.0012	8.337	4.06	455.2
2213	166.1	166.8	0.68	54.7	166.7	111.98	0.470	1.0012	8.337	3.92	439.2
2214	165.9	166.6	0.70	54.6	166.4	111.85	0.470	1.0012	8.337	3.92	438.7
2215	165.7	166.4	0.69	54.5	166.3	111.76	0.470	1.0012	8.337	3.92	438.3
2216	165.6	166.2	0.67	54.5	166.1	111.64	0.470	1.0012	8.337	3.92	437.8
2217	165.4	166.1	0.69	54.4	165.9	111.52	0.487	1.0012	8.337	4.06	453.0
2218	165.2	165.9	0.69	54.4	165.7	111.39	0.470	1.0012	8.337	3.92	436.9
2219	165.0	165.7	0.68	54.3	165.6	111.26	0.470	1.0012	8.337	3.92	436.4
2220	164.8	165.5	0.66	54.3	165.4	111.12	0.470	1.0012	8.337	3.92	435.8
2221	164.6	165.3	0.66	54.2	165.2	110.96	0.470	1.0012	8.337	3.92	435.2
2222	164.4	165.1	0.67	54.2	165.0	110.81	0.487	1.0012	8.337	4.06	450.1
2223	164.3	165.0	0.67	54.2	164.8	110.65	0.470	1.0012	8.337	3.92	434.0
2224	164.1	164.8	0.66	54.1	164.6	110.49	0.470	1.0012	8.337	3.92	433.4
2225	163.9	164.6	0.64	54.1	164.4	110.29	0.470	1.0012	8.337	3.92	432.6
2226	163.7	164.4	0.67	54.1	164.2	110.08	0.470	1.0012	8.337	3.92	431.8
2227	163.6	164.2	0.65	54.2	164.1	109.85	0.470	1.0012	8.337	3.92	430.8
2228	163.4	164.0	0.64	54.4	163.9	109.49	0.470	1.0012	8.337	3.92	429.4
2229	163.2	163.9	0.64	54.6	163.7	109.12	0.470	1.0012	8.337	3.92	428.0
2230	163.0	163.7	0.64	54.7	163.5	108.79	0.470	1.0012	8.337	3.92	426.7
2231	162.9	163.5	0.65	54.9	163.4	108.51	0.470	1.0012	8.337	3.92	425.5
2232	162.7	163.3	0.63	55.0	163.2	108.18	0.470	1.0012	8.337	3.92	424.3
2233	162.6	163.2	0.63	55.1	163.0	107.89	0.487	1.0012	8.336	4.06	438.2
2234	162.4	163.0	0.62	55.3	162.9	107.60	0.470	1.0012	8.336	3.92	422.0
2235	162.2	162.8	0.61	55.4	162.7	107.31	0.453	1.0012	8.336	3.78	405.8
2236	162.0	162.6	0.62	55.5	162.5	107.03	0.470	1.0012	8.336	3.92	419.7
2237	161.8	162.5	0.62	55.6	162.3	106.74	0.470	1.0012	8.336	3.92	418.6
2238	161.7	162.3	0.62	55.7	162.2	106.50	0.487	1.0012	8.336	4.06	432.6
2239	161.5	162.1	0.62	55.8	161.9	106.19	0.470	1.0012	8.336	3.92	416.4
2240	161.3	161.9	0.62	55.8	161.8	105.90	0.470	1.0012	8.336	3.92	415.3
2241	161.2	161.8	0.60	55.9	161.6	105.64	0.470	1.0012	8.336	3.92	414.3
2242	161.0	161.6	0.60	56.0	161.5	105.42	0.470	1.0012	8.336	3.92	413.4
2243	160.8	161.4	0.60	56.1	161.3	105.16	0.487	1.0012	8.336	4.06	427.1
2244	160.7	161.3	0.59	56.2	161.1	104.92	0.470	1.0012	8.335	3.92	411.4
2245	160.5	161.1	0.58	56.2	160.9	104.71	0.470	1.0012	8.335	3.92	410.6
2246	160.3	160.9	0.59	56.3	160.7	104.48	0.470	1.0012	8.335	3.92	409.7
2247	160.1	160.7	0.58	56.3	160.6	104.25	0.487	1.0012	8.335	4.06	423.4
2248	160.0	160.5	0.56	56.4	160.4	104.04	0.470	1.0012	8.335	3.92	408.0

<i>Elapsed Time (min)</i>	Appliance			Load							
	<i>T2 Return Temp °F</i>	<i>T1 Supply Temp °F</i>	<i>ΔT across Appliance</i>	<i>T3 Load IN Temp °F</i>	<i>Load Out Temp °F</i>	<i>Delta - T °F</i>	<i>Flow-Rate GPM</i>	<i>cp_i</i>	<i>σ_i</i>	<i>M_i Mass lb/min</i>	<i>Heat Output Btu</i>
2249	159.8	160.4	0.58	56.4	160.2	103.82	0.470	1.0012	8.335	3.92	407.1
2250	159.6	160.2	0.57	56.4	160.1	103.62	0.470	1.0012	8.335	3.92	406.3
2251	159.5	160.0	0.57	56.5	159.9	103.40	0.487	1.0012	8.335	4.06	419.9
2252	159.4	160.0	0.58	56.5	159.8	103.31	0.470	1.0012	8.335	3.92	405.1
2253	159.6	160.2	0.58	56.5	159.9	103.40	0.470	1.0012	8.335	3.92	405.4
2254	159.9	160.5	0.61	56.6	160.2	103.60	0.470	1.0012	8.335	3.92	406.2
2255	160.3	160.9	0.61	56.6	160.6	103.99	0.487	1.0012	8.335	4.06	422.3
2256	160.9	161.5	0.63	56.6	161.1	104.52	0.470	1.0012	8.335	3.92	409.8
2257	161.6	162.2	0.65	56.6	161.7	105.09	0.470	1.0012	8.335	3.92	412.1
2258	162.3	163.0	0.66	56.7	162.5	105.83	0.470	1.0012	8.335	3.92	414.9
2259	163.2	163.9	0.67	56.7	163.4	106.63	0.470	1.0012	8.335	3.92	418.1
2260	164.2	164.8	0.69	56.8	164.3	107.54	0.470	1.0012	8.335	3.92	421.6
2261	165.1	165.8	0.70	56.8	165.2	108.46	0.470	1.0012	8.335	3.92	425.3
2262	166.0	166.8	0.72	56.8	166.2	109.43	0.487	1.0012	8.335	4.06	444.4

Gravimetric Lab Data

ASTM E2515

Manufacturer: Central Boiler
 Model: Classic Edge 560.1
 Tracking No.: 2495
 Project No.: 0117WB043E
 Run No.: 4
 Test Date: 12/5/24

OMNI Eq. ID Numbers
 Analytical Scale _____
 Audit Weight Set: _____
 Analytical Scale _____
 Hydrometer _____
 Filters are weighed In Pairs

Train A

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
Filter Pairs		Filter	F490/A	241.3	236.6	4.7	4.7
Probe catch*		Probe	2	115012.0	115011.9	0.1	0.1
Filter seals catch*		Seals	S905	3255.9	3255.5	0.4	0.4
				Total Particulate, mg:		5.2	5.2

Train B

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
Filter Pairs		Filter	F491/A	242.1	237.4	4.7	4.7
Probe catch*		Probe	82	116287.3	116287.2	0.1	0.1
Filter seals catch*		Seals	S906	3375.8	3375.2	0.6	0.6
Sub-Total				Total Particulate, mg:		5.4	5.4

Train C - First Hour

Sample Component Date / Time in Desiccator		Reagent	Filter, Probe or Dish #	Weights			
				Final, mg	Tare, mg	Particulate, mg	
Filter Pairs	12/05/24 @ 18:14	Filter	F492/A	237.6	236.8	0.8	0.8
Probe catch*	12/05/24 @ 18:14	Probe	83	117541.2	117541.2	0.0	0.0
Filter seals catch*	12/05/24 @ 18:14	Seals	S909	3334.8	3334.3	0.5	0.5
				Total Particulate, mg:		1.3	1.3

Train D - Ambient Background

Sample Component Date / Time in Desiccator		Reagent	Filter # or	Weights			
				Final, mg	Tare, mg	Particulate, mg	
Filter catch*		Filter	F418	125.5	125.4	0.1	
				Total Particulate, mg:		0.1	

$$\text{Final (mg)} - \text{Tare (mg)} = \text{Particulate (mg)}$$

NOTE: The Uncorrected values are those where any negative filter weights are taken as a negative value. This can possibly occur when filter matter adheres the O-ring seals and thereby transfers some mass to the O-ring. The Corrected values reflect where any negative filter weights are taken as ZERO, thus not accounting for any transfer of mass and resultingly over-reporting. Corrected values were added to this analysis to report the "Corrected" results in this report in response to a request by the US EPA. In cases where the Final weight minus the Tare weight of the Ambient filter occurs, it is taken as a ZERO. Any negative probe weights are evaluated pursuant to clause of ASTM E25215 (or appropriately associated test standard as defined in the introduction of this report).

Technician Signature: _____

Reviewed By: _____

Run 4 - Run Notes

Manufacturer: Central Boiler
Model: Classic Edge 560.1
Project Number: 0117WB043E
Run Number: 4
Test Date: 12/5/2024

This supplemental section of miscellaneous run notes is comprised of the following:

- Appliance Operation Notes
- Velocity Traverse / Supplemental Run Notes
- Test Fuel Notes
- Gravimetric Analysis Notes

ASTM E2780 Wood Heater Test Notes

Client: CENTRAL BOILERProject Number: 0117WB0435Run Number: 4Model: 560.1Tracking Number: 2495Date: 12/05/24Test Crew: R. Tng, T. Tong, K. Morgan

Primary Air Control Settings

Automatic

Secondary:

FIXED

Tertiary/Pilot:

N/A

Fan:

Auto

Preburn Notes

Time	Notes
	SEE ATTACHED PRE-BURN Activity NOTES

Sampling Portion Notes

Sketch test fuel configuration:

SEE Photographs

Start up procedures & Timeline:

Bypass:

NOT USED

Fuel loaded by:

60 sec.

Door closed at:

65 sec.

Primary air:

Auto

Notes:

NONE

Time	Notes
12/05-2225	18:04 Test started
	Gas analyser filter change
	12-07-2024 06:46 Test complete!

Technician Signature: [Signature]Date: 12-07-2024

CENTRAL Boiler 560,1 12-05-24 RUN 4

TIME	SCALE	PRE-BURN Notes
	0	30 lb. Audits = 30.0 lb.
9:54	11.5	Coals added
10:04	27.5	ADDED 16.0 lb (27.5 lb. total)
10:17	20.0	ADDED 26.0 lb
	46.0	(42 lb. total)
10:55	26.0	Added 43.0 lb
	69.0	(85 lb. total)
12:08	30.0	ADDED 40 lb.
	70.0	(125 lb. total)
12:53	STIR	
1:09	30.0	ADDED 39.5 lb
	69.5	(164.5 total)
2:02	STIR	
2:25	300 STIR	ADDED 15.5 lb
	45.5	(180.0 lb total)
4:57	STIR	
5:03	Preburn End	
		loaded by 60 sec, door closed at 65 sec

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 2117 WB 043 E Run Number: 4
 Model: 560.1 Tracking Number: 2495 Date: 12/05/24
 Test Crew: K. McGowan, T. Tene, R. Tene

Supplemental Data

Test Booth No. 3 Sampling Start Time: 5:03 pm Sampling End Time: 0646

Tunnel Cleaned Date 11/22/24 % Smoke Capture 100 Induced Draft 0.000 in. H₂O

Systems Leak Checks			
System	Pre-Test	Post-Test	Sampling Probe Change-out
Pitot	0.000 @	0 @ 3"	
Train A	0.000 @ 17.29	0.002 @ 11"	
Train B	0.000 @ 19.27	0.001 @ 9.8"	
Train C	0.000 @ 22.02	0.003 @ 9.7"	

Velocity Traverse, 6-inch tunnel			
Location	Microtector (in. H ₂ O)	Δp (in. H ₂ O)	Tunnel Temp., °F
Center	.057	.114	70
1	.052	.104	70
2	.057	.114	70
3	.056	.112	70
4	.058	.110	70
5	.049	.078	70
6	.029	.058	70
7			
8			
Tunnel Static (in. H ₂ O)		Pre-Test	Post-Test
		-0.40	-0.40

	Microtector	Δp	Temp
1	.051	.102	70
2	.056	.112	70
3	.056	.116	70
4	.056	.112	70
5	.055	.110	70
6	.046	.092	70

Miscellaneous Parameters			
Item	Initial	Final	Equipment No.
Room Air Velocity, ft/min.	25	17	
Scale Audit, lb. (20-80 % of fuel load)	30	30	
Room Relative Humidity, %	33	34	
Barometric Pressure, in. Hg	30.36	30.10	
Room Temperature, °F	64	62	

Flue Gas Continuous Analyzer						
Analyzer ID		Response Time, sec.		Leak Check Performed?	✓ 0653	
Bias Checks	Concentration:		Pre-Test Response	8.00 ppm	Post-Test Response	
Concentration	Bottle No.	Value, %	Pre-Test Response	8.00 ppm	Post-Test Response	
			Zero	Span	Zero	Span
CO ₂ % Span	CC738144	16.88	0.00	16.89	0.120.04	16.78
CO % Span	CC738144	4.05	0.00	4.04	0	4.01
CO ppm Span	CC305741	500 ppm	0.0	498.6 ppm	0	494
Zero	3AA2400	0.00				

Technician Signature: [Signature]

Date: 12-7-2024

Test Fuel Properties

ASTM E2780

Manufacturer : Central Boiler

Model : 560.1

Tracking No. : 2495

Project No. : 0117WB043E

Test Date : 12-05-24

Run No. : 4

Firebox Volume : 13.720 ft³

Manufacturer's Recommended Loading Density : 12

Ideal Fuel Weight : 164.64 lb.

Minimum Fuel Weight : 148.18 lb.

Maximum Fuel Weight : 181.10 lb.

Fuel Species : Maple

Moisture Meter Cal	
Cal Block	Measured
12.0	12.0
22.0	22.0

Fuel Piece Data

PC No.	Weight, Lb. (W _i)	Cross-Section, Inches			Moisture, % DB						
		Max	Min	Length	1	2	3	4	5	Average (MC _i)	W _i · MC _i
1	11.3	5.2	4 3/4	2.2	24.2	25.3	22.0	25.3	24.3		
2	11.6	5.1	4 1/2		24.0	23.6	21.8	24.9	24.9		
3	9.8	5.0	4 1/2		21.8	22.8	22.0	21.6	20.5		
4	10.6	5.5	4 3/4		20.0	24.0	23.6	20.1	23.0		
5	12.0	8.0	5.0		18.0	20.4	18.9	20.5	19.2		
6	9.7	5.1	5.1		22.0	21.8	24.2	23.1	18.6		
7	12.9	7.5	4.0		25.9	24.9	22.8	23.8	23.0		
8	11.2	6.1	4 1/2		22.9	21.5	19.4	21.0	19.6		
9	10.8	7.0	3.5		25.6	26.1	19.8	22.9	22.0		
10	12.0	6.5	4.5		19.0	19.4	19.4	22.9	24.9		
11	11.6	7.0	6.0		24.9	23.5	18.4	23.1	21.4		
12	9.6	7.0	3.3		23.7	21.5	20.2	21.6	18.6		
13	10.8	6.5	4.5		19.0	19.6	20.9	19.4	19.0		
14	13.5	8.0	5.0		19.3	19.4	19.6	19.4	19.8		
15	11.6	6.0	4.5		19.8	20.4	19.5	18.0	19.0		
16											
17	168.8	16									
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28											
29											
30											
TOTAL	0.0										0.00
Averages	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

CBR : 16.9 - 33.7

ASTM E2780 Wood Heater Test Notes

Client: Central Boiler Project Number: 0117W130038 Run Number: 4
 Model: 560 Tracking Number: 2495 Date: 12/05/24
 Test Crew: R. Morgan, T. Tong, R. Tings

Gravimetric Analysis Sheet

Assembled By:

Tong Tong

Date/Time in Desiccator:

1st hr: 12/05/22 at 18:14
12/07/2024 at 0703

Weighing's				
Date/Time: 12-09-24 8:14	Date/Time: 12-10-24 07:20			
R/H %: 17.1	R/H %: 15.0			
Temp: 67.9	Temp: 67.2			
100 mg Audit 100.0	100 mg Audit 100.0			
200 mg Audit 200.0	200 mg Audit 200.0			
2 g Audit: 2000.2	2 g Audit: 2000.2			
100 g Audit: 99997.9	100 g Audit 99997.9			
Initials: /L	Initials: /K			

Train	Element	ID #	Tare (mg)	v	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)	Weight (mg)
A	Filter Pair	F490/F490A	236.6	✓	241.4	241.3	—		
	Probe	2	115011.9	✓	115012.1	115012.0	—		
	O-Ring Set	S905	3255.5	✓	3255.9	3255.9	—		
B	Front Filter	F491/491A	237.4	✓	242.3	242.1	—		
	Probe	82	116287.2	✓	116287.3	116287.3	—		
	O-Ring Set	S906	3375.2	✓	3375.9	3375.8	—		
C (1 st hr)	Front Filter	F492/492A	236.8	✓	237.6	237.6	—		
	Probe	83	117541.2	✓	117541.2	117541.2	—		
	O-Ring Set	S909	3334.3	✓	3334.9	3334.8	—		
BG	Filter	F418	125.4	✓	125.5	125.5	—		

Technician Signature: R. MorganDate: 12-10-24

Equations and Calculations – ASTM E2618 & ASTM E2515



Manufacturer Central Boiler
 Model: Classic Edge 560.1
 Project Number: 0117WB043E
 Run Number: 4

Summary of INPUT values necessary for calculations

Global Input Parameters for Equations	Value	Source
MC_{Ave} - Average Fuel Load Moisture Content, % dry basis	21.62	Fuel Properties Work Sheet
W_{fuel} - Fuel charge weight (wet), pounds	168.8	Fuel Properties Work Sheet
HHV - Higher Heating Value of Fuel, Btu/lb.	8348	ISO Lab Report ¹
LHV - Lower Heating Value of Fuel, Btu/lb.	7789.6	CSA B415.1:22 ²
W_{app} - Mass of dry boiler, lb.	1822.5	Measured
W_{water} - Mass of Water within Boiler, lb.	1663	Measured
V_{SCENT} - Average gas velocity at the center of the dilution tunnel calculated after the Pitot tube traverse, ft/sec	22.27	Traverse Worksheet
V_{STRAV} - Average gas velocity calculated after the multipoint Pitot traverse	21.17	Traverse Worksheet
θ - Duration of test, min	2262	Train A Worksheet
P_{bar} - Barometric pressure (average) at the testing site, in. Hg	30.23	Traverse Worksheet
P_g - Tunnel Static Pressure	-0.4	Traverse Worksheet

¹ From an Ultimate Analysis performed on a sample of the fuel lot that was used.

² CSA B415 only accepts input for the HHV and calculates the LHV from that data. This differs from the LHV reported in the ultimate analysis, however the CSA value was used for consistency in comparing SLM and delivered efficiencies.

Sample Train Input Parameters for Equations	Train A	Train B	Train C	Train D
V_m - Volume of gas sample measured at the dry gas meter, dcf	365.324	364.807	9.384	362.385
Y Dry gas meter calibration factor	1.015	1.006	1.010	1.016
ΔH - Average pressure differential across the orifice meter, in. H ₂ O	1.29	0.98	2.17	1.54
T_m - Temperature of Dry Gas Meter, °F	76.0	77.0	64.8	66.0

Uncorrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.1	0.1	0.0	n/a
m_f - mass of particulate matter from filters, mg	4.7	4.7	0.8	0.1
m_g - mass of particulate matter from seals, mg	0.4	0.6	0.5	n/a

Corrected Sample Mass

m_p - mass of particulate matter from probe, mg	0.1	0.1	0.0	n/a
m_f - mass of particulate matter from filters, mg	4.7	4.7	0.8	n/a
m_g - mass of particulate matter from seals, mg	0.4	0.6	0.5	n/a

TI_{avg} - Average Temperature of Appliance and Water at Start of Test, °F - ASTM E2618 equation (1)

$$TI_{avg} = (T1 + T2)/2 \quad \text{At beginning of Test}$$

Where,

	Value
$T1$ = Temperature at inlet of supply side of exchanger, °F	165.5
$T2$ = Temperature at outlet of supply side of exchanger, °F	164.8

$$Ti_{avg} = (165.49 + 164.8) / 2 = 165.1$$

 TF_{avg} - Average Temperature of Appliance and Water at End of Test, °F - ASTM E2618 equation (2)

$$TF_{avg} = (T1 + T2)/2 \quad \text{At end of test}$$

Where,

	Value
$T1$ = Temperature at inlet of load side of heat exchanger, °F	166.8
$T2$ = Temperature at outlet of load side of heat exchanger, °F	166.0

$$TF_{avg} = (166.77 + 166.05) / 2 = 166.4$$

 MC_{Ave} - Average Fuel Load Moisture Content, dry basis, % - ASTM E2618 equation (3)

$$MC_{Ave} = (\Sigma W_i \cdot MC_i) / \Sigma W_i$$

Where,

W_i = Weight of individual pieces
 MC_i = Average moisture content of individual fuel pieces, dry basis

$\Sigma(W_i \cdot MC_i)$	3649.5	Taken from fuel properties sheet
Σw_i	168.8	Taken from fuel properties sheet

$$MC_{Ave} = (3649.5 / 168.8) = 21.62 \quad \%, \text{ dry basis}$$

Q_{in} - Heat Input, Btu (HHV) - ASTM E2618 equation (4)

$$Q_{in} = (W_{fuel} / (1 + (MC_{Ave} / 100))) \times HHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	168.8
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	21.62
HHV =	Higher Heating Value of Fuel, Btu/lb.	8348

$$Q_{in} = (168.8 / (1 + (21.62 / 100))) \times 8348 = 1158642.628 \quad \text{Btu}$$

Q_{in LHV} - Heat Input, Btu (LHV) - ASTM E2618 equation (5)

$$Q_{in LHV} = (W_{fuel} / (1 + (MC_{Ave} / 100))) \times LHV$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	168.8
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	21.62
LHV =	Higher Heating Value of Fuel, Btu/lb.	7789.6

$$Q_{in LHV} = (168.8 / (1 + (21.62 / 100))) \times 7789.6 = 1081140.706 \quad \text{Btu}$$

BR - Dry Burn-Rate, kg/hr

$$BR = [(W_{fuel} / (1 + (MC_{Ave} / 100))) / 2.2046] / \theta$$

Where,		Value
W_{fuel} =	Weight of the Wet Fuel Load, lb.	168.8
MC_{Ave} =	Average Fuel Load Moisture Content, dry basis	21.62
2.2046 =	Conversion kg -> lb.	2.2046
θ =	Duration of Test, hours	37.700

$$BR = (168.8 / (1 + (21.62 / 100))) / 2.2046 / 37.7 = 1.67 \quad \text{kg/hr}$$

Q_{out} - Heat Output, Btu - ASTM E2618 equation (7)

$$Q_{out} = \left[\sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) \right] + (W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg})$$

Where,

	<u>Value</u>
C_{pi} = Specific heat of water during interval (i), Btu/lb °F	Varies
ΔT_i = Temperature difference between water entering and exiting heat exchanger (load), °F	Varies
M_i = Mass flow-rate of water through heat exchanger during interval (i), lb./min	Varies
t_i = Data sampling interval, min	<u>Varies</u>
W_{app} = Weight of empty appliance, lb.	1822.5
C_{steel} = Specific heat of steel, Btu/lb.°F	0.1
C_{pa} = Specific heat of water at average appliance temperature, Btu/lb °F	1.0008
W_{water} = Weight of water in supply side of system, lb.	1663
TF_{avg} = Average temperature of appliance and water at end of test	166.41
TI_{avg} = Average temperature of appliance and water at start of test	165.15

$$\sum (C_{pi} \cdot \Delta T_i \cdot M_i \cdot t_i) \quad \text{from Water Data sheet} = \quad 926062.8492 \quad 24564.0013$$

$$C_{pa} = 1.0014 + (-0.000003485 \cdot (TI_{avg} + TF_{avg}) / 2) = \quad 1.0008$$

$$(W_{app} \cdot C_{steel} + C_{pa} \cdot W_{water}) \cdot (TF_{avg} - TI_{avg}) = \quad 2328.00$$

$$Q_{OUT} = \quad 926062.849 + 1.0008 \times 2327.995 = \quad 928390.84 \quad \text{Btu}$$

 $Heat Output Rate, Btu/hr$ - ASTM E2618 equation (15)

$$Heat Output Rate = Q_{OUT} / \theta$$

Where,

	<u>Value</u>
Q_{OUT} = Heat Output	928390.8
θ = Duration of test, hr	37.7000

$$Heat Output Rate = \quad 24625.8 \quad \text{Btu/hr}$$

V_S – Average gas velocity in the dilution tunnel, ft/sec - ASTM E2515 equation (9)

$$V_S = F_P \times K_P \times C_P \times (\sqrt{\Delta P})_{avg} \times \sqrt{\frac{T_{S(avg)}}{P_S \times M_S}}$$

Where

F_P = Adjustment factor for center of tunnel pitot tube placement, where

$$F_P = V_{STRAV} / V_{SCENT}$$

V_{SCENT} = Dilution tunnel velocity, at the center, ft/sec

V_{STRAV} = Dilution tunnel velocity, multi-point pitot traverse, ft/sec

K_P = Pitot tube constant, 85.49

C_P = Pitot tube coefficient: 0.99, unitless

$\Delta P^{1/2}_{AVG}$ = Velocity pressure in the dilution tunnel, in H_2O

$T_{S(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R

P_S = Absolute average gas static pressure in tunnel, = Pbar + Pg, where

Pbar = Barometric Pressure, in. Hg,

Pg = Static pressure in tunnel, Hg (in H_2O / 13.6)

M_S = The dilution tunnel wet molecular weight; M_S = 28.78 assuming a dry weight of 29 lb/lb-mole

(Duration of Test)

$$F_P = 0.9506$$

$$\Delta P^{1/2}_{AVG} = 0.3371$$

$$T_{S(avg)} = 525.9324$$

$$P_{bar} = 30.2300$$

$$P_g = -0.4000$$

$$P_S = 30.2006$$

$$V_S = 0.951 \times 85.49 \times 0.99 \times 0.337 \times \sqrt{[(526 / (30.2 \times 28.78))]}$$

$$V_S = \mathbf{21.095} \quad \text{ft/sec}$$

(First Hour of Test)

$$F_P = 0.9506$$

$$\Delta P^{1/2}_{AVG} = 0.3394$$

$$T_{S(avg)} = 526.2295$$

$$P_{bar} = 30.3600$$

$$P_g = -0.4000$$

$$P_S = 30.3306$$

$$V_S = 0.951 \times 85.49 \times 0.99 \times 0.339 \times \sqrt{[(526 / (30.33 \times 28.78))]}$$

$$V_S = \mathbf{21.204} \quad \text{ft/sec}$$

Q_{std} – Average gas flow rate in dilution tunnel, dscf/hr - ASTM E2515 equation (3)

$$Q_{std} = 3600 \times (1 - B_{ws}) \times v_s \times A \times \frac{T_{std}}{T_{s(avg)}} \times \frac{P_s}{P_{std}}$$

Where:

3600 = Conversion from seconds to hours (ASTM method uses 60 to convert in minutes)

B_{ws} = Water vapor in gas stream, proportion by volume; assume 2%

A = Cross sectional area of dilution tunnel, ft²

T_{std} = solute temperature, 528 °R

P_s = Absolute average gas static pressure in dilution tunnel, = Pbar + Pg , in Hg

$T_{s(avg)}$ = Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)

P_{std} = Standard absolute pressure, 29.92 in Hg

(Full Duration of Test):

$$B_{ws} = 0.02$$

$$A = 0.78540$$

$$P_s = 30.20$$

$$T_{s(avg)} = 526$$

$$V_s = 21.10$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.095 \times 0.7854 \times (528 / 526) \times (30.2 / 29.92)$$

$$Q_{std} = \mathbf{59232.8} \quad \text{dscf/hr}$$

(First Hour):

$$B_{ws} = 0.02$$

$$A = 0.78540$$

$$P_s = 30.33$$

$$T_{s(avg)} = 526$$

$$V_s = 21.204$$

$$Q_{std} = 3600 \times (1 - 0.02) \times 21.204 \times 0.7854 \times (528 / 526) \times (30.33 / 29.92)$$

$$Q_{std} = \mathbf{59760.5} \quad \text{dscf/hr}$$

V_{m(std)} – Volume of Gas Sampled (Corrected), dscf - ASTM E2515 equation (6)

$$V_{m(std)} = K_1 V_m Y \frac{P_{bar} + \left(\frac{\Delta H}{13.6} \right)}{T_m}$$

Where:

K_1	=	17.64 °R/in. Hg
V_m	=	Volume of gas sample measured at the dry gas meter, dcf
Y	=	Dry gas meter calibration factor, dimensionless
P_{bar}	=	Barometric pressure at the testing site, in. Hg
ΔH	=	Average pressure differential across the orifice meter, in. H ₂ O
T_m	=	Absolute average dry gas meter temperature, °R

Train A

$$V_{m(std)} = 17.64 \times 365.324 \times 1.015 \times \frac{(30.23 + \frac{1.29}{13.6})}{(76.0 + 460)}$$

$$V_{m(std)} = \mathbf{370.035} \text{ dscf}$$

Train B

$$V_{m(std)} = 17.64 \times 364.807 \times 1.006 \times \frac{(30.23 + \frac{0.98}{13.6})}{(77 + 460)}$$

$$V_{m(std)} = \mathbf{365.325} \text{ dscf}$$

Train C (1st Hour)

$$V_{m(std)} = 17.64 \times 9.38 \times 1.010 \times \frac{(30.36 + \frac{2.17}{13.6})}{(64.8 + 460)}$$

$$V_{m(std)} = \mathbf{9.722} \text{ dscf}$$

Train D (Background)

$$V_{m(std)} = 17.64 \times 362.39 \times 1.016 \times \frac{(30.23 + \frac{1.54}{13.6})}{(66.0 + 460)}$$

$$V_{m(std)} = \mathbf{374.659} \text{ dscf}$$

mn – Total Particulate Matter Collected, mg - ASTM E2515 Equation (12)

$$m_n = m_p + m_f + m_g$$

Where:

- m_p = mass of particulate matter from probe, mg
- m_f = mass of particulate matter from filters, mg
- m_g = mass of particulate matter from filter seals, mg

Uncorrected:

Train A

$$m_n = 0.1 + 4.7 + 0.4$$
$$m_n = 5.2 \text{ mg}$$

Train B

$$m_n = 0.1 + 4.7 + 0.6$$
$$m_n = 5.4 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.0 + 0.8 + 0.5$$
$$m_n = 1.3 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.1$$
$$m_n = 0.1 \text{ mg}$$

Corrected:

Train A

$$m_n = 0.1 + 4.7 + 0.4$$
$$m_n = 5.2 \text{ mg}$$

Train B

$$m_n = 0.1 + 4.7 + 0.6$$
$$m_n = 5.4 \text{ mg}$$

Train C (1st hour)

$$m_n = 0.0 + 0.8 + 0.5$$
$$m_n = 1.3 \text{ mg}$$

Train D (Background)

$$m_n = m_f = 0.1$$
$$m_n = 0.1 \text{ mg}$$

**C_s - Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions
g/dscf - ASTM E2515 equation (13)**

$$C_s = K_2 \times \frac{m_n}{V_{m(std)}}$$

Where:

K₂ = Constant, 0.001 g/mg

m_n = Total mass of particulate matter collected in the sampling train, mg

V_{m(std)} = Volume of gas sampled corrected to dry standard conditions, dscf

Uncorrected:

Train A	C _s =	0.001 x	$\frac{5.2}{370.04}$
---------	------------------	---------	----------------------

C_s = **0.000014** g/dscf

Train B	C _s =	0.001 x	$\frac{5.4}{365.32}$
---------	------------------	---------	----------------------

C_s = **0.0000148** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{1.3}{9.72}$
--------------------	------------------	---------	--------------------

C_s = **0.000134** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.1}{374.66}$
----------------------	------------------	---------	----------------------

C_r = **0.000000** g/dscf

Corrected:

Train A	C _s =	0.001 x	$\frac{5.2}{370.04}$
---------	------------------	---------	----------------------

C_s = **0.000014** g/dscf

Train B	C _s =	0.001 x	$\frac{5.4}{365.32}$
---------	------------------	---------	----------------------

C_s = **0.0000148** g/dscf

Train C (1st Hour)	C _s =	0.001 x	$\frac{1.3}{9.72}$
--------------------	------------------	---------	--------------------

C_s = **0.000134** g/dscf

Train D (Background)	C _r =	0.001 x	$\frac{0.1}{374.66}$
----------------------	------------------	---------	----------------------

C_r = **0.000000** g/dscf

ET – Total Particulate Emissions, g - ASTM E2515 equation (15)

$$E_T = (c_s - c_r) \times Q_{std} \times \theta$$

Where:

C_s	=	Concentration of particulate matter in tunnel gas, g/dscf
C_r	=	Concentration particulate matter room air, g/dscf
Q_{std}	=	Average dilution tunnel gas flow rate, dscf/hr
θ	=	Total time of test run, minutes

Uncorrected:

Train A

$$E_T = (0.000014 - 0.000000) \times 59232.8 \times 2262 / 60$$

$$E_T = 31.38 \text{ g}$$

Train B

$$E_T = (0.000015 - 0.000000) \times 59232.8 \times 2262 / 60$$

$$E_T = 33.01 \text{ g}$$

First Hour

$$E_T = (0.000134 - 0.000000) \times 59760.5 \times 60 / 60$$

$$E_T = 7.99 \text{ g}$$

Trains A and B Average

$$E_T = 32.19 \text{ g}$$

Corrected:

Train A

$$E_T = (0.000014 - 0.000000) \times 59232.8 \times 2262 / 60$$

$$E_T = 31.38 \text{ g}$$

Train B

$$E_T = (0.000015 - 0.000000) \times 59232.8 \times 2262 / 60$$

$$E_T = 33.01 \text{ g}$$

First Hour

$$E_T = (0.000134 - 0.000000) \times 59760.5 \times 60 / 60$$

$$E_T = 7.99 \text{ g}$$

Trains A and B Average

$$E_T = 32.19 \text{ g}$$

PM_R – Particulate emissions for test run, g/hr - ASTM E2780 equation (6)

$$PM_R = 60(E_T/\theta)$$

Where,

 E_T = Total particulate emissions, grams θ = Total length of full integrated test run, min**Uncorrected:**

Train A

$$E_T = 31.38 \text{ g}$$

$$\theta = 2262 \text{ min}$$

$$PM_R = 60 \times (31.38 / \text{###})$$

$$PM_R = \mathbf{0.83} \text{ g/hr}$$

Train B

$$E_T = 33.01 \text{ g}$$

$$\theta = 2262 \text{ min}$$

$$PM_R = 60 \times (33.01 / \text{###})$$

$$PM_R = \mathbf{0.88} \text{ g/hr}$$

A and B Average

$$PM_R = \mathbf{0.85} \text{ g/hr}$$

First Hour

$$E_T = 7.99 \text{ g}$$

$$\theta = 60 \text{ min}$$

$$PM_R = 60 \times (7.99 / 60)$$

$$PM_R = \mathbf{7.99} \text{ g/hr}$$

Corrected:

Train A

$$E_T = 31.38 \text{ g}$$

$$\theta = 2262 \text{ min}$$

$$PM_R = 60 \times (31.38 / \text{###})$$

$$PM_R = \mathbf{0.83} \text{ g/hr}$$

Train B

$$E_T = 33.01 \text{ g}$$

$$\theta = 2262 \text{ min}$$

$$PM_R = 60 \times (33.01 / \text{###})$$

$$PM_R = \mathbf{0.88} \text{ g/hr}$$

A and B Average

$$E_T = \mathbf{0.85} \text{ g}$$

First Hour

$$E_T = 7.99 \text{ g}$$

$$\theta = 60 \text{ min}$$

$$PM_R = 60 \times (7.99 / 60)$$

$$PM_R = \mathbf{7.99} \text{ g/hr}$$

$E_{g/kg}$ - Particulate emission factor for test run, g/dry kg of fuel burned - ASTM E2618 equation (18)

$$E_{g/kg} = E_T / (W_{fuel} / (1 + MC/100))$$

Uncorrected:

Train A	$E_T =$	31.38	g
	$W_{fuel} =$	76.57	kg
	$MC =$	21.62	
	$E_{g/kg} =$	0.498	/kg

Train B	$E_T =$	33.01	g
	$W_{fuel} =$	76.57	kg
	$MC =$	21.62	
	$E_{g/kg} =$	0.524	/kg

Corrected:

Train A	$E_T =$	31.38	g
	$W_{fuel} =$	76.57	kg
	$MC =$	21.62	
	$E_{g/kg} =$	0.498	/kg

Train B	$E_T =$	33.01	g
	$W_{fuel} =$	76.57	kg
	$MC =$	21.62	
	$E_{g/kg} =$	0.524	/kg

PR - Proportional Rate Variation - ASTM E2515 equation (16)

$$PR = \left[\frac{\theta \times V_{mi} \times V_s \times T_m \times T_{si}}{\theta_i \times V_m \times V_{si} \times T_{mi} \times T_s} \right] \times 100$$

Where:

	Train A	Train B	Train C
θ = Total sampling time, min	2262	2262	60
θ_i = Length of recording interval, min	1	1	1
V_{mi} = Volume of gas sample measured by the dry gas meter during the "ith" time interval, dcf	0.162	0.161	0.159
V_m = Volume of gas sample as measured by dry gas meter, dcf	365.324	364.807	9.384
V_{si} = Average gas velocity in the dilution tunnel during the "ith" time interval, ft/sec	21.315	21.315	21.315
V_s = Average gas velocity in the dilution tunnel, ft/sec	21.096	21.096	21.257
T_{mi} = Absolute average dry gas meter temperature during the "ith" time interval, °R	529.0	529.0	524.0
T_m = Absolute average dry gas meter temperature, °R	536.0	537.0	524.8
T_{si} = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, °R	531.0	531.0	531.0
T_s = Absolute average gas temperature in the dilution tunnel, °R	525.9	525.9	526.2

NOTE: These calculations are for the Second interval of each train)

$$\text{Train A PR} = \left(\frac{2262 \times 0.162 \times 21.096 \times 536 \times 531}{1 \times 365.324 \times 21.315 \times 529 \times 526} \right) \times 100 = 101.6 \%$$

$$\text{Train B PR} = \left(\frac{2262 \times 0.161 \times 21.096 \times 537 \times 531}{1 \times 364.807 \times 21.315 \times 529 \times 526} \right) \times 100 = 101.3 \%$$

$$\text{Train C PR} = \left(\frac{60 \times 0.159 \times 21.257 \times 525 \times 531}{1 \times 9.384 \times 21.315 \times 524 \times 526} \right) \times 100 = 102.5 \%$$

Emission Rates and Factors - ASTM E2618 equations 16, 17, 18 and 19

Uncorrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 32.19 / (928390.8 \times 0.001055) = 0.0329$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (32.19 / 453.59) / (928390.8 \times 10^{-6}) = 0.0765$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 32.19 / \left((168.8 / (1 + 21.62 / 100)) / 2.2046 \right) = 0.511$$

Corrected:

$$E_{g/MJ} = E_T / (Q_{out} \times 0.001055) \quad (16)$$

$$E_{g/MJ} = 32.19 / (928390.8 \times 0.001055) = 0.0329$$

$$E_{lbs./MM \text{ Btu output}} = (E_T / 453.59) / (Q_{out} \times 10^{-6}) \quad (17)$$

$$E_{lbs./MM \text{ Btu output}} = (32.19 / 453.59) / (928390.8 \times 10^{-6}) = 0.0765$$

$$E_{g/kg} = E_T / \left(\left(W_{fuel} / \left(1 + \frac{M_C}{100} \right) \right) / 2.2046 \right) \quad (18)$$

$$E_{g/kg} = 32.19 / \left((168.8 / (1 + 21.62 / 100)) / 2.2046 \right) = 0.511$$

Tare Sheet: (check one) ☒ Probes ☒ 47mm Filters ☒ 100mm Filters ☐ O-Ring Pair ☐
 Prepared By: _____ Balance ID #: _____ Thermohygrometer ID #: _____ Audit Weight ID #/Mass: _____ /

Placed in Dessicator:		Date: <u>6-13-2024</u>		Date: <u>06/19/24</u>		Date: _____		Date Used		Project Number		Run No.	
Time: <u>1730</u>		Time: <u>14:50</u>		Time: _____		Time: _____		Time: _____		Time: _____		Time: _____	
RH %: <u>18.7</u>		RH %: <u>15.8</u>		RH %: _____		RH %: _____		RH %: _____		RH %: _____		RH %: _____	
T (°F): <u>76.4</u>		T (°F): <u>14.7</u>		T (°F): _____		T (°F): _____		T (°F): _____		T (°F): _____		T (°F): _____	
Audit: <u>200.0</u>		Audit: <u>200.0</u>		Audit: _____		Audit: _____		Audit: _____		Audit: _____		Audit: _____	
ID #													
F401	124.9	124.8											
F402	125.9	125.8											
F403	125.1	125.1											
F404	125.1	125.0											
F405	125.5	125.5											
F406	126.1	125.2											
F407	125.9	125.9											
F408	123.9	124.0											
F409	126.1	126.1											
F410	125.4	125.4											
F411	125.0	124.9											
F412	125.1	125.2											
F413	124.7	124.8											
F414	125.4	125.5											
F415	125.6	125.5											
F416	125.5	125.4											
F417	125.7	125.5											
F418	125.3	125.4											
F419	124.8	124.7											
F420	125.8	125.9											
Initials: <u>RT</u>		Initials: <u>TT</u>		Initials: _____		Initials: _____		Initials: _____		Initials: _____		Initials: _____	

Final Technician Signature: [Signature] Date: 9/18/24
 Control No. P-SFDP-0002.xls, Effective date: 2/1/2017
 Evaluator signature: [Signature] 9/18/24

Tare Sheet: (check one) Probes 47mm Filters 100mm Filters O-Ring Pair
 Prepared By: Balance ID #: Thermohygrometer ID #: Audit Weight ID #/Mass: 1

Placed in Dessicator:	Date: <u>11/26/24</u> Time: <u>15:00</u> RH %: <u>14.6</u> T (°F): <u>68.5</u> Audit: <u>200.0</u>	Date: <u>11/27/24</u> Time: <u>14:30</u> RH %: <u>14.4</u> T (°F): <u>67.4</u> Audit: <u>300.1</u>	Date: _____ Time: _____ RH %: _____ T (°F): _____ Audit: _____	Date Used	Project Number	Run No.
ID #						
F 481/481A	238.3	238.3		12/02/24	0117 WB 043 E	1
F 482/482A	237.4	237.5		↓	↓	↓
F 483/483A	238.2	238.1				
F 484/484A	238.3	238.2		12/03/24	0117 WB 043 E	2
F 485/485A	238.5	238.5		↓	↓	↓
F 486/486A	237.1	237.1				
F 487/487A	237.5	237.4		12/04/24	0117 WB 043 E	3
F 488/488A	237.5	237.5		↓	↓	↓
F 489/489A	238.1	238.3				
F 490/490A	236.6	236.6		12/05/24	0117 WB 043 E	4
F 491/491A	237.5	237.4		↓	↓	↓
F 492/492A	237.0	236.8				
F 493/493A	238.2	238.1				
F 494/494A	237.6	237.5				
F 495/495A	237.4	237.5				
F 496/496A	239.0	238.8				
F 497/497A	239.5	239.4				
F 498/498A	237.6	237.4				
F 499/499A	237.4	237.2				
F 500/500A	238.0	237.8				
Initials: TT	Initials: TT	Initials: TT	Initials: _____			

Final Technician Signature: Tony Terry Date: 11/27/24 Evaluator signature: Th. H. Meyer
 Control No. P-SFDP-0002.xls, Effective date: 2/1/2017

Tare Sheet: (check one)

Probes

47mm Filters

100mm Filters

O-Ring Pair

Prepared By:

Balance ID #:

Thermohygrometer ID #:

Audit Weight ID #/Mass:

Placed in

Dessicator:

Date: 9/17/24

Time: 9:00

Date: 11/26/24

Time: 14:00

RH %: 2.1

T (°F): 70.7

Audit: 5000.0

Date: 11/27/24

Time: 15:05

RH %: 4.6

T (°F): 70.3

Audit: 3000.3

Date: 12/02/24

Time: 11:00

RH %: 9.3

T (°F): 69.0

Audit: 3000.2

Date:

Time:

RH %:

T (°F):

Audit:

Date Used

Project Number

Run No.

ID #	Date: 11/26/24 Time: 14:00 RH %: 2.1 T (°F): 70.7 Audit: 5000.0	Date: 11/27/24 Time: 15:05 RH %: 4.6 T (°F): 70.3 Audit: 3000.3	Date: 12/02/24 Time: 11:00 RH %: 9.3 T (°F): 69.0 Audit: 3000.2	Date Used	Project Number	Run No.
5896	3411.0	3411.1		12/02/24	0117WB043E	1
5897	3320.0	3320.1		↓	↓	↓
5898	3373.9	3373.8				
5899	3309.5	3309.3		12/03/24	0117WB043E	2
5900	3383.3	3383.2		↓	↓	↓
5901	3361.4	3361.3				
5902	3365.2	3365.0				
5903	3352.0	3352.0				
5904	3294.2	3294.2		12/04/24	0117WB043E	3
5905	3255.6	3255.5		12/05/24	0117WB043E	4
5906	3375.3	3375.2		↓	↓	↓
5907	4146.2	4146.4		12/04/24	0117WB043E	3
5908	3332.6	3332.6		↓	↓	↓
5909	3334.5	3334.3		12/05/24	0117WB043E	4
5910	4130.5	4130.5				
5911	4124.7	4124.7				
5912	3332.6	3332.7				
5913	3358.1	3358.1				
5914	3325.7	3325.9				
5915	3349.9	3349.6	3349.8			

Initials:

Initials: TT

Initials: TT

Initials:

Final Technician Signature: Terry Tong

Control No. P-SFDP-0002.xls, Effective date: 2/1/2017

Date: 12/02/24

Evaluator signature: [Signature]

Central Boiler 560.1 Water Flow Verifications
Project Number: 0117WB043E

Run	Date	Bucket Measurement							Logged Data		
		Time	Weight	T, min	lb/min	Water, °F	lb/gal	GPM	Data Rows	GPM	± %
1	12/2/2024	16:56	38.12	1	38.12	54.5	8.3371	4.572	322-323	4.575	-0.06
1	12/2/2024	22:02	73.61	2.013167	36.56429	54.1	8.3374	4.386	628-629	4.388	-0.06
2	12/3/2024	14:57	33.96	2.018500	16.82437	54.6	8.3370	2.018	331-332	2.034	-0.79
2	12/4/2024	1:43	23.7	2.005167	11.82944	53.6	8.3379	1.419	977-978	1.424	-0.37
3	12/4/2024	12:10	19.32	3.007167	6.424652	56.2	8.3354	0.771	336-337	0.773	-0.29
3	12/5/2024	8:27	14.27	2.064000	6.91376	55.2	8.3364	0.829	1553-1554	0.830	-0.08
4	12/5/2024	15:53	11.38	3.008500	3.782616	58.3	8.3333	0.454	361-363	0.458	-0.90
4	12/7/2024	6:25	11.38	3.006000	3.785762	56.1	8.3355	0.454	2673-2675	0.458	-0.84

CENTRAL Boiler
560.1 Bucket checks

12/02/24 Run 1			
Time (min)	Mass (lbs)		
15:12 154	3'00"81	73.49	24.50 lb/min
Rows	1900.02 mba	38.12 lb	
330-331			
628 629	2'00:79	73.01	
12-03-24 Run 2			
14:57	2'01.11 = 2.0185	33.96	
20:00	2'00.00	20.47	
01:43	2'00.31	23.72	
12-04-24 Run 3			
12:10	2'02.01	12.98 lb	6.38 lb/min
579 2582 min	3'00"43	19.32 lbs	6.02 lb/min
0028	3'00.33	16.47 lbs	
08:27	2'03.84	14.27	
12/05/24 Run 4			
3:55 (15:54)	3'00"51	11.38 lb	
	3.0085	3.78	
0629:	3'00.36	11.38	

6. Appliance Engineering Drawings

(CBI Report Only)

7. Appliance Labeling and Owner's Manual(s)

Tested &
Listed By



Portland
Oregon USA

OMNI-Test Laboratories, Inc.



Central Boiler
20502 160th Street
Greenbush, MN 56726

Report (rapport) # 0117WB036S (12/2014), 0117WB043E

Serial No. (Numéro de série)

Model (Modèle)

Month/Year Manufactured
(Date de fabrication)

Solid Fuel Only Models: Classic Edge 560.1 Outdoor Wood Furnace

Listed by OMNI-Test Laboratories to the applicable portions of the following standards: UL 2523-2018 Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters and Boilers, CAN/CSA B415.1-10 (R2015) Performance Testing of Solid-Fuel-Burning Heating Appliances, CSA-B366.1-11 (R2015) Solid-Fuel-Fired Central Heating Appliance, ASTM E2618-13 Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances, ASTM E2515-11 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel.

For outdoor installations only; Category I Boiler.

May be connected to existing boiler system by qualified installer only.

Never fire appliance with water level below the FULL mark.
DO NOT ATTEMPT TO LIGHT A FIRE WHEN THERE IS GAS VAPOR PRESENT.

FOR SAFETY, KEEP FIREBOX DOOR LATCHED. Leaving the firebox door open may lead to a runaway fire.

THE APPLIANCE AND CHIMNEY MUST BE KEPT IN GOOD CONDITION AND CLEANED WHEN NECESSARY.

THE HEAT EXCHANGER, FLUE PIPE, AND CHIMNEY MUST BE CLEANED REGULARLY TO REMOVE ACCUMULATED CREOSOTE AND ASH. ENSURE THAT THE HEAT EXCHANGER, FLUE PIPE, AND CHIMNEY ARE CLEANED AT THE END OF EACH HEATING SEASON TO MINIMIZE CORROSION DURING THE SUMMER MONTHS. THE APPLIANCE, FLUE PIPE, AND CHIMNEY MUST BE IN GOOD CONDITION. THESE INSTRUCTIONS ALSO APPLY IF A DRAFT INDUCER IS USED.

A POWER GENERATOR MAY BE USED IN EVENT OF POWER FAILURE TO PREVENT LINES FROM FREEZING.

DO NOT CONNECT THIS APPLIANCE TO CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

Installation Clearances to Combustibles

44 in. (1.12 m) from the back, 48 in. (1.22 m) from the front, 12 in. (0.3 m) from the sides, 18 in. (0.46 m) from the chimney inspection cover

Do not store wood or other combustible material within installation clearances. Base - Noncombustible; concrete preferred for all models. Minimum recommended chimney length is 8 ft (two 4-ft sections supplied). Adjust flue draft between -0.010 and -0.030 in. WC (-2.490 and -7.470 Pa). Unsafe to adjust flue draft higher than -0.050 in. WC (-12.450 Pa). Maximum Circuit Breaker: 120 Volts, 50/60 Hz, 15 Amps. Maximum Auxiliary Outlet Load: 120 Volts, 50/60 Hz, 7 Amps.

Firebox Fuel

BURN WOOD ONLY; LOAD WITH CAUTION TO PREVENT DAMAGE TO APPLIANCE. DO NOT BURN GARBAGE, GASOLINE, NAPHTHA, ENGINE OIL, OR OTHER INAPPROPRIATE MATERIALS. DO NOT USE CHEMICALS OR FLUIDS TO START FIRE.

Refer to Owner's Manual for further instructions.

Modèles à combustible solide seulement : Chaudière Extérieure à Bois Classic Edge 560.1

La chaudière hydronique extérieure Classic Edge fabriquée par Central Boiler a été certifiée par les laboratoires OMNI-Test conforme aux sections applicables des normes suivantes : UL 2523-2018 Appareils de chauffage hydroniques, chauffe-eaux et chaudières à eau à combustibles solides, CAN/CSA B415.1-10 (R2015) Essais et rendement des appareils de chauffage à combustibles solides, CSA-B366.1-11 (R2015) Appareil de chauffage central à combustibles solides, ASTM E2618-13 Protocole d'essais standard destiné à mesurer les émissions de particules et le rendement thermique des appareils de chauffage hydroniques à combustibles solides, ASTM E2515-11 Protocole d'essais standard destiné à déterminer les émissions de particules recueillies par un tunnel de dilution.

Ne convient qu'à des installations extérieures; chaudières de catégorie I.

Peut être connecté à une chaudière existante uniquement par un installateur qualifié.

Ne démarrez jamais l'appareil si le niveau d'eau se situe en deçà du repère FULL (PLEIN).

N'ESSAYEZ PAS D'ALLUMER UN FEU EN PRÉSENCE DE VAPEURS DE GAZ.

À DES FINS DE SÉCURITÉ, GARDEZ FERMÉE LA PORTE DE LA CHAMBRE DE COMBUSTION. Si vous la laissez ouverte, cela peut provoquer un incendie incontrôlé.

L'APPAREIL ET LA CHEMINÉE DOIVENT ÊTRE, AU BESOIN, NETTOYÉS ET MAINTENUS EN BON ÉTAT.

L'ÉCHANGEUR THERMIQUE, LE CARNEAU DE FUMÉES ET LA CHEMINÉE DOIVENT ÊTRE NETTOYÉS RÉGULIÈREMENT AFIN D'ÉLIMINER LES ACCUMULATIONS DE CRÉOSOTE ET DE CENDRES. ASSUREZ-VOUS DE NETTOYER L'ÉCHANGEUR THERMIQUE, LE CARNEAU DE FUMÉES ET LA CHEMINÉE À LA FIN DE CHAQUE SAISON DE CHAUFFE AFIN DE MINIMISER LES RISQUES DE CORROSION DURANT LES MOIS CHAUDS. L'APPAREIL, LE CARNEAU DE FUMÉES ET LA CHEMINÉE DOIVENT ÊTRE EN BON ÉTAT. CES INSTRUCTIONS SONT ÉGALEMENT VALABLES SI LE SYSTÈME EST DOTÉ D'UN DISPOSITIF D'ASPIRATION.

EN CAS DE PANNE D'ÉLECTRICITÉ, POUR ÉVITER QUE LES CANALISATIONS NE GÈLENT, UNE GÉNÉRATRICE ÉLECTRIQUE PEUT ÊTRE UTILISÉE.

NE CONNECTEZ PAS CET APPAREIL À UNE CONDUITE DE CHEMINÉE DE CHEMINÉE SERVANT UN AUTRE.

Installation et Espace Libre jusqu'à des Matériaux Combustibles

112 cm (44 pouces) à partir de l'arrière / 122 cm (48 pouces) à partir du devant / 30 cm (12 pouces) à partir des côtés / à 46 cm (18 pouces) du raccord de cheminée

N'entrez ni bois ni autre forme de combustible à l'intérieur de la zone de dégagement de l'installation. Base – non combustible; le béton est préféré pour tous les modèles. La longueur de cheminée recommandée s'élève à huit pieds (deux sections de quatre pieds). Réglez le tirage du carneau entre -0,01 et -0,03 pouce de colonne d'eau (-2,490 et -7,470 Pa). Il est dangereux de régler le tirage sur une valeur supérieure à -0,05 pouce de colonne d'eau. Disjoncteur maximale : 120 V, 50/60 Hz, circuit 15 A. Charge maximale prise de courant auxiliaire : 120 V, 50/60 Hz, circuit 7 A.

Combustible pour chambre de combustion

NE BRÛLEZ QUE DU BOIS; CHARGEZ-LE AVEC PRÉCAUTION POUR ÉVITER D'ENDOMMAGER L'APPAREIL. NE PAS BRÛLER DE DÉCHETS, D'ESSENCE, DE NAPHTA, D'HUILE MOTEUR OU TOUT AUTRE PRODUIT INAPPROPRIÉ. NE PAS UTILISER DE PRODUITS CHIMIQUES OU DE LIQUIDES INFLAMMABLES POUR L'ALLUMAGE.

Pour des directives additionnelles, reportez-vous au manuel d'utilisation.

Tested &
Listed By



Portland
Oregon USA

OMNI-Test Laboratories, Inc.



WoodMaster, Inc.
20502 160th Street
Greenbush, MN 56726

Report (rapport) # 0117WB036S (12/2014), 0117WB043E

Serial No. (Numéro de série)

Model (Modèle)

Month/Year Manufactured
(Date de fabrication)

Solid Fuel Only Models: CleanFire 500.1 Outdoor Wood Furnace

Listed by OMNI-Test Laboratories to the applicable portions of the following standards: UL 2523-2018 Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters and Boilers, CAN/CSA B415.1-10 (R2015) Performance Testing of Solid-Fuel-Burning Heating Appliances, CSA-B366.1-11 (R2015) Solid-Fuel-Fired Central Heating Appliance, ASTM E2618-13 Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances, ASTM E2515-11 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel.

For outdoor installations only; Category I Boiler.

May be connected to existing boiler system by qualified installer only.

Never fire appliance with water level below the FULL mark.
DO NOT ATTEMPT TO LIGHT A FIRE WHEN THERE IS GAS VAPOR PRESENT.

FOR SAFETY, KEEP FIREBOX DOOR LATCHED. Leaving the firebox door open may lead to a runaway fire.

THE APPLIANCE AND CHIMNEY MUST BE KEPT IN GOOD CONDITION AND CLEANED WHEN NECESSARY.

THE HEAT EXCHANGER, FLUE PIPE, AND CHIMNEY MUST BE CLEANED REGULARLY TO REMOVE ACCUMULATED CREOSOTE AND ASH. ENSURE THAT THE HEAT EXCHANGER, FLUE PIPE, AND CHIMNEY ARE CLEANED AT THE END OF EACH HEATING SEASON TO MINIMIZE CORROSION DURING THE SUMMER MONTHS. THE APPLIANCE, FLUE PIPE, AND CHIMNEY MUST BE IN GOOD CONDITION. THESE INSTRUCTIONS ALSO APPLY IF A DRAFT INDUCER IS USED.

A POWER GENERATOR MAY BE USED IN EVENT OF POWER FAILURE TO PREVENT LINES FROM FREEZING.

DO NOT CONNECT THIS APPLIANCE TO CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

Installation Clearances to Combustibles

44 in. (1.12 m) from the back, 48 in. (1.22 m) from the front, 12 in. (0.3 m) from the sides, 18 in. (0.46 m) from the chimney inspection cover.

Do not store wood or other combustible material within installation clearances. Base - Noncombustible; concrete preferred for all models. Minimum recommended chimney length is 8 ft (two 4-ft sections supplied). Adjust flue draft between -0.010 and -0.030 in. WC (-2.490 and -7.470 Pa). Unsafe to adjust flue draft higher than -0.050 in. WC (-12.450 Pa). Maximum Circuit Breaker: 120 Volts, 50/60 Hz, 15 Amps. Maximum Auxiliary Outlet Load: 120 Volts, 50/60 Hz, 7 Amps.

Firebox Fuel

BURN WOOD ONLY; LOAD WITH CAUTION TO PREVENT DAMAGE TO APPLIANCE. DO NOT BURN GARBAGE, GASOLINE, NAPHTHA, ENGINE OIL, OR OTHER INAPPROPRIATE MATERIALS. DO NOT USE CHEMICALS OR FLUIDS TO START FIRE.

Refer to Owner's Manual for further instructions.

Modèles à combustible solide seulement : Chaudière Extérieure à Bois CleanFire 500.1

La chaudière hydronique extérieure CleanFire fabriquée par WoodMaster a été certifiée par les laboratoires OMNI-Test conforme aux sections applicables des normes suivantes : UL 2523-2018 Appareils de chauffage hydroniques, chauffe-eaux et chaudières à eau à combustibles solides, CAN/CSA B415.1-10 (R2015) Essais et rendement des appareils de chauffage à combustibles solides, CSA-B366.1-11 (R2015) Appareil de chauffage central à combustibles solides, ASTM E2618-13 Protocole d'essais standard destiné à mesurer les émissions de particules et le rendement thermique des appareils de chauffage hydroniques à combustibles solides, ASTM E2515-11 Protocole d'essais standard destiné à déterminer les émissions de particules recueillies par un tunnel de dilution.

Ne convient qu'à des installations extérieures; chaudières de catégorie I.

Peut être connecté à une chaudière existante uniquement par un installateur qualifié.

Ne démarrez jamais l'appareil si le niveau d'eau se situe en deçà du repère FULL (PLEIN).

N'ESSAYEZ PAS D'ALLUMER UN FEU EN PRÉSENCE DE VAPEURS DE GAZ.

À DES FINS DE SÉCURITÉ, GARDEZ FERMÉE LA PORTE DE LA CHAMBRE DE COMBUSTION. Si vous la laissez ouverte, cela peut provoquer un incendie incontrôlé.

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112 cm (44 pouces) à partir de l'arrière / 122 cm (48 pouces) à partir du devant / 30 cm (12 pouces) à partir des côtés / à 46 cm (18 pouces) du raccord de cheminée.

N'entrez ni bois ni autre forme de combustible à l'intérieur de la zone de dégagement de l'installation. Base - non combustible; le béton est préféré pour tous les modèles. La longueur de cheminée recommandée s'élève à huit pieds (deux sections de quatre pieds). Réglez le tirage du carneau entre -0,01 et -0,03 pouce de colonne d'eau (-2,490 et -7,470 Pa). Il est dangereux de régler le tirage sur une valeur supérieure à -0,05 pouce de colonne d'eau. Disjoncteur maximale : 120 V, 50/60 Hz, circuit 15 A. Charge maximale prise de courant auxiliaire : 120 V, 50/60 Hz, circuit 7 A.

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Pour des directives additionnelles, reportez-vous au manuel d'utilisation.



CLASSIC EDGE™

TITANIUM HDX

OUTDOOR WOOD FURNACE



OWNER'S MANUAL

CLASSIC EDGE 760

TITANIUM HDX

CLASSIC EDGE

560/560.1

TITANIUM HDX

CLASSIC EDGE 360

TITANIUM HDX

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electrical switch.
 - Immediately call your gas supplier. Follow the supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.

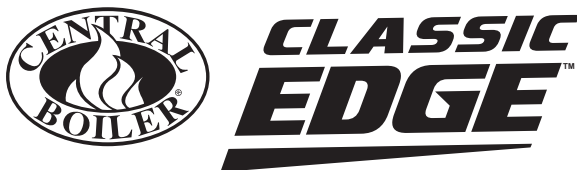


0117WB036S
0117WB039E



**SAVE THESE
INSTRUCTIONS**

(p/n 9001135 - REV. A)



Central Boiler, Inc. • 20502 160th Street • Greenbush, MN 56726 • CentralBoiler.com

The Classic Edge outdoor hydronic heater by Central Boiler is listed by OMNI-Test Laboratories to the applicable portions of the following standards: UL 2523-2018 Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters and Boilers, CAN/CSA B415.1-10 (R2015) Performance Testing of Solid-Fuel-Burning Heating Appliances, CSA-B366.1-11 (R2015) Solid-Fuel-Fired Central Heating Appliance, ASTM E2618-13 Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances, ASTM E2515-11 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel.

The Classic Edge includes two 4-foot stainless steel insulated chimney sections. Use only stainless steel solid fuel chimneys specified by Central Boiler. Maximum draft is marked on nameplate.

French Owner's Manual is available at CentralBoiler.com/support or upon request from your dealer
(Manuel d'installation en français disponible sur demande auprès de votre revendeur)

CLASSIC EDGE 760	Annual Efficiency Rating*: 89.8% (lower heating value), 83.4% (higher heating value) Manufacturer's Rated Heat Output Capacity: 245,000 Btu/hr Range**: 0 to 235,938 Btu/hr. Water Capacity: 330 gal. Weight: 2,186 lbs
CLASSIC EDGE 560	Annual Efficiency Rating*: 90.2% (lower heating value), 83.8% (higher heating value) Manufacturer's Rated Heat Output Capacity: 200,000 Btu/hr Range**: 0 to 194,724 Btu/hr. Water Capacity: 205 gal. Weight: 1,668 lbs
CLASSIC EDGE 560.1	Annual Efficiency Rating*: 86.4% (lower heating value), 80.6% (higher heating value) Manufacturer's Rated Heat Output Capacity: 190,000 Btu/hr Range**: 0 to 171,956 Btu/hr. Water Capacity: 205 gal. Weight: 1,668 lbs
CLASSIC EDGE 360	Annual Efficiency Rating*: 88% (lower heating value), 82% (higher heating value) Manufacturer's Rated Heat Output Capacity: 150,000 Btu/hr Range**: 0 to 148,625 Btu/hr. Water Capacity: 150 gal. Weight: 1,460 lbs

*Performance is a product of the combustion rate, combustion efficiency and heat exchange efficiency with a single fuel load without refueling. Results vary based on wood species, wood quality, wood quantity and moisture content. Efficiencies are determined under the same test conditions using higher heating value, lower heating value and annual fuel utilization efficiency (AFUE).

- This heater meets the 2020 U.S. Environmental Protection Agency's cord wood emission limits for wood heaters sold after May 15, 2020. Under specific test conditions this heater has been shown to deliver heat at rates shown for the respective model above**.
- This wood heater has a manufacturer-set minimum low burn rate that must not be altered. This wood heater needs periodic inspection and repair for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this manual.
- DO NOT OVERFIRE THIS HEATER. Attempts to achieve heat output rates that exceed heater design specifications can result in permanent damage to the heater.
- Any person(s) operating a hydronic heater must comply with all applicable laws, including but not limited to local ordinances.
- Improper use or failure to maintain the hydronic heater may cause nuisance conditions. The person(s) operating a hydronic heater is/are responsible for operation in a manner that does not create a nuisance condition. Meeting the setback distance and stack height recommendations from the manufacturer and requirements in applicable State and local regulations may not always be adequate to prevent nuisance conditions in some areas due to terrain or other factors.
- Operating an outdoor furnace may not be suitable to some individuals' abilities or lifestyles. Be sure to review the Owner's Manual for the appliance with your dealer.

- Register at time of purchase for FREE 25 Year Limited Warranty -

Verify your warranty and check status of water samples at: CentralBoiler.com/w25

For parts and accessories, service or repairs, call your authorized Central Boiler dealer or heating contractor. Record the information below for future reference.

Model	Serial Number	Installation Date
Dealership Name		Phone Number
Owner Name		

Contents

How to Use This Guide

The guide is divided into sections to help with the operation and maintenance of the outdoor furnace. If questions arise that are not answered with this manual, consult with your authorized Central Boiler dealer.

Central Boiler Online Resources	lv
EPA Resources	iv
Labeling and Terminology	1
Important Precautionary Information	2
Foundation	4
Access to Ports on Outdoor Furnace	5
Ground Rod Kit	7
Furnace Installation - Connecting to Your Existing System	7
Outdoor Wood Furnace Best Burn Practices	9
Chimney Recommendations	9
Chimney Installation	9
Water Quality and Maintenance	12
1. Test Supply Water	12
2. Check the Vent Cap	12
3. Check Heating System for Leaks	12
4. Cover Supply and Return Lines	13
5. Add MolyArmor through Vent Pipe	13
6. Fill Outdoor Furnace with Water and Purge Air	14
7. Immediately Start the Pump(s); then Heat the System Water to 185°F (85°C)	14
8. Test the Treated System Water	15
Send in Initial Water Sample	16
Initial Water Sample	16
Deferred Installation	16
Check Status of Water Sample	16
Annual Water Sample	16
System Maintenance	17
Water Test Kits and Test Results	17
Flushing the System	18
POST HEATING SEASON MAINTENANCE	18
Adding Antifreeze to Outdoor Furnace System	20
Wood Selection and Preparation	21
Operating Instructions	22
FireStar Combustion Controller	22
How the Classic Edge Works	22
Initial Fire Up - Start of Heating Season	24
Adding Heat Load	26
Ash Removal Frequency	27
Adding Wood	27
Maintenance Schedule	33
Control Locations	33
Routine Maintenance	33
Maintenance Sections	34
Serviceable Items	46
Firebox Door Hinge / Latch Bearing Adjustment	46
Firebox Door Seal	46
Reaction Chamber Door Seal	48
Heat Exchanger Door Seal	49
Circuit Breaker	50
Airbox Seal	51
Air Charge Tube and Refractory Modules	52
Thermocouple	53
Heat Exchanger Door Insulation	54
Heat Exchanger Access Cover Insulation	55
Combustion Air Tube / Front Air Channel	56
Troubleshooting	58
General Information	67
Wiring Diagram	68
Water Sample Information - Titanium Series Models	69

CENTRAL BOILER ONLINE RESOURCES

Enter **CentralBoiler.com** in your browser or scan the code using any QR code reader app on your smartphone to access Central Boiler's library of information to help with installation, operation and maintenance of your Central Boiler outdoor furnace.

Detailed Furnace Installation Variations - <https://www.CentralBoiler.com/explore/furnace-installation/>


View and/or download PDFs to assist in installation of your outdoor furnace. Information and examples regarding pumps, foundations, chimneys and support structures, ThermoPEX piping, and example configurations for a variety of heating configurations.



Online Support Center

<https://www.CentralBoiler.com/Support/>

Enter your furnace serial number and find articles, answers, parts and more information.



Online Support Center

CentralBoiler.com/Support

Enter your serial number for information specific to your furnace.

Write your **serial number** here for future reference.



Videos to supplement the Owner's Manual are available at
www.youtube.com/centralboilerinc
 Watch tips on initial startup, testing system water and more.

EPA RESOURCES

EPA's Burnwise Program - <https://www.epa.gov/burnwise>

How to Use a Moisture Meter Video - <http://www.youtube.com/watch?v=jM2WGgRcnm0>

EPA offers tips on how to properly use a moisture meter to test firewood before using in a wood-burning stove or fireplace. Wet wood can create excessive smoke which is wasted fuel.

Split, Stack, Cover and Store Video - <http://www.youtube.com/watch?v=yo1--Zrh11s>

EPA offers four simple steps to properly dry firewood before using in a wood-burning stove or fireplace. Wet wood can create excessive smoke which is wasted fuel. Burning dry, seasoned firewood with a moisture content of 20% or less can save money and help reduce harmful air pollution.

Resources to Help Burn Wood the Right Way - <https://www.epa.gov/burnwise/resources-help-you-burn-wood-right-way-and-promote-burn-wise-program>

Find tip sheets, brochure and flyers, and more information.

NOTE: The warranty can be voided by operating a residential hydronic heater in a manner inconsistent with the Owner's Manual.

INSTALLATIONS IN MASSACHUSETTS:

1. All installation components must be products approved in the Commonwealth of Massachusetts by the Gas and Plumbing Board.
2. The maximum run of tubing from the water heater to a fan coil is 50 linear feet.
3. Persons operating this hydronic heater are responsible for operation of the hydronic heater so as not to cause a condition of air pollution as defined in 310 CMR 7.01(1).

Labeling and Terminology

The outdoor furnace and this guide use the following terms and symbols to bring attention to the presence of hazards of various risk levels and important information concerning the use and maintenance of the outdoor furnace.

⚠ DANGER

This symbol and text indicate an imminently hazardous situation which, if ignored, will result in death or serious injury.

⚠ WARNING

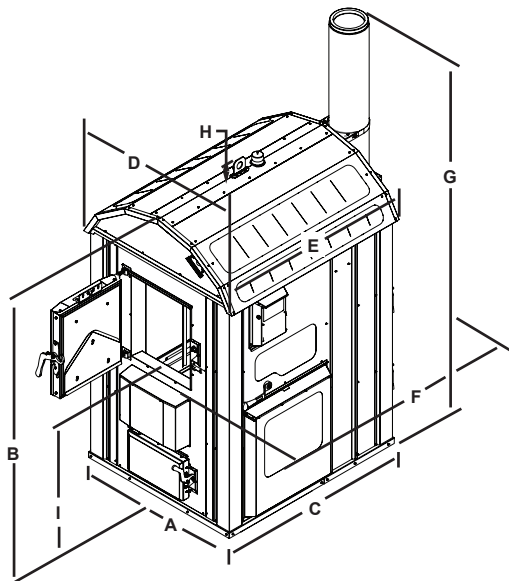
This symbol and text indicate the presence of a hazard which can cause severe personal injury or death to an operator or bystander, or substantial property damage if ignored.

⚠ CAUTION

This symbol and text indicate the presence of a hazard which can cause minor personal injury or property damage if ignored.

NOTE: Indicates supplementary information worthy of particular attention relating to installation, operation, or maintenance of the outdoor furnace but is not related to a hazardous condition.

Be sure to follow all instructions and related precautions as they are meant for your safety and protection. Store this manual in a readily accessible location for future reference.



Classic Edge 760 Measurements

	A	B	C	D	E	F	G	H	I
in.	51	84.75	59.75	53.5	60.5	79	164	5	39
cm	130	215	152	136	154	201	417	13	99

Classic Edge 560/560.1 Measurements

	A	B	C	D	E	F	G	H	I
in.	42.5	76	55.5	45	56	73.5	151	5	37.5
cm	108	193	141	114	142	187	384	13	95

Classic Edge 360 Measurements

	A	B	C	D	E	F	G	H	I
in.	40.5	72	50.75	43	51.5	69	150	5	38
cm	103	183	129	109	131	175	381	13	97

- Measurement (F) is from firebox door to chimney inspection cover.
- Measurement (G) includes two 4 ft (1.2 m) chimney sections.
- All measurements are approximate

Important Precautionary Information

Be sure to read carefully and understand these precautions before, during and after the installation, operation and maintenance of the furnace.

NOTE: All operations must be in accordance with local and state codes which may differ from the information in this manual.

⚠ CAUTION

This outdoor furnace is not intended to be the only source of heat. In the event of a prolonged power failure, a generator may be used to prevent lines from freezing. Should the outdoor furnace be left unattended, run out of fuel or require service, an alternate heating source in the building being heated should be in place to prevent damage caused by freezing.

⚠ WARNING

This outdoor furnace and/or chimney is not intended or safety tested to be used or installed in a building where contents of that building could be damaged or where a financial loss could occur from smoke, soot, fire or water.

⚠ WARNING

The outdoor furnace vent cap must fit loosely on the vent opening. Do not force the cap down or try to seal it tightly onto the vent pipe. Do not extend or restrict the vent pipe or opening. **DO NOT ALLOW THE OUTDOOR FURNACE TO BE PRESSURIZED.**



⚠ WARNING

Be sure the outdoor furnace is filled with water before firing. Never fire the outdoor furnace when the water level is more than 1" (2.5 cm) below the FULL mark on the sight gauge. MolyArmor 350 must be added before the initial fill (see Water Quality and Maintenance).

⚠ WARNING

Disconnect the electrical power to the outdoor furnace before replacing an electrical component.

⚠ WARNING

Do not attempt service inside the electrical control panel without first disconnecting the electrical power at the main power source.

NOTE: Any electrical installation should be done by a qualified installer in accordance with applicable codes.

⚠ WARNING

Allow the outdoor furnace to thoroughly cool and completely clean out the firebox before draining water from the outdoor furnace. If the water in the outdoor furnace ever boils, be sure to check the water level and restore to full. If water is added, the proper level of MolyArmor 350 Corrosion Inhibitor (p/n 2900630) must be maintained.

⚠ WARNING

When cleaning the outdoor furnace, be careful not to spill any coals.

⚠ WARNING

ALWAYS store ash in a covered non-combustible container.

⚠ WARNING

Maintain the following clearances from combustibles for the furnace installation:

- 44" (112 cm) from the back
- 12" (30.5 cm) from the sides
- 48" (122 cm) from the front
- 18" (46 cm) from chimney inspection cover
- The foundation must be noncombustible

⚠ WARNING

Do not allow combustible materials (straw, hay or wood) near the outdoor furnace. Keep the perimeter of the outdoor furnace clear and clean.

⚠ WARNING

For fire safety, keep all combustible materials at least six feet (two meters) away from the outdoor furnace, especially around the door area. Debris of wood chips and other combustibles in the area may be easily ignited if a hot coal is spilled out of the firebox and left unnoticed.

⚠ WARNING

The firebox door must be closed and latched at all times except when filling the firebox with wood. Leaving the firebox door open may lead to a runaway fire. In the event of a runaway fire, close the firebox door. In the event of a chimney or soot fire, close the firebox door and make sure power is off to the outdoor furnace.

⚠ WARNING

All covers must be maintained at all times except during maintenance, inspection and service.

⚠ WARNING

When opening the firebox door, the door switch will shut off the primary air actuator motor while the firebox door is open. Do NOT disable the door switch.

NOTE: The prohibition against burning these materials does not prohibit the use of fire starters made from paper, cardboard, saw dust, wax and similar substances for the purpose of starting a fire in an affected wood heater.

NOTE: Do not use chemicals or fluids to start the fire. Use kindling or gas-fired wood ignition option to start an initial fire.

NOTE: The sight gauge valve should always be closed, except when checking water level. Water will automatically drain from the sight gauge tube when the valve is closed. Remember that this type of valve requires only 1/4 turn to open or close.

⚠ WARNING

This heater is designed to burn natural wood only. **DO NOT BURN:** unseasoned wood, treated wood, colored paper, cardboard, trash or garbage.

NOTE: Chloride or sulfurous gases can be generated if plastic or rubber is burned and will mix with the moisture from the wood and form hydrochloric or sulfuric acids in the firebox, creating corrosion.

NOTE: This outdoor furnace is not to be used with an automatic stoker.

⚠ CAUTION

This outdoor furnace is not to be connected to a chimney flue serving another appliance.

⚠ WARNING

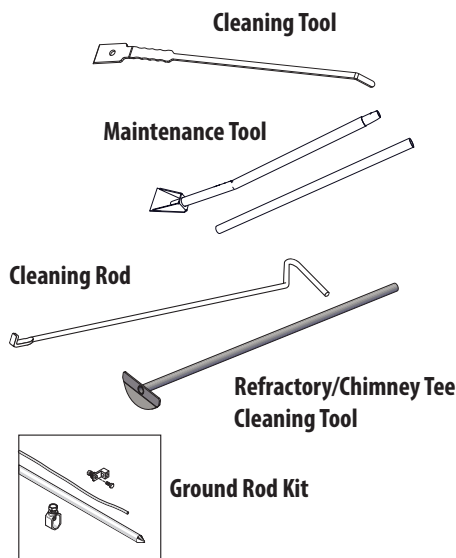
When adding wood to the firebox, be careful not to get pinched between the wood and the door frame, or any part of the outdoor furnace. Use extreme care with large pieces of wood that may be difficult to handle.

NOTE: At least one circulation pump must run continuously to ensure proper operation of the outdoor furnace.

Tools/Ground Rod Kit

Included with each new furnace are tools that are invaluable for maintenance and cleaning and a Ground Rod Kit for electrically grounding the furnace. Use the **maintenance tool** to clean the firebox and to remove ash from the Reaction Chamber. Use the **cleaning tool** to clean the heat exchangers. The maintenance tool and cleaning tool are also used for cleaning the firebox and door frame. The **cleaning rod** can be used to break up heavy or solidified ash in the firebox. It is also used to clean the heat exchangers. The **Refractory/Chimney Tee cleaning tool** is used to clean ash from the Reaction Chamber and to clean the chimney tee.

Refer to the Maintenance section for more information.



Foundation

The outdoor furnace may be installed directly on stable, level ground without the necessity of a foundation, although installing the outdoor furnace on a foundation offers many advantages. The outdoor furnace is less likely to move due to frost heaving. A foundation keeps the area directly around the outdoor furnace free of standing water and can help to keep unwanted pests out. It can also raise the furnace up to provide a more comfortable height of the firebox door opening.

If the ground is unstable, one option is to use patio blocks under the perimeter of the base. Another option is to pour a concrete foundation.

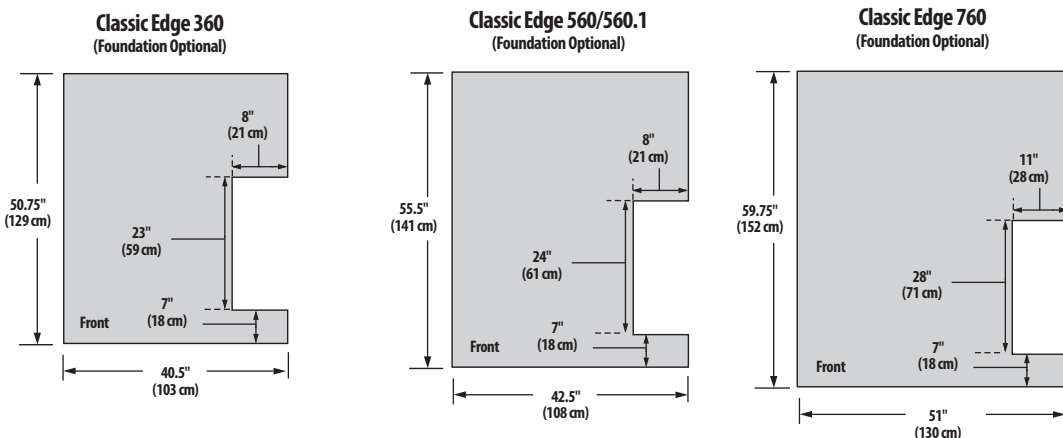
To install the outdoor furnace on a concrete foundation, refer to the illustration for dimensions and for the location of the hollowed-out area for each model. A 4" to 6" (10 to 15 cm) thick concrete slab works well; however, a thicker slab may be used to obtain the desired door opening height.

If the area for the concrete slab is unstable and/or affected by frost heaving, consider installing 2" closed-cell insulation beneath the front portion of the slab and under the area of the ground used for walking.

⚠ CAUTION

Do not use any combustible materials for the foundation.

NOTE: The installation surface or foundation must be noncombustible. The hot supply and return lines must also be protected from possible exposure to sunlight, fire or physical damage that may be caused by an occurrence outside the outdoor furnace enclosure. Foundations may consist of concrete, crushed rock or patio blocks.



⚠ CAUTION

Do not use any combustible materials for the foundation.

Outdoor furnace must be installed on a noncombustible surface or foundation that incorporates an enclosure that will prevent supply and return lines from possible exposure to sunlight, fire, or physical damage that may be caused by an occurrence outside the outdoor furnace enclosure. Foundation may consist of concrete, crushed rock, or patio blocks.

Access to Ports on Outdoor Furnace

Ports are provided that allow mounting circulation pumps on the outdoor furnace. Refer to the illustrations in this section for proper supply and return line and pump installations for your model.

NOTE: The Installation Guide provides more information on pump selection. For even more detailed information, see the Hydronic Component Selection Guide (p/n 2482), available from your Central Boiler dealer.

NOTE: At least one circulation pump must run continuously to ensure proper operation of the outdoor furnace.

Classic Edge 760 Model – 3-Pump Configuration

3 - Pump Parts List*

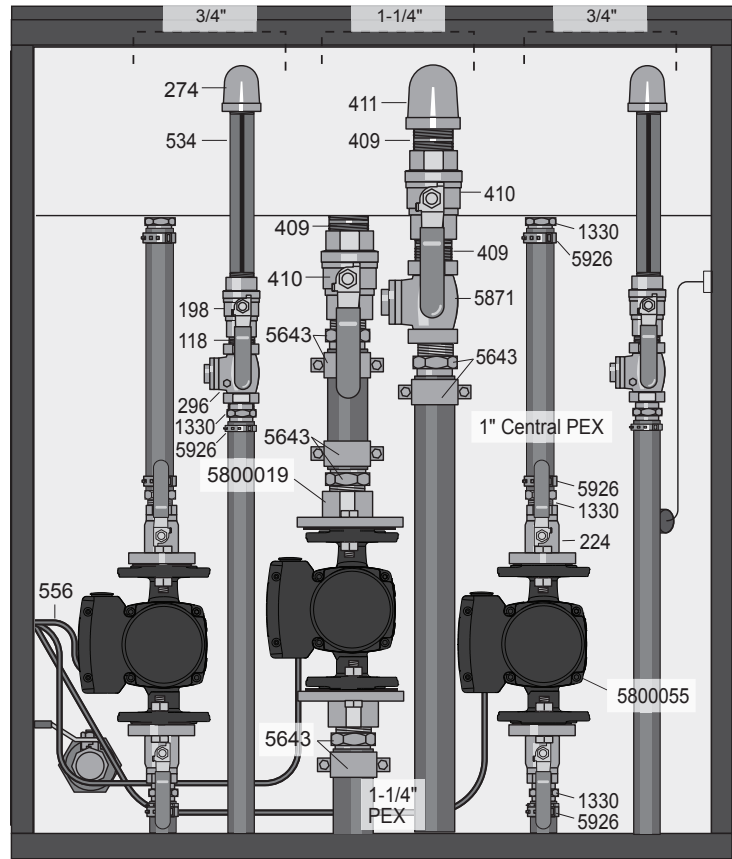
3/4" Supply		
Qty	p/n	Description
6	1330	MPT to PEX, 3/4" x 1"
6	5926	Clamp Crimp Ring, 1"
2	224	Isolation Flange Kit, 3/4"
2	5800055	Pump, UPMS 20-58 F
2	556	Power Supply Cord, 32"
		1" Central PEX

3/4" Return		
Qty	p/n	Description
2	274	90° Street Elbow, 3/4"
2	534	Nipple, 3/4" x 7"
2	198	Ball Valve, 3/4"
2	118	Close Nipple, 3/4"
2	296	Swing Check Valve, 3/4"
2	1330	MPT to PEX, 3/4" x 1"
2	5926	Clamp Crimp Ring, 1"

1-1/4" Supply & Return		
Qty	p/n	Description
3	409	Close Nipple, 1-1/4"
2	410	Ball Valve, 1-1/4"
4	5643	Brass Clamp, 1-1/4"
1	5800019	Pump Flange Kit, 1-1/4"
1	5871	Swing Check Valve, 1-1/4"
1	5800055	Pump, UPMS 20-58 F
1	556	Power Supply Cord, 32"
1	411	90° Street Elbow, 1-1/4"

*Parts and accessories sold separately.
Pump size may vary.

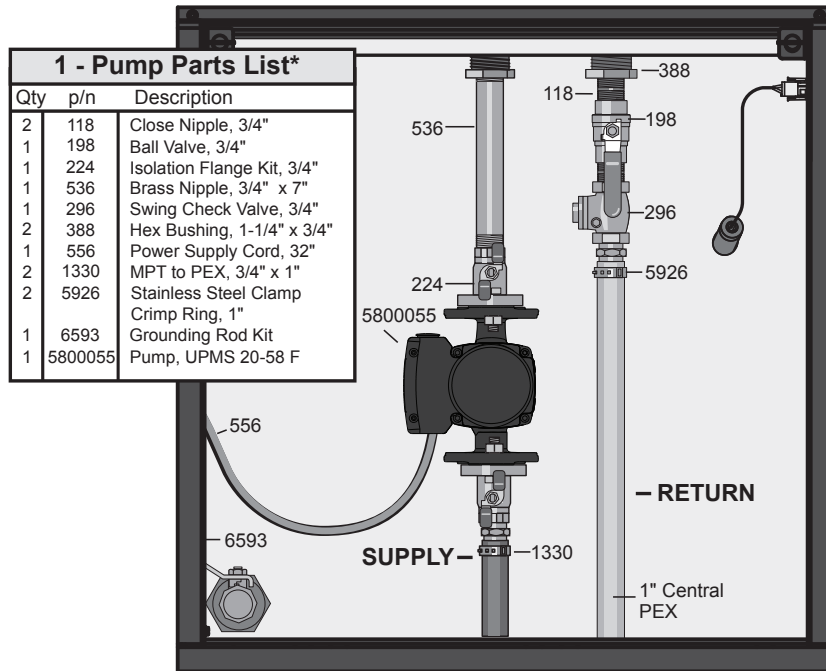
For illustration purposes only.



NOTE

The Ground Rod Kit (p/n 6593), included with the outdoor furnace, must be installed with every furnace.

Classic Edge 360/560/560.1 Models – 1-Pump Configuration

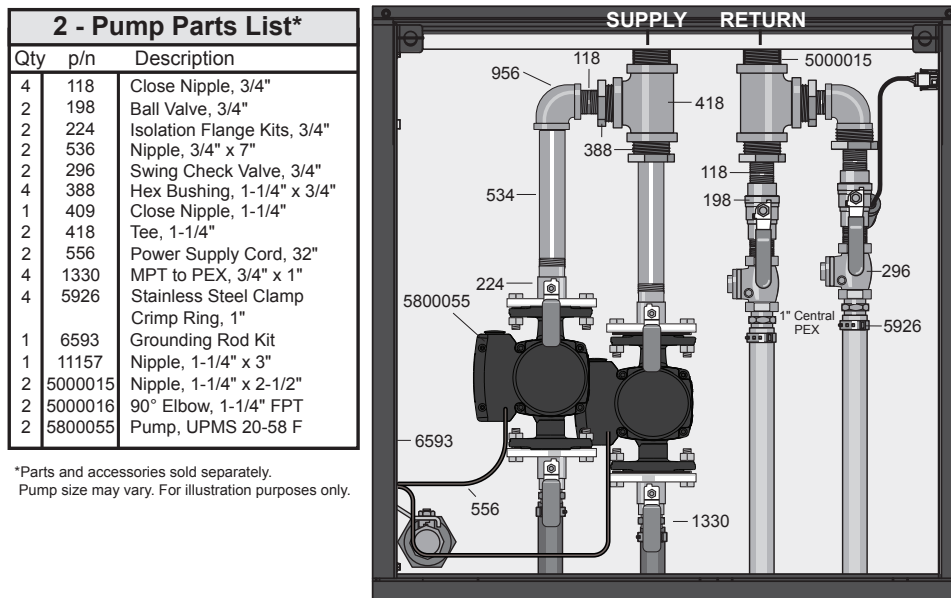


*Parts and accessories sold separately.
Pump size may vary.
For illustration purposes only.

NOTE

Grounding Rod Kit (p/n 6593) must be installed with every furnace.

Classic Edge 360/560/560.1 Models – 2-Pump Configuration*



*Parts and accessories sold separately.
Pump size may vary. For illustration purposes only.

NOTE

Grounding Rod Kit (p/n 6593) must be installed with every furnace.

***Pump Extension Kit (p/n 2500164) required.**

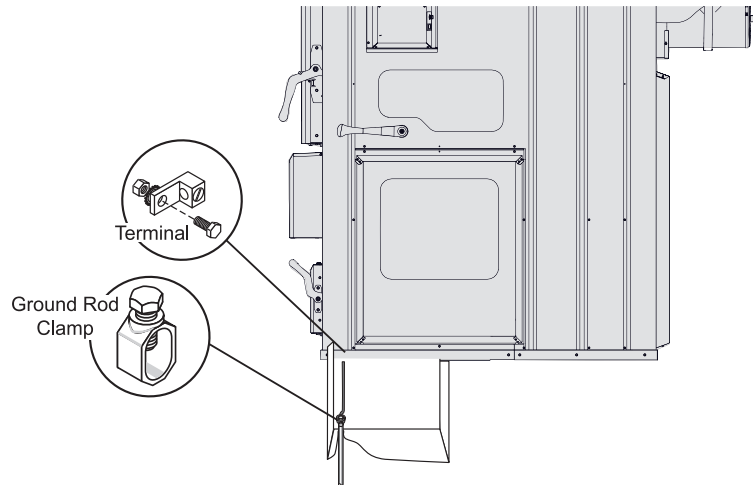
Ground Rod Kit

The outdoor furnace must be electrically bonded to ground in accordance with the requirements of the authority having jurisdiction or, in absence of such requirements, with the National Electrical Code, ANSI/NFPA 70 and/or the Canadian Electrical Code Part 1, CSA C22.1 Electrical Code.

Install the Ground Rod Kit (p/n 6593) included with the outdoor furnace and connect it to the outdoor furnace.

1. In the water line trench near the outdoor furnace, drive the ground rod into the ground until the top of the ground rod is below the ground surface.
2. Route the ground wire from the ground rod under the outdoor furnace base and over to the frame of the outdoor furnace.
3. Secure the ground terminal with a cap screw (1/4" x 3/4"), star washer and nut. Secure the ground wire to the terminal; then secure the ground wire to the ground rod with the clamp. Tighten all hardware securely.

NOTE: A hole for the ground terminal has been pre-punched in the outdoor furnace base near the pumps.



Furnace Installation - Connecting to Your Existing System

A common installation is to connect the outdoor furnace to an existing water heater and then to an existing forced air system. A water-to-air heat exchanger is mounted in the plenum or duct work of the existing furnace. Heated water from the outdoor furnace either continuously flows through the water-to-air heat exchanger or is diverted through a 3-way zone valve. When the thermostat senses the need for heat, the fan on the existing furnace forces air through the heat exchanger, transferring heat throughout the existing ductwork.

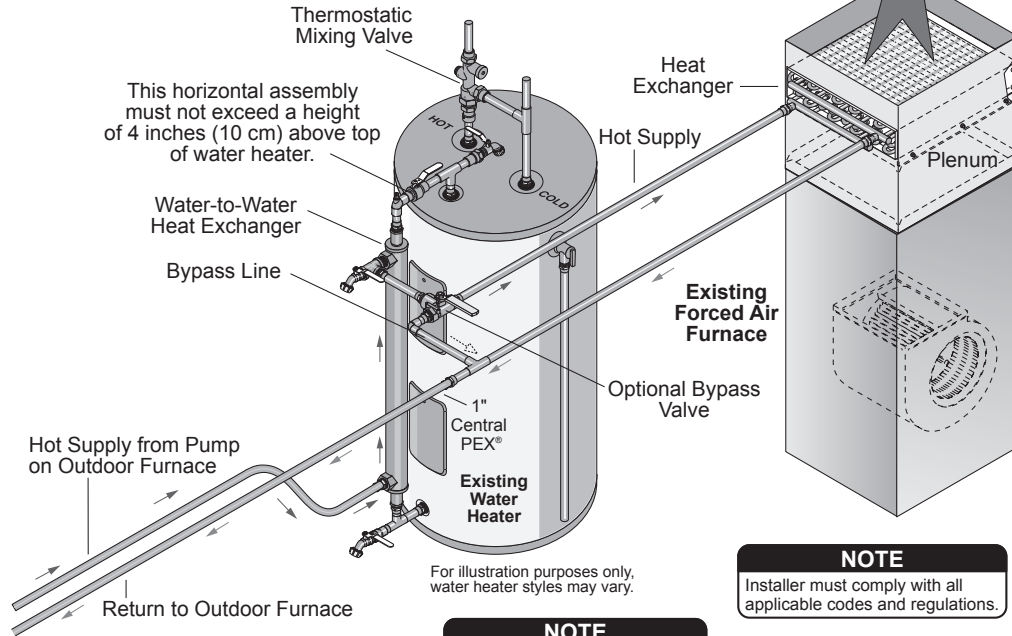
NOTE: There are numerous ways to connect to your heating system. Refer to the Central Boiler Outdoor Furnace Installation Guide for other installations.

Detailed Furnace Installation Variations

Visit CentralBoiler.com to access a library of detailed illustrations for connecting to a wide variety of existing heating systems and for other heating options.

Typical Installation

Connecting to Water Heater and Forced Air Furnace



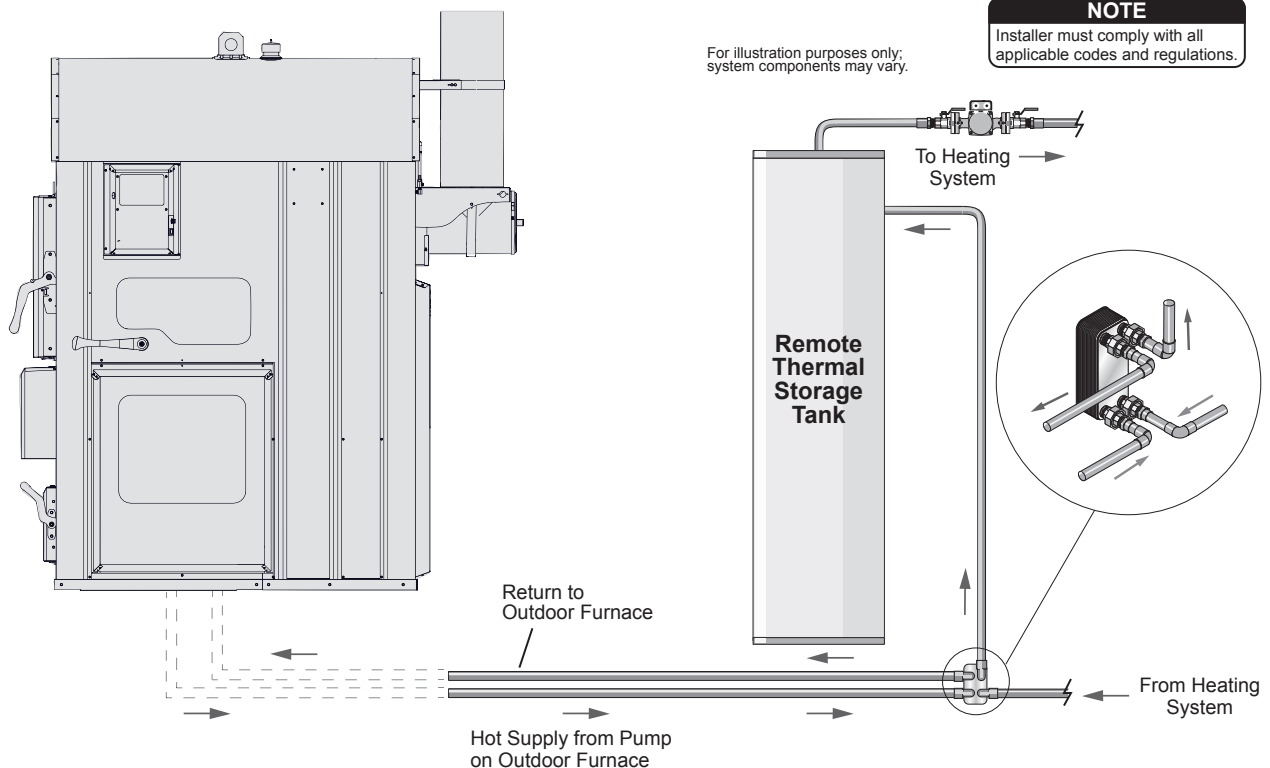
NOTE: A certified electrician must do the electrical installation.

NOTE
Any electrical installation should be done by a qualified installer in accordance with applicable codes.

NOTE
Installer must comply with all applicable codes and regulations.

Remote Thermal Storage Installation

Connecting to Remote Thermal Storage Tank



NOTE
Installer must comply with all applicable codes and regulations.

Outdoor Wood Furnace Best Burn Practices

1. Read and follow all operating instructions supplied by the manufacturer.
2. **FUEL USED:** Only those listed fuels recommended by the manufacturer of your unit. Never use the following: trash, plastics, gasoline, rubber, naphtha, household garbage, material treated with petroleum products (particle board, railroad ties and pressure treated wood), leaves, paper products, and cardboard.
3. **LOADING FUEL:** For a more efficient burn, pay careful attention to loading times and amounts. Follow the manufacturer's written instructions for recommended loading times and amounts.
4. **STARTERS:** Do not use lighter fluids, gasoline, or chemicals.
5. **CHIMNEY RECOMMENDATIONS:** In higher populated areas, extend the chimney to a height above the roofs of surrounding buildings.
6. Always remember to comply with all applicable state and local codes.

Be considerate of neighbors when operating your furnace. If you use your furnace in the summer months, be certain your chimney exhaust is not adversely affecting neighbors with open windows.

Chimney Recommendations

In higher populated areas, extend the chimney to a height above the roofs of surrounding buildings. Use Central Boiler Chimney Extensions when extending the chimney. When only the standard eight feet (2.4 m) of chimney are used, the sections must be secured at the connection joint with four (4) screws to stabilize the extension.

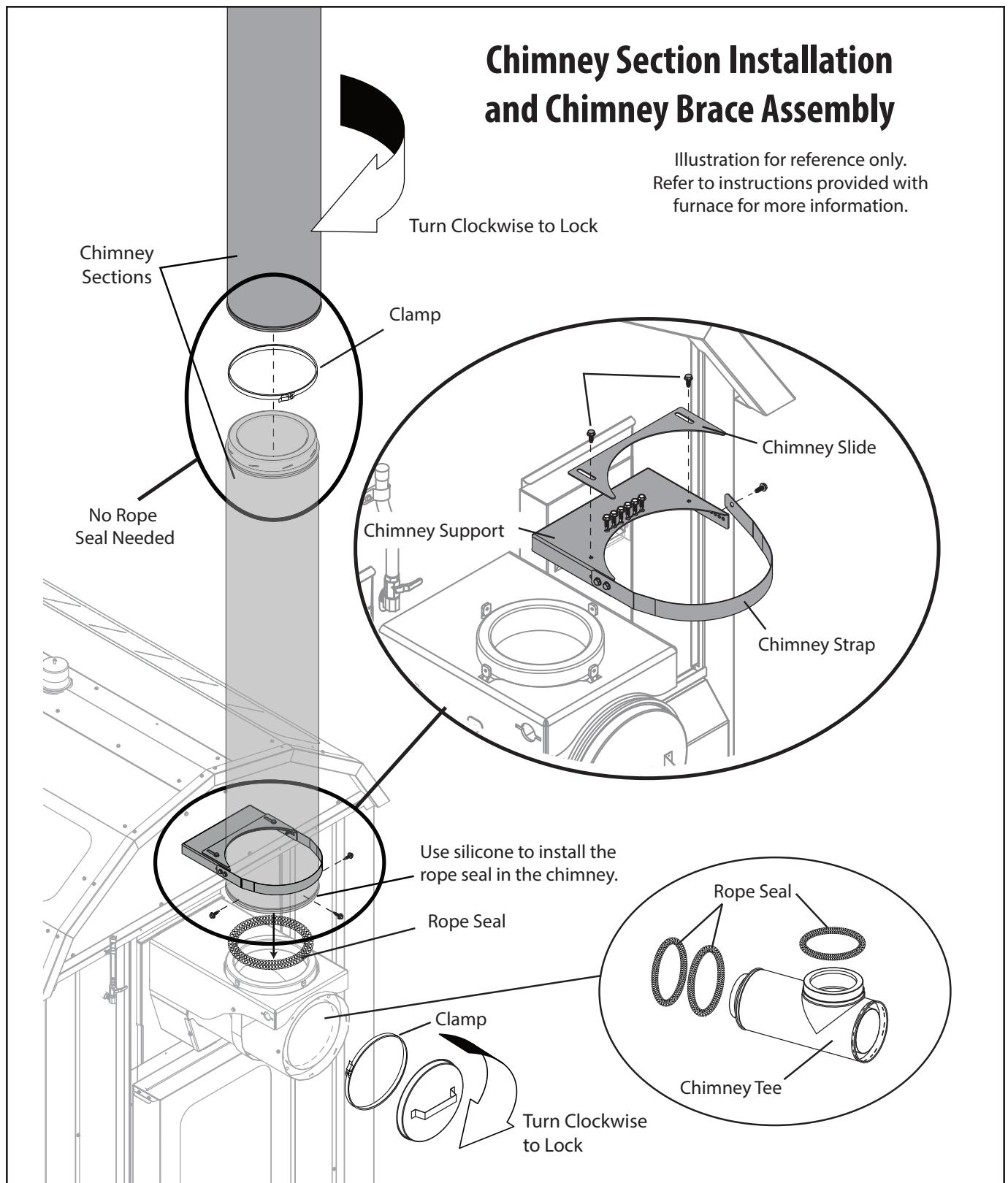
Chimney Installation

NOTE: Instructions for installing chimney sections and the chimney brace assembly are also provided with the furnace.

1. Remove the two slotted hex screws securing the Chimney Slide to the Chimney Support.
2. Remove the six self-tapping screws from the slot in the Chimney Brace Support. These screws are used to assemble the chimney sections.
3. Remove the single slotted hex screw securing the Chimney Strap to the Chimney Brace Support.
4. Install the rope seal at the bottom of the first chimney section; then assemble the chimney as shown.
5. Mount the Chimney Slide to the Chimney Support with two slotted hex screws. Do not tighten completely to allow the Chimney Slide to move.
6. Level the chimney front to back; then position the Chimney Slide against the chimney and completely tighten the two slotted hex screws.
7. Wrap the Chimney Strap around the chimney and secure with a slotted hex screw.
8. Secure the base of the chimney with three self-tapping screws.
9. Secure the joint between the first two chimney sections with the clamp.

Chimney Section Installation and Chimney Brace Assembly

Illustration for reference only.
Refer to instructions provided with
furnace for more information.



If extensions are added to the standard eight feet (2.4 m) of chimney, the chimney should be reinforced appropriately. The illustration shows chimney support recommendations when three or more sections are used. When adding sections of chimney, make sure that there is nothing within the fall zone of the chimney that could be damaged. If something is located within the fall zone and cannot be removed, guy wires or braces may need to be installed to prevent a falling chimney from causing damage.

NOTE: If more than three 4-foot (1.2-m) sections of chimney are used, a support (e.g., a pole, pipe or other structural support) may be installed from the ground that can withstand wind. Other reinforcement recommendations are shown.

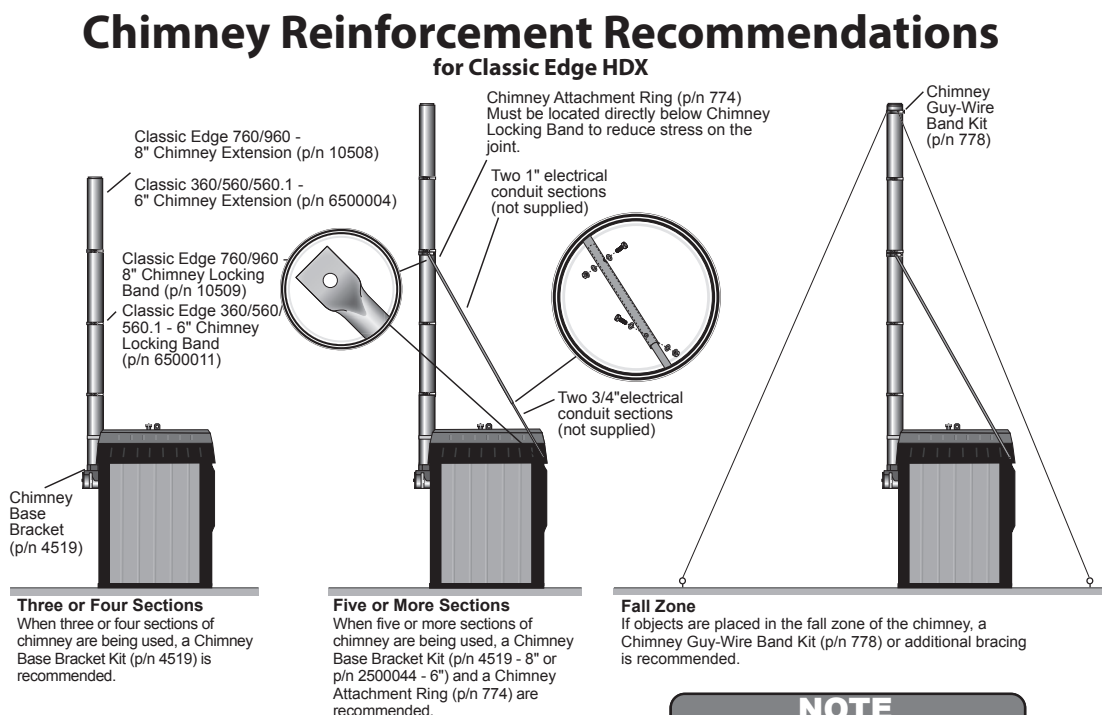
NOTE: For chimney extensions or chimney replacement, use only genuine Central Boiler chimney components. Parts are available from an authorized Central Boiler dealer.

The installation of a spark arrestor is recommended, particularly where there are dry conditions or where there is combustible material near the unit, unless the installation of a spark arrestor is prohibited by local requirements.

NOTE: If the screen is left on the chimney cap, the spark arrestor should be inspected and cleaned as needed.

Use common sense to avoid potential fires, including exercising caution when disposing of ashes, cleaning and refueling. Keep all highly combustible materials (e.g., gasoline, propane, leaves, pine needles, etc.) away from an operating unit at all times. Take special precautions in windy conditions.

NOTE: You may need to increase the chimney height if conditions occur that force exhaust to low levels.



NOTE

- Additional bracing may be necessary in certain areas such as those subject to severe weather, winds, freezing rain, etc.
- Inspect all bracing bi-annually for integrity.



WATER QUALITY AND MAINTENANCE

Follow the steps provided here to add MolyArmor 350 and to fill the outdoor furnace system for the first time, or any time the system has been completely drained and needs to be refilled.

Before you fire the outdoor furnace for the first time, it is very important to perform the following important steps in order.

1. Test Supply Water

Test a sample of the supply water (makeup water) that will be used to fill the outdoor furnace (softened water is recommended). Test strips for testing pH are included in the water test kit which is provided with the outdoor furnace.

1. Collect a small sample of the water to be used to fill the outdoor furnace in a clean container.
2. Dip a test strip from the test kit in the water sample for **1 second** and remove. Shake off excess liquid (very important to prevent water bleed from one pad to the other). Compare the pH test pad to the color chart at **30 seconds**.
3. If the pH level is between 6.5 and 8.0 and there are no other known water quality problems, then the outdoor furnace may be filled with this water.
4. Water that has a pH level of less than 6.5 or greater than 8.0, or that has other known water quality problems, should not be used to fill the furnace. Instead, water should be supplied from a different source.

2. Check the Vent Cap

If the vent cap has been secured with a wire tie-down, the wire tie-down **MUST** be removed before operating the furnace. If the vent cap is held in place by a spring retainer, the spring retainer can be left in place. The vent cap must fit loosely over the outdoor furnace vent.

3. Check Heating System for Leaks

Close the valves on the outdoor furnace before checking the heating system for leaks.

⚠ CAUTION

Do not pressurize the outdoor furnace or damage could occur. Isolate the furnace when pressure testing by closing all of the valves on the outdoor furnace.

Pressure-test the entire plumbing heating system. Apply 50 psi (3.5 kg/cm²) of air pressure for thirty minutes and closely monitor for any pressure loss. Inspect all fittings and hose ends for any signs of leakage using leak detection solution (leak soap); repair as necessary.

Release the pressure from the entire plumbing heating system and open the valves on the outdoor furnace.

4. Cover Supply and Return Lines

Backfill the trench for the supply and return lines. Enclose the area where the supply and return lines enter the outdoor furnace. Do not leave the PEX hot supply and return lines exposed to sunlight as exposure to UV rays will damage them.

5. Add MolyArmor through Vent Pipe

CAUTION

Avoid damaging your furnace and voiding your warranty. Add water treatment BEFORE adding water to the system. Water treatment in your outdoor furnace is just as important as the oil in a car's engine.

MolyArmor 350 Corrosion Inhibitor (p/n 2900630) gives optimum protection for the furnace water jacket and system parts when it is used to initially treat the water and is maintained at a minimum of 350 ppm of moly and pH level between 8.0 and 9.5.

NOTE: The recommended minimal treatment amounts are based on an average heating system with less than 50 feet of ThermoPEX, one heat exchanger in a forced-air furnace and a heat exchanger on a domestic water heater.

NOTE: If the system has a larger than normal water capacity, more MolyArmor 350 should be added at a recommended rate of 6.5 oz. (190 ml) per 10 gallons (37.8 liters) of system water. One gallon (3.78 liters) of MolyArmor 350 Corrosion Inhibitor will treat 200 gallons (757 liters) of system water.

MOLYARMOR 350 MINIMAL TREATMENT AMOUNTS	
Classic Edge 760	2-1/2 gallons
Classic Edge 560/560.1	1-1/2 gallons
Classic Edge 360	1-1/2 gallons

1. Add the recommended amount of MolyArmor 350 Corrosion Inhibitor (or more depending on the water capacity of the heating system) through the vent pipe on the outdoor furnace.

NOTE: Be sure to add enough MolyArmor 350 to obtain at least 350 ppm moly. There are no negative effects from adding more than the recommended amount of MolyArmor 350.

6. Fill Outdoor Furnace with Water and Purge Air

NOTE: If adding antifreeze to the system, refer to Adding Antifreeze to Outdoor Furnace System section for important information.

⚠ CAUTION

If using antifreeze, use only a nontoxic boiler-type antifreeze. It is imperative that the entire system contain at least 30% antifreeze concentration mixed with water that is 6.5 to 8.0 pH. Softened water is recommended, if available. Do not use reverse osmosis or deionized water that has very low pH. Be sure to adhere to all warnings and precautions on the antifreeze label.

NOTE: If the outdoor furnace is being filled with water when the temperature is below freezing, circulate the water immediately after filling to prevent freezing the water lines.

NOTE: The circulation pump(s) must be installed in the hot supply line(s).

NOTE: All air must be purged from the water lines when filling the system. Be sure to purge the air from each pump circuit from the outdoor furnace.

NOTE: All valves in the outdoor furnace system should be opened before starting this procedure.

1. Connect a garden hose to the water source to be used to fill the outdoor furnace. Purge the garden hose of any impurities by running water through it until the water is clear.
2. Connect the hose to the drain valve on the outdoor furnace. Open the drain valve and fill with water to thoroughly mix the MolyArmor 350, which is heavier than water.

7. Immediately Start the Pump(s); then Heat the System Water to 185°F (85°C)

⚠ CAUTION

Be sure the outdoor furnace is filled with water before firing. Never fire the outdoor furnace when the water level is more than 1" (2.5 cm) below the FULL mark on the sight gauge.

NOTE: The sight gauge valve should always be closed except when checking water level. Water will automatically drain from the sight gauge tube. Remember that this type of valve requires only 1/4 turn to open or close.

1. Start the pump(s). Refer to Initial Fire Up - Start of Heating Season in the Owner's Manual to start the outdoor furnace. Bring the water temperature up to operating temperature (185°F or 85°C) for hours with the system circulating; then add water to the full mark. Continue to run the pump and circulate the water for 24 hours. If a multi-speed pump is used, set the pump on high.

NOTE: It is important to bring the water in the system up to operating temperature (i.e., 185°F or 85°C) immediately after filling the system and to circulate for at least 24 hours to kill bacteria. This also applies any time water is added to the system.

⚠ CAUTION

The water in the system may be hot. Use caution and the appropriate personal protective equipment (PPE) when checking for leaks.

2. Check the system for leaks. Inspect all fittings and hose ends for any signs of leakage. Use several dry paper towels and wrap them around and squeeze each fitting, valve and pipe connection. The paper towels will get wet even if there is a very small leak. Immediately repair any leaks to eliminate the need for adding water. If a screw-type clamp has been used, it may be possible to stop a very slow leak at a hose clamp by tightening the clamp after the system has warmed up and the poly becomes more pliable. It might also be necessary to install a second hose clamp with the screw positioned on the opposite side.

NOTE: After a week of operating, use the procedure in step 2 to check the system for leaks again.

NOTE: If water is ever added, it is important to bring the water in the system up to operating temperature (i.e., 185°F or 85°C) immediately. Refer to Water Quality and Maintenance in the Owner's Manual for water testing procedures. If indicated by test results, add MolyArmor 350 as required. Deterioration due to improper operation and/or maintenance is not covered by warranty.

8. Test the Treated System Water

After circulating the heated water in the system for 24 hours, test the treated system water for the recommended moly of at least 350 ppm and pH level between 8.0 and 9.5.

⚠ CAUTION

The water in the sight gauge may be hot. Use caution when obtaining a sample.

1. To obtain a system water sample, bend the sight gauge tube away from the outdoor furnace. Before collecting the sample, open the valve and drain about a quart of water from the sight gauge tube; then carefully fill the sample container without contaminating the sample. **Be sure to properly install the sight gauge tube and close the valve when finished.** The water in the sight gauge valve and tube will drain when the valve is closed.
2. Dip a test strip from the test kit in the water sample for **1 second** and remove. Shake off excess liquid (very important to prevent water bleed from one pad to the other). Compare moly test pad to the color chart within 10 seconds. The moly level must be **350 ppm or more**.
3. Compare pH test pad to the color chart at **30 seconds**. The pH of the treated water should be **between 8.0 and 9.5**. If the pH is higher than 10.0, dilute the water in the furnace by draining approximately 1/4 of the water from the furnace. Add MolyArmor 350 and refill with water that has a pH between 6.5 and 8.0. After refilling, circulate the water with furnace at operating temperature for at least 24 hours and test to confirm the moly is **350 ppm or more and the pH is between 8.0 and 9.5**.

Send in Initial Water Sample

NOTE: It is your responsibility as owner to ensure that your water sample information is accurate and that you submit your samples on a timely basis as required by the warranty for your stainless steel outdoor furnace. Failure to do so will result in a one year warranty.

Your owner's packet contains a Water Sample Kit for submitting an initial water test and an informational sheet entitled Submitting Water Samples for Your Titanium Series Outdoor Furnace. Follow the instructions to collect and submit your initial water sample. Additional Water Samples Kits are available from your Central Boiler dealer.

NOTE: Your water sample will be tested and must indicate acceptable levels of water treatment to qualify for the 25 year warranty.

Initial Water Sample

You are required to submit an initial water sample within 30 days of purchase of your outdoor furnace.

Deferred Installation

If your outdoor furnace is not being installed within 30 days of purchase, you must email service@centralboiler.com with your name and your furnace serial number. When the furnace installation is complete, send the water sample **within 10 days of the initial fill.**

Check Status of Water Sample

If you have provided an email address, you will receive an email with the results of your water test.

If you did not provide an email address, you will be notified by mail **ONLY** if your water sample test is **NOT ACCEPTABLE**. If your water sample test is acceptable, you will **NOT** be notified with a mailed letter. You can however check the status of your water test online.

Check the status of your water sample at:

CentralBoiler.com/w25

You will need your serial number and postal code. Please allow 2-3 weeks for results to be available. For a deferred installation, your status will be available approximately 10 days after you email the deferred installation message.

Annual Water Sample

You are required to submit a water sample yearly prior to the anniversary date of your initial installation. Record the anniversary date below:

DATE OF INSTALLATION

System Maintenance

Maintaining the corrosion inhibitor at a proper level is imperative to preventing corrosion failures. To qualify for the 25 year warranty, you must follow the instructions in the Owner's Manual concerning initial water treatment and maintenance. When the outdoor furnace is initially put into service, and once a year after that, you are required to submit a water sample to confirm proper maintenance and water treatment. No warranty claim can be approved unless the outdoor furnace registration and the acceptable levels of water treatment are on file at Central Boiler.

Test the pH and moly levels after the first three months and every six months thereafter, and after adding water to furnace.

NOTE: If using antifreeze, test the pH and Moly levels once each month. If the bacterial issues occur, the pH will decrease.

Water Test Kits and Test Results

DATE	pH LEVEL	MOLY LEVEL

Record the results of pH and Moly level tests in the table above.
If additional space is needed, record on a separate sheet of paper.

It is very important to keep record of water test results (including the date, pH and Moly level). The pH and Moly test strips and indicator have a shelf life of approximately two years that can affect their accuracy. Test kits should be stored in a dry area at room temperature to obtain maximum accuracy over a longer period of time.

Biological contamination can occur if the furnace is not heated up to 185°F immediately after filling it with inhibitor and water as directed.

NOTE: It should not be necessary to add water to the outdoor furnace more frequently than once every twelve months. If it is more frequent, either there is a leak in the system or the outdoor furnace is boiling because of improper operation or maintenance (see Troubleshooting Section in the Owner's Manual). Be sure to locate and repair the problem immediately. Frequently adding water can cause deterioration in the water jacket. ANY time water is added to the system, it is extremely important to bring the water temperature up to operating temperature (185°F) as soon as possible, even if it is during the off-season. Failure to bring the water in the system up to operating temperature immediately after filling the system can allow bacteria present in the water to multiply and may increase the potential for corrosion in the system.

If the test indicates a significantly lower-than-recommended pH level (below 8.0), add MolyArmor to increase the pH level.

POST HEATING SEASON MAINTENANCE

The water should be left in the outdoor furnace if the outdoor furnace is not being used for an extended period of time.

1. Refer to the Preventive Maintenance Schedule for a list of operations to perform.
2. Shut off the power supply to the outdoor furnace.
3. Place a cover over the chimney to keep rain from entering the outdoor furnace. Clean and oil the chimney flue to the firebox.

Draining Treated System Water

MolyArmor 350 is composed of common materials. Molybdenum compounds characterized as nontoxic in US Public Health Bulletin 293, by the Federal Hazardous Substances Labeling Act, and by the Occupational Safety and Health Act. However, in keeping with good safety and environmental practices, dispose furnace water in accordance with federal, state and local regulation. Unless regulation prohibits, you may drain the outdoor furnace to a home septic system. If doing so, however, be careful not to overflow the septic system.

Do not drain the outdoor furnace in such a manner that the drain water could in any way contact surface water, stream, river, estuary (where a river meets a sea), lake, pond, ocean or other types of waters.

Do not drain to any location within 50 feet (15 meters) of any water well.

Flushing the System

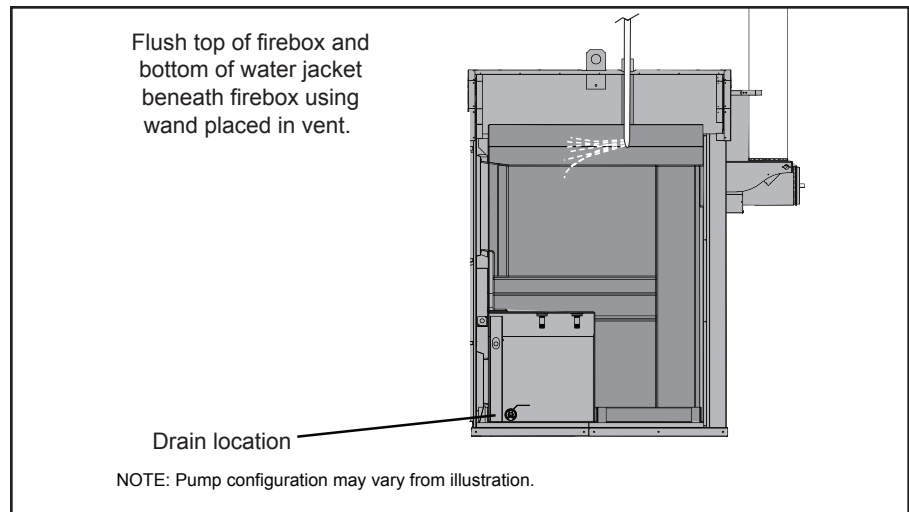
If the system water is brown or orange, it is an indication that the corrosion inhibitor level has not been maintained correctly and corrosion is present in the water jacket. Sludge Conditioner (p/n 166) can be used by circulating the recommended amount through the furnace **for one week** to help clean some of the corrosion from inside the water jacket before flushing, draining and refilling with water and the correct amount of MolyArmor 350.

NOTE: Use one unit of Sludge Conditioner per 200 gallons of system water.

1. De-energize the pump(s) and close the supply and return valves on the outdoor furnace. Remove the inspection panel and insulation covering the drain to gain access to the drain valve. Remove the cap and connect a hose to the drain.
2. Open the drain to drain the system; then flush the top of the firebox and bottom of the water jacket beneath the firebox using a wand placed in the vent.

CAUTION

Completely clean out the firebox before draining water from the outdoor furnace.



3. Close the drain valve securely and replace the cap on drain after flushing the outdoor furnace.
4. Add recommended amount of MolyArmor 350.
5. Fill the outdoor furnace following the procedure in Finalizing the Installation in the Installation Guide. Start the pump(s) and bring the water temperature up to operating temperature (185°F) for 24 hours with the system circulating to thoroughly mix the MolyArmor 350.

NOTE: ANY time water is added to the system, it is extremely important to bring the water temperature up to operating temperature (185°F) as soon as possible, even if it is during the off-season. Failure to bring the water in the system up to operating temperature immediately after filling the system can allow bacteria present in the water to multiply, which may increase the potential for corrosion in the system.

6. Insulate the area using a mat of fiberglass insulation.
7. Install the inspection panel and secure with self-tapping screws.

Adding Antifreeze to Outdoor Furnace System

If using other antifreeze, use **ONLY** uninhibited, undyed, “raw” propylene glycol industrial grade with softened water and add the correct amount of MolyArmor 350 to achieve 350 ppm moly and 8.0 to 9.5 pH levels. Some distributors call this type of antifreeze PGI (shorthand for Propylene Glycol Industrial grade).

Most outdoor furnaces are installed **without** antifreeze when an existing heating system is in place and there is no anticipation of leaving the outdoor furnace unattended for extended periods of time (10 days or more). If the building being heated has an alternate heat source, system water may be kept from freezing by running the circulating pump(s) and drawing heat from the existing furnace or boiler in the home or building.

To prevent freezing if the outdoor furnace is not fired for extended time periods or if lengthy power outages are anticipated during cold weather, a nontoxic propylene glycol may be used in the system. Some types of antifreeze that contain various inhibitors have been known to create problems like coagulation and jelling. To prevent potential problems, **do not use propylene glycol that is premixed with inhibitors**. MolyArmor 350 is compatible with (raw) propylene glycol. It is important to use MolyArmor 350 with straight propylene glycol for corrosion protection. If adding antifreeze to the system, it is imperative that the entire system contain **at least 30% antifreeze concentration mixed with water that is 6.5 to 8.0 pH**. Softened water is recommended, if available. **Do not use reverse osmosis or deionized water that has very low pH**. Bacterial growth is likely to occur with low antifreeze concentrations and can cause corrosion in the furnace water jacket and/or clogging of heat exchangers. To confirm the antifreeze solution is adequate and to kill bacteria, immediately heat the system up to 185° F, allow the pumps to circulate for at least 24 hours and then obtain a sample of the system water. Using an antifreeze tester, the solution must be protected to 10°F (-12°C) or below.

NOTE: If using antifreeze, test the pH and Moly levels once each month. If the bacterial issues occur, the pH will decrease.

NOTE: Be sure to adhere to all warnings and precautions on the antifreeze label.

NOTE: Do not use automotive or RV types of antifreeze.

Wood Selection and Preparation

Before You Start Operating Your Classic Edge Outdoor Wood Furnace

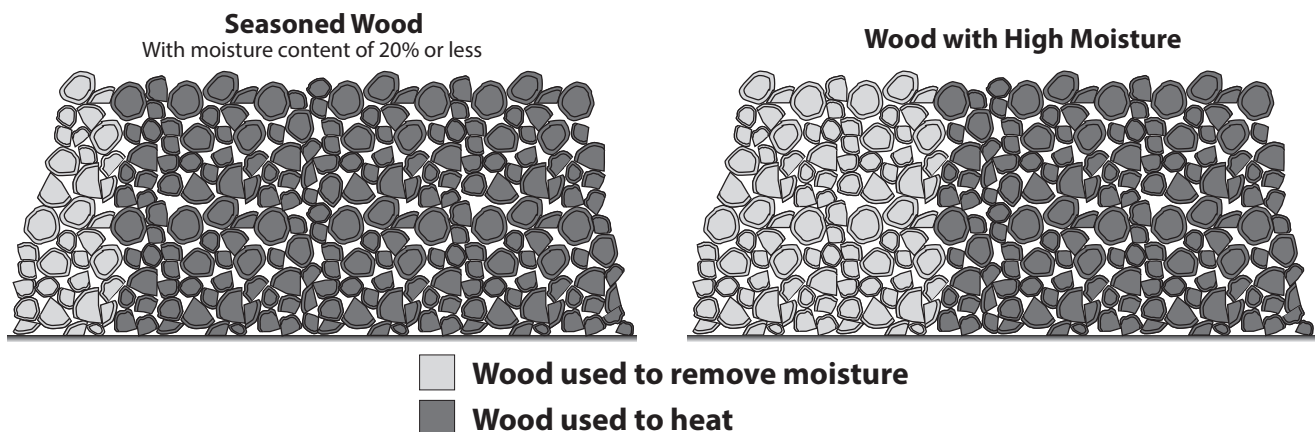
Be sure to read carefully and observe all of the information in the entire Owner's Manual.

If any questions arise that cannot be answered by the information in this manual, be sure to contact your dealer.

For the best results, it is best to burn seasoned split wood. However, it may be possible to burn some unsplit wood with the split wood depending on quality, size, moisture content and wood type. Properly seasoned wood has a moisture content of 20% or less. It is darker, has cracks in the end grain, and sounds hollow when smacked against another piece of wood. Most wood needs to be split to dry down to 20% within a year. Wood between 4" and 8" (10 and 20 cm) in diameter works well in most cases. Pieces of wood that are too large can reduce output capacity because they burn slower.

- Wood that works well in most cases:
 - Is between 4" and 8" (10 and 20 cm) in diameter
 - Is approximately 60-70% of the length of the firebox
 - Typically weighs 10-15 pounds per cubic foot for heavy heat loads
- Pieces of wood that are too large can reduce output capacity because they burn slower. Wood that is too long can cause bridging.
- Seasoned wood burns more efficiently, minimizes the amount of creosote formation and reduces emissions.
- Maintain a quantity of smaller, drier pieces of wood for relighting the fire if the wood load is burned very low or becomes completely empty.
- Green wood contains about 50% moisture by weight. Energy is required to heat the wood and evaporate the moisture - energy which could have been used to provide heat for the home. The illustration below shows that burning drier, seasoned wood provides more energy for heating your home compared with burning green, unseasoned wood that uses more energy to evaporate the moisture and provides less energy for heating your home.

NOTE: Do not store wood within the outdoor furnace installation clearances or within the spaces required for fueling, ash removal and other routine maintenance operations.



Operating Instructions

FIRESTAR COMBUSTION CONTROLLER

Refer to the FireStar Combustion Controller Operation Manual for information about the combustion controller.

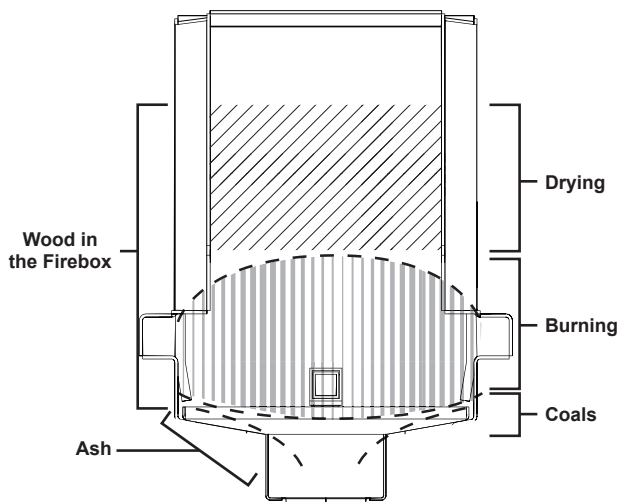
How the Classic Edge Works

Because of its highly efficient and clean-burning design, the Classic Edge operates differently than other types of wood-burning devices. Understanding a few basic principles will help you operate the Classic Edge as it was designed, maximizing its performance, heat transfer and longevity.

NOTE: For proper operation, the fuel must match the heat load, the furnace must be maintained to ensure proper air flow, and the water temperature must be kept above 150°F (66°C).

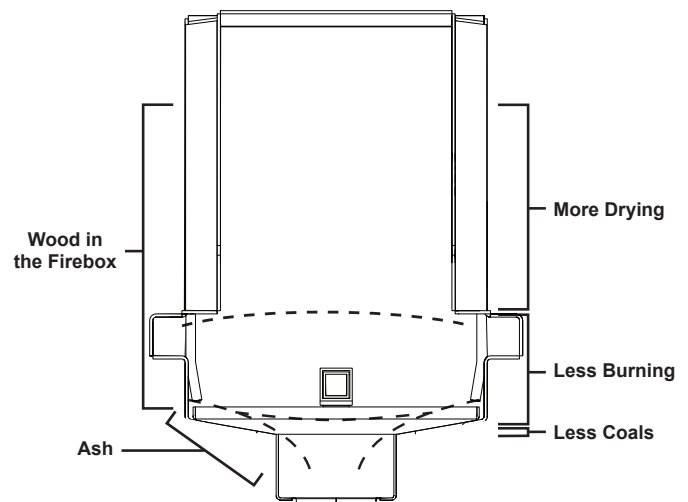
1. The combustion air fan pressurizes the airbox located at the front of the outdoor furnace. Primary air flow, regulated by an actuator motor, flows into the firebox through combustion air inlets located on the front and sides near the bottom. Secondary air is regulated by a second actuator motor that allow air flow through the air charge tube. Combustion starts in the firebox near the bottom of the wood load.

Operating with Properly Seasoned Wood



- Burns more efficiently
- Minimizes amount of wood used
- Reduces emissions
- Extends life of furnace
- Reduces bridging

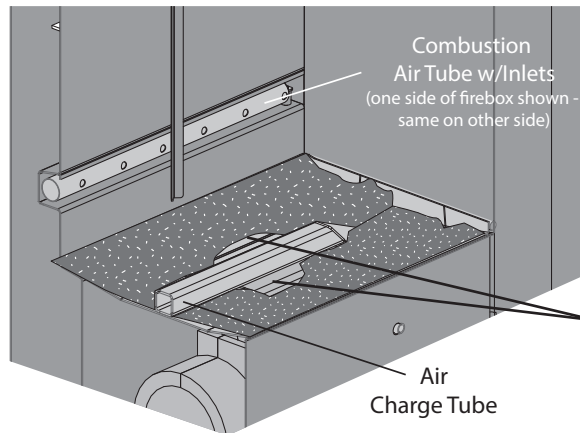
Operating with Wood with Too Much Moisture



- Burns less efficiently
- Increases amount of wood used
- Lowers combustion rates
- Increases maintenance requirements
- Increases bridging

NOTE: When the volume of burning wood is greater than the volume of drying wood, the outdoor furnace operates more efficiently.

NOTE: The combustion air inlets must be visible (i.e., ash must be kept below the combustion air inlets as shown).

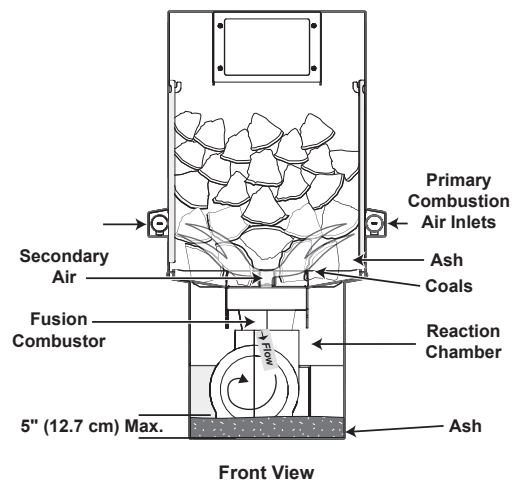


Keep the combustion air tube inlets open and clear of ash and coals to allow the furnace to operate properly.

Keep the area on BOTH sides of the air charge tube open

- Gasified fuel exits the bottom of the firebox alongside and under the air charge tube, through the mixing channel and down to the Fusion Combustor and Reaction Chamber™. Final combustion occurs in the Reaction Chamber where extremely high temperatures aid in complete combustion. The chimney creates a draft (negative pressure) which helps to draw exhaust gases from the furnace.
- Heat is transferred to the water from the hot gases as they move through the firebox, the Reaction Chamber and the heat exchanger.

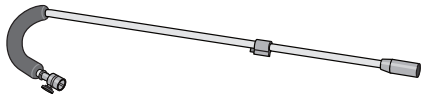
CORRECT (Proper Flow)



NOTE: The illustration shows the Classic Edge operating correctly with proper combustion air flow and with the wood properly loaded.

NOTE: A key point to remember about the operation of the Classic Edge is that as wood burns, the combustion gases flow down through the bottom of the firebox so the proper flow must be maintained as shown.

NOTE: Refer to the General Troubleshooting Information for more information on outdoor furnace operation and for conditions to avoid.



Outdoor Torch

The optional Outdoor Torch (p/n 2900325) is an excellent tool for starting a fire. Attaches quickly to an external propane tank and can be directed at the bottom of a wood pile for quicker, easier combustion.



Watch the Classic Edge HDX
Initial Start Up Video

Initial Fire Up - Start of Heating Season

NOTE: These procedures apply to initial firing at the start of the heating season.

⚠ CAUTION

Do not burn plastic, garbage, treated wood or fuels not listed for this outdoor furnace.


NOTE: Before firing the outdoor furnace for the first time, make sure the proper amount of MolyArmor 350 has been added and the water level is 1" below the full mark on the sight gauge, as the water will expand when heated.

Two options are provided for a clean, easy startup. Using lump charcoal is the easiest and fastest method. Be sure the wood (including the kindling) is dry for the best results.

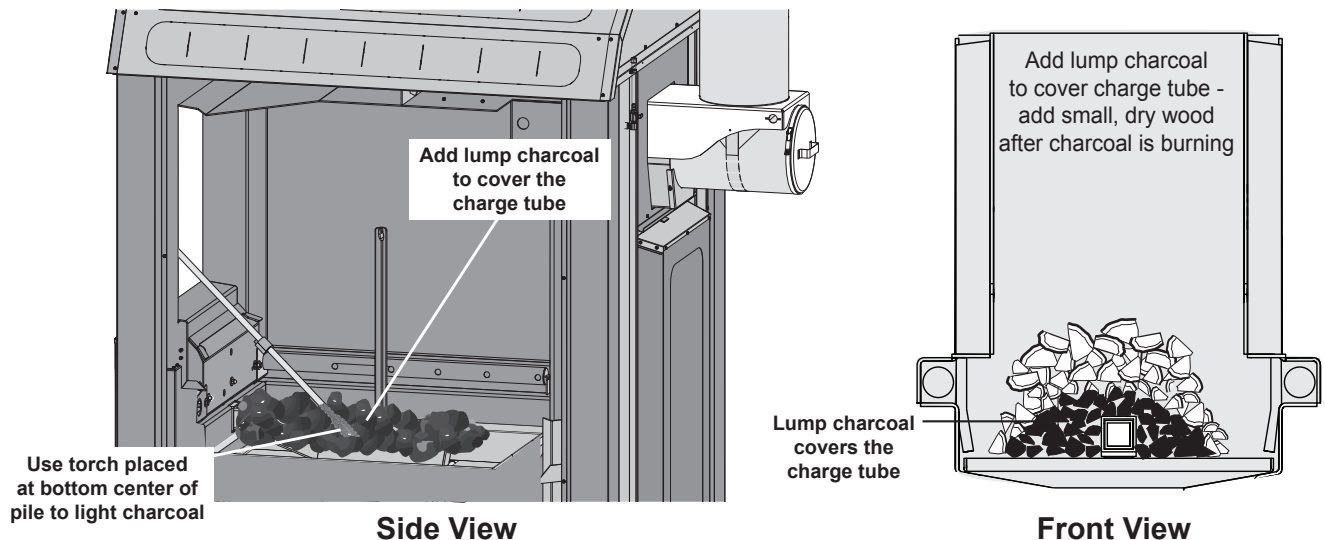
NOTE: During startup, the Reaction Chamber percentage will increase as the combustion process ramps up. Optimum burn occurs when the Reaction Chamber percentage is maintained between 70% and 100%. The drier the wood that is used during startup, the faster these percentages can be reached.

Startup Option A - Lump Charcoal

NOTE: Keep the bypass door closed for this procedure.

1. Disconnect the heat load draw by turning off the pump(s).
2. Open the firebox door and add 10 pounds of lump charcoal to cover the charge tube.
3. Turn the controller on by pressing the **Power**  button; then press the Ignition Air button to turn on the primary combustion air for the initial fire up process when the firebox door is open.

Initial Fire Up with Lump Charcoal



4. Ignite the lump charcoal making sure that the charcoal on both sides of the charge tube is burning.
5. Add small pieces of dry wood to a level just above the primary air tubes on the sides of the firebox.
6. Close and latch the firebox door.

⚠ CAUTION

Do not leave the firebox door open while the fire is burning. Damage to the door seal and paint on the front of the outdoor furnace will result and it could cause a dangerous build-up of gas in the firebox.

7. Allow the wood load to burn until the water temperature reaches 175°F (79°C). Turn on the pump(s) and let run for 24 hours to circulate the system water. If this is the initial startup of the furnace, at this point a proper water sample can be taken.

⚠ WARNING

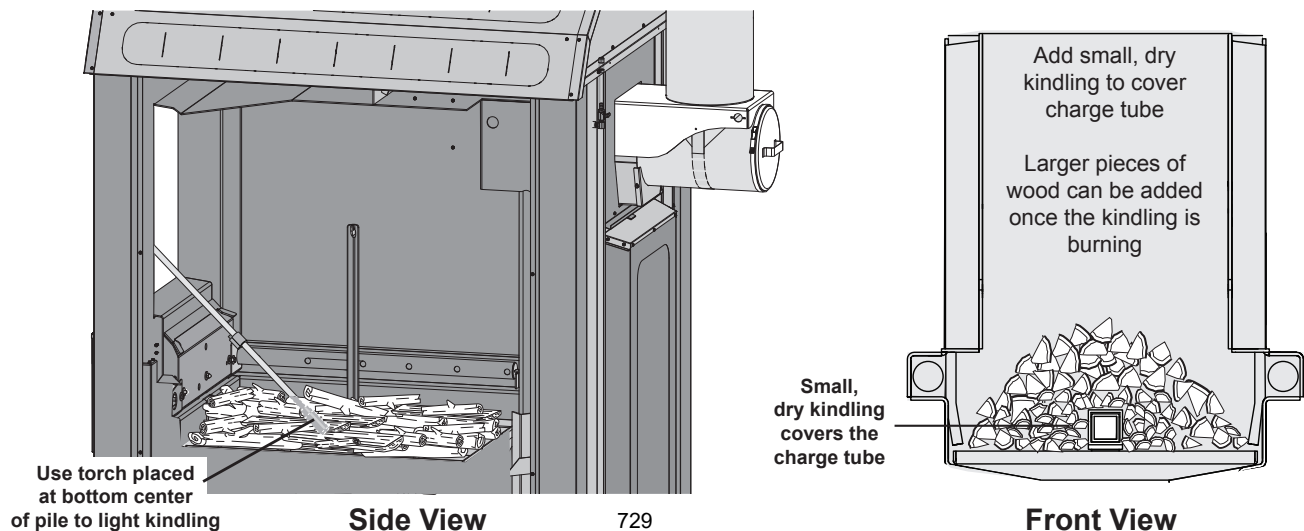
When opening the firebox door, the door switch will shut off the primary air actuator motor while the firebox door is open. Do NOT disable the door switch.


Startup Option B - Dry Kindling

NOTE: Keep the bypass door closed for this procedure.

1. Disconnect the heat load draw by turning off the pump(s).
2. Open the firebox door and add small, dry kindling to cover the charge tube. Smaller kindling is preferred. It should be staggered and able to ignite and burn quickly for the initial fire. The intent is to make sure the combustion air will be able to flow past the charge tube and into the Reaction Chamber.

Initial Fire Up with Dry Kindling



3. Turn the controller on by pressing the **Power**  button; then press the Ignition Air button to turn on the primary combustion air for the initial fire up process when the firebox door is open.
4. Ignite the bottom side of the kindling. Make sure the wood on both sides of the charge tube is burning. Once the kindling is burning, add larger pieces of dry wood to just above the primary air tubes.

NOTE: Add enough wood to bring the water temperature up to 175°F (79°C).

5. Close and latch the firebox door.

CAUTION

Do not leave the firebox door open while the fire is burning. Damage to the door seal and paint on the front of the outdoor furnace will result and it could cause a dangerous build-up of gas in the firebox.

6. Allow the wood load to burn until the water temperature reaches 175°F (79°C). Turn on the pump(s) and let run for 24 hours to circulate the system water. If this is the initial startup of the furnace, at this point a proper water sample can be taken.

WARNING

When opening the firebox door, the door switch will shut off the primary air actuator motor while the firebox door is open. Do NOT disable the door switch.

Adding Heat Load

NOTE: During initial start-up, a considerable amount of moisture from condensation will collect inside the firebox and heat exchanger and may drip out of the Reaction Chamber door. This is normal and the moisture will evaporate after the first couple of fuel loads.

1. With no heat load draw in the system, monitor the operation of the outdoor furnace until the water temperature reaches the water temperature setpoint.
2. Turn on the pump(s); then start a heat load draw in the system by turning up the thermostat in the house. Monitor the outdoor furnace for one hour or until another cycle occurs (i.e., outdoor furnace goes from combustion to idle mode). If the water temperature drops and does not recover to the water temperature setpoint within one hour of starting the heat load draw, the heat load draw should be shut off, allowing the furnace to cycle to the idle mode again.

NOTE: The outdoor furnace will not operate satisfactorily if the heat load is higher than the output capacity of the outdoor furnace.

3. At this point, there should be glowing coals established in the bottom of the firebox. The firebox can be filled with dry, seasoned split wood.

Ash Removal Frequency

During the first week of operation, check the level of ash in the Reaction Chamber every two days. Ash needs to be removed from the Reaction Chamber before it obstructs the combustion air flow for efficient operation. Clean the Reaction Chamber before it becomes 1/2 full of ash (approximately 5" or 13 cm deep in any area of the Reaction Chamber).

Adding Wood

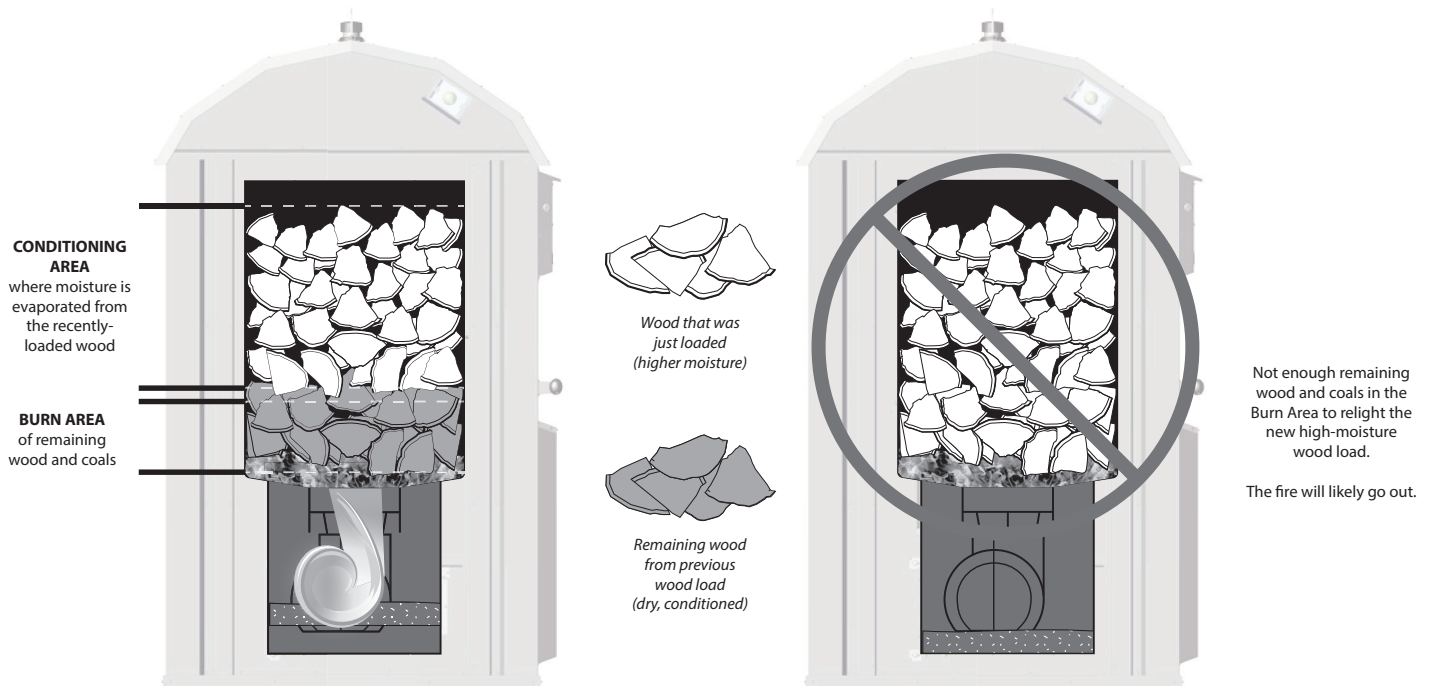
1. Classic Edge 760/560/560.1 only - slowly lift and push the bypass door handle toward the back of the outdoor furnace to open the bypass door; then wait for 15 seconds.

NOTE: The alarm is a reminder that the bypass door is open. During initial start, it will continue to sound.

⚠ WARNING

Keep your face away and stay as far away as possible from the firebox door area when opening the door.

How to Load Wood for Best Operation

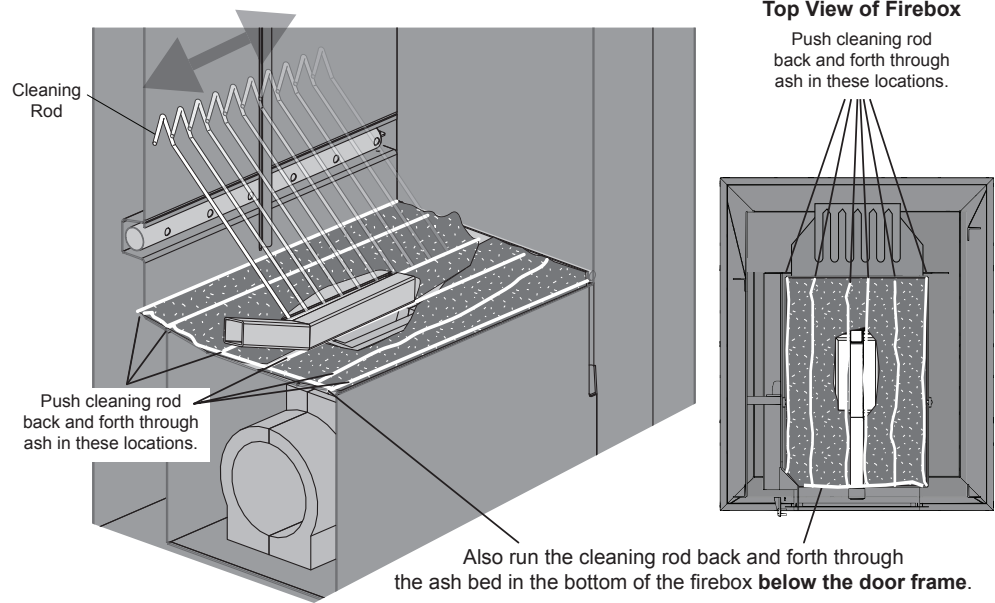


Follow these steps for trouble-free operation:

1. Make sure there is enough wood and coals left to relight the new wood load. Use the Reserve Mode function to ensure an adequate amount of wood and coals is available to start the new wood load.
2. Use the cleaning rod as directed to ensure airflow is free and unobstructed. EVERY time you add wood, run the cleaning rod back and forth through the ash/coal bed, along the air charge tube and beneath the firebox door.
3. Fill the firebox completely with wood.



Watch the Furnace Operation Video, an excellent resource showing how easy the furnace is to maintain. **NOTE:** You'll need to enter your serial number to view.



2. Unlatch the firebox door; then slightly open the firebox door and wait 10 seconds. Stay as far away as possible as the firebox door is opened because smoke and hot gases escaping through the firebox door opening could ignite. From a safe distance, observe the fuel load.

⚠ WARNING

Use extreme care when adding wood when wood or coals are already present. Very hot gases may be coming out of the firebox door opening.



Run the cleaning rod through the coal bed every time before loading wood to help maintain proper air flow and optimize combustion.

3. Using the illustration as a reference, push the cleaning rod through the ash, coals and remaining wood in the bottom of the firebox to loosen it up, including a pass on each side of the air charge tube. Also run the rod sideways on each side of the air charge tube in the bottom of the firebox below the door frame.

NOTE: Neglecting to push the cleaning rod through the ash and coals as described in Step 3 each time before wood is loaded can cause the ash bed to deepen and become compacted. This can result in poor heat output and combustion because of restricted airflow. Compacted ash will not fall into the Reaction Chamber; it will need to be removed with a shovel.

4. Some ash in the bottom of the firebox (but not alongside the charge tube) is necessary for the proper operation of the outdoor furnace. Ash acts as an insulator, keeping the glowing coals in the bottom of the firebox hot enough to restart the fire. When using the cleaning rod, some of the ash will fall into the Reaction Chamber and some ash with coals will remain. The coals remaining around the mixing channel (the area alongside the air charge tube) will create a clean, efficient burn.

5. The combustion air inlets must be kept open and clear of ash and coals to allow the furnace to operate properly. If needed, remove enough ash to keep the combustion air inlets free of obstruction.

NOTE: It is important to understand that when the water temperature setpoint (185°F) is reached, the combustion air is shut off until the water temperature drops to the setpoint minus the differential setting. During this cycle-off time there will be no active fire in the firebox. If the firebox door is opened, the wood might begin to burn again but will be shut down when the door is closed if the water temperature is above the setpoint. If the door is opened and closed when the water temperature is below the setpoint the fan will cycle on again to achieve the setpoint even though the differential point has not been reached. If the combustion cycle is activated with the water temperature at least to the differential below setpoint and the fire is not actively burning when the door is closed, first confirm that proper operating and maintenance procedures are being performed before considering testing mechanical components.

6. When refilling the firebox, the new wood load will ignite quickly and burn more efficiently if these instructions are followed. This will prevent creosote buildup in the heat exchanger, air channels or primary elbow. The operating procedures will maintain good air flow and very efficient combustion.

DAILY

- Run the cleaning rod through the ash and coal bed and along both sides of the air charge tube as shown on previous page to keep ash loose. **Use care near the refractory mixing channel.** This will allow excess ash to flow down into the Reaction Chamber. If the coal bed/remaining wood is more than 4 inches deep, it may be necessary to use the cleaning rod to open a passage through the coals on each side of the air charge tube. **Air flow down past the air charge tube is essential for a good combustion rate to be maintained. To confirm adequate air flow, cautiously open the Reaction Chamber door to visually identify the combustion air flow while the furnace is in a burn cycle with the fan on and the bypass closed.**
- Pay extra attention to clearing the **front corners** and **below the door**.
- To ensure the fire will maintain good combustion, it is important to refill the firebox when an adequate amount of the previous wood load is remaining (enough to provide enough heat and fire to dry and ignite the new wood load). If the coals burn out from under the new wood load and are unable to keep the fire going, there are not enough coals and wood left from the previous load. When the firebox is filled completely each loading, the FireStar's default Reserve Mode will help "reserve" a portion of the previous wood load for a quicker, more efficient fire up after reloading.

- Be sure to fill the firebox with enough wood so there is adequate wood left the next time you load to dry and ignite the new wood.
- Keep in mind that burning dry, well-seasoned wood requires less coals to ignite the new wood load.
- Burning higher moisture wood or larger, unsplit wood will require that a larger amount of the previous wood load remain in the firebox to adequately ignite the new wood load. If there are not an adequate amount of coals or enough of the previous wood load to achieve a good hot fire and efficient combustion with Reaction Chamber temperatures, open the bypass door for a long enough time to get the new wood load burning well; then close the bypass. Refer to Initial Fire Up - Start of Heating Season.
- If the furnace is being used in the fall and spring or on heat loads much lower than the main heating season, use a 25% wood load or whatever amount will be needed for the period of time between normal reloading.

WEEKLY (or as needed)

- Clean the heat exchanger weekly (or as needed) to prevent air flow restriction. When the operating procedure outlined here is used, there will be no creosote formation in the Reaction Chamber or heat exchanger passage.
- Clean ash out of the Reaction Chamber channel as needed. It is best not to allow the Reaction Chamber to fill to a depth over 1/2 full.
- Inspect and clean the chimney tee as needed to prevent restriction.
- Clean and inspect the spark arrestor (if one is being used) as needed.
- Review the operation and maintenance, and refueling tips videos available on the Online Support Center.

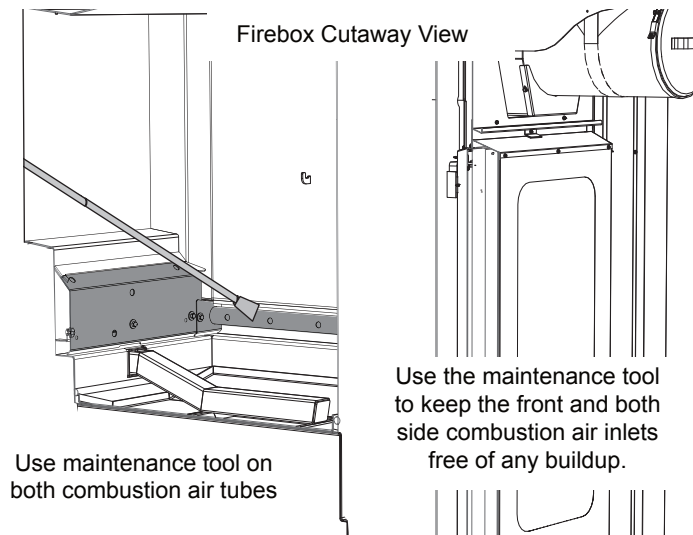
NOTE: If the furnace has been operated without adequate airflow and efficient combustion, it may be necessary to inspect and clean the primary combustion air inlets, air channels, primary air elbow, heat exchanger, and Reaction Chamber.

NOTE: If the fire goes out or keeps going out, the pulse timer can be adjusted to a longer duration and shorter time periods between idle pulses.

⚠ WARNING

When adding wood to the firebox, be careful not to get pinched between the wood and the door frame or any part of the outdoor furnace. Use extreme care with large pieces of wood that may be difficult to handle.

7. Inspect the firebox for crusty deposits on the walls and in the corners and use the maintenance tool or similar type of tool to scrape and remove. Use the maintenance tool to remove any thick deposits from the inside front corners of the firebox, down each side and across the top, as shown.
8. Use the maintenance tool to keep the front combustion air inlets, and the combustion inlets on both air tubes free of any buildup.



9. When loading, load the wood so that the combustion air inlets on the side of the firebox do not become blocked or restricted.
10. Close and latch the firebox door. **Do not use the firebox door to ram wood into the outdoor furnace. Do not operate the outdoor furnace with the firebox door open.** Combustion in the firebox cannot be controlled if the firebox door is left open or unlatched. If the firebox door is left open, an uncontrolled burn will result. To return to a controlled burn, close and latch the firebox door.
11. Classic Edge 760/560/560.1 only - wait for 15 seconds; then slowly pull the bypass door handle toward the front of the furnace and push down to close the bypass door.

⚠ WARNING

The firebox door must be closed and latched at all times except when filling the firebox with wood or damage to gaskets, paint, etc., may occur. Leaving the firebox door open may lead to a runaway fire. In the event of a runaway fire, close the firebox door.

PREVENTIVE MAINTENANCE SCHEDULE

Regular maintenance and inspections can help extend the life of your outdoor furnace and prevent high-cost repairs. This table is meant to serve as a general guideline until you become acquainted with how the outdoor furnace operates with your specific application.

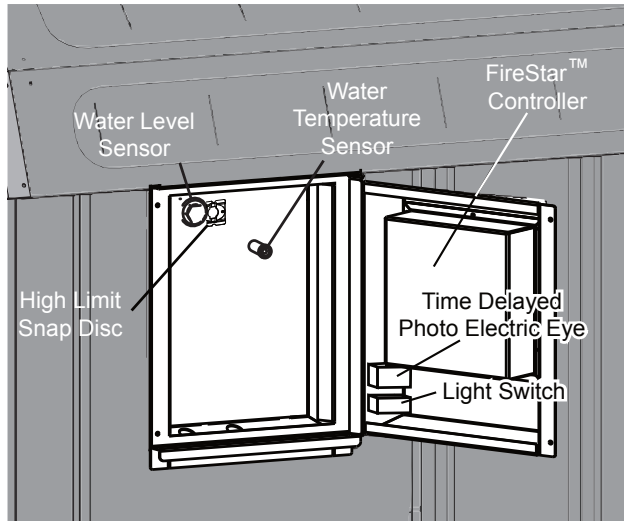
OPERATION	SERVICE INTERVAL						See Section Number
	Before first operation of season	Daily	Weekly	Monthly	Semi-Annually	Post Season	
Check water level.	●	●					1
Remove ash.			C			●	3
Scrape firebox door frame; use cleaning rod in ash.		A				●	8
Inspect firebox door seal.		A				●	4
Inspect and lubricate door latch bushings.						●	G 4
Inspect chimney and chimney tee.	●		●			●	5
Check vent cap.	●						2
Clean heat exchangers.	●		C			●	F 6
Inspect rear access heat exchanger door latches, seal and insulation							H 6
Inspect Reaction Chamber.	●		C			●	7
Inspect secondary air tube and refractory.						●	11
Inspect firebox and firebox ash area.	●	A				●	8
Inspect and clean combustion air inlets.	●		C			●	B 9
Inspect and clean the combustion fan and inlet screen.					D		10
Oil the combustion fan.						●	10
Check pH and moly levels of water.	●				D	●	E
Inspect primary and secondary combustion air elbows.						G	12
Grease bypass door handle (760/560 only).				F		●	13
Perform a complete cleaning.				F		●	14

NOTE: Check daily for build-up of creosote in the lower corners and around the air outlets until experience shows how often cleaning is necessary.

- A** Daily, or as needed.
- B** Twice a week.
- C** Weekly until interval for your application can be determined.
- D** When new, after three months, then every six months thereafter.
- E** Refer to **Testing Treated Water in the Outdoor Furnace** (Installation and Initial Water Treatment Guide).
- F** Frequency will vary depending on heat load requirements, type of wood used and the moisture content of the wood.
- G** Or as needed.
- H** Whenever rear access heat exchanger door is opened.

Maintenance Schedule

Control Locations



ROUTINE MAINTENANCE

⚠ CAUTION

Use only genuine Central Boiler Parts and Accessories if it ever becomes necessary to replace any component of the outdoor furnace.

Routine inspections and maintenance are essential to the proper operation and longevity of the outdoor furnace. The items indicated in the preventive maintenance schedule are intended to serve as a guideline. Actual intervals between inspections and maintenance may vary depending on a number of factors, including your heat load requirements, type of wood used, and outdoor temperatures.

NOTE: Proper maintenance of the firebox, Reaction Chamber, Fusion Combustor, heat exchanger, chimney transition box and chimney tee are essential for the outdoor furnace to function properly and for longevity.

⚠ CAUTION

Do not burn plastic, garbage, treated wood or fuels not listed for this outdoor furnace.

NOTE: Chloride or sulfurous gases can be generated if plastic or rubber is burned and will mix with the moisture from the wood to form hydrochloric or sulfuric acids in the firebox, creating corrosion.

Creosote - Formation and Need for Removal. When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire.

NOTE: If the outdoor furnace is operated correctly, creosote will not form in the chimney.

The chimney connector and chimney should be inspected at least twice monthly during the heating season to determine if a creosote buildup has occurred, and to check for corrosion or condensation. If creosote has accumulated it should be removed to reduce the risk of a chimney fire.

⚠ WARNING

The chimney and chimney connector must be clean and in good condition.

MAINTENANCE SECTIONS

Refer to the Preventive Maintenance Schedule for the recommended intervals with which to perform these maintenance items.

Section 1 - Water Level

Open the sight gauge valve. The sight gauge tube will fill to indicate the level of water in the outdoor furnace. Be sure to close the sight gauge valve after checking water level. The sight gauge valve and tube will drain when the valve is closed.

Section 2 - Vent Cap

Check that the vent cap fits loosely on the vent opening. Check the vent cap copper tube for obstruction; clean with a pipe cleaner if needed.

⚠ WARNING

The outdoor furnace vent cap must fit loosely on the vent opening. Do not force the cap down or try to seal it tightly onto the vent pipe. Do not extend or restrict the vent pipe or opening. DO NOT ALLOW THE OUTDOOR FURNACE TO BE PRESSURIZED.

Section 3 - Ash

Refer to the Adding Wood section.

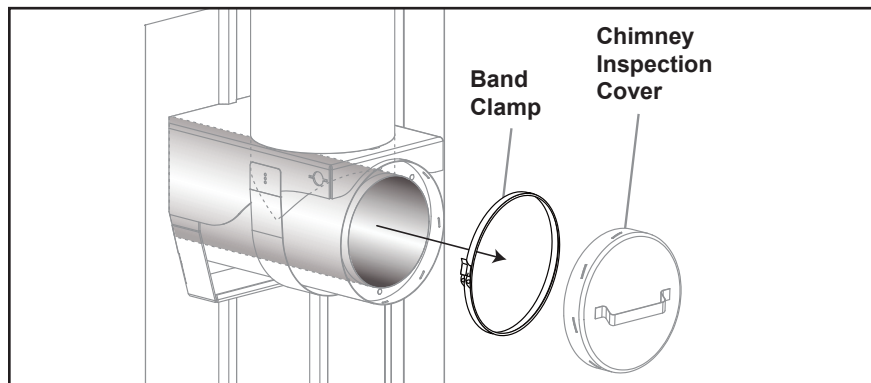
Section 4 - Firebox Door Seal and Bushings

Make sure the firebox door is properly latched and check the condition of the firebox door seal. If it is not sealing properly (indicated by a uniform indentation), replace the seal. If it is not sealing properly after replacing the seal, the firebox door may need to be adjusted. See Firebox Door Hinge/Latch Bearing Adjustment in Serviceable Items section.

Section 5 - Chimney Tee and Chimney

Remove the band clamp and chimney inspection cover. Inspect the chimney outlet and chimney for excessive creosote, ash or deposits and clean as necessary.


NOTE: The chimney inspection cover must fit tightly. Check and clean if necessary the groove for the cover to prevent air from leaking out. Leaking air caused by an improperly fitting cover can cause corrosion.



Section 6 - Heat Exchangers

NOTE: Inspect the heat exchangers weekly, and clean as needed, until the interval for your application can be determined. Frequency will vary depending on a number of factors including heat load requirements, type of wood used and the moisture content of the wood.

NOTE: The best time to clean the heat exchangers is prior to loading with wood when all that remains in the firebox is a glowing coal bed.

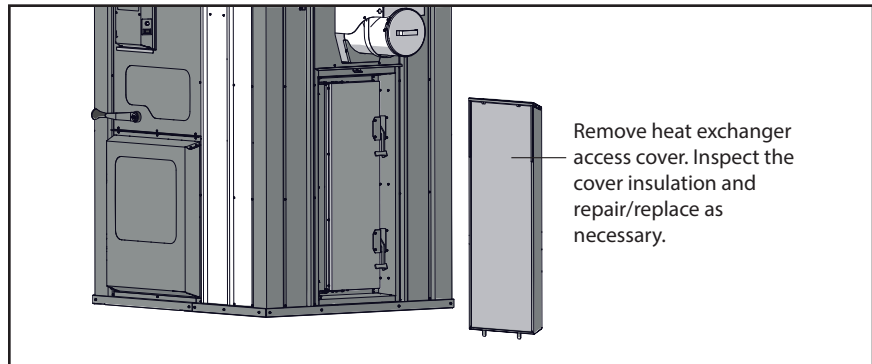
1. Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

2. Remove the chimney inspection cover. Inspect the area above the heat exchangers for any excessive ash buildup. Clean and remove any excessive ash accumulation.

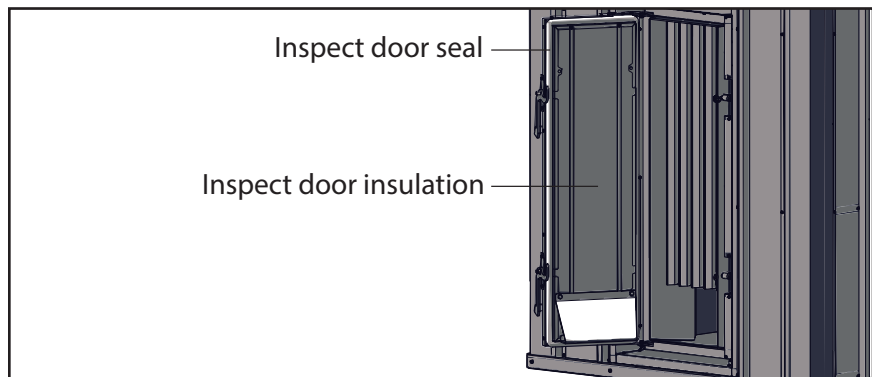
3. Remove the heat exchanger access cover from the back of the furnace. Inspect the cover insulation and repair/replace as necessary.



4. Carefully undo both latches on the hinged heat exchanger door. If any coals or wood remain in the firebox, slowly open the door making sure to stand off to the side when opening it.

⚠ CAUTION

Open the heat exchanger door slowly and stand off to the side when opening it.

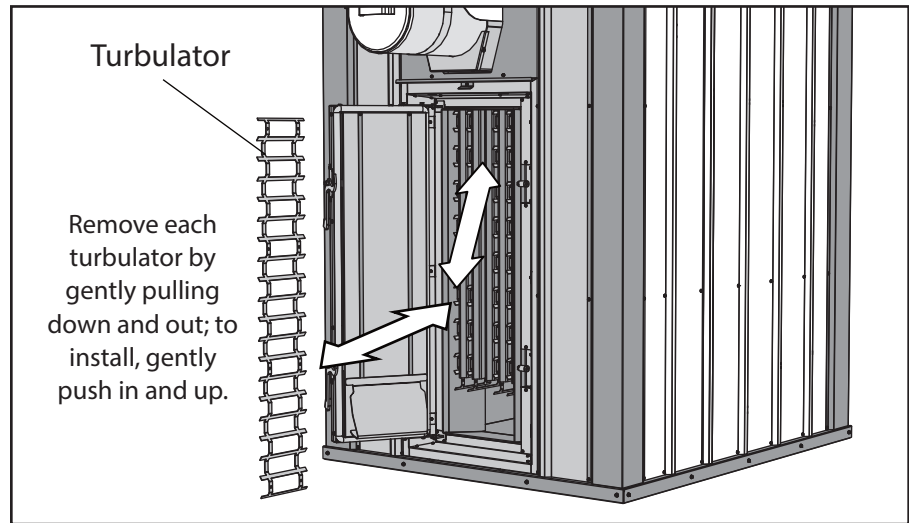


5. Inspect the door insulation and door seal. Repair/replace any defective seal or insulation.
6. Inspect the door frame edge for any buildup of creosote or ash. Use the maintenance tool to clean the door edges.

⚠ CAUTION

Always wear the appropriate personal protective gear when cleaning ash from the turbulators and the Reaction Chamber.

7. Remove each turbulator by gently pulling down and out. Clean each turbulator to remove any ash or buildup; then inspect for damage.

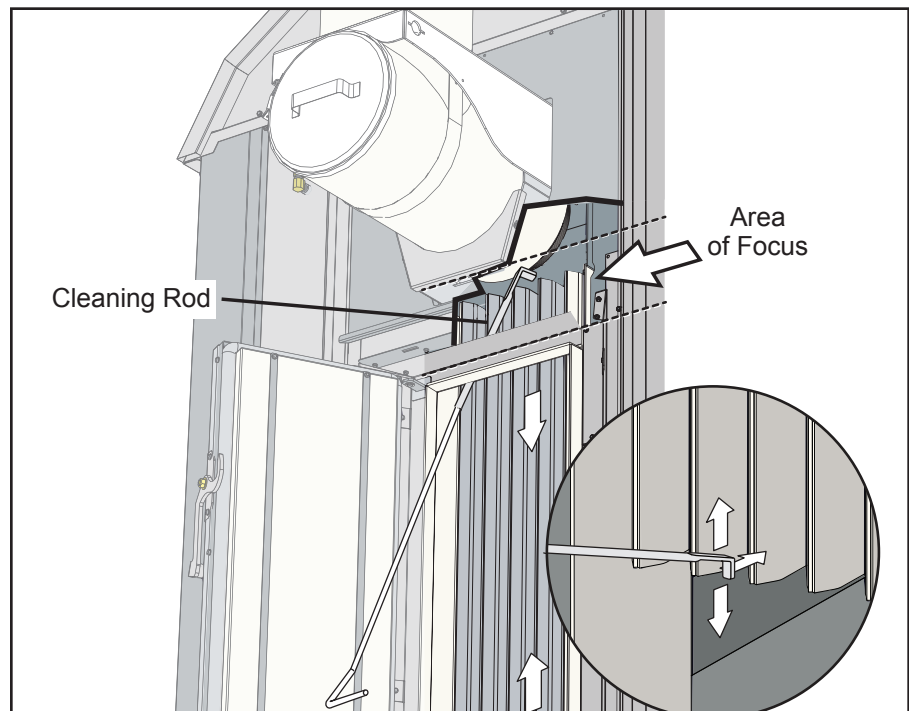



8. Inspect the heat exchangers for excessive buildup of creosote or ash. Use the scraping end of the maintenance tool to clean any accumulations from the sides of the heat exchanger sections. Angle the cleaning rod up to clean from the top of the exchangers and then down to the bottom between each folder of the exchanger.

The Flue Brush Kit (p/n 390) is an excellent option as an additional way to clean the exchangers.



NOTE: If there is creosote buildup in the heat exchanger, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Operating Instructions).



9. Using the maintenance tool and a shovel, clean any accumulated ash from beneath the heat exchanger. Dispose of ash properly.
10. Ensure that the door seal and frame are still clean of any debris or ash; then install each turbulator by gently pushing in and up.
11. Close and latch the heat exchanger door; then install the heat exchanger access cover and chimney inspection cover.
12. Press the **Power**  button on the FireStar combustion controller to turn it on.

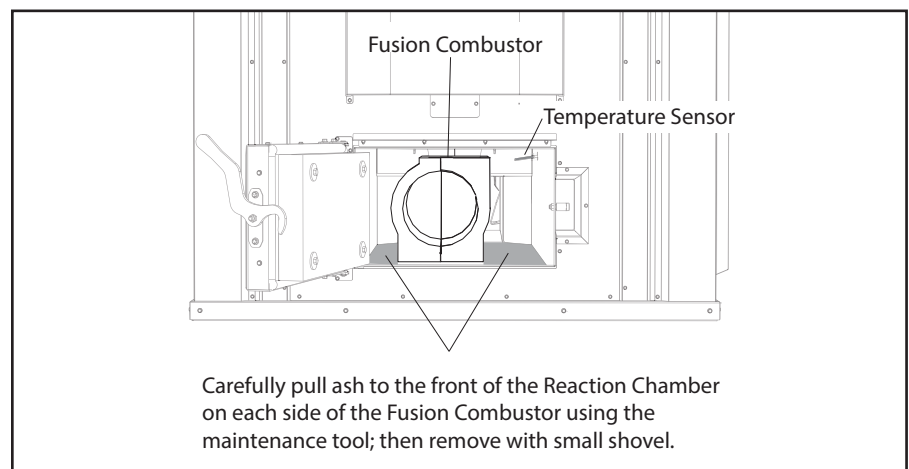
Section 7 - Reaction Chamber

1. Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

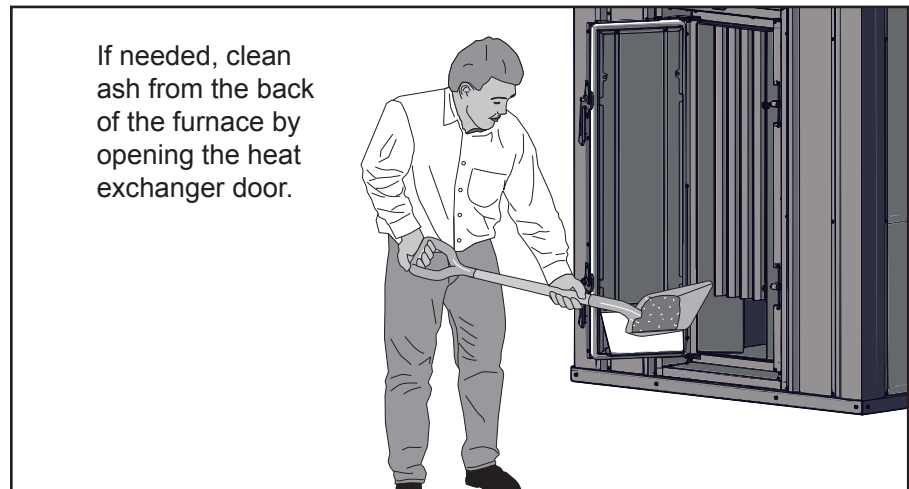
2. Unlatch and open the Reaction Chamber door.
3. Use the maintenance tool to pull the ash to the front of the furnace. Take care when pulling ash from each side of the Fusion Combustor not to move the refractory sections.
4. Use a small shovel to remove all of the ash and deposits from the Reaction Chamber. Take care not to damage the temperature sensor. You can also clean ash from the back of the furnace by opening the heat exchanger door.




NOTE: It is extremely important to clean ash from the entire Reaction Chamber area. If necessary, refer to section Heat Exchangers section for the procedure for removing ash from heat exchanger area.

⚠ CAUTION

Take care not to damage the temperature sensor when removing ash.



5. Close the Reaction Chamber door and secure the latch.
6. Press the **Power**  button on the FireStar combustion controller to turn it on.

Section 8 - Firebox**⚠ WARNING**

Remove all wood, coals and ash from the firebox.

1. Scrape the top and sides of the firebox and around the door frame area to remove any deposits; then inspect the surfaces of the firebox for any signs of corrosion, paying particular attention to the ash level and below.

NOTE: When scraping to clean inside the firebox, be sure to pay particular attention to the corners and to the seams.

2. If signs of corrosion are present, contact your dealer. Refer to the section Corrosion is Present in the Troubleshooting section.
3. A thin, tar-like creosote layer may form on the firebox walls and migrate toward the bottom of the firebox where it could collect into a thicker layer. Normally this layer will burn up as it collects on the bottom. If it migrates to the bottom of the firebox and does not burn up, it must be removed. Do not allow it to cover or restrict air flow through the combustion air inlets or bottom of the firebox. If larger, thick, dry deposits form on the walls in the firebox, they should be removed with the maintenance tool.

NOTE: Be aware that the hotter the fire, the less creosote is deposited, so weekly cleaning may be necessary in mild weather, even though monthly cleaning may be enough in coldest months.

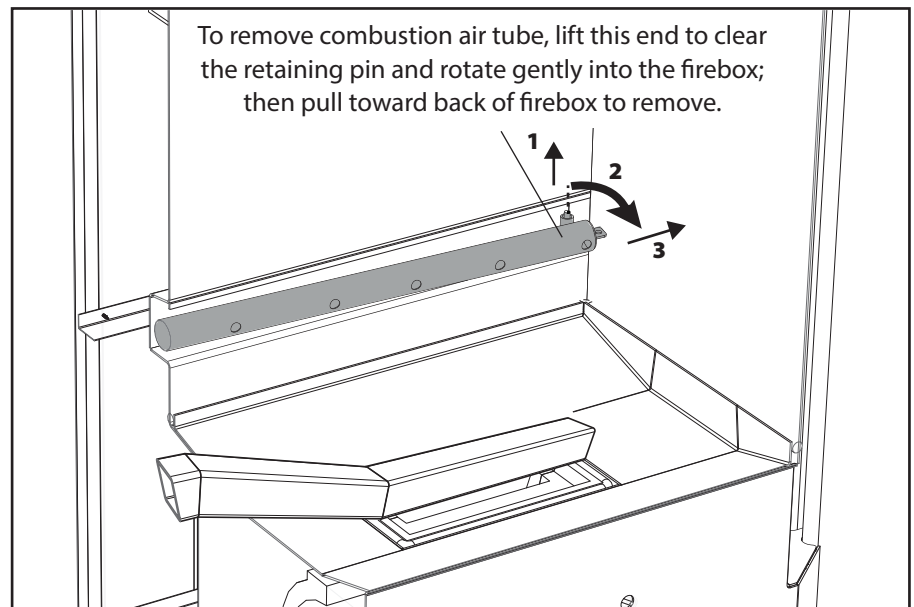
Section 9 - Combustion Air Tubes

NOTE: If the combustion air tubes are becoming restricted by ash or creosote, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Adding Wood section).

Primary combustion air is supplied to the firebox through the combustion air inlets located in the front air channel and in the side combustion air tubes. Be sure to clean off any buildup around the combustion air tube holes and buildup that may collect around the combustion air tubes themselves.

The side combustion air tubes can be removed if necessary. To remove, lift the end of the tube closest to the back of the firebox up off of the retaining pin, then in and toward the back of the firebox. Install by reversing this procedure.

NOTE: If there is a large amount of buildup on the exterior of the combustion air tube, it may be necessary to first remove the buildup to make removal easier.



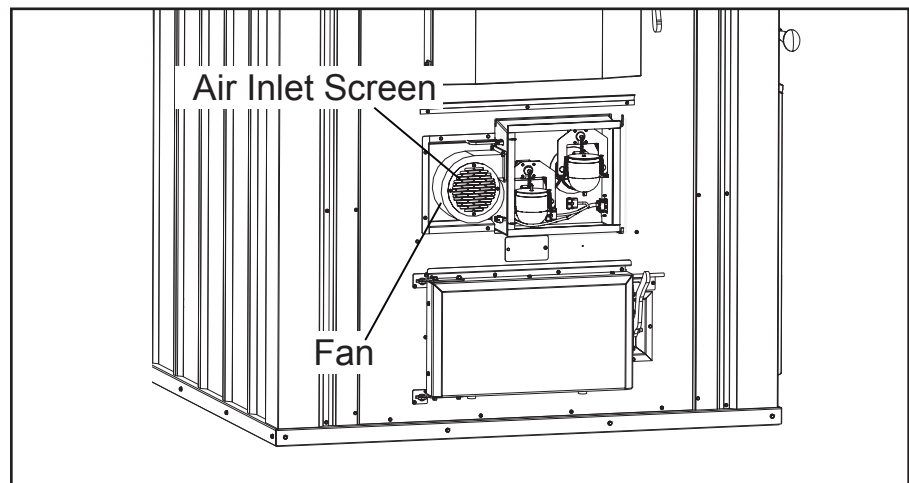
Section 10 - Combustion Air Fan

1. Disconnect power to the outdoor furnace.

⚠ WARNING

Do not proceed without testing that power is disconnected.

2. Remove the airbox access cover; then open the hinged airbox door. Inspect the combustion air fan inlet screen and fan wheel and clean if necessary. Make sure the air intake is clean and not obstructed.



3. Close and secure the airbox door. Install the airbox access cover.

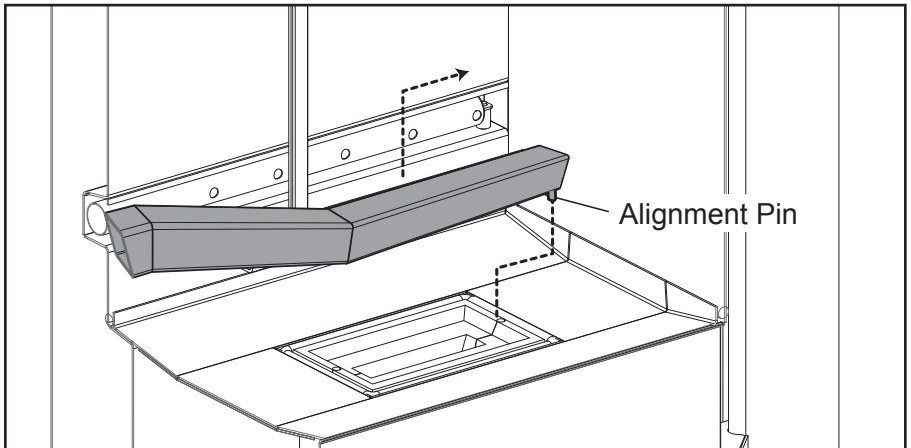
⚠ DANGER

Do not connect power or operate the outdoor furnace with the airbox access cover removed. The outer airbox cover must be installed and secured with screws.

Section 11 - Air Charge Tube and Refractory

Removing and inspecting the air charge tube and inspecting the refractory is best done after the outdoor furnace has been shut down and the firebox has been cleaned according to the Complete Firebox Cleaning Procedures.

NOTE: The air charge tube and refractory are wear items.



1. Remove the air charge tube by lifting and then sliding it toward the rear of the outdoor furnace. Inspect the mixing channel to see the area is not plugged.
2. Inspect each refractory module for damage. Small cracks and chips in the refractory are normal. If large pieces of the refractory modules are missing, contact your Central Boiler dealer.
3. Install the air charge tube making sure the alignment pin is seated in the alignment hole in the refractory modules.

Section 12 - Primary Air Elbow

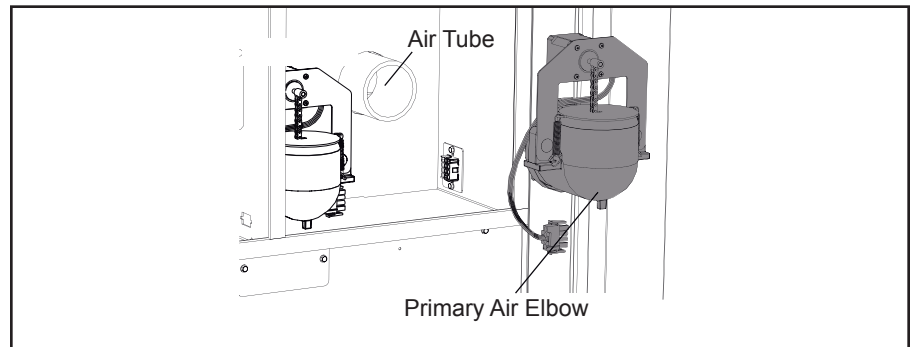
1. Disconnect the electrical power to the outdoor furnace at the main power source.

⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while servicing the actuator motors (i.e., use lock out, tag out).

2. Remove the outer airbox cover; then open the airbox door.
3. Disconnect the actuator motor wiring harness.

4. Loosen the hose clamp securing the primary air elbow to the air tube; then remove the assembly from the airbox.



5. Inspect the elbow and clean out any build-up or blockage.

NOTE: A *small* amount of material in the elbow is normal and is not an indication of improper operation.

NOTE: If there is creosote buildup in the primary air elbow, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Adding Wood section).

6. Inspect the air tube for blockage or obstructions. To remove blockage or obstructions in the air tube, a screwdriver and a shop vac may be useful.
7. Install the primary air elbow over the air tube; then tighten the hose clamp.
8. Connect the actuator motor wiring harness.
9. Close and secure the airbox door. Install the outer airbox cover and secure with screws.

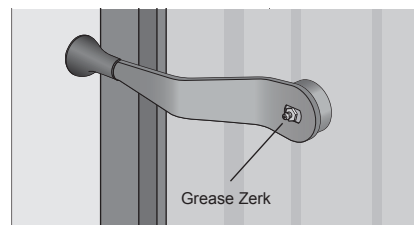
⚠ DANGER

Do not connect power or operate the outdoor furnace with the outer airbox cover removed. The outer airbox cover must be installed and secured with screws.

10. Connect the electrical power to the outdoor furnace at the main power source.

Section 13 - Bypass Handle (if applicable)

1. Using the grease zerk on the bypass handle, add grease.



2. Lift and lower the bypass handle several times to distribute the grease.

Section 14 - Complete Cleaning Procedures

The frequency for performing a complete cleaning will vary depending on a number of factors, including your heat load requirements, type of wood used, and the moisture of the wood.

NOTE: Proper maintenance of the firebox, Reaction Chamber, heat exchanger, chimney transition box and chimney tee are essential for the outdoor furnace to function properly and for longevity.

NOTE: It may be best to allow the wood and coals to burn out completely before this type of cleaning.

CAUTION

Always wear the appropriate personal protective gear (e.g., protective gloves, clothes, dust mask, etc.) when cleaning ash from the firebox and the Reaction Chamber, etc.


CAUTION

Clear the entire area surrounding the outdoor furnace of any combustible materials before performing these cleaning procedures.

WARNING

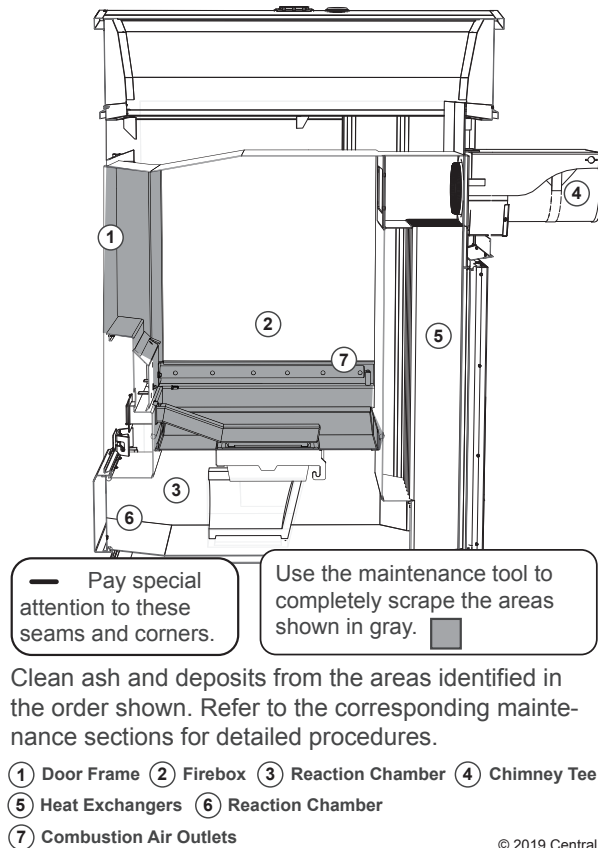
Be careful not to spill any coals or ash. Place coals and ash in a metal container with a tight-fitting metal lid.

NOTE: Refer to the illustration and clean the areas identified in the order shown. For each area in the illustration, refer to the corresponding maintenance section.

1. Press the **Power**  button to turn the FireStar combustion controller off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.



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Door Frame

Open the firebox door; then scrape the face and surface area of the door frame to remove any deposits.

Firebox

See Maintenance Section 8 - Firebox.

Chimney Tee

See Maintenance Section 3 - Chimney Tee.

Heat Exchangers

See Maintenance Section 6 - Heat Exchangers.

Reaction Chamber

See Maintenance Section 7 - Reaction Chamber.

Combustion Air Tubes / Air Charge Tube

See Maintenance Section 9 - Combustion Air Tubes and Maintenance Section 11 - Air Charge Tube and Refractory.

SERVICEABLE ITEMS

NOTE: These procedures should be performed by a qualified individual and in accordance with any and all federal, state/provincial and local codes and regulations. When performing work on an appliance observe all precautions in the literature, tags and labels attached to the appliance and other safety precautions that may apply. When working with electricity and electrical components, failure to follow precautions could result in property damage, personal injury or death.

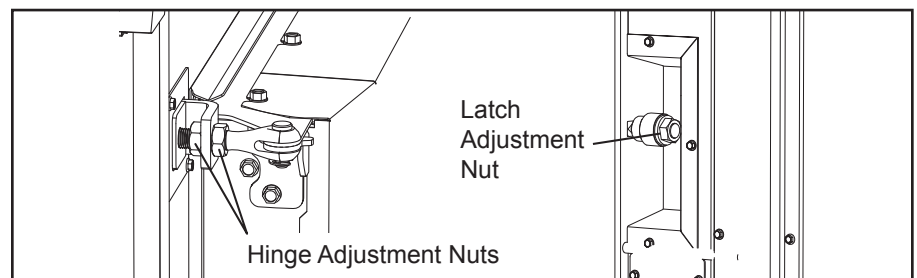
NOTE: If any of these items are under warranty, remember that the warranty covers only the cost of the replacement part. Labor is not covered.

NOTE: Use only genuine Central Boiler parts and accessories if it ever becomes necessary to replace any component on the outdoor furnace.

FIREBOX DOOR HINGE / LATCH BEARING ADJUSTMENT

If the firebox door seal has been replaced and it is not sealing properly, the firebox door may need to be adjusted to close more tightly. When adjusting the firebox door, make sure it is not adjusted too tightly as damage to the firebox door, frame or door seal may result.

1. To tighten the hinges, loosen the outer adjustment nut and turn the inner nut counter-clockwise; then tighten the outer adjustment nut securely. Adjust the top and bottom hinge for equal pressure when the door is latched.
2. To tighten the latch bearing, loosen the latch adjustment nut; then tap the latch bearing assembly in toward the firebox. Tighten the latch adjustment nut securely.



FIREBOX DOOR SEAL

The firebox door seal must be in good condition to ensure an airtight seal. If the outdoor furnace is operated with the door open or ajar, the firebox door seal may become damaged or brittle due to excessive temperatures. If replacement is necessary, use the following procedure:

⚠ WARNING

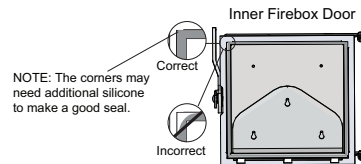
Remove all wood, coals and ash from the firebox.

1. Disconnect power to the outdoor furnace.

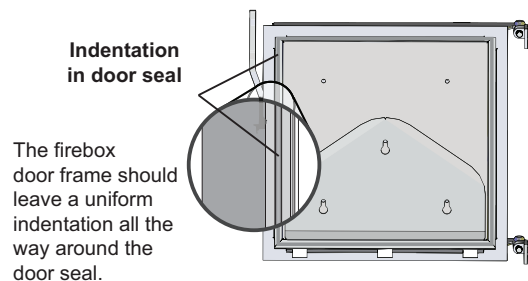
⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while testing components (i.e., use lock out, tag out).

2. Using a scraper, remove the firebox door seal on the inner side of the firebox door and clean any remaining silicone adhesive from the groove. Any residue left in the groove will interfere with the new door seal.
3. Apply a liberal amount of silicone sealant into the entire firebox door seal groove.
4. Starting at the center of the hinge side of the firebox door, insert the new door seal into the groove, pressing it firmly into the bead of silicone sealant. Make sure the seal is not stretched as it is pressed into the corners. Force the seal out to fill in the corners as shown.



5. Scrape the face and surface area of the door frame to remove any deposits.
6. Close the firebox door. Make sure that pressure is felt as the latch is closed to ensure the seal is tight with the door frame.
7. Open the firebox door and check that there is an impression in the seal from the door frame. This mark must extend, with no gaps, around the entire perimeter of the firebox door seal. If needed, adjust the hinges and latch assembly.

**⚠ CAUTION**

The firebox door seal will be damaged or destroyed if it is not installed properly.

REACTION CHAMBER DOOR SEAL

The Reaction Chamber door seal must be in good condition to ensure an airtight seal. If replacement is necessary due to the Reaction Chamber door seal becoming damaged or brittle, use the following procedure:

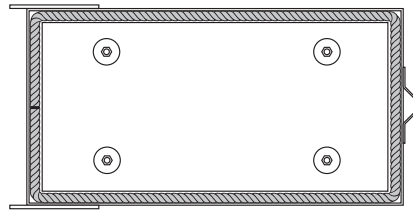
1. Disconnect power to the furnace.
2. Unlatch and open the Reaction Chamber door.
3. Use the maintenance tool to pull the ash to the front of the furnace; then use a small shovel to remove all of the ash and deposits from the Reaction Chamber. Take care not to damage the temperature sensor.

⚠ WARNING

Remove all ash from the Reaction Chamber.

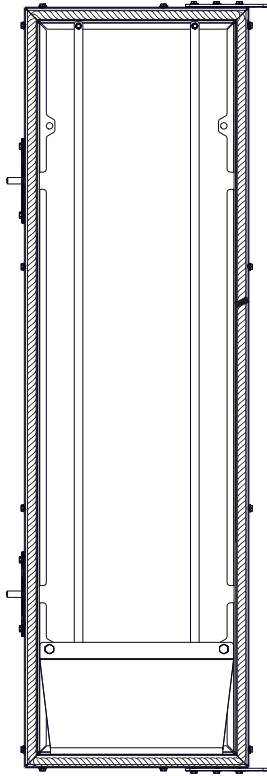
4. Using a scraper, remove the Reaction Chamber door seal rope and clean any remaining silicone adhesive from the groove. Any residue left in the groove will interfere with the new seal.
5. Apply a liberal amount of silicone sealant into the entire Reaction Chamber door seal groove.
6. Starting at the center of the hinge side of the Reaction Chamber door, insert the new door seal rope into the groove, pressing it firmly into the bead of silicone sealant. Make sure the Reaction Chamber door seal rope is not stretched as it is pressed into the corners. Force the Reaction Chamber door seal rope out to fill in the corners as shown.

**Reaction Chamber
Door**




7. When the seal has been pressed into the groove all the way around the Reaction Chamber door, cut the end of the rope about one inch longer than required and press it tightly against the beginning end of the rope.
8. Close the Reaction Chamber door and secure the latch.

Heat Exchanger Door Seal Rope



HEAT EXCHANGER DOOR SEAL

The heat exchanger door seal must be in good condition to ensure an airtight seal. If replacement is necessary due to the door seal becoming damaged or brittle, use the following procedure:

1. Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

2. Remove the heat exchanger access cover from the back of the furnace.
3. Carefully undo both latches on the heat exchanger door; then slowly open the door making sure to stand clear of the opening.

CAUTION

Open the heat exchanger door slowly and stand off to the side when opening it.

4. Using a scraper, remove the heat exchanger door seal rope and clean any remaining silicone adhesive from the groove. Any residue left in the groove will interfere with the new seal.
5. Apply a liberal amount of silicone sealant into the entire heat exchanger door seal groove.
6. Starting at the center of the hinge side of the heat exchanger door, insert the new door seal rope into the groove, pressing it firmly into the bead of silicone sealant. Make sure the door seal rope is not stretched as it is pressed into the corners. Force the door seal rope out to fill in the corners as shown.
7. When the seal has been pressed into the groove all the way around the heat exchanger door, cut the end of the rope about one inch longer than required and press it tightly against the beginning end of the rope.
8. Close the heat exchanger door and secure with latches. Install and secure the heat exchanger access cover.

CIRCUIT BREAKER

The circuit breaker is located in the pump access area and also serves as the furnace disconnect. If the circuit breaker trips (turns off), reset it by turning it on. If the circuit breaker continues to trip, a component may be faulty. It is possible to isolate a faulty component using the following procedure.

1. Disconnect power to the outdoor furnace.

⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while testing components (i.e., use lock out, tag out).

2. Remove the airbox access cover; then open the airbox door.
3. Disconnect the actuator motor harness and disconnect the fan harness.
4. To test for a faulty component, connect one component at a time (e.g., start with one of the actuator motors); then connect power to the outdoor furnace. If the circuit breaker trips, the component is likely faulty. If not, disconnect power to the outdoor furnace and repeat the procedure until all components have been tested.

⚠ CAUTION

Disconnect power to the outdoor furnace before disconnecting a component and before connecting a component.

5. Close and secure the airbox door. Install the airbox access cover.

⚠ DANGER

Do not connect power or operate the outdoor furnace with the outer airbox cover removed. The outer airbox cover must be installed and secured with screws.

AIRBOX SEAL

Replace the airbox seal if it becomes damaged or worn to maintain proper operation of the furnace. See your Central Boiler dealer for replacement seals.

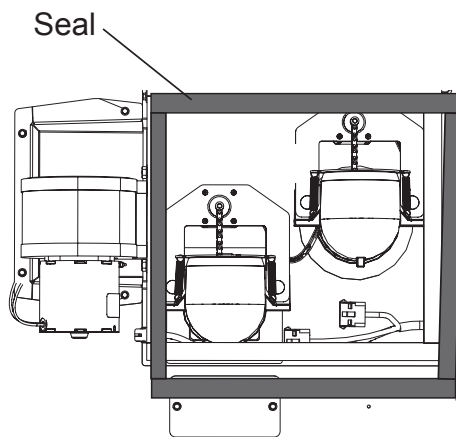
NOTE: It is best to replace the entire seal. Over time, the seal will compress, and replacing it in sections may result in the old sections not sealing completely against the airbox door.

1. Disconnect power to the outdoor furnace.

⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while replacing the airbox seal.

2. Remove the airbox access cover; then open the airbox door. Using a scraper or similar tool, scrape off the existing seal from the airbox.
3. Clean off any remaining adhesive residue with alcohol or a suitable solvent.
4. Measure and cut replacement seal.

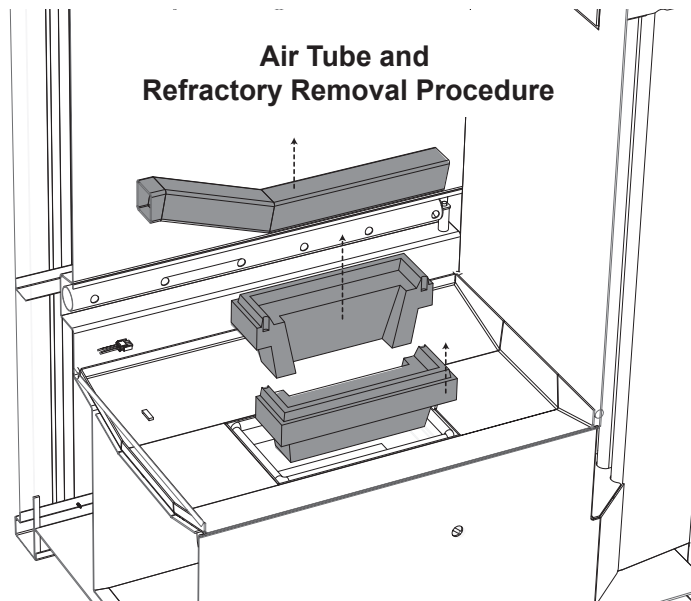


5. Remove the adhesive backing from the replacement seal and carefully apply the seal to the airbox as shown, making sure there are no gaps.
6. Close the airbox door and turn the furnace back on.
7. After the fan has started, use your hand to feel around the edges of the airbox door to check for leaks. A little air leakage, especially around the latches, is normal. If an excessive amount of air is felt, turn off the furnace; then check and repair/replace the seal if necessary.
8. Install the airbox access cover.

AIR CHARGE TUBE AND REFRACTORY MODULES

⚠ WARNING

Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly before replacing the air charge tube and/or refractory.



1. Remove the air charge tube by lifting it up and sliding it toward the back of the outdoor furnace.
2. Remove the rope gasket; then remove the existing refractory modules.
3. Ensure the area where the new refractory modules will be installed is clean and free of all debris. Install the new refractory modules; then install a new rope gasket on top of the refractory modules.
4. Install the new air charge tube by placing it in the opening at the front of the outdoor furnace as shown; then pull it toward the front of the outdoor furnace to secure it in place making sure the alignment pin fits into the alignment hole in the refractory modules.

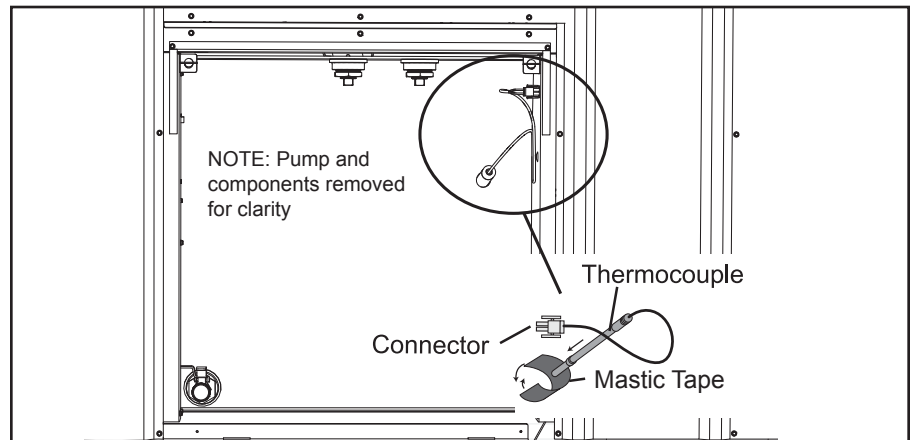
THERMOCOUPLE

1. Disconnect power to the outdoor furnace.

⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while replacing the thermocouple.


2. Remove the pump access cover.
3. Disconnect the thermocouple connector; then remove the mastic tape from the thermocouple.
4. Remove the thermocouple.
5. Install the new thermocouple until the stop collar contacts the thermocouple tube.



6. Secure the thermocouple with the mastic tape; then connect the thermocouple connector.
7. Install the pump access cover; then connect power to the furnace.

HEAT EXCHANGER DOOR INSULATION

NOTE: Insulation for the heat exchanger door is not standard fiberglass insulation. Use only the correct insulation when replacing or damage could occur. Contact your Central Boiler dealer for replacement insulation.

1. Press the **Power**  button on the FireStar combustion controller to turn it off.
2. Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly.

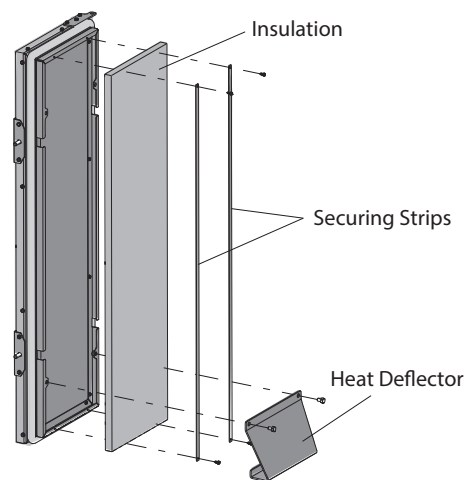
WARNING

Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly before replacing the heat exchanger door insulation.

3. Remove the heat exchanger access cover from the back of the furnace.
4. Carefully undo both latches on the heat exchanger door; then slowly open the door making sure to stand clear of the opening.

CAUTION

Open the heat exchanger door slowly and stand off to the side when opening it.



5. Swing the door open far enough to gain access to the inside of the door.
6. Wearing proper protective gear, use a brush or small broom to clean off any accumulated ash from the inside of the door.

7. Remove the heat deflector from the bottom of the door.
8. Remove the hardware and securing strips.
9. Carefully remove the insulation paying close attention to how the insulation is installed in the door and tucked into the edges of the door. This will aid in installation of the new insulation.
10. Before installing the new insulation, place it over the opening to make sure it is the correct size.
11. Place the new insulation inside the heat exchanger door with the reflective side facing out (toward you). Be careful not to tear the reflective material. Ensure that the edges of the new insulation are tucked into the edges of the door.
12. Install the securing strips. It may be necessary to adjust the insulation being careful not to tear it, after the securing strips are installed.
13. Install the heat deflector.
14. Check the insulation again to ensure that it is properly secured and attached to the inside of the heat exchanger door.
15. Carefully close and latch the heat exchanger door.

NOTE: The first few times the heat exchanger door is opened and closed after installing new insulation, it could seem more difficult to secure the latches. This is normal and once the insulation settles, securing the latches will be easier.

16. Install the heat exchanger access cover.

HEAT EXCHANGER ACCESS COVER INSULATION

NOTE: Be sure to check the temperature range for the spray adhesive. It may be necessary to replace the heat exchanger access cover insulation indoors to allow it to cure properly.

1. Remove the heat exchanger access cover from the back of the furnace.
2. Lay the cover on a piece of cardboard on a flat surface; then, wearing proper protective equipment, use a scraper to remove the insulation and any adhesive from the cover.
3. Test fit the new piece of insulation.
4. Using a good quality spray adhesive, follow the instructions on the can and apply the necessary amount to the inside of the cover.
5. Install the insulation in the cover, pressing down in multiple spots to ensure complete contact with the adhesive. Make sure the insulation is tucked all the way into the top of the cover.

6. Leave the cover on the flat surface until the adhesive cures according to the adhesive manufacturer's instructions.
7. After the adhesive has cured, check to ensure the insulation has properly bonded to the cover; then install the heat exchanger access cover on the furnace.

COMBUSTION AIR TUBE / FRONT AIR CHANNEL

Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

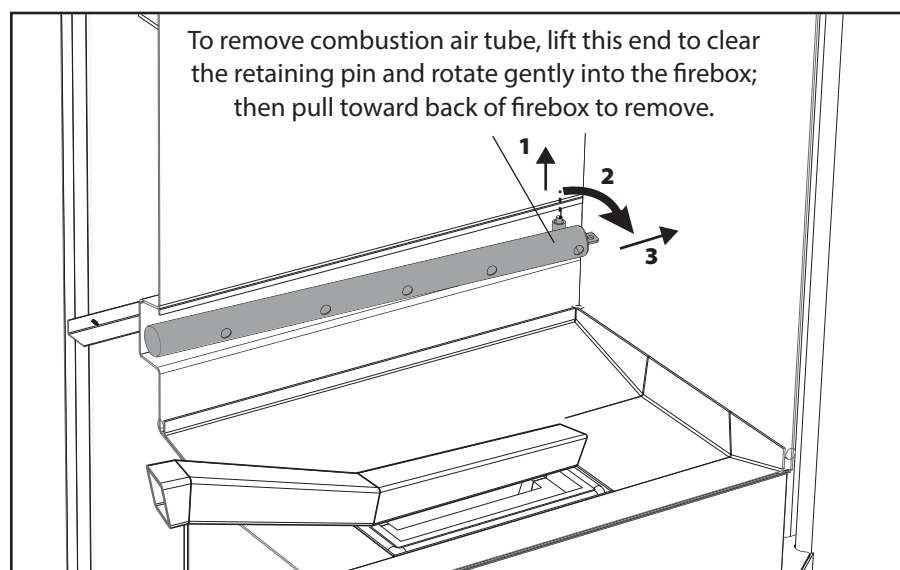
WARNING

Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly before working inside the firebox.

Combustion Air Tube

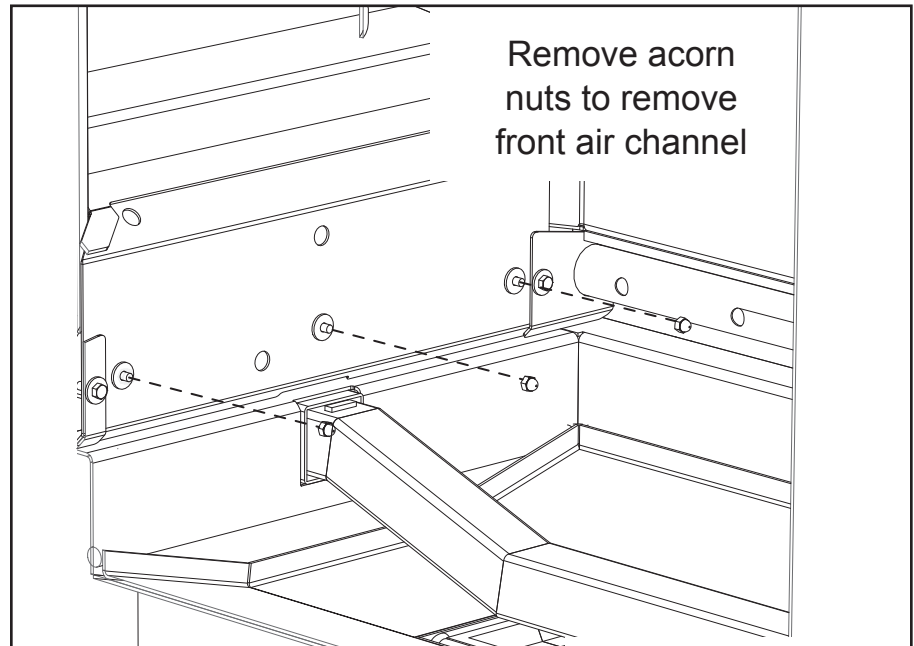
1. Lift the end of the tube closest to the back of the firebox up off of the retaining pin, then in and toward the back of the firebox. Install by reversing this procedure.

NOTE: If there is a large amount of buildup on the exterior of the combustion air tube, it may be necessary to first remove the buildup to make removal easier.



Front Air Channel

1. Remove the acorn nuts securing the front air channel and remove. Remove any ash or deposits from behind the air channel in the wall of the firebox.

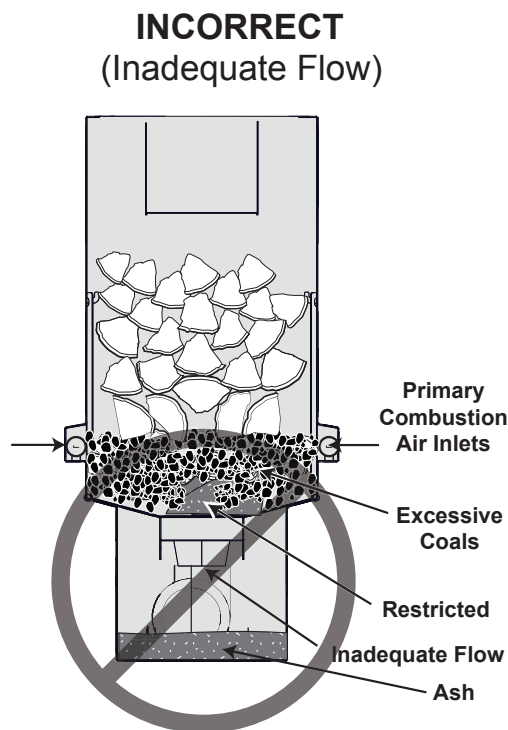


2. Install the new air channel. Apply a high-temperature, anti-seize compound to the stud threads; then secure with the acorn nuts and tighten securely.

TROUBLESHOOTING

GENERAL TROUBLESHOOTING INFORMATION

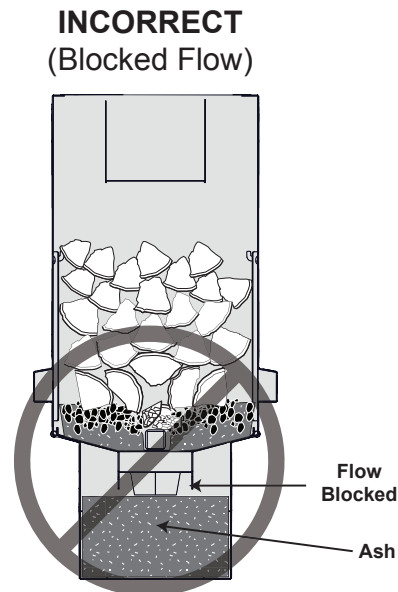
If the outdoor furnace is not operating the way it should, first review the information found in the Operation Instructions section, particularly the Adding Wood section.



Is the Reaction Chamber full of ash?

The Reaction Chamber is where final combustion occurs. It is important that the Reaction Chamber remain unobstructed to allow final combustion to occur. It is not designed to be an ash collection area, although over time ash will gradually accumulate in the Reaction Chamber.

If ash builds up in the Reaction Chamber to a level that obstructs flow, the performance of the outdoor furnace will be affected, so the ash must be removed. A good rule is to clean the Reaction Chamber before it becomes 1/2 full (approximately 5" or 13 cm deep in any area of the Reaction Chamber).



Are the air inlets plugged?

Primary combustion air is provided through the combustion air inlets in the firebox. If the air inlets are restricted or plugged, the furnace will not operate correctly. If it appears the combustion air inlets are plugged or restricted, refer to the Maintenance Sections for the Combustion Air Tubes and Air Charge Tube and Refractory. If after cleaning each combustion air inlet, air flow is still blocked, inspect the primary combustion air elbow. Refer to the Maintenance Section for Primary Air Elbow.

NOTE: If there is creosote buildup in the primary air elbow, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Adding Wood section).

Is there creosote and/or ash inside the airbox?

Creosote, ash, or even coals in the airbox is an indication that the outdoor furnace has not been maintained and/or operated properly. Especially important to the operation and efficiency of the outdoor furnace is unrestricted air flow throughout the entire system. Refer to Adding Wood for a detailed explanation of how to operate and maintain your Classic Edge.

One or more combustion air inlets are covered - If the level of coals and ash in the firebox is allowed to accumulate over the combustion air inlets, normal air flow can be blocked and could force coals and ash back into the airbox. Remove enough ash so the combustion air inlets are not covered. Review the Adding Wood section for more information.

TROUBLESHOOTING OTHER SITUATIONS

A. OUTDOOR FURNACE IS NOT OPERATING CORRECTLY

Review the information in the Adding Wood section, starting at step 5.

1. **Out of wood** - Add wood as necessary. Use correctly sized, seasoned wood.
2. **Mixing channel (area directly below the charge tube) or Fusion Combustor obstructed** - Inspect and clean as required.
3. **Combustion air inlets obstructed** - Clean as required to prevent the combustion air inlets from being obstructed.
4. **Combustion air fan obstructed or not running** - Check the screen over the fan inlet and the inside of the fan for any obstructions.
5. **Airbox leaking** - The airbox cover must be properly secured. Determine the cause and correct.
6. **Primary air actuator motor closed** - If the primary air actuator motor is not operating properly, determine the cause and correct.
7. **Reaction Chamber, heat exchanger or the chimney plugged** - If the Reaction Chamber, heat exchanger or chimney are plugged, determine the cause and correct.
8. **Door open** - If the display on the controller indicates Door Open, close the firebox door. Make sure the firebox door is properly latched and check the condition of the firebox door seal. If it is not sealing properly (indicated by a uniform indentation), replace the seal.
9. **Low water** - If the display on the controller indicates Low Water, the system senses a low water condition. Check the water level at the sight gauge and, if necessary, add water according to the Water Quality and Maintenance section. If adding water does not correct the problem, contact your Central Boiler dealer.

NOTE: If water needs to be added, it is very important to identify the cause of water loss and correct immediately. A leaky system or overheating commonly leads to dilution of the corrosion inhibitor and water jacket corrosion.

10. **Low water temperature for too long a period of time** - The display on the controller will indicate Fire Out and the controller will shut down the furnace if the water temperature has been too low for too long. Determine the cause of the water temperature being too low.
11. **Alarm condition** - Refer to the FireStar Combustion Controller Operation Manual.
12. **Chimney not drafting properly** - Draft is the force which moves air from the appliance up through the chimney. The amount of draft in your chimney depends on the length of the chimney, local geography, nearby obstructions and other factors. Draft occurs when the temperature in the chimney is high enough to cause a negative pressure that "pulls" the exhaust up and out the chimney.

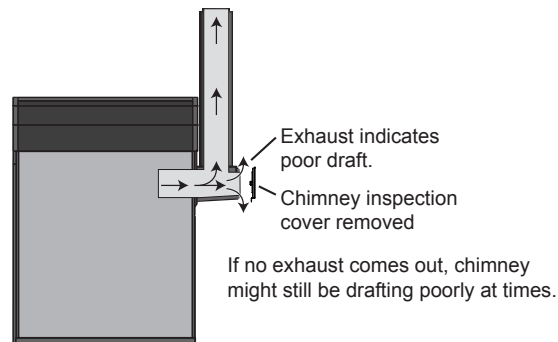
Proper draft is necessary for the Classic Edge to operate optimally. Too much draft may cause excessive temperatures in the appliance. Inadequate draft may cause backpuffing and plugging of the chimney.

If poor draft is suspected, perform the following test: with the outdoor furnace and chimney at normal operating temperature, loosen the chimney inspection cover and pull it back about an inch. If exhaust comes out from around the cover, pressure in the chimney may be incorrect and adding more chimney sections may be required. However, due to many variables, even if exhaust does not come out from around the cover, the chimney might still not be drafting properly at all times. Due to a number of variables, poor draft can be an intermittent problem.

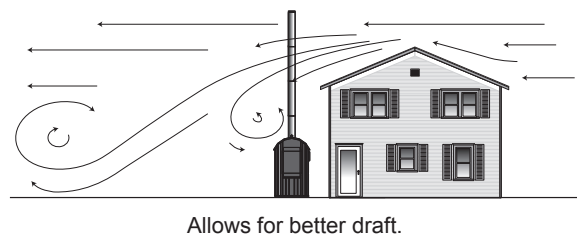
NOTE: A qualified installer may perform the following test to check for proper draft. Before performing the test, the outdoor furnace should be completely cleaned to ensure nothing obstructs exhaust flow through the system. Fire the furnace and allow it to reach normal operating temperature before performing the test.

- Drill a hole in the chimney inspection cover; then with the outdoor furnace and chimney at normal operating temperature, use a manometer to check draft. If flue draft is less than -0.05 in. WC (-12.45 Pa) add more chimney sections.
- After the test, fill the hole in the chimney inspection cover with high-temp silicone.

Perform test with bypass closed at normal operating temperature.



- If a spark arrestor is being used, make sure it is clean and unobstructed.
- Objects like buildings and trees in close proximity or nearby terrain (e.g., hills, valleys, etc.) can adversely affect air flow in the chimney. Adding chimney sections may overcome these factors.



B. FIRE GOES OUT OR KEEPS GOING OUT

Review the information in the Adding Wood section, starting at step 5.

C. BUILDING IS LOSING TEMPERATURE

Review the information in the Adding Wood section, starting at step 5.

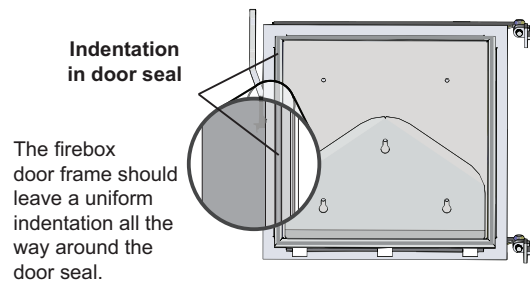
1. **Circulation valve(s) closed** - Be sure the proper valves in the system are open to allow circulation.
2. **Circuit breaker off** - If there is a circuit breaker that supplies power to the outdoor furnace, check that it is on.
3. **Circuit breaker off** - Check that the circuit breaker switch (located in the pump compartment) is on. If the circuit breaker has tripped, determine the cause before resetting it.
4. **Circulation pump(s) not operating** - Check that circulation pumps are operating. If not, disconnect power to the pump. Close valves at the pump. Disassemble the pump and try to turn the pump shaft. If the shaft is stuck, replace the pump cartridge. Replace only the cartridge whenever possible. If necessary, replace the pump. Follow instructions supplied with the pump.
5. **Air in system** - Check for air in the water lines or heat exchangers. If you hear a gurgling sound in a heat exchanger, air is present in the system. Shut off the pump, wait 15 seconds and start the pump. If it is necessary to force air from lines, refer to Initial Start-up Procedures.
6. **Building(s) poorly insulated or uninsulated** - Poorly insulated or uninsulated buildings, buildings with uninsulated or poorly insulated ceilings, or a lack of proper insulation under radiant flooring can cause excessive fuel consumption and or heating problems.
7. **Supply and return lines installed incorrectly** - Make sure the hot supply line is connected to the correct fitting on the outdoor furnace and heat exchanger.
8. **Circulation pump(s) installed backwards** - Check that pump flow direction is correct. If not, shut off power to pump. If the flow is not in the correct direction, disconnect pump from water line and reverse pump mounting to correct flow direction. If the pump is not mounted on the outdoor furnace, check for proper pump mounting location.
9. **Underground supply and return lines insulated poorly** - Heat loss from poorly insulated underground supply and return lines is often indicated by an unusually high amount of snow melting above the lines when the ground temperature is 10° F (-12°C) or colder.
10. **Supply and return lines uninsulated** - Uninsulated supply and return lines in areas that are not intended to be heated (unheated crawl spaces, under mobile homes, etc.) may cause excessive heat loss. Insulate the supply and return lines.
12. **Poor water quality** - Water with high amounts of solids, sand or dirt can create deposits inside the wall of heat exchanger components, reducing the amount of heat output. If this condition is suspected, contact your Central Boiler dealer.
13. **New construction with radiant in-floor heat** - Bringing a cold concrete slab up to temperature the first time will take a considerable amount of time and wood; once warm, wood consumption will be reduced if the concrete slab and building are insulated properly.
14. **Heat load too large** - Re-evaluate the system and match heat load to the outdoor furnace.

D. SMOKE COMING FROM BETWEEN FIREBOX DOOR AND FRONT OF THE DOOR FRAME

1. **Door seal faulty or door frame obstructed** - If there is smoke coming from between the firebox door and the front of the door frame for more than a short time after reloading, scrape the face and surface area of the door frame to remove any deposits. Check the condition of the firebox door seal and replace if necessary.
2. **Door hinges and/or latch need adjusting** - Adjust the hinges and/or latch bearing.

E. OUTDOOR FURNACE IS OVERHEATING

1. **Air entering through the firebox door or smoke coming out of the firebox door when the door is closed** - Make sure the firebox door is properly latched and check the condition of the firebox door seal. If it is not sealing properly (indicated by a uniform indentation), replace the seal. If firebox door does not close tightly, adjust using the appropriate procedure (see Owner Serviceable Items).



NOTE: If the outdoor furnace is operated with the door open, the firebox door seal may be damaged.

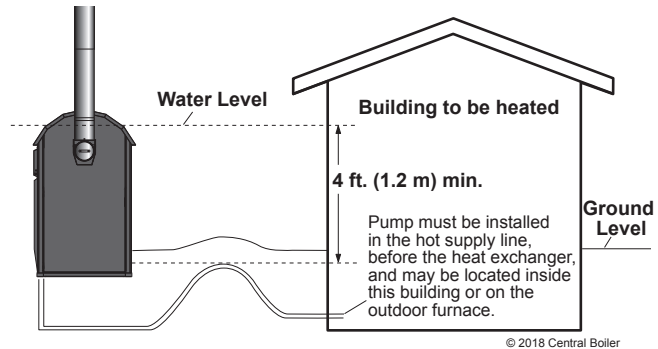
2. **Actuator motor and/or air regulating disc stuck open or obstructed** - Remove any obstructions. Lubricate the chain with a high temperature dry film lubricant rated for chains. Be careful not to get lubricant on the actuator motor or motor shaft.

NOTE: If the outdoor furnace loses water from boiling, the problem should be identified and repaired immediately. Under normal operation, little or no water needs to be added. Adding water to the furnace may cause corrosion if not immediately treated with MolyArmor 350 to the proper level. In addition, the amount of dissolved solids in the system (due to adding additional water) can cause problems.

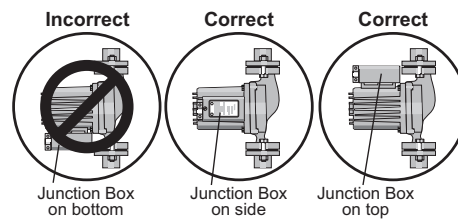
3. **Water is not circulating** - Check to make sure the pump is operating and water is circulating continuously through the supply and return lines to keep water temperature uniform in the outdoor furnace.
4. **Circulation valve(s) closed** - Be sure the proper valves in the system are open to allow circulation.
5. **Pulse set to run too long and/or too often in a low heat draw situation** - Increase the time between idle pulses of air and/or decrease the amount of time the pulse is provided (see FireStar operating instructions).
6. **FireStar combustion controller set incorrectly** - Refer to FireStar Combustion Controller Operation Manual.

F. FREQUENT PUMP TROUBLE OR POOR WATER CIRCULATION

1. **Pump mounted incorrectly** - If the pump is not mounted on the outdoor furnace, it must be mounted at a minimum of four feet lower than the top water level in the outdoor furnace.



Make sure the pump motor is installed in a horizontal position. The junction box must not be located below the pump motor. If necessary, remove the four screws and rotate the pump body.



2. **Water will not circulate** - If the system has been drained and refilled, or if the system has been opened for any reason (e.g., replacement of pump, adding heat exchangers, repairing a leak), the system must be purged (see Initial Start-up Procedures).
3. **Poor water quality** - Water with high amounts of solids, sand or dirt can cause frequent pump failure. Use softened and/or filtered water.
4. **Deposits in water lines/heat exchanger walls** - If water high in silica or other mineral content has been used, material deposits may build up on the insides of the supply and return lines and on the heat exchanger walls. If this occurs, the system will need to be drained and then cleaned using Sludge Conditioner (p/n 166). The system must then be refilled with the proper amount of MolyArmor 350 Corrosion Inhibitor (p/n 2900630) and fresh water.

G. BURNING AN EXCESSIVE AMOUNT OF WOOD

1. **High volume water heating** - High volume water heating (e.g., car wash, swimming pool, etc.) will require high wood consumption.
2. **Excessive heat loss** - See items 6-10 of Building is Losing Temperature.
3. **Supply and return line heat loss** - If not using ThermoPEX, supply and return lines buried in a wet, low-lying area may cause a large heat loss that will greatly increase wood consumption.
4. **High heat demand** - Concrete slabs (with radiant heat) that are poorly insulated or are exposed to water or cold outside temperatures will require increased wood consumption (see Hydronic Installations section). Bringing a cold concrete slab up to temperature the first time will take a considerable amount of time and wood; once warm, wood consumption will be reduced if the concrete slab and building are insulated properly. The following will also have a high heat demand: poorly insulated buildings, buildings with large amounts of glass windows/doors, buildings with overhead doors, greenhouses, uninsulated crawl spaces, outdoor air infiltration and air leaking through foundation.

H. VISIBLE EXHAUST COMING FROM CHIMNEY

Review the information in the Adding Wood section, starting at step 5.

There are conditions related to outside temperatures, humidity, fuel moisture, burn rate and other factors that can cause steam to be visible in the exhaust plume of combustion equipment, whether it is wood, gas or oil.

Seeing a white exhaust plume with moisture present is normal under many conditions and is not suggestive of poor combustion or high emissions.

Opacity is the amount of light which is blocked in an exhaust plume. It is a measurement that is usually stated as a percentage. For example, an opacity of 0% means that all light passes through while an opacity of 100% means that no light can pass through. Opacity measurements give an indication of the concentration of particles in an exhaust plume.

To read opacity correctly, observations should be made only when:

- The sun is shining and behind you,
- You are at least three times the distance of the chimney height away from the furnace, and
- The plume is traveling perpendicular to your position.

The observation should be conducted looking at the point of the plume where condensed water vapor (steam) is not present. Do not observe the plume itself but rather look through it at a contrasting background (such as green leaves or trees). There are many other important factors as well.

The amount of visible emissions can be reduced by burning seasoned wood, by making sure that your chimney meets the recommendations in this owner's manual and by loading the firebox to match your heat load. Once the water content of the wood has evaporated, the emissions become very transparent.

1. **Too much ash in firebox** - Refer to Routine Maintenance for ash removal.

I. CORROSION IS PRESENT - CALL DEALER
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NOTE: To reduce condensation in the firebox, it is not recommended to set the temperature below 185°F (85°C).

1. **Burning garbage or plastic** - Do not burn garbage or plastic. It is likely unlawful and may damage the firebox in a very short period of time.

NOTE: Chloride or sulfurous gases can be generated if plastic or rubber is burned and will mix with the moisture from the wood to form hydrochloric or sulfuric acids in the firebox, creating corrosion.

2. **Firebox wasn't cleaned out at the end of the heating season** - Be sure to follow the post-heating season maintenance schedule which includes scraping out firebox and removing all ash.
3. **Cleaning rod not run through ash bed prior to loading wood** - It is important that you push the cleaning rod back and forth through the ash bed each time prior to loading wood to allow air flow and prevent the ashes from accumulating moisture. See Operating Instructions for more details.

GENERAL INFORMATION

Make note of these precautionary statements, also found on the outdoor furnace.

CAUTION



Take care not to damage the temperature sensor when removing ash.

ATTENTION



Prenez soin de ne pas endommager le capteur de température lorsque vous enlevez les cendres.

NOTICE

During a cold start, a considerable amount of moisture from condensation will collect inside the firebox and Reaction Chamber. This is normal and the moisture will evaporate when the outdoor furnace reaches operating temperature.

REMARQUE

Lors d'un démarrage à froid, une importante quantité d'humidité de condensation s'accumule à l'intérieur du foyer et de la chambre de réaction. Ce phénomène est normal et l'humidité s'évaporera lorsque la chaudière extérieure aura atteint sa température de service.

NOTICE

For use with aluminum or copper conductors.

REMARQUE

Pour utilisation avec des conducteurs en aluminium ou en cuivre.

NOTICE

Check door seal, chimney and vent cap. Remove ashes and clean the firebox. Inspect and clean the heat exchanger and Reaction Chamber.

WARNING

AVOID DAMAGE!

BEFORE operating this appliance read manual and watch videos for proper operation and maintenance procedures. Damage or decreased life expectancy of appliance could result if appliance is not properly operated or maintained.

WARNING

Risk of fire. Do not store fuel or other combustible materials within marked clearances to combustibles. Do not cover supply and return lines with combustible materials.

NOTICE



Inspect seals for any damage or gaps. Pay close attention to corners and any location where one seal meets another, as a good seal is crucial for proper furnace operation. Refer to the Owner's Manual for instructions on how to replace a defective seal.

WARNING

Risk of fire. Do not open the Reaction Chamber door when appliance is in operation. Do not leave Reaction Chamber door open unattended.

AVERTISSEMENT

Risque d'incendie. N'ouvrez pas la porte de la chambre de réaction lorsque l'appareil est en marche. Ne laissez pas la porte de la chambre de réaction ouverte sans surveillance.

WARNING

Turn off Furnace Power Disconnect before opening this panel. Furnace Power Disconnect located on side of furnace under the pump panel. Do not operate furnace with this panel removed.

AVERTISSEMENT

Avant d'ouvrir ce panneau, arrêtez le commutateur de coupure électrique de la chaudière. Ce commutateur est situé sur le côté de la chaudière sous le panneau de la pompe. Ne pas faire fonctionner la chaudière à bois extérieur avec ce panneau retiré.

CAUTION

Failure to perform proper care and maintenance will reduce the life and performance of your furnace. For best results, always follow these guidelines:

1. Add water treatment before filling with water.
2. Burn properly seasoned wood.
3. Do not burn anything other than the recommended fuels.
4. Clean and inspect the furnace regularly.
5. Do not operate with the water temperature below 150 °F (65 °C).
6. Maintain the recommended water treatment levels at all times.
7. Clean the firebox thoroughly and keep it dry when not in use.
8. See Owner's Manual for more information about regularly scheduled maintenance.

ATTENTION!

The Owner's Manual is located behind the airbox cover. Remove and read before operating furnace. If you have any questions, contact your dealer.

NOTICE

Inspect and clean the heat exchangers monthly or as needed. READ OWNER'S MANUAL FOR COMPLETE INSTRUCTIONS.

MAINTENANCE SCHEDULE

DAILY
Check water level. Remove ashes as needed.

MONTHLY
Check door seal, chimney and vent cap. Remove ashes and clean the firebox. Inspect and clean the heat exchanger and Reaction Chamber.

SEMIANNUALLY
Completely remove ashes from the firebox. Inspect and scrape the firebox. Inspect and clean the heat exchanger and Reaction Chamber. This inspection should also be performed after the first and third months of operation. Use a wire brush and small scraper to clean firebox, side walls, back wall and ash pan.

NOTICE

Use the tools provided to completely scrape the face of the firebox door frame where the door seal contacts.

NOTICE

Keep the combustion air inlets and exhaust pathway open and clear of ash to allow the furnace to operate properly.

CAUTION

DO NOT start fire until water level is full.
Keep face away from door area.
Hot surfaces.
Keep children away.
DO NOT touch during operation.
DO NOT burn treated wood, plastic or rubber in the furnace.
Maximum draft marked on the manometer.
ALWAYS comply with all applicable codes and regulations.
ALWAYS take care when adding wood to the furnace to prevent hot coals from spilling out.
ALWAYS store ashes in a covered non-combustible container.

ATTENTION

NE démarrez PAS le feu avant de faire le plein d'eau.
Éloignez votre visage de la porte.
Surfaces brûlantes.
Éloignez les enfants.
NE touchez PAS pendant l'utilisation.
NE brûlez PAS de bois traité, de plastique ou de caoutchouc dans la chaudière.
Sur la plaque signalétique, remettez des législations et réglementations applicables.
Respectez TOUJOURS avec précaution lorsque vous ajoutez du bois dans la chaudière pour éviter de faire tomber des braises à redifier.
Stockez TOUJOURS les cendres dans un récipient non combustible et couvert.

NOTICE

ONLY burn the proper fuels specified.

NOTICE

DO NOT create a nuisance. Be certain your chimney exhaust is not adversely affecting neighbors. Creating a nuisance may affect your right to burn wood. If any issue with chimney exhaust arises, take immediate action to solve the issue.

DO NOT BURN GARBAGE

Burning garbage causes damage to components of wood burning appliances.

BURN RESPONSIBLY

Preserve Your Right to Burn Wood

- Before installing, ALWAYS consider the direction that the chimney exhaust will travel with prevailing winds.
- BEFORE operating the furnace must be installed with adequate chimney height. If there is a residence not served by the furnace within 300 feet (91.5 meters), the chimney must be 2 feet (0.6 meters) higher than the peak of the residence it serves. If there is a residence not served by the furnace within 100 feet (30.5 meters), the chimney must be 2 feet (0.6 meters) higher than the peak of the residence served or not served, whichever is higher. Proper chimney height will aid in dispersing the chimney exhaust. Chimney height may need to be greater than the above minimum requirements. The outdoor wood furnace must be installed in accordance with the manufacturer's recommendations and/or in accordance to all applicable codes and regulations, whichever is more stringent. Refer to your Owner's Manual.
- ONLY burn the proper fuels specified.
- DO NOT create a nuisance. Be certain your chimney exhaust is not adversely affecting neighbors. Creating a nuisance may affect your right to burn wood. If any issue with chimney exhaust arises, take immediate action to solve the issue.
- Wood burning can be more of an art than a science. The operator may need to vary technique to achieve satisfying results as installations, heat loads and fuel vary. Over time, you will become familiar with your particular installation and you will be able to identify cause and effect in a variety of circumstances.

NOTICE

Use the tools provided to completely scrape the face of the firebox door frame where the door seal contacts.

NOTICE

Keep the combustion air inlets and exhaust pathway open and clear of ash to allow the furnace to operate properly.

CAUTION

DO NOT disable the door switch, as it serves as a safety and reset function.

ATTENTION

NE désactivez PAS l'interrupteur de porte car il sert de fonction de sécurité et de réinitialisation.

CAUTION

ANY TIME WATER IS ADDED, the furnace MUST BE immediately heated to 185°F, circulated, and the inhibitor level tested. FAILURE TO DO SO WILL RESULT IN DAMAGE to your furnace's water jacket!

CAUTION

Carefully follow the steps in your Owner's Manual for adding water and testing inhibitor levels.

CAUTION

Watch your head.

DANGER

Risk of fire or explosion.

DANGER

Risque d'incendie ou d'explosion.

WARNING

Risk of fire.
DO NOT operate with flue draft exceeding -0.050 in. water column (-1.245 Pa).
DO NOT use chemicals to start unit firing.
DO NOT burn garbage, gasoline, fuel oils, or other flammable liquids or materials.
DO NOT operate with fuel-loading or ash-removal doors open.
DO NOT store fuel or other combustible materials within marked installation clearances.
Inspect and clean flues and chimney regularly.
For safety, open bypass door 15 seconds before opening the firebox door and do not operate the furnace with the firebox door unsecured.
Operating the furnace with the firebox door unsecured may lead to a runaway fire. In the event of a runaway fire or immediately after tending to the fire, latch the firebox door and wait 15 seconds before closing the bypass door to purge the flues.
DO NOT leave furnace unattended with the firebox door unsecured.
DO NOT install or operate furnace before first reading and understanding the Owner's Manual.
DO NOT allow others to install or operate furnace without first reading and understanding the Owner's Manual.

ATTENTION

Risque d'incendie.
N'utilisez PAS l'appareil si le tirage dépasse de -0,050 pouce la colonne d'eau (-1,245 Pa).
N'utilisez PAS de produits chimiques pour allumer la machine.
Ne brûlez PAS de déchets, d'essence, d'huile de vidange ni d'autres liquides ou matériaux inflammables.
Ne faites PAS fonctionner la chaudière avec la porte de chargement de combustible ou celle d'enlèvement des cendres ouverte.
NE stockez PAS de carburant ou autres matières combustibles à l'intérieur du périmètre de sécurité indiqué.
Inspectez et nettoyez périodiquement les carreaux de la chaudière.
Pour des raisons de sécurité, ouvrez la porte de dérivation quinze secondes avant d'ouvrir la porte du foyer. Ne faites pas fonctionner la chaudière avec la porte du foyer déverrouillée, un feu de cheminée risque de se déclarer. Si un feu de cheminée survient ou immédiatement après avoir éteint le feu, verrouillez la porte du foyer et attendez quinze secondes avant de fermer la porte de dérivation pour purger le foyer.
Ne laissez PAS la chaudière sans surveillance lorsque la porte du foyer est déverrouillée.
N'installez PAS et N'utilisez PAS la chaudière avant de lire et de comprendre le manuel du propriétaire.
N'autorisez PAS d'autres personnes à installer et utiliser la chaudière avant de lire et de comprendre le manuel du propriétaire.

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DANGER

Risk of fire or explosion.

DANGER

Risque d'incendie ou d'explosion.

WARNING

Risk of fire.
DO NOT operate with flue draft exceeding -0.050 in. water column (-1.245 Pa).
DO NOT use chemicals to start unit firing.
DO NOT burn garbage, gasoline, fuel oils, or other flammable liquids or materials.
DO NOT operate with fuel-loading or ash-removal doors open.
DO NOT store fuel or other combustible materials within marked installation clearances.
Inspect and clean flues and chimney regularly.
For safety, open bypass door 15 seconds before opening the firebox door and do not operate the furnace with the firebox door unsecured.
Operating the furnace with the firebox door unsecured may lead to a runaway fire. In the event of a runaway fire or immediately after tending to the fire, latch the firebox door and wait 15 seconds before closing the bypass door to purge the flues.
DO NOT leave furnace unattended with the firebox door unsecured.
DO NOT install or operate furnace before first reading and understanding the Owner's Manual.
DO NOT allow others to install or operate furnace without first reading and understanding the Owner's Manual.

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CAUTION

15 seconds before opening firebox door, lift and push handle toward back of furnace to open bypass door.

ATTENTION

Quinze secondes avant d'ouvrir la porte du foyer, ouvrez la porte de dérivation en soulevant puis poussant la poignée en direction de l'arrière de la chaudière.

ATTENTION

Quinze secondes après avoir fermé la porte du foyer, fermez la porte de dérivation en tirant la poignée en direction de l'avant de la chaudière puis en la poussant vers le bas.

NOTICE

Initially inspect the heat exchanger's weekly, and clean as needed, until you can determine the frequency of cleaning based on your application.

NOTICE

Refer to the Owner's Manual for cleaning procedures.

NOTICE

Furnace Power Disconnect
Coupez l'alimentation électrique de la chaudière.

NOTICE

To reset the circuit breaker, turn the switch OFF and then ON.

AVIS

Pour réinitialiser le disjoncteur, arrêtez l'interrupteur sur (ARRÊT) puis sur (MARCHÉ).

NOTICE

Chimney pipe and all extensions must be insulated.

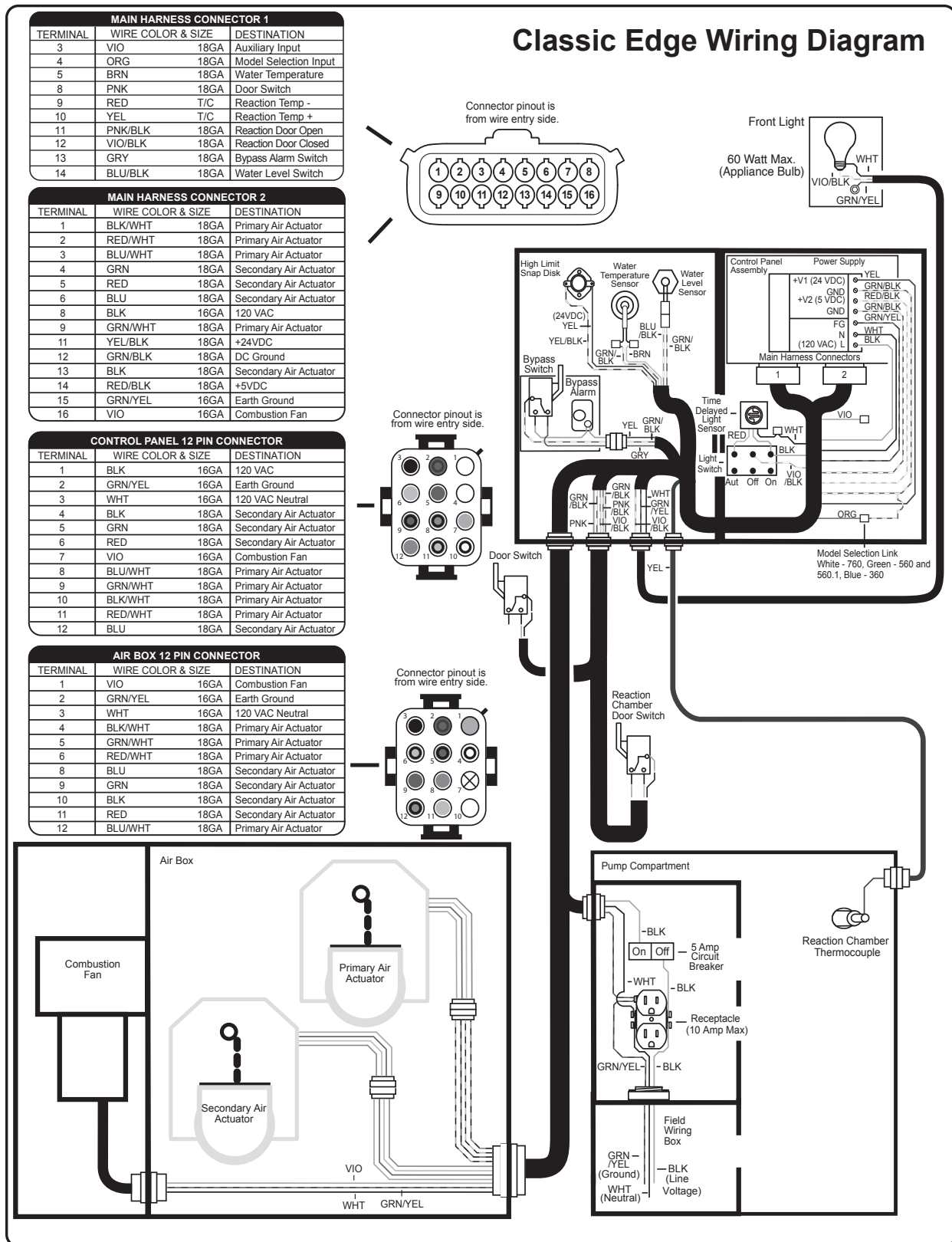
NOTICE

Coupez l'alimentation électrique avant d'enlever ce panneau.

CAUTION

Do NOT Touch During Operation

WIRING DIAGRAM



LIMITED WARRANTY - CLASSIC EDGE TITANIUM SERIES MODELS

Central Boiler, Inc. ("Central Boiler") warrants to the original owner, except (a) parts manufactured by others and excluded from warranty coverage below; and (b) parts or items specified below as covered by a limited one year warranty, Central Boiler Classic and Classic Edge Titanium Series furnaces against defects in workmanship and against corrosion failure of the firebox/water jacket assembly for a period of TWENTY-FIVE (25) YEARS from the date of original retail purchase, provided that the Limited Warranty Registration Form is completed and sent to Central Boiler within ten (10) days of the original owner taking possession of the furnace and the original owner strictly complies with the instructions for maintenance and corrosion inhibitor contained in the Owner's Manual; otherwise this Limited Warranty shall be for a period of ONE (1) YEAR from the date of manufacture or one year from original retail purchase, if proof of purchase date can be provided.

If a failure of a warranty covered part occurs that is caused by a defect in workmanship or corrosion, at its option Central Boiler will (1) repair or replace (using new or refurbished replacement parts) the defective or failed part based on the date of original retail purchase at the following prorated scale:

First – Fifth year: Parts and labor will be covered at 100%
Sixth year: Parts will be covered at 70%
Seventh year: Parts will be covered at 60%
Eighth year: Parts will be covered at 50%
Ninth year: Parts will be covered at 40%
Tenth – Twentieth year: Parts will be covered at 15%
Twenty-first – Twenty-fifth: Parts will be covered at 10%

(2) exchange the furnace with a comparable model furnace that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original furnace, or (3) provide a discount off the retail purchase price of a new Central Boiler furnace of comparable model based on the pro-rated scale: Years 1-5 100%, years 6-7 at 50%, years 8-10 at 40%, years 11-15 at 30% and years 16-25 at 10%. A replacement furnace/part assumes the remaining warranty of the original furnace/part or ninety (90) days from the date of replacement or repair, whichever provides longer coverage. If a furnace or part is qualified for replacement under the provisions of this limited warranty, at Central Boiler's discretion, the furnace or part may be required to be returned to Central Boiler for inspection and recycling or disposal.

Because maintaining the corrosion inhibitor at a proper level is imperative to preventing corrosion failures, to qualify for the 25 year warranty the operator must comply with the instructions in the owner's manual for maintenance and corrosion inhibitor and send a furnace water sample when the furnace is initially put into service and once each year thereafter to confirm proper maintenance and corrosion inhibitor. No warranty claim can be approved unless the furnace registration and the required water test verifications are on file at Central Boiler.

Parts Manufactured By Others. Parts that are factory-installed by Central Boiler, but are manufactured by others, may be covered by their own manufacturer's warranty and are not covered by this limited warranty, except the FireStar® combustion controller on the Classic and Classic Edge Titanium Series furnace is warranted against defects in workmanship for a period of two (2) years from the date of original retail purchase, provided that the Limited Warranty Registration Form is completed and sent to Central Boiler within ten (10) days of the original owner taking possession of the furnace; otherwise this limited warranty shall be for a period of ONE (1) YEAR from the date of original retail purchase. This limited warranty covers the controller part only; service calls, mileage, and labor to diagnose the problem and install a new part are not covered.

Parts Covered by a Limited One Year Warranty. The following parts are covered by a limited warranty for workmanship defects for one year: gaskets, seals, heat shields, paint, air charge tube, firebox ash pan, combustors, aquastats, actuators, heat refractory, firebrick, air channels, combustion air tubes, turbulators, chimney sections, and chimney tee. This limited warranty covers the part only; service calls, mileage, and labor to diagnose the problem and install a new part are not covered.

EXCLUSIONS AND LIMITATIONS - This Limited Warranty applies only to Central Boiler Classic and Classic Edge Titanium Series outdoor furnaces. This limited warranty covers only those defects or corrosion failures that arise as a result of normal use of the outdoor furnace and does not cover any other defects or problems, including those that arise as a result of: (a) improper maintenance (b) operation outside the furnace's specifications (see owner's manual), accident, abuse, misuse, misapplication, or parts that are not factory-installed; (c) service performed by anyone other than Central Boiler unless authorized by Central Boiler in writing; (d) modifications undertaken without the written permission of Central Boiler; or (e) if any Central Boiler serial number has been removed or defaced. This limited corrosion warranty will be void if the owner fails to maintain the proper amount of MolyArmor 350 Corrosion Inhibitor in the system, fails to send water samples to Central Boiler as required, or burns materials in the firebox other than natural wood. This limited warranty excludes the cost of shipping, labor to remove or reinstall the furnace, plumbing labor and/or parts and the cost of alternative heat if the furnace is out of service for repairs. Warranty excludes replacement of water, inhibitors or other additives, and parts used in the system whether or not mounted on the furnace, such as pumps, valves, and piping.

Central Boiler is not liable for damage or repairs required as a consequence of faulty installations or applications by others or any event of *force majeure*. Central Boiler is not liable for incidents or accidents which can be prevented by the owner or that occur from the operation of the outdoor furnace. A backup heating system should be in place to prevent damage in case of failure to refuel the outdoor furnace or in the event that mechanical failure of the outdoor furnace or system occurs. Heat replacement representations found in Central Boiler promotional information should be used only as a guideline. Heat loss for all applications with all weather extremes and other heat variables must be considered when sizing an outdoor furnace for different applications.

THIS LIMITED WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. CENTRAL BOILER SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF CENTRAL BOILER CANNOT LAWFULLY DISCLAIM IMPLIED WARRANTIES UNDER THIS LIMITED WARRANTY, ALL SUCH WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. No Central Boiler dealer or employee is authorized to make any modification, extension, or addition to this limited warranty. CENTRAL BOILER IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages or exclusions or limitations on the duration of implied warranties or conditions, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by state or province.

OBTAINING WARRANTY SERVICE - To obtain warranty service, contact the Central Boiler dealer from whom you purchased your furnace or contact Central Boiler by telephone (218-782-2575) or mail (20502 160th Street, Greenbush, MN 56726). Please provide the dealer's name, original date of sale, model number and serial number in all communications. Central Boiler reserves the right to require the warranty service to be performed at a Central Boiler facility when deemed necessary by Central Boiler. All corrosion repairs will be performed at Central Boiler unless authorized by Central Boiler in writing.

Design Changes. Central Boiler reserves the right to change and improve the product design for improved performance without assuming responsibility to upgrade previously sold products.

WOODMASTER[®] CleanFire

OUTDOOR WOOD FURNACE



OWNER'S MANUAL

CLEANFIRE 700

CLEANFIRE 500/500.1

CLEANFIRE 300

WARNING: If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.
- **WHAT TO DO IF YOU SMELL GAS**
 - Do not try to light any appliance.
 - Do not touch any electrical switch.
 - Immediately call your gas supplier. Follow the supplier's instructions.
 - If you cannot reach your gas supplier, call the fire department.
- Installation and service must be performed by a qualified installer, service agency or the gas supplier.



0117WB036S
0117WB039E



**SAVE THESE
INSTRUCTIONS**

(p/n 9001136) - REV. A



WoodMaster, Inc. • 20502 160th Street • Greenbush, MN 56726 • WoodMaster.com

The CleanFire outdoor hydronic heater by WoodMaster is listed by OMNI-Test Laboratories to the applicable portions of the following standards: UL 2523-2018 Solid Fuel-Fired Hydronic Heating Appliances, Water Heaters and Boilers, CAN/CSA B415.1-10 (R2015) Performance Testing of Solid-Fuel-Burning Heating Appliances, CSA-B366.1-11 (R2015) Solid-Fuel-Fired Central Heating Appliance, ASTM E2618-13 Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances, ASTM E2515-11 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel.

The CleanFire includes two 4-foot stainless steel insulated chimney sections (8" in diameter, p/n 10508 - CleanFire 700). Use only stainless steel solid fuel chimneys specified by WoodMaster. Maximum draft is marked on nameplate.

French Owner's Manual is available upon request from your dealer
(Manuel d'installation en français disponible sur demande auprès de votre revendeur)

CleanFire 700	Annual Efficiency Rating*: 89.8% (lower heating value), 83.4% (higher heating value) Manufacturer's Rated Heat Output Capacity: 245,000 Btu/hr Range**: 0 to 235,938 Btu/hr. Water Capacity: 330 gal. Weight: 2,186 lbs
CleanFire 500	Annual Efficiency Rating*: 90.2% (lower heating value), 83.8% (higher heating value) Manufacturer's Rated Heat Output Capacity: 200,000 Btu/hr Range**: 0 to 194,724 Btu/hr. Water Capacity: 205 gal. Weight: 1,668 lbs
CleanFire 500.1	Annual Efficiency Rating*: 86.4% (lower heating value), 80.6% (higher heating value) Manufacturer's Rated Heat Output Capacity: 190,000 Btu/hr Range**: 0 to 171,956 Btu/hr. Water Capacity: 205 gal. Weight: 1,668 lbs
CleanFire 300	Annual Efficiency Rating*: 88% (lower heating value), 82% (higher heating value) Manufacturer's Rated Heat Output Capacity: 150,000 Btu/hr Range**: 0 to 148,625 Btu/hr. Water Capacity: 150 gal. Weight: 1,460 lbs

*Performance is a product of the combustion rate, combustion efficiency and heat exchange efficiency with a single fuel load without refueling. Results vary based on wood species, wood quality, wood quantity and moisture content. Efficiencies are determined under the same test conditions using higher heating value, lower heating value and annual fuel utilization efficiency (AFUE).

- This heater meets the 2020 U.S. Environmental Protection Agency's cord wood emission limits for wood heaters sold after May 15, 2020. Under specific test conditions this heater has been shown to deliver heat at rates shown for the respective model above**.
- This wood heater has a manufacturer-set minimum low burn rate that must not be altered. This wood heater needs periodic inspection and repair for proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this manual.
- DO NOT OVERFIRE THIS HEATER. Attempts to achieve heat output rates that exceed heater design specifications can result in permanent damage to the heater.
- Any person(s) operating a hydronic heater must comply with all applicable laws, including but not limited to local ordinances.
- Improper use or failure to maintain the hydronic heater may cause nuisance conditions. The person(s) operating a hydronic heater is/are responsible for operation in a manner that does not create a nuisance condition. Meeting the setback distance and stack height recommendations from the manufacturer and requirements in applicable State and local regulations may not always be adequate to prevent nuisance conditions in some areas due to terrain or other factors.
- Operating an outdoor furnace may not be suitable to some individuals' abilities or lifestyles. Be sure to review the Owner's Manual for the appliance with your dealer.

- Register at time of purchase for FREE 25 Year Limited Warranty -

Verify your warranty and check status of water samples at: WoodMaster.com/w25

For parts and accessories, service or repairs, call your authorized WoodMaster dealer or heating contractor. Record the information below for future reference.

Model	Serial Number	Installation Date
Dealership Name		Phone Number
Owner Name		

Contents

How to Use This Guide

The guide is divided into sections to help with the operation and maintenance of the outdoor furnace. If questions arise that are not answered with this manual, consult with your authorized WoodMaster dealer.

Woodmaster Online Resources	iv
EPA Resources	iv
Labeling and Terminology	1
Important Precautionary Information	2
Foundation	4
Access to Ports on Outdoor Furnace	5
Ground Rod Kit	7
Furnace Installation - Connecting to Your Existing System	7
Outdoor Wood Furnace Best Burn Practices	9
Chimney Installation	9
WATER QUALITY AND MAINTENANCE	12
1. Test Supply Water	12
2. Check the Vent Cap	12
3. Check Heating System for Leaks	12
4. Cover Supply and Return Lines	13
5. Add MolyArmor through Vent Pipe	13
6. Fill Outdoor Furnace with Water and Purge Air	14
7. Immediately Start the Pump(s); then Heat the System Water to 185°F (85°C) ..	14
8. Test the Treated System Water	15
Send in Initial Water Sample	16
Initial Water Sample	16
Deferred Installation	16
Check Status of Water Sample	16
Annual Water Sample	16
System Maintenance	17
Water Test Kits and Test Results	17
Flushing the System	19
Adding Antifreeze to Outdoor Furnace System	20
Wood Selection and Preparation	21
Operating Instructions	22
FIRESTAR COMBUSTION CONTROLLER	22
How the CleanFire Works	22
Initial Fire Up - Start of Heating Season	24
Adding Heat Load	27
Ash Removal Frequency	27
Adding Wood	27
Maintenance Schedule	32
Control Locations	33
Routine Maintenance	33
Maintenance Sections	34
Serviceable Items	46
Firebox Door Hinge/Latch Bearing Adjustment	46
Firebox Door Seal	46
Reaction Chamber Door Seal	48
Heat Exchanger Door Seal	49
Circuit Breaker	50
Airbox Seal	51
Air Tube and Refractory Modules	52
Thermocouple	53
Heat Exchanger Door Insulation	54
Heat Exchanger Access Cover Insulation	55
Combustion Air Tube / Front Air Channel	56
Troubleshooting	58
General Information	67
Wiring Diagram	68
Water Sample Information - CleanFire Models	69

WOODMASTER ONLINE RESOURCES

Enter **WoodMaster.com** in your browser or scan the code using any QR code reader app on your smartphone to access WoodMaster's library of information to help with installation, operation and maintenance of your WoodMaster outdoor furnace.

Detailed Furnace Installation Variations - <https://www.woodmaster.com/furnace-installation/>

View and/or download PDFs to assist in installation of your outdoor furnace. Information and examples regarding pumps, foundations, chimneys and support structures, ThermoPEX piping, and example configurations for a variety of heating configurations.



Online Support Center

<https://support.woodmaster.com>

Enter your furnace serial number and find articles, answers, parts and more information.



Videos to supplement the Owner's Manual are available at
www.youtube.com/@WMfurnaces
Watch tips on initial startup, testing system water and more.

EPA RESOURCES

EPA's Burnwise Program - <https://www.epa.gov/burnwise>

How to Use a Moisture Meter Video - <http://www.youtube.com/watch?v=jM2WGgRcnm0>

EPA offers tips on how to properly use a moisture meter to test firewood before using in a wood-burning stove or fireplace. Wet wood can create excessive smoke which is wasted fuel.

Split, Stack, Cover and Store Video - <http://www.youtube.com/watch?v=yo1--Zrh11s>

EPA offers four simple steps to properly dry firewood before using in a wood-burning stove or fireplace. Wet wood can create excessive smoke which is wasted fuel. Burning dry, seasoned firewood with a moisture content of 20% or less can save money and help reduce harmful air pollution.

Resources to Help Burn Wood the Right Way - <https://www.epa.gov/burnwise/resources-help-you-burn-wood-right-way-and-promote-burn-wise-program>. Find tip sheets, brochure and flyers, and more information.

NOTE: The warranty can be voided by operating a residential hydronic heater in a manner inconsistent with the Owner's Manual.

INSTALLATIONS IN MASSACHUSETTS:

1. All installation components must be products approved in the Commonwealth of Massachusetts by the Gas and Plumbing Board.
2. The maximum run of tubing from the water heater to a fan coil is 50 linear feet.
3. Persons operating this hydronic heater are responsible for operation of the hydronic heater so as not to cause a condition of air pollution as defined in 310 CMR 7.01(1).

Labeling and Terminology

The outdoor furnace and this installation guide use the following terms and symbols to bring attention to the presence of hazards of various risk levels and important information concerning the use and maintenance of the outdoor furnace.

⚠ DANGER

This symbol and text indicate an imminently hazardous situation which, if ignored, will result in death or serious injury.

⚠ WARNING

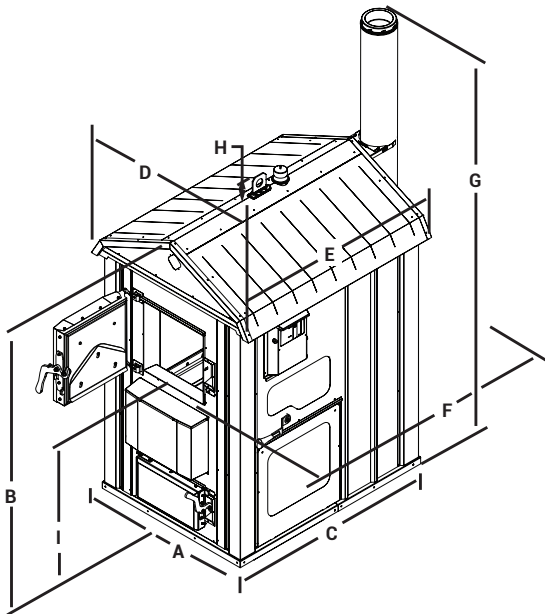
This symbol and text indicate the presence of a hazard which can cause severe personal injury or death to an operator or bystander, or substantial property damage if ignored.

⚠ CAUTION

This symbol and text indicate the presence of a hazard which can cause minor personal injury or property damage if ignored.

NOTE: Indicates supplementary information worthy of particular attention relating to installation, operation, or maintenance of the outdoor furnace but is not related to a hazardous condition.

Be sure to follow all instructions and related precautions as they are meant for your safety and protection. Store this manual in a readily accessible location for future reference.



CleanFire 700 Measurements

	A	B	C	D	E	F	G	H	I
in.	51	84.75	59.75	53.5	60.5	79	164	5	39
cm	130	215	152	136	154	201	417	13	99

CleanFire 500/500.1 Measurements

	A	B	C	D	E	F	G	H	I
in.	42.5	76	55.5	45	56	73.5	151	5	37.5
cm	108	193	141	114	142	187	384	13	95

CleanFire 300 Measurements

	A	B	C	D	E	F	G	H	I
in.	40.5	72	50.75	43	51.5	69	150	5	38
cm	103	183	129	109	131	175	381	13	97

- Measurement (F) is from firebox door to chimney inspection cover.
- Measurement (G) includes two 4 ft (1.2 m) chimney sections.
- All measurements are approximate

Important Precautionary Information

Be sure to read carefully and understand these precautions before, during and after the installation, operation and maintenance of the furnace.

NOTE: All operations must be in accordance with local and state codes which may differ from the information in this manual.

⚠ CAUTION

This outdoor furnace is not intended to be the only source of heat. In the event of a prolonged power failure, a generator may be used to prevent lines from freezing. Should the outdoor furnace be left unattended, run out of fuel or require service, an alternate heating source in the building being heated should be in place to prevent damage caused by freezing.

⚠ WARNING

This outdoor furnace and/or chimney is not intended or safety tested to be used or installed in a building where contents of that building could be damaged or where a financial loss could occur from smoke, soot, fire or water.

⚠ WARNING

The outdoor furnace vent cap must fit loosely on the vent opening. Do not force the cap down or try to seal it tightly onto the vent pipe. Do not extend or restrict the vent pipe or opening. **DO NOT ALLOW THE OUTDOOR FURNACE TO BE PRESSURIZED.**



Vent Cap Must Fit Loosely



⚠ WARNING

Be sure the outdoor furnace is filled with water before firing. Never fire the outdoor furnace when the water level is more than 1" (2.5 cm) below the FULL mark on the sight gauge. MolyArmor 350 must be added before the initial fill (see Water Quality and Maintenance).

⚠ WARNING

Disconnect the electrical power to the outdoor furnace before replacing an electrical component.

⚠ WARNING

Do not attempt service inside the electrical control panel without first disconnecting the electrical power at the main power source.

NOTE: Any electrical installation should be done by a qualified installer in accordance with applicable codes.

⚠ WARNING

Allow the outdoor furnace to thoroughly cool and completely clean out the firebox before draining water from the outdoor furnace. If the water in the outdoor furnace ever boils, be sure to check the water level and restore to full. If water is added, the proper level of MolyArmor 350 (p/n 2900631) must be maintained.

⚠ WARNING

When cleaning the outdoor furnace, be careful not to spill any coals.

⚠ WARNING

ALWAYS store ash in a covered non-combustible container.

⚠ WARNING

Maintain the following clearances from combustibles for the furnace installation:

- 44" (112 cm) from the back
- 12" (30.5 cm) from the sides
- 48" (122 cm) from the front
- 18" (46 cm) from chimney inspection cover
- The foundation must be noncombustible

⚠ WARNING

Do not allow combustible materials (straw, hay or wood) near the outdoor furnace. Keep the perimeter of the outdoor furnace clear and clean.

⚠ WARNING

For fire safety, keep all combustible materials at least six feet (two meters) away from the outdoor furnace, especially around the door area. Debris of wood chips and other combustibles in the area may be easily ignited if a hot coal is spilled out of the firebox and left unnoticed.

⚠ WARNING

The firebox door must be closed and latched at all times except when filling the firebox with wood. Leaving the firebox door open may lead to a runaway fire. In the event of a runaway fire, close the firebox door. In the event of a chimney or soot fire, close the firebox door and make sure power is off to the outdoor furnace.

⚠ WARNING

All covers must be maintained at all times except during maintenance, inspection and service.

⚠ WARNING

When opening the firebox door, the door switch will shut off the primary air actuator motor while the firebox door is open. Do NOT disable the door switch.

NOTE: The prohibition against burning these materials does not prohibit the use of fire starters made from paper, cardboard, saw dust, wax and similar substances for the purpose of starting a fire in an affected wood heater.

NOTE: Do not use chemicals or fluids to start the fire. Use kindling or gas-fired wood ignition option to start an initial fire.

NOTE: The sight gauge valve should always be closed, except when checking water level. Water will automatically drain from the sight gauge tube when the valve is closed. Remember that this type of valve requires only 1/4 turn to open or close.

⚠ WARNING

This heater is designed to burn natural wood only. DO NOT BURN: unseasoned wood, treated wood, colored paper, cardboard, trash or garbage.

NOTE: Chloride or sulfurous gases can be generated if plastic or rubber is burned and will mix with the moisture from the wood and form hydrochloric or sulfuric acids in the firebox, creating corrosion.

NOTE: This outdoor furnace is not to be used with an automatic stoker.

⚠ CAUTION

This outdoor furnace is not to be connected to a chimney flue serving another appliance.

⚠ WARNING

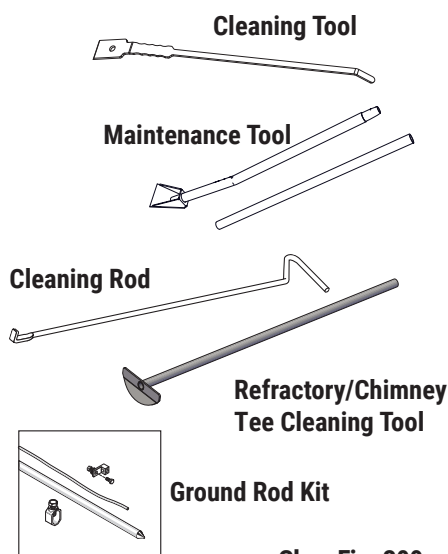
When adding wood to the firebox, be careful not to get pinched between the wood and the door frame, or any part of the outdoor furnace. Use extreme care with large pieces of wood that may be difficult to handle.

NOTE: At least one circulation pump must run continuously to ensure proper operation of the outdoor furnace.

Tools/Ground Rod Kit

Included with each new furnace are tools that are invaluable for maintenance and cleaning and a Ground Rod Kit for electrically grounding the furnace. Use the **maintenance tool** to clean the firebox and to remove ash from the Reaction Chamber. Use the **cleaning tool** to clean the heat exchangers. The maintenance tool and cleaning tool are also used for cleaning the firebox and door frame. The **cleaning rod** can be used to break up heavy or solidified ash in the firebox. It is also used to clean the heat exchangers. The **Refractory/Chimney Tee cleaning tool** is used to clean ash from the Reaction Chamber and to clean the chimney tee.

Refer to the Maintenance section for more information.



Foundation

The outdoor furnace may be installed directly on stable, level ground without the necessity of a foundation, although installing the outdoor furnace on a foundation offers many advantages. The outdoor furnace is less likely to move due to frost heaving. A foundation keeps the area directly around the outdoor furnace free of standing water and can help to keep unwanted pests out. It can also raise the furnace up to provide a more comfortable height of the firebox door opening.

If the ground is unstable, one option is to use patio blocks under the perimeter of the base. Another option is to pour a concrete foundation.

To install the outdoor furnace on a concrete foundation, refer to the illustration for dimensions and for the location of the hollowed-out area for each model. A 4" to 6" (10 to 15 cm) thick concrete slab works well; however, a thicker slab may be used to obtain the desired door opening height.

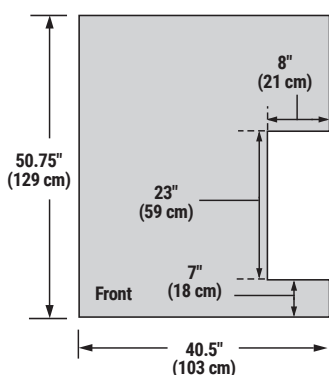
If the area for the concrete slab is unstable and/or affected by frost heaving, consider installing 2" closed-cell insulation beneath the front portion of the slab and under the area of the ground used for walking.

⚠ CAUTION

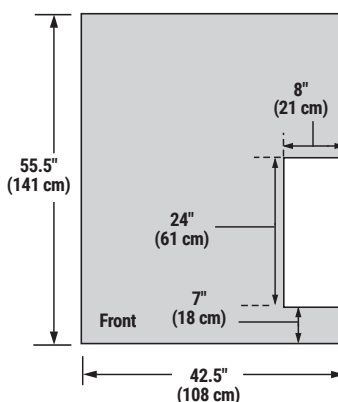
Do not use any combustible materials for the foundation.

NOTE: The installation surface or foundation must be noncombustible. The hot supply and return lines must also be protected from possible exposure to sunlight, fire or physical damage that may be caused by an occurrence outside the outdoor furnace enclosure. Foundations may consist of concrete, crushed rock or patio blocks.

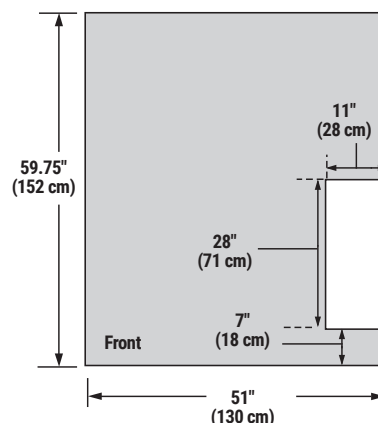
CleanFire 300
(Foundation Optional)



CleanFire 500/500.1
(Foundation Optional)



CleanFire 700
(Foundation Optional)



⚠ CAUTION

Do not use any combustible materials for the foundation.

Outdoor furnace must be installed on a noncombustible surface or foundation that incorporates an enclosure that will prevent supply and return lines from possible exposure to sunlight, fire, or physical damage that may be caused by an occurrence outside the outdoor furnace enclosure. Foundation may consist of concrete, crushed rock, or patio blocks.

Access to Ports on Outdoor Furnace

Ports are provided that allow mounting circulation pumps on the outdoor furnace. Refer to the illustrations in this section for proper supply and return line and pump installations for your model.

NOTE: The Installation Guide provides more information on pump selection. For even more detailed information, see the Hydronic Component Selection Guide (p/n 2482), available from your WoodMaster dealer.

NOTE: At least one circulation pump must run continuously to ensure proper operation of the outdoor furnace.

CleanFire 700 Model – 3-Pump Configuration

3 - Pump Parts List*

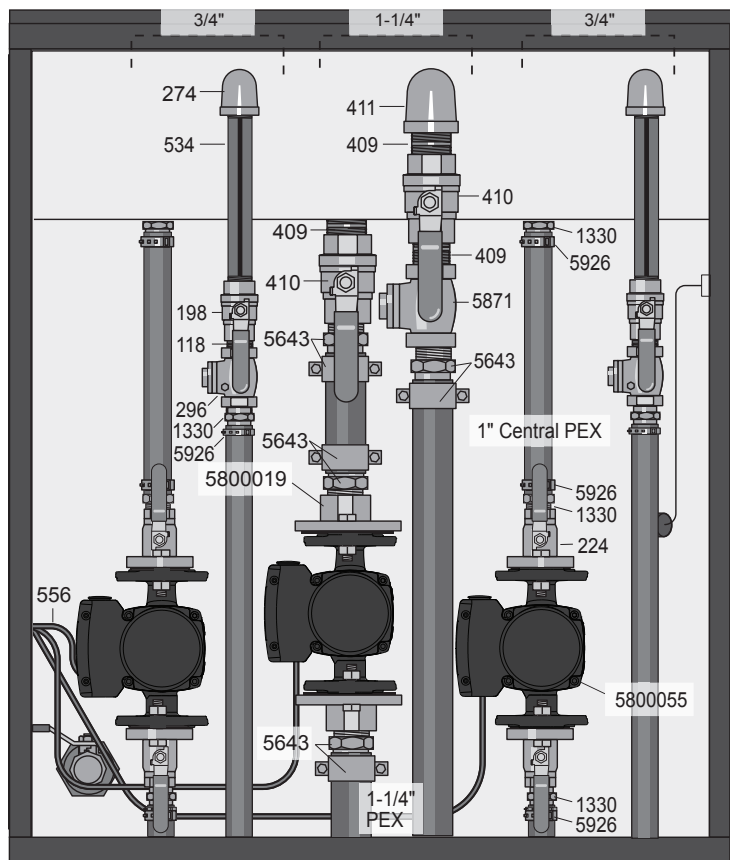
3/4" Supply		
Qty	p/n	Description
6	1330	MPT to PEX, 3/4" x 1"
6	5926	Clamp Crimp Ring, 1"
2	224	Isolation Flange Kit, 3/4"
2	5800055	Pump, UPMS 20-58 F
2	556	Power Supply Cord, 32"
		1" Central PEX

3/4" Return		
Qty	p/n	Description
2	274	90° Street Elbow, 3/4"
2	534	Nipple, 3/4" x 7"
2	198	Ball Valve, 3/4"
2	118	Close Nipple, 3/4"
2	296	Swing Check Valve, 3/4"
2	1330	MPT to PEX, 3/4" x 1"
2	5926	Clamp Crimp Ring, 1"

1-1/4" Supply & Return		
Qty	p/n	Description
3	409	Close Nipple, 1-1/4"
2	410	Ball Valve, 1-1/4"
4	5643	Brass Clamp, 1-1/4"
1	5800019	Pump Flange Kit, 1-1/4"
1	5871	Swing Check Valve, 1-1/4"
1	5800055	Pump, UPMS 20-58 F
1	556	Power Supply Cord, 32"
1	411	90° Street Elbow, 1-1/4"

*Parts and accessories sold separately.
Pump size may vary.

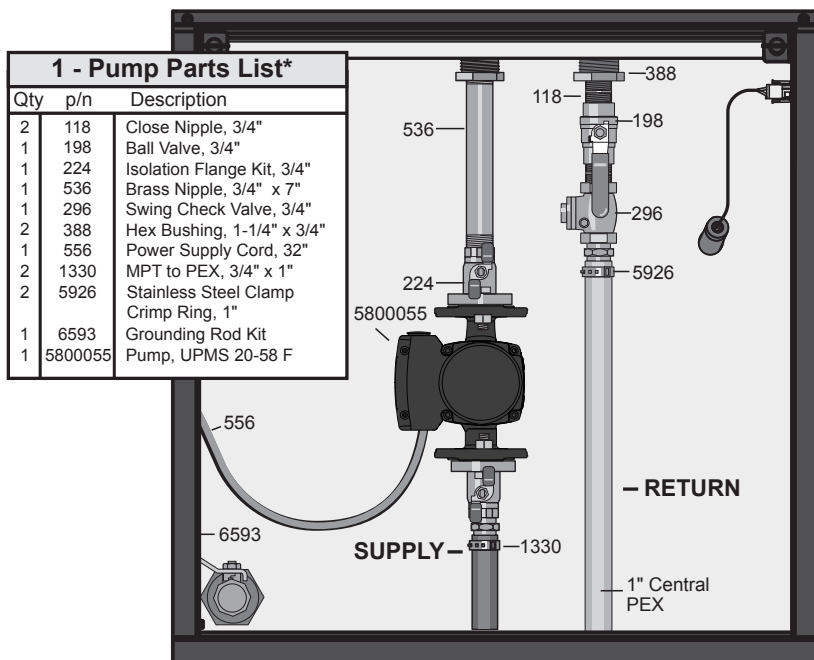
For illustration purposes only.



NOTE

The Ground Rod Kit (p/n 6593), included with the outdoor furnace, must be installed with every furnace.

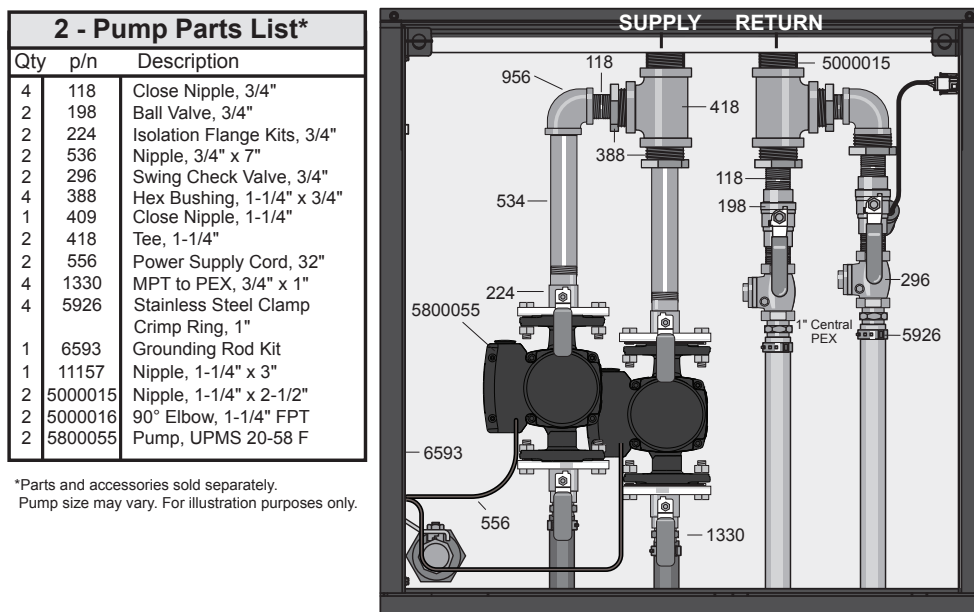
CleanFire 300/500/500.1 Models – 1-Pump Configuration



*Parts and accessories sold separately.
Pump size may vary.
For illustration purposes only.

NOTE
Grounding Rod Kit (p/n 6593) must be installed with every furnace.

CleanFire 300/500/500.1 Models – 2-Pump Configuration*



*Parts and accessories sold separately.
Pump size may vary. For illustration purposes only.

NOTE
Grounding Rod Kit (p/n 6593) must be installed with every furnace.

*Pump Extension Kit (p/n 2500164) required.

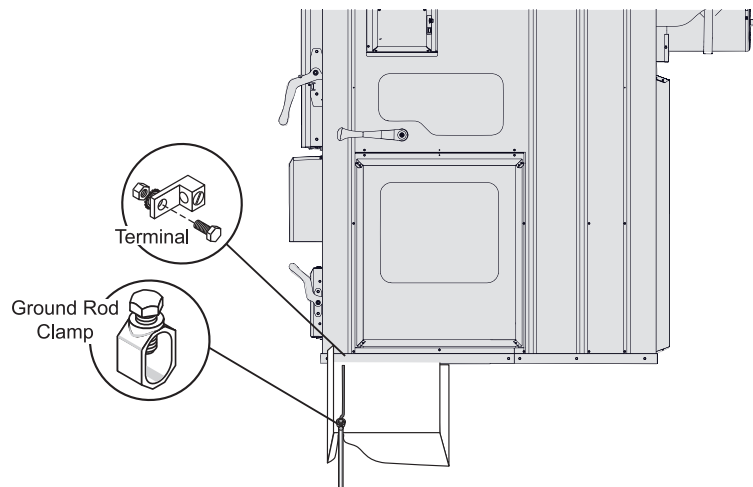
Ground Rod Kit

The outdoor furnace must be electrically bonded to ground in accordance with the requirements of the authority having jurisdiction or, in absence of such requirements, with the National Electrical Code, ANSI/NFPA 70 and/or the Canadian Electrical Code Part 1, CSA C22.1 Electrical Code.

Install the Ground Rod Kit (p/n 6593) included with the outdoor furnace and connect it to the outdoor furnace.

1. In the water line trench near the outdoor furnace, drive the ground rod into the ground until the top of the ground rod is below the ground surface.
2. Route the ground wire from the ground rod under the outdoor furnace base and over to the frame of the outdoor furnace.
3. Secure the ground terminal with a cap screw (1/4" x 3/4"), star washer and nut. Secure the ground wire to the terminal; then secure the ground wire to the ground rod with the clamp. Tighten all hardware securely.

NOTE: A hole for the ground terminal has been pre-punched in the outdoor furnace base near the pumps.



Furnace Installation - Connecting to Your Existing System

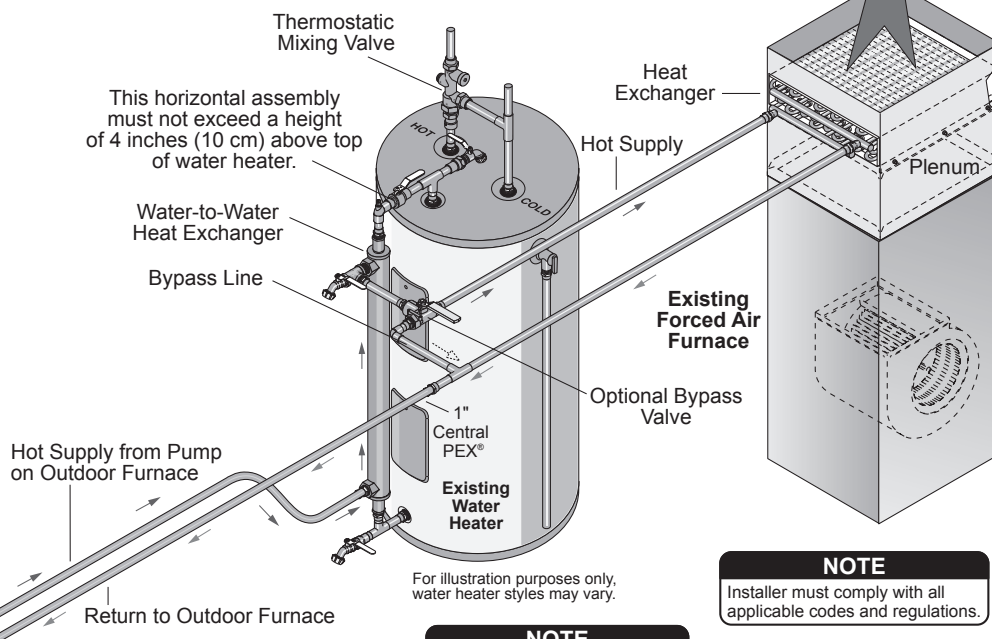
A common installation is to connect the outdoor furnace to an existing water heater and then to an existing forced air system. A water-to-air heat exchanger is mounted in the plenum or duct work of the existing furnace. Heated water from the outdoor furnace either continuously flows through the water-to-air heat exchanger or is diverted through a 3-way zone valve. When the thermostat senses the need for heat, the fan on the existing furnace forces air through the heat exchanger, transferring heat throughout the existing ductwork.

NOTE: There are numerous ways to connect to your heating system. Refer to the Outdoor Furnace Installation Guide for other installations.

Detailed Furnace Installation Variations

Visit WoodMaster.com to access a library of detailed illustrations for connecting to a wide variety of existing heating systems and for other heating options.

Typical Installation



NOTE: A certified electrician must do the electrical installation.

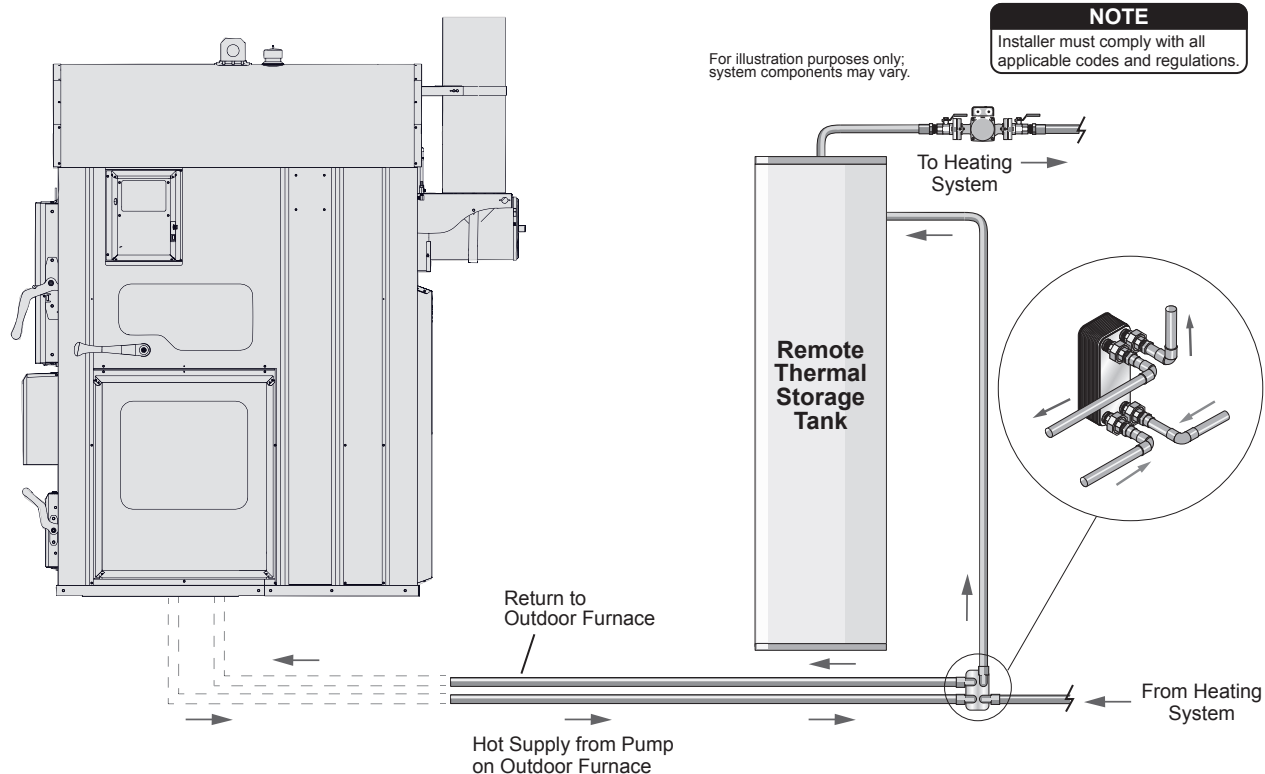
For illustration purposes only,
water heater styles may vary.

NOTE
Any electrical installation should be done by a qualified installer in accordance with applicable codes.

NOTE

Installer must comply with all applicable codes and regulations.

Remote Thermal Storage Installation



NOTE

Installer must comply with all applicable codes and regulations.

For illustration purposes only;
system components may vary.

Outdoor Wood Furnace Best Burn Practices

1. Read and follow all operating instructions supplied by the manufacturer.
2. **FUEL USED:** Only those listed fuels recommended by the manufacturer of your unit. Never use the following: trash, plastics, gasoline, rubber, naphtha, household garbage, material treated with petroleum products (particle board, railroad ties and pressure treated wood), leaves, paper products, and cardboard.
3. **LOADING FUEL:** For a more efficient burn, pay careful attention to loading times and amounts. Follow the manufacturer's written instructions for recommended loading times and amounts.
4. **STARTERS:** Do not use lighter fluids, gasoline, or chemicals.
5. **CHIMNEY RECOMMENDATIONS:** In higher populated areas, extend the chimney to a height above the roofs of surrounding buildings.
6. Always remember to comply with all applicable state and local codes.

Be considerate of neighbors when operating your furnace. If you use your furnace in the summer months, be certain your chimney exhaust is not adversely affecting neighbors with open windows.

Chimney Recommendations

In higher populated areas, extend the chimney to a height above the roofs of surrounding buildings. Use WoodMaster Chimney Extensions when extending the chimney. When only the standard eight feet (2.4 m) of chimney are used, the sections must be secured at the connection joint with four (4) screws to stabilize the extension.

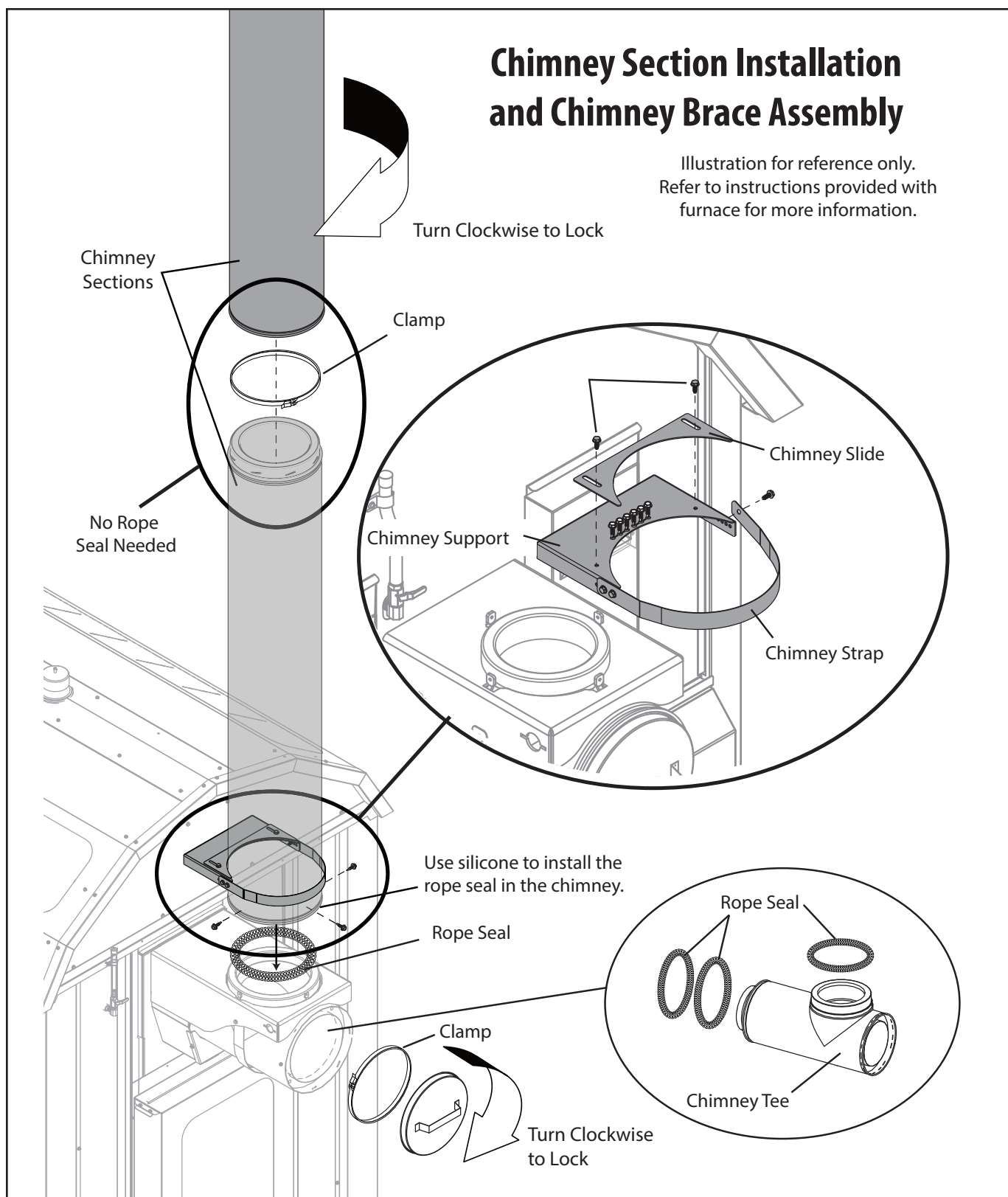
Chimney Installation

NOTE: Instructions for installing chimney sections and the chimney brace assembly are also provided with the furnace.

1. Remove the two slotted hex screws securing the Chimney Slide to the Chimney Support.
2. Remove the six self-tapping screws from the slot in the Chimney Brace Support. These screws are used to assemble the chimney sections.
3. Remove the single slotted hex screw securing the Chimney Strap to the Chimney Brace Support.
4. Install the rope seal at the bottom of the first chimney section; then assemble the chimney as shown.
5. Mount the Chimney Slide to the Chimney Support with two slotted hex screws. Do not tighten completely to allow the Chimney Slide to move.
6. Level the chimney front to back; then position the Chimney Slide against the chimney and completely tighten the two slotted hex screws.
7. Wrap the Chimney Strap around the chimney and secure with a slotted hex screw.
8. Secure the base of the chimney with three self-tapping screws.
9. Secure the joint between the first two chimney sections with the clamp.

Chimney Section Installation and Chimney Brace Assembly

Illustration for reference only.
Refer to instructions provided with
furnace for more information.



If extensions are added to the standard eight feet (2.4 m) of chimney, the chimney should be reinforced appropriately. The illustration shows chimney support recommendations when three or more sections are used. When adding sections of chimney, make sure that there is nothing within the fall zone of the chimney that could be damaged. If something is located within the fall zone and cannot be removed, guy wires or braces may need to be installed to prevent a falling chimney from causing damage.

NOTE: If more than three 4-foot (1.2-m) sections of chimney are used, a support (e.g., a pole, pipe or other structural support) may be installed from the ground that can withstand wind. Other reinforcement recommendations are shown.

NOTE: For chimney extensions or chimney replacement, use only genuine WoodMaster chimney components. Parts are available from an authorized WoodMaster dealer.

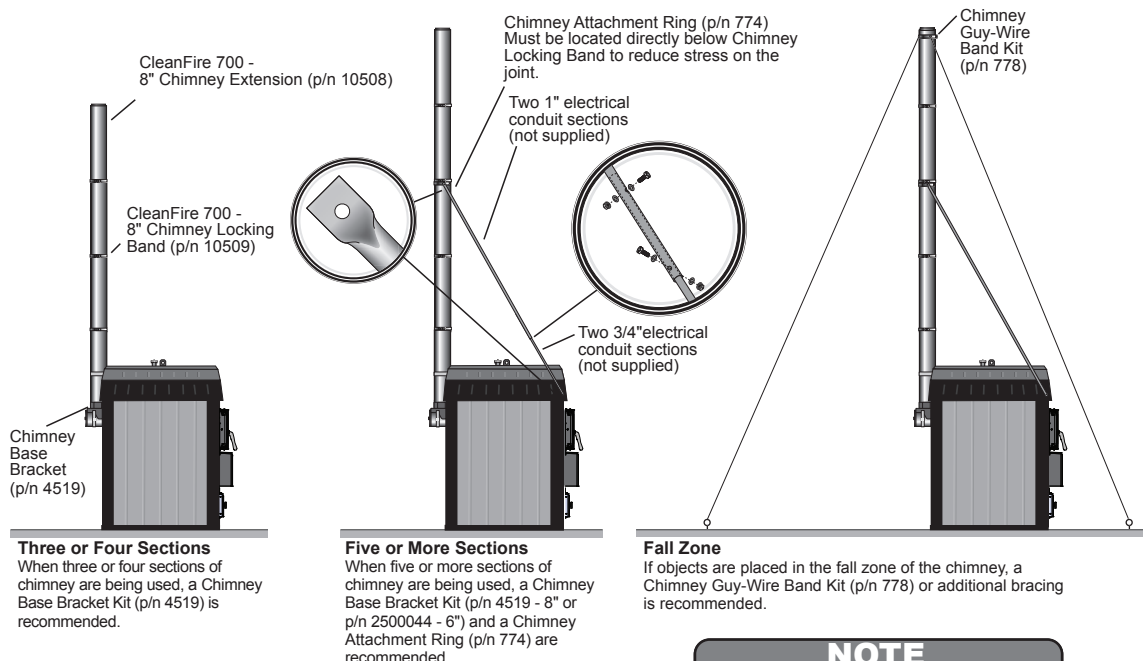
The installation of a spark arrestor is recommended, particularly where there are dry conditions or where there is combustible material near the unit, unless the installation of a spark arrestor is prohibited by local requirements.

NOTE: If the screen is left on the chimney cap, the spark arrestor should be inspected and cleaned as needed.

Use common sense to avoid potential fires, including exercising caution when disposing of ashes, cleaning and refueling. Keep all highly combustible materials (e.g., gasoline, propane, leaves, pine needles, etc.) away from an operating unit at all times. Take special precautions in windy conditions.

NOTE: You may need to increase the chimney height if conditions occur that force exhaust to low levels.

Chimney Reinforcement Recommendations



NOTE

- Additional bracing may be necessary in certain areas such as those subject to severe weather, winds, freezing rain, etc.
- Inspect all bracing bi-annually for integrity.

WATER QUALITY AND MAINTENANCE

Follow the steps provided here to add MolyArmor 350 and to fill the outdoor furnace system for the first time, or any time the system has been completely drained and needs to be refilled.

Before you fire the outdoor furnace for the first time, it is very important to perform the following important steps in order.

1. Test Supply Water

Test a sample of the supply water (makeup water) that will be used to fill the outdoor furnace (softened water is recommended). Test strips for testing pH are included in the water test kit which is provided with the outdoor furnace.

1. Collect a small sample of the water to be used to fill the outdoor furnace in a clean container.
2. Dip a test strip from the test kit in the water sample for **1 second** and remove. Shake off excess liquid (very important to prevent water bleed from one pad to the other). Compare the pH test pad to the color chart at **30 seconds**.
3. If the pH level is between 6.5 and 8.0 and there are no other known water quality problems, then the outdoor furnace may be filled with this water.
4. Water that has a pH level of less than 6.5 or greater than 8.0, or that has other known water quality problems, should not be used to fill the furnace. Instead, water should be supplied from a different source.

2. Check the Vent Cap

If the vent cap has been secured with a wire tie-down, the wire tie-down **MUST** be removed before operating the furnace. If the vent cap is held in place by a spring retainer, the spring retainer can be left in place. The vent cap must fit loosely over the outdoor furnace vent.

3. Check Heating System for Leaks

Close the valves on the outdoor furnace before checking the heating system for leaks.

⚠ CAUTION

Do not pressurize the outdoor furnace or damage could occur. Isolate the furnace when pressure testing by closing all of the valves on the outdoor furnace.

Pressure-test the entire plumbing heating system. Apply 50 psi (3.5 kg/cm²) of air pressure for thirty minutes and closely monitor for any pressure loss. Inspect all fittings and hose ends for any signs of leakage using leak detection solution (leak soap); repair as necessary.

Release the pressure from the entire plumbing heating system and open the valves on the outdoor furnace.

4. Cover Supply and Return Lines

Backfill the trench for the supply and return lines. Enclose the area where the supply and return lines enter the outdoor furnace. Do not leave the PEX hot supply and return lines exposed to sunlight as exposure to UV rays will damage them.

5. Add MolyArmor through Vent Pipe

⚠ CAUTION

Avoid damaging your furnace and voiding your warranty. Add water treatment BEFORE adding water to the system. Water treatment in your outdoor furnace is just as important as the oil in a car's engine.

MolyArmor 350 Corrosion Inhibitor (p/n 2900630) gives optimum protection for the furnace water jacket and system parts when it is used to initially treat the water and is maintained at a minimum of 350 ppm of moly and pH level between 8.0 and 9.5.

NOTE: The recommended minimal treatment amounts are based on an average heating system with less than 50 feet of ThermoPEX, one heat exchanger in a forced-air furnace and a heat exchanger on a domestic water heater.

NOTE: If the system has a larger than normal water capacity, more MolyArmor 350 should be added at a recommended rate of 6.5 oz. (190 ml) per 10 gallons (37.8 liters) of system water. One gallon (3.78 liters) of MolyArmor 350 Corrosion Inhibitor will treat 200 gallons (757 liters) of system water.

MOLYARMOR 350 MINIMAL TREATMENT AMOUNTS	
CleanFire 700	2.5 gallons
CleanFire 500/500.1	1.5 gallons
CleanFire 300	1.5 gallons

1. Add the recommended amount of MolyArmor 350 Corrosion Inhibitor (or more depending on the water capacity of the heating system) through the vent pipe on the outdoor furnace.

NOTE: Be sure to add enough MolyArmor 350 to obtain at least 350 ppm moly. There are no negative effects from adding more than the recommended amount of MolyArmor 350.

6. Fill Outdoor Furnace with Water and Purge Air

NOTE: If adding antifreeze to the system, refer to Adding Antifreeze to Outdoor Furnace System section for important information.

⚠ CAUTION

If using antifreeze, use only a nontoxic boiler-type antifreeze. It is imperative that the entire system contain at least 30% antifreeze concentration mixed with water that is 6.5 to 8.0 pH. Softened water is recommended, if available. Do not use reverse osmosis or deionized water that has very low pH. Be sure to adhere to all warnings and precautions on the antifreeze label.

NOTE: If the outdoor furnace is being filled with water when the temperature is below freezing, circulate the water immediately after filling to prevent freezing the water lines.

NOTE: The circulation pump(s) must be installed in the hot supply line(s).

NOTE: All air must be purged from the water lines when filling the system. Be sure to purge the air from each pump circuit from the outdoor furnace.

NOTE: All valves in the outdoor furnace system should be opened before starting this procedure.

1. Connect a garden hose to the water source to be used to fill the outdoor furnace. Purge the garden hose of any impurities by running water through it until the water is clear.
2. Connect the hose to the drain valve on the outdoor furnace. Open the drain valve and fill with water to thoroughly mix the MolyArmor 350, which is heavier than water.

7. Immediately Start the Pump(s); then Heat the System Water to 185°F (85°C)

⚠ CAUTION

Be sure the outdoor furnace is filled with water before firing. Never fire the outdoor furnace when the water level is more than 1" (2.5 cm) below the FULL mark on the sight gauge.

NOTE: The sight gauge valve should always be closed except when checking water level. Water will automatically drain from the sight gauge tube. Remember that this type of valve requires only 1/4 turn to open or close.

1. Start the pump(s). Refer to Initial Fire Up - Start of Heating Season in the Owner's Manual to start the outdoor furnace. Bring the water temperature up to operating temperature (185°F or 85°C) for hours with the system circulating; then add water to the full mark. Continue to run the pump and circulate the water for 24 hours. If a multi-speed pump is used, set the pump on high.

NOTE: It is important to bring the water in the system up to operating temperature (i.e., 185°F or 85°C) immediately after filling the system and to circulate for at least 24 hours to kill bacteria. This also applies any time water is added to the system.

⚠ CAUTION

The water in the system may be hot. Use caution and the appropriate personal protective equipment (PPE) when checking for leaks.

2. Check the system for leaks. Inspect all fittings and hose ends for any signs of leakage. Use several dry paper towels and wrap them around and squeeze each fitting, valve and pipe connection. The paper towels will get wet even if there is a very small leak. Immediately repair any leaks to eliminate the need for adding water. If a screw-type clamp has been used, it may be possible to stop a very slow leak at a hose clamp by tightening the clamp after the system has warmed up and the poly becomes more pliable. It might also be necessary to install a second hose clamp with the screw positioned on the opposite side.

NOTE: After a week of operating, use the procedure in step 2 to check the system for leaks again.

NOTE: If water is ever added, it is important to bring the water in the system up to operating temperature (i.e., 185°F or 85°C) immediately. Refer to Water Quality and Maintenance in the Owner's Manual for water testing procedures. If indicated by test results, add MolyArmor 350 as required. Deterioration due to improper operation and/or maintenance is not covered by warranty.

8. Test the Treated System Water

After circulating the heated water in the system for 24 hours, test the treated system water for the recommended moly (at least 350 ppm) and pH level (between 8.0 and 9.5).

⚠ CAUTION

The water in the sight gauge may be hot. Use caution when obtaining a sample.

1. To obtain a system water sample, bend the sight gauge tube away from the outdoor furnace. Before collecting the sample, open the valve and drain about a quart of water from the sight gauge tube; then carefully fill the sample container without contaminating the sample. **Be sure to properly install the sight gauge tube and close the valve when finished.** The water in the sight gauge valve and tube will drain when the valve is closed.
2. Dip a test strip from the test kit in the water sample for **1 second** and remove. Shake off excess liquid (very important to prevent water bleed from one pad to the other). Compare moly test pad to the color chart within 10 seconds. The moly level must be **350 ppm or more**.
3. Compare pH test pad to the color chart at **30 seconds**. The pH of the treated water should be **between 8.0 and 9.5**. If the pH is higher than 10.0, dilute the water in the furnace by draining approximately 1/4 of the water from the furnace. Add MolyArmor 350 and refill with water that has a pH between 6.5 and 8.0. After refilling, circulate the water with furnace at operating temperature for at least 24 hours and test to confirm the moly is **350 ppm or more and the pH is between 8.0 and 9.5**.

Send in Initial Water Sample

NOTE: It is your responsibility as owner to ensure that your water sample information is accurate and that you submit your samples on a timely basis as required by the warranty for your stainless steel outdoor furnace. Failure to do so will result in a one year warranty.

Your owner's packet contains a Water Sample Kit for submitting an initial water test and an informational sheet entitled Submitting Water Samples for Your Titanium Series Outdoor Furnace. Follow the instructions to collect and submit your initial water sample. Additional Water Samples Kits are available from your WoodMaster dealer.

NOTE: Your water sample will be tested and must indicate acceptable levels of water treatment to qualify for the 25 year warranty.

Initial Water Sample

You are required to submit an initial water sample within 30 days of purchase of your outdoor furnace.

Deferred Installation

If your outdoor furnace is not being installed within 30 days of purchase, you must email service@woodmaster.com with your name and your furnace serial number. When the furnace installation is complete, send the water sample **within 10 days of the initial fill**.

Check Status of Water Sample

If you have provided an email address, you will receive an email with the results of your water test.

If you did not provide an email address, you will be notified by mail **ONLY** if your water sample test is **NOT ACCEPTABLE**. If your water sample test is acceptable, you will **NOT** be notified with a mailed letter. You can however check the status of your water test online.

Check the status of your water sample at:

WoodMaster.com/w25

You will need your serial number and postal code. Please allow 2-3 weeks for results to be available. For a deferred installation, your status will be available approximately 10 days after you email the deferred installation message.

Annual Water Sample

You are required to submit a water sample yearly prior to the anniversary date of your initial installation. Record the anniversary date below:

DATE OF INSTALLATION

System Maintenance

Maintaining the corrosion inhibitor at a proper level is imperative to preventing corrosion failures. To qualify for the 25 year warranty, you must follow the instructions in the Owner's Manual concerning initial water treatment and maintenance. When the outdoor furnace is initially put into service, and once a year after that, you are required to submit a water sample to confirm proper maintenance and water treatment. No warranty claim can be approved unless the outdoor furnace registration and the acceptable levels of water treatment are on file at WoodMaster.

Test the pH and moly levels after the first three months and every six months thereafter, and after adding water to furnace.

NOTE: If using antifreeze, test the pH and Moly levels once each month. If the bacterial issues occur, the pH will decrease.

Water Test Kits and Test Results

DATE	pH LEVEL	MOLY LEVEL

Record the results of pH and Moly level tests in the table above.
If additional space is needed, record on a separate sheet of paper.

It is very important to keep record of water test results (including the date, pH and Moly level). The pH and Moly test strips and indicator have a shelf life of approximately two years that can affect their accuracy. Test kits should be stored in a dry area at room temperature to obtain maximum accuracy over a longer period of time.

Biological contamination can occur if the furnace is not heated up to 185°F immediately after filling it with inhibitor and water as directed.

NOTE: It should not be necessary to add water to the outdoor furnace more frequently than once every twelve months. If it is more frequent, either there is a leak in the system or the outdoor furnace is boiling because of improper operation or maintenance (see Troubleshooting Section in the Owner's Manual). Be sure to locate and repair the problem immediately. Frequently adding water can cause deterioration in the water jacket. ANY time water is added to the system, it is extremely important to bring the water temperature up to operating temperature (185°F) as soon as possible, even if it is during the off-season. Failure to bring the water in the system up to operating temperature immediately after filling the system can allow bacteria present in the water to multiply and may increase the potential for corrosion in the system.

If the test indicates a significantly lower-than-recommended pH level (below 8.0), add MolyArmor to increase the pH level.

POST HEATING SEASON MAINTENANCE

The water should be left in the outdoor furnace if the outdoor furnace is not being used for an extended period of time.

1. Refer to the Preventive Maintenance Schedule for a list of operations to perform.
2. Shut off the power supply to the outdoor furnace.
3. Place a cover over the chimney to keep rain from entering the outdoor furnace. Clean and oil the chimney flue to the firebox.

Draining Treated System Water

MolyArmor 350 is composed of common materials. Molybdenum compounds characterized as nontoxic in US Public Health Bulletin 293, by the Federal Hazardous Substances Labeling Act, and by the Occupational Safety and Health Act. However, in keeping with good safety and environmental practices, dispose furnace water in accordance with federal, state and local regulation. Unless regulation prohibits, you may drain the outdoor furnace to a home septic system. If doing so, however, be careful not to overflow the septic system.

Do not drain the outdoor furnace in such a manner that the drain water could in any way contact surface water, stream, river, estuary (where a river meets a sea), lake, pond, ocean or other types of waters.

Do not drain to any location within 50 feet (15 meters) of any water well.

Flushing the System

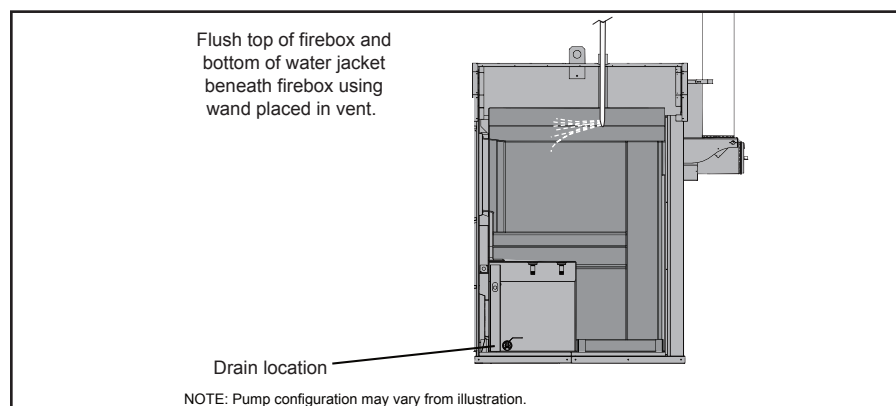
If the system water is brown or orange, it is an indication that the corrosion inhibitor level has not been maintained correctly and corrosion is present in the water jacket. Sludge Conditioner (p/n 166) can be used by circulating the recommended amount through the furnace **for one week** to help clean some of the corrosion from inside the water jacket before flushing, draining and refilling with water and the correct amount of MolyArmor 350.

NOTE: Use one unit of Sludge Conditioner per 200 gallons of system water.

1. De-energize the pump(s) and close the supply and return valves on the outdoor furnace. Remove the inspection panel and insulation covering the drain to gain access to the drain valve. Remove the cap and connect a hose to the drain.
2. Open the drain to drain the system; then flush the top of the firebox and bottom of the water jacket beneath firebox using a wand placed in the vent.

⚠ CAUTION

Completely clean out the firebox before draining water from the outdoor furnace.



3. Close the drain valve securely and replace the cap on drain after flushing the outdoor furnace.
4. Add recommended amount of MolyArmor 350.
5. Fill the outdoor furnace following the procedure in Finalizing the Installation in the Installation Guide. Start the pump(s) and bring the water temperature up to operating temperature (185°F) for 24 hours with the system circulating to thoroughly mix the MolyArmor 350.

NOTE: ANY time water is added to the system, it is extremely important to bring the water temperature up to operating temperature (185°F) as soon as possible, even if it is during the off-season. Failure to bring the water in the system up to operating temperature immediately after filling the system can allow bacteria present in the water to multiply, which may increase the potential for corrosion in the system.

6. Insulate the area using a mat of fiberglass insulation.
7. Install the inspection panel and secure with self-tapping screws.

Adding Antifreeze to Outdoor Furnace System

If using antifreeze, use ONLY uninhibited, undyed, "raw" PGI (shorthand for Propylene Glycol Industrial grade) with softened water and add the correct amount of MolyArmor 350 to achieve 350 ppm moly and 8.0 to 9.5 pH levels.

Most outdoor furnaces are installed **without** antifreeze when an existing heating system is in place and there is no anticipation of leaving the outdoor furnace unattended for extended periods of time (10 days or more). If the building being heated has an alternate heat source, system water may be kept from freezing by running the circulating pump(s) and drawing heat from the existing furnace or boiler in the home or building.

To prevent freezing if the outdoor furnace is not fired for extended time periods or if lengthy power outages are anticipated during cold weather, a nontoxic propylene glycol may be used in the system. Some types of antifreeze that contain various inhibitors have been known to create problems like coagulation and jelling. To prevent potential problems, **do not use propylene glycol that is premixed with inhibitors.** MolyArmor 350 is compatible with (raw) propylene glycol. It is important to use MolyArmor 350 with straight propylene glycol for corrosion protection. If adding antifreeze to the system, it is imperative that the entire system contain **at least 30% antifreeze concentration mixed with water that is 6.5 to 8.0 pH. Softened water is recommended, if available. Do not use reverse osmosis or deionized water** that has very low pH. Bacterial growth is likely to occur with low antifreeze concentrations and can cause corrosion in the furnace water jacket and/or clogging of heat exchangers. To confirm the antifreeze solution is adequate and to kill bacteria, immediately heat the system up to 185° F, allow the pumps to circulate for at least 24 hours and then obtain a sample of the system water. Using an antifreeze tester, the solution must be protected to 10°F (-12°C) or below.

NOTE: If using antifreeze, test the pH and Moly levels once each month. If the bacterial issues occur, the pH will decrease.

NOTE: Be sure to adhere to all warnings and precautions on the antifreeze label.

NOTE: Do not use automotive or RV types of antifreeze.

Wood Selection and Preparation

Before You Start Operating Your CleanFire Outdoor Wood Furnace

Be sure to read carefully and observe all of the information in the entire Owner's Manual.

If any questions arise that cannot be answered by the information in this manual, be sure to contact your dealer.

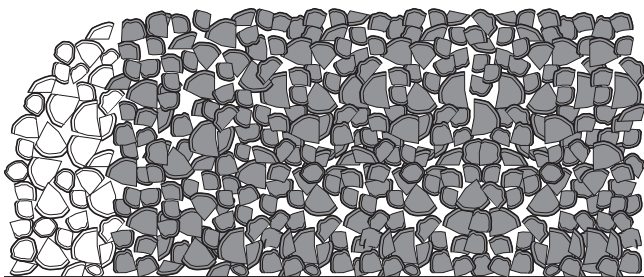
For the best results, it is best to burn seasoned split wood. However, it may be possible to burn some unsplit wood with the split wood depending on quality, size, moisture content and wood type. Properly seasoned wood has a moisture content of 20% or less. It is darker, has cracks in the end grain, and sounds hollow when smacked against another piece of wood. Most wood needs to be split to dry down to 20% within a year. Wood between 4" and 8" (10 and 20 cm) in diameter works well in most cases. Pieces of wood that are too large can reduce output capacity because they burn slower.

- Wood that works well in most cases:
 - Is between 4" and 8" (10 and 20 cm) in diameter
 - Is approximately 60-70% of the length of the firebox
 - Typically weighs 10-15 pounds per cubic foot for heavy heat loads
- Pieces of wood that are too large can reduce output capacity because they burn slower. Wood that is too long can cause bridging.
- Seasoned wood burns more efficiently, minimizes the amount of creosote formation and reduces emissions.
- Maintain a quantity of smaller, drier pieces of wood for relighting the fire if the wood load is burned very low or becomes completely empty.
- Green wood contains about 50% moisture by weight. Energy is required to heat the wood and evaporate the moisture - energy which could have been used to provide heat for the home. The illustration below shows that burning drier, seasoned wood provides more energy for heating your home compared with burning green, unseasoned wood that uses more energy to evaporate the moisture and provides less energy for heating your home.

NOTE: Do not store wood within the outdoor furnace installation clearances or within the spaces required for fueling, ash removal and other routine maintenance operations.

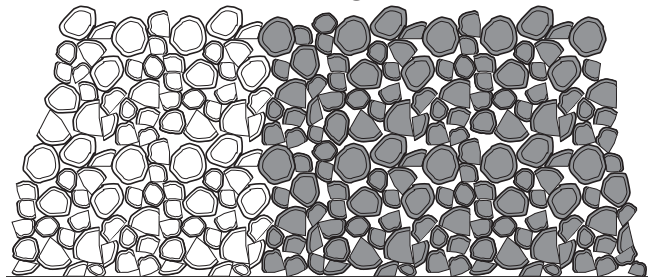
Seasoned Wood

With moisture content of 20% or less



- Wood used to heat
- Wood used to remove moisture

Wood With High Moisture



- Wood used to heat
- Wood used to remove moisture

Operating Instructions

FIRESTAR COMBUSTION CONTROLLER

Refer to the FireStar Combustion Controller Operation Manual for information about the combustion controller.

How the CleanFire Works

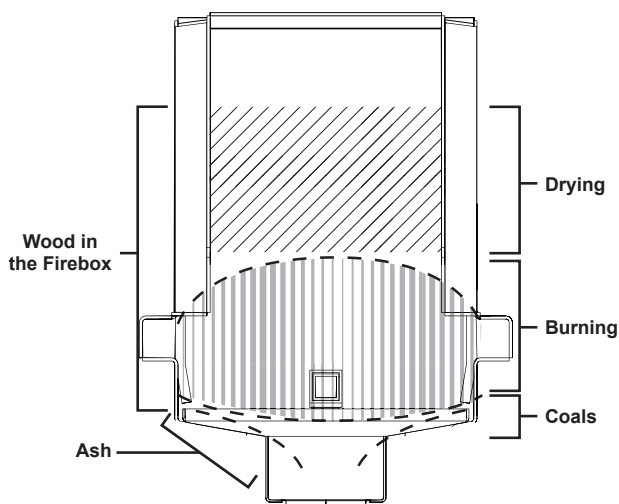
Because of its highly efficient and clean-burning design, the CleanFire operates differently than other types of wood-burning devices.

Understanding a few basic principles will help you operate the CleanFire as it was designed, maximizing its performance, heat transfer and longevity.

NOTE: For proper operation, the fuel must match the heat load, the furnace must be maintained to ensure proper air flow, and the water temperature must be kept above 150°F (66°C).

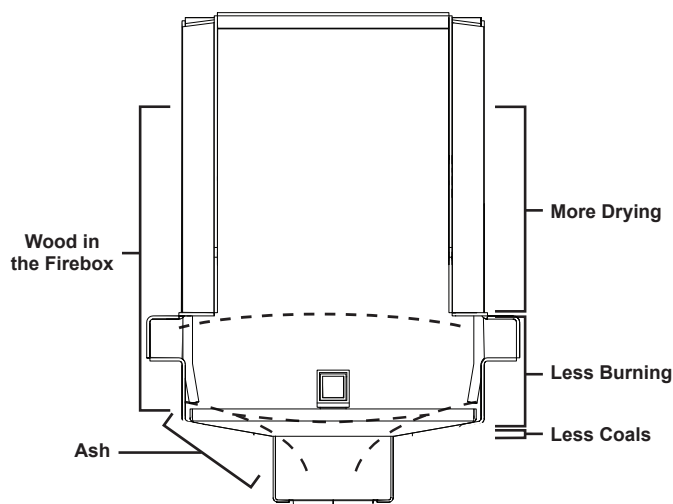
1. The combustion air fan pressurizes the airbox located at the front of the outdoor furnace. Primary air flow, regulated by an actuator motor, flows into the firebox through combustion air inlets located on the front and sides near the bottom. Secondary air is regulated by a second actuator motor that allow air flow through the air tube. Combustion starts in the firebox near the bottom of the wood load.

Operating with Properly Seasoned Wood



- Burns more efficiently
- Minimizes amount of wood used
- Reduces emissions
- Extends life of furnace
- Reduces bridging

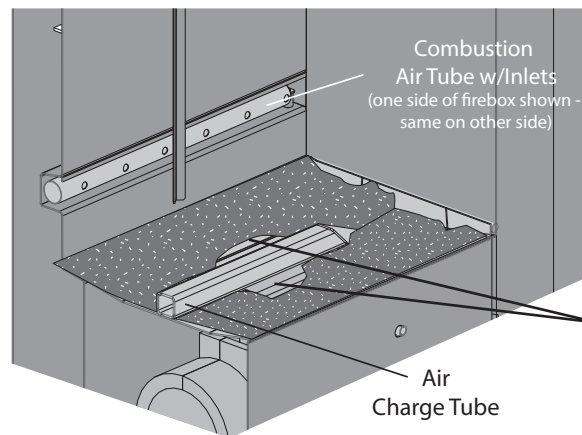
Operating with Wood with Too Much Moisture



- Burns less efficiently
- Increases amount of wood used
- Lowers combustion rates
- Increases maintenance requirements
- Increases bridging

NOTE: When the volume of burning wood is greater than the volume of drying wood, the outdoor furnace operates more efficiently.

NOTE: The combustion air inlets must be visible (i.e., ash must be kept below the combustion air inlets as shown).



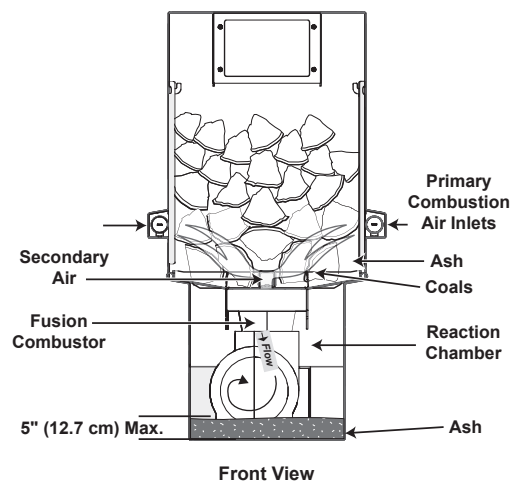
Keep the combustion air tube inlets open and clear of ash and coals to allow the furnace to operate properly.

Keep the area on BOTH sides of the air charge tube open

For illustration purposes. Your furnace may have different configuration.

2. Gasified fuel exits the bottom of the firebox alongside and under the air tube, down to the Fusion Combustor and Reaction Chamber. Final combustion occurs in the Reaction Chamber where extremely high temperatures aid in complete combustion. The chimney creates a draft (negative pressure) which helps to draw exhaust gases from the furnace.
3. Heat is transferred to the water from the hot gases as they move through the firebox, the Reaction Chamber and the heat exchanger.

CORRECT (Proper Flow)



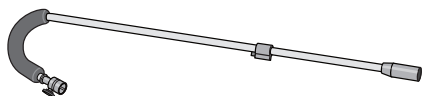
NOTE: The illustration shows the CleanFire operating correctly with proper combustion air flow and with the wood properly loaded.

NOTE: A key point to remember about the operation of the CleanFire is that as wood burns, the combustion gases flow down through the bottom of the firebox so the proper flow must be maintained as shown.

NOTE: Refer to the General Troubleshooting Information for more information on outdoor furnace operation and for conditions to avoid.

Initial Fire Up - Start of Heating Season

NOTE: These procedures apply to initial firing at the start of the heating season.



Outdoor Torch

The optional Outdoor Torch (p/n 2900325) is an excellent tool for starting a fire. Attaches quickly to an external propane tank and can be directed at the bottom of a wood pile for quicker, easier combustion.

⚠ CAUTION

Do not burn plastic, garbage, treated wood or fuels not listed for this outdoor furnace.


NOTE: Before firing the outdoor furnace for the first time, make sure the proper amount of MolyArmor 350 has been added and the water level is 1" below the full mark on the sight gauge, as the water will expand when heated.

Two options are provided for a clean, easy startup. Using lump charcoal is the easiest and fastest method. Be sure the wood (including the kindling) is dry for the best results.

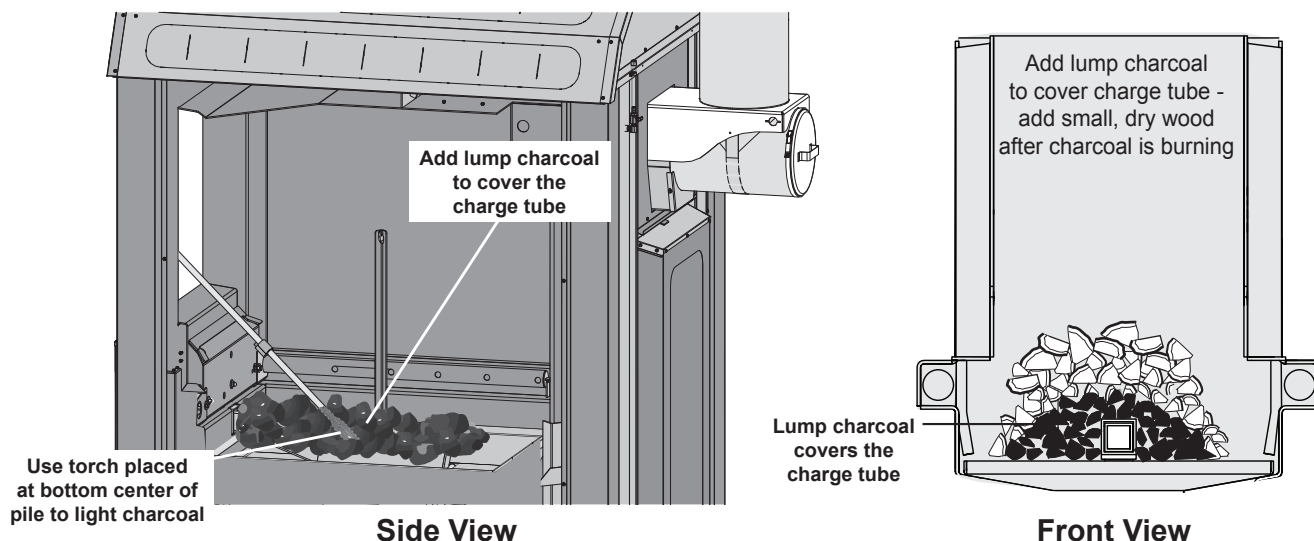
NOTE: During startup, the Reaction Chamber percentage will increase as the combustion process ramps up. Optimum burn occurs when the Reaction Chamber percentage is maintained between 70% and 100%. The drier the wood that is used during startup, the faster these percentages can be reached.

Startup Option A - Lump Charcoal

NOTE: Keep the bypass door closed for this procedure.

1. Disconnect the heat load draw by turning off the pump(s).
2. Open the firebox door and add 10 pounds of lump charcoal to cover the charge tube.
3. Turn the controller on by pressing the **Power**  button; then press the Ignition Air button to turn on the primary combustion air for the initial fire up process when the firebox door is open.

Initial Fire Up with Lump Charcoal



4. Ignite the lump charcoal making sure that the charcoal on both sides of the charge tube is burning.
5. Add small pieces of dry wood to a level just above the primary air tubes on the sides of the firebox.
6. Close and latch the firebox door.

⚠ CAUTION

Do not leave the firebox door open while the fire is burning. Damage to the door seal and paint on the front of the outdoor furnace will result and it could cause a dangerous build-up of gas in the firebox.

7. Allow the wood load to burn until the water temperature reaches 175°F (79°C). Turn on the pump(s) and let run for 24 hours to circulate the system water. If this is the initial startup of the furnace, at this point a proper water sample can be taken.

⚠ WARNING

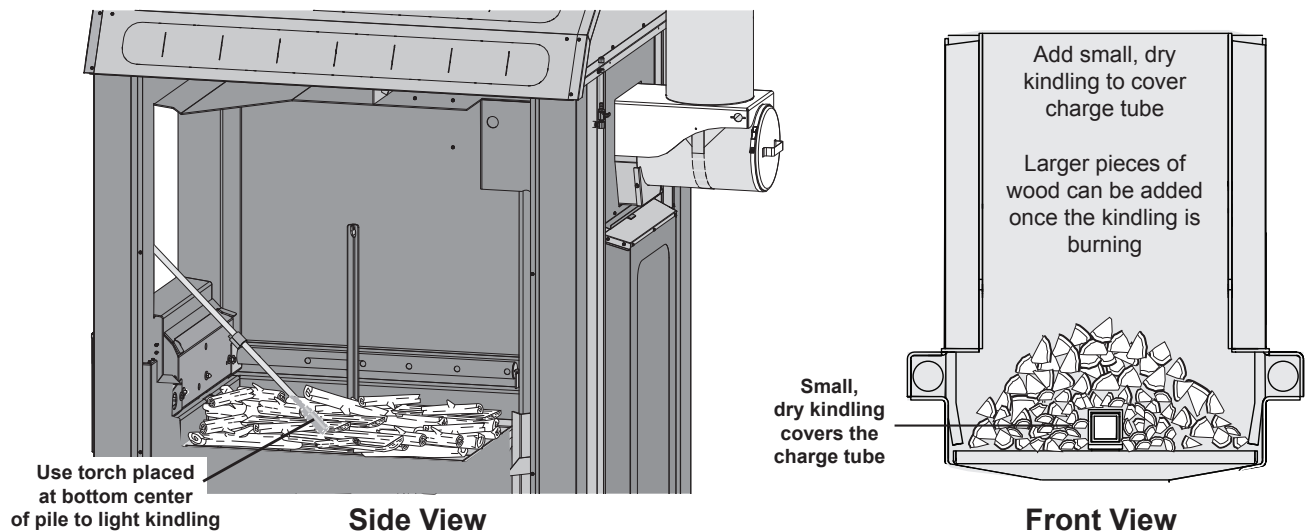
When opening the firebox door, the door switch will shut off the primary air actuator motor while the firebox door is open. Do NOT disable the door switch.


Startup Option B - Dry Kindling

NOTE: Keep the bypass door closed for this procedure.

1. Disconnect the heat load draw by turning off the pump(s).
2. Open the firebox door and add small, dry kindling to cover the charge tube. Smaller kindling is preferred. It should be staggered and able to ignite and burn quickly for the initial fire. The intent is to make sure the combustion air will be able to flow past the charge tube and into the Reaction Chamber.

Initial Fire Up with Dry Kindling



3. Turn the controller on by pressing the **Power**  button; then press the Ignition Air button to turn on the primary combustion air for the initial fire up process when the firebox door is open.
4. Ignite the bottom side of the kindling. Make sure the wood on both sides of the charge tube is burning. Once the kindling is burning, add larger pieces of dry wood to just above the primary air tubes.

NOTE: Add enough wood to bring the water temperature up to 175°F (79°C).

5. Close and latch the firebox door.

CAUTION

Do not leave the firebox door open while the fire is burning. Damage to the door seal and paint on the front of the outdoor furnace will result and it could cause a dangerous build-up of gas in the firebox.

6. Allow the wood load to burn until the water temperature reaches 175°F (79°C). Turn on the pump(s) and let run for 24 hours to circulate the system water. If this is the initial startup of the furnace, at this point a proper water sample can be taken.

WARNING

When opening the firebox door, the door switch will shut off the primary air actuator motor while the firebox door is open. Do NOT disable the door switch.

Adding Heat Load

NOTE: During initial start-up, a considerable amount of moisture from condensation will collect inside the firebox and heat exchanger and may drip out of the Reaction Chamber door. This is normal and the moisture will evaporate after the first couple of fuel loads.

1. With no heat load draw in the system, monitor the operation of the outdoor furnace until the water temperature reaches the water temperature setpoint.
2. Turn on the pump(s); then start a heat load draw in the system by turning up the thermostat in the house. Monitor the outdoor furnace for one hour or until another cycle occurs (i.e., outdoor furnace goes from combustion to idle mode). If the water temperature drops and does not recover to the water temperature setpoint within one hour of starting the heat load draw, the heat load draw should be shut off, allowing the furnace to cycle to the idle mode again.

NOTE: The outdoor furnace will not operate satisfactorily if the heat load is higher than the output capacity of the outdoor furnace.

3. At this point, there should be glowing coals established in the bottom of the firebox. The firebox can be filled with dry, seasoned split wood.

Ash Removal Frequency

During the first week of operation, check the level of ash in the Reaction Chamber every two days. Ash needs to be removed from the Reaction Chamber before it obstructs the combustion air flow for efficient operation. Clean the Reaction Chamber before it becomes 1/2 full of ash (approximately 5" or 13 cm deep in any area of the Reaction Chamber).

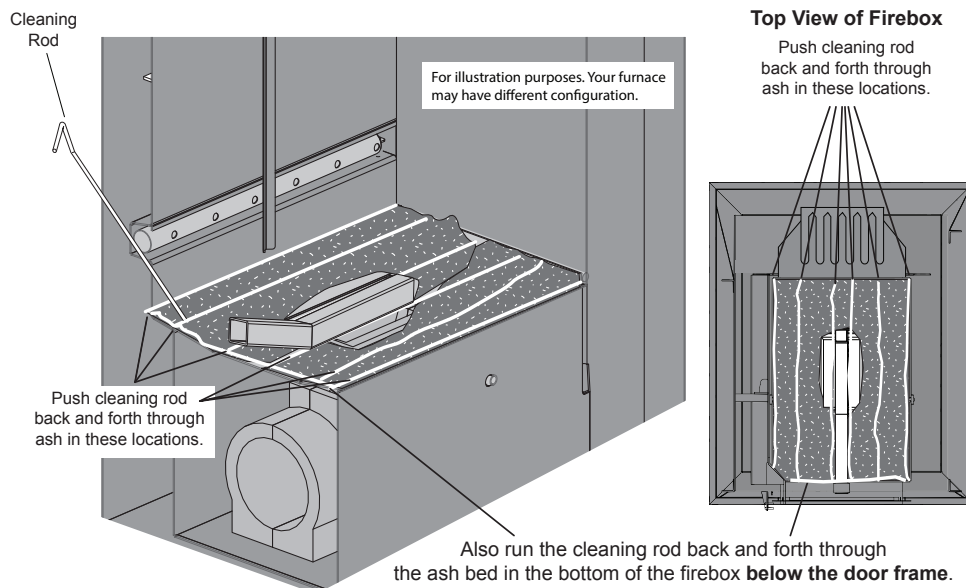
Adding Wood

1. CleanFire 700/500/500.1 only - Slowly lift and push the bypass door handle toward the back of the outdoor furnace to open the bypass door; then wait for 15 seconds.

NOTE: The alarm is a reminder that the bypass door is open. During initial start, it will continue to sound.

WARNING

Keep your face away and stay as far away as possible from the firebox door area when opening the door.



2. Unlatch the firebox door; then slightly open the firebox door and wait 10 seconds. Stay as far away as possible as the firebox door is opened because smoke and hot gases escaping through the firebox door opening could ignite. From a safe distance, observe the fuel load.

⚠ WARNING

Use extreme care when adding wood when wood or coals are already present. Very hot gases may be coming out of the firebox door opening.



Run the cleaning rod through the coal bed every time before loading wood to help maintain proper air flow and optimize combustion.

3. Using the illustration as a reference, push the cleaning rod through the ash, coals and remaining wood in the bottom of the firebox to loosen it up, including a pass on each side of the air tube. **Be sure the area on each side of the charge tube is open.** Also run the rod sideways on each side of the air charge tube in the bottom of the firebox below the door frame.

NOTE: Neglecting to push the cleaning rod through the ash and coals as described in Step 3 each time before wood is loaded can cause the ash bed to deepen and become compacted. This can result in poor heat output and combustion because of restricted airflow. Compacted ash will not fall into the Reaction Chamber; it will need to be removed with a shovel.

4. Some ash in the bottom of the firebox (but not alongside the charge tube) is necessary for the proper operation of the outdoor furnace. Ash acts as an insulator, keeping the glowing coals in the bottom of the firebox hot enough to restart the fire. When using the cleaning rod, some of the ash will fall into the Reaction Chamber and some ash with coals will remain. The coals remaining around the area alongside the air tube will create a clean, efficient burn.

5. The combustion air inlets must be kept open and clear of ash and coals to allow the furnace to operate properly. If needed, remove enough ash to keep the combustion air inlets free of obstruction.

NOTE: It is important to understand that when the water temperature setpoint (185°F) is reached, the combustion air is shut off until the water temperature drops to the setpoint minus the differential setting. During this cycle-off time there will be no active fire in the firebox. If the firebox door is opened, the wood might begin to burn again but will be shut down when the door is closed if the water temperature is above the setpoint. If the door is opened and closed when the water temperature is below the setpoint the fan will cycle on again to achieve the setpoint even though the differential point has not been reached. If the combustion cycle is activated with the water temperature at least to the differential below setpoint and the fire is not actively burning when the door is closed, first confirm that proper operating and maintenance procedures are being performed before considering testing mechanical components.

6. When refilling the firebox, the new wood load will ignite quickly and burn more efficiently if these instructions are followed. This will prevent creosote buildup in the heat exchanger, air channels or primary elbow. The operating procedures will maintain good air flow and very efficient combustion.

DAILY

- Run the cleaning rod through the ash and coal bed and along both sides of the air tube as shown on previous page to keep ash loose. **Use care near the refractory.** This will allow excess ash to flow down into the Reaction Chamber. If the coal bed/remaining wood is more than 4 inches deep, it may be necessary to use the cleaning rod to open a passage through the coals on each side of the air tube. **Air flow down past the air tube is essential for a good combustion rate to be maintained. To confirm adequate air flow, cautiously open the Reaction Chamber door to visually identify the combustion air flow while the furnace is in a burn cycle with the fan on and the bypass closed.**
- To ensure the fire will maintain good combustion, it is important to refill the firebox when an adequate amount of the previous wood load is remaining (enough to provide enough heat and fire to dry and ignite the new wood load). If the coals burn out from under the new wood load and are unable to keep the fire going, there are not enough coals and wood left from the previous load. When the firebox is filled completely each loading, the FireStar's default Reserve Mode will help "reserve" a portion of the previous wood load for a quicker, more efficient fire up after reloading.
- Be sure to fill the firebox with enough wood so there is adequate wood left the next time you load to dry and ignite the new wood.
- Keep in mind that burning dry, well-seasoned wood requires less coals to ignite the new wood load.

- Burning higher moisture wood or larger, unsplit wood will require that a larger amount of the previous wood load remain in the firebox to adequately ignite the new wood load. If there are not an adequate amount of coals or enough of the previous wood load to achieve a good hot fire and efficient combustion with Reaction Chamber temperatures, open the bypass door for a long enough time to get the new wood load burning well; then close the bypass. Refer to Initial Fire Up - Start of Heating Season.
- If the furnace is being used in the fall and spring or on heat loads much lower than the main heating season, use a 25% wood load or whatever amount will be needed for the period of time between normal reloading.

WEEKLY (or as needed)

- Clean the heat exchanger weekly (or as needed) to prevent air flow restriction. When the operating procedure outlined here is used, there will be no creosote formation in the Reaction Chamber or heat exchanger passage.
- Clean ash out of the Reaction Chamber channel as needed. It is best not to allow the Reaction Chamber to fill to a depth over 1/2 full.
- Inspect and clean the chimney tee as needed to prevent restriction.
- Clean and inspect the spark arrestor (if one is being used) as needed.
- Review the operation and maintenance, and refueling tips videos available on the Online Support Center.

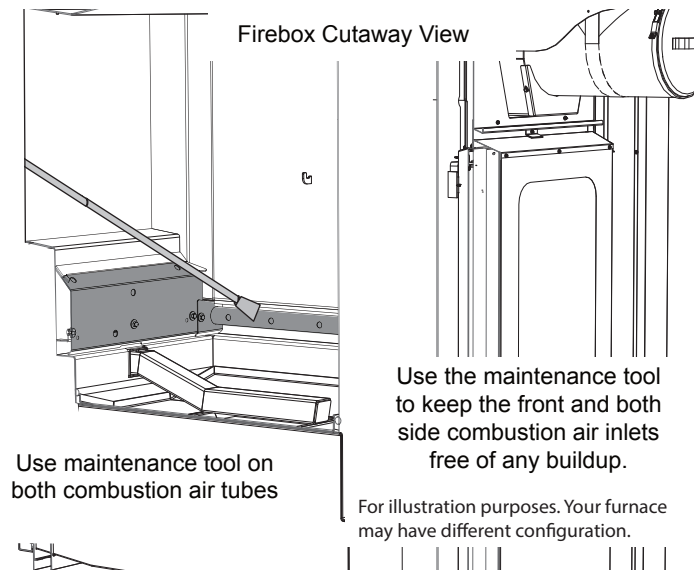
NOTE: If the furnace has been operated without adequate airflow and efficient combustion, it may be necessary to inspect and clean the primary combustion air inlets, air channels, primary air elbow, heat exchanger, and Reaction Chamber.

NOTE: If the fire goes out or keeps going out, the pulse timer can be adjusted to a longer duration and shorter time periods between idle pulses.

⚠ WARNING

When adding wood to the firebox, be careful not to get pinched between the wood and the door frame or any part of the outdoor furnace. Use extreme care with large pieces of wood that may be difficult to handle.

7. Inspect the firebox for crusty deposits on the walls and in the corners and use the maintenance tool or similar type of tool to scrape and remove. Use the maintenance tool to remove any thick deposits from the inside front corners of the firebox, down each side and across the top, as shown.
8. Use the maintenance tool to keep the front combustion air inlets, and the combustion inlets on both air tubes free of any buildup.



9. When loading, load the wood so that the combustion air inlets on the side of the firebox do not become blocked or restricted.
10. Close and latch the firebox door. **Do not use the firebox door to ram wood into the outdoor furnace. Do not operate the outdoor furnace with the firebox door open.** Combustion in the firebox cannot be controlled if the firebox door is left open or unlatched. If the firebox door is left open, an uncontrolled burn will result. To return to a controlled burn, close and latch the firebox door.
11. CleanFire 700/500/500.1 only - Wait for 15 seconds; then slowly pull the bypass door handle toward the front of the furnace and push down to close the bypass door.

⚠ WARNING

The firebox door must be closed and latched at all times except when filling the firebox with wood or damage to gaskets, paint, etc., may occur. Leaving the firebox door open may lead to a runaway fire. In the event of a runaway fire, close the firebox door.

Maintenance Schedule

PREVENTIVE MAINTENANCE SCHEDULE

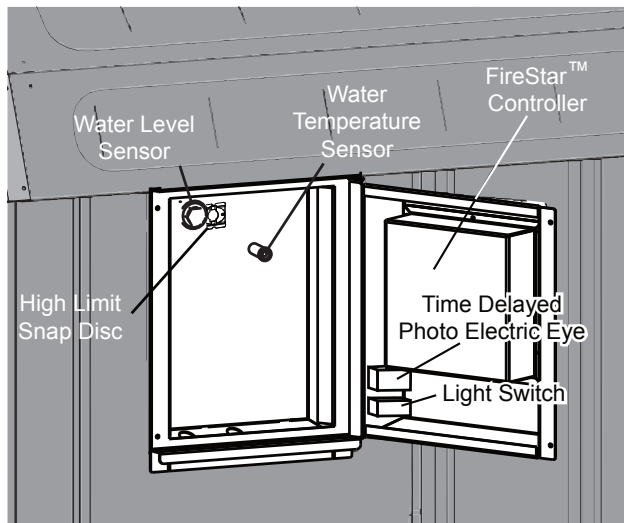
Regular maintenance and inspections can help extend the life of your outdoor furnace and prevent high-cost repairs. This table is meant to serve as a general guideline until you become acquainted with how the outdoor furnace operates with your specific application.

OPERATION	SERVICE INTERVAL							See Section Number
	Before first operation of season	Daily	Weekly	Monthly	Semi-Annually	Post Season	Other	
Check water level.	●	●						1
Remove ash.			C			●		3
Scrape firebox door frame; use cleaning rod in ash.		A				●		8
Inspect firebox door seal.		A				●		4
Inspect and lubricate door latch bushings.						●	G	4
Inspect chimney and chimney tee.	●		●			●		5
Check vent cap.	●							2
Clean heat exchangers.	●		C			●	F	6
Inspect rear access heat exchanger door latches, seal and insulation							H	6
Inspect Reaction Chamber.	●		C			●		7
Inspect secondary air tube and refractory.						●		11
Inspect firebox and firebox ash area.	●	A				●		8
Inspect and clean combustion air inlets.	●		C			●	B	9
Inspect and clean the combustion fan and inlet screen.					D			10
Oil the combustion fan.						●		10
Check pH and moly levels of water.	●				D	●	E	
Inspect primary and secondary combustion air elbows.						G		12
Grease bypass door handle (700/500/500.1 only).				F		●		13
Perform a complete cleaning.				F		●		14

NOTE: Check daily for build-up of creosote in the lower corners and around the air outlets until experience shows how often cleaning is necessary.

- A** Daily, or as needed.
- B** Twice a week.
- C** Weekly until interval for your application can be determined.
- D** When new, after three months, then every six months thereafter.
- E** Refer to **Testing Treated Water in the Outdoor Furnace** (Installation and Initial Water Treatment Guide).
- F** Frequency will vary depending on heat load requirements, type of wood used and the moisture content of the wood.
- G** Or as needed.
- H** Whenever rear access heat exchanger door is opened.

Control Locations



ROUTINE MAINTENANCE

⚠ CAUTION

Use only genuine WoodMaster Parts and Accessories if it ever becomes necessary to replace any component of the outdoor furnace.

Routine inspections and maintenance are essential to the proper operation and longevity of the outdoor furnace. The items indicated in the preventive maintenance schedule are intended to serve as a guideline. Actual intervals between inspections and maintenance may vary depending on a number of factors, including your heat load requirements, type of wood used, and outdoor temperatures.

NOTE: Proper maintenance of the firebox, Reaction Chamber, Fusion Combustor, heat exchanger, chimney transition box and chimney tee are essential for the outdoor furnace to function properly and for longevity.

⚠ CAUTION

Do not burn plastic, garbage, treated wood or fuels not listed for this outdoor furnace.

NOTE: Chloride or sulfurous gases can be generated if plastic or rubber is burned and will mix with the moisture from the wood to form hydrochloric or sulfuric acids in the firebox, creating corrosion.

Creosote - Formation and Need for Removal. When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire.

NOTE: If the outdoor furnace is operated correctly, creosote will not form in the chimney.

The chimney connector and chimney should be inspected at least twice monthly during the heating season to determine if a creosote buildup has occurred, and to check for corrosion or condensation. If creosote has accumulated it should be removed to reduce the risk of a chimney fire.

⚠ WARNING

The chimney and chimney connector must be clean and in good condition.

MAINTENANCE SECTIONS

Refer to the Preventive Maintenance Schedule for the recommended intervals with which to perform these maintenance items.

Section 1 - Water Level

Open the sight gauge valve. The sight gauge tube will fill to indicate the level of water in the outdoor furnace. Be sure to close the sight gauge valve after checking water level. The sight gauge valve and tube will drain when the valve is closed.

Section 2 - Vent Cap

Check that the vent cap fits loosely on the vent opening. Check the vent cap copper tube for obstruction; clean with a pipe cleaner if needed.

⚠ WARNING

The outdoor furnace vent cap must fit loosely on the vent opening. Do not force the cap down or try to seal it tightly onto the vent pipe. Do not extend or restrict the vent pipe or opening. DO NOT ALLOW THE OUTDOOR FURNACE TO BE PRESSURIZED.

Section 3 - Ash

Refer to the Adding Wood section.

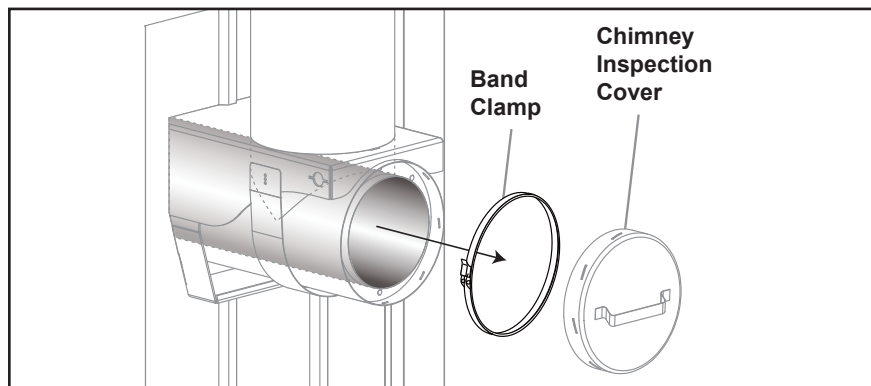
Section 4 - Firebox Door Seal and Bushings

Make sure the firebox door is properly latched and check the condition of the firebox door seal. If it is not sealing properly (indicated by a uniform indentation), replace the seal. If it is not sealing properly after replacing the seal, the firebox door may need to be adjusted. See Firebox Door Hinge/Latch Bearing Adjustment in Serviceable Items section.

Section 5 - Chimney Tee and Chimney

Remove the band clamp and chimney inspection cover. Inspect the chimney outlet and chimney for excessive creosote, ash or deposits and clean as necessary.


NOTE: The chimney inspection cover must fit tightly. Check and clean if necessary the groove for the cover to prevent air from leaking out. Leaking air caused by an improperly fitting cover can cause corrosion.



Section 6 - Heat Exchangers

NOTE: Inspect the heat exchangers weekly, and clean as needed, until the interval for your application can be determined. Frequency will vary depending on a number of factors including heat load requirements, type of wood used and the moisture content of the wood.

NOTE: The best time to clean the heat exchangers is prior to loading with wood when all that remains in the firebox is a glowing coal bed.

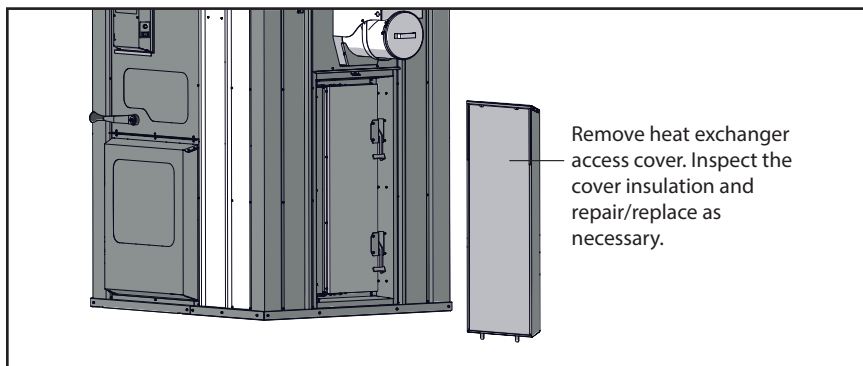
1. Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

2. Remove the chimney inspection cover. Inspect the area above the heat exchangers for any excessive ash buildup. Clean and remove any excessive ash accumulation.

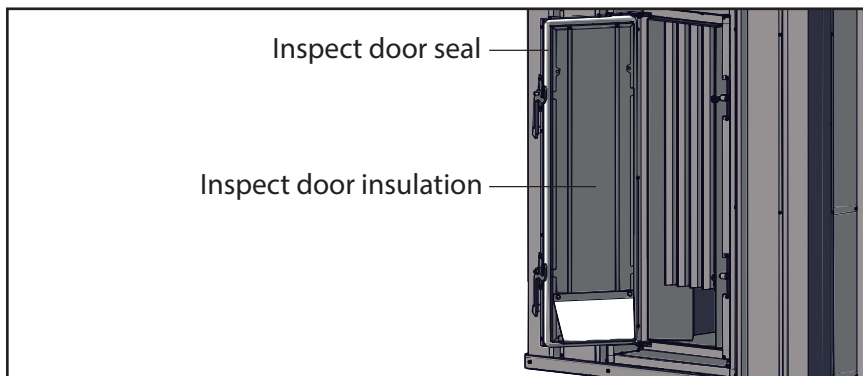
3. Remove the heat exchanger access cover from the back of the furnace. Inspect the cover insulation and repair/replace as necessary.



4. Carefully undo both latches on the hinged heat exchanger door. If any coals or wood remain in the firebox, slowly open the door making sure to stand off to the side when opening it.

⚠ CAUTION

Open the heat exchanger door slowly and stand off to the side when opening it.

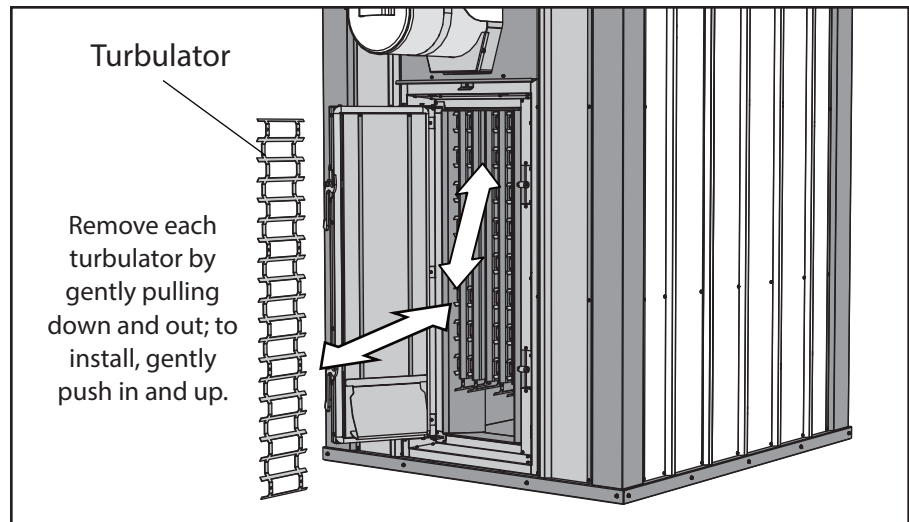


5. Inspect the door insulation and door seal. Repair/replace any defective seal or insulation.
6. Inspect the door frame edge for any buildup of creosote or ash. Use the maintenance tool to clean the door edges.

⚠ CAUTION

Always wear the appropriate personal protective gear when cleaning ash from the turbulators and the Reaction Chamber.

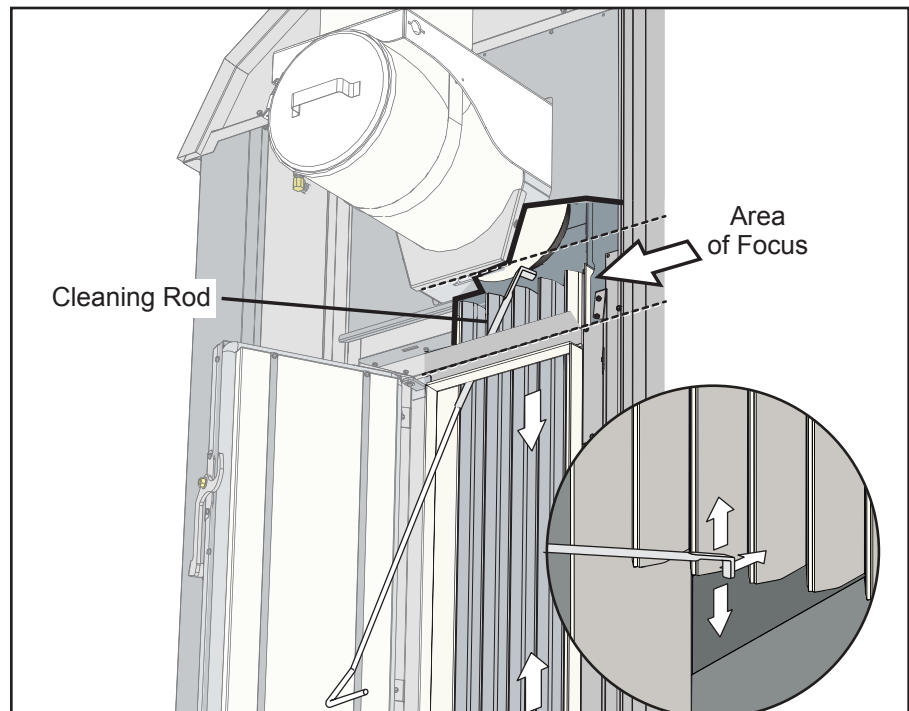
7. Remove each turbulator by gently pulling down and out. Clean each turbulator to remove any ash or buildup; then inspect for damage.




8. Inspect the heat exchangers for excessive buildup of creosote or ash. Use the scraping end of the maintenance tool to clean any accumulations from the sides of the heat exchanger sections. Angle the cleaning rod up to clean from the top of the exchangers and then down to the bottom between each folder of the exchanger.

NOTE: If there is creosote buildup in the heat exchanger, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Operating Instructions).


The Flue Brush Kit (p/n 390) is an excellent option as an additional way to clean the exchangers.



9. Using the maintenance tool and a shovel, clean any accumulated ash from beneath the heat exchanger. Dispose of ash properly.

10. Ensure that the door seal and frame are still clean of any debris or ash; then install each turbulator by gently pushing in and up.
11. Close and latch the heat exchanger door; then install the heat exchanger access cover and chimney inspection cover.
12. Press the **Power**  button on the FireStar combustion controller to turn it on.

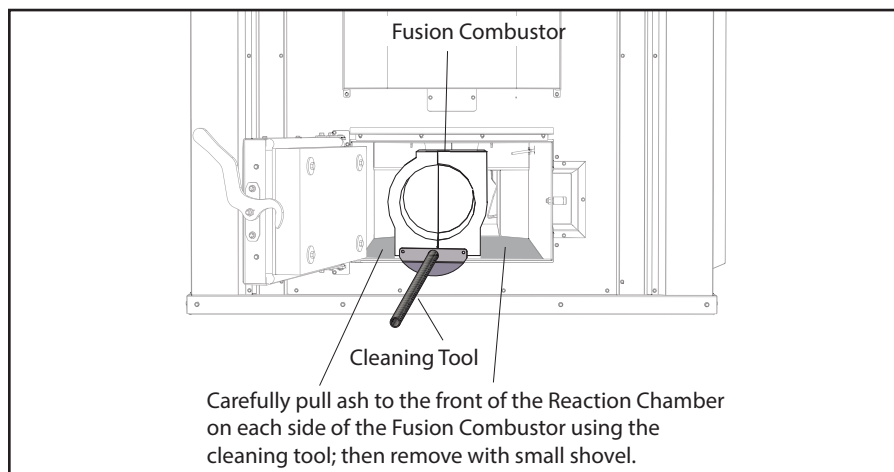
Section 7 - Reaction Chamber

1. Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

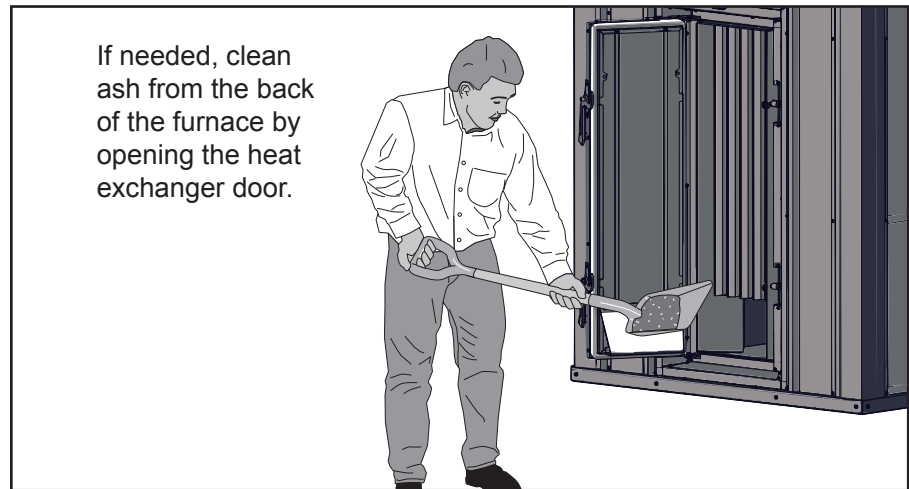
2. Unlatch and open the Reaction Chamber door.
3. Use the maintenance tool to pull the ash to the front of the furnace. Take care when pulling ash from each side of the Combustor not to move the refractory sections.
4. Use a small shovel to remove all of the ash and deposits from the Reaction Chamber. Take care not to damage the temperature sensor. You can also clean ash from the back of the furnace by opening the heat exchanger door.




NOTE: It is extremely important to clean ash from the entire Reaction Chamber area. If necessary, refer to section Heat Exchangers section for the procedure for removing ash from heat exchanger area.

CAUTION

Take care not to damage the temperature sensor when removing ash.



5. Close the Reaction Chamber door and secure the latch.
6. Press the **Power**  button on the FireStar combustion controller to turn it on.

Section 8 - Firebox

WARNING

Remove all wood, coals and ash from the firebox.

1. Scrape the top and sides of the firebox and around the door frame area to remove any deposits; then inspect the surfaces of the firebox for any signs of corrosion, paying particular attention to the ash level and below.

NOTE: When scraping to clean inside the firebox, be sure to pay particular attention to the corners and to the seams.

2. If signs of corrosion are present, contact your dealer. Refer to the section Corrosion is Present in the Troubleshooting section.
3. A thin, tar-like creosote layer may form on the firebox walls and migrate toward the bottom of the firebox where it could collect into a thicker layer. Normally this layer will burn up as it collects on the bottom. If it migrates to the bottom of the firebox and does not burn up, it must be removed. Do not allow it to cover or restrict air flow through the combustion air inlets or bottom of the firebox. If larger, thick, dry deposits form on the walls in the firebox, they should be removed with the maintenance tool.

NOTE: Be aware that the hotter the fire, the less creosote is deposited, so weekly cleaning may be necessary in mild weather, even though monthly cleaning may be enough in coldest months.

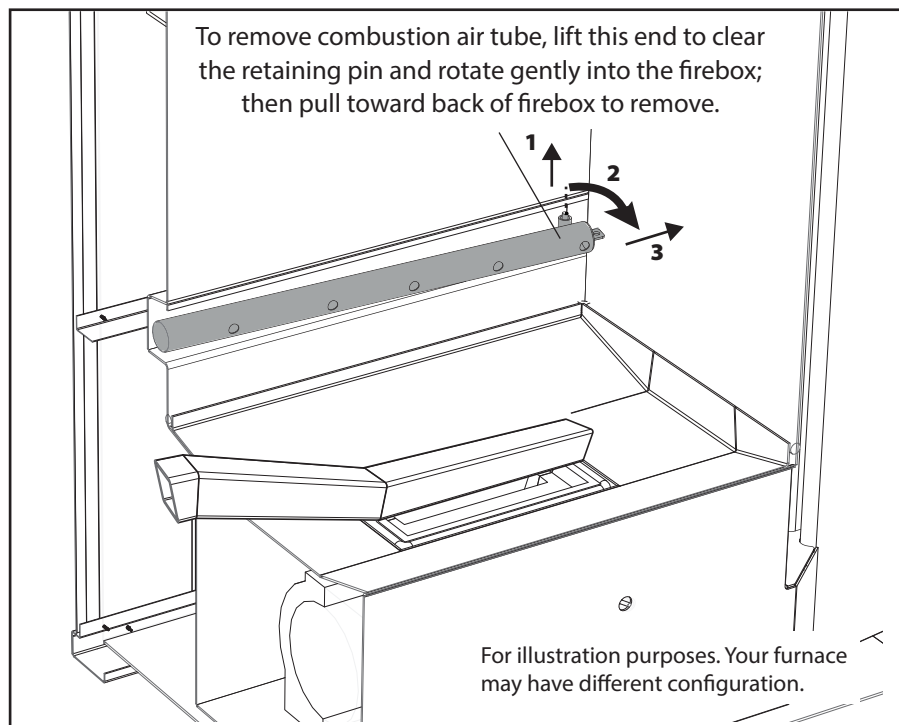
Section 9 - Combustion Air Tubes

NOTE: If the combustion air tubes are becoming restricted by ash or creosote, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Adding Wood section).

Primary combustion air is supplied to the firebox through the combustion air inlets located in the front air channel and in the side combustion air tubes. Be sure to clean off any buildup around the combustion air tube holes and buildup that may collect around the combustion air tubes themselves.

The side combustion air tubes can be removed if necessary. To remove, lift the end of the tube closest to the back of the firebox up off of the retaining pin, then in and toward the back of the firebox. Install by reversing this procedure.

NOTE: If there is a large amount of buildup on the exterior of the combustion air tube, it may be necessary to first remove the buildup to make removal easier.



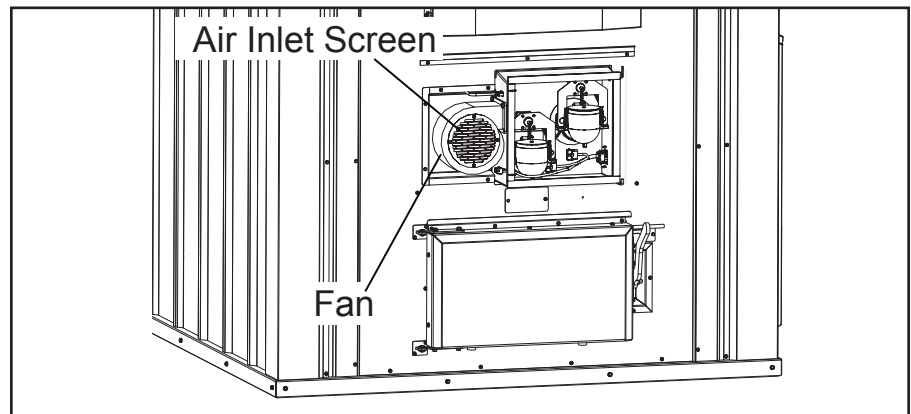
Section 10 - Combustion Air Fan

1. Disconnect power to the outdoor furnace.

⚠ WARNING

Do not proceed without testing that power is disconnected.

2. Remove the airbox access cover; then open the hinged airbox door. Inspect the combustion air fan inlet screen and fan wheel and clean if necessary. Make sure the air intake is clean and not obstructed.



3. Close and secure the airbox door. Install the airbox access cover.

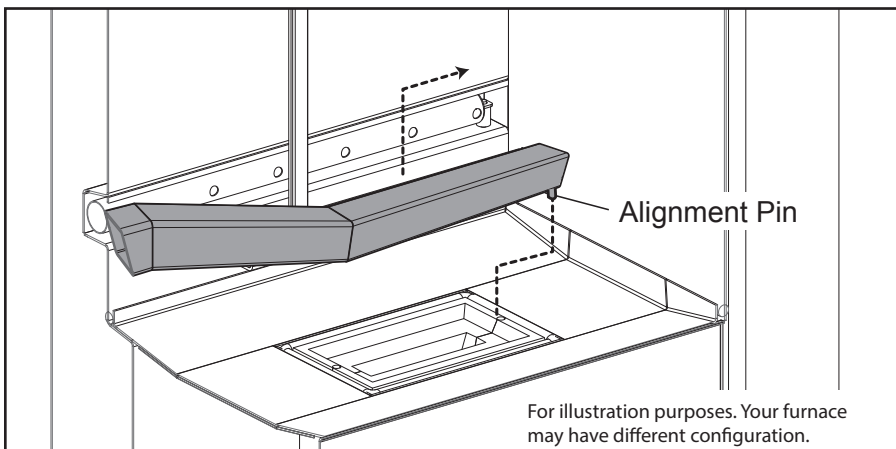
⚠ DANGER

Do not connect power or operate the outdoor furnace with the airbox access cover removed. The outer airbox cover must be installed and secured with screws.

Section 11 - Air Tube and Refractory

Removing and inspecting the air tube and inspecting the refractory is best done after the outdoor furnace has been shut down and the firebox has been cleaned according to the Complete Firebox Cleaning Procedures.

NOTE: The air tube and refractory are wear items.



1. Remove the air tube by lifting and then sliding it toward the rear of the outdoor furnace. Inspect the area beneath the air tube to see the area is not plugged.
2. Inspect each refractory module for damage. Small cracks and chips in the refractory are normal. If large pieces of the refractory modules are missing, contact your WoodMaster dealer.
3. Install the air tube making sure the alignment pin is seated in the alignment hole in the refractory modules.

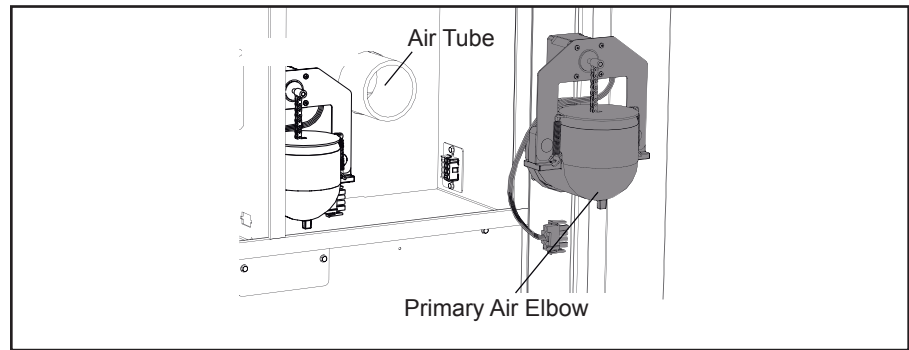
Section 12 - Primary Air Elbow

1. Disconnect the electrical power to the outdoor furnace at the main power source.

⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while servicing the actuator motors (i.e., use lock out, tag out).

2. Remove the outer airbox cover; then open the airbox door.
3. Disconnect the actuator motor wiring harness.
4. Loosen the hose clamp securing the primary air elbow to the air tube; then remove the assembly from the airbox.



5. Inspect the elbow and clean out any build-up or blockage.

NOTE: A small amount of material in the elbow is normal and is not an indication of improper operation.

NOTE: If there is creosote buildup in the primary air elbow, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Adding Wood section).

6. Inspect the air tube for blockage or obstructions. To remove blockage or obstructions in the air tube, a screwdriver and a shop vac may be useful.
7. Install the primary air elbow over the air tube; then tighten the hose clamp.
8. Connect the actuator motor wiring harness.
9. Close and secure the airbox door. Install the outer airbox cover and secure with screws.

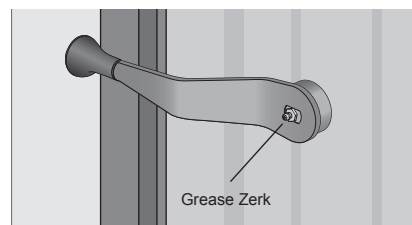
⚠ DANGER

Do not connect power or operate the outdoor furnace with the outer airbox cover removed. The outer airbox cover must be installed and secured with screws.

10. Connect the electrical power to the outdoor furnace at the main power source.

Section 13 - Bypass Handle (if applicable)

1. Using the grease zerk on the bypass handle, add grease.



2. Lift and lower the bypass handle several times to distribute the grease.

Section 14 - Complete Cleaning Procedures

The frequency for performing a complete cleaning will vary depending on a number of factors, including your heat load requirements, type of wood used, and the moisture of the wood.

NOTE: Proper maintenance of the firebox, Reaction Chamber, heat exchanger, chimney transition box and chimney tee are essential for the outdoor furnace to function properly and for longevity.

NOTE: It may be best to allow the wood and coals to burn out completely before this type of cleaning.

CAUTION

Always wear the appropriate personal protective gear (e.g., protective gloves, clothes, dust mask, etc.) when cleaning ash from the firebox and the Reaction Chamber, etc.


CAUTION

Clear the entire area surrounding the outdoor furnace of any combustible materials before performing these cleaning procedures.

WARNING

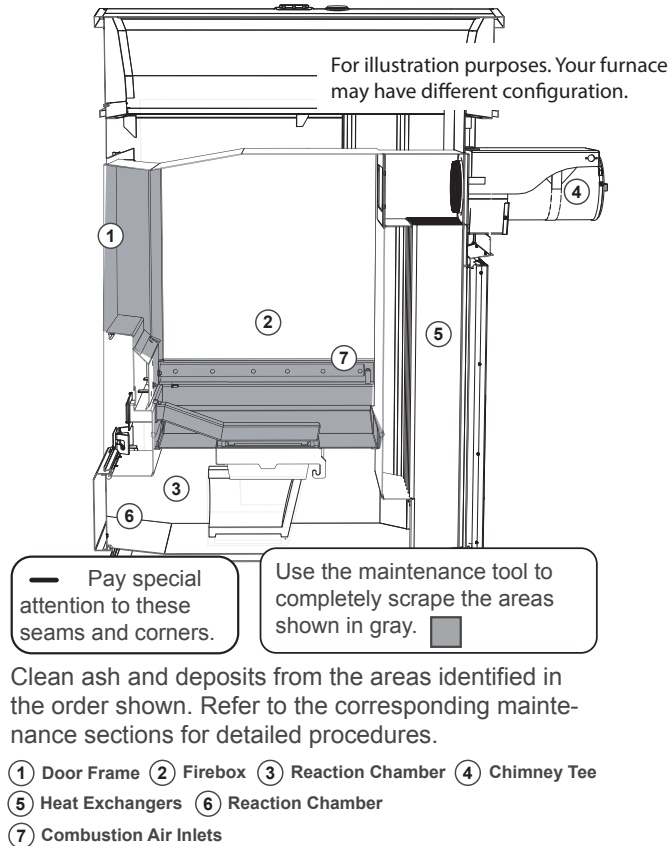
Be careful not to spill any coals or ash. Place coals and ash in a metal container with a tight-fitting metal lid.

NOTE: Refer to the illustration and clean the areas identified in the order shown. For each area in the illustration, refer to the corresponding maintenance section.

1. Press the **Power**  button to turn the FireStar combustion controller off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.



Door Frame

Open the firebox door; then scrape the face and surface area of the door frame to remove any deposits.

Firebox

See Maintenance Section 8 - Firebox.

Chimney Tee

See Maintenance Section 3 - Chimney Tee.

Heat Exchangers

See Maintenance Section 6 - Heat Exchangers.

Reaction Chamber

See Maintenance Section 7 - Reaction Chamber.

Combustion Air Tubes / Air Tube

See Maintenance Section 9 - Combustion Air Tubes and Maintenance Section 11 - Air Tube and Refractory.

SERVICEABLE ITEMS

NOTE: These procedures should be performed by a qualified individual and in accordance with any and all federal, state/provincial and local codes and regulations. When performing work on an appliance observe all precautions in the literature, tags and labels attached to the appliance and other safety precautions that may apply. When working with electricity and electrical components, failure to follow precautions could result in property damage, personal injury or death.

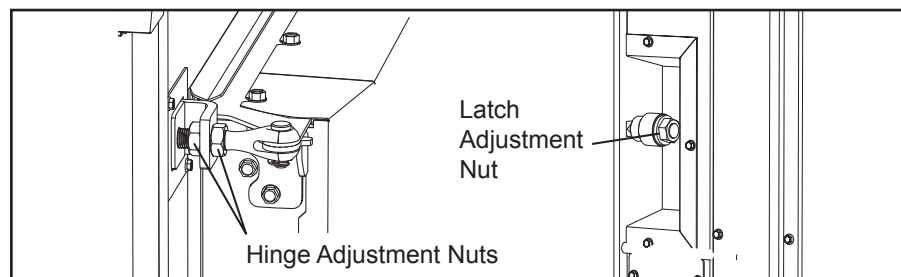
NOTE: If any of these items are under warranty, remember that the warranty covers only the cost of the replacement part. Labor is not covered.

NOTE: Use only genuine WoodMaster parts and accessories if it ever becomes necessary to replace any component on the outdoor furnace.

FIREBOX DOOR HINGE / LATCH BEARING ADJUSTMENT

If the firebox door seal has been replaced and it is not sealing properly, the firebox door may need to be adjusted to close more tightly. When adjusting the firebox door, make sure it is not adjusted too tightly as damage to the firebox door, frame or door seal may result.

1. To tighten the hinges, loosen the outer adjustment nut and turn the inner nut counter-clockwise; then tighten the outer adjustment nut securely. Adjust the top and bottom hinge for equal pressure when the door is latched.
2. To tighten the latch bearing, loosen the latch adjustment nut; then tap the latch bearing assembly in toward the firebox. Tighten the latch adjustment nut securely.



FIREBOX DOOR SEAL

The firebox door seal must be in good condition to ensure an airtight seal. If the outdoor furnace is operated with the door open or ajar, the firebox door seal may become damaged or brittle due to excessive temperatures. If replacement is necessary, use the following procedure:

⚠ WARNING

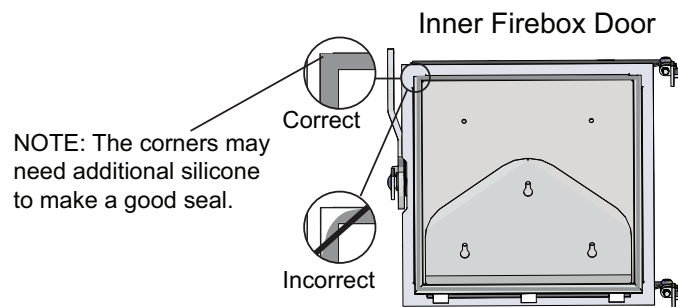
Remove all wood, coals and ash from the firebox.

1. Disconnect power to the outdoor furnace.

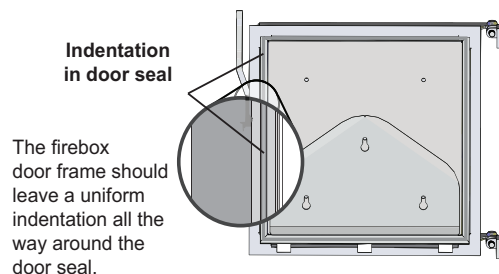
⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while testing components (i.e., use lock out, tag out).

2. Using a scraper, remove the firebox door seal on the inner side of the firebox door and clean any remaining silicone adhesive from the groove. Any residue left in the groove will interfere with the new door seal.
3. Apply a liberal amount of silicone sealant into the entire firebox door seal groove.
4. Starting at the center of the hinge side of the firebox door, insert the new door seal into the groove, pressing it firmly into the bead of silicone sealant. Make sure the seal is not stretched as it is pressed into the corners. Force the seal out to fill in the corners as shown.



5. Scrape the face and surface area of the door frame to remove any deposits.
6. Close the firebox door. Make sure that pressure is felt as the latch is closed to ensure the seal is tight with the door frame.
7. Open the firebox door and check that there is an impression in the seal from the door frame. This mark must extend, with no gaps, around the entire perimeter of the firebox door seal. If needed, adjust the hinges and latch assembly.



⚠ CAUTION

The firebox door seal will be damaged or destroyed if it is not installed properly.

REACTION CHAMBER DOOR SEAL

The Reaction Chamber door seal must be in good condition to ensure an airtight seal. If replacement is necessary due to the Reaction Chamber door seal becoming damaged or brittle, use the following procedure:

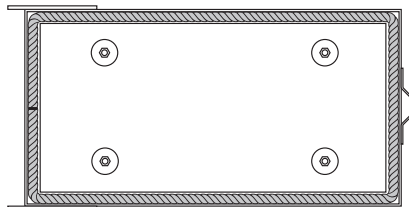
1. Disconnect power to the furnace.
2. Unlatch and open the Reaction Chamber door.
3. Use the maintenance tool to pull the ash to the front of the furnace; then use a small shovel to remove all of the ash and deposits from the Reaction Chamber. Take care not to damage the temperature sensor.

⚠ WARNING

Remove all ash from the Reaction Chamber.

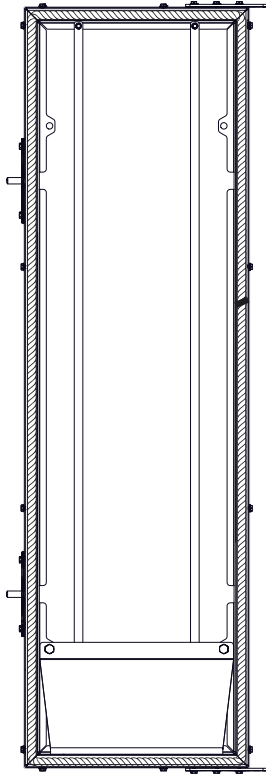
4. Using a scraper, remove the Reaction Chamber door seal rope and clean any remaining silicone adhesive from the groove. Any residue left in the groove will interfere with the new seal.
5. Apply a liberal amount of silicone sealant into the entire Reaction Chamber door seal groove.
6. Starting at the center of the hinge side of the Reaction Chamber door, insert the new door seal rope into the groove, pressing it firmly into the bead of silicone sealant. Make sure the Reaction Chamber door seal rope is not stretched as it is pressed into the corners. Force the Reaction Chamber door seal rope out to fill in the corners as shown.

**Reaction Chamber
Door**




7. When the seal has been pressed into the groove all the way around the Reaction Chamber door, cut the end of the rope about one inch longer than required and press it tightly against the beginning end of the rope.
8. Close the Reaction Chamber door and secure the latch.

Heat Exchanger Door Seal Rope



HEAT EXCHANGER DOOR SEAL

The heat exchanger door seal must be in good condition to ensure an airtight seal. If replacement is necessary due to the door seal becoming damaged or brittle, use the following procedure:

1. Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

2. Remove the heat exchanger access cover from the back of the furnace.
3. Carefully undo both latches on the heat exchanger door; then slowly open the door making sure to stand clear of the opening.

CAUTION

Open the heat exchanger door slowly and stand off to the side when opening it.

4. Using a scraper, remove the heat exchanger door seal rope and clean any remaining silicone adhesive from the groove. Any residue left in the groove will interfere with the new seal.
5. Apply a liberal amount of silicone sealant into the entire heat exchanger door seal groove.
6. Starting at the center of the hinge side of the heat exchanger door, insert the new door seal rope into the groove, pressing it firmly into the bead of silicone sealant. Make sure the door seal rope is not stretched as it is pressed into the corners. Force the door seal rope out to fill in the corners as shown.
7. When the seal has been pressed into the groove all the way around the heat exchanger door, cut the end of the rope about one inch longer than required and press it tightly against the beginning end of the rope.
8. Close the heat exchanger door and secure with latches. Install and secure the heat exchanger access cover.

CIRCUIT BREAKER

The circuit breaker is located in the pump access area and also serves as the furnace disconnect. If the circuit breaker trips (turns off), reset it by turning it on. If the circuit breaker continues to trip, a component may be faulty. It is possible to isolate a faulty component using the following procedure.

1. Disconnect power to the outdoor furnace.

WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while testing components (i.e., use lock out, tag out).

2. Remove the airbox access cover; then open the airbox door.
3. Disconnect the actuator motor harness and disconnect the fan harness.
4. To test for a faulty component, connect one component at a time (e.g., start with one of the actuator motors); then connect power to the outdoor furnace. If the circuit breaker trips, the component is likely faulty. If not, disconnect power to the outdoor furnace and repeat the procedure until all components have been tested.

CAUTION

Disconnect power to the outdoor furnace before disconnecting a component and before connecting a component.

5. Close and secure the airbox door. Install the airbox access cover.

DANGER

Do not connect power or operate the outdoor furnace with the outer airbox cover removed. The outer airbox cover must be installed and secured with screws.

AIRBOX SEAL

Replace the airbox seal if it becomes damaged or worn to maintain proper operation of the furnace. See your WoodMaster dealer for replacement seals.

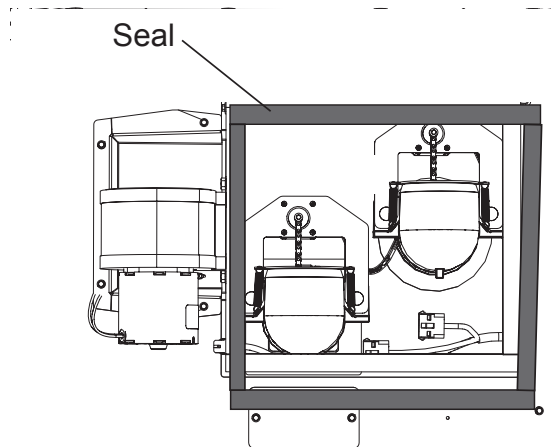
NOTE: It is best to replace the entire seal. Over time, the seal will compress, and replacing it in sections may result in the old sections not sealing completely against the airbox door.

1. Disconnect power to the outdoor furnace.

⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while replacing the airbox seal.

2. Remove the airbox access cover; then open the airbox door. Using a scraper or similar tool, scrape off the existing seal from the airbox.
3. Clean off any remaining adhesive residue with alcohol or a suitable solvent.
4. Measure and cut replacement seal.

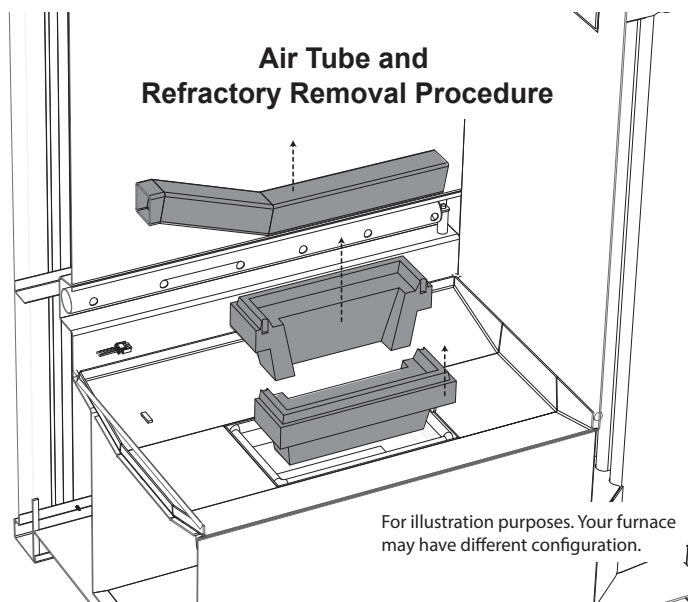


5. Remove the adhesive backing from the replacement seal and carefully apply the seal to the airbox as shown, making sure there are no gaps.
6. Close the airbox door and turn the furnace back on.
7. After the fan has started, use your hand to feel around the edges of the airbox door to check for leaks. A little air leakage, especially around the latches, is normal. If an excessive amount of air is felt, turn off the furnace; then check and repair/replace the seal if necessary.
8. Install the airbox access cover.

AIR TUBE AND REFRACTORY MODULES

⚠ WARNING

Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly before replacing the air tube and/or refractory.



1. Remove the air tube by lifting it up and sliding it toward the back of the outdoor furnace.
2. Remove the rope gasket; then remove the existing refractory modules.
3. Ensure the area where the new refractory modules will be installed is clean and free of all debris. Install the new refractory modules; then install a new rope gasket on top of the refractory modules.
4. Install the new air tube by placing it in the opening at the front of the outdoor furnace as shown; then pull it toward the front of the outdoor furnace to secure it in place making sure the alignment pin fits into the alignment hole in the refractory modules.

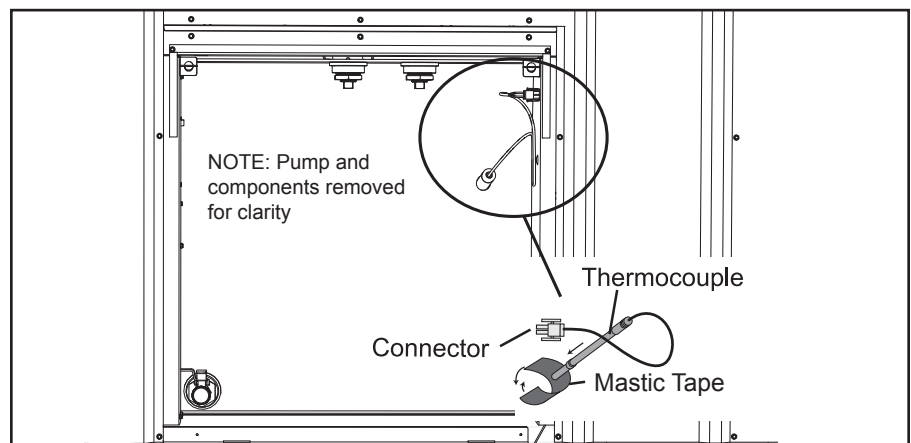
THERMOCOUPLE

1. Disconnect power to the outdoor furnace.

⚠ WARNING

Do not proceed without testing that power is disconnected. Make sure the power cannot be reconnected while replacing the thermocouple.


2. Remove the pump access cover.
3. Disconnect the thermocouple connector; then remove the mastic tape from the thermocouple.
4. Remove the thermocouple.
5. Install the new thermocouple until the stop collar contacts the thermocouple tube.



6. Secure the thermocouple with the mastic tape; then connect the thermocouple connector.
7. Install the pump access cover; then connect power to the furnace.

HEAT EXCHANGER DOOR INSULATION

NOTE: Insulation for the heat exchanger door is not standard fiberglass insulation. Use only the correct insulation when replacing or damage could occur. Contact your WoodMaster dealer for replacement insulation.

1. Press the **Power**  button on the FireStar combustion controller to turn it off.
2. Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly.

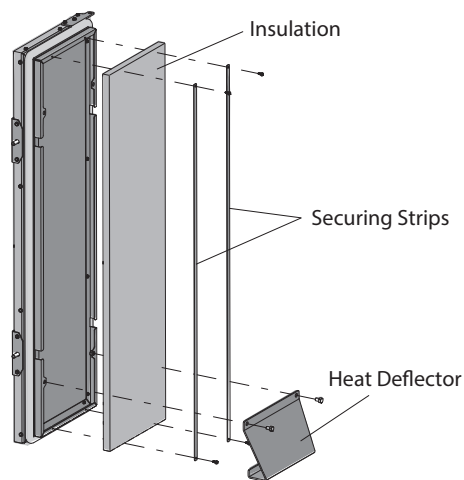
WARNING

Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly before replacing the heat exchanger door insulation.

3. Remove the heat exchanger access cover from the back of the furnace.
4. Carefully undo both latches on the heat exchanger door; then slowly open the door making sure to stand clear of the opening.

CAUTION

Open the heat exchanger door slowly and stand off to the side when opening it.



5. Swing the door open far enough to gain access to the inside of the door.
6. Wearing proper protective gear, use a brush or small broom to clean off any accumulated ash from the inside of the door.

7. Remove the heat deflector from the bottom of the door.
8. Remove the hardware and securing strips.
9. Carefully remove the insulation paying close attention to how the insulation is installed in the door and tucked into the edges of the door. This will aid in installation of the new insulation.
10. Before installing the new insulation, place it over the opening to make sure it is the correct size.
11. Place the new insulation inside the heat exchanger door with the reflective side facing out (toward you). Be careful not to tear the reflective material. Ensure that the edges of the new insulation are tucked into the edges of the door.
12. Install the securing strips. It may be necessary to adjust the insulation being careful not to tear it, after the securing strips are installed.
13. Install the heat deflector.
14. Check the insulation again to ensure that it is properly secured and attached to the inside of the heat exchanger door.
15. Carefully close and latch the heat exchanger door.

NOTE: The first few times the heat exchanger door is opened and closed after installing new insulation, it could seem more difficult to secure the latches. This is normal and once the insulation settles, securing the latches will be easier.

16. Install the heat exchanger access cover.


HEAT EXCHANGER ACCESS COVER INSULATION

NOTE: Be sure to check the temperature range for the spray adhesive. It may be necessary to replace the heat exchanger access cover insulation indoors to allow it to cure properly.

1. Remove the heat exchanger access cover from the back of the furnace.
2. Lay the cover on a piece of cardboard on a flat surface; then, wearing proper protective equipment, use a scraper to remove the insulation and any adhesive from the cover.
3. Test fit the new piece of insulation.
4. Using a good quality spray adhesive, follow the instructions on the can and apply the necessary amount to the inside of the cover.
5. Install the insulation in the cover, pressing down in multiple spots to ensure complete contact with the adhesive. Make sure the insulation is tucked all the way into the top of the cover.
6. Leave the cover on the flat surface until the adhesive cures according to the adhesive manufacturer's instructions.

7. After the adhesive has cured, check to ensure the insulation has properly bonded to the cover; then install the heat exchanger access cover on the furnace.

COMBUSTION AIR TUBE / FRONT AIR CHANNEL

Press the **Power**  button on the FireStar combustion controller to turn it off.

CAUTION

Be sure to turn off the FireStar combustion controller before doing this procedure.

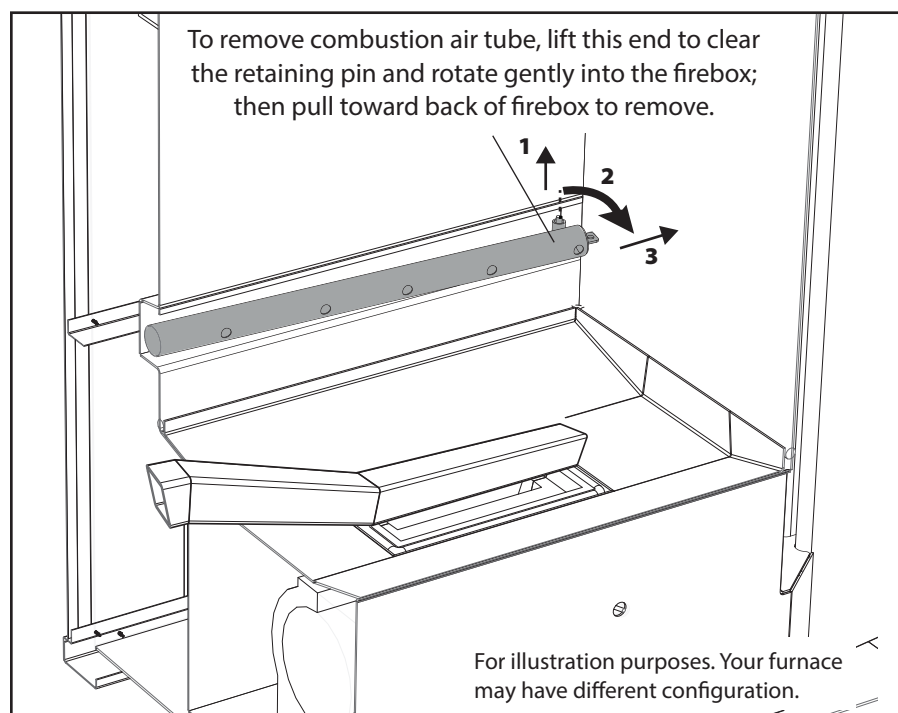
WARNING

Remove all wood, coals and ash from the firebox and allow the firebox to cool thoroughly before working inside the firebox.

Combustion Air Tube

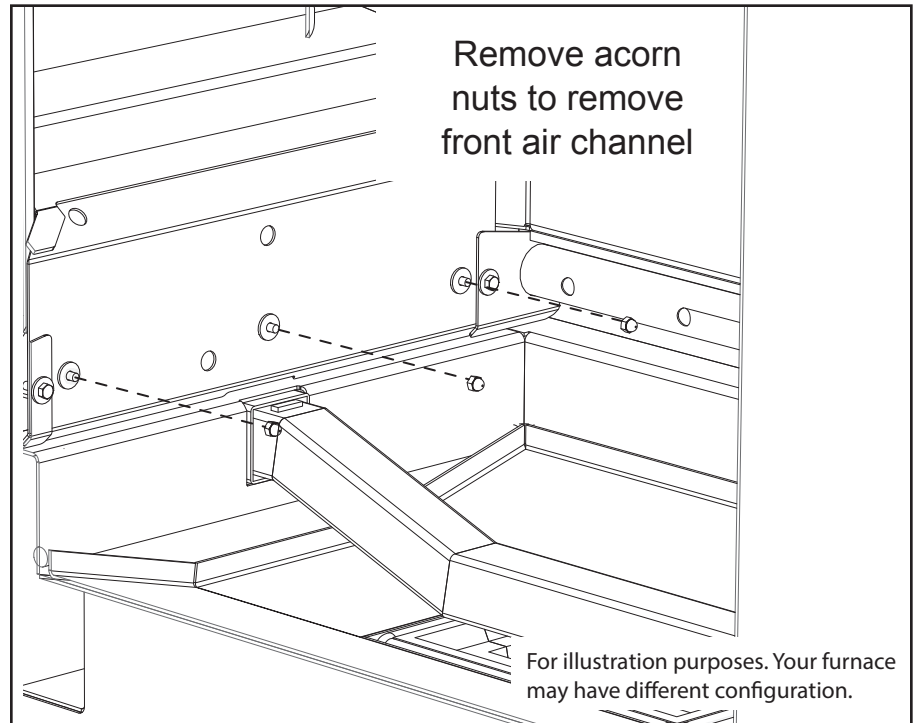
1. Lift the end of the tube closest to the back of the firebox up off of the retaining pin, then in and toward the back of the firebox. Install by reversing this procedure.

NOTE: If there is a large amount of buildup on the exterior of the combustion air tube, it may be necessary to first remove the buildup to make removal easier.



Front Air Channel

1. Remove the acorn nuts securing the front air channel and remove. Remove any ash or deposits from behind the air channel in the wall of the firebox.

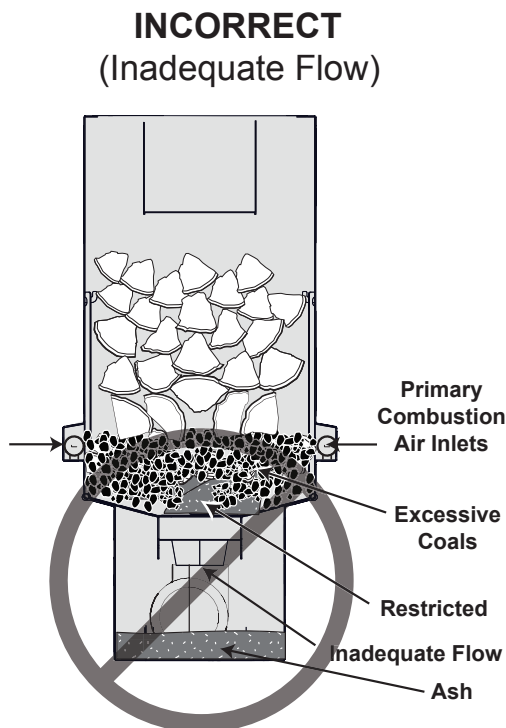


2. Install the new air channel. Apply a high-temperature, anti-seize compound to the stud threads; then secure with the acorn nuts and tighten securely.

TROUBLESHOOTING

GENERAL TROUBLESHOOTING INFORMATION

If the outdoor furnace is not operating the way it should, first review the information found in the Operation Instructions section, particularly the Adding Wood section.

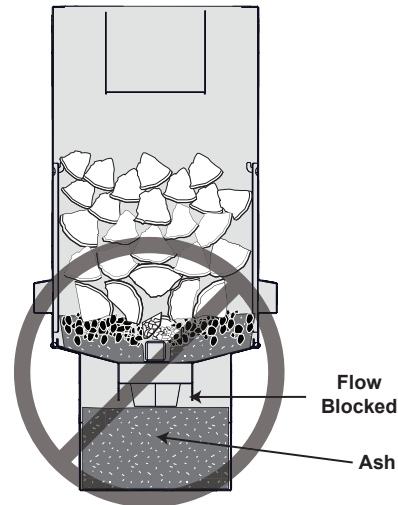


Is the Reaction Chamber full of ash?

The Reaction Chamber is where final combustion occurs. It is important that the Reaction Chamber remain unobstructed to allow final combustion to occur. It is not designed to be an ash collection area, although over time ash will gradually accumulate in the Reaction Chamber.

If ash builds up in the Reaction Chamber to a level that obstructs flow, the performance of the outdoor furnace will be affected, so the ash must be removed. A good rule is to clean the Reaction Chamber before it becomes 1/2 full (approximately 5" or 13 cm deep in any area of the Reaction Chamber).

INCORRECT (Blocked Flow)



Are the air inlets plugged?

Primary combustion air is provided through the combustion air inlets in the firebox. If the air inlets are restricted or plugged, the furnace will not operate correctly. If it appears the combustion air inlets are plugged or restricted, refer to the Maintenance Sections for the Combustion Air Tubes and Air Tube and Refractory. If after cleaning each combustion air inlet, air flow is still blocked, inspect the primary combustion air elbow. Refer to the Maintenance Section for Primary Air Elbow.

NOTE: If there is creosote buildup in the primary air elbow, it is caused by operating the furnace incorrectly. It is important to follow the recommended operation and maintenance procedures (see Adding Wood section).

Is there creosote and/or ash inside the airbox?

Creosote, ash, or even coals in the airbox is an indication that the outdoor furnace has not been maintained and/or operated properly. Especially important to the operation and efficiency of the outdoor furnace is unrestricted air flow throughout the entire system. Refer to Adding Wood for a detailed explanation of how to operate and maintain your CleanFire.

One or more combustion air inlets are covered - If the level of coals and ash in the firebox is allowed to accumulate over the combustion air inlets, normal air flow can be blocked and could force coals and ash back into the airbox. Remove enough ash so the combustion air inlets are not covered. Review the Adding Wood section for more information.

TROUBLESHOOTING OTHER SITUATIONS

A. OUTDOOR FURNACE IS NOT OPERATING CORRECTLY

Review the information in the Adding Wood section, starting at step 5.

1. **Out of wood** - Add wood as necessary. Use correctly sized, seasoned wood.
2. **Area directly below the charge tube or Combustor obstructed** - Inspect and clean as required.
3. **Combustion air inlets obstructed** - Clean as required to prevent the combustion air inlets from being obstructed.
4. **Combustion air fan obstructed or not running** - Check the screen over the fan inlet and the inside of the fan for any obstructions.
5. **Airbox leaking** - The airbox cover must be properly secured. Determine the cause and correct.
6. **Primary air actuator motor closed** - If the primary air actuator motor is not operating properly, determine the cause and correct.
7. **Reaction Chamber, heat exchanger or the chimney plugged** - If the Reaction Chamber, heat exchanger or chimney are plugged, determine the cause and correct.
8. **Door open** - If the display on the controller indicates Door Open, close the firebox door. Make sure the firebox door is properly latched and check the condition of the firebox door seal. If it is not sealing properly (indicated by a uniform indentation), replace the seal.
9. **Low water** - If the display on the controller indicates Low Water, the system senses a low water condition. Check the water level at the sight gauge and, if necessary, add water according to the Water Quality and Maintenance section. If adding water does not correct the problem, contact your WoodMaster dealer.

NOTE: If water needs to be added, it is very important to identify the cause of water loss and correct immediately. A leaky system or overheating commonly leads to dilution of the corrosion inhibitor and water jacket corrosion.

10. **Low water temperature for too long a period of time** - The display on the controller will indicate Fire Out and the controller will shut down the furnace if the water temperature has been too low for too long. Determine the cause of the water temperature being too low.
11. **Alarm condition** - Refer to the FireStar Combustion Controller Operation Manual.
12. **Chimney not drafting properly** - Draft is the force which moves air from the appliance up through the chimney. The amount of draft in your chimney depends on the length of the chimney, local geography, nearby obstructions and other factors. Draft occurs when the temperature in the chimney is high enough to cause a negative pressure that "pulls" the exhaust up and out the chimney.

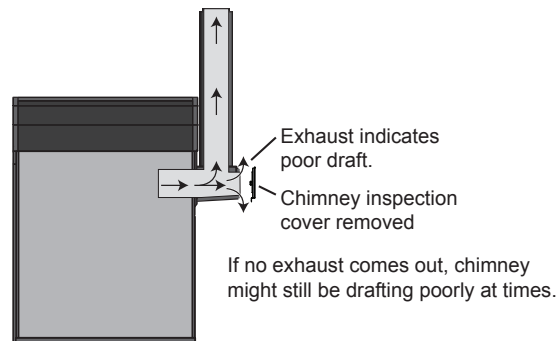
Proper draft is necessary for the CleanFire to operate optimally. Too much draft may cause excessive temperatures in the appliance. Inadequate draft may cause backpuffing and plugging of the chimney.

If poor draft is suspected, perform the following test: with the outdoor furnace and chimney at normal operating temperature, loosen the chimney inspection cover and pull it back about an inch. If exhaust comes out from around the cover, pressure in the chimney may be incorrect and adding more chimney sections may be required. However, due to many variables, even if exhaust does not come out from around the cover, the chimney might still not be drafting properly at all times. Due to a number of variables, poor draft can be an intermittent problem.

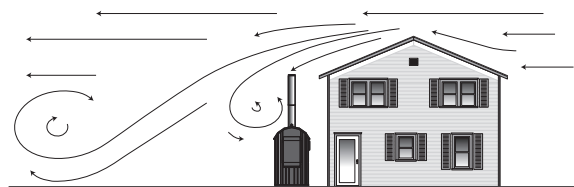
NOTE: A qualified installer may perform the following test to check for proper draft. Before performing the test, the outdoor furnace should be completely cleaned to ensure nothing obstructs exhaust flow through the system. Fire the furnace and allow it to reach normal operating temperature before performing the test.

- Drill a hole in the chimney inspection cover; then with the outdoor furnace and chimney at normal operating temperature, use a manometer to check draft. If flue draft is less than -0.05 in. WC (-12.45 Pa) add more chimney sections.
- After the test, fill the hole in the chimney inspection cover with high-temp silicone.

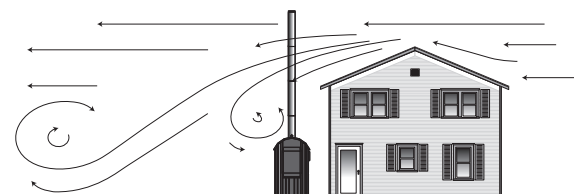
Perform test with bypass closed at normal operating temperature.



- If a spark arrestor is being used, make sure it is clean and unobstructed.
- Objects like buildings and trees in close proximity or nearby terrain (e.g., hills, valleys, etc.) can adversely affect air flow in the chimney. Adding chimney sections may overcome these factors.



May cause poor draft.



Allows for better draft.

B. FIRE GOES OUT OR KEEPS GOING OUT

Review the information in the Adding Wood section, starting at step 5.

C. BUILDING IS LOSING TEMPERATURE

Review the information in the Adding Wood section, starting at step 5.

1. **Circulation valve(s) closed** - Be sure the proper valves in the system are open to allow circulation.
2. **Circuit breaker off** - If there is a circuit breaker that supplies power to the outdoor furnace, check that it is on.
3. **Circuit breaker off** - Check that the circuit breaker switch (located in the pump compartment) is on. If the circuit breaker has tripped, determine the cause before resetting it.
4. **Circulation pump(s) not operating** - Check that circulation pumps are operating. If not, disconnect power to the pump. Close valves at the pump. Disassemble the pump and try to turn the pump shaft. If the shaft is stuck, replace the pump cartridge. Replace only the cartridge whenever possible. If necessary, replace the pump. Follow instructions supplied with the pump.
5. **Air in system** - Check for air in the water lines or heat exchangers. If you hear a gurgling sound in a heat exchanger, air is present in the system. Shut off the pump, wait 15 seconds and start the pump. If it is necessary to force air from lines, refer to Initial Start-up Procedures.
6. **Building(s) poorly insulated or uninsulated** - Poorly insulated or uninsulated buildings, buildings with uninsulated or poorly insulated ceilings, or a lack of proper insulation under radiant flooring can cause excessive fuel consumption and or heating problems.
7. **Supply and return lines installed incorrectly** - Make sure the hot supply line is connected to the correct fitting on the outdoor furnace and heat exchanger.

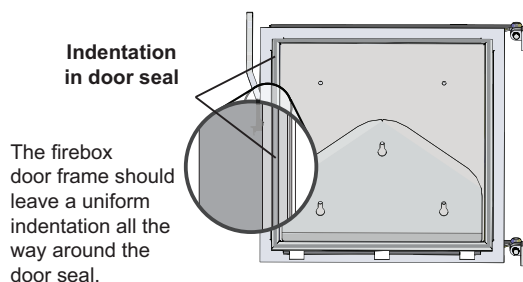
8. **Circulation pump(s) installed backwards** - Check that pump flow direction is correct. If not, shut off power to pump. If the flow is not in the correct direction, disconnect pump from water line and reverse pump mounting to correct flow direction. If the pump is not mounted on the outdoor furnace, check for proper pump mounting location.
9. **Underground supply and return lines insulated poorly** - Heat loss from poorly insulated underground supply and return lines is often indicated by an unusually high amount of snow melting above the lines when the ground temperature is 10° F (-12°C) or colder.
10. **Supply and return lines uninsulated** - Uninsulated supply and return lines in areas that are not intended to be heated (unheated crawl spaces, under mobile homes, etc.) may cause excessive heat loss. Insulate the supply and return lines.
12. **Poor water quality** - Water with high amounts of solids, sand or dirt can create deposits inside the wall of heat exchanger components, reducing the amount of heat output. If this condition is suspected, contact your WoodMaster dealer.
13. **New construction with radiant in-floor heat** - Bringing a cold concrete slab up to temperature the first time will take a considerable amount of time and wood; once warm, wood consumption will be reduced if the concrete slab and building are insulated properly.
14. **Heat load too large** - Re-evaluate the system and match heat load to the outdoor furnace.

D. SMOKE COMING FROM BETWEEN FIREBOX DOOR AND FRONT OF THE DOOR FRAME

1. **Door seal faulty or door frame obstructed** - If there is smoke coming from between the firebox door and the front of the door frame for more than a short time after reloading, scrape the face and surface area of the door frame to remove any deposits. Check the condition of the firebox door seal and replace if necessary.
2. **Door hinges and/or latch need adjusting** - Adjust the hinges and/or latch bearing.

E. OUTDOOR FURNACE IS OVERHEATING

1. **Air entering through the firebox door or smoke coming out of the firebox door when the door is closed** - Make sure the firebox door is properly latched and check the condition of the firebox door seal. If it is not sealing properly (indicated by a uniform indentation), replace the seal. If firebox door does not close tightly, adjust using the appropriate procedure (see Owner Serviceable Items).



NOTE: If the outdoor furnace is operated with the door open, the firebox door seal may be damaged.

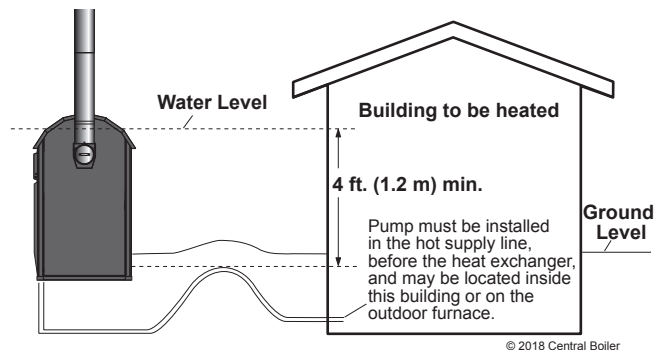
2. **Actuator motor and/or air regulating disc stuck open or obstructed** - Remove any obstructions. Lubricate the chain with a high temperature dry film lubricant rated for chains. Be careful not to get lubricant on the actuator motor or motor shaft. If replacement is necessary, refer to Air Regulating Disc Gaps for the factory settings for the air regulating discs.

NOTE: If the outdoor furnace loses water from boiling, the problem should be identified and repaired immediately. Under normal operation, little or no water needs to be added. Adding water to the furnace may cause corrosion if not immediately treated with MolyArmor 350. In addition, the amount of dissolved solids in the system (due to adding additional water) can cause problems.

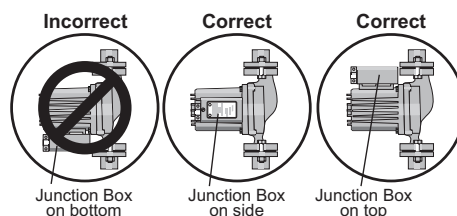
3. **Water is not circulating** - Check to make sure the pump is operating and water is circulating continuously through the supply and return lines to keep water temperature uniform in the outdoor furnace.
4. **Circulation valve(s) closed** - Be sure the proper valves in the system are open to allow circulation.
5. **Pulse set to run too long and/or too often in a low heat draw situation** - Increase the time between idle pulses of air and/or decrease the amount of time the pulse is provided (see FireStar operating instructions).
6. **FireStar combustion controller set incorrectly** - Refer to FireStar Combustion Controller Operation Manual.

F. FREQUENT PUMP TROUBLE OR POOR WATER CIRCULATION

1. **Pump mounted incorrectly** - If the pump is not mounted on the outdoor furnace, it must be mounted at a minimum of four feet lower than the top water level in the outdoor furnace.



Make sure the pump motor is installed in a horizontal position. The junction box must not be located below the pump motor. If necessary, remove the four screws and rotate the pump body.



2. **Water will not circulate** - If the system has been drained and refilled, or if the system has been opened for any reason (e.g., replacement of pump, adding heat exchangers, repairing a leak), the system must be purged (see Initial Start-up Procedures).
3. **Poor water quality** - Water with high amounts of solids, sand or dirt can cause frequent pump failure. Use softened and/or filtered water.
4. **Deposits in water lines/heat exchanger walls** - If water high in silica or other mineral content has been used, material deposits may build up on the insides of the supply and return lines and on the heat exchanger walls. If this occurs, the system will need to be drained and then cleaned using Sludge Conditioner (p/n 166). The system must then be refilled with the proper amount of MolyArmor 350 (p/n 2900631) and fresh water.

G. BURNING AN EXCESSIVE AMOUNT OF WOOD

1. **High volume water heating** - High volume water heating (e.g., car wash, swimming pool, etc.) will require high wood consumption.
2. **Excessive heat loss** - See items 6-10 of Building is Losing Temperature.
3. **Supply and return line heat loss** - If not using ThermoPEX, supply and return lines buried in a wet, low-lying area may cause a large heat loss that will greatly increase wood consumption.
4. **High heat demand** - Concrete slabs (with radiant heat) that are poorly insulated or are exposed to water or cold outside temperatures will require increased wood consumption (see Hydronic Installations section). Bringing a cold concrete slab up to temperature the first time will take a considerable amount of time and wood; once warm, wood consumption will be reduced if the concrete slab and building are insulated properly. The following will also have a high heat demand: poorly insulated buildings, buildings with large amounts of glass windows/doors, buildings with overhead doors, greenhouses, uninsulated crawl spaces, outdoor air infiltration and air leaking through foundation.

H. VISIBLE EXHAUST COMING FROM CHIMNEY

Review the information in the Adding Wood section, starting at step 5.

There are conditions related to outside temperatures, humidity, fuel moisture, burn rate and other factors that can cause steam to be visible in the exhaust plume of combustion equipment, whether it is wood, gas or oil.

Seeing a white exhaust plume with moisture present is normal under many conditions and is not suggestive of poor combustion or high emissions.

Opacity is the amount of light which is blocked in an exhaust plume. It is a measurement that is usually stated as a percentage. For example, an opacity of 0% means that all light passes through while an opacity of 100% means that no light can pass through. Opacity measurements give an indication of the concentration of particles in an exhaust plume.

To read opacity correctly, observations should be made only when:

- The sun is shining and behind you,
- You are at least three times the distance of the chimney height away from the furnace, and
- The plume is traveling perpendicular to your position.

The observation should be conducted looking at the point of the plume where condensed water vapor (steam) is not present. Do not observe the plume itself but rather look through it at a contrasting background (such as green leaves or trees). There are many other important factors as well.

The amount of visible emissions can be reduced by burning seasoned wood, by making sure that your chimney meets the recommendations in this owner's manual and by loading the firebox to match your heat load. Once the water content of the wood has evaporated, the emissions become very transparent.

1. **Too much ash in firebox** - Refer to Routine Maintenance for ash removal.

I. CORROSION IS PRESENT - CALL DEALER

NOTE: To reduce condensation in the firebox, it is not recommended to set the temperature below 185°F (85°C).

1. **Burning garbage or plastic** - Do not burn garbage or plastic. It is likely unlawful and may damage the firebox in a very short period of time.

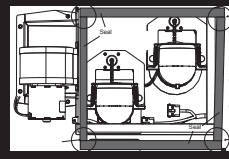
NOTE: Chloride or sulfurous gases can be generated if plastic or rubber is burned and will mix with the moisture from the wood to form hydrochloric or sulfuric acids in the firebox, creating corrosion.

2. **Firebox wasn't cleaned out at the end of the heating season** - Be sure to follow the post-heating season maintenance schedule which includes scraping out firebox and removing all ash.
3. **Cleaning rod not run through ash bed prior to loading wood** - It is important that you push the cleaning rod back and forth through the ash bed each time prior to loading wood to allow air flow and prevent the ashes from accumulating moisture. See Operating Instructions for more details.

GENERAL INFORMATION

Make note of these precautionary statements, also found on the outdoor furnace.

NOTICE




Refer to Owner's Manual in regards to stepper motor operation. This is essential to maintaining proper and efficient operation of the furnace.

Inspect seals for any damage or gaps. Pay close attention to corners and any location where one seal meets another, as a good seal is crucial for proper furnace operation. Refer to the Owner's Manual for instructions on how to replace a defective seal.

*Airbox illustration for reference only. Actual setup and component location may differ from your specific model. Refer to your Owner's Manual for more details.

pin 7000245


CAUTION



Temperature Sensor

Take care not to damage the temperature sensor when removing ash.

ATTENTION



Capteur de température

Prenez soin de ne pas endommager le capteur de température lorsque vous enlevez les cendres.

NOTICE


Chimney pipe and all extensions must be insulated.

CAUTION

HOT Surfaces

Do NOT Touch During Operation

NOTICE



Firebox Door Frame

Use the tools provided to completely scrape the face of the firebox door frame where the door seal contacts.

Keep the combustion air inlet and exhaust pathway open and clear of ash to allow the furnace to operate properly.

pin 700033 Rev. 6

REMARQUE

Coupez l'alimentation électrique avant d'enlever ce panneau.

ATTENTION

Surfaces BRÛLANTES

NE touchez PAS pendant le fonctionnement

pin 7000246

AVIS

Pour réarmer le disjoncteur, amenez l'interrupteur sur ARRÊT puis sur MARCHÉ.

pin 7000249

WARNING

Disconnect power before removing this panel.

AVERTISSEMENT

Coupez l'alimentation électrique avant d'enlever ce panneau.

pin 7000248

NOTICE

For use with aluminum or copper conductors.

REMARQUE

Pour utilisation avec des conducteurs en aluminium ou en cuivre.

pin 7000251

WARNING

AVOID DAMAGE!

BEFORE operating this appliance read manual and watch videos for proper operation and maintenance procedures.

Damage or decreased life expectancy of appliance could result if appliance is not properly operated or maintained.

pin 7000268

WARNING

Risk of fire. Do not store fuel or other combustible materials within marked clearances to combustibles. Do not cover supply and return lines with combustible materials.

AVERTISSEMENT

Risque d'incendie. Ne stockez pas de carburant ou autres matériaux combustibles à l'intérieur du périmètre de sécurité indiqué. Ne recouvrez pas les conduites d'alimentation et de retour avec des matériaux combustibles.

pin 7000245

NOTICE

During a cold start, a considerable amount of moisture from condensation will collect inside the firebox and Reaction Chamber. This is normal and the moisture will evaporate when the outdoor furnace reaches operating temperature.

REMARQUE

Lors d'un démarrage à froid, une importante quantité d'humidité de condensation s'accumule à l'intérieur du foyer et de la chambre de réaction. Ce phénomène est normal et l'humidité s'évaporera lorsque la chaudière extérieure aura atteint sa température de service.

pin 7000269

CAUTION

ANY TIME WATER IS ADDED, the furnace MUST BE immediately heated to 185°F, circulated, and the inhibitor level tested. FAILURE TO DO SO WILL RESULT IN DAMAGE to your furnace's water jacket!

Carefully follow the steps in your Owner's Manual for adding water and testing inhibitor levels.

pin 7000277

NOTICE

Initially inspect the heat exchangers weekly, and clean as needed, until you can determine the frequency of cleaning based on your application.

Refer to the Owner's Manual for cleaning procedures.

pin 7000276

WARNING

Turn off Furnace Power Disconnect before opening this panel. Furnace Power Disconnect located on side of furnace under the pump panel. Do not operate furnace with this panel removed.

AVERTISSEMENT

Avant d'ouvrir ce panneau, arrêtez le commutateur de coupure électrique de la chaudière. Ce commutateur est situé sur le côté de la chaudière sous le panneau de la pompe. Ne pas faire fonctionner la chaudière à bois extérieur avec ce panneau retiré.

pin 7000281

CAUTION

Failure to perform proper care and maintenance will reduce the life and performance of your furnace. For best results, always follow these guidelines:

1. Add water treatment before filling with water.
2. Burn properly seasoned wood.
3. Do not burn anything other than the recommended fuels.
4. Clean and inspect the furnace regularly.
5. Do not operate with the water temperature below 150°F (66°C).
6. Maintain the recommended water treatment levels at all times.
7. Clean the firebox thoroughly and keep it dry when not in use.
8. See Owner's Manual for more information about regularly scheduled maintenance.

DO NOT BURN GARBAGE

Burning garbage causes damage to components of wood burning appliances.

HPBA

Refer to your Owner's Manual

WARNING

Risk of fire.

- DO NOT operate with flue draft exceeding 0.050 in. water column (12.480 Pa).
- DO NOT use chemicals to start fire.
- DO NOT burn garbage, gasoline, fuel oils, or other flammable liquids or materials.
- DO NOT operate with fuel loading or ash-removal doors open.
- DO NOT store fuel or other combustible materials within marked installation clearances.
- Inspect and clean flues and chimney regularly.
- For safety, open bypass door 15 seconds before opening the firebox door and do not operate the furnace with the firebox door unlatched.
- Operating the furnace with the firebox door unlatched may lead to a runaway fire. In the event of a runaway fire or immediately after tending to the fire, latch the firebox door and wait 15 seconds before closing the bypass door to purge the firebox.
- DO NOT leave furnace unattended with the firebox door unlatched.
- DO NOT install or operate furnace before first reading and understanding the Owner's Manual.
- DO NOT allow others to install or operate furnace without first reading and understanding the Owner's Manual.

WARNING

Risk of fire. Do not open the Reaction Chamber door when appliance is in operation. Do not leave Reaction Chamber door open unattended.

AVERTISSEMENT

Risque d'incendie. N'ouvrez pas la porte de la chambre de réaction lorsque l'appareil est en marche. Ne laissez pas la porte de la chambre de réaction ouverte sans surveillance.

pin 7000281

ATTENTION!

Remove the Owner's Manual and read it before operating furnace. If you have any questions, contact your dealer.

BURN RESPONSIBLY

Preserve Your Right to Burn Wood

- Before installing, ALWAYS consider the direction that the chimney exhaust will travel with prevailing winds.
- BEFORE operating, the furnace must be installed with adequate chimney height. If there is a residence not served by the furnace within 300 feet (91.5 meters), the chimney must be 2 feet (0.6 meters) higher than the peak of the residence it serves. If there is a residence not served by the furnace within 100 feet (30.5 meters), the chimney must be 2 feet (0.6 meters) higher than the peak of the residence served or not served, whichever is higher.
- Proper chimney height will aid in dispersing the chimney exhaust. Chimney height may need to be greater than the above minimum requirements. The outdoor wood furnace must be installed in accordance with the manufacturer's recommendations and/or in accordance to all applicable codes and regulations, whichever is more stringent. Refer to your Owner's Manual.
- ONLY burn the proper fuels specified.
- DO NOT create a nuisance. Be certain your chimney exhaust is not adversely affecting neighbors. Creating a nuisance may affect your right to burn wood. If any issue with chimney exhaust arises, take immediate action to solve the issue.
- It's been said that lighting a fire can be more of an art than a science. You may need to try various techniques to achieve best results. Many factors can have a significant effect such as size of wood, moisture content, wood storage, etc. Over time, you will become familiar with your particular conditions. This will allow you to identify cause and effect in a variety of circumstances and what works best for your conditions.

Protect your right to heat with wood. Careless operation may result in a loss of your rights.

pin 7000282 Rev. 6

AVERTISSEMENT

Risque d'incendie.

- N'UTILISEZ PAS l'appareil si le tirage dépasse de 0.050 pouce la colonne d'eau (12.480 Pa).
- N'utilisez PAS de produits chimiques pour allumer la machine.
- Ne brûlez PAS de déchets, d'essence, d'huile de vidange ni d'autres liquides ou matériaux inflammables.
- NE faites PAS fonctionner la chaudière avec la porte de chargement du combustible ou celle d'enlèvement des cendres ouverte.
- NE stockez PAS de carburant ou autres matériaux combustibles à l'intérieur du périmètre de sécurité indiqué.
- Inspectez et nettoyez périodiquement les carnaux et la cheminée.
- Pour des raisons de sécurité, couvrez la porte de dérivation quinze secondes avant d'ouvrir la porte du foyer. Ne faites pas fonctionner la chaudière avec la porte du foyer déverrouillée.
- Si la chaudière fonctionne avec un feu de cheminée risque de se déclencher. Si un feu de cheminée survient ou immédiatement après avoir éteint le feu, verrouillez la porte du foyer et attendez quinze secondes avant de fermer la porte de dérivation pour purger le foyer.
- Ne laissez PAS la chaudière sans surveillance lorsque la porte du foyer est déverrouillée.
- N'installez PAS et n'utilisez PAS la chaudière avant de lire et de comprendre le manuel du propriétaire.
- N'autorisez PAS d'autres personnes à installer et utiliser la chaudière avant de lire et de comprendre le manuel du propriétaire.

pin 7000222

CAUTION

- DO NOT start fire until water level is full.
- Keep face away from door area.
- Hot surfaces.
- Keep children away.
- DO NOT touch during operation.
- DO NOT burn treated wood, plastics or rubber in the furnace.
- Maximum draft marked on the nameplate.
- ALWAYS comply with all applicable codes and regulations.
- ALWAYS take care when adding wood to the furnace to prevent hot coals from spilling out.
- ALWAYS store ashes in a covered non-combustible container.

CAUTION

Do not plug, block or seal vent opening. Sealing can result in a dangerous buildup of pressure.

ATTENTION

Ne pas bloquer, obturer ou sceller l'ouverture du conduit d'évacuation. Sceller l'ouverture pourrait entraîner une augmentation dangereuse de la pression.

pin 7000283

CAUTION

Watch your head.

pin 6956

ATTENTION

NE démarrez PAS le feu avant de faire le plein d'eau.

- Éloignez votre visage de la porte.
- Surfaces brûlantes.
- Éloignez les enfants.
- NE touchez PAS pendant l'utilisation.
- NE brûlez PAS de bois traité, de plastique ou de caoutchouc dans la chaudière.
- Le tirage maximal est indiqué sur la plaque signalétique.
- Respectez TOUJOURS l'ensemble des réglementations et recommandations applicables.
- Procédez TOUJOURS avec précaution lorsque vous ajoutez du bois dans la chaudière pour éviter de faire tomber des braises à l'extérieur.
- Stockez TOUJOURS les cendres dans un récipient non combustible et couvert.

pin 7000223

CAUTION

15 seconds before opening firebox door, lift and push handle toward back of furnace to open bypass door.

15 seconds after closing firebox door, pull handle toward front of furnace and push down to close bypass door.

ATTENTION

Quinze secondes avant d'ouvrir la porte du foyer, soulevez la poignée en appuyant vers l'arrière de la chaudière.

Quinze secondes après avoir fermé la porte du foyer, tirez la poignée en tirant la poignée en direction de l'avant de la chaudière puis en la poussant vers le bas.

pin 7000273

CAUTION

DO NOT disable the door switch, as it serves as a safety and reset function.

ATTENTION

Ni déconnecter PAS l'interrupteur de porte car il sert de fonction de sécurité et de réinitialisation.

pin 7000284

MAINTENANCE SCHEDULE

DAILY
Check water level. Remove ashes as needed.

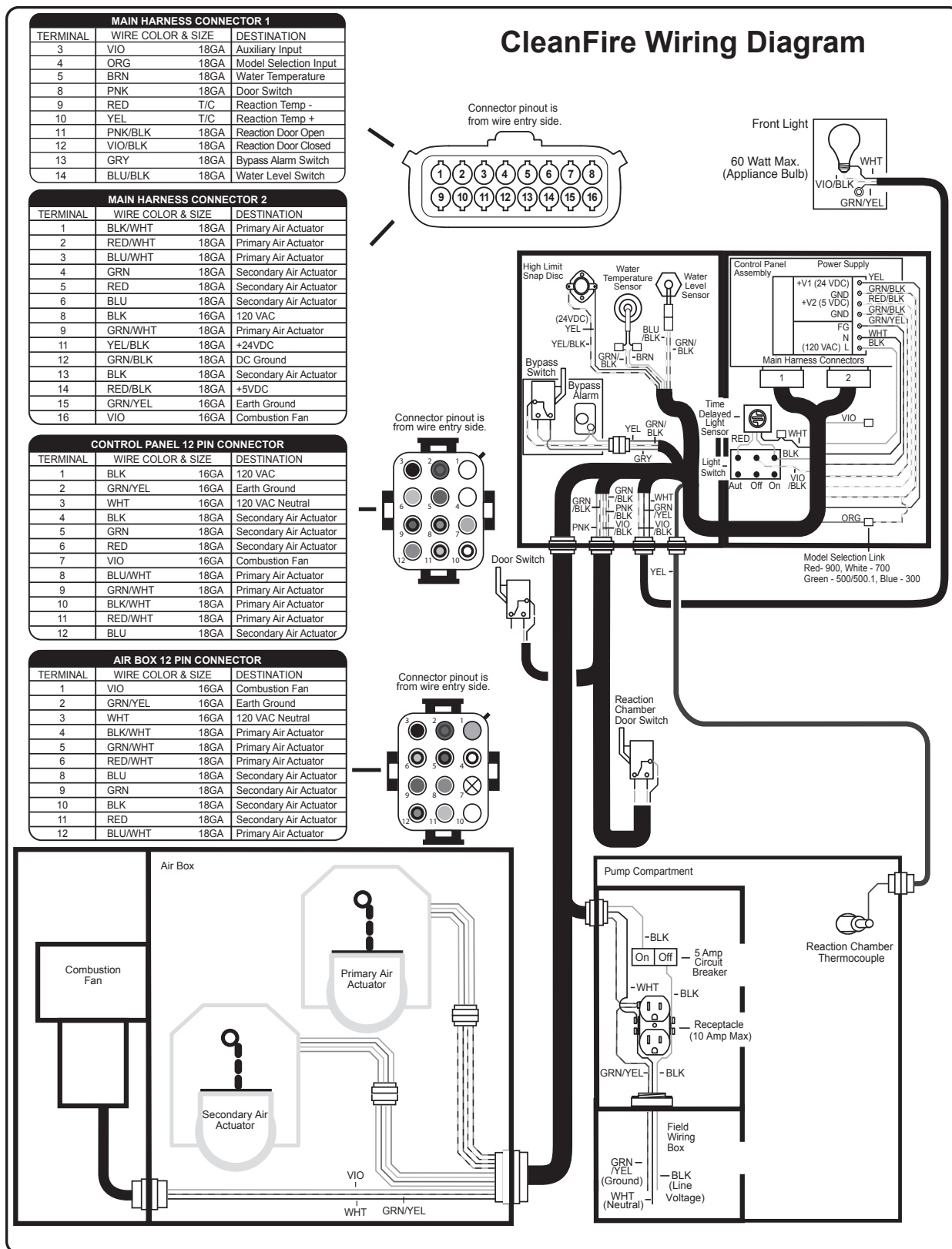
MONTHLY
Check door seal, chimney and vent cap. Remove ashes and clean the firebox. Inspect and clean the heat exchanger and Reaction Chamber.

SEMIANNUALLY
Completely remove ashes from the firebox. Inspect and scrape the firebox. Inspect and clean the heat exchanger and Reaction Chamber. This inspection should also be performed after the first and third months of operation. Use a wire brush and small scraper to clean firebox, side walls, back wall and ash pan.

READ OWNER'S MANUAL FOR COMPLETE INSTRUCTIONS

pin 7000284 Rev. 6

WIRING DIAGRAM



NOTES

NOTES

LIMITED WARRANTY - CLEANFIRE MODELS

WoodMaster, Inc. ("WoodMaster") warrants to the original owner, except (a) parts manufactured by others and excluded from warranty coverage below; and (b) parts or items specified below as covered by a limited one-year warranty, WoodMaster CleanFire Titanium Series furnaces against defects in workmanship and against corrosion failure of the firebox/water jacket assembly for a period of TWENTY-FIVE (25) YEARS from the date of original retail purchase, provided that the Limited Warranty Registration Form is completed and sent to WoodMaster within seven (7) days of the original owner taking possession of the furnace and the original owner strictly complies with the instructions for maintenance and corrosion inhibitor contained in the Owner's Manual; otherwise this Limited Warranty shall be for a period of ONE (1) YEAR from the date of manufacture or one year from original retail purchase, if proof of purchase date can be provided.

If a failure of a warranty-covered part occurs that is caused by a defect in workmanship or corrosion, at its option, WoodMaster will (1) repair or replace (using new or refurbished replacement parts) the defective or failed part based on the date of original retail purchase at the following prorated scale:

First – Fifth year: Parts and labor will be covered at 100%
Sixth year: Parts will be covered at 70%
Seventh year: Parts will be covered at 60%
Eighth year: Parts will be covered at 50%
Ninth year: Parts will be covered at 40%
Tenth – Twentieth year: Parts will be covered at 15%
Twenty-first – Twenty-fifth: Parts will be covered at 10%

(2) exchange the furnace with a comparable model furnace that is new or which has been manufactured from new or serviceable used parts and is at least functionally equivalent to the original furnace, or (3) provide a discount off the retail purchase price of a new WoodMaster furnace of comparable model based on the pro-rated scale: Years 1-5 100%, years 6-7 at 50%, years 8-10 at 40%, years 11-15 at 30% and years 16-25 at 10%. A replacement furnace/part assumes the remaining warranty of the original furnace/part or ninety (90) days from the date of replacement or repair, whichever provides longer coverage. If a furnace or part is qualified for replacement under the provisions of this limited warranty, at WoodMaster's discretion, the furnace or part may be required to be returned to WoodMaster for inspection and recycling or disposal.

Because maintaining the corrosion inhibitor at a proper level is imperative to preventing corrosion failures, to qualify for the 25-year warranty the operator must comply with the instructions in the owner's manual for maintenance and corrosion inhibitor and send a furnace water sample when the furnace is initially put into service and once each year thereafter to confirm proper maintenance and corrosion inhibitor. No warranty claim can be approved unless the furnace registration and the required water test verifications are on file at WoodMaster.

Parts Manufactured By Others. Parts that are factory-installed by WoodMaster, but are manufactured by others, may be covered by their own manufacturer's warranty and are not covered by this limited warranty, except the FireStar® combustion controller on the CleanFire Titanium Series furnace is warranted against defects in workmanship for a period of two (2) years from the date of original retail purchase, provided that the Limited Warranty Registration Form is completed and sent to WoodMaster within seven (7) days of the original owner taking possession of the furnace; otherwise, this limited warranty shall be for a period of ONE (1) YEAR from the date of original retail purchase. This limited warranty covers the controller part only; service calls, mileage, and labor to diagnose the problem and install a new part are not covered.

Parts Covered by a Limited One Year Warranty. The following parts are covered by a limited warranty for workmanship defects for one year: gaskets, seals, heat shields, paint, air charge tube, firebox ash pan, combustors, aquastats, actuators, heat refractory, firebrick, air channels, combustion air tubes, turbulators, chimney sections, and chimney tee. This limited warranty covers the part only; service calls, mileage, and labor to diagnose the problem and install a new part are not covered.

EXCLUSIONS AND LIMITATIONS - This Limited Warranty applies only to WoodMaster CleanFire Titanium Series outdoor furnaces. This limited warranty covers only those defects or corrosion failures that arise as a result of normal use of the outdoor furnace and does not cover any other defects or problems, including those that arise as a result of: (a) improper maintenance (b) operation outside the furnace's specifications (see owner's manual), accident, abuse, misuse, misapplication, or parts that are not factory-installed; (c) service performed by anyone other than WoodMaster unless authorized by WoodMaster in writing; (d) modifications undertaken without the written permission of WoodMaster; or (e) if any WoodMaster serial number has been removed or defaced. This limited corrosion warranty will be void if the owner fails to maintain the proper amount of MolyArmor 350 Corrosion Inhibitor in the system, fails to send water samples to WoodMaster as required, or burns materials in the firebox other than natural wood. This limited warranty excludes the cost of shipping, labor to remove or reinstall the furnace, plumbing labor and/or parts and the cost of alternative heat if the furnace is out of service for repairs. Warranty excludes replacement of water, inhibitors or other additives, and parts used in the system whether or not mounted on the furnace, such as pumps, valves, and piping.

WoodMaster is not liable for damage or repairs required as a consequence of faulty installations or applications by others or any event of force majeure. WoodMaster is not liable for incidents or accidents which can be prevented by the owner or that occur from the operation of the outdoor furnace. A backup heating system should be in place to prevent damage in case of failure to refuel the outdoor furnace or in the event that mechanical failure of the outdoor furnace or system occurs. Heat replacement representations found in WoodMaster promotional information should be used only as a guideline. Heat loss for all applications with all weather extremes and other heat variables must be considered when sizing an outdoor furnace for different applications.

THIS LIMITED WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. WOODMASTER SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF WOODMASTER CANNOT LAWFULLY DISCLAIM IMPLIED WARRANTIES UNDER THIS LIMITED WARRANTY, ALL SUCH WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. No WoodMaster dealer or employee is authorized to make any modification, extension, or addition to this limited warranty. WOODMASTER IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages or exclusions or limitations on the duration of implied warranties or conditions, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary by state or province.

OBTAINING WARRANTY SERVICE - To obtain warranty service, contact the WoodMaster dealer from whom you purchased your furnace or contact WoodMaster by telephone (800-932-3629) or mail (600 Polk Ave. SW, Red Lake Falls, MN 56750). Please provide the dealer's name, original date of sale, model number and serial number in all communications. WoodMaster reserves the right to require the warranty service to be performed at a WoodMaster facility when deemed necessary by WoodMaster. All corrosion repairs will be performed at WoodMaster unless authorized by WoodMaster in writing.

Design Changes. WoodMaster reserves the right to change and improve the product design for improved performance without assuming responsibility to upgrade previously sold products.

8. Quality Assurance / Quality Control

8.1 OMNI's Quality Statement

OMNI's Testing capabilities and Evaluation credentials are covered under the requirements of ISO/IEC Standards, which are utilized by the recognized ILAC Accreditation Agencies to ensure that OMNI's services maintain quality and consistency. This includes the appliance Data/Results (associated with the Construction Evaluation and Performance Evaluation), which are summarized in this specific Report, and are maintained through diligent adherence to the accreditation standards. The Testing, Data Evaluation, Document Review, and Evaluation Report are all conducted and adhere to the system and process/procedures requirements of ISO/IEC 17025, as well as the those set forth by each agency's own program guidelines.

Along with the ISO/IEC 17025 and accreditation agency requirements, OMNI incorporates its own procedures and company policies. These are reviewed (at minimum) on an annual basis, through both internal and external audits of OMNI's Quality Management System. A short list of agencies that accredit OMNI for approval to conduct the scope of services provided, please read the list below.

OMNI's scope of accreditation includes (but is not limited to), the following agencies:

- **International Accreditation Service, Inc. (IAS):** Approved to Test and complete an Evaluation of specified appliances (covered in OMNI's scope of testing certificate) to confirm compliance with performance standard criteria and (ID #TL-130). Also approved for Certification of United States products to the applicable U.S. safety standards (ID #PCA-156) and Inspection/Surveillance of those products (ID #AA-706).
- **Standards Council of Canada (SCC):** Approved for Certification of Canadian products to Canadian safety standards.
- **EPA Recognition and Approval:** Approved under 40 CFR 60 by the United States EPA as a Test Lab, 3rd Party Certification Body, and an Inspection agency.

If this Evaluation Report is used in an appliance's Certification, an Initial Factory Audit will need to be completed before a Certification can be issued (this may be waived after a client's first Certification has been completed and the client has maintained their Listings in good standing). If the appliance covered in this Report is Certified and Listed on OMNI's Public Listing Directory (PLD), then this Report may be used as a reference document to conduct the annual Quality Control and Product Inspections, which is required to maintain the appliance Listing. If discrepancies are found between the appliance and the information in this Report during the annual inspections, and the owner(s) of the Listing appliance fails to produce evidence or data to resolve said discrepancies, especially in cases that may jeopardize an end-user's safety, then OMNI reserves the right to revoke the appliance Listing.

8.2 - Manufacturer's Quality Assurance Plan (QAP) - CBI Report Only

8.3 Equipment and Calibrations

Equipment List

Item No.	Eq. No.	Description	Cal Date	Cal Due
1	OMNI-00335	Dry Gas Meter System A (Train A)	8/21/2024	2/21/2025
2	OMNI-00336	Dry Gas Meter System B (Train B)	8/21/2024	2/21/2025
3	OMNI-00371	Dry Gas Meter System C (First Hour)	8/21/2024	2/21/2025
4	OMNI-00372	Dry Gas Meter System D (Background)	8/26/2024	2/26/2025
5	OMNI-00742	Moisture Meter, Delmhorst model J-2000	VBU ¹	
6	OMNI-00431	Moisture Meter Reference, Delmhorst model MCS-1	10/18/2024	10/18/2025
7	OMNI-00353	Scale, 150 kg, for fuel preparation	8/10/2023	8/10/2028
8	OMNI-00730	Tape Measure, Fuel Preparation	11/18/2024	11/18/2025
9	OMNI-00715	Barometer, Digital	7/2/2024	1/2/2025
10	OMNI-00737	Anemometer, Hot-Wire type, for room air velocity	11/7/2024	11/7/2025
11	OMNI-00211	DAQ 6-1/2 digit DMM, Keithley 2700 for RTDs and flow sensor	VBU ²	
12	OMNI - 00373	Thermocouple Calibrator / Thermometer, Omega CL24	11/7/2024	11/7/2025
13	OMNI-00494	Liquid Flow Meter, Omega model FTB 4607	VBU ³	
14	OMNI-00439	Stopwatch	3/11/2023	3/11/2028
15	OMNI-00356	Platform Scale, 5000 lb.	9/7/2023	8/25/2025
16	OMNI-00132	Class F audit weight, 10 Lb. (1 of 3)	2/15/2023	2/15/2028
17	OMNI-00255	Class F audit weight, 10 Lb. (2 of 3)	7/6/2021	7/6/2026
18	OMNI-00274	Class F audit weight, 10 Lb. (3 of 3)	4/7/2023	4/7/2028
19	OMNI-00743	Manometer, 0-2" H2O, Dwyer model 1430 "microtector"	3/22/2024	3/22/2025
20	OMNI-00715	Humidity/Temperature Meter (for room humidity)	7/2/2024	1/2/2025
21	OMNI-00637	Analytical Balance, Mettler model MS104TS, 200g	8/26/2024	2/26/2025
22	OMNI-00283A	Class F Audit Weights, 0.2 - 100 grams	10/24/2023	10/24/2028
23	OMNI-00273	Class F Audit Weights, 0.100 grams	9/10/2024	9/10/2029
24	OMNI-00709	Hygrometer/Thermometer, desiccator	3/6/2023	3/6/2028
25	OMNI-00745	Scale, 150 kg, used for water flow checks	9/25/2024	8/1/2025
26	OMNI-00594	Flue gas analyzer, CAI model ZRE-4, CO2%, CO%, CO ppm	VBU ⁴	
27	CC738144	Span Gas, 16.88% CO2, 4.05% CO	6/20/2023	6/20/2031
28	CC305741	Span Gas, 500 ppm CO	6/6/2023	6/1/2028
29	3AA2400G	Nitrogen (Zero Gas)		

VBU¹ - Verified Before Use using Item No. 6

VBU² - Verified before use using boiling water and ice water and Item No. 7

VBU³ - Verified before use using Scale (item 25) and stopwatch (item 14). Also verified at beginning and ending of each test run.

VBU⁴ - Calibrated and verified before use using Items 27, 28 and 29

SCALE WEIGHT CALIBRATION DATA SHEET

Weight to be calibrated: 10 lbs
ID Number: OMNI-00132
Reference Standard Weight: 10 lbs
ID Number: OMNI-00255
Scale Used: MTW-150K
ID Number: OMNI-00353
Date: 02/15/2023 By: Tony Tong

Standard Weight (A) (Lb.)	Weight Verified (B) (Lb.)	Difference (A – B)	Error (%)
10.0	10.0	0.0	0.0

Acceptable tolerance is 1%.

This calibration is traceable to NIST using calibrated standard weight.

Technician signature: Tony Tong

Date: 02/15/2023

Certificate of Calibration

Certificate Number: 749605



JJ Calibrations, Inc.

7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 210356

Order Date: 05/28/2021

Authorized By: N/A



Calibrated on: 07/06/2021

*Recommended Due: 07/06/2026

Environment: 20 °C 52 % RH

* As Received: Within Tolerance

* As Returned: Within Tolerance

Action Taken: Calibrated

Technician: 126

Property #: OMNI-00255

User: N/A

Department: N/A

Make: Rice Lake

Model: 10 Lbs. (Class F)

Serial #: OMNI-00255

Description: Mass

Procedure: DCN 500901

Accuracy: Class F (± 450 mg)

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit.
Uncertainties include the effects of the unit.

This mass meets class F specifications.

Received/returned without accessories.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
256A	Rice Lake	W0133K	Mass Set,	09/18/2022	741788
484A	Rice Lake	1kg- 10kg (Class ASTM 1)	Mass Set,	07/02/2023	748551
550A	And (A&D) Co.	HP- 30K	Balance 30 Kg	12/31/2021	739307

Parameter

Measurement Data

Measurement Description	Range	Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After								Accredited = ✓
Mass								
10 Lbs.		g	4535.92400000	4535.47400000	4536.3740000	0.2288327	4536.1528327 g	3.5E-01 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to either the SI or to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by JCGM 106:2012. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without written approval of JJ Calibrations.

Reviewer

3 Issued 07/08/2021

Rev # 15

Inspector

Certificate of Calibration

Certificate Number: 821552



JJ Calibrations, Inc.
7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 240499
Order Date: 09/09/2024
Authorized By: N/A



Property #: OMNI-00273
User: N/A
Department: N/A
Make: Ohaus
Model: 100 mg
Serial #: OMNI-00273
Description: Mass
Procedure: DCN 500901
Accuracy: Class F ($\pm 0.43\text{mg}$)

Calibrated on: 09/10/2024
*Recommended Due: 09/10/2029
Environment: 21 °C 57 % RH
* As Received: Within Tolerance
* As Returned: Within Tolerance
Action Taken: Calibrated
Technician: 126

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit.
Uncertainties include the effects of the unit.

Received/returned with case.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
723A	Rice Lake	1mg- 200g (Class 0)	Mass Set,	12/12/2024	804865
801A	Sartorius	MSE6. 6S	Analytical Balance	01/08/2025	807470

Parameter		Measurement Data					UUT	Uncertainty
Measurement Description	Range Unit	Reference	Min	Max	*Error			
Before/After								Accredited = ✓
Mass								
Mass	mg	100.00000	99.5700	100.4300	0.0064		100.0064 mg	2.9E-02 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to the SI through an NMI such as but not limited to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NC SL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by ILAC G8:2019. A test uncertainty ratio (TUR) of 4:1, if achievable, is maintained. Where uncertainties are reported, see uncertainties to calculate TUR to determine your possible Risk. The results reported herein apply only to the calibration of the item described above. JJ Calibrations does not alter or update software of the UUT, version stays the same unless otherwise noted. This report may not be reproduced, except in full, without written approval of JJ Calibrations

Reviewer

3 Issued 09/10/2024 Rev # 15

Inspector

Certificate of Calibration

Certificate Number: 791395



JJ Calibrations, Inc.

7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 230427

Order Date: 03/30/2023

Authorized By: N/A



Property #: OMNI-00274

User: N/A

Department: N/A

Make: Rice Lake

Model: 10 Lbs. (Class F)

Serial #: OMNI-00274

Description: Mass

Procedure: DCN 500901

Accuracy: Class F ($\pm 450\text{mg}$)

Calibrated on: 04/07/2023

*Recommended Due: 04/07/2028

Environment: 20 °C 44 % RH

* As Received: Within Tolerance

* As Returned: Within Tolerance

Action Taken: Calibrated

Technician: 175

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit.
Uncertainties include the effects of the unit.

Received and returned with no case.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
550A	And (A&D) Co.	HP- 30K	Analytical Balance, 30Kg	02/07/2024	785492
92A	Rice Lake	1oz to 10 lbs (Class F)	Mass Set,	11/18/2023	759449

Parameter

Measurement Data

Measurement Description	Range Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After							Accredited = ✓
Mass							
10 Lbs.	g	4535.9240	4535.474	4536.374	0.324	4535.600 g	3.6E-01 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to either the SI or to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by JCGM 106:2012. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without written approval of JJ Calibrations.

Reviewer

3 Issued 04/07/2023

Rev # 15

Inspector

Customer: OMNI-TEST LABORATORIES INC
13327 NE AIRPORT WAY
PORTLAND, OR 97230

PO Number: 230453



Certificate/SO Number: 19-E6W3O-20-1 Revision 0

Manufacturer: Troemner/Talboys
Model Number: 100 g - 200 mg
Description: Weight Set, 8 Pcs, Class F
Serial Number: 47883
ID: OMNI-00283A

As-Found: In Tolerance
As-Left: In Tolerance

Issue Date: Oct 24, 2023
Calibration Date: Oct 24, 2023
Due Date: Oct 24, 2028

Calibrated To: Manufacturer Specification
Calibration Procedure: 6-AC11601-3

88

Transcat Calibration Laboratories have been audited and found in compliance with ISO/IEC 17025:2017. Accredited calibrations performed within the Lab Scope of Accreditation are indicated by the presence of the Accrediting Body Logo and Certificate Number. Any measurements on an accredited calibration not covered by the Lab Scope of Accreditation are listed in the notes section of the certificate. SCC, NRC, CLAS or ANAB do not guarantee the accuracy of an individual calibration by accredited laboratories.

Transcat calibrations, as applicable, are performed in compliance with the requirements of the Transcat Quality Manual QAC-P01-000, the customer Purchase Order and/or Quality Agreement requirements, ISO 9001:2015, ANSI/NCSL Z540.1-1994 (R2002), and ISO 10012:2003, as applicable. When specified contractually, the requirements of ISO TS16949:2009, 10CFR21, 10CFR50 App. B, ASME NQA-1:2012, and ANSI/NCSL Z540.3-2006 (R2013) are also covered.

Complete records of work performed are maintained by Transcat and are available for inspection. Laboratory standards used in the performance of this calibration are listed on this certificate.

Transcat documents the traceability of measurements to the SI units through the National Institute of Standards and Technology (NIST), or the National Research Council of Canada (NRC), or other national measurement institutes (NMI) that are signatories to the CIPM Mutual Recognition Arrangement, or accepted fundamental and/or natural physical constants, or by the use of specified methods, consensus standards or ratio type measurements. Documentation supporting traceability information is available for review upon written request at a Transcat facility. The measured quantity and the measurement uncertainty are required for further dissemination of traceability.

Uncertainties are reported with a coverage factor $k=2$, providing a level of confidence of approximately 95%. All calibrations have been performed using processes having a TUR of 4:1 or better (3:1 for mass calibrations), unless otherwise noted. The Test Uncertainty Ratio (TUR) is calculated in accordance with NCSL International RP-18. For mass calibrations: Conventional mass referenced to 8.0 g/cm³.

The results in this report relate only to the item calibrated or tested. Recorded calibration data is valid at the time of calibration within the stated uncertainties at the environmental conditions noted. The determination of compliance to the specification is specific to the model/serial no./ID no. referenced above based on the tolerances shown; these tolerances are either the original equipment manufacturer's (OEM's) warranted specifications or the client's requested specifications. Any number of factors can cause a unit to drift out of tolerance at any time following its calibration. Limitations on the uses of this instrument are detailed in the OEM's operating instructions. This certificate may not be reproduced except in full, without the written approval of Transcat. Additional information, if applicable may be included on separate report(s).



Customer: OMNI-TEST LABORATORIES INC
13327 NE AIRPORT WAY
PORTLAND, OR 97230

PO Number: 230453

Certificate/SO Number: 19-E6W3O-20-1 Revision 0

As Found/As Left Data

Description	Setpoints	Accuracy	Low Limit	High Limit	As Found / As Left	O T	Cal Process O T	Measurement Uncertainty (k=2; ±)	Units	TUR
Test Environment Ambient Temperature - W1										
Ambient Temperature					20.000 °C					
Test Environment Ambient Relative Humidity - W1										
Relative Humidity					40.00 %RH					
Test Environment Barometric Pressure - W1										
Barometric Pressure					29.751 "Hg@0°C					
Mass Measurement - W1	100.0000g	±(0.02 g)	99.9800	100.0200	99.9982 g		0.00025	0.00025	g	80.0 : 1
Mass Measurement - W2	50.0000g	±(0.01 g)	49.9900	50.0100	49.9994 g		0.00015	0.00015	g	66.7 : 1
Mass Measurement - W3	20.0000g	±(0.004 g)	19.9960	20.0040	20.0010 g		0.000087	0.000087	g	46.0 : 1
Mass Measurement - W4	10.0000g	±(0.002 g)	9.9980	10.0020	9.9998 g		0.000062	0.000062	g	32.3 : 1
Mass Measurement - W5	5.000000g	±(0.001501 g)	4.998499	5.001501	4.999870 g		0.000045	0.000045	g	33.4 : 1
Mass Measurement - W6	2.000000g	±(0.001122 g)	1.998878	2.001122	2.000407 g		0.000032	0.000032	g	35.1 : 1
Mass Measurement - W7	1.00000g	±(0.0009 g)	0.99910	1.00090	1.00011 g		0.000025	0.000025	g	36.0 : 1
Mass Measurement - W8	200.0000mg	±(0.5395 mg)	199.4605	200.5395	200.0602 mg		0.0047	0.0047	mg	100.0 : 1

CALIBRATED BY **TRANSCAT** CERTIFICATE OF CALIBRATION

Customer: OMNI-TEST LABORATORIES INC
13327 NE AIRPORT WAY
PORTLAND, OR 97230

PO Number: 230453

Certificate/SO Number: 19-E6W3O-20-1 Revision 0



Field not applicable.

Customer: OMNI-TEST LABORATORIES INC
13327 NE AIRPORT WAY
PORTLAND, OR 97230

PO Number: 230453



Certificate/SO Number: 19-E6W30-20-1 Revision 0

Traceable Standards

Asset	Manufacturer	Model Number	Description	Cal Date	Due Date	Traceability Number	Use
19-321	Fluke	2626-H	Hygro-Thermometer, Probe,	31-May-23	31-Mar-24	19-&19-321-22-1	AF/AL
19-Mass3	Transcat	Echelon III	Transfer Mass Standard Set	23-Oct-23	23-Nov-23	19-&19-Mass3-99-1	AF/AL
19-P100	Troemner	7210-1	Weight Set, 5 kg to 1 g, Class 1	4-Oct-23	31-Oct-24	19-&19-P100-19-1	AF/AL
19-P126	Druck Inc.	DPI 740 (22 to 34 inHg)	Barometer	22-Mar-23	31-Mar-24	19-&19-P126-17-1	AF/AL
19-P129	Mettler Toledo	XPE2004SC	Comparator Balance	25-Oct-22	31-Oct-23	19-&19-P129-15-1	AF/AL
19-P142	Mettler Toledo	UMX5	Micro Balance	25-Oct-22	31-Oct-23	19-&19-P142-13-1	AF/AL

The use of the standard is defined as: AF - used for as-found readings, AL - used for as-left readings.

Environmental Data

Temperature	Relative Humidity	Temp / RH Asset	Lab Area	Lab Description
68.80°F /20.44°C	40.20%	19-321	E2C	Echelon II (10 kg)

Decision Rule

When compliance statements are present, they are reported without factoring in the effects of uncertainty and comply with the guidelines as follows: The acceptance zone is defined as: less than or equal to the high limit, and/or greater than or equal to the low limit. The rejection zones are defined as greater than the high limit and/or less than the low limit. Single measurement results in the acceptance zone are identified as in-tolerance. Single measurement results in the rejection zone are identified as out-of-tolerance (OOT). When all measurement results are in the acceptance zone for repeated measurements, for the same characteristic, the test is identified as in-tolerance. For repeated characteristic measurements, a single measurement result in the rejection zone, will cause the test to be identified as out-of-tolerance (OOT). Data rejection for cause, (outliers) is permitted after the acceptance Determining and Verifying Out Of Tolerance(OOT) and/or Op Fail Readings procedure outlined in this document has been completed and the anomalous reading cannot be repeated, and the anomalous reading does not represent the system under test. Statements of conformity are binary.



Customer: OMNI-TEST LABORATORIES INC
13327 NE AIRPORT WAY
PORTLAND, OR 97230

PO Number: 230453

Certificate/SO Number: 19-E6W3O-20-1 Revision 0

Legend

Topic	Description
Accuracy	UUT specification that establishes expected tolerances and a time limit (calibration interval) over which the instrument is expected to hold these tolerances
As Found	Initial measurement results
As Left	Measurement results after adjustment and/or repair
Blank Data Field	Test is not applicable for the UUT
Cal Process Uncertainty (CPU)	The uncertainty of calibration process for the reported measurement result
Calibration Date	Indicates the date that the calibration was completed
Cover Factor (k)	A measure of uncertainty that defines an interval about the measurement result
Due Date	Indicates the end of the calibration cycle as requested by the customer
Issue Date	Indicates the date that the calibration has passed the Data Review Process and was signed by an authorized signatory or the date that a revision to the original certificate has been issued
Low / High Limits	Establishes UUT acceptable performance limits for the test measurement
Measurement Uncertainty	The dispersion of the values attributed to a measured quantity
OOA	Out of Acceptance (#)
OOT	Out of Tolerance (*)
Setpoints	Measurement target values
Traceability	Unbroken chain of comparisons relating an instrument's measurements to a known standard(s)
Traceability Number	Unique identifier(s) used to document traceability of calibration standards
TUR	Test Uncertainty Ratio, ratio of the tolerance or specification of the test measurement in relation to the uncertainty in measurement results
UUT	Unit Under test

Customer: OMNI-TEST LABORATORIES INC
13327 NE AIRPORT WAY
PORTLAND, OR 97230

PO Number: 230453



Certificate/SO Number: 19-E6W3O-20-1 Revision 0

Calibrated At:
1503 E Orangethorpe Ave
Fullerton, CA 92831

Facility Responsible:
1503 E Orangethorpe Ave
Fullerton, CA 92831
800-828-1470

Unit Barcode:
0900B531163

Date Received: October 13, 2023
Service Level: R9

Calibrated By:

Electronically Signed By:
Vianey Manriquez

Vianey Manriquez
Calibration Technician
Oct 24, 2023
07:33:18 -04:00

Reviewed By:

Electronically Signed By:
Cody Viers for

Mathew Bundy
Lab Manager
Oct 24, 2023
10:58:21 -04:00

Thermal Metering System Calibration

Y Factor

Manufacturer: Apex Instruments
 Model: XC-60-EP
 Serial Number: 606001
 OMNI Tracking No.: OMNI-00335
 Calibrated Orifice: ☐ Yes

Average Gas Meter y Factor
1.016

Orifice Meter dH@
N/A

Calibration Date: 08/21/24
 Calibrated by: Tony Tong
 Calibration Frequency: Six Month
 Next Calibration Due: 2/21/2025
 Instrument Range: 1.000 cfm
 Standard Temp.: 68 °F
 Standard Press.: 29.92 "Hg
 Barometric Press., Pb: 30.09 "Hg
 Signature/Date: Tony Tong 08/26/2024

Previous Calibration Comparison

Date	3/11/2024	Acceptable Deviation (5%)	Deviation
y Factor	1.015	0.05075	0.001
Acceptance	Acceptable		

Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.005
Acceptable dH@ Deviation	N/A
Maximum dH@ Deviation	N/A
Acceptance	Acceptable

Reference Standard *

Standard	Model	Standard Test Meter
Calibrator	S/N	OMNI-00330
	Calib. Date	01-May-24
	Calib. Value	1.0018 y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Reference Meter Pressure ("H2O), Pr	0.00	0.00	0.00
DGM Pressure ("H2O), Pd	2.00	1.27	1.00
Initial Reference Meter	193.935	199.838	205.39
Final Reference Meter	199.689	205.304	211.705
Initial DGM	0	0	0
Final DGM	5.7	5.45	6.354
Temp. Ref. Meter (°F), Tr	77.9	78.1	78.3
Temperature DGM (°F), Td	85.0	87.0	88.0
Time (min)	28.0	33.3	42.0
Net Volume Ref. Meter, Vr	5.754	5.466	6.315
Net Volume DGM, Vd	5.7	5.45	6.354
Gas Meter y Factor =	1.020	1.018	1.011
Gas Meter y Factor Deviation (from avg.)	0.003	0.002	0.005
Orifice dH@	N/A	N/A	N/A
Orifice dH@ Deviation (from avg.)	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|
- ** 2. $y = [V_r \times (y \text{ factor (ref)}) \times (P_b + (P_r / 13.6)) \times (T_d + 460)] / [V_d \times (P_b + (P_d / 13.6)) \times (T_r + 460)]$
- ** 3. $dH@ = 0.0317 \times P_d / (P_b (T_d + 460)) \times [(T_r + 460) \times \text{time}] / V_r]^2$

* Reference calibration is traceable to NIST through NIST Test # 40674, Kimble ASTM E1272, or NIST traceable laboratory

** Equations come from EPA Method 5

The uncertainty of measurement is $\pm 0.14 \text{ ft}^3/\text{min}$. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

DIFFERENTIAL PRESSURE GAUGE CALIBRATION DATA SHEETInstrument to be calibrated: Pressure Transducer(Draft)Maximum Range: 0 – 1" H₂OID Number: OMNI-00335Calibration Instrument: Digital ManometerID Number: OMNI-00633Date: 08/21/2024By: Tony Tong**This form is to be used only in conjunction with Standard Procedure C-SPC.**

Range of Calibration Point ("WC)	Digital Manometer Input ("WC)	Pressure Gauge Response ("WC)	Difference Input – Response	% Error of Full Span*
0-20% Max. Range 0.0 – 0.2	0.063	0.055	0.008	0.8
20-40% Max. Range 0.2 – 0.4	0.251	0.243	0.008	0.8
40-60% Max. Range 0.4 – 0.6	0.556	0.545	0.011	1.1
60-80% Max. Range 0.6 – 0.8	0.682	0.678	0.004	0.4
80-100% Max. Range 0.8 – 1.0	0.828	0.812	0.016	1.6

*Acceptable tolerance is 4%.

The uncertainty of measurement is ± 0.4 " WC. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.Technician signature: Tony TongDate: 08/26/2024

Reviewed by: _____

Date: _____

Temperature Calibration EPA Method 28 R, ASTM 2515							
Booth:		Temperature Monitor Type:				Equipment Number:	
E 1		National Instruments Logger				00335/00336	
Reference Meter Number: 00373					Calibration Due Date: 10/30/2024		
Calibration Performed By:			Date:	Ambient Temperature(F°):		Barometric Pressure(inHg):	
Tony Tong			08/15/2024	79		30.13	
Input Temp (°F)	Ambient	Meter A	Meter B	Filter A	Filter B	Tunnel	FB Interior
0	1	1	1	1	1	0	0
100	101	101	101	101	101	100	100
300	301	301	301	301	301	300	300
500	501	501	501	501	501	500	500
700	701	701	701	701	701	701	700
1000	1001	1001	1001	1001	1001	1001	1001
1500	1501	1501	1502	1501	1501	1501	1501
2000	2002	2002	2002	2002	2002	2002	2001

Input (°F)	FB Top	FB Bottom	FB Back	FB Left	FB Right	Imp A	Imp B	Cat	Stack
0	0	0	0	0	0	1	1	1	0
100	100	100	100	100	100	101	101	101	100
300	300	300	300	300	300	301	301	301	300
500	500	500	500	500	500	501	501	501	500
700	700	700	700	700	700	701	701	701	700
1000	1001	1001	1001	1001	1001	1001	1001	1001	1001
1500	1501	1501	1501	1501	1501	1501	1501	1501	1501
2000	2001	2001	2001	2001	2001	2002	2002	2002	2001

Technician Signature: Tony Tong Date: 08/26/2024

Reviewed By: _____ Date: _____

Thermal Metering System Calibration

Y Factor

Manufacturer: Apex Instruments
 Model: XC-60-EP
 Serial Number: 606001
 OMNI Tracking No.: OMNI-00336
 Calibrated Orifice: ☐ Yes

Average Gas Meter y Factor
1.009

Orifice Meter dH@
N/A

Calibration Date: 08/21/24
 Calibrated by: Tony Tong
 Calibration Frequency: Six Month
 Next Calibration Due: 2/21/2025
 Instrument Range: 1.000 cfm
 Standard Temp.: 68 °F
 Standard Press.: 29.92 "Hg
 Barometric Press., Pb: 30.09 "Hg
 Signature/Date: Tony Tong 08/26/2024

Previous Calibration Comparison

Date	3/11/2024	Acceptable Deviation (5%)	Deviation
y Factor	1.006	0.0503	0.003
Acceptance	Acceptable		

Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.005
Acceptable dH@ Deviation	N/A
Maximum dH@ Deviation	N/A
Acceptance	Acceptable

Reference Standard *		
Standard	Model	Standard Test Meter
Calibrator	S/N	OMNI-00330
	Calib. Date	01-May-24
	Calib. Value	1.0018 y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Reference Meter Pressure ("H2O), Pr	0.00	0.00	0.00
DGM Pressure ("H2O), Pd	1.82	0.95	0.70
Initial Reference Meter	212.623	218.678	224.028
Final Reference Meter	218.394	223.939	229.588
Initial DGM	0	0	0
Final DGM	5.743	5.305	5.635
Temp. Ref. Meter (°F), Tr	78.7	78.6	78.9
Temperature DGM (°F), Td	85.0	88.0	89.0
Time (min)	26.5	32.5	39.0
Net Volume Ref. Meter, Vr	5.771	5.261	5.560
Net Volume DGM, Vd	5.743	5.305	5.635
Gas Meter y Factor =	1.014	1.008	1.005
Gas Meter y Factor Deviation (from avg.)	0.005	0.001	0.004
Orifice dH@	N/A	N/A	N/A
Orifice dH@ Deviation (from avg.)	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|
- ** 2. $y = [V_r \times (y \text{ factor (ref)}) \times (P_b + (P_r / 13.6)) \times (T_d + 460)] / [V_d \times (P_b + (P_d / 13.6)) \times (T_r + 460)]$
- ** 3. $dH@ = 0.0317 \times P_d / (P_b (T_d + 460)) \times [(T_r + 460) \times \text{time}] / V_r]^2$

* Reference calibration is traceable to NIST through NIST Test # 40674, Kimble ASTM E1272, or NIST traceable laboratory

** Equations come from EPA Method 5

The uncertainty of measurement is $\pm 0.14 \text{ ft}^3/\text{min}$. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

DIFFERENTIAL PRESSURE GAUGE CALIBRATION DATA SHEETInstrument to be calibrated: Pressure Transducer(dP)Maximum Range: 0 – 1" H₂OID Number: OMNI-00336Calibration Instrument: Digital ManometerID Number: OMNI-00633Date: 08/21/2024By: Tony Tong**This form is to be used only in conjunction with Standard Procedure C-SPC.**

Range of Calibration Point ("WC)	Digital Manometer Input ("WC)	Pressure Gauge Response ("WC)	Difference Input – Response	% Error of Full Span*
0-20% Max. Range 0.0 – 0.2	0.092	0.093	0.001	0.1
20-40% Max. Range 0.2 – 0.4	0.255	0.257	0.002	0.2
40-60% Max. Range 0.4 – 0.6	0.589	0.604	0.015	1.5
60-80% Max. Range 0.6 – 0.8	0.689	0.708	0.019	1.9
80-100% Max. Range 0.8 – 1.0	0.827	0.836	0.009	0.9

*Acceptable tolerance is 4%.

The uncertainty of measurement is ± 0.4 " WC. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.Technician signature: Tony TongDate: 08/26/2024

Reviewed by: _____

Date: _____

Temperature Calibration EPA Method 28 R, ASTM 2515							
Booth:		Temperature Monitor Type:				Equipment Number:	
E 1		National Instruments Logger				00335/00336	
Reference Meter Number: 00373					Calibration Due Date: 10/30/2024		
Calibration Performed By:			Date:		Ambient Temperature(F°):		Barometric Pressure(inHg):
Tony Tong			08/15/2024		79		30.13
Input Temp (°F)	Ambient	Meter A	Meter B	Filter A	Filter B	Tunnel	FB Interior
0	1	1	1	1	1	0	0
100	101	101	101	101	101	100	100
300	301	301	301	301	301	300	300
500	501	501	501	501	501	500	500
700	701	701	701	701	701	701	700
1000	1001	1001	1001	1001	1001	1001	1001
1500	1501	1501	1502	1501	1501	1501	1501
2000	2002	2002	2002	2002	2002	2002	2001

Input (°F)	FB Top	FB Bottom	FB Back	FB Left	FB Right	Imp A	Imp B	Cat	Stack
0	0	0	0	0	0	1	1	1	0
100	100	100	100	100	100	101	101	101	100
300	300	300	300	300	300	301	301	301	300
500	500	500	500	500	500	501	501	501	500
700	700	700	700	700	700	701	701	701	700
1000	1001	1001	1001	1001	1001	1001	1001	1001	1001
1500	1501	1501	1501	1501	1501	1501	1501	1501	1501
2000	2001	2001	2001	2001	2001	2002	2002	2002	2001

Technician Signature: Tony Tong Date: 08/26/2024

Reviewed By: _____ Date: _____



QUALITY CONTROL SERVICES

LABORATORY EQUIPMENT • SALES • SERVICE • CALIBRATION • REPAIRS
2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293
(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com



OMNI-Test Laboratories, Inc.
13327 NE Airport Way
Portland, OR 97230

Report Number: OMNE03MKW-04072230810

A2LA ACCREDITED CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	EXCELL	MTW-150K	MKW-04072	OMNI-00353	Lab
Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
kg	0.05	QC033	8/10/23	N/A	8/2028

FUNCTIONAL CHECKS

SHIFT TEST	LINEARITY	REPEATABILITY	ENVIRONMENTAL CONDITIONS
Test Wt: Tol: 50 0.20	Test Wt: Tol: HB44 HB44	Test Wt: Tol: 20 0.1	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Good Fair Poor
As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	Temperature: 25.6°C
As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	

CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
150	150.05	150.05	0.029
100	100.05	100.05	0.029
50	50.00	50.00	0.029
25	25.00	25.00	0.029
10	10.00	10.00	0.029
5	5.00	5.00	0.029

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Avoirdupois Cast W	Rice Lake	25 and 50lb	PWO990-CA	7/18/22	7/2024	20221688
Avoirdupois Weight	Rice Lake	10lb to 0.001lb	95473	9/13/22	9/2023	20221504

Permanent Information Concerning this Equipment:

Comments/Information Concerning this Calibration

8/23 - Cleaned & leveled. Converted weight from lbs to kg. RH = 40%

Report prepared/reviewed by: RB Date: 8-14-23

Technician: D. Oudeans

Signature: R. B. Oudeans For D. Oudeans

THIS CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy.

Member: National Conference of Standards Laboratories and Weights & Measures

PT ID: OMNE03

Quality Control Services

Report of Service and Calibration

2340 S.E. 11TH AVENUE
PORTLAND, OR 97214
PHONE 503-236-2712

74414

Sold To OMNI-Test Laboratories, Inc. PT ID: OMNE03 P.O. No: 230442
Address PO Box 301367 Contact: Michael Castillo
City Portland, OR 97294 Phone: 503-643-3788
Ship To 13327 NE Airport Way Portland, OR 97230 Email: mcastillo@omni-test.com

No	Item	Make	Model	Serial Number	Location	Contact	Rate	Date 2023		Cust ID
								Svc'd	Tech	
1	Balance	Mettler	MS104TS	B729400181	Lab	Michael Castillo	\$180.00	8/10	MP	OMNI-00637
2	Scale	EXCELL	MTW-150K	MKW-04072	Lab	Michael Castillo	\$180.00	8/10	K	OMNI-00353

Service / Calibration ☐ Certificate of Calibration
Documentation Requirements ☐ Calibration with Data
☒ A2LA Certificate

Received By: _____ Date: _____

Comments: #2. Needs 5 yr cycle + 350lb max



Established 1974

QUALITY CONTROL SERVICES

LABORATORY EQUIPMENT • SALES • SERVICE • CALIBRATION • REPAIRS

2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293

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OMNI-Test Laboratories, Inc.
13327 NE Airport Way
Portland, OR 97230

Report Number: OMNE03069076240826

A2LA ACCREDITED

CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	Weigh-Tronix	WI-125x5000x0.5lb	069076	OMNI-00356	Lab
Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
lbs	0.5	QC033	8/26/24	9/7/23	8/2025

FUNCTIONAL CHECKS

SHIFT TEST	LINEARITY	REPEATABILITY	ENVIRONMENTAL CONDITIONS
Test Wt: Tol: 1000 2.5	Test Wt: Tol: HB44 HB44	Test Wt: Tol: 1000 2.5	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Good Fair Poor
As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	Temperature: 22.5°C
As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	

CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
1000	999.0	999.5	0.29
700	699.5	699.5	0.29
500	499.5	500.0	0.29
200	199.5	200.0	0.29
100	99.5	100.0	0.29
50	50.0	50.0	0.29

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Weight Set	Rice Lake	10 kg to 1 mg	D123	7/1/24	7/2025	20241353

Permanent Information Concerning this Equipment:

Old s/n 53719. Results listed apply to only items calibrated.

Comments/Information Concerning this Calibration

8/24 - Adjusted span. RH= 52%.

Report prepared/reviewed by:

Date: 8/26/24

Technician: D. Oudeans

Signature:

THIS CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy. Calibrations comply with ISO/IEC 17025 and ANSI/Z540-1-1994 quality standards.

Member: National Conference of Standards Laboratories and Weights & Measures

Thermal Metering System Calibration

Y Factor

Manufacturer: Apex Instruments
 Model: XC-60-EP
 Serial Number: 702003
 OMNI Tracking No.: OMNI-00371
 Calibrated Orifice: ☐ Yes

Average Gas Meter y Factor
1.013

Orifice Meter dH@
N/A

Calibration Date: 08/21/24
 Calibrated by: Tony Tong
 Calibration Frequency: Six Month
 Next Calibration Due: 2/21/2025
 Instrument Range: 1.000 cfm
 Standard Temp.: 68 °F
 Standard Press.: 29.92 "Hg
 Barometric Press., Pb: 30.01 "Hg
 Signature/Date: Tony Tong 08/26/2024

Previous Calibration Comparison

Date	3/12/2024	Acceptable Deviation (5%)	Deviation
y Factor	1.01	0.0505	0.003
Acceptance	Acceptable		

Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.004
Acceptable dH@ Deviation	N/A
Maximum dH@ Deviation	N/A
Acceptance	Acceptable

Reference Standard *

Standard	Model	Standard Test Meter
Calibrator	S/N	OMNI-00330
	Calib. Date	01-May-24
	Calib. Value	1.0018 y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Reference Meter Pressure ("H ₂ O), Pr	0.00	0.00	0.00
DGM Pressure ("H ₂ O), Pd	3.12	2.22	1.10
Initial Reference Meter	241.237	247.464	252.721
Final Reference Meter	247.295	252.721	257.942
Initial DGM	0	0	0
Final DGM	5.94	5.192	5.199
Temp. Ref. Meter (°F), Tr	79.4	79.7	79.7
Temperature DGM (°F), Td	81.0	82.0	83.0
Time (min)	29.5	32.0	48.0
Net Volume Ref. Meter, Vr	6.058	5.257	5.221
Net Volume DGM, Vd	5.94	5.192	5.199
Gas Meter y Factor =	1.017	1.013	1.009
Gas Meter y Factor Deviation (from avg.)	0.004	0.000	0.004
Orifice dH@	N/A	N/A	N/A
Orifice dH@ Deviation (from avg.)	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|
- ** 2. $y = [V_r \times (y \text{ factor (ref)}) \times (P_b + (P_r / 13.6)) \times (T_d + 460)] / [V_d \times (P_b + (P_d / 13.6)) \times (T_r + 460)]$
- ** 3. $dH@ = 0.0317 \times P_d / (P_b (T_d + 460)) \times [(T_r + 460) \times \text{time}] / V_r]^2$

* Reference calibration is traceable to NIST through NIST Test # 40674, Kimble ASTM E1272, or NIST traceable laboratory

** Equations come from EPA Method 5

The uncertainty of measurement is $\pm 0.14 \text{ ft}^3/\text{min}$. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

DIFFERENTIAL PRESSURE GAUGE CALIBRATION DATA SHEETInstrument to be calibrated: Pressure Transducer(Draft)Maximum Range: 0 – 1" H₂OID Number: OMNI-00371Calibration Instrument: Digital ManometerID Number: OMNI-00633Date: 08/21/2024By: Tony Tong**This form is to be used only in conjunction with Standard Procedure C-SPC.**

Range of Calibration Point ("WC)	Digital Manometer Input ("WC)	Pressure Gauge Response ("WC)	Difference Input – Response	% Error of Full Span*
0-20% Max. Range 0.0 – 0.2	0.160	0.164	0.004	0.4
20-40% Max. Range 0.2 – 0.4	0.265	0.271	0.006	0.6
40-60% Max. Range 0.4 – 0.6	0.490	0.493	0.003	0.3
60-80% Max. Range 0.6 – 0.8	0.726	0.724	0.002	0.2
80-100% Max. Range 0.8 – 1.0	0.974	0.990	0.016	1.6

*Acceptable tolerance is 4%.

The uncertainty of measurement is ± 0.4 " WC. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.Technician signature: Tony TongDate: 08/26/2024

Reviewed by: _____

Date: _____

Temperature Calibration EPA Method 28 R, ASTM 2515							
Booth:		Temperature Monitor Type:				Equipment Number:	
E 1		National Instruments Logger				00371/00372	
Reference Meter Number: 00373					Calibration Due Date: 10/30/2024		
Calibration Performed By:			Date:	Ambient Temperature(F°):		Barometric Pressure(inHg):	
Tony Tong			08/21/2024	80		30.09	
Input Temp (°F)	Ambient	Meter A	Meter B	Filter A	Filter B	Tunnel	FB Interior
0	0	0	0	-1	0	1	1
100	99	100	100	99	100	101	101
300	299	300	300	299	300	301	300
500	500	500	500	499	500	501	501
700	700	700	700	700	700	701	701
1000	1000	1000	1000	1000	1000	1001	1001
1500	1500	1500	1500	1500	1500	1501	1501
2000	2000	2000	2001	2000	2000	2001	2001

Input (°F)	FB Top	FB Bottom	FB Back	FB Left	FB Right	Imp A	Imp B	Cat	Stack
0	1	0	0	1	1	0	-1	-1	1
100	101	101	101	100	101	100	99	99	100
300	301	301	300	300	301	300	300	299	300
500	501	501	501	501	501	500	500	500	501
700	701	701	701	701	701	700	700	700	701
1000	1001	1001	1001	1001	1001	1000	1000	1000	1001
1500	1501	1501	1501	1501	1501	1500	1500	1500	1501
2000	2001	2001	2001	2001	2001	2000	2000	2000	2001

Technician Signature: Tony Tong Date: 08/26/2024

Reviewed By: _____ Date: _____

Thermal Metering System Calibration

Y Factor

Manufacturer: Apex Instruments
 Model: XC-60-EP
 Serial Number: 702004
 OMNI Tracking No.: OMNI-00372
 Calibrated Orifice: ☐ Yes

Average Gas Meter y Factor
1.007

Orifice Meter dH@
N/A

Calibration Date: 08/26/24
 Calibrated by: Tony Tong
 Calibration Frequency: Six Month
 Next Calibration Due: 2/26/2025
 Instrument Range: 1.000 cfm
 Standard Temp.: 68 °F
 Standard Press.: 29.92 "Hg
 Barometric Press., Pb: 30.2 "Hg
 Signature/Date: Tony Tong 08/26/2024

Previous Calibration Comparison

Date	3/12/2024	Acceptable Deviation (5%)	Deviation
y Factor	1.016	0.0508	0.009
Acceptance	Acceptable		

Current Calibration

Acceptable y Deviation	0.020
Maximum y Deviation	0.004
Acceptable dH@ Deviation	N/A
Maximum dH@ Deviation	N/A
Acceptance	Acceptable

Reference Standard *

Standard	Model	Standard Test Meter
Calibrator	S/N	OMNI-00330
	Calib. Date	01-May-24
	Calib. Value	1.0018 y factor (ref)

Calibration Parameters	Run 1	Run 2	Run 3
Reference Meter Pressure ("H2O), Pr	0.00	0.00	0.00
DGM Pressure ("H2O), Pd	2.76	1.72	0.83
Initial Reference Meter	282.812	276.822	271.024
Final Reference Meter	288.884	282.416	276.423
Initial DGM	0	0	0
Final DGM	6.022	5.567	5.41
Temp. Ref. Meter (°F), Tr	74.3	72.8	74.1
Temperature DGM (°F), Td	77.0	77.0	77.0
Time (min)	28.5	34.0	50.0
Net Volume Ref. Meter, Vr	6.072	5.594	5.399
Net Volume DGM, Vd	6.022	5.567	5.41
Gas Meter y Factor =	1.008	1.010	1.003
Gas Meter y Factor Deviation (from avg.)	0.001	0.003	0.004
Orifice dH@	N/A	N/A	N/A
Orifice dH@ Deviation (from avg.)	N/A	N/A	N/A

where:

1. Deviation = |Average value for all runs - current run value|
- ** 2. $y = [V_r \times (y \text{ factor (ref)}) \times (P_b + (P_r / 13.6)) \times (T_d + 460)] / [V_d \times (P_b + (P_d / 13.6)) \times (T_r + 460)]$
- ** 3. $dH@ = 0.0317 \times P_d / (P_b (T_d + 460)) \times [(T_r + 460) \times \text{time}] / V_r]^2$

* Reference calibration is traceable to NIST through NIST Test # 40674, Kimble ASTM E1272, or NIST traceable laboratory

** Equations come from EPA Method 5

The uncertainty of measurement is $\pm 0.14 \text{ ft}^3/\text{min}$. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

DIFFERENTIAL PRESSURE GAUGE CALIBRATION DATA SHEET

Instrument to be calibrated: Pressure Transducer(dP)Maximum Range: 0 – 1" H₂OID Number: OMNI-00372Calibration Instrument: Digital ManometerID Number: OMNI-00633Date: 08/21/2024By: Tony Tong

This form is to be used only in conjunction with Standard Procedure C-SPC.

Range of Calibration Point ("WC)	Digital Manometer Input ("WC)	Pressure Gauge Response ("WC)	Difference Input – Response	% Error of Full Span*
0-20% Max. Range 0.0 – 0.2	0.102	0.105	0.003	0.3
20-40% Max. Range 0.2 – 0.4	0.220	0.223	0.003	0.3
40-60% Max. Range 0.4 – 0.6	0.433	0.441	0.008	0.8
60-80% Max. Range 0.6 – 0.8	0.629	0.633	0.004	0.4
80-100% Max. Range 0.8 – 1.0	0.957	0.967	0.010	1.0

*Acceptable tolerance is 4%.

The uncertainty of measurement is ± 0.4 " WC. This is based on the reference standard having a TAR (Test Accuracy Ratio) of at least 4:1.

Technician signature: Tony TongDate: 08/26/2024

Reviewed by: _____

Date: _____

Temperature Calibration EPA Method 28 R, ASTM 2515							
Booth:		Temperature Monitor Type:				Equipment Number:	
E 1		National Instruments Logger				00371/00372	
Reference Meter Number: 00373				Calibration Due Date: 10/30/2024			
Calibration Performed By:			Date:	Ambient Temperature(F°):		Barometric Pressure(inHg):	
Tony Tong			08/21/2024	80		30.09	
Input Temp (°F)	Ambient	Meter A	Meter B	Filter A	Filter B	Tunnel	FB Interior
0	0	0	0	-1	0	1	1
100	99	100	100	99	100	101	101
300	299	300	300	299	300	301	300
500	500	500	500	499	500	501	501
700	700	700	700	700	700	701	701
1000	1000	1000	1000	1000	1000	1001	1001
1500	1500	1500	1500	1500	1500	1501	1501
2000	2000	2000	2001	2000	2000	2001	2001

Input (°F)	FB Top	FB Bottom	FB Back	FB Left	FB Right	Imp A	Imp B	Cat	Stack
0	1	0	0	1	1	0	-1	-1	1
100	101	101	101	100	101	100	99	99	100
300	301	301	300	300	301	300	300	299	300
500	501	501	501	501	501	500	500	500	501
700	701	701	701	701	701	700	700	700	701
1000	1001	1001	1001	1001	1001	1000	1000	1000	1001
1500	1501	1501	1501	1501	1501	1500	1500	1500	1501
2000	2001	2001	2001	2001	2001	2000	2000	2000	2001

Technician Signature: Tony Tong Date: 08/26/2024

Reviewed By: _____ Date: _____

Certificate of Calibration

Certificate Number: 824447



JJ Calibrations, Inc.

7724 SE Aspen Summit Drive

Portland, OR 97266-9217

Phone 503.786.3005

FAX 503.786.2994

Omni-Test Laboratories

13327 NE Airport Way

Portland, OR 97230

PO: 240507

Order Date: 10/17/2024

Authorized By: N/A

Calibrated on: 11/07/2024

*Recommended Due: 11/07/2025

Environment: 22 °C 44 % RH

* As Received: Within Tolerance

* As Returned: Within Tolerance

Action Taken: Calibrated

Technician: 175



Property #: OMNI-00373

User: N/A

Department: N/A

Make: Omega

Model: CL24

Serial #: T-210520

Description: Thermometer/Calibrator

Procedure: 400379

Accuracy: Refer to Mfg. Specs.

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit. Uncertainties include the effects of the unit.

TUR<4: 1. See Uncertainties to calculate TUR to determine your possible risk. Received and returned with probes, cord, case, and manual.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
702A	Fluke	5522A	Calibrator	08/26/2025	818893
880A	Hart Scientific	1502A	Precision Digital Thermometer	06/10/2025	816135
601A	Burns Engineering	200G05B085	INDUSTRIAL PRT	09/29/2025	802942

Parameter

Measurement Data

Measurement Description	Range Unit	Reference	Min	Max	*Error	UUT	Uncertainty
							Accredited = ✓
Before/After							
Thermocouple Type K							
Measure	-50 °C	-50.00	-50.3	-49.7	0.2	-49.8 °C	2.1E-01 ✓
Measure	0 °C	0.00	-0.3	0.3	0.1	0.1 °C	1.9E-01 ✓
Measure	100 °C	100.00	99.7	100.3	0.1	100.1 °C	1.9E-01 ✓
Measure	500 °C	500.00	499.7	500.3	0.1	500.1 °C	3E-01 ✓
Measure	1000 °C	1000.00	999.6	1000.4	0.1	1000.1 °C	3E-01 ✓
Thermocouple Type J							
Measure	0 °C	0.00	-0.3	0.3	0.3	-0.3 °C	1.7E-01 ✓
Measure	100 °C	100.00	99.7	100.3	0.3	99.7 °C	1.7E-01 ✓
Thermocouple Type T							
Measure	0 °C	0.00	-0.3	0.3	0.1	-0.1 °C	1.9E-01 ✓
Measure	100 °C	100.00	99.7	100.3	0.3	99.7 °C	1.9E-01 ✓
Thermocouple Type K							
Source	-50 °C	-49.750	-50.05	-49.45	0.25	-50.00 °C	2.1E-01 ✓
Source	0 °C	0.210	-0.09	0.51	0.21	0.00 °C	1.9E-01 ✓
Source	100 °C	100.250	99.95	100.55	0.25	100.00 °C	1.9E-01 ✓
Source	500 °C	500.290	499.99	500.59	0.29	500.00 °C	3E-01 ✓
Source	1000 °C	1000.390	999.99	1000.79	0.39	1000.00 °C	3E-01 ✓
Thermocouple Type J							
Source	0 °C	0.10	-0.2	0.4	0.1	0.0 °C	1.7E-01 ✓
Source	100 °C	100.180	99.88	100.48	0.18	100.00 °C	1.7E-01 ✓
Thermocouple Type T							
Source	0 °C	0.250	-0.05	0.55	0.25	0.00 °C	1.9E-01 ✓
Source	100 °C	100.160	99.86	100.46	0.16	100.00 °C	1.9E-01 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to the SI through an NMI such as but not limited to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NC SL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by ILAC G8:2019. A test uncertainty ratio (TUR) of 4:1, if achievable, is maintained. Where uncertainties are reported, see uncertainties to calculate TUR to determine your possible Risk. The results reported herein apply only to the calibration of the item described above. JJ Calibrations does not alter or update software of the UUT, version stays the same unless otherwise noted. This report may not be reproduced, except in full, without written approval of JJ Calibrations


Reviewer

3 Issued 11/08/2024

Rev # 15


Inspector

Certificate of Calibration

Certificate Number: 824107



JJ Calibrations, Inc.
7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 240504
Order Date: 10/10/2024
Authorized By: N/A



Property #: OMNI 00431
User: N/A
Department: N/A
Make: Delmhorst
Model: MCS-1
Serial #: OMNI 00431
Description: Moisture Calibrator
Procedure: Raw Data
Accuracy: Raw Data

Calibrated on: 10/18/2024
*Recommended Due: 10/18/2025
Environment: 22 °C 43 % RH
* As Received: Other - See Remarks
* As Returned: Other - See Remarks
Action Taken: Calibrated
Technician: 128

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit.
Uncertainties include the effects of the unit.

Data is provided for your determination of acceptability.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
582A	F l u k e	8508A	8 1/2 Reference Mtr	10/07/2025	819058

Parameter		Measurement Data				UUT	Uncertainty
Measurement Description	Range Unit	Reference	Min	Max	*Error		Accredited = ✓
Before/After Resistance							
12 %	MOhm	120.000	0.00	0.00	0.91	120.91 MOhm	5.7E-01 ✓
22 %	MOhm	1.100000	0.00000	0.00000	0.00105	1.10105 MOhm	5.7E-01 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to the SI through an NMI such as but not limited to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NC SL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by ILAC G8:2019. A test uncertainty ratio (TUR) of 4:1, if achievable, is maintained. Where uncertainties are reported, see uncertainties to calculate TUR to determine your possible Risk. The results reported herein apply only to the calibration of the item described above. JJ Calibrations does not alter or update software of the UUT, version stays the same unless otherwise noted. This report may not be reproduced, except in full, without written approval of JJ Calibrations

Reviewer

3 Issued 10/19/2024 Rev # 15

Inspector

Certificate of Calibration

Certificate Number: 788866



JJ Calibrations, Inc.

7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 230422

Order Date: 02/16/2023

Authorized By: N/A



Property #: OMNI-00439

User: N/A

Department: N/A

Make: Robic

Model: SC - 606 W

Serial #: OMNI-00439

Description: Stopwatch

Procedure: 400480

Accuracy: ± 1 Sec

Calibrated on: 03/11/2023

*Recommended Due: 03/11/2028

Environment: 22 °C 38 % RH

* As Received: Within Tolerance

* As Returned: Within Tolerance

Action Taken: Calibrated

Technician: 40

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit.
Uncertainties include the effects of the unit.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
690A	Hewlett-Packard	5345A	Counter	05/25/2023	770158
738A	Ul trak	360	Stopwatch	04/06/2023	768236

Parameter

Measurement Data

Measurement Description	Range Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After Time							Accredited = ✓
	60 second	60.310	59.31	61.31	0.07	60.38 second	1.1E+00 ✓
	250 second	250.360	249.36	251.36	0.06	250.42 second	1.1E+00 ✓
	300 second	300.500	299.50	301.50	0.12	300.38 second	1.1E+00 ✓
	650 second	650.420	649.42	651.42	0.06	650.48 second	1.1E+00 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to either the SI or to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by JCGM 106:2012. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without written approval of JJ Calibrations.

Reviewer

3 Issued 03/13/2023

Rev # 15

Inspector



QUALITY CONTROL SERVICES

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2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293
(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com



OMNI-Test Laboratories, Inc.
13327 NE Airport Way
Portland, OR 97230

Report Number: OMNE03B729400181240826

A2LA ACCREDITED **CERTIFICATE OF CALIBRATION WITH DATA**

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Balance	Mettler	MS104TS	B729400181	OMNI-00637	Lab
Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
g	0.0001	qcs012	8/26/24	2/8/24	2/2025

FUNCTIONAL CHECKS

ECCENTRICITY		LINEARITY		STANDARD DEVIATION			ENVIRONMENTAL CONDITIONS
Test Wt:	Tol:	Test Wt:	Tol:	Test Wt:	Tol:		
50	0.0001	20x4	0.0001	100	0.0001		<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
As-Found:		As-Found:		1.99.9999	5.99.9999	9.99.9999	Good Fair Poor
Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	2.99.9999	6.99.9999	10.99.9999	
As-Left:		As-Left:		3.99.9998	7.99.9999	<u>Result</u>	Temperature: 22.5°C
Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	Pass: <input checked="" type="checkbox"/>	Fail: <input type="checkbox"/>	4.100.0000	8.99.9999	0.00004	

A2LA ACCREDITED SECTION OF REPORT

Standard	As-Found	As-Left	Expanded Uncertainty
100	99.9998	99.9999	0.00016
80	79.9999	80.0000	0.00016
50	49.9999	50.0000	0.00015
20	20.0000	20.0000	0.00015
1	1.0001	1.0000	0.00014
0.1	0.0999	0.1000	0.00014

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Weight Set	Rice Lake	10 kg to 1 mg	D123	7/1/24	7/2025	20241353

Permanent Information Concerning this Equipment:

Results listed apply to only items calibrated.

Comments/Info Concerning this Calibration:

8/24 - Cleaned, leveled, & adjusted span. RH = 50%

Report prepared/reviewed by:  Date: 8/26/24

Technician: D. Oudeans

Signature: 

THIS CERTIFICATE SHALL NOT BE REPRODUCED WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation and readability of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy. Calibrations comply with ISO/IEC 17025 and ANSI/Z540-1-1994 quality standards. Results relate only to the item(s) tested. Unless otherwise noted, statements of conformity do not include measurement

Certificate of Calibration

Certificate Number: 788485



JJ Calibrations, Inc.

7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 230420

Order Date: 02/16/2023

Authorized By: N/A



Calibrated on: 03/06/2023

*Recommended Due: 03/06/2028

Environment: 23 °C 35 % RH

* As Received: Within Tolerance

* As Returned: Within Tolerance

Action Taken: Calibrated

Technician: 173

Property #: OMNI-00709

User: N/A

Department: N/A

Make: Omega

Model: RH81

Serial #: 10361019

Description: Thermohygrometer

Procedure: DCN 401013/403410

Accuracy: RH $\pm 3\%$, TEMP $\pm 1^\circ\text{C}$ ($\pm 1.8^\circ\text{F}$)

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit.
Uncertainties include the effects of the unit.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
925A	RH Systems	CGS-240	Humidity Generator	02/22/2024	789080

Parameter

Measurement Data

Measurement Description	Range Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After							Accredited = ✓
Relative Humidity							
	RH	25.00	22.0	28.0	0.3	25.3 RH	6.3E-01 ✓
	RH	50.00	47.0	53.0	1.3	48.7 RH	6.3E-01 ✓
	RH	75.00	72.0	78.0	0.7	74.3 RH	6.3E-01 ✓
Temperature							
	°C	20.0	19	21	0	20 °C	2.8E-01 ✓
	°C	30.00	29.0	31.0	0.6	29.4 °C	2.8E-01 ✓
	°C	40.60	39.6	41.6	0.4	40.2 °C	2.8E-01 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to either the SI or to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by JCGM 106:2012. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without written approval of JJ Calibrations.

Reviewer

3 Issued 03/08/2023

Rev # 15

Inspector

Certificate of Calibration

Certificate Number: 816476



JJ Calibrations, Inc.
7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 240489
Order Date: 06/06/2024
Authorized By: N/A



Property #: OMNI-00715
User: N/A
Department: N/A
Make: Control Company
Model: 6530
Serial #: 221461542
Description: Thermohygrometer / Barometer
Procedure: 403406
Accuracy: $\pm 3\%RH, \pm 4^{\circ}C(0.8^{\circ}F), \pm 4mbar$

Calibrated on: 07/02/2024
*Recommended Due: 01/02/2025
Environment: 24 °C 44 % RH
* As Received: Within Tolerance
* As Returned: Within Tolerance
Action Taken: Calibrated
Technician: 128

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit. Uncertainties include the effects of the unit.

TUR<4: 1. See Uncertainties to calculate TUR to determine your possible Risk.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
925A	RH Systems	CGS- 240	Humidity Generator	04/04/2025	811937

Parameter		Measurement Data				UUT	Uncertainty
Measurement Description	Range Unit	Reference	Min	Max	*Error		Accredited = ✓
Before/After Humidity							
	%	20.1280	17.128	23.128	2.872	23.000 %	6E-01 ✓
	%	50.050	47.05	53.05	0.05	50.00 %	6E-01 ✓
	%	79.8820	76.882	82.882	1.882	78.000 %	6E-01 ✓
Temperature							
	°F	33.0320	32.232	33.832	0.468	33.500 °F	1.2E-01 ✓
	°F	73.390	72.59	74.19	0.29	73.10 °F	1.2E-01 ✓
	°F	105.050	104.25	105.85	0.35	104.70 °F	1.2E-01 ✓
Barometer							
	inHg	29.826000	29.70788	29.94412	0.01600	29.81000 inHg	1.8E-01 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to the SI through an NMI such as but not limited to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NC SL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by ILAC G8:2019. A test uncertainty ratio (TUR) of 4:1, if achievable, is maintained. Where uncertainties are reported, see uncertainties to calculate TUR to determine your possible Risk. The results reported herein apply only to the calibration of the item described above. JJ Calibrations does not alter or update software of the UUT, version stays the

Reviewer

3 Issued 07/08/2024

Rev # 15

Inspector

CALIBRATION DATA SHEET

TAPE MEASURE CALIBRATION

Date	11/18/2024
Technician	Tony Tong

Tape Measure Title	16' Tape Measure
Tape Measure Track #	OMNI-00730
Standard Reference Used	OMNI-00281

SIDE A - OUTER MEASUREMENT												
Increment	0"-1"	1"-2"	2"-3"	3"-4"	4"-5"	5"-6"	6"-7"	7"-8"	8"-9"	9"-10"	10"-11"	11"-12"
Random Value Selected	[3/16"]	1 2/16"	2 7/16"	3 5/16"	4 1/16"	5 9/16"	6 8/16"	7 4/16"	8 6/16"	9 10/16"	10 13/16"	11 11/16"
Trial 1	7/32"	1 5/32"	2 15/32"	3 11/32"	4 3/32"	5 19/32"	6 17/32"	7 9/32"	8 13/32"	9 21/32"	10 27/32"	11 23/32"
Trial 2	7/32"	1 5/32"	2 15/32"	3 11/32"	4 3/32"	5 19/32"	6 17/32"	7 9/32"	8 13/32"	9 21/32"	10 27/32"	11 23/32"
Trial 3	7/32"	1 5/32"	2 15/32"	3 11/32"	4 3/32"	5 19/32"	6 17/32"	7 9/32"	8 13/32"	9 21/32"	10 27/32"	11 23/32"

SIDE A - INNER MEASUREMENT												
Increment	0"-1"	1"-2"	2"-3"	3"-4"	4"-5"	5"-6"	6"-7"	7"-8"	8"-9"	9"-10"	10"-11"	11"-12"
Random Value Selected	[3/16"]	1 2/16"	2 7/16"	3 5/16"	4 1/16"	5 9/16"	6 8/16"	7 4/16"	8 6/16"	9 10/16"	10 13/16"	11 11/16"
Trial 1	5/32"	1 3/32"	2 13/32"	3 9/32"	4 1/32"	5 17/32"	6 15/32"	7 7/32"	8 11/32"	9 19/32"	10 25/32"	11 21/32"
Trial 2	5/32"	1 3/32"	2 13/32"	3 9/32"	4 1/32"	5 17/32"	6 15/32"	7 7/32"	8 11/32"	9 19/32"	10 25/32"	11 21/32"
Trial 3	6/32"	1 3/32"	2 13/32"	3 9/32"	4 1/32"	5 17/32"	6 15/32"	7 7/32"	8 11/32"	9 19/32"	10 25/32"	11 21/32"

SIDE B - OUTER MEASUREMENT												
Increment	0"-1"	1"-2"	2"-3"	3"-4"	4"-5"	5"-6"	6"-7"	7"-8"	8"-9"	9"-10"	10"-11"	11"-12"
Random Value Selected	[3/16"]	1 2/16"	2 7/16"	3 5/16"	4 1/16"	5 9/16"	6 8/16"	7 4/16"	8 6/16"	9 10/16"	10 13/16"	11 11/16"

Trial 1	6/32"	1 4/32"	2 14/32"	3 10/32"	4 2/32"	5 18/32"	6 16/32"	7 8/32"	8 12/32"	9 20/32"	10 26/32"	11 22/32"
Trial 2	6/32"	1 4/32"	2 14/32"	3 10/32"	4 2/32"	5 18/32"	6 16/32"	7 8/32"	8 12/32"	9 20/32"	10 26/32"	11 22/32"
Trial 3	6/32"	1 4/32"	2 14/32"	3 10/32"	4 2/32"	5 18/32"	6 16/32"	7 8/32"	8 12/32"	9 20/32"	10 26/32"	11 22/32"

SIDE B - INNER MEASUREMENT												
Increment	0"-1"	1"-2"	2"-3"	3"-4"	4"-5"	5"-6"	6"-7"	7"-8"	8"-9"	9"-10"	10"-11"	11"-12"
Random Value Selected	[3/16"]	1 2/16"	2 7/16"	3 5/16"	4 1/16"	5 9/16"	6 8/16"	7 4/16"	8 6/16"	9 10/16"	10 13/16"	11 11/16"
Trial 1	5/32"	1 3/32"	2 13/32"	3 9/32"	4 1/32"	5 17/32"	6 15/32"	7 7/32"	8 11/32"	9 19/32"	10 25/32"	11 21/32"
Trial 2	5/32"	1 3/32"	2 13/32"	3 9/32"	4 1/32"	5 17/32"	6 15/32"	7 7/32"	8 11/32"	9 19/32"	10 25/32"	11 21/32"
Trial 3	5/32"	1 3/32"	2 13/32"	3 9/32"	4 1/32"	5 17/32"	6 15/32"	7 7/32"	8 11/32"	9 19/32"	10 25/32"	11 21/32"

NIST Traceable Calibration Report

Omni-Test Laboratories, Inc.
13327 NE Airport Way
Portland, OR 97230 United States

REPORT NUMBER

1769963

Reference Number: 175228700

PO Number: 240506



Manufacturer: Digi-Sense
Model Number: 20250-16
Description: Air Velocity, Hot Wire Anemometer
Asset Number: OMNI-00737
Serial Number: 230544726
Procedure: DS Digi-Sense 20250-16

Calibration Date 11/07/2024
Calibration Due Date 11/07/2025
Condition As Found: Out of Tolerance
Condition As Left: In Tolerance After Adjustment

Remarks:

NIST-traceable calibration performed on the unit referenced above in accordance with customer requirements, published specifications and the lab's standard operating procedures. Unit was received out-of-tolerance as indicated in the as-found data; adjustments were successful in bringing unit within specifications. As-left data reflects measurements taken after adjustments.

Standards Used

Standard ID	Manufacturer	Model Number	Description	Cal Date	Due Date
CP105979	Kanomax	X5602	Air Velocity, Wind Tunnel, Open Jet	7/01/2024	7/31/2025
CP144552	Fluke Corporation	1551A EX	Temperature, Stik Thermometer	7/10/2024	7/31/2025

Calibration Data

Function Tested	Nominal / Reference Value	Measured Value	OOT	Calibration Tolerance <small>eg. - Guard Banding Applied</small>	TUR	EMU
Air Velocity Accuracy	5.00 m/s					
As Found	5.00	4.89		4.74 to 5.26 m/s	6.2:1	± 0.042 m/s
As Left	5.00	5.02		4.74 to 5.26 m/s	6.2:1	± 0.042 m/s
	10.00 m/s					
As Found	10.00	9.70		9.49 to 10.51 m/s	11:1	± 0.045 m/s
As Left	10.00	9.96		9.49 to 10.51 m/s	11:1	± 0.045 m/s
	15.00 m/s					
As Found	15.00	14.26		14.24 to 15.76 m/s	8.1:1	± 0.094 m/s
As Left	15.00	15.01		14.24 to 15.76 m/s	8.1:1	± 0.094 m/s
	20.00 m/s					
As Found	20.00	18.45	X	18.99 to 21.01 m/s	8.1:1	± 0.12 m/s
As Left	20.00	20.04		18.99 to 21.01 m/s	8.1:1	± 0.12 m/s
	25.00 m/s					
As Found	25.00	22.18	X	23.74 to 26.26 m/s	8.1:1	± 0.16 m/s
As Left	25.00	25.06		23.74 to 26.26 m/s	8.1:1	± 0.16 m/s
Temperature Accuracy	25.0 °C					
As Found	25.0	25.0		24.0 to 26.0 °C	13:1	± 0.077 °C
As Left	25.0	25.0		24.0 to 26.0 °C	13:1	± 0.077 °C

Temperature: 23 °C
Humidity: 36 %RH
Rpt. No.: 1769963

Calibration Performed By:		Quality Reviewer:	
Chris Lu	Technician, Metrology	James Alexander	11/7/2024
Name	Title	Name	Date

This report may not be reproduced except in full, without written permission of Innocal. The results stated in this report relate only to the items tested or calibrated. Measurements reported herein are traceable to SI units via national standards maintained by NIST and were performed in compliance with MIL-STD-45662A, ANSI/NCSS Z540-1-1994 10CFR50, Appendix B ISO 9002-94, and ISO 17025:2017. Conformance based on Simple Acceptance as defined in ILAC G8 with a < 50% PFA. The estimated measurement uncertainty (EMU), if reported on this certificate, is being reported at a confidence level of 95% or K=2 unless otherwise noted in the remarks section.

Certificate of Calibration

Certificate Number: 810896



JJ Calibrations, Inc.

7724 SE Aspen Summit Drive
Portland, OR 97266-9217
Phone 503.786.3005
FAX 503.786.2994

Omni-Test Laboratories
13327 NE Airport Way
Portland, OR 97230

PO: 1670/240474

Order Date: 02/29/2024

Authorized By: N/A



Calibrated on: 03/22/2024

*Recommended Due: 03/22/2025

Environment: 20 °C 47 % RH

* As Received: Other - See Remarks

* As Returned: Limited

Action Taken: Calibrated

Technician: 111

Property #: OMNI-00743

User: N/A

Department: N/A

Make: Dwyer

Model: 1430

Serial #: 113004-00

Description: Microtector

Procedure: 500908

Accuracy: ± 0.00025 " WC

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit. Uncertainties include the effects of the unit.

Unit was received and returned in a case. Limited calibration: Micrometer head calibrated only, from 0-1" per customer request.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
837A	IMGages	B7806	Gage Block Set, 81 Pieces	01/25/2025	807579

Parameter		Measurement Data				UUT	Uncertainty
Measurement Description	Range Unit	Reference	Min	Max	*Error		Accredited = ✓
Before/After Length							
	Inch	0.1300	0.129	0.131	0.000	0.130 Inch	2.5E-05 ✓
	Inch	0.3850	0.384	0.386	0.000	0.385 Inch	2.5E-05 ✓
	Inch	0.6150	0.614	0.616	0.000	0.615 Inch	2.5E-05 ✓
	Inch	0.8700	0.869	0.871	0.000	0.870 Inch	2.5E-05 ✓
	Inch	1.0000	0.999	1.001	0.000	1.000 Inch	2.5E-05 ✓

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to the SI through an NMI such as but not limited to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCCL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by ILAC G8:2019. Unless otherwise stated, a test uncertainty ratio (TUR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above.

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Reviewer

3 Issued 03/25/2024

Rev # 15

Inspector



QUALITY CONTROL SERVICES

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OMNI-Test Laboratories, Inc.
13327 NE Airport Way
Portland, OR 97230

Report Number: OMNE03AE83723924240925

A2LA ACCREDITED **CERTIFICATE OF CALIBRATION WITH DATA**

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	Adam	GFK165aH	AE83723924	N/A	Lab
Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
lbs	0.01	QC033	9/25/24	N/A	8/2025

FUNCTIONAL CHECKS

SHIFT TEST	LINEARITY	REPEATABILITY	ENVIRONMENTAL CONDITIONS
Test Wt: Tol: 50 0.10 As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/> As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	Test Wt: Tol: HB44 HB44 As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/> As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	Test Wt: Tol: 50 0.10 As-Found: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/> As-Left: Pass: <input checked="" type="checkbox"/> Fail: <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Good Fair Poor Temperature: 23.7°C

CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
150	150.20	150.20	0.005
100	100.13	99.99	0.005
75	75.06	79.99	0.005
50	50.04	49.99	0.005
25	25.02	24.99	0.005
10	10.02	10.00	0.005

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Avoirdupois Cast W	Rice Lake	25 and 50lb	PWO990-CA	7/26/24	7/2026	20221688
Avoirdupois Weight	Rice Lake	10lb to 0.001lb	95473	2/25/24	2/2026	20240410

Permanent Information Concerning this Equipment:

Comments/Information Concerning this Calibration

9/24 - Adjusted span. RH = 59%

Report prepared/reviewed by: 

Date: 9-25-24

Technician: D. Oudeans

Signature: 

THIS CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy. Calibrations comply with ISO/IEC 17025 and ANSI/Z540-1-1994 quality standards.

Member: National Conference of Standards Laboratories and Weights & Measures

PT ID: OMNE03



Making our world
more productive

Received 06/22/23



Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles, CA 90058
Tel: 323-585-2154
Fax: 714-542-6689

Customer & Order Information:

LGEPKG TUALATIN OR H
10450 SW TUALATIN SHERWOOD ROAD,
TUALATIN, OR 97062-9547

Linde Order Number: **72440818**

Customer PO Number: **80449468**

Certificate Issuance Date: **6/6/2023**

Certification Date: **6/6/2023**

Lot Number: **70086313906**

Part Number: **NI CD15C5P-AS**

DocNumber: **683272**

Expiration Date: **6/1/2028**

CERTIFICATE OF ANALYSIS

Primary Standard

Component	Requested Concentration (Molar)	Certified Concentration (Molar)	Analytical Reference	Analytical Uncertainty
Carbon dioxide	15 %	15.00 %	1	± 0.02% Abs.
Carbon monoxide	500 ppm	502 ppm	1	± 1%
Nitrogen	Balance	Balance		

Cylinder Style: **AS**
Cylinder Pressure @ 70 F: **2000 psig**
Cylinder Volume: **150 ft³**
Valve Outlet Connection: **CGA 350**
Cylinder Number(s): **CC305741**

Fill Date: **5/19/2023**
Analysis Date: **6/1/2023**

Filling Method: **Gravimetric**

Analyst: **Ying Yu**

Approved Signer: **Amalia Real**

Key to Analytical Techniques:

Reference Analytical Instrument - Analytical Principle

1 Mettler ID5 - Gravimetric Method

Received 6/22/2023

The gas calibration cylinder standard prepared by Linde Gas & Equipment Inc. is considered a certified standard. It is prepared by gravimetric, volumetric, or partial pressure techniques. The calibration standard provided is certified against Linde Gas & Equipment Inc. Reference Materials which are traceable to the International System of Units (SI) through either weights traceable to the National Institute of Standards and Technology (NIST) or Measurement Canada, or through NIST Standard Reference Materials or equivalent where available.

Note: All expressions for concentration (e.g., % or ppm) are for gas phase, by mole unless otherwise noted. Analytical uncertainty is expressed as a Relative % unless otherwise noted.

IMPORTANT

The information contained herein has been prepared at your request by personnel within Linde Gas & Equipment Inc. While we believe the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall liability of Linde Gas & Equipment Inc. arising out of the use of the information contained herein exceed the fee established for providing such information.



Making our world
more productive

DocNumber: 551951

Reviewed
09-15-24



Linde Gas & Equipment Inc.
5700 S. Alameda Street
Los Angeles CA 90058
Tel: 323-585-2154
Fax: 714-542-6689
PGVP ID: F22023

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

Customer & Order Information

LGEPKG TUALATIN OR H
10450 SW TUALATIN SHERWOOD ROAD
TUALATIN OR 97062-9547

Certificate Issuance Date: 06/20/2023

Linde Order Number: 72440820

Part Number: NI CD17CO8E-AS

Customer PO Number: 80449472

Fill Date: 08/16/2023

Lot Number: 70086316711

Cylinder Style & Outlet: AS

Cylinder Pressure and Volume: 1290 psig 99 ft3

Certified Concentration

Expiration Date:	06/20/2031	NIST Traceable
Cylinder Number:	CC738144	Expanded Uncertainty
16.88 %	Carbon dioxide	± 0.15 %
4.05 %	Carbon monoxide	± 0.03 %
17.01 %	Oxygen	± 0.04 %
Balance	Nitrogen	

ProSpec EZ Cert



Certification Information:

Certification Date: 06/20/2023

Term: 96 Months

Expiration Date: 06/20/2031

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-600/R-12/531, using Procedure G1. Uncertainty above is expressed as absolute expanded uncertainty at a level of confidence of approximately 95% with a coverage factor k = 2. Do Not Use this Standard if Pressure is less than 100 PSIG.

CO2 responses have been corrected for Oxygen IR Broadening effect.

Analytical Data:

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

1. Component:

Carbon dioxide

Requested Concentration: 17 %
Certified Concentration: 16.88 %
Instrument Used: Horiba VIA-510 S/N 20C194WK
Analytical Method: NDIR
Last Multipoint Calibration: 05/30/2023

First Analysis Data:		Date		06/20/2023	
Z:	0	R:	19.34	C:	16.88
R:	19.35	Z:	0	C:	16.9
Z:	0	C:	16.88	R:	19.36
UOM:	%	Mean Test Assay:	16.88	%	

Reference Standard:

Type / Cylinder #: NTRM / CC725981

Concentration / Uncertainty: 19.34 % ± 0.16 %

Expiration Date: 01/12/2027

Traceable to:

SRM # / Sample # / Cylinder #: NTRM / 190701 / CC725973

SRM Concentration / Uncertainty: 19.34 % ± 0.16 %

SRM Expiration Date: 01/12/2027

Second Analysis Data:		Date			
Z:	0	R:	0	C:	0
R:	0	Z:	0	C:	0
Z:	0	C:	0	R:	0
UOM:	%	Mean Test Assay:		%	

2. Component:

Carbon monoxide

Requested Concentration: 4.25 %
Certified Concentration: 4.05 %
Instrument Used: Horiba VIA-510 S/N UB9UCSYX
Analytical Method: NDIR
Last Multipoint Calibration: 05/30/2023

First Analysis Data:		Date		06/20/2023	
Z:	0	R:	7.81	C:	4.06
R:	7.85	Z:	0	C:	4.05
Z:	0	C:	4.06	R:	7.8
UOM:	%	Mean Test Assay:	4.05	%	

Reference Standard:

Type / Cylinder #: GMIS / CC187322

Concentration / Uncertainty: 7.81 % ± 0.04 %

Expiration Date: 04/03/2025

Traceable to:

SRM # / Sample # / Cylinder #: SRM 2642a / 51-D-23 / FF23106

SRM Concentration / Uncertainty: 7.859 % ± 0.039 %

SRM Expiration Date: 07/15/2019

Second Analysis Data:		Date			
Z:	0	R:	0	C:	0
R:	0	Z:	0	C:	0
Z:	0	C:	0	R:	0
UOM:	%	Mean Test Assay:		%	

3. Component:

Oxygen

Requested Concentration: 17 %
Certified Concentration: 17.01 %
Instrument Used: Siemens Oxymat 6E S/N 7MB20211AA000CA1
Analytical Method: Paramagnetic
Last Multipoint Calibration: 05/30/2023

First Analysis Data:		Date		06/20/2023	
Z:	0	R:	24.96	C:	17.01
R:	24.97	Z:	0	C:	17
Z:	0	C:	17.02	R:	24.94
UOM:	%	Mean Test Assay:	17.01	%	

Reference Standard:

Type / Cylinder #: GMIS / DT0025134

Concentration / Uncertainty: 24.96 % ± 0.04 %

Expiration Date: 12/14/2026

Traceable to:

SRM # / Sample # / Cylinder #: SRM 2659a / 71-E-19 / FF22331

SRM Concentration / Uncertainty: 20.863 % ± 0.021 %

SRM Expiration Date: 02/27/2026

Second Analysis Data:		Date			
Z:	0	R:	0	C:	0
R:	0	Z:	0	C:	0
Z:	0	C:	0	R:	0
UOM:	%	Mean Test Assay:		%	

Analyzed By

Courtney Zinke

Certified By

Nelson Ma

Information contained herein has been prepared at your request by qualified experts within Linde Gas & Equipment Inc. While we believe that the information is accurate within the limits of the analytical methods employed and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability of Linde Gas & Equipment Inc., arising out of the use of the information contained herein exceed the fee established for providing such information.

Page 1 of 1

8.4 - Archival of Appliance Specimen

The tested unit was sealed by OMNI-Test Laboratories after the completion of certification testing. This unit will be stored at the manufacturer's premises in the sealed state until 5 years after the certification testing at the following address:

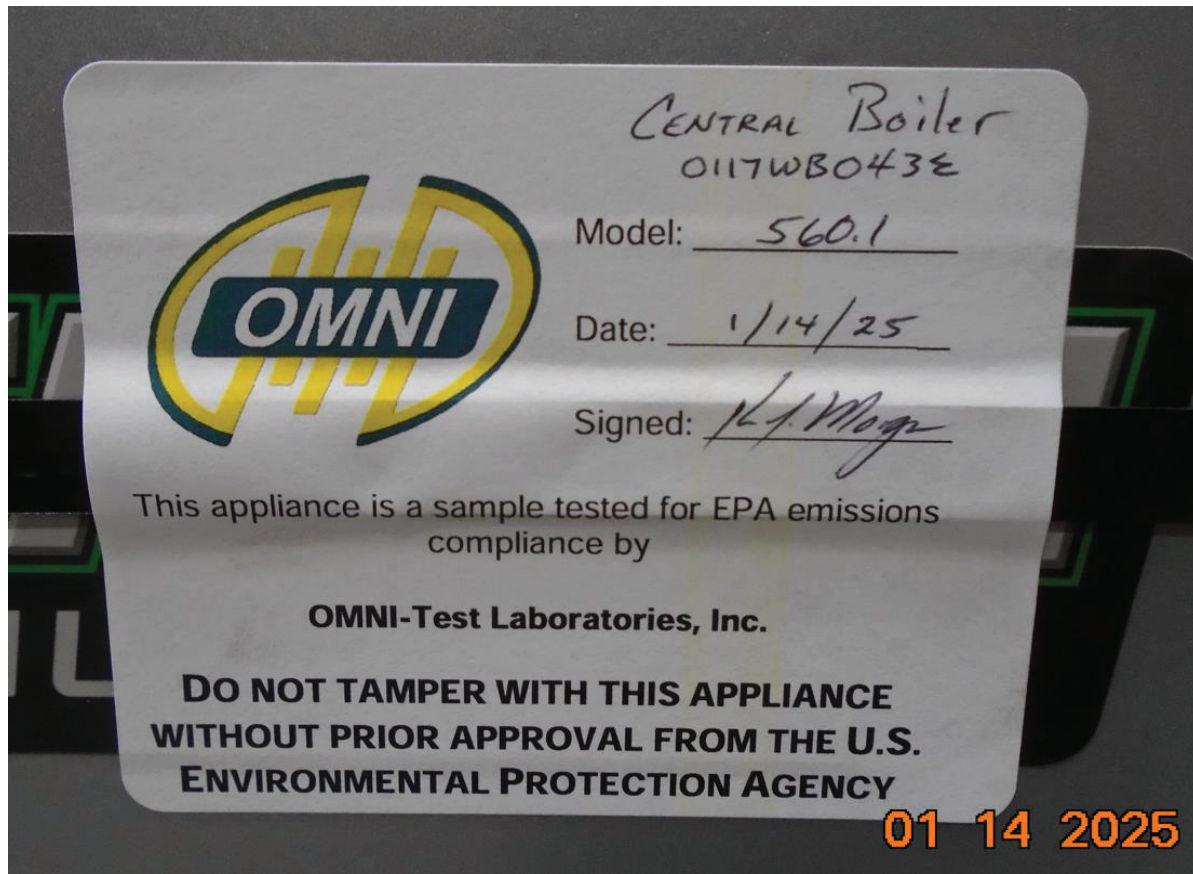
Central Boiler, Inc.
20502 160th Street
Greenbush, MN 56726
USA



Classic Edge 560.1 Sealed Unit - Front/Left 3/4 View



Central Boiler Classic Edge 560.1 - Rear / Right 3/4 View



Close-Up of Typical Seal Applied

9. References

U.S. EPA 40 CFR Part 60, Subpart AAA – "Standards of Performance for New Residential Wood Heaters"

ASTM E2515-11, "Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel", ASTM International, West Conshohocken, PA, 2011, www.astm.org

ASTM E2618-13 "Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances", ASTM International, West Conshohocken, PA, 2011, www.astm.org

Mark's Standard Handbook for Mechanical Engineers, 9th edition (1986)

CSA B415.1:22 "Performance testing of solid-biofuel-burning heating appliance"

EPA Method 1 - Sample and Velocity Traverses for Stationary Sources

EPA Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

EPA Method 5G - Particulate Matter Wood Heaters from a Dilution Tunnel

EPA Method 28R - Certification and Auditing of Wood Heaters

EPA Source Classification Codes (SCCs) - <https://sor-scc-api.epa.gov/sccwebservices/sccsearch/>

EPA Method 7E—Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)

10. Appendices

Appendix A - Appliance Conditioning Data

Appendix B - EPA 30 - Day Notice

Appendix C - ALT-154

Appendix D - Test Fuel Analysis

Appendix A

Appliance Conditioning Data

Conditioning of the Classic Edge 560.1 was performed by Central Boiler staff at Central Boiler's Greenbush Minnesota facility from October 3, 2024 through October 29, 2024. The data was recorded in one-minute intervals with a cumulative total of 62.4 hrs. at a medium load averaging 47,390 Btu (30% of manufacturer's rated maximum output of 190,000 Btu/hr.). The fuel used was Maple with moisture content within 19 - 25 percent (dry-basis).

Central Boiler model 560.1 - Conditioning Data

Note: All conditioning was performed by Central Boiler staff at Central Boiler's Greenbush Minnesota facility. All conditioning data was produced using Maple wood with adry-basis moisture content of 19-25 percent.

Average Btu/hr. load from the 1301st to the 5045th one-minute interval:	47896
Total hours (from the 1301st to the 5045th one-minute interval):	62.4

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	1	31.2	396	71	32482.49
10/3/2024	2	30.9	400	71	162535.34
10/3/2024	3	30.3	402	71	121704.33
10/3/2024	4	29.9	403	71	124394.54
10/3/2024	5	29.5	405	71	131216.45
10/3/2024	6	28.9	408	70	124241.96
10/3/2024	7	28.4	407	69	118144.64
10/3/2024	8	27.8	407	69	122254.58
10/3/2024	9	27.2	408	70	114406.44
10/3/2024	10	26.6	409	70	122537.07
10/3/2024	11	25.9	409	70	119001.06
10/3/2024	12	25.3	409	70	120336.27
10/3/2024	13	24.8	410	70	126708.98
10/3/2024	14	24.3	410	70	126821.96
10/3/2024	15	23.8	410	70	115825.37
10/3/2024	16	23.3	409	70	120221.49
10/3/2024	17	22.7	408	70	120640.69
10/3/2024	18	22.3	406	70	118449.32
10/3/2024	19	21.7	405	70	125783.4
10/3/2024	20	21.3	403	70	122115.35
10/3/2024	21	20.9	402	70	118651.16
10/3/2024	22	20.5	401	70	122546.59
10/3/2024	23	20.1	398	70	114972.04
10/3/2024	24	19.7	395	70	119745.4
10/3/2024	25	19.4	391	70	119269.75
10/3/2024	26	19.1	386	70	117225.46
10/3/2024	27	18.9	381	69	126378.24
10/3/2024	28	32	366	69	212094.67
10/3/2024	29	82.3	348	70	200616.97
10/3/2024	30	81.8	346	70	197886.1
10/3/2024	31	81.3	347	70	229400.33
10/3/2024	32	80.8	348	70	218548.7
10/3/2024	33	80.3	346	70	211945.59
10/3/2024	34	79.8	343	70	214624.47

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	35	79.3	340	70	197059.62
10/3/2024	36	78.9	337	70	197645.3
10/3/2024	37	78.4	332	70	198103.42
10/3/2024	38	78	326	70	180552.99
10/3/2024	39	77.6	320	70	200779.23
10/3/2024	40	77.1	315	71	200122.38
10/3/2024	41	76.6	310	71	192412.81
10/3/2024	42	76.2	305	71	191118.91
10/3/2024	43	75.6	301	71	106093.68
10/3/2024	44	75.2	298	71	94702.08
10/3/2024	45	74.7	296	71	95415.14
10/3/2024	46	74.2	293	71	104899.5
10/3/2024	47	73.8	289	71	98271.46
10/3/2024	48	73.3	286	71	102015.88
10/3/2024	49	72.9	282	71	101271.2
10/3/2024	50	72.5	277	71	97980.63
10/3/2024	51	72.1	271	71	98669.56
10/3/2024	52	71.7	267	71	95255.96
10/3/2024	53	71.3	263	71	98999.93
10/3/2024	54	70.9	262	71	98922.41
10/3/2024	55	70.5	261	71	95832.3
10/3/2024	56	70.1	257	71	93799.44
10/3/2024	57	69.7	254	71	93361.93
10/3/2024	58	69.3	250	71	98905.25
10/3/2024	59	68.9	247	71	99837.74
10/3/2024	60	68.5	244	71	98474.18
10/3/2024	61	68.1	242	71	101231.69
10/3/2024	62	67.7	242	71	93472.95
10/3/2024	63	67.1	241	71	92150.08
10/3/2024	64	66.7	240	71	87812.48
10/3/2024	65	66.2	238	71	88693.35
10/3/2024	66	65.8	237	71	90060.67
10/3/2024	67	65.3	236	71	92104.32
10/3/2024	68	64.9	236	71	98341.53
10/3/2024	69	64.4	235	71	94474.62
10/3/2024	70	63.9	235	71	94616.09
10/3/2024	71	63.5	235	71	87532.88
10/3/2024	72	63.1	234	71	93163.92
10/3/2024	73	62.7	233	71	92762.45
10/3/2024	74	62.2	232	71	83616.86
10/3/2024	75	61.7	231	71	98338.31
10/3/2024	76	61.3	230	71	93708.09
10/3/2024	77	60.8	230	71	97673.99
10/3/2024	78	60.3	232	71	84291.43
10/3/2024	79	59.8	232	71	93996.24

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	80	59.2	233	71	94771.14
10/3/2024	81	58.8	233	71	95262.51
10/3/2024	82	58.3	233	71	95002.82
10/3/2024	83	57.8	232	71	99523.09
10/3/2024	84	57.2	232	71	87661.81
10/3/2024	85	56.6	231	71	98097.73
10/3/2024	86	56.1	230	71	90706.17
10/3/2024	87	55.6	229	71	90047.29
10/3/2024	88	55.1	232	71	88387.5
10/3/2024	89	54.4	233	71	83981.07
10/3/2024	90	53.8	235	71	95043.05
10/3/2024	91	53.2	236	71	92765.01
10/3/2024	92	52.6	236	71	89749.68
10/3/2024	93	52	236	71	92747.34
10/3/2024	94	51.5	236	71	93845.26
10/3/2024	95	50.9	236	71	94618.65
10/3/2024	96	50.3	235	71	92149.87
10/3/2024	97	49.8	234	71	92551.44
10/3/2024	98	49.2	233	71	89547.38
10/3/2024	99	48.7	233	71	95392.35
10/3/2024	100	47.5	226	71	100594.01
10/3/2024	101	46.9	227	72	86022.94
10/3/2024	102	46.4	230	72	88526.05
10/3/2024	103	45.9	236	72	80263.86
10/3/2024	104	45.5	242	72	79479.54
10/3/2024	105	45.1	248	72	88459.71
10/3/2024	106	44.7	253	72	89046.65
10/3/2024	107	44.3	257	72	84465.38
10/3/2024	108	44	260	72	81900.06
10/3/2024	109	43.6	263	72	83914.09
10/3/2024	110	43.2	265	72	81751.97
10/3/2024	111	42.9	266	72	83910.06
10/3/2024	112	42.5	267	72	78927.47
10/3/2024	113	42.1	267	72	79459.36
10/3/2024	114	41.8	267	72	86170.88
10/3/2024	115	41.5	267	72	86087.53
10/3/2024	116	41.2	266	72	87763.3
10/3/2024	117	40.8	266	72	83892.9
10/3/2024	118	40.5	265	72	86760.9
10/3/2024	119	40.2	265	72	88979.04
10/3/2024	120	40	264	72	84394.75
10/3/2024	121	39.7	264	72	82925.79
10/3/2024	122	39.4	263	72	84131.82
10/3/2024	123	39.2	261	72	81327.74
10/3/2024	124	38.9	261	72	81218.6

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	125	38.6	260	72	71196.08
10/3/2024	126	38.4	259	72	83723.9
10/3/2024	127	38.1	259	72	84798.6
10/3/2024	128	37.9	258	72	82723.87
10/3/2024	129	37.6	258	72	77784.11
10/3/2024	130	44.2	256	72	85654.84
10/3/2024	131	61.5	245	72	90413.63
10/3/2024	132	74.2	244	72	83353.82
10/3/2024	133	73.8	248	72	80556.73
10/3/2024	134	73.5	252	72	85365.4
10/3/2024	135	73.1	255	72	84977.87
10/3/2024	136	72.8	256	72	83529.09
10/3/2024	137	72.4	257	72	81459.8
10/3/2024	138	72.1	257	72	84123.96
10/3/2024	139	71.8	257	72	83739.06
10/3/2024	140	71.5	255	72	84394.45
10/3/2024	141	71.2	254	72	81823.08
10/3/2024	142	70.9	253	72	83896.68
10/3/2024	143	70.6	251	72	83978.09
10/3/2024	144	70.2	249	72	84013.09
10/3/2024	145	70	247	72	79630.58
10/3/2024	146	69.7	245	72	83006.1
10/3/2024	147	69.3	243	72	79142.03
10/3/2024	148	69.1	241	72	83363.79
10/3/2024	149	68.8	239	72	78915.48
10/3/2024	150	68.5	237	73	86133.77
10/3/2024	151	68.1	234	73	80210.91
10/3/2024	152	67.8	232	73	78077.52
10/3/2024	153	67.5	230	73	83910.56
10/3/2024	154	67.2	228	73	75972.03
10/3/2024	155	67	225	73	82143.33
10/3/2024	156	66.7	223	73	79273.95
10/3/2024	157	66.4	221	73	83310.07
10/3/2024	158	66.1	218	73	77775.58
10/3/2024	159	65.9	216	73	77703.49
10/3/2024	160	65.6	214	73	80540.56
10/3/2024	161	65.3	212	73	79917.06
10/3/2024	162	65	211	73	79056.23
10/3/2024	163	64.8	209	73	83695.41
10/3/2024	164	64.6	207	73	77836.27
10/3/2024	165	64.3	206	73	78592.74
10/3/2024	166	64.1	204	73	80311.2
10/3/2024	167	63.8	203	73	80870.56
10/3/2024	168	63.6	201	73	80408.52
10/3/2024	169	63.4	199	73	79805.46

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	170	63.1	197	73	74423.76
10/3/2024	171	62.9	196	73	80590.51
10/3/2024	172	62.7	194	73	80948.01
10/3/2024	173	62.5	193	73	81604.21
10/3/2024	174	62.2	192	73	75181.11
10/3/2024	175	62.1	192	73	103319.96
10/3/2024	176	61.4	188	73	209331.04
10/3/2024	177	61.2	186	73	105804.23
10/3/2024	178	60.7	185	73	37439.09
10/3/2024	179	60.4	185	73	59021.83
10/3/2024	180	60.1	184	73	59588.57
10/3/2024	181	59.8	183	73	59193.58
10/3/2024	182	59.6	182	73	57532.53
10/3/2024	183	59.3	182	73	53591.94
10/3/2024	184	59.1	181	73	58469.17
10/3/2024	185	58.9	180	73	60259.48
10/3/2024	186	58.6	179	73	57947
10/3/2024	187	58.4	178	73	54034.81
10/3/2024	188	58.2	177	73	57504.25
10/3/2024	189	57.9	177	73	56523.64
10/3/2024	190	57.7	176	73	57059.79
10/3/2024	191	57.5	175	73	56577.74
10/3/2024	192	51.6	179	73	57552.97
10/3/2024	193	50.7	202	73	53111
10/3/2024	194	49.9	216	73	57012.61
10/3/2024	195	49.1	226	73	58045.04
10/3/2024	196	48.4	233	73	57234.05
10/3/2024	197	47.7	238	73	54490.61
10/3/2024	198	47.1	242	73	64739.23
10/3/2024	199	47.4	242	73	63096.45
10/3/2024	200	74	238	73	64083.88
10/3/2024	201	73.1	244	73	64587.71
10/3/2024	202	72.3	248	73	68751.11
10/3/2024	203	71.5	250	73	64922.09
10/3/2024	204	70.7	252	73	65580.5
10/3/2024	205	70	252	73	64515.63
10/3/2024	206	69.4	255	73	63752.3
10/3/2024	207	68.7	259	73	64946.25
10/3/2024	208	68	266	73	68086.96
10/3/2024	209	67.5	275	73	67362.01
10/3/2024	210	66.8	287	74	68441.23
10/3/2024	211	66.2	301	73	72173.87
10/3/2024	212	65.5	314	74	69901.85
10/3/2024	213	64.9	328	74	66588.58
10/3/2024	214	64.3	340	74	64192.08

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	215	63.7	349	74	66204.38
10/3/2024	216	63.1	356	74	68412.46
10/3/2024	217	62.4	361	74	68172.5
10/3/2024	218	61.9	365	74	71432.47
10/3/2024	219	61.3	368	74	69671.36
10/3/2024	220	60.7	371	74	68803.87
10/3/2024	221	60.2	374	74	73250.2
10/3/2024	222	59.6	376	74	68558
10/3/2024	223	59	378	74	69053.82
10/3/2024	224	58.4	380	74	70350.74
10/3/2024	225	57.9	382	74	72661.96
10/3/2024	226	57.3	383	74	69464.56
10/3/2024	227	56.7	384	74	67162.33
10/3/2024	228	56.2	385	74	76554.23
10/3/2024	229	55.7	387	74	84685.07
10/3/2024	230	55.1	389	74	74101.55
10/3/2024	231	54.5	390	74	69679.3
10/3/2024	232	54	390	74	78886.03
10/3/2024	233	53.5	391	74	74150.26
10/3/2024	234	53	392	74	74000.36
10/3/2024	235	52.4	393	74	72179.37
10/3/2024	236	52	393	74	68922.7
10/3/2024	237	51.5	392	74	73152.43
10/3/2024	238	51	392	74	76369.77
10/3/2024	239	50.5	392	74	72927.1
10/3/2024	240	50.1	394	74	75950.07
10/3/2024	241	49.6	394	74	74702.18
10/3/2024	242	49.1	394	74	74972.11
10/3/2024	243	48.7	395	74	79460.52
10/3/2024	244	48.2	397	74	83320.79
10/3/2024	245	47.7	397	74	73688.57
10/3/2024	246	47.2	397	74	80595.52
10/3/2024	247	46.8	398	74	74026.6
10/3/2024	248	46.4	399	74	74466.55
10/3/2024	249	45.9	400	74	74550.28
10/3/2024	250	45.4	402	74	76699.86
10/3/2024	251	45	401	74	74610.35
10/3/2024	252	44.4	402	74	86532.37
10/3/2024	253	44	404	74	77508.16
10/3/2024	254	43.5	407	74	78051.02
10/3/2024	255	43.1	410	74	76340.75
10/3/2024	256	42.6	413	74	80969.67
10/3/2024	257	42.2	415	74	79431.11
10/3/2024	258	41.7	413	74	77984.27
10/3/2024	259	41.3	411	74	78411.39

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	260	40.9	412	74	79898.84
10/3/2024	261	40.4	414	74	76957.48
10/3/2024	262	40.1	414	74	78479.47
10/3/2024	263	39.7	415	74	82412.63
10/3/2024	264	39.5	416	74	180306.54
10/3/2024	265	39.1	418	74	169383.85
10/3/2024	266	38.8	419	74	177106.53
10/3/2024	267	38.6	419	74	257105.52
10/3/2024	268	38.2	420	74	280052.43
10/3/2024	269	37.8	421	74	293789.42
10/3/2024	270	37.4	421	74	270304.41
10/3/2024	271	37.1	421	75	284999.53
10/3/2024	272	36.7	421	75	254689.89
10/3/2024	273	36.5	422	74	272076.51
10/3/2024	274	36.1	420	74	270182.67
10/3/2024	275	35.7	419	75	262218.31
10/3/2024	276	35.4	420	75	263745.16
10/3/2024	277	35	422	75	272413.41
10/3/2024	278	34.6	424	75	253869.13
10/3/2024	279	34.5	416	75	269774.06
10/3/2024	280	94.4	393	75	217617.6
10/3/2024	281	93.4	398	75	156109.56
10/3/2024	282	92.6	405	75	150486.38
10/3/2024	283	92.3	401	75	134203.29
10/3/2024	284	91.7	404	75	146143.98
10/3/2024	285	91.1	405	75	150824.22
10/3/2024	286	90.5	405	75	154681.05
10/3/2024	287	90.1	404	75	149552.7
10/3/2024	288	89.4	403	75	147324.91
10/3/2024	289	88.8	403	75	148104.83
10/3/2024	290	88.3	402	75	153157.3
10/3/2024	291	87.7	401	75	149502.38
10/3/2024	292	87.1	402	75	135673.84
10/3/2024	293	86.5	401	75	155093.25
10/3/2024	294	85.9	402	75	146867.5
10/3/2024	295	85.3	404	75	144400.97
10/3/2024	296	84.8	404	75	146279.51
10/3/2024	297	84.2	404	75	149677.7
10/3/2024	298	83.6	406	75	145157.31
10/3/2024	299	83.1	406	75	157452.13
10/3/2024	300	82.5	406	75	155970.26
10/3/2024	301	81.9	406	75	149972.86
10/3/2024	302	81.3	406	75	153302.07
10/3/2024	303	80.8	406	75	149014.39
10/3/2024	304	80.1	407	75	140078.5

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	305	79.6	409	75	151830.46
10/3/2024	306	79	408	75	152633.89
10/3/2024	307	78.5	407	75	153793.63
10/3/2024	308	77.9	408	75	140788.11
10/3/2024	309	77.4	407	75	153213.66
10/3/2024	310	76.9	408	75	149298.53
10/3/2024	311	76.2	409	75	142407.77
10/3/2024	312	75.7	410	75	155598.21
10/3/2024	313	75.1	412	75	151377.06
10/3/2024	314	74.6	413	75	135627.25
10/3/2024	315	74	391	75	157279.2
10/3/2024	316	73.5	399	75	157191.88
10/3/2024	317	73	404	75	137754.79
10/3/2024	318	72.5	408	75	151930.39
10/3/2024	319	72	409	74	152794.35
10/3/2024	320	71.5	411	74	145651.85
10/3/2024	321	71	412	74	157079.69
10/3/2024	322	70.4	415	74	153839.25
10/3/2024	323	69.9	415	74	146484.52
10/3/2024	324	69.3	418	74	153005.2
10/3/2024	325	68.7	421	74	162403.68
10/3/2024	326	68.1	423	74	153726.29
10/3/2024	327	67.4	426	75	160641.17
10/3/2024	328	66.8	428	75	163031.84
10/3/2024	329	66.2	429	75	163720.28
10/3/2024	330	65.6	427	75	158484.92
10/3/2024	331	65	427	75	153646.59
10/3/2024	332	64.5	426	75	166137.18
10/3/2024	333	63.9	429	75	149031.99
10/3/2024	334	63.3	429	75	150445.25
10/3/2024	335	62.8	426	75	158280.9
10/3/2024	336	62.2	427	75	157514.23
10/3/2024	337	61.7	425	75	151430.24
10/3/2024	338	61.1	426	75	164316.36
10/3/2024	339	60.6	431	75	158349.66
10/3/2024	340	59.9	435	75	152777.19
10/3/2024	341	59.4	438	75	154615.58
10/3/2024	342	58.8	434	75	157729.95
10/3/2024	343	58.3	431	75	156728.95
10/3/2024	344	57.7	434	75	157831.44
10/3/2024	345	57.1	434	75	152325.1
10/3/2024	346	56.6	431	75	161512.99
10/3/2024	347	56.1	431	75	162733.82
10/3/2024	348	55.5	431	75	149985.24
10/3/2024	349	55	430	75	161286.55

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	350	54.4	430	75	155176.45
10/3/2024	351	53.9	429	75	155234.68
10/3/2024	352	53.3	432	75	158364.22
10/3/2024	353	52.8	430	75	164797.76
10/3/2024	354	52.4	427	75	156401
10/3/2024	355	51.8	429	75	156933.7
10/3/2024	356	51.2	428	75	164047.06
10/3/2024	357	50.8	426	75	156310.8
10/3/2024	358	50.2	430	75	160971.14
10/3/2024	359	49.8	430	75	162525.54
10/3/2024	360	49.3	430	75	158221.58
10/3/2024	361	48.8	427	75	150331.5
10/3/2024	362	48.4	426	75	163148.82
10/3/2024	363	47.9	427	75	161146.87
10/3/2024	364	47.4	426	75	156092.29
10/3/2024	365	47	425	75	146786.78
10/3/2024	366	46.5	427	76	161838.02
10/3/2024	367	46	421	76	159136.78
10/3/2024	368	45.4	423	76	150064.94
10/3/2024	369	45.3	418	76	308096.67
10/3/2024	370	44.9	420	76	278080.54
10/3/2024	371	44.3	422	76	242681.45
10/3/2024	372	44	423	76	292197.79
10/3/2024	373	43.5	424	76	243345.88
10/3/2024	374	43.1	424	76	278841.97
10/3/2024	375	42.8	424	76	297287.88
10/3/2024	376	42.3	424	76	266316.02
10/3/2024	377	41.9	424	76	290344.86
10/3/2024	378	41.6	424	76	282684.04
10/3/2024	379	41.1	426	76	285020.01
10/3/2024	380	40.7	427	76	277389.32
10/3/2024	381	40.2	429	76	268092.6
10/3/2024	382	39.8	429	76	290387.9
10/3/2024	383	39.3	430	76	278549.43
10/3/2024	384	38.9	427	76	256335.62
10/3/2024	385	38.6	426	76	278891.01
10/3/2024	386	38.1	426	76	261000.43
10/3/2024	387	37.8	426	76	269968.78
10/3/2024	388	37.3	425	76	259861.72
10/3/2024	389	36.9	428	76	283540.52
10/3/2024	390	36.5	429	76	264765.63
10/3/2024	391	36.2	430	76	257532.48
10/3/2024	392	35.8	430	76	277632.82
10/3/2024	393	35.4	430	76	273185.4
10/3/2024	394	35	429	76	267131.13

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	395	34.7	427	76	258905.51
10/3/2024	396	34.2	425	76	221079.11
10/3/2024	397	33.9	424	76	225398.49
10/3/2024	398	33.5	425	76	211622.08
10/3/2024	399	33.1	426	76	216223.68
10/3/2024	400	32.8	424	76	224233.94
10/3/2024	401	32.5	422	76	213750.26
10/3/2024	402	32.1	422	76	221432.57
10/3/2024	403	31.7	421	76	220225.7
10/3/2024	404	31.4	420	76	217316.12
10/3/2024	405	31.1	418	76	220620.43
10/3/2024	406	30.7	416	76	209241.3
10/3/2024	407	30.4	414	76	214636.51
10/3/2024	408	30	411	76	214565.13
10/3/2024	409	29.7	409	76	198853.37
10/3/2024	410	29.4	408	76	230226.03
10/3/2024	411	29	399	76	323438.98
10/3/2024	412	28.6	406	76	358145.52
10/3/2024	413	28.3	406	76	251469
10/3/2024	414	28	409	76	244997.43
10/3/2024	415	27.7	411	76	249346.54
10/3/2024	416	27.4	412	76	233021.06
10/3/2024	417	26.7	414	76	217451.86
10/3/2024	418	26.5	413	76	245626.45
10/3/2024	419	26.2	414	76	234581.11
10/3/2024	420	26.1	416	76	223306.89
10/3/2024	421	25.8	417	76	243435.32
10/3/2024	422	25.5	418	76	226356.8
10/3/2024	423	26.7	409	76	243574.73
10/3/2024	424	25.1	396	76	246679.92
10/3/2024	425	24.9	391	76	218118.82
10/3/2024	426	24.8	389	76	242608.08
10/3/2024	427	24.8	388	76	222976.19
10/3/2024	428	24.4	371	76	218355.3
10/3/2024	429	24.3	368	76	205406.61
10/3/2024	430	24.1	367	76	188083.38
10/3/2024	431	23.9	365	76	216269.79
10/3/2024	432	23.7	363	76	204617.15
10/3/2024	433	23.5	360	76	192898.12
10/3/2024	434	23.3	356	76	203298.48
10/3/2024	435	23.3	349	76	197805.19
10/3/2024	436	23.3	342	76	190380.41
10/3/2024	437	23.3	335	76	206456.18
10/3/2024	438	23.4	327	76	182081.67
10/3/2024	439	23.5	319	76	171819.71

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/3/2024	440	23.3	312	76	10517.7
10/3/2024	441	23.2	304	76	15128.09
10/3/2024	442	23.3	296	76	15506.04
10/3/2024	443	23.3	289	76	13574.45
10/3/2024	444	23.3	282	76	12429.3
10/3/2024	445	23.3	275	76	12832.01
10/3/2024	446	23.3	269	76	12912.18
10/3/2024	447	23.3	262	76	13279.02
10/3/2024	448	23.3	256	76	13183.08
10/3/2024	449	23.4	250	76	13095.16
10/3/2024	450	23.4	244	76	13319.49
10/3/2024	451	23.4	239	76	12658.94
10/3/2024	452	23.4	234	76	12484.86
10/3/2024	453	23.4	229	76	12569.2
10/3/2024	454	23.5	224	75	12250.98
10/3/2024	455	23.5	219	75	12038.29
10/3/2024	456	23.5	214	75	5611.99
10/3/2024	457	23.6	210	75	11688.08
10/3/2024	458	23.6	206	75	5452.58
10/3/2024	459	23.6	202	75	6651.36
10/3/2024	460	23.6	198	75	11112.83
10/3/2024	461	23.6	194	75	11016.43
10/3/2024	462	23.6	191	75	11292.41
10/3/2024	463	23.6	187	75	3272.57
10/3/2024	464	23.6	184	75	8481.22
10/3/2024	465	23.6	180	75	11314.15
10/3/2024	466	18.5	253	69	61413.8
10/3/2024	467	17.2	258	70	21743.84
10/3/2024	468	16.4	262	69	25779.32
10/3/2024	469	30.6	262	70	34490.02
10/3/2024	470	40.9	261	70	35473.06
10/3/2024	471	31.2	396	71	32482.49
10/4/2024	472	30.9	400	71	162535.34
10/4/2024	473	30.3	402	71	121704.33
10/4/2024	474	29.9	403	71	124394.54
10/4/2024	475	29.5	405	71	131216.45
10/4/2024	476	28.9	408	70	124241.96
10/4/2024	477	28.4	407	69	118144.64
10/4/2024	478	27.8	407	69	122254.58
10/4/2024	479	27.2	408	70	114406.44
10/4/2024	480	26.6	409	70	122537.07
10/4/2024	481	25.9	409	70	119001.06
10/4/2024	482	25.3	409	70	120336.27
10/4/2024	483	24.8	410	70	126708.98
10/4/2024	484	24.3	410	70	126821.96

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	485	23.8	410	70	115825.37
10/4/2024	486	23.3	409	70	120221.49
10/4/2024	487	22.7	408	70	120640.69
10/4/2024	488	22.3	406	70	118449.32
10/4/2024	489	21.7	405	70	125783.4
10/4/2024	490	21.3	403	70	122115.35
10/4/2024	491	20.9	402	70	118651.16
10/4/2024	492	20.5	401	70	122546.59
10/4/2024	493	20.1	398	70	114972.04
10/4/2024	494	19.7	395	70	119745.4
10/4/2024	495	19.4	391	70	119269.75
10/4/2024	496	19.1	386	70	117225.46
10/4/2024	497	18.9	381	69	126378.24
10/4/2024	498	32	366	69	212094.67
10/4/2024	499	82.3	348	70	200616.97
10/4/2024	500	81.8	346	70	197886.1
10/4/2024	501	81.3	347	70	229400.33
10/4/2024	502	80.8	348	70	218548.7
10/4/2024	503	80.3	346	70	211945.59
10/4/2024	504	79.8	343	70	214624.47
10/4/2024	505	79.3	340	70	197059.62
10/4/2024	506	78.9	337	70	197645.3
10/4/2024	507	78.4	332	70	198103.42
10/4/2024	508	78	326	70	180552.99
10/4/2024	509	77.6	320	70	200779.23
10/4/2024	510	77.1	315	71	200122.38
10/4/2024	511	76.6	310	71	192412.81
10/4/2024	512	76.2	305	71	191118.91
10/4/2024	513	75.6	301	71	106093.68
10/4/2024	514	75.2	298	71	94702.08
10/4/2024	515	74.7	296	71	95415.14
10/4/2024	516	74.2	293	71	104899.5
10/4/2024	517	73.8	289	71	98271.46
10/4/2024	518	73.3	286	71	102015.88
10/4/2024	519	72.9	282	71	101271.2
10/4/2024	520	72.5	277	71	97980.63
10/4/2024	521	72.1	271	71	98669.56
10/4/2024	522	71.7	267	71	95255.96
10/4/2024	523	71.3	263	71	98999.93
10/4/2024	524	70.9	262	71	98922.41
10/4/2024	525	70.5	261	71	95832.3
10/4/2024	526	70.1	257	71	93799.44
10/4/2024	527	69.7	254	71	93361.93
10/4/2024	528	69.3	250	71	98905.25
10/4/2024	529	68.9	247	71	99837.74

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	530	68.5	244	71	98474.18
10/4/2024	531	68.1	242	71	101231.69
10/4/2024	532	67.7	242	71	93472.95
10/4/2024	533	67.1	241	71	92150.08
10/4/2024	534	66.7	240	71	87812.48
10/4/2024	535	66.2	238	71	88693.35
10/4/2024	536	65.8	237	71	90060.67
10/4/2024	537	65.3	236	71	92104.32
10/4/2024	538	64.9	236	71	98341.53
10/4/2024	539	64.4	235	71	94474.62
10/4/2024	540	63.9	235	71	94616.09
10/4/2024	541	63.5	235	71	87532.88
10/4/2024	542	63.1	234	71	93163.92
10/4/2024	543	62.7	233	71	92762.45
10/4/2024	544	62.2	232	71	83616.86
10/4/2024	545	61.7	231	71	98338.31
10/4/2024	546	61.3	230	71	93708.09
10/4/2024	547	60.8	230	71	97673.99
10/4/2024	548	60.3	232	71	84291.43
10/4/2024	549	59.8	232	71	93996.24
10/4/2024	550	59.2	233	71	94771.14
10/4/2024	551	58.8	233	71	95262.51
10/4/2024	552	58.3	233	71	95002.82
10/4/2024	553	57.8	232	71	99523.09
10/4/2024	554	57.2	232	71	87661.81
10/4/2024	555	56.6	231	71	98097.73
10/4/2024	556	56.1	230	71	90706.17
10/4/2024	557	55.6	229	71	90047.29
10/4/2024	558	55.1	232	71	88387.5
10/4/2024	559	54.4	233	71	83981.07
10/4/2024	560	53.8	235	71	95043.05
10/4/2024	561	53.2	236	71	92765.01
10/4/2024	562	52.6	236	71	89749.68
10/4/2024	563	52	236	71	92747.34
10/4/2024	564	51.5	236	71	93845.26
10/4/2024	565	50.9	236	71	94618.65
10/4/2024	566	50.3	235	71	92149.87
10/4/2024	567	49.8	234	71	92551.44
10/4/2024	568	49.2	233	71	89547.38
10/4/2024	569	48.7	233	71	95392.35
10/4/2024	570	47.5	226	71	100594.01
10/4/2024	571	46.9	227	72	86022.94
10/4/2024	572	46.4	230	72	88526.05
10/4/2024	573	45.9	236	72	80263.86
10/4/2024	574	45.5	242	72	79479.54

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	575	45.1	248	72	88459.71
10/4/2024	576	44.7	253	72	89046.65
10/4/2024	577	44.3	257	72	84465.38
10/4/2024	578	44	260	72	81900.06
10/4/2024	579	43.6	263	72	83914.09
10/4/2024	580	43.2	265	72	81751.97
10/4/2024	581	42.9	266	72	83910.06
10/4/2024	582	42.5	267	72	78927.47
10/4/2024	583	42.1	267	72	79459.36
10/4/2024	584	41.8	267	72	86170.88
10/4/2024	585	41.5	267	72	86087.53
10/4/2024	586	41.2	266	72	87763.3
10/4/2024	587	40.8	266	72	83892.9
10/4/2024	588	40.5	265	72	86760.9
10/4/2024	589	40.2	265	72	88979.04
10/4/2024	590	40	264	72	84394.75
10/4/2024	591	39.7	264	72	82925.79
10/4/2024	592	39.4	263	72	84131.82
10/4/2024	593	39.2	261	72	81327.74
10/4/2024	594	38.9	261	72	81218.6
10/4/2024	595	38.6	260	72	71196.08
10/4/2024	596	38.4	259	72	83723.9
10/4/2024	597	38.1	259	72	84798.6
10/4/2024	598	37.9	258	72	82723.87
10/4/2024	599	37.6	258	72	77784.11
10/4/2024	600	44.2	256	72	85654.84
10/4/2024	601	61.5	245	72	90413.63
10/4/2024	602	74.2	244	72	83353.82
10/4/2024	603	73.8	248	72	80556.73
10/4/2024	604	73.5	252	72	85365.4
10/4/2024	605	73.1	255	72	84977.87
10/4/2024	606	72.8	256	72	83529.09
10/4/2024	607	72.4	257	72	81459.8
10/4/2024	608	72.1	257	72	84123.96
10/4/2024	609	71.8	257	72	83739.06
10/4/2024	610	71.5	255	72	84394.45
10/4/2024	611	71.2	254	72	81823.08
10/4/2024	612	70.9	253	72	83896.68
10/4/2024	613	70.6	251	72	83978.09
10/4/2024	614	70.2	249	72	84013.09
10/4/2024	615	70	247	72	79630.58
10/4/2024	616	69.7	245	72	83006.1
10/4/2024	617	69.3	243	72	79142.03
10/4/2024	618	69.1	241	72	83363.79
10/4/2024	619	68.8	239	72	78915.48

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	620	68.5	237	73	86133.77
10/4/2024	621	68.1	234	73	80210.91
10/4/2024	622	67.8	232	73	78077.52
10/4/2024	623	67.5	230	73	83910.56
10/4/2024	624	67.2	228	73	75972.03
10/4/2024	625	67	225	73	82143.33
10/4/2024	626	66.7	223	73	79273.95
10/4/2024	627	66.4	221	73	83310.07
10/4/2024	628	66.1	218	73	77775.58
10/4/2024	629	65.9	216	73	77703.49
10/4/2024	630	65.6	214	73	80540.56
10/4/2024	631	65.3	212	73	79917.06
10/4/2024	632	65	211	73	79056.23
10/4/2024	633	64.8	209	73	83695.41
10/4/2024	634	64.6	207	73	77836.27
10/4/2024	635	64.3	206	73	78592.74
10/4/2024	636	64.1	204	73	80311.2
10/4/2024	637	63.8	203	73	80870.56
10/4/2024	638	63.6	201	73	80408.52
10/4/2024	639	63.4	199	73	79805.46
10/4/2024	640	63.1	197	73	74423.76
10/4/2024	641	62.9	196	73	80590.51
10/4/2024	642	62.7	194	73	80948.01
10/4/2024	643	62.5	193	73	81604.21
10/4/2024	644	62.2	192	73	75181.11
10/4/2024	645	62.1	192	73	103319.96
10/4/2024	646	61.4	188	73	209331.04
10/4/2024	647	61.2	186	73	105804.23
10/4/2024	648	60.7	185	73	37439.09
10/4/2024	649	60.4	185	73	59021.83
10/4/2024	650	60.1	184	73	59588.57
10/4/2024	651	59.8	183	73	59193.58
10/4/2024	652	59.6	182	73	57532.53
10/4/2024	653	59.3	182	73	53591.94
10/4/2024	654	59.1	181	73	58469.17
10/4/2024	655	58.9	180	73	60259.48
10/4/2024	656	58.6	179	73	57947
10/4/2024	657	58.4	178	73	54034.81
10/4/2024	658	58.2	177	73	57504.25
10/4/2024	659	57.9	177	73	56523.64
10/4/2024	660	57.7	176	73	57059.79
10/4/2024	661	57.5	175	73	56577.74
10/4/2024	662	51.6	179	73	57552.97
10/4/2024	663	50.7	202	73	53111
10/4/2024	664	49.9	216	73	57012.61

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	665	49.1	226	73	58045.04
10/4/2024	666	48.4	233	73	57234.05
10/4/2024	667	47.7	238	73	54490.61
10/4/2024	668	47.1	242	73	64739.23
10/4/2024	669	47.4	242	73	63096.45
10/4/2024	670	74	238	73	64083.88
10/4/2024	671	73.1	244	73	64587.71
10/4/2024	672	72.3	248	73	68751.11
10/4/2024	673	71.5	250	73	64922.09
10/4/2024	674	70.7	252	73	65580.5
10/4/2024	675	70	252	73	64515.63
10/4/2024	676	69.4	255	73	63752.3
10/4/2024	677	68.7	259	73	64946.25
10/4/2024	678	68	266	73	68086.96
10/4/2024	679	67.5	275	73	67362.01
10/4/2024	680	66.8	287	74	68441.23
10/4/2024	681	66.2	301	73	72173.87
10/4/2024	682	65.5	314	74	69901.85
10/4/2024	683	64.9	328	74	66588.58
10/4/2024	684	64.3	340	74	64192.08
10/4/2024	685	63.7	349	74	66204.38
10/4/2024	686	63.1	356	74	68412.46
10/4/2024	687	62.4	361	74	68172.5
10/4/2024	688	61.9	365	74	71432.47
10/4/2024	689	61.3	368	74	69671.36
10/4/2024	690	60.7	371	74	68803.87
10/4/2024	691	60.2	374	74	73250.2
10/4/2024	692	59.6	376	74	68558
10/4/2024	693	59	378	74	69053.82
10/4/2024	694	58.4	380	74	70350.74
10/4/2024	695	57.9	382	74	72661.96
10/4/2024	696	57.3	383	74	69464.56
10/4/2024	697	56.7	384	74	67162.33
10/4/2024	698	56.2	385	74	76554.23
10/4/2024	699	55.7	387	74	84685.07
10/4/2024	700	55.1	389	74	74101.55
10/4/2024	701	54.5	390	74	69679.3
10/4/2024	702	54	390	74	78886.03
10/4/2024	703	53.5	391	74	74150.26
10/4/2024	704	53	392	74	74000.36
10/4/2024	705	52.4	393	74	72179.37
10/4/2024	706	52	393	74	68922.7
10/4/2024	707	51.5	392	74	73152.43
10/4/2024	708	51	392	74	76369.77
10/4/2024	709	50.5	392	74	72927.1

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	710	50.1	394	74	75950.07
10/4/2024	711	49.6	394	74	74702.18
10/4/2024	712	49.1	394	74	74972.11
10/4/2024	713	48.7	395	74	79460.52
10/4/2024	714	48.2	397	74	83320.79
10/4/2024	715	47.7	397	74	73688.57
10/4/2024	716	47.2	397	74	80595.52
10/4/2024	717	46.8	398	74	74026.6
10/4/2024	718	46.4	399	74	74466.55
10/4/2024	719	45.9	400	74	74550.28
10/4/2024	720	45.4	402	74	76699.86
10/4/2024	721	45	401	74	74610.35
10/4/2024	722	44.4	402	74	86532.37
10/4/2024	723	44	404	74	77508.16
10/4/2024	724	43.5	407	74	78051.02
10/4/2024	725	43.1	410	74	76340.75
10/4/2024	726	42.6	413	74	80969.67
10/4/2024	727	42.2	415	74	79431.11
10/4/2024	728	41.7	413	74	77984.27
10/4/2024	729	41.3	411	74	78411.39
10/4/2024	730	40.9	412	74	79898.84
10/4/2024	731	40.4	414	74	76957.48
10/4/2024	732	40.1	414	74	78479.47
10/4/2024	733	39.7	415	74	82412.63
10/4/2024	734	39.5	416	74	180306.54
10/4/2024	735	39.1	418	74	169383.85
10/4/2024	736	38.8	419	74	177106.53
10/4/2024	737	38.6	419	74	257105.52
10/4/2024	738	38.2	420	74	280052.43
10/4/2024	739	37.8	421	74	293789.42
10/4/2024	740	37.4	421	74	270304.41
10/4/2024	741	37.1	421	75	284999.53
10/4/2024	742	36.7	421	75	254689.89
10/4/2024	743	36.5	422	74	272076.51
10/4/2024	744	36.1	420	74	270182.67
10/4/2024	745	35.7	419	75	262218.31
10/4/2024	746	35.4	420	75	263745.16
10/4/2024	747	35	422	75	272413.41
10/4/2024	748	34.6	424	75	253869.13
10/4/2024	749	34.5	416	75	269774.06
10/4/2024	750	94.4	393	75	217617.6
10/4/2024	751	93.4	398	75	156109.56
10/4/2024	752	92.6	405	75	150486.38
10/4/2024	753	92.3	401	75	134203.29
10/4/2024	754	91.7	404	75	146143.98

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	755	91.1	405	75	150824.22
10/4/2024	756	90.5	405	75	154681.05
10/4/2024	757	90.1	404	75	149552.7
10/4/2024	758	89.4	403	75	147324.91
10/4/2024	759	88.8	403	75	148104.83
10/4/2024	760	88.3	402	75	153157.3
10/4/2024	761	87.7	401	75	149502.38
10/4/2024	762	87.1	402	75	135673.84
10/4/2024	763	86.5	401	75	155093.25
10/4/2024	764	85.9	402	75	146867.5
10/4/2024	765	85.3	404	75	144400.97
10/4/2024	766	84.8	404	75	146279.51
10/4/2024	767	84.2	404	75	149677.7
10/4/2024	768	83.6	406	75	145157.31
10/4/2024	769	83.1	406	75	157452.13
10/4/2024	770	82.5	406	75	155970.26
10/4/2024	771	81.9	406	75	149972.86
10/4/2024	772	81.3	406	75	153302.07
10/4/2024	773	80.8	406	75	149014.39
10/4/2024	774	80.1	407	75	140078.5
10/4/2024	775	79.6	409	75	151830.46
10/4/2024	776	79	408	75	152633.89
10/4/2024	777	78.5	407	75	153793.63
10/4/2024	778	77.9	408	75	140788.11
10/4/2024	779	77.4	407	75	153213.66
10/4/2024	780	76.9	408	75	149298.53
10/4/2024	781	76.2	409	75	142407.77
10/4/2024	782	75.7	410	75	155598.21
10/4/2024	783	75.1	412	75	151377.06
10/4/2024	784	74.6	413	75	135627.25
10/4/2024	785	74	391	75	157279.2
10/4/2024	786	73.5	399	75	157191.88
10/4/2024	787	73	404	75	137754.79
10/4/2024	788	72.5	408	75	151930.39
10/4/2024	789	72	409	74	152794.35
10/4/2024	790	71.5	411	74	145651.85
10/4/2024	791	71	412	74	157079.69
10/4/2024	792	70.4	415	74	153839.25
10/4/2024	793	69.9	415	74	146484.52
10/4/2024	794	69.3	418	74	153005.2
10/4/2024	795	68.7	421	74	162403.68
10/4/2024	796	68.1	423	74	153726.29
10/4/2024	797	67.4	426	75	160641.17
10/4/2024	798	66.8	428	75	163031.84
10/4/2024	799	66.2	429	75	163720.28

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	800	65.6	427	75	158484.92
10/4/2024	801	65	427	75	153646.59
10/4/2024	802	64.5	426	75	166137.18
10/4/2024	803	63.9	429	75	149031.99
10/4/2024	804	63.3	429	75	150445.25
10/4/2024	805	62.8	426	75	158280.9
10/4/2024	806	62.2	427	75	157514.23
10/4/2024	807	61.7	425	75	151430.24
10/4/2024	808	61.1	426	75	164316.36
10/4/2024	809	60.6	431	75	158349.66
10/4/2024	810	59.9	435	75	152777.19
10/4/2024	811	59.4	438	75	154615.58
10/4/2024	812	58.8	434	75	157729.95
10/4/2024	813	58.3	431	75	156728.95
10/4/2024	814	57.7	434	75	157831.44
10/4/2024	815	57.1	434	75	152325.1
10/4/2024	816	56.6	431	75	161512.99
10/4/2024	817	56.1	431	75	162733.82
10/4/2024	818	55.5	431	75	149985.24
10/4/2024	819	55	430	75	161286.55
10/4/2024	820	54.4	430	75	155176.45
10/4/2024	821	53.9	429	75	155234.68
10/4/2024	822	53.3	432	75	158364.22
10/4/2024	823	52.8	430	75	164797.76
10/4/2024	824	52.4	427	75	156401
10/4/2024	825	51.8	429	75	156933.7
10/4/2024	826	51.2	428	75	164047.06
10/4/2024	827	50.8	426	75	156310.8
10/4/2024	828	50.2	430	75	160971.14
10/4/2024	829	49.8	430	75	162525.54
10/4/2024	830	49.3	430	75	158221.58
10/4/2024	831	48.8	427	75	150331.5
10/4/2024	832	48.4	426	75	163148.82
10/4/2024	833	47.9	427	75	161146.87
10/4/2024	834	47.4	426	75	156092.29
10/4/2024	835	47	425	75	146786.78
10/4/2024	836	46.5	427	76	161838.02
10/4/2024	837	46	421	76	159136.78
10/4/2024	838	45.4	423	76	150064.94
10/4/2024	839	45.3	418	76	308096.67
10/4/2024	840	44.9	420	76	278080.54
10/4/2024	841	44.3	422	76	242681.45
10/4/2024	842	44	423	76	292197.79
10/4/2024	843	43.5	424	76	243345.88
10/4/2024	844	43.1	424	76	278841.97

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	845	42.8	424	76	297287.88
10/4/2024	846	42.3	424	76	266316.02
10/4/2024	847	41.9	424	76	290344.86
10/4/2024	848	41.6	424	76	282684.04
10/4/2024	849	41.1	426	76	285020.01
10/4/2024	850	40.7	427	76	277389.32
10/4/2024	851	40.2	429	76	268092.6
10/4/2024	852	39.8	429	76	290387.9
10/4/2024	853	39.3	430	76	278549.43
10/4/2024	854	38.9	427	76	256335.62
10/4/2024	855	38.6	426	76	278891.01
10/4/2024	856	38.1	426	76	261000.43
10/4/2024	857	37.8	426	76	269968.78
10/4/2024	858	37.3	425	76	259861.72
10/4/2024	859	36.9	428	76	283540.52
10/4/2024	860	36.5	429	76	264765.63
10/4/2024	861	36.2	430	76	257532.48
10/4/2024	862	35.8	430	76	277632.82
10/4/2024	863	35.4	430	76	273185.4
10/4/2024	864	35	429	76	267131.13
10/4/2024	865	34.7	427	76	258905.51
10/4/2024	866	34.2	425	76	221079.11
10/4/2024	867	33.9	424	76	225398.49
10/4/2024	868	33.5	425	76	211622.08
10/4/2024	869	33.1	426	76	216223.68
10/4/2024	870	32.8	424	76	224233.94
10/4/2024	871	32.5	422	76	213750.26
10/4/2024	872	32.1	422	76	221432.57
10/4/2024	873	31.7	421	76	220225.7
10/4/2024	874	31.4	420	76	217316.12
10/4/2024	875	31.1	418	76	220620.43
10/4/2024	876	30.7	416	76	209241.3
10/4/2024	877	30.4	414	76	214636.51
10/4/2024	878	30	411	76	214565.13
10/4/2024	879	29.7	409	76	198853.37
10/4/2024	880	29.4	408	76	230226.03
10/4/2024	881	29	399	76	323438.98
10/4/2024	882	28.6	406	76	358145.52
10/4/2024	883	28.3	406	76	251469
10/4/2024	884	28	409	76	244997.43
10/4/2024	885	27.7	411	76	249346.54
10/4/2024	886	27.4	412	76	233021.06
10/4/2024	887	26.7	414	76	217451.86
10/4/2024	888	26.5	413	76	245626.45
10/4/2024	889	26.2	414	76	234581.11

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	890	26.1	416	76	223306.89
10/4/2024	891	25.8	417	76	243435.32
10/4/2024	892	25.5	418	76	226356.8
10/4/2024	893	26.7	409	76	243574.73
10/4/2024	894	25.1	396	76	246679.92
10/4/2024	895	24.9	391	76	218118.82
10/4/2024	896	24.8	389	76	242608.08
10/4/2024	897	24.8	388	76	222976.19
10/4/2024	898	24.4	371	76	218355.3
10/4/2024	899	24.3	368	76	205406.61
10/4/2024	900	24.1	367	76	188083.38
10/4/2024	901	23.9	365	76	216269.79
10/4/2024	902	23.7	363	76	204617.15
10/4/2024	903	23.5	360	76	192898.12
10/4/2024	904	23.3	356	76	203298.48
10/4/2024	905	23.3	349	76	197805.19
10/4/2024	906	23.3	342	76	190380.41
10/4/2024	907	23.3	335	76	206456.18
10/4/2024	908	23.4	327	76	182081.67
10/4/2024	909	23.5	319	76	171819.71
10/4/2024	910	23.3	312	76	10517.7
10/4/2024	911	23.2	304	76	15128.09
10/4/2024	912	23.3	296	76	15506.04
10/4/2024	913	23.3	289	76	13574.45
10/4/2024	914	23.3	282	76	12429.3
10/4/2024	915	23.3	275	76	12832.01
10/4/2024	916	23.3	269	76	12912.18
10/4/2024	917	23.3	262	76	13279.02
10/4/2024	918	23.3	256	76	13183.08
10/4/2024	919	23.4	250	76	13095.16
10/4/2024	920	23.4	244	76	13319.49
10/4/2024	921	23.4	239	76	12658.94
10/4/2024	922	23.4	234	76	12484.86
10/4/2024	923	23.4	229	76	12569.2
10/4/2024	924	23.5	224	75	12250.98
10/4/2024	925	23.5	219	75	12038.29
10/4/2024	926	23.5	214	75	5611.99
10/4/2024	927	23.6	210	75	11688.08
10/4/2024	928	23.6	206	75	5452.58
10/4/2024	929	23.6	202	75	6651.36
10/4/2024	930	23.6	198	75	11112.83
10/4/2024	931	23.6	194	75	11016.43
10/4/2024	932	23.6	191	75	11292.41
10/4/2024	933	23.6	187	75	3272.57
10/4/2024	934	23.6	184	75	8481.22

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	935	23.6	180	75	11314.15
10/4/2024	936	18.5	253	69	61413.8
10/4/2024	937	17.2	258	70	21743.84
10/4/2024	938	16.4	262	69	25779.32
10/4/2024	939	30.6	262	70	34490.02
10/4/2024	940	40.9	261	70	35473.06
10/4/2024	941	53.9	266	70	35590.55
10/4/2024	942	53	270	70	38114.81
10/4/2024	943	52.2	273	70	37467.37
10/4/2024	944	51.3	276	70	36118.55
10/4/2024	945	50.3	278	70	37568.39
10/4/2024	946	49.5	280	70	39701.24
10/4/2024	947	48.5	281	70	35650.06
10/4/2024	948	47.6	283	70	38760.52
10/4/2024	949	46.8	284	70	39073.49
10/4/2024	950	45.9	286	70	41151.27
10/4/2024	951	45.1	287	70	41418.81
10/4/2024	952	44.3	287	70	43858.4
10/4/2024	953	43.5	288	70	40061.48
10/4/2024	954	42.6	289	70	42446.78
10/4/2024	955	41.9	290	70	41254.18
10/4/2024	956	41.2	291	70	41119.81
10/4/2024	957	40.6	287	70	38679.71
10/4/2024	958	40.1	286	70	40191.68
10/4/2024	959	39.3	285	70	41074.21
10/4/2024	960	39.2	284	70	41953.84
10/4/2024	961	38.6	282	70	41959.63
10/4/2024	962	38.5	284	70	41249.43
10/4/2024	963	37.7	288	70	40425.17
10/4/2024	964	37.1	289	70	42903.4
10/4/2024	965	36.4	286	70	44353.48
10/4/2024	966	35.9	283	70	43065.49
10/4/2024	967	35.1	287	70	42375.04
10/4/2024	968	34.4	287	70	42138.69
10/4/2024	969	33.8	285	70	42335.74
10/4/2024	970	33.2	287	71	40710.18
10/4/2024	971	32.4	292	71	42139.05
10/4/2024	972	32	291	71	220824
10/4/2024	973	31.6	288	71	271446.42
10/4/2024	974	31.1	289	71	252314.99
10/4/2024	975	30.3	293	71	271992.34
10/4/2024	976	31.2	296	71	273485.79
10/4/2024	977	39.3	292	71	255092.16
10/4/2024	978	28.6	290	71	274583.77
10/4/2024	979	28	288	71	261002.49

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	980	27.4	289	71	260405.12
10/4/2024	981	27	287	71	261450.12
10/4/2024	982	26.4	286	71	252060.69
10/4/2024	983	25.9	285	71	269919.07
10/4/2024	984	25.5	286	71	248249.04
10/4/2024	985	34.4	287	71	254685.31
10/4/2024	986	24.2	287	71	234860.85
10/4/2024	987	23.6	287	71	245371.85
10/4/2024	988	23.1	287	71	241273.26
10/4/2024	989	22.4	289	71	216660.83
10/4/2024	990	21.8	291	72	205953.78
10/4/2024	991	21.7	287	71	214957.12
10/4/2024	992	58.5	279	72	190021.97
10/4/2024	993	88.2	276	72	184915.8
10/4/2024	994	87.4	278	72	196969.75
10/4/2024	995	86.8	277	72	180933.99
10/4/2024	996	86.1	275	72	182089.25
10/4/2024	997	85.5	276	72	185071.56
10/4/2024	998	84.9	276	72	166292.67
10/4/2024	999	84.2	278	72	193468.11
10/4/2024	1000	83.6	278	72	185646.32
10/4/2024	1001	82.9	278	72	180103.04
10/4/2024	1002	82.2	279	72	183179.28
10/4/2024	1003	81.6	280	72	198464.07
10/4/2024	1004	81	280	72	184427.7
10/4/2024	1005	80.3	280	72	180770.84
10/4/2024	1006	79.6	281	72	186712.32
10/4/2024	1007	78.9	280	72	175896.87
10/4/2024	1008	78.3	280	72	190423
10/4/2024	1009	77.7	280	72	168736.05
10/4/2024	1010	77	279	72	184636.06
10/4/2024	1011	76.4	279	72	177907.41
10/4/2024	1012	75.7	279	71	126877.9
10/4/2024	1013	74.9	278	72	110479.44
10/4/2024	1014	74.2	278	72	115736.14
10/4/2024	1015	73.5	278	71	119209.88
10/4/2024	1016	72.8	278	71	115543.42
10/4/2024	1017	72.1	278	71	116278.77
10/4/2024	1018	71.5	278	71	141316.27
10/4/2024	1019	70.9	278	71	151742.96
10/4/2024	1020	70.3	278	71	152775.61
10/4/2024	1021	69.7	279	71	151814.98
10/4/2024	1022	69	279	71	141893.25
10/4/2024	1023	68.4	279	71	157462.99
10/4/2024	1024	67.7	279	71	148017.1

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	1025	67.1	279	71	154233.02
10/4/2024	1026	66.4	280	71	149310.45
10/4/2024	1027	65.8	280	71	148114.98
10/4/2024	1028	65.1	280	71	152079.74
10/4/2024	1029	64.4	282	72	149341.36
10/4/2024	1030	63.8	283	72	153973.25
10/4/2024	1031	63.1	284	72	151104.36
10/4/2024	1032	62.4	285	72	160428.52
10/4/2024	1033	61.7	285	72	155214.55
10/4/2024	1034	61.2	285	72	155087.57
10/4/2024	1035	60.5	285	72	147291.7
10/4/2024	1036	59.8	286	72	160381.13
10/4/2024	1037	59.2	287	72	150736.01
10/4/2024	1038	58.6	287	72	154816.06
10/4/2024	1039	58	287	72	160103.33
10/4/2024	1040	57.3	287	72	142586.04
10/4/2024	1041	56.7	287	72	154946.47
10/4/2024	1042	56	287	72	149259.25
10/4/2024	1043	55.4	288	72	142849.78
10/4/2024	1044	54.8	289	72	157762.04
10/4/2024	1045	54.1	290	72	139423.28
10/4/2024	1046	53.5	291	72	160166.52
10/4/2024	1047	52.8	292	72	150139.2
10/4/2024	1048	52.1	292	72	155861.6
10/4/2024	1049	51.6	292	72	158457.96
10/4/2024	1050	50.9	292	72	145377.85
10/4/2024	1051	50.4	292	72	155958.78
10/4/2024	1052	49.8	292	72	146110.64
10/4/2024	1053	49.2	292	72	155906.99
10/4/2024	1054	48.6	293	72	154346.42
10/4/2024	1055	48	294	72	150372.2
10/4/2024	1056	47.3	295	72	148151.4
10/4/2024	1057	46.7	296	72	147643.88
10/4/2024	1058	46.2	296	72	153348.2
10/4/2024	1059	45.6	296	72	151640.13
10/4/2024	1060	45	296	72	152243.25
10/4/2024	1061	44.5	296	72	160658.54
10/4/2024	1062	44	295	72	157606.99
10/4/2024	1063	43.5	295	72	154048.26
10/4/2024	1064	43	294	72	151463.28
10/4/2024	1065	42.5	293	72	156164.85
10/4/2024	1066	42	293	72	147877.33
10/4/2024	1067	41.5	293	72	155004.91
10/4/2024	1068	41	293	72	147256.67
10/4/2024	1069	40.5	292	72	146802.79

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	1070	40.1	291	72	160276
10/4/2024	1071	39.6	290	72	150703.4
10/4/2024	1072	39.1	290	72	149143.46
10/4/2024	1073	38.6	289	72	160632.17
10/4/2024	1074	38.2	290	72	165834.08
10/4/2024	1075	37.7	291	72	147416.16
10/4/2024	1076	37.2	292	72	152292.26
10/4/2024	1077	36.8	292	72	157411.28
10/4/2024	1078	36.3	292	72	152854.82
10/4/2024	1079	35.8	292	72	156098.4
10/4/2024	1080	35.3	292	72	155936.79
10/4/2024	1081	34.9	292	72	153433.32
10/4/2024	1082	34.4	292	72	150541.59
10/4/2024	1083	33.9	292	72	152921.71
10/4/2024	1084	33.5	292	72	144268.39
10/4/2024	1085	33.1	291	72	149704.37
10/4/2024	1086	32.7	291	72	152734.36
10/4/2024	1087	32.2	291	72	157383.46
10/4/2024	1088	31.8	291	72	156642.88
10/4/2024	1089	70.2	281	73	154388.16
10/4/2024	1090	113.8	275	73	155806.95
10/4/2024	1091	113.1	277	73	139514.91
10/4/2024	1092	112.6	279	72	158408
10/4/2024	1093	112	280	72	149277.37
10/4/2024	1094	111.5	281	72	155014.04
10/4/2024	1095	110.9	282	73	146698.88
10/4/2024	1096	110.5	282	73	151359.6
10/4/2024	1097	109.9	282	73	156241.91
10/4/2024	1098	109.3	283	73	149413.1
10/4/2024	1099	108.9	283	73	152197.6
10/4/2024	1100	108.3	284	73	149936.81
10/4/2024	1101	107.8	284	73	153730
10/4/2024	1102	107.2	285	73	155023.4
10/4/2024	1103	106.6	287	73	142007.86
10/4/2024	1104	106	290	73	161846.38
10/4/2024	1105	105.4	292	73	140362.04
10/4/2024	1106	104.8	293	73	160913.91
10/4/2024	1107	104.2	294	73	150910.14
10/4/2024	1108	103.7	294	73	159640.25
10/4/2024	1109	103.1	294	73	162700.64
10/4/2024	1110	102.5	295	73	146821.17
10/4/2024	1111	101.9	296	73	163799.24
10/4/2024	1112	101.3	297	73	158232.79
10/4/2024	1113	100.8	297	73	158101.09
10/4/2024	1114	100.1	298	73	150703.41

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	1115	99.6	298	73	145352.1
10/4/2024	1116	99	299	73	158525.74
10/4/2024	1117	98.5	299	73	150890.95
10/4/2024	1118	97.9	299	73	143672.22
10/4/2024	1119	97.3	299	73	150258.56
10/4/2024	1120	96.8	299	73	150719.68
10/4/2024	1121	96.3	298	73	162756.49
10/4/2024	1122	95.7	298	73	155091.46
10/4/2024	1123	95.2	297	73	161349.85
10/4/2024	1124	94.8	297	73	196332.66
10/4/2024	1125	94.2	297	73	143162.56
10/4/2024	1126	93.7	297	73	143048.58
10/4/2024	1127	93.1	297	73	144185.19
10/4/2024	1128	92.6	298	74	153668.9
10/4/2024	1129	91.9	299	74	146869.28
10/4/2024	1130	91.4	299	74	132508
10/4/2024	1131	90.8	300	74	144976.82
10/4/2024	1132	90.2	300	74	133984.24
10/4/2024	1133	89.7	300	74	141813.51
10/4/2024	1134	89.2	300	74	136374.26
10/4/2024	1135	88.6	300	74	133992.04
10/4/2024	1136	88.1	300	74	151020
10/4/2024	1137	87.6	299	74	123759.08
10/4/2024	1138	87.1	299	74	137626.11
10/4/2024	1139	86.6	299	74	142161.53
10/4/2024	1140	86.1	299	74	141717.07
10/4/2024	1141	85.6	299	74	132038.27
10/4/2024	1142	85.1	298	74	146915.27
10/4/2024	1143	84.6	297	74	135588.61
10/4/2024	1144	84.2	295	74	131998.18
10/4/2024	1145	83.7	293	74	137993.28
10/4/2024	1146	83.3	291	74	143285.12
10/4/2024	1147	82.9	290	74	144567.57
10/4/2024	1148	82.4	288	74	133321.71
10/4/2024	1149	82	287	74	145109.68
10/4/2024	1150	81.5	286	74	151897.49
10/4/2024	1151	81.1	286	74	143261.37
10/4/2024	1152	80.5	286	74	181852.33
10/4/2024	1153	80.2	287	74	235793.33
10/4/2024	1154	79.7	288	74	172920.26
10/4/2024	1155	79	289	74	144219.13
10/4/2024	1156	78.5	291	74	145381.11
10/4/2024	1157	77.9	291	74	148907.9
10/4/2024	1158	77.5	291	74	152765.69
10/4/2024	1159	76.9	290	74	149933.89

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	1160	76.4	291	74	156332.75
10/4/2024	1161	75.9	292	74	141312.85
10/4/2024	1162	75.3	293	74	146409.74
10/4/2024	1163	74.8	292	74	146447.46
10/4/2024	1164	74.3	291	74	153348.6
10/4/2024	1165	73.8	290	74	151116.33
10/4/2024	1166	73.3	291	74	142592.66
10/4/2024	1167	72.7	292	74	155979.84
10/4/2024	1168	72.1	294	74	157545.95
10/4/2024	1169	71.6	295	74	145623.37
10/4/2024	1170	71	297	75	148525.88
10/4/2024	1171	70.5	297	75	150288.61
10/4/2024	1172	70	297	75	152836.03
10/4/2024	1173	69.3	298	75	143067.64
10/4/2024	1174	68.7	300	75	149936.83
10/4/2024	1175	68.1	301	75	141239.48
10/4/2024	1176	67.5	301	75	160618.34
10/4/2024	1177	66.9	300	75	153725.88
10/4/2024	1178	66.4	300	75	148473.35
10/4/2024	1179	65.8	299	75	150699.19
10/4/2024	1180	65.3	298	75	145140.99
10/4/2024	1181	64.8	297	75	148895.74
10/4/2024	1182	64.3	296	75	149114.44
10/4/2024	1183	63.8	294	75	154599.15
10/4/2024	1184	63.3	293	75	143602.89
10/4/2024	1185	62.8	291	75	145283.14
10/4/2024	1186	62.3	289	75	140677.72
10/4/2024	1187	61.8	287	75	142575.23
10/4/2024	1188	61.4	287	75	145269.69
10/4/2024	1189	60.9	285	75	146721
10/4/2024	1190	60.5	284	75	149635.66
10/4/2024	1191	59.9	283	75	153512.94
10/4/2024	1192	59.5	282	75	149579.25
10/4/2024	1193	59.1	281	75	149503.65
10/4/2024	1194	58.5	282	75	149083.16
10/4/2024	1195	58	283	75	158598.05
10/4/2024	1196	57.5	284	75	160224.66
10/4/2024	1197	56.9	284	75	157908.54
10/4/2024	1198	56.5	283	75	146047.41
10/4/2024	1199	56	282	75	145710.31
10/4/2024	1200	55.5	281	75	158536.98
10/4/2024	1201	55.1	280	75	146294.33
10/4/2024	1202	54.5	280	75	141868.49
10/4/2024	1203	54	280	75	145349.59
10/4/2024	1204	53.5	280	75	145098.15

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	1205	53	281	75	131581.02
10/4/2024	1206	52.6	281	75	145344.64
10/4/2024	1207	52.1	281	75	144535.17
10/4/2024	1208	51.6	281	75	150945.12
10/4/2024	1209	51.1	280	75	152861.82
10/4/2024	1210	50.7	280	75	140609.16
10/4/2024	1211	50.2	280	75	152719.7
10/4/2024	1212	49.7	279	75	159486.61
10/4/2024	1213	49.2	279	75	145680.87
10/4/2024	1214	48.8	278	75	153647.11
10/4/2024	1215	48.3	278	75	147229.96
10/4/2024	1216	47.9	277	75	147426.12
10/4/2024	1217	47.4	278	75	136762.06
10/4/2024	1218	47	280	75	156837.04
10/4/2024	1219	46.4	283	75	145653.96
10/4/2024	1220	46	285	75	136092.15
10/4/2024	1221	45.5	288	75	149623.25
10/4/2024	1222	45	289	75	142932.12
10/4/2024	1223	44.5	290	75	142338.01
10/4/2024	1224	44.1	291	75	150038.57
10/4/2024	1225	43.7	291	75	154265.33
10/4/2024	1226	43.2	292	75	160292.35
10/4/2024	1227	44.9	289	75	147334.13
10/4/2024	1228	41.6	285	75	154214.04
10/4/2024	1229	40.9	287	75	149423.18
10/4/2024	1230	40.4	289	75	150769.94
10/4/2024	1231	39.8	291	75	134726.63
10/4/2024	1232	39.2	292	75	154731.19
10/4/2024	1233	38.6	293	75	157231.21
10/4/2024	1234	38	293	75	143554.23
10/4/2024	1235	37.5	293	75	136927.63
10/4/2024	1236	37	294	75	148756.42
10/4/2024	1237	36.5	294	75	141243.06
10/4/2024	1238	36	294	75	142101.01
10/4/2024	1239	35.4	295	76	150533.47
10/4/2024	1240	34.9	295	76	150592.22
10/4/2024	1241	34.4	296	76	146302.42
10/4/2024	1242	33.8	297	76	161285.55
10/4/2024	1243	33.4	298	76	151329.15
10/4/2024	1244	32.8	298	76	149463.91
10/4/2024	1245	32.3	299	76	150521.24
10/4/2024	1246	31.8	300	76	154693.72
10/4/2024	1247	31.3	300	76	152988.77
10/4/2024	1248	30.7	301	76	147846.82
10/4/2024	1249	30.2	301	76	154792.19

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	1250	29.8	301	76	153776.56
10/4/2024	1251	29.2	301	76	158793.96
10/4/2024	1252	28.7	302	76	153145.98
10/4/2024	1253	28.2	302	76	152734.17
10/4/2024	1254	27.7	303	76	158701.76
10/4/2024	1255	27.3	304	76	153966.68
10/4/2024	1256	26.7	304	76	150648.03
10/4/2024	1257	26.3	305	76	163291.49
10/4/2024	1258	26.4	302	76	144631.96
10/4/2024	1259	24.9	298	76	161724.75
10/4/2024	1260	24.4	297	76	163759.14
10/4/2024	1261	23.9	294	76	161985.54
10/4/2024	1262	23.4	296	76	150605.62
10/4/2024	1263	23	297	76	150049.02
10/4/2024	1264	22.5	298	76	158962.09
10/4/2024	1265	22.1	300	76	156280.12
10/4/2024	1266	21.6	300	76	147181.32
10/4/2024	1267	21.1	300	76	150973.26
10/4/2024	1268	20.7	301	76	144748.07
10/4/2024	1269	20.3	302	76	148475.21
10/4/2024	1270	19.9	303	76	148830.03
10/4/2024	1271	19.4	304	76	161195.97
10/4/2024	1272	19.1	304	76	149390.8
10/4/2024	1273	18.6	304	76	158230.79
10/4/2024	1274	18.4	304	76	155149.45
10/4/2024	1275	18	303	76	154916.53
10/4/2024	1276	17.6	302	76	146809.72
10/4/2024	1277	17.3	302	76	154189.75
10/4/2024	1278	17	302	76	153625.93
10/4/2024	1279	16.7	302	76	163701.01
10/4/2024	1280	16.4	302	76	153545.92
10/4/2024	1281	16.1	301	76	172327.24
10/4/2024	1282	15.8	301	76	150819.86
10/4/2024	1283	15.5	300	76	152217.83
10/4/2024	1284	15.2	299	76	163155.85
10/4/2024	1285	14.9	298	76	162602.45
10/4/2024	1286	14.6	297	76	149897.63
10/4/2024	1287	14.3	296	76	156575.62
10/4/2024	1288	14.1	295	76	155591.24
10/4/2024	1289	13.8	295	76	150599.39
10/4/2024	1290	13.5	294	76	158039.23
10/4/2024	1291	13.2	294	76	162149.94
10/4/2024	1292	12.9	294	76	152831.95
10/4/2024	1293	12.6	296	76	158932.5
10/4/2024	1294	12.3	297	76	155370.91

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/4/2024	1295	12	297	76	150715.84
10/7/2024	1296	36.5	231	74	70512.07
10/7/2024	1297	172.6	224	74	70933.56
10/7/2024	1298	172.2	224	74	72088.57
10/7/2024	1299	171.8	226	74	70220.84
10/7/2024	1300	171.4	229	74	69033.41
10/7/2024	1301	171	231	74	74615.27
10/7/2024	1302	170.7	233	74	72254.66
10/7/2024	1303	170.3	235	74	75540.58
10/7/2024	1304	170	236	74	71752.82
10/7/2024	1305	169.6	238	74	71159.97
10/7/2024	1306	169.2	238	74	72042.24
10/7/2024	1307	168.9	239	74	68570.22
10/7/2024	1308	168.6	240	74	69346.23
10/7/2024	1309	168.2	241	74	75848.23
10/7/2024	1310	167.9	242	74	70897.04
10/7/2024	1311	167.5	243	74	73933.23
10/7/2024	1312	167.1	244	74	69734.79
10/7/2024	1313	166.7	246	74	72448.02
10/7/2024	1314	166.4	248	74	72487.43
10/7/2024	1315	166	249	74	70227.2
10/7/2024	1316	165.6	251	74	72840.23
10/7/2024	1317	165.2	254	75	70537.08
10/7/2024	1318	164.8	256	75	70388.25
10/7/2024	1319	164.4	257	75	77430.52
10/7/2024	1320	164	258	75	67105.68
10/7/2024	1321	163.6	259	75	71965.01
10/7/2024	1322	163.1	261	75	68383.63
10/7/2024	1323	162.6	263	75	66243.26
10/7/2024	1324	162.3	265	75	67363.45
10/7/2024	1325	161.9	266	74	65414.63
10/7/2024	1326	161.4	268	74	65901.11
10/7/2024	1327	161	270	74	62591.16
10/7/2024	1328	160.5	273	74	66924.07
10/7/2024	1329	160	277	75	66006.35
10/7/2024	1330	159.4	280	74	62778.15
10/7/2024	1331	158.9	283	75	70138.8
10/7/2024	1332	158.4	284	75	68726.25
10/7/2024	1333	157.9	285	74	64113.56
10/7/2024	1334	157.3	288	74	68302.87
10/7/2024	1335	156.6	291	75	67111.16
10/7/2024	1336	156.1	294	75	67712.15
10/7/2024	1337	155.5	296	75	69976.95
10/7/2024	1338	154.9	297	75	68232.03
10/7/2024	1339	154.3	299	75	69367.03

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1340	153.7	300	75	68202.48
10/7/2024	1341	153.1	302	75	65609.25
10/7/2024	1342	152.5	303	75	70071.62
10/7/2024	1343	151.9	304	75	67740.37
10/7/2024	1344	151.3	305	75	67520.3
10/7/2024	1345	150.6	305	75	71239.03
10/7/2024	1346	150.1	306	75	71010.22
10/7/2024	1347	149.4	307	75	65460.46
10/7/2024	1348	148.8	308	75	70100.21
10/7/2024	1349	148.2	309	75	70613.3
10/7/2024	1350	147.6	310	75	68274.71
10/7/2024	1351	147.1	305	75	67729.98
10/7/2024	1352	146.9	292	75	65868.09
10/7/2024	1353	146.8	278	75	67600.55
10/7/2024	1354	146.7	267	75	69368.98
10/7/2024	1355	146.7	260	75	67759.52
10/7/2024	1356	146.7	256	75	70926.09
10/7/2024	1357	146.7	252	75	68893.16
10/7/2024	1358	146.7	248	75	65188.17
10/7/2024	1359	146.7	243	75	65653.81
10/7/2024	1360	146.8	239	75	65126.12
10/7/2024	1361	146.8	235	75	64794.72
10/7/2024	1362	146.8	230	75	66498.23
10/7/2024	1363	146.9	226	75	71285.01
10/7/2024	1364	146.9	222	75	62089.8
10/7/2024	1365	146.9	218	75	66995.3
10/7/2024	1366	146.9	214	75	66903.47
10/7/2024	1367	147	210	75	65239.39
10/7/2024	1368	147	206	75	68559.06
10/7/2024	1369	147	203	75	67072.17
10/7/2024	1370	147.1	199	75	60443.15
10/7/2024	1371	147.1	196	75	62981.44
10/7/2024	1372	147.1	193	75	66742.56
10/7/2024	1373	147.2	189	75	69490.98
10/7/2024	1374	147.2	186	75	65782.57
10/7/2024	1375	147.2	184	75	60814.58
10/7/2024	1376	147.2	181	75	63714.86
10/7/2024	1377	147.2	178	75	63294.96
10/7/2024	1378	147.2	175	75	61884.39
10/7/2024	1379	146.9	183	75	59705.49
10/7/2024	1380	146.6	193	75	60982.29
10/7/2024	1381	146.2	203	75	56622.42
10/7/2024	1382	145.8	213	75	57536.24
10/7/2024	1383	145.3	224	75	58193.24
10/7/2024	1384	144.6	237	75	54868.64

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1385	144.1	248	75	60810.52
10/7/2024	1386	143.4	258	75	61339.07
10/7/2024	1387	142.7	265	75	60582.27
10/7/2024	1388	142	271	75	60875.69
10/7/2024	1389	141.4	276	75	59241.59
10/7/2024	1390	140.7	280	75	61313.25
10/7/2024	1391	140	283	75	60612.68
10/7/2024	1392	139.4	285	75	58258.28
10/7/2024	1393	138.8	286	75	62517.65
10/7/2024	1394	138.2	287	75	61345.13
10/7/2024	1395	137.5	289	75	62795.17
10/7/2024	1396	136.9	290	75	62108.91
10/7/2024	1397	136.3	292	75	62464.61
10/7/2024	1398	135.7	293	75	60125.21
10/7/2024	1399	135.1	294	75	63691.94
10/7/2024	1400	134.5	295	75	63792.95
10/7/2024	1401	133.9	297	75	59838.77
10/7/2024	1402	133.2	298	75	61794.91
10/7/2024	1403	132.7	299	75	62859.49
10/7/2024	1404	132.2	300	75	64894.12
10/7/2024	1405	131.5	301	75	63092.48
10/7/2024	1406	130.9	302	75	60245.77
10/7/2024	1407	130.4	303	75	60530.52
10/7/2024	1408	129.8	304	75	67162.32
10/7/2024	1409	129.2	305	75	64212.98
10/7/2024	1410	128.7	306	75	64422.65
10/7/2024	1411	128.1	307	75	66652.68
10/7/2024	1412	127.5	308	75	63673.58
10/7/2024	1413	127	309	75	60821.1
10/7/2024	1414	126.4	310	75	65724.68
10/7/2024	1415	125.9	310	75	65927.76
10/7/2024	1416	125.3	311	75	63100.44
10/7/2024	1417	124.8	305	76	66206
10/7/2024	1418	124.6	291	75	62624.87
10/7/2024	1419	124.5	278	76	65019.69
10/7/2024	1420	124.4	267	76	61437.78
10/7/2024	1421	124.3	259	76	60306.89
10/7/2024	1422	124.2	255	76	64783.04
10/7/2024	1423	124.2	251	76	65894.73
10/7/2024	1424	124.2	247	76	63569.65
10/7/2024	1425	124.2	242	76	59424.57
10/7/2024	1426	124.3	238	76	64877.41
10/7/2024	1427	124.3	234	76	63313.06
10/7/2024	1428	124.3	229	76	64070.15
10/7/2024	1429	124.3	225	76	60379.14

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1430	124.3	220	76	60367.41
10/7/2024	1431	124.3	216	76	60501.72
10/7/2024	1432	124.3	212	76	62628.86
10/7/2024	1433	124.4	208	76	58408.68
10/7/2024	1434	124.4	205	76	63422.19
10/7/2024	1435	124.4	201	76	66684.63
10/7/2024	1436	124.5	198	76	65051.94
10/7/2024	1437	124.5	194	76	62493.8
10/7/2024	1438	124.5	191	76	60373.42
10/7/2024	1439	124.5	188	76	61534.76
10/7/2024	1440	124.5	185	76	64464.98
10/7/2024	1441	124.5	182	76	59107.84
10/7/2024	1442	124.5	179	75	56994.32
10/7/2024	1443	124.5	177	76	61903.41
10/7/2024	1444	124	179	76	57055.66
10/7/2024	1445	123.7	190	76	57099.29
10/7/2024	1446	123.3	200	76	55529.79
10/7/2024	1447	122.9	209	76	53198.88
10/7/2024	1448	122.5	218	76	56423.99
10/7/2024	1449	122	227	76	55985.87
10/7/2024	1450	121.5	236	76	57603.39
10/7/2024	1451	121	245	76	54770.15
10/7/2024	1452	120.5	253	76	56227.63
10/7/2024	1453	120	259	76	56686.3
10/7/2024	1454	119.4	264	76	56518.56
10/7/2024	1455	118.8	268	76	59290.62
10/7/2024	1456	118.3	272	76	59078.63
10/7/2024	1457	117.7	275	76	58922.76
10/7/2024	1458	117.1	278	76	59903.18
10/7/2024	1459	116.5	281	76	57098.66
10/7/2024	1460	116	283	76	58011.9
10/7/2024	1461	115.4	285	76	59620.56
10/7/2024	1462	114.8	288	76	64858.32
10/7/2024	1463	114.2	290	76	60212.81
10/7/2024	1464	113.7	292	76	62467.39
10/7/2024	1465	113.1	294	76	59576.34
10/7/2024	1466	112.5	295	76	59757
10/7/2024	1467	111.9	297	76	59346.98
10/7/2024	1468	111.4	298	76	60125.54
10/7/2024	1469	110.7	301	76	64295.21
10/7/2024	1470	110.2	302	76	64667.19
10/7/2024	1471	109.6	299	76	61752.34
10/7/2024	1472	109	299	76	62826.43
10/7/2024	1473	108.5	301	76	62108.02
10/7/2024	1474	108	301	76	65232.97

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1475	107.4	302	76	60797.32
10/7/2024	1476	106.9	302	76	64252.19
10/7/2024	1477	106.3	303	76	79982.28
10/7/2024	1478	105.7	304	76	63519.43
10/7/2024	1479	105.1	306	76	65669.12
10/7/2024	1480	104.5	308	76	64254.69
10/7/2024	1481	104	309	76	64691.08
10/7/2024	1482	103.4	309	76	63958.38
10/7/2024	1483	103.1	295	76	68704.67
10/7/2024	1484	102.9	282	76	66038.96
10/7/2024	1485	102.7	270	76	61290.78
10/7/2024	1486	102.6	260	76	62948.57
10/7/2024	1487	102.5	256	76	61809.5
10/7/2024	1488	102.5	252	76	64991.92
10/7/2024	1489	102.5	247	76	62482.96
10/7/2024	1490	102.5	243	76	60957.7
10/7/2024	1491	102.5	238	76	60883.96
10/7/2024	1492	102.5	234	76	62656.97
10/7/2024	1493	102.5	230	76	57735.26
10/7/2024	1494	102.5	225	76	57907.26
10/7/2024	1495	102.5	221	76	66019.46
10/7/2024	1496	102.5	217	76	60829.77
10/7/2024	1497	102.6	213	76	60857.35
10/7/2024	1498	102.6	209	76	64042.68
10/7/2024	1499	102.6	206	76	61438.07
10/7/2024	1500	102.6	202	76	62189.6
10/7/2024	1501	102.7	199	76	62211.84
10/7/2024	1502	102.7	195	76	59983.71
10/7/2024	1503	102.7	192	76	58027.1
10/7/2024	1504	102.7	189	76	58200.02
10/7/2024	1505	102.7	186	76	61992.66
10/7/2024	1506	102.8	183	76	59267
10/7/2024	1507	102.8	180	76	58880.79
10/7/2024	1508	102.8	177	76	61697.19
10/7/2024	1509	102.8	175	76	62018.59
10/7/2024	1510	102.2	180	75	54742.19
10/7/2024	1511	101.8	193	75	54650.65
10/7/2024	1512	101.3	206	75	52969.67
10/7/2024	1513	100.7	220	75	55257.03
10/7/2024	1514	100.1	233	75	57342.28
10/7/2024	1515	99.5	244	75	57241.62
10/7/2024	1516	98.9	252	75	56709.25
10/7/2024	1517	98.4	257	75	56493.75
10/7/2024	1518	97.8	262	75	55430.13
10/7/2024	1519	97.2	267	75	55721.82

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1520	96.6	271	75	56130.3
10/7/2024	1521	96	274	75	54873.77
10/7/2024	1522	95.3	277	75	58650.15
10/7/2024	1523	94.7	280	75	56852.21
10/7/2024	1524	94	284	75	59926.93
10/7/2024	1525	93.3	287	75	58799.53
10/7/2024	1526	92.6	289	75	58624.14
10/7/2024	1527	92	292	75	63822.76
10/7/2024	1528	91.3	294	75	61492.9
10/7/2024	1529	90.6	297	75	57515.9
10/7/2024	1530	89.9	299	75	62179.53
10/7/2024	1531	89.2	301	75	60429.32
10/7/2024	1532	88.5	302	75	58066.19
10/7/2024	1533	87.9	303	75	61664.3
10/7/2024	1534	87.1	305	75	61512.27
10/7/2024	1535	86.5	306	75	58688.98
10/7/2024	1536	85.8	306	75	63379.78
10/7/2024	1537	85.2	307	75	63656.99
10/7/2024	1538	84.6	308	75	61873.52
10/7/2024	1539	84	309	75	61309.89
10/7/2024	1540	83.3	310	75	61089.81
10/7/2024	1541	82.7	310	75	61440.42
10/7/2024	1542	82.1	311	75	63785.26
10/7/2024	1543	81.7	304	75	72499.81
10/7/2024	1544	81.4	291	75	62611.57
10/7/2024	1545	81.2	278	75	63781.97
10/7/2024	1546	81	266	75	62803.38
10/7/2024	1547	80.9	259	75	61020.31
10/7/2024	1548	80.8	254	75	61190.35
10/7/2024	1549	80.7	249	75	60008.32
10/7/2024	1550	80.6	244	75	59026.46
10/7/2024	1551	80.6	239	75	62816.69
10/7/2024	1552	80.6	235	75	61819.26
10/7/2024	1553	80.5	230	75	63532.28
10/7/2024	1554	80.5	226	75	59306.41
10/7/2024	1555	80.5	221	75	62000.76
10/7/2024	1556	80.5	217	75	57901.65
10/7/2024	1557	80.6	213	75	56228.75
10/7/2024	1558	80.6	210	75	62740.21
10/7/2024	1559	80.6	206	75	61746.9
10/7/2024	1560	80.6	202	75	59001.46
10/7/2024	1561	80.6	199	75	55390.35
10/7/2024	1562	80.6	195	75	61528.63
10/7/2024	1563	80.6	192	75	58890.91
10/7/2024	1564	80.7	189	75	63764.44

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1565	80.7	186	75	58968.94
10/7/2024	1566	80.7	183	75	57008.22
10/7/2024	1567	80.7	180	75	60290.91
10/7/2024	1568	80.7	177	75	57116.29
10/7/2024	1569	80.7	175	75	57242.49
10/7/2024	1570	80.3	176	74	54757.52
10/7/2024	1571	79.9	190	74	55212.48
10/7/2024	1572	79.4	202	74	55631.4
10/7/2024	1573	79	215	74	54162.21
10/7/2024	1574	78.5	228	74	57447.4
10/7/2024	1575	77.9	238	74	57276.43
10/7/2024	1576	77.4	247	74	57794.66
10/7/2024	1577	76.9	254	74	56962.07
10/7/2024	1578	76.3	261	74	54692.36
10/7/2024	1579	75.7	267	74	56251.66
10/7/2024	1580	75.1	271	74	55046.57
10/7/2024	1581	74.6	274	74	58233.45
10/7/2024	1582	74	277	74	62944.69
10/7/2024	1583	73.5	279	74	60048.23
10/7/2024	1584	72.9	281	74	60899.23
10/7/2024	1585	72.3	282	74	60163.69
10/7/2024	1586	71.8	284	74	57875.02
10/7/2024	1587	71.2	286	74	58776.89
10/7/2024	1588	70.6	289	74	60854.1
10/7/2024	1589	70	291	74	59674.71
10/7/2024	1590	69.5	292	74	61669.54
10/7/2024	1591	68.9	294	74	59308.43
10/7/2024	1592	68.3	295	74	60708.75
10/7/2024	1593	67.7	296	74	58329.89
10/7/2024	1594	67.2	296	74	59768.27
10/7/2024	1595	66.5	297	74	59720.51
10/7/2024	1596	66	298	74	65030.87
10/7/2024	1597	65.5	298	74	65800.54
10/7/2024	1598	64.9	299	74	61828.82
10/7/2024	1599	64.4	299	74	62385.57
10/7/2024	1600	63.9	300	74	63302.25
10/7/2024	1601	63.4	301	74	64695.45
10/7/2024	1602	62.8	301	74	61414.64
10/7/2024	1603	62.2	302	74	62370.35
10/7/2024	1604	61.7	303	74	76631.95
10/7/2024	1605	61.5	290	74	61584.03
10/7/2024	1606	61.2	278	74	62435.86
10/7/2024	1607	61	267	74	60521.36
10/7/2024	1608	60.9	257	74	62442.73
10/7/2024	1609	60.8	252	74	60972.86

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1610	60.6	248	74	59368.53
10/7/2024	1611	60.6	243	74	61080.5
10/7/2024	1612	60.5	239	74	76827.82
10/7/2024	1613	60.6	234	74	65026.27
10/7/2024	1614	60.6	230	74	63344.34
10/7/2024	1615	60.5	225	74	60801.06
10/7/2024	1616	60.5	221	74	63618.02
10/7/2024	1617	60.5	217	74	62076.52
10/7/2024	1618	60.6	213	74	59449.58
10/7/2024	1619	60.6	209	74	60631.44
10/7/2024	1620	60.6	206	74	56827.15
10/7/2024	1621	60.6	202	74	58736.22
10/7/2024	1622	60.6	199	74	60894.84
10/7/2024	1623	60.6	195	74	61807.8
10/7/2024	1624	60.6	192	74	61074.89
10/7/2024	1625	60.6	189	74	55093.25
10/7/2024	1626	60.6	187	74	58999.99
10/7/2024	1627	60.6	184	74	60015.65
10/7/2024	1628	60.7	181	74	59135.01
10/7/2024	1629	60.6	178	74	60216.66
10/7/2024	1630	60.7	176	74	61798.32
10/7/2024	1631	59.9	185	73	55706.9
10/7/2024	1632	59.6	197	73	58008.3
10/7/2024	1633	59.1	208	73	55106.74
10/7/2024	1634	58.7	221	73	56135.19
10/7/2024	1635	58.1	232	73	53973.27
10/7/2024	1636	57.6	241	73	55443.25
10/7/2024	1637	57.1	250	73	58224.18
10/7/2024	1638	56.5	257	73	58546.83
10/7/2024	1639	55.9	263	73	60494
10/7/2024	1640	55.4	269	73	56182.02
10/7/2024	1641	54.8	274	73	55421.11
10/7/2024	1642	54.1	279	73	56931.84
10/7/2024	1643	53.5	283	73	58401.29
10/7/2024	1644	52.9	286	73	58132.84
10/7/2024	1645	52.3	288	73	61187.26
10/7/2024	1646	51.7	290	73	61711.24
10/7/2024	1647	51.1	292	73	62027.97
10/7/2024	1648	50.5	293	73	61494.63
10/7/2024	1649	50	295	73	59967.91
10/7/2024	1650	49.4	296	73	61557.96
10/7/2024	1651	48.8	298	73	60387.67
10/7/2024	1652	48.2	299	73	58950.39
10/7/2024	1653	47.6	300	73	58716.72
10/7/2024	1654	47	301	73	60677.22

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1655	46.4	302	73	59173.53
10/7/2024	1656	45.9	303	73	63686.31
10/7/2024	1657	45.3	304	73	63603.6
10/7/2024	1658	44.6	306	73	63332.96
10/7/2024	1659	44	304	73	63352.01
10/7/2024	1660	43.4	305	73	61501.12
10/7/2024	1661	42.8	307	73	63362.84
10/7/2024	1662	42.2	308	73	64307.39
10/7/2024	1663	41.7	305	73	64724.84
10/7/2024	1664	41.4	291	73	61893.72
10/7/2024	1665	41.1	279	73	61378.36
10/7/2024	1666	40.9	268	73	60904.69
10/7/2024	1667	40.7	259	73	60698.6
10/7/2024	1668	40.6	254	73	65169.18
10/7/2024	1669	40.5	249	73	61535.71
10/7/2024	1670	40.4	244	73	62632.76
10/7/2024	1671	40.3	239	73	65469.5
10/7/2024	1672	40.3	234	73	61081.69
10/7/2024	1673	40.3	229	73	62162.69
10/7/2024	1674	40.3	225	73	60211.54
10/7/2024	1675	40.3	221	73	60135.45
10/7/2024	1676	40.2	216	73	60800.02
10/7/2024	1677	40.2	212	73	64027.91
10/7/2024	1678	40.3	209	73	59756.81
10/7/2024	1679	40.2	205	73	62222.74
10/7/2024	1680	40.2	202	73	58245.44
10/7/2024	1681	40.2	199	73	60581.71
10/7/2024	1682	40.3	195	73	60143.39
10/7/2024	1683	40.3	192	73	59124.56
10/7/2024	1684	40.3	189	73	63445.84
10/7/2024	1685	40.3	186	73	61335.8
10/7/2024	1686	40.3	184	73	60973.43
10/7/2024	1687	40.3	181	73	62424.74
10/7/2024	1688	40.3	178	73	57355.27
10/7/2024	1689	40.3	176	73	57282.76
10/7/2024	1690	39.8	176	73	53287.3
10/7/2024	1691	39.5	190	73	56729.85
10/7/2024	1692	39.1	203	73	57661.28
10/7/2024	1693	38.8	215	73	58315.8
10/7/2024	1694	38.4	226	73	60115.88
10/7/2024	1695	38	236	73	56663.02
10/7/2024	1696	37.6	245	73	57536.44
10/7/2024	1697	37.1	253	73	57359.34
10/7/2024	1698	36.7	261	73	55614.81
10/7/2024	1699	36.2	267	73	55411.02

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1700	35.7	273	73	63929.27
10/7/2024	1701	35.1	278	73	60128.02
10/7/2024	1702	34.6	282	73	59304.1
10/7/2024	1703	34	285	73	58195.45
10/7/2024	1704	33.4	287	73	59607.06
10/7/2024	1705	32.8	289	73	58846.79
10/7/2024	1706	32.3	291	73	60657.26
10/7/2024	1707	31.7	292	73	61551.88
10/7/2024	1708	31.2	293	73	63721.46
10/7/2024	1709	30.6	294	73	62370.68
10/7/2024	1710	30	296	73	61215.21
10/7/2024	1711	29.4	298	73	62104.82
10/7/2024	1712	28.9	299	73	61335.06
10/7/2024	1713	28.4	300	73	64946.42
10/7/2024	1714	27.9	301	73	61988.62
10/7/2024	1715	27.3	302	73	62965.58
10/7/2024	1716	26.8	303	73	60702.14
10/7/2024	1717	26.4	302	73	61376.82
10/7/2024	1718	25.8	303	73	61667.23
10/7/2024	1719	25.3	304	73	62739.02
10/7/2024	1720	24.9	305	73	63681.69
10/7/2024	1721	24.4	306	73	61384.51
10/7/2024	1722	24.1	301	73	63251.64
10/7/2024	1723	23.8	287	73	59567.74
10/7/2024	1724	23.6	275	73	58566.24
10/7/2024	1725	23.4	264	73	57407.88
10/7/2024	1726	23.3	257	73	61278.74
10/7/2024	1727	23.1	252	73	61726.66
10/7/2024	1728	23.1	247	73	62328.98
10/7/2024	1729	23	242	73	61475.66
10/7/2024	1730	22.9	237	73	61481.49
10/7/2024	1731	22.9	232	73	57168.54
10/7/2024	1732	22.8	227	73	64753.26
10/7/2024	1733	22.8	223	73	61073.45
10/7/2024	1734	22.8	218	73	61114.61
10/7/2024	1735	22.8	214	73	60058.49
10/7/2024	1736	22.8	211	73	62435.87
10/7/2024	1737	22.8	207	73	62419.64
10/7/2024	1738	22.8	203	73	58112.95
10/7/2024	1739	22.8	200	73	64725.16
10/7/2024	1740	22.8	197	73	62160.11
10/7/2024	1741	22.8	194	73	58874.58
10/7/2024	1742	22.8	191	73	60640.03
10/7/2024	1743	22.8	188	73	61236.03
10/7/2024	1744	22.8	185	73	60581.7

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1745	22.8	182	73	60783.96
10/7/2024	1746	22.8	180	73	59830.78
10/7/2024	1747	22.9	177	73	60408.61
10/7/2024	1748	22.9	175	73	58280.63
10/7/2024	1749	22.1	186	73	55988.55
10/7/2024	1750	21.8	201	73	57165.69
10/7/2024	1751	21.4	216	73	58669.5
10/7/2024	1752	21	229	73	60133.15
10/7/2024	1753	20.5	240	73	57995.8
10/7/2024	1754	20.1	249	73	55803.41
10/7/2024	1755	19.7	257	73	55595.1
10/7/2024	1756	19.2	263	73	59179.03
10/7/2024	1757	18.7	269	73	55831.04
10/7/2024	1758	18.3	274	73	59414.46
10/7/2024	1759	17.8	278	73	61272.35
10/7/2024	1760	17.3	282	73	60740.54
10/7/2024	1761	16.8	286	73	63009.82
10/7/2024	1762	16.2	290	73	58153.91
10/7/2024	1763	15.7	290	73	61104.87
10/7/2024	1764	15.1	293	73	61428.24
10/7/2024	1765	14.7	294	73	57615.37
10/7/2024	1766	14.2	294	73	63897.9
10/7/2024	1767	13.6	296	73	61589.39
10/7/2024	1768	13.2	297	73	62982.27
10/7/2024	1769	12.7	299	73	62433.82
10/7/2024	1770	12.2	300	73	62116.8
10/7/2024	1771	11.8	302	73	62905.89
10/7/2024	1772	11.2	303	73	58569.95
10/7/2024	1773	10.8	304	73	60073.43
10/7/2024	1774	10.4	305	73	64759.37
10/7/2024	1775	9.9	306	73	63979.66
10/7/2024	1776	9.4	307	73	64268.37
10/7/2024	1777	9	307	73	64073.24
10/7/2024	1778	8.5	308	73	62829.16
10/7/2024	1779	8.3	298	73	62696.61
10/7/2024	1780	8.2	285	73	62321.18
10/7/2024	1781	8	273	73	60072.3
10/7/2024	1782	7.9	263	73	58091.8
10/7/2024	1783	7.9	257	73	60184.04
10/7/2024	1784	7.8	253	73	66085.87
10/7/2024	1785	7.7	248	73	64520.44
10/7/2024	1786	7.7	243	73	59778.33
10/7/2024	1787	7.7	238	73	58074.41
10/7/2024	1788	7.7	234	73	59286.66
10/7/2024	1789	7.6	229	73	56640.75

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/7/2024	1790	7.6	224	73	60123.15
10/7/2024	1791	7.6	220	73	58599.35
10/7/2024	1792	7.7	216	73	62586.63
10/7/2024	1793	7.7	212	73	61702.46
10/7/2024	1794	7.7	208	73	61228.24
10/7/2024	1795	7.7	205	73	63012.2
10/7/2024	1796	7.7	201	73	56732.66
10/7/2024	1797	7.7	198	73	57784.32
10/7/2024	1798	7.7	195	73	62532.83
10/7/2024	1799	7.7	191	73	62801.45
10/7/2024	1800	7.7	188	73	61211.37
10/7/2024	1801	7.8	185	73	60067.53
10/7/2024	1802	7.8	182	73	56072.02
10/7/2024	1803	7.8	180	73	57075.47
10/7/2024	1804	7.8	177	73	59410.73
10/7/2024	1805	7.5	183	72	54924.33
10/7/2024	1806	7.2	199	72	56464.63
10/7/2024	1807	6.9	213	72	57032.79
10/7/2024	1808	6.6	224	72	58083.79
10/7/2024	1809	6.3	234	72	56284.92
10/7/2024	1810	6	242	72	57276.44
10/7/2024	1811	5.7	249	72	53896.24
10/7/2024	1812	5.4	255	72	57670.17
10/7/2024	1813	5.1	260	72	54838.21
10/7/2024	1814	4.8	262	72	56915.84
10/7/2024	1815	4.4	265	72	58339.54
10/7/2024	1816	4	269	72	59367.34
10/7/2024	1817	3.7	271	72	58014.23
10/7/2024	1818	3.4	272	72	58318.84
10/7/2024	1819	3	274	72	56166.73
10/7/2024	1820	2.7	276	72	61469.94
10/7/2024	1821	2.3	278	72	61181.33
10/7/2024	1822	2	280	72	60615.38
10/7/2024	1823	1.7	281	72	59932
10/7/2024	1824	1.4	282	72	58684.32
10/7/2024	1825	1.1	282	72	59688.83
10/7/2024	1826	0.8	282	72	59999.44
10/7/2024	1827	0.5	281	72	61879.26
10/7/2024	1828	0.2	281	72	58718.9
10/8/2024	1829	131.7	288	76	36123.63
10/8/2024	1830	176.3	282	76	36442.14
10/8/2024	1831	175.6	284	76	36728.44
10/8/2024	1832	175.1	287	76	36657.27
10/8/2024	1833	174.5	290	76	36954.07
10/8/2024	1834	174	292	76	35196.64

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	1835	173.4	293	76	36071.1
10/8/2024	1836	172.8	294	76	36940.81
10/8/2024	1837	172.3	295	76	35715.96
10/8/2024	1838	171.8	296	76	34879.74
10/8/2024	1839	171.3	296	76	35977.69
10/8/2024	1840	170.7	296	76	37366.91
10/8/2024	1841	170.2	297	76	34931.72
10/8/2024	1842	169.7	297	76	34849.8
10/8/2024	1843	169.3	297	76	34740.68
10/8/2024	1844	168.8	298	76	35134.27
10/8/2024	1845	168.2	299	76	38202.91
10/8/2024	1846	167.7	299	76	35457.69
10/8/2024	1847	167.2	300	76	35327.55
10/8/2024	1848	166.7	301	76	34595.3
10/8/2024	1849	166.2	301	76	36599.5
10/8/2024	1850	165.7	302	76	37073.29
10/8/2024	1851	165.1	303	76	36302.3
10/8/2024	1852	164.6	305	76	36695.66
10/8/2024	1853	164.2	306	76	35937.83
10/8/2024	1854	163.6	308	76	40186.48
10/8/2024	1855	163.2	305	76	37859.54
10/8/2024	1856	163.1	292	76	36263.97
10/8/2024	1857	163	280	76	38869.38
10/8/2024	1858	163	269	76	34010.44
10/8/2024	1859	162.9	261	76	34527.83
10/8/2024	1860	162.9	258	76	31758.45
10/8/2024	1861	162.9	253	76	36137.17
10/8/2024	1862	162.9	249	76	36125.45
10/8/2024	1863	162.9	244	76	35181.2
10/8/2024	1864	162.9	240	76	40077.82
10/8/2024	1865	162.9	236	76	37973.07
10/8/2024	1866	162.9	231	76	41811.57
10/8/2024	1867	162.9	227	76	42759.16
10/8/2024	1868	163	223	76	40655.23
10/8/2024	1869	163	219	76	40159.07
10/8/2024	1870	163	215	76	37590.47
10/8/2024	1871	163	211	76	39831.05
10/8/2024	1872	163	207	76	38690.29
10/8/2024	1873	163	204	76	39812.41
10/8/2024	1874	163.1	200	76	38271.93
10/8/2024	1875	163.1	197	76	37782.52
10/8/2024	1876	163.1	194	76	39976.99
10/8/2024	1877	163.1	191	76	39445.47
10/8/2024	1878	163.1	188	77	37985.77
10/8/2024	1879	163.1	185	77	41251.24

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	1880	163.2	182	77	37457.06
10/8/2024	1881	163.2	179	77	37591.21
10/8/2024	1882	163.2	177	77	39681.57
10/8/2024	1883	162.5	178	77	36160.82
10/8/2024	1884	161.9	202	77	35651.62
10/8/2024	1885	161.3	224	77	37190.04
10/8/2024	1886	160.7	241	77	38063.31
10/8/2024	1887	160	255	77	35840.94
10/8/2024	1888	159.3	267	77	35122.22
10/8/2024	1889	158.6	277	76	37120.29
10/8/2024	1890	157.8	285	76	36339.32
10/8/2024	1891	157.1	291	76	37258.55
10/8/2024	1892	156.4	295	76	38735.18
10/8/2024	1893	155.7	299	76	36456.43
10/8/2024	1894	155	302	77	37895.79
10/8/2024	1895	154.3	303	76	37221.14
10/8/2024	1896	153.6	305	76	38103.4
10/8/2024	1897	152.9	307	76	40172.96
10/8/2024	1898	152.3	309	76	39864.53
10/8/2024	1899	151.6	310	76	38772.48
10/8/2024	1900	150.9	312	77	36918.75
10/8/2024	1901	150.3	312	76	39351.25
10/8/2024	1902	149.6	312	76	36434.22
10/8/2024	1903	149	313	76	35838.7
10/8/2024	1904	148.4	313	76	39431.03
10/8/2024	1905	147.7	315	76	38619.76
10/8/2024	1906	147	316	76	40722.17
10/8/2024	1907	146.4	317	76	41036.74
10/8/2024	1908	145.8	319	76	39726.18
10/8/2024	1909	145.3	316	76	41672.64
10/8/2024	1910	144.9	302	76	37403.25
10/8/2024	1911	144.7	288	76	37780.46
10/8/2024	1912	144.6	276	76	36800.56
10/8/2024	1913	144.5	267	76	38410.93
10/8/2024	1914	144.4	263	76	35226.54
10/8/2024	1915	144.3	258	76	36310.45
10/8/2024	1916	144.3	253	76	37349.17
10/8/2024	1917	144.2	248	76	38403.83
10/8/2024	1918	144.3	243	76	38492.59
10/8/2024	1919	144.3	238	76	37466.9
10/8/2024	1920	144.2	234	76	38031.4
10/8/2024	1921	144.3	229	76	35915.12
10/8/2024	1922	144.4	225	76	37072
10/8/2024	1923	144.3	221	76	35948.13
10/8/2024	1924	144.3	217	76	33794.54

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	1925	144.3	213	76	35035.99
10/8/2024	1926	144.3	209	76	36654.76
10/8/2024	1927	144.4	205	76	39859.75
10/8/2024	1928	144.4	202	76	35194.49
10/8/2024	1929	144.4	198	76	37346.53
10/8/2024	1930	144.4	195	76	38410.25
10/8/2024	1931	144.4	192	76	37939.95
10/8/2024	1932	144.4	189	76	34243
10/8/2024	1933	144.4	186	76	36944.09
10/8/2024	1934	144.5	184	76	37959.75
10/8/2024	1935	144.5	181	76	36543.77
10/8/2024	1936	144.5	179	76	38135.93
10/8/2024	1937	144.5	176	76	37095.65
10/8/2024	1938	143.3	183	76	33382.47
10/8/2024	1939	142.8	197	76	35540.73
10/8/2024	1940	142.3	211	76	36082.43
10/8/2024	1941	141.8	224	76	35595.51
10/8/2024	1942	141.2	235	76	35416.37
10/8/2024	1943	140.6	246	76	35374.18
10/8/2024	1944	140	256	76	34151.45
10/8/2024	1945	139.4	265	76	35624.69
10/8/2024	1946	138.8	273	76	36072.62
10/8/2024	1947	138.1	280	76	34861.14
10/8/2024	1948	137.4	285	76	37781.69
10/8/2024	1949	136.7	291	76	37068.9
10/8/2024	1950	136	295	76	36996.22
10/8/2024	1951	135.3	299	76	35105.84
10/8/2024	1952	134.6	303	76	37657.55
10/8/2024	1953	133.9	306	76	35926.29
10/8/2024	1954	133.2	309	76	35198.9
10/8/2024	1955	132.5	311	76	35510.47
10/8/2024	1956	131.8	311	76	36909.67
10/8/2024	1957	131.1	311	76	37232.48
10/8/2024	1958	130.5	311	76	37727.46
10/8/2024	1959	129.8	313	76	37132.97
10/8/2024	1960	129.2	314	76	37909.73
10/8/2024	1961	128.6	314	76	38335.76
10/8/2024	1962	128	316	76	38123.8
10/8/2024	1963	127.4	317	76	40113.26
10/8/2024	1964	126.8	319	76	35155.28
10/8/2024	1965	126.2	320	76	38580.43
10/8/2024	1966	125.6	321	76	39543.08
10/8/2024	1967	125.1	315	76	36753.36
10/8/2024	1968	124.8	301	76	39397.03
10/8/2024	1969	124.6	288	76	35531.38

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	1970	124.4	276	76	38237.78
10/8/2024	1971	124.3	267	76	36140.77
10/8/2024	1972	124.1	262	76	36685.92
10/8/2024	1973	124	257	76	36122.2
10/8/2024	1974	124	252	76	39875.7
10/8/2024	1975	123.9	246	76	34552.66
10/8/2024	1976	123.9	241	76	36652.16
10/8/2024	1977	123.8	236	76	35160.04
10/8/2024	1978	123.9	232	76	33087.32
10/8/2024	1979	123.8	227	75	33656.91
10/8/2024	1980	123.9	223	76	36309.77
10/8/2024	1981	123.9	219	75	38393.17
10/8/2024	1982	123.8	215	75	38995.01
10/8/2024	1983	123.9	211	75	35907.21
10/8/2024	1984	123.9	208	75	38567.18
10/8/2024	1985	123.9	204	75	36945.66
10/8/2024	1986	123.9	200	75	33831.35
10/8/2024	1987	123.9	197	75	34485.25
10/8/2024	1988	123.9	194	75	34957.91
10/8/2024	1989	123.9	191	75	37182.43
10/8/2024	1990	123.9	188	75	36164.86
10/8/2024	1991	124	185	75	37328.7
10/8/2024	1992	124	182	75	34676.61
10/8/2024	1993	124	180	75	33014.4
10/8/2024	1994	124	177	76	35957.99
10/8/2024	1995	123.1	177	75	32857.74
10/8/2024	1996	122.8	189	75	32929.6
10/8/2024	1997	122.4	201	75	33476.51
10/8/2024	1998	121.9	213	75	35639.64
10/8/2024	1999	121.4	224	75	33978.54
10/8/2024	2000	121	235	75	33859.01
10/8/2024	2001	120.4	247	75	34350.56
10/8/2024	2002	119.9	256	75	34821.31
10/8/2024	2003	119.2	265	75	35157.46
10/8/2024	2004	118.6	273	75	35475.86
10/8/2024	2005	118	280	75	34804.64
10/8/2024	2006	117.4	284	75	33536.04
10/8/2024	2007	116.7	288	75	36757.67
10/8/2024	2008	116.1	293	75	35366.67
10/8/2024	2009	115.5	296	75	35302.55
10/8/2024	2010	114.8	299	75	34541.18
10/8/2024	2011	114.2	301	75	38679.15
10/8/2024	2012	113.6	303	75	37342.28
10/8/2024	2013	112.9	304	75	37275.16
10/8/2024	2014	112.3	305	74	34829.63

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2015	111.7	305	74	36341.76
10/8/2024	2016	111.1	305	75	36077.42
10/8/2024	2017	110.6	305	75	35415.96
10/8/2024	2018	110	305	75	36985.4
10/8/2024	2019	109.4	305	75	36162.85
10/8/2024	2020	108.9	306	75	35556.57
10/8/2024	2021	108.3	307	75	35307.97
10/8/2024	2022	107.7	307	75	35140.95
10/8/2024	2023	107.2	307	75	37757.36
10/8/2024	2024	106.6	307	75	37571.77
10/8/2024	2025	106.1	307	75	39677.99
10/8/2024	2026	105.5	307	75	36740.64
10/8/2024	2027	105.2	297	75	35670.59
10/8/2024	2028	105	284	75	35082.28
10/8/2024	2029	104.7	272	75	34554.48
10/8/2024	2030	104.6	262	75	34489.07
10/8/2024	2031	104.5	256	75	36517.87
10/8/2024	2032	104.4	252	75	35047.79
10/8/2024	2033	104.3	248	75	33173.27
10/8/2024	2034	104.3	243	75	34224.14
10/8/2024	2035	104.3	238	75	33149.08
10/8/2024	2036	104.3	234	75	37422.12
10/8/2024	2037	104.2	230	75	33290.07
10/8/2024	2038	104.2	225	75	34302.49
10/8/2024	2039	104.2	221	75	33362.6
10/8/2024	2040	104.3	217	75	34411.64
10/8/2024	2041	104.3	213	75	34903.93
10/8/2024	2042	104.3	209	75	33386.62
10/8/2024	2043	104.3	206	75	34001.46
10/8/2024	2044	104.3	202	75	33455.03
10/8/2024	2045	104.3	199	75	36699.91
10/8/2024	2046	104.4	195	75	34628.46
10/8/2024	2047	104.4	192	75	35242.07
10/8/2024	2048	104.4	189	74	36338.4
10/8/2024	2049	104.4	186	74	36293.03
10/8/2024	2050	104.4	183	74	34777.02
10/8/2024	2051	104.4	180	74	35395.13
10/8/2024	2052	104.4	178	74	33733.02
10/8/2024	2053	104.5	175	74	33778.64
10/8/2024	2054	103.7	176	74	32308.03
10/8/2024	2055	103.3	189	74	32815.96
10/8/2024	2056	102.9	203	74	33927.52
10/8/2024	2057	102.4	214	74	35502.47
10/8/2024	2058	101.9	225	74	33831.37
10/8/2024	2059	101.5	233	74	34826.57

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2060	101.1	240	74	34317.28
10/8/2024	2061	100.6	246	74	33621.38
10/8/2024	2062	100.1	250	74	34654.5
10/8/2024	2063	99.7	254	74	32979.06
10/8/2024	2064	99.2	258	74	33991.18
10/8/2024	2065	98.7	260	74	36525.85
10/8/2024	2066	98.2	263	74	35848.72
10/8/2024	2067	97.7	267	74	36880.14
10/8/2024	2068	97.2	270	74	35038.74
10/8/2024	2069	96.6	275	74	34922.81
10/8/2024	2070	96	280	74	36404.68
10/8/2024	2071	95.4	285	74	36687.46
10/8/2024	2072	94.9	289	74	35518.83
10/8/2024	2073	94.2	293	74	34749.22
10/8/2024	2074	93.6	297	74	35582.33
10/8/2024	2075	93	300	74	38129.09
10/8/2024	2076	92.3	302	74	35840.16
10/8/2024	2077	91.7	305	74	36226.6
10/8/2024	2078	91	307	74	34932.24
10/8/2024	2079	90.4	309	74	35904.7
10/8/2024	2080	89.8	312	74	36743.99
10/8/2024	2081	89	313	74	37547.34
10/8/2024	2082	88.3	312	74	37356.37
10/8/2024	2083	87.6	313	74	38262.47
10/8/2024	2084	86.9	311	74	36461.84
10/8/2024	2085	86.2	310	74	38374.23
10/8/2024	2086	85.6	307	74	37112.38
10/8/2024	2087	85.1	294	74	35555.38
10/8/2024	2088	84.9	282	74	38116.28
10/8/2024	2089	84.7	271	74	36363.86
10/8/2024	2090	84.5	261	74	39155.83
10/8/2024	2091	84.4	257	74	32798.7
10/8/2024	2092	84.3	252	74	38697.39
10/8/2024	2093	84.3	247	74	38713.21
10/8/2024	2094	84.2	243	74	37177.7
10/8/2024	2095	84.2	238	74	36642.81
10/8/2024	2096	84.2	233	74	32472.29
10/8/2024	2097	84.2	229	74	34627.76
10/8/2024	2098	84.2	225	74	34616.76
10/8/2024	2099	84.2	220	74	35764.95
10/8/2024	2100	84.1	216	74	35315.97
10/8/2024	2101	84.2	213	74	34258.56
10/8/2024	2102	84.1	209	74	35397.26
10/8/2024	2103	84.1	205	74	33313.39
10/8/2024	2104	84.1	202	74	33329.82

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2105	84.2	199	74	37604.95
10/8/2024	2106	84.2	195	74	36054.77
10/8/2024	2107	84.2	192	74	35520.88
10/8/2024	2108	84.2	189	74	36159.83
10/8/2024	2109	84.2	186	74	34554.82
10/8/2024	2110	84.2	184	74	36196.91
10/8/2024	2111	84.2	181	74	34148.63
10/8/2024	2112	84.2	179	74	34663.14
10/8/2024	2113	84.2	176	74	35298.03
10/8/2024	2114	83.1	182	73	35038.1
10/8/2024	2115	82.7	196	73	32329.75
10/8/2024	2116	82.2	211	73	33917.86
10/8/2024	2117	81.7	226	73	32733.3
10/8/2024	2118	81.1	240	73	34718.14
10/8/2024	2119	80.5	253	73	35126.38
10/8/2024	2120	79.8	265	73	33959.98
10/8/2024	2121	79.2	274	73	34363.97
10/8/2024	2122	78.5	282	73	34628.72
10/8/2024	2123	77.7	289	73	37647.54
10/8/2024	2124	77	294	73	37099.83
10/8/2024	2125	76.3	298	73	36199.66
10/8/2024	2126	75.6	300	73	35516.58
10/8/2024	2127	74.9	303	73	37346.65
10/8/2024	2128	74.3	305	73	36273.25
10/8/2024	2129	73.6	307	73	38075.16
10/8/2024	2130	73	308	73	36281.86
10/8/2024	2131	72.3	310	73	38113.9
10/8/2024	2132	71.6	312	73	38391.64
10/8/2024	2133	71	314	73	37232.8
10/8/2024	2134	70.4	314	73	36486.91
10/8/2024	2135	69.7	314	73	34181.63
10/8/2024	2136	69.1	313	73	35617.39
10/8/2024	2137	68.5	313	73	38569.36
10/8/2024	2138	67.8	313	73	37354.88
10/8/2024	2139	67.2	314	73	38826.32
10/8/2024	2140	66.8	304	73	36041.88
10/8/2024	2141	66.4	291	73	38641.37
10/8/2024	2142	66.1	279	73	35885.04
10/8/2024	2143	65.9	268	73	33343.98
10/8/2024	2144	65.8	262	73	34332.82
10/8/2024	2145	65.6	257	74	33343.3
10/8/2024	2146	65.5	251	73	35439.93
10/8/2024	2147	65.4	246	73	36514.89
10/8/2024	2148	65.4	241	73	34399.67
10/8/2024	2149	65.3	236	73	32883.14

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2150	65.3	231	73	36041.04
10/8/2024	2151	65.3	227	73	35618.88
10/8/2024	2152	65.3	223	73	35603.7
10/8/2024	2153	65.3	219	73	35655.84
10/8/2024	2154	65.3	215	73	35099.61
10/8/2024	2155	65.3	211	73	35154.92
10/8/2024	2156	65.3	207	73	35268.03
10/8/2024	2157	65.3	204	73	34229.39
10/8/2024	2158	65.3	200	73	33169.45
10/8/2024	2159	65.3	197	73	35908.56
10/8/2024	2160	65.3	194	73	36985.81
10/8/2024	2161	65.3	191	73	37571.78
10/8/2024	2162	65.3	188	73	33302.57
10/8/2024	2163	65.3	185	73	34460.45
10/8/2024	2164	65.3	183	73	34542.18
10/8/2024	2165	65.3	180	73	37228.52
10/8/2024	2166	65.3	178	73	35172.29
10/8/2024	2167	65.3	176	73	36700.26
10/8/2024	2168	64.4	179	73	33814.03
10/8/2024	2169	64	197	73	35350.03
10/8/2024	2170	63.5	214	73	33173.56
10/8/2024	2171	63.1	229	73	35198.05
10/8/2024	2172	62.6	243	73	34583.89
10/8/2024	2173	62	254	73	33980.69
10/8/2024	2174	61.4	264	73	32808.87
10/8/2024	2175	60.8	273	73	35248.43
10/8/2024	2176	60.2	280	73	34539.91
10/8/2024	2177	59.6	286	73	35993.91
10/8/2024	2178	59.1	291	73	35610.82
10/8/2024	2179	58.4	295	73	35039.58
10/8/2024	2180	57.8	296	73	34836.27
10/8/2024	2181	57.2	298	73	35687.72
10/8/2024	2182	56.6	300	73	37129.17
10/8/2024	2183	55.9	302	73	36374.91
10/8/2024	2184	55.2	306	73	37270.83
10/8/2024	2185	54.7	305	73	37068.85
10/8/2024	2186	54	307	73	37428.3
10/8/2024	2187	53.4	307	73	38262.14
10/8/2024	2188	52.8	309	73	36553.14
10/8/2024	2189	52.2	311	73	35792.58
10/8/2024	2190	51.6	312	73	37208.62
10/8/2024	2191	51	312	73	37032.89
10/8/2024	2192	50.4	313	73	36285.67
10/8/2024	2193	49.7	314	73	37636.79
10/8/2024	2194	49.3	310	73	39131.52

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2195	48.9	296	73	38057.22
10/8/2024	2196	48.6	284	73	38433.3
10/8/2024	2197	48.3	272	73	35279.13
10/8/2024	2198	48.1	264	73	35816.82
10/8/2024	2199	47.9	258	73	36914.25
10/8/2024	2200	47.7	252	73	33793.43
10/8/2024	2201	47.5	246	73	34676.02
10/8/2024	2202	47.4	241	73	34344.75
10/8/2024	2203	47.3	235	73	35326.35
10/8/2024	2204	47.2	230	73	34908.67
10/8/2024	2205	47.2	225	73	34917.42
10/8/2024	2206	47.1	221	73	34413.54
10/8/2024	2207	47.1	217	73	36487.87
10/8/2024	2208	47.1	213	73	34482.93
10/8/2024	2209	47	209	73	35494.61
10/8/2024	2210	47	206	73	34501.72
10/8/2024	2211	47	203	73	33960.19
10/8/2024	2212	47	199	73	34025.08
10/8/2024	2213	46.9	196	73	36738.34
10/8/2024	2214	47	193	73	33529.12
10/8/2024	2215	47	191	73	35704.64
10/8/2024	2216	47	188	73	33109.15
10/8/2024	2217	47	185	73	34245.83
10/8/2024	2218	46.9	183	73	34324.85
10/8/2024	2219	46.9	180	73	35320.13
10/8/2024	2220	46.9	178	73	34802.82
10/8/2024	2221	46.9	176	73	36601.01
10/8/2024	2222	45.8	183	73	33678.37
10/8/2024	2223	45.4	204	73	33716.67
10/8/2024	2224	45	221	73	35734.78
10/8/2024	2225	44.6	236	73	33005.13
10/8/2024	2226	44.1	248	73	34454.46
10/8/2024	2227	43.6	258	73	35378.4
10/8/2024	2228	43.1	266	73	34736.14
10/8/2024	2229	42.5	273	73	36135.07
10/8/2024	2230	42	278	73	35992.4
10/8/2024	2231	41.5	283	73	35286.88
10/8/2024	2232	40.9	287	73	36176.57
10/8/2024	2233	40.4	290	73	36382.42
10/8/2024	2234	39.8	293	73	34150.8
10/8/2024	2235	39.2	296	73	35060.91
10/8/2024	2236	38.7	299	73	33722.53
10/8/2024	2237	38	301	73	35787.09
10/8/2024	2238	37.5	304	73	38835.33
10/8/2024	2239	36.8	306	73	36509.68

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2240	36.3	308	73	36185.88
10/8/2024	2241	35.6	311	73	36632.63
10/8/2024	2242	35.1	313	73	37366.76
10/8/2024	2243	34.4	315	73	37209.33
10/8/2024	2244	33.9	314	73	38117.75
10/8/2024	2245	33.3	313	73	35802.29
10/8/2024	2246	32.7	315	73	35580.86
10/8/2024	2247	32.2	313	73	37574.35
10/8/2024	2248	31.8	299	73	34862.19
10/8/2024	2249	31.5	286	73	35724.31
10/8/2024	2250	31.2	275	73	34102.69
10/8/2024	2251	31.1	265	73	35619.86
10/8/2024	2252	30.8	260	73	36767.45
10/8/2024	2253	30.7	254	73	35716.08
10/8/2024	2254	30.5	248	73	36813.56
10/8/2024	2255	30.5	242	73	35798.71
10/8/2024	2256	30.3	237	73	35338.96
10/8/2024	2257	30.3	232	73	38051.18
10/8/2024	2258	30.2	227	73	35813.94
10/8/2024	2259	30.1	222	73	34869.18
10/8/2024	2260	30.1	218	73	35997
10/8/2024	2261	30.1	214	73	33829.05
10/8/2024	2262	30.1	210	73	37058.54
10/8/2024	2263	30	207	73	32823.5
10/8/2024	2264	30	203	73	33410.36
10/8/2024	2265	30	200	73	35645.44
10/8/2024	2266	30	197	73	35572.54
10/8/2024	2267	30	194	73	36678.32
10/8/2024	2268	30	191	73	34603.85
10/8/2024	2269	30	188	73	35160.75
10/8/2024	2270	30	185	73	34601.88
10/8/2024	2271	30	183	73	35804.61
10/8/2024	2272	30	180	73	37938.09
10/8/2024	2273	30	178	73	35902.35
10/8/2024	2274	30	176	73	35918.7
10/8/2024	2275	29	179	72	35182.87
10/8/2024	2276	28.6	200	72	33105.16
10/8/2024	2277	28.2	218	72	34042.03
10/8/2024	2278	27.9	233	72	33362.92
10/8/2024	2279	27.5	245	72	34988.8
10/8/2024	2280	27.1	256	72	33811.78
10/8/2024	2281	26.7	265	72	34691.47
10/8/2024	2282	26.2	273	72	35673.47
10/8/2024	2283	25.8	279	72	36533.49
10/8/2024	2284	25.4	284	72	36933.28

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2285	24.9	289	72	36235.04
10/8/2024	2286	24.4	293	72	39872.3
10/8/2024	2287	24	295	72	38596.93
10/8/2024	2288	23.6	297	72	36633.01
10/8/2024	2289	23.1	299	72	37134.76
10/8/2024	2290	22.7	301	72	36920.84
10/8/2024	2291	22.2	302	72	36188.37
10/8/2024	2292	21.7	304	72	37614.48
10/8/2024	2293	21.2	305	72	36754.5
10/8/2024	2294	20.8	307	72	39284.95
10/8/2024	2295	20.3	309	72	37780.84
10/8/2024	2296	19.8	310	72	37455.33
10/8/2024	2297	19.3	311	72	37330.36
10/8/2024	2298	18.8	312	72	38190.05
10/8/2024	2299	18.5	313	72	39542.06
10/8/2024	2300	18.1	314	72	36209.12
10/8/2024	2301	17.8	311	72	36548.74
10/8/2024	2302	17.5	297	72	34838.12
10/8/2024	2303	17.2	284	72	36457.65
10/8/2024	2304	17.1	272	72	35894.57
10/8/2024	2305	16.9	264	72	38450
10/8/2024	2306	16.8	258	72	37435.56
10/8/2024	2307	16.7	253	72	34732.83
10/8/2024	2308	16.6	247	72	35940.9
10/8/2024	2309	16.5	242	72	34833.04
10/8/2024	2310	16.4	236	72	35342.64
10/8/2024	2311	16.3	231	72	35461.27
10/8/2024	2312	16.3	226	72	38033.91
10/8/2024	2313	16.3	222	72	37131.8
10/8/2024	2314	16.3	218	72	33353.67
10/8/2024	2315	16.2	213	72	36571.33
10/8/2024	2316	16.2	210	72	37194.29
10/8/2024	2317	16.2	206	72	33981.35
10/8/2024	2318	16.2	203	72	35160.93
10/8/2024	2319	16.2	200	72	35729.19
10/8/2024	2320	16.2	196	72	34175.93
10/8/2024	2321	16.2	193	72	34111.22
10/8/2024	2322	16.2	190	72	35291.11
10/8/2024	2323	16.2	187	72	36382.52
10/8/2024	2324	16.3	185	72	34848.56
10/8/2024	2325	16.2	182	72	36467.21
10/8/2024	2326	16.2	179	72	38116.65
10/8/2024	2327	16.2	177	72	35488.25
10/8/2024	2328	15.6	181	73	34598.51
10/8/2024	2329	15.1	197	73	32836.03

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2330	14.8	211	73	35009.68
10/8/2024	2331	14.5	223	73	33968.91
10/8/2024	2332	14.2	233	73	33462.83
10/8/2024	2333	13.9	240	73	34405.35
10/8/2024	2334	13.6	247	73	34715.27
10/8/2024	2335	13.2	254	73	36778.76
10/8/2024	2336	12.9	260	73	36130.81
10/8/2024	2337	12.6	265	73	36061.86
10/8/2024	2338	12.3	270	73	35905.09
10/8/2024	2339	11.9	275	73	36745.37
10/8/2024	2340	11.6	279	73	35044.69
10/8/2024	2341	11.2	282	73	36979.99
10/8/2024	2342	10.9	285	73	37341.81
10/8/2024	2343	10.5	288	73	34528.92
10/8/2024	2344	10.1	290	73	36981.23
10/8/2024	2345	9.8	293	73	36314.92
10/8/2024	2346	9.4	295	73	37237.57
10/8/2024	2347	9.1	297	73	35474.53
10/8/2024	2348	8.7	300	73	38502.25
10/8/2024	2349	8.3	301	73	39368.44
10/8/2024	2350	7.9	303	73	34373.1
10/8/2024	2351	7.6	304	73	36420.01
10/8/2024	2352	7.2	306	73	39937.6
10/8/2024	2353	6.8	307	73	81235.47
10/8/2024	2354	6.4	309	73	44202.78
10/8/2024	2355	6	310	73	41667.42
10/8/2024	2356	5.6	312	73	40488.59
10/8/2024	2357	5.3	314	73	44633.43
10/8/2024	2358	5	311	73	40685
10/8/2024	2359	4.9	297	73	43267.18
10/8/2024	2360	4.8	284	73	39667.42
10/8/2024	2361	4.8	272	73	42982.71
10/8/2024	2362	4.8	264	73	43912.75
10/8/2024	2363	4.7	260	73	42271.11
10/8/2024	2364	4.6	255	73	38666.26
10/8/2024	2365	4.6	250	73	38327.74
10/8/2024	2366	4.6	246	73	40531.87
10/8/2024	2367	4.6	241	73	40389.41
10/8/2024	2368	4.6	236	73	39932.28
10/8/2024	2369	4.6	232	73	39552.75
10/8/2024	2370	4.6	227	73	41119.21
10/8/2024	2371	4.6	223	73	39979.58
10/8/2024	2372	4.6	219	73	38517.82
10/8/2024	2373	4.6	215	73	43371.28
10/8/2024	2374	4.6	211	74	41090.69

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/8/2024	2375	4.6	207	74	39616.75
10/8/2024	2376	4.7	204	74	39181.29
10/8/2024	2377	4.7	200	74	37599.34
10/8/2024	2378	4.7	197	74	37696.58
10/8/2024	2379	4.8	194	74	42459.14
10/8/2024	2380	4.7	191	74	39964.17
10/8/2024	2381	4.8	188	74	38955.97
10/8/2024	2382	4.8	185	74	42136.9
10/8/2024	2383	4.8	182	74	40682.93
10/8/2024	2384	4.9	179	74	37917.71
10/8/2024	2385	4.9	177	74	40655.75
10/8/2024	2386	4.6	175	73	37395.32
10/8/2024	2387	4.3	191	73	36781.22
10/8/2024	2388	4	204	73	36753.45
10/8/2024	2389	3.7	215	73	36686.85
10/8/2024	2390	2.8	223	73	38430.97
10/8/2024	2391	6	231	73	40515.24
10/8/2024	2392	3.4	237	73	31150.04
10/8/2024	2393	3.1	243	73	30501.5
10/8/2024	2394	2.7	249	73	32003.33
10/8/2024	2395	2.4	253	73	31303.18
10/8/2024	2396	2.2	257	73	31198.25
10/8/2024	2397	1.9	259	73	32740.7
10/8/2024	2398	1.6	261	73	33614.94
10/8/2024	2399	1.3	262	73	31889.73
10/8/2024	2400	1.1	264	73	32771.67
10/8/2024	2401	0.8	266	73	32707.12
10/8/2024	2402	0.5	268	73	31986.3
10/8/2024	2403	0.3	270	73	29165.17
10/8/2024	2404	0.1	271	73	31226.85
10/10/2024	2405	14.2	291	80	22543.21
10/10/2024	2406	152.7	279	80	22622.21
10/10/2024	2407	150.9	280	80	22478.08
10/10/2024	2408	150.2	284	80	22620.44
10/10/2024	2409	149.7	289	80	23086.79
10/10/2024	2410	149.1	293	80	23378.3
10/10/2024	2411	148.5	296	80	23815.48
10/10/2024	2412	148	298	80	23595.53
10/10/2024	2413	147.5	300	80	22866.02
10/10/2024	2414	146.8	301	80	21623.06
10/10/2024	2415	146.3	302	80	22530
10/10/2024	2416	145.7	304	80	24008.19
10/10/2024	2417	145.2	305	80	21650.36
10/10/2024	2418	144.6	306	80	22021.02
10/10/2024	2419	144	307	80	22932.75

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2420	143.5	308	80	23261.47
10/10/2024	2421	142.9	309	80	22014
10/10/2024	2422	142.4	310	80	22416.38
10/10/2024	2423	141.8	311	80	22253.81
10/10/2024	2424	141.2	312	80	22575.79
10/10/2024	2425	140.6	313	80	20377.01
10/10/2024	2426	140	315	80	21794.38
10/10/2024	2427	139.5	316	80	21651.62
10/10/2024	2428	139	316	80	22927.53
10/10/2024	2429	138.3	317	80	20121.38
10/10/2024	2430	137.7	318	80	21550.13
10/10/2024	2431	137.3	318	80	22424.88
10/10/2024	2432	136.7	319	80	21716.07
10/10/2024	2433	136.2	319	80	21063.1
10/10/2024	2434	135.7	320	80	19727.41
10/10/2024	2435	135.1	321	80	19575.57
10/10/2024	2436	134.8	309	80	18912.46
10/10/2024	2437	134.6	296	80	19988.86
10/10/2024	2438	134.5	285	80	18884.72
10/10/2024	2439	134.4	275	80	21019.29
10/10/2024	2440	134.4	270	80	20920.28
10/10/2024	2441	134.3	266	80	20399.71
10/10/2024	2442	134.3	261	80	19380.26
10/10/2024	2443	134.3	256	80	19273.63
10/10/2024	2444	134.3	251	80	19361.26
10/10/2024	2445	134.3	246	80	19385.18
10/10/2024	2446	134.3	242	80	19376.3
10/10/2024	2447	134.4	237	80	17280.32
10/10/2024	2448	134.3	233	80	20467.29
10/10/2024	2449	134.4	229	80	18380.19
10/10/2024	2450	134.4	225	80	19431.12
10/10/2024	2451	134.5	221	80	20492.32
10/10/2024	2452	134.5	217	80	19439.5
10/10/2024	2453	134.5	213	80	18910.71
10/10/2024	2454	134.5	209	80	17960.69
10/10/2024	2455	134.5	206	80	19521.95
10/10/2024	2456	134.6	203	80	20048.91
10/10/2024	2457	134.6	199	80	21209.44
10/10/2024	2458	134.6	196	80	19034.45
10/10/2024	2459	134.6	193	79	20159.47
10/10/2024	2460	134.7	191	79	17502.49
10/10/2024	2461	134.6	188	79	19105.81
10/10/2024	2462	134.7	185	79	18607.01
10/10/2024	2463	134.8	183	79	19708.82
10/10/2024	2464	134.7	180	79	17635.02

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2465	134.7	178	79	18131.47
10/10/2024	2466	134.8	175	79	17140.62
10/10/2024	2467	133.5	175	78	19355.8
10/10/2024	2468	133	196	78	19311.71
10/10/2024	2469	132.4	216	78	20800.79
10/10/2024	2470	131.7	233	78	20104.27
10/10/2024	2471	131	248	78	19969.52
10/10/2024	2472	130.3	260	78	20407.13
10/10/2024	2473	129.7	270	78	21320.2
10/10/2024	2474	128.9	278	78	22167.01
10/10/2024	2475	128.1	284	78	20924.35
10/10/2024	2476	127.3	290	78	21774.49
10/10/2024	2477	126.6	295	78	21066.29
10/10/2024	2478	125.8	298	78	20910.5
10/10/2024	2479	125.1	300	78	21853.52
10/10/2024	2480	124.4	302	78	21612.03
10/10/2024	2481	123.6	304	78	22033.94
10/10/2024	2482	122.9	304	78	20741.02
10/10/2024	2483	122.2	305	78	20118.44
10/10/2024	2484	121.5	306	78	20968.94
10/10/2024	2485	120.9	307	78	20825.15
10/10/2024	2486	120.3	308	78	20135.39
10/10/2024	2487	119.7	309	78	23139.59
10/10/2024	2488	119	310	78	21381.98
10/10/2024	2489	118.5	310	78	21250.43
10/10/2024	2490	117.9	312	78	19979.33
10/10/2024	2491	117.4	312	78	20384.37
10/10/2024	2492	117.1	298	78	19227.75
10/10/2024	2493	116.8	285	78	21318.98
10/10/2024	2494	116.6	274	78	17557.12
10/10/2024	2495	116.5	264	78	19127.08
10/10/2024	2496	116.4	260	78	19105.62
10/10/2024	2497	116.3	255	78	19113.4
10/10/2024	2498	116.3	250	78	19165.38
10/10/2024	2499	116.2	245	78	18631.14
10/10/2024	2500	116.2	241	78	19129.59
10/10/2024	2501	116.2	236	78	19685.25
10/10/2024	2502	116.2	232	78	20246.06
10/10/2024	2503	116.2	228	78	17645.73
10/10/2024	2504	116.1	224	78	18694.18
10/10/2024	2505	116.1	219	78	20317.64
10/10/2024	2506	116.2	216	78	18211.56
10/10/2024	2507	116.2	212	78	18795.88
10/10/2024	2508	116.2	208	78	18317.64
10/10/2024	2509	116.2	204	78	18792.18

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2510	116.2	201	78	18859.39
10/10/2024	2511	116.2	198	78	18846.01
10/10/2024	2512	116.2	195	78	19911.61
10/10/2024	2513	116.2	192	78	19926.55
10/10/2024	2514	116.2	189	78	18393.93
10/10/2024	2515	116.3	186	78	19423
10/10/2024	2516	116.3	183	78	17997.55
10/10/2024	2517	116.3	181	78	19037.36
10/10/2024	2518	116.3	178	78	20138.15
10/10/2024	2519	116.3	176	78	19620.89
10/10/2024	2520	115.1	177	77	20458.12
10/10/2024	2521	114.7	191	77	18798.41
10/10/2024	2522	114.3	203	77	20361.72
10/10/2024	2523	113.8	214	77	19299.37
10/10/2024	2524	113.4	226	77	20311.36
10/10/2024	2525	112.9	237	77	19143.82
10/10/2024	2526	112.3	249	77	19586.06
10/10/2024	2527	111.7	259	77	21564.18
10/10/2024	2528	111	269	77	20363.75
10/10/2024	2529	110.4	277	77	20816.36
10/10/2024	2530	109.7	283	77	22686.34
10/10/2024	2531	109.1	288	77	20967.36
10/10/2024	2532	108.5	293	77	19736.55
10/10/2024	2533	107.9	296	77	20579.65
10/10/2024	2534	107.3	299	77	20444.84
10/10/2024	2535	106.6	302	77	21830.15
10/10/2024	2536	105.9	305	77	20101.47
10/10/2024	2537	105.3	307	77	20943.02
10/10/2024	2538	104.7	309	77	22409.47
10/10/2024	2539	104	311	77	21114.84
10/10/2024	2540	103.4	312	77	20923.02
10/10/2024	2541	102.8	314	77	21314.82
10/10/2024	2542	102.1	316	77	21131.37
10/10/2024	2543	101.5	317	77	20372.75
10/10/2024	2544	100.9	318	77	20255.42
10/10/2024	2545	100.3	318	77	20145.27
10/10/2024	2546	99.6	319	77	20447.82
10/10/2024	2547	99.2	314	77	21258.72
10/10/2024	2548	98.9	300	77	19143.87
10/10/2024	2549	98.7	287	77	19108.09
10/10/2024	2550	98.5	275	77	19073.21
10/10/2024	2551	98.4	267	77	18540.69
10/10/2024	2552	98.2	262	77	17994.09
10/10/2024	2553	98.2	257	77	18024.36
10/10/2024	2554	98.1	252	77	19589.13

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2555	98	247	77	18528.07
10/10/2024	2556	98	242	77	19067.61
10/10/2024	2557	98	238	77	18090.86
10/10/2024	2558	98	233	77	19070.42
10/10/2024	2559	98	229	77	20167.01
10/10/2024	2560	98	225	77	19149.39
10/10/2024	2561	97.9	221	77	19686.6
10/10/2024	2562	98	217	77	18153.49
10/10/2024	2563	98	213	77	18651.73
10/10/2024	2564	98	209	77	18736.07
10/10/2024	2565	98	205	77	21374.41
10/10/2024	2566	98	202	77	19828.24
10/10/2024	2567	98	198	77	20341.27
10/10/2024	2568	98.1	195	77	18791.87
10/10/2024	2569	98	192	77	18787.36
10/10/2024	2570	98.1	189	77	18853.19
10/10/2024	2571	98	186	77	19398.96
10/10/2024	2572	98.1	184	77	17812.39
10/10/2024	2573	98.1	181	77	17836.71
10/10/2024	2574	98.1	179	77	19507.25
10/10/2024	2575	98.1	176	77	20010.3
10/10/2024	2576	96.9	183	76	19856.83
10/10/2024	2577	96.5	196	76	19883.4
10/10/2024	2578	95.9	208	76	18249.16
10/10/2024	2579	95.5	220	76	21341.47
10/10/2024	2580	94.9	232	76	20715.94
10/10/2024	2581	94.5	243	76	21646.86
10/10/2024	2582	93.9	251	76	21023.02
10/10/2024	2583	93.3	260	76	20842.91
10/10/2024	2584	92.8	267	76	21209.79
10/10/2024	2585	92.1	273	76	20587.04
10/10/2024	2586	91.5	279	76	23067.25
10/10/2024	2587	90.8	285	76	21278.8
10/10/2024	2588	90.1	290	76	20061.77
10/10/2024	2589	89.4	294	76	20961.78
10/10/2024	2590	88.7	299	76	20708.12
10/10/2024	2591	88	303	76	21656.16
10/10/2024	2592	87.4	306	76	20940.94
10/10/2024	2593	86.7	308	76	22853.26
10/10/2024	2594	86	309	76	21110.64
10/10/2024	2595	85.4	310	76	21507.83
10/10/2024	2596	84.8	310	76	21836.55
10/10/2024	2597	84.2	311	76	21166.88
10/10/2024	2598	83.6	313	76	19937.8
10/10/2024	2599	83	314	76	20287.01

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2600	82.3	315	76	21656.93
10/10/2024	2601	81.7	316	76	19441.21
10/10/2024	2602	81.1	317	76	20364.49
10/10/2024	2603	80.7	305	76	19674.84
10/10/2024	2604	80.4	292	76	20195.62
10/10/2024	2605	80.1	280	76	19088.76
10/10/2024	2606	79.9	269	76	20050.38
10/10/2024	2607	79.8	263	76	19083.65
10/10/2024	2608	79.7	258	76	20055.52
10/10/2024	2609	79.6	253	76	19545.5
10/10/2024	2610	79.6	248	76	18000.07
10/10/2024	2611	79.6	243	76	19591.18
10/10/2024	2612	79.5	239	76	18575.56
10/10/2024	2613	79.5	234	76	18069.28
10/10/2024	2614	79.5	230	76	18037.08
10/10/2024	2615	79.5	226	76	19641.82
10/10/2024	2616	79.5	222	76	19657.5
10/10/2024	2617	79.5	218	76	19222.88
10/10/2024	2618	79.5	214	76	19752.66
10/10/2024	2619	79.5	210	76	20281.74
10/10/2024	2620	79.5	206	76	18761.35
10/10/2024	2621	79.5	203	76	19262.83
10/10/2024	2622	79.6	200	76	19289.57
10/10/2024	2623	79.6	196	76	17749.59
10/10/2024	2624	79.6	193	76	18833.18
10/10/2024	2625	79.7	190	76	20383.69
10/10/2024	2626	79.6	188	76	18897.68
10/10/2024	2627	79.7	185	76	18367.39
10/10/2024	2628	79.7	182	76	19992.74
10/10/2024	2629	79.7	180	76	18929.22
10/10/2024	2630	79.7	177	76	20045.04
10/10/2024	2631	79.7	175	76	18999.64
10/10/2024	2632	78.9	175	75	19414.29
10/10/2024	2633	78.5	186	75	20471.41
10/10/2024	2634	78.1	197	75	20443.87
10/10/2024	2635	77.7	208	75	20950.14
10/10/2024	2636	77.2	219	75	21362.34
10/10/2024	2637	76.7	229	75	19756.73
10/10/2024	2638	76.2	239	75	19672.96
10/10/2024	2639	75.6	249	75	20599.51
10/10/2024	2640	75	258	75	21044.72
10/10/2024	2641	74.4	267	75	23554.29
10/10/2024	2642	73.6	273	75	21262.22
10/10/2024	2643	73.1	279	75	20564.4
10/10/2024	2644	72.5	285	75	22010.02

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2645	71.8	291	75	21295.72
10/10/2024	2646	71.1	296	75	20594.86
10/10/2024	2647	70.3	301	75	20468.25
10/10/2024	2648	69.7	305	75	25551.19
10/10/2024	2649	69	308	75	20628.65
10/10/2024	2650	68.3	310	75	21957.86
10/10/2024	2651	67.7	311	75	20231.3
10/10/2024	2652	67	313	75	21075.96
10/10/2024	2653	66.3	314	75	21949.43
10/10/2024	2654	65.6	316	75	21255.06
10/10/2024	2655	65	317	75	21572.37
10/10/2024	2656	64.3	320	75	20904.1
10/10/2024	2657	63.7	321	75	21199.94
10/10/2024	2658	63.1	321	75	21515.56
10/10/2024	2659	62.5	322	75	20335.19
10/10/2024	2660	62	312	75	20178.85
10/10/2024	2661	61.7	298	75	20671.09
10/10/2024	2662	61.4	285	75	20061.14
10/10/2024	2663	61.3	274	75	18988.93
10/10/2024	2664	61.2	267	75	20020.24
10/10/2024	2665	61	262	75	21591.47
10/10/2024	2666	61	257	75	19583.61
10/10/2024	2667	60.9	252	75	19593.67
10/10/2024	2668	60.9	247	75	20104.45
10/10/2024	2669	60.8	242	75	19658.35
10/10/2024	2670	60.8	237	75	19065.63
10/10/2024	2671	60.8	233	75	19034.67
10/10/2024	2672	60.8	229	75	19084.08
10/10/2024	2673	60.8	225	75	19595.74
10/10/2024	2674	60.8	221	75	18018.17
10/10/2024	2675	60.8	216	75	17557.87
10/10/2024	2676	60.8	213	75	17576.96
10/10/2024	2677	60.8	209	75	18667.47
10/10/2024	2678	60.8	205	75	17602.42
10/10/2024	2679	60.8	202	75	19693.01
10/10/2024	2680	60.8	198	75	18207.77
10/10/2024	2681	60.8	195	75	18399.53
10/10/2024	2682	60.8	192	75	19992.86
10/10/2024	2683	60.9	189	75	17868.56
10/10/2024	2684	60.9	186	75	18949.84
10/10/2024	2685	60.9	184	75	18451.82
10/10/2024	2686	60.9	181	75	19602.34
10/10/2024	2687	60.9	179	75	19104.53
10/10/2024	2688	60.9	176	75	20161.72
10/10/2024	2689	38	183	74	20226.37

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2690	37.5	202	74	20741.25
10/10/2024	2691	37.1	220	74	20080.33
10/10/2024	2692	36.6	235	74	21083.98
10/10/2024	2693	36.2	247	74	21434.1
10/10/2024	2694	35.7	257	74	22973.07
10/10/2024	2695	35.2	266	74	23273.85
10/10/2024	2696	34.7	273	74	22051.59
10/10/2024	2697	34.2	278	74	21848.48
10/10/2024	2698	33.7	283	74	22841.09
10/10/2024	2699	33.2	287	74	21522.22
10/10/2024	2700	32.6	291	74	22995.94
10/10/2024	2701	32.1	293	74	21675.09
10/10/2024	2702	31.6	295	74	22600.93
10/10/2024	2703	31.1	296	74	21822.92
10/10/2024	2704	30.4	298	74	20549.42
10/10/2024	2705	29.9	300	74	21985.19
10/10/2024	2706	29.4	303	74	20667.64
10/10/2024	2707	28.8	305	74	21096.85
10/10/2024	2708	28.3	306	74	21884.2
10/10/2024	2709	27.7	307	74	20601.23
10/10/2024	2710	27.1	309	74	23109.22
10/10/2024	2711	26.6	309	74	22463.71
10/10/2024	2712	26.1	305	74	21670.92
10/10/2024	2713	25.7	293	74	20468.91
10/10/2024	2714	25.5	281	74	23080.36
10/10/2024	2715	25.2	270	74	20344
10/10/2024	2716	25	262	74	19805.79
10/10/2024	2717	24.8	256	74	20310.17
10/10/2024	2718	24.7	250	74	20324.27
10/10/2024	2719	24.6	245	74	20338.92
10/10/2024	2720	24.4	240	74	19864.87
10/10/2024	2721	24.4	235	74	18799.1
10/10/2024	2722	24.3	230	74	17706.61
10/10/2024	2723	24.2	225	74	19315.95
10/10/2024	2724	24.3	221	74	20960.47
10/10/2024	2725	24.1	217	74	19921.35
10/10/2024	2726	24.1	213	74	21540.76
10/10/2024	2727	24.2	210	74	19965.36
10/10/2024	2728	24	206	74	18884
10/10/2024	2729	24	203	74	18369.24
10/10/2024	2730	24	200	74	20012.01
10/10/2024	2731	23.9	197	74	19052.2
10/10/2024	2732	24	194	74	21743.69
10/10/2024	2733	23.9	192	74	18002.74
10/10/2024	2734	24	189	74	19059.28

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2735	24	187	74	19101.03
10/10/2024	2736	23.9	184	74	20774.31
10/10/2024	2737	24	182	74	20818
10/10/2024	2738	24.1	180	74	21893.36
10/10/2024	2739	24	178	74	18199.12
10/10/2024	2740	24.1	175	74	20917.87
10/10/2024	2741	23.3	188	73	37667.63
10/10/2024	2742	22.9	203	73	37086.2
10/10/2024	2743	22.5	216	74	38082.67
10/10/2024	2744	22.2	229	74	38029.25
10/10/2024	2745	21.8	241	74	38415.61
10/10/2024	2746	21.9	250	74	39877.89
10/10/2024	2747	21.5	258	74	39190.64
10/10/2024	2748	21.1	265	74	38999.35
10/10/2024	2749	20.8	271	74	43755.34
10/10/2024	2750	20.4	276	74	43068.67
10/10/2024	2751	20	281	74	43857.32
10/10/2024	2752	19.7	285	74	41552.2
10/10/2024	2753	19.3	288	74	41331.93
10/10/2024	2754	18.8	291	74	42136.34
10/10/2024	2755	18.4	294	74	41862.16
10/10/2024	2756	18	297	74	44505.14
10/10/2024	2757	17.6	299	74	41622.3
10/10/2024	2758	17	302	74	46032.01
10/10/2024	2759	16.6	305	74	46465.6
10/10/2024	2760	16.1	308	74	46743.78
10/10/2024	2761	15.6	310	74	45458.63
10/10/2024	2762	15.1	312	74	45651.04
10/10/2024	2763	14.6	314	74	44936.3
10/10/2024	2764	14.1	316	74	45808.32
10/10/2024	2765	13.7	308	74	44079.19
10/10/2024	2766	13.5	294	74	43451.37
10/10/2024	2767	13.3	282	74	47054.13
10/10/2024	2768	13.1	270	74	43754.89
10/10/2024	2769	13	263	74	45393.53
10/10/2024	2770	12.8	258	74	44759.83
10/10/2024	2771	12.7	253	74	43168.34
10/10/2024	2772	12.6	247	74	44127.74
10/10/2024	2773	12.6	242	74	43186.77
10/10/2024	2774	12.5	237	74	44699.58
10/10/2024	2775	12.4	232	74	43211.51
10/10/2024	2776	12.4	227	74	41615.34
10/10/2024	2777	12.4	223	74	44762.11
10/10/2024	2778	12.3	219	74	44864.92
10/10/2024	2779	12.3	215	74	44258.43

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2780	12.3	211	74	43818.32
10/10/2024	2781	12.2	208	74	43264.28
10/10/2024	2782	12.2	204	74	41243.46
10/10/2024	2783	12.2	201	74	44839.6
10/10/2024	2784	12.2	198	74	45499.59
10/10/2024	2785	12.2	195	74	43401.21
10/10/2024	2786	12.1	192	74	43930.66
10/10/2024	2787	12.1	189	74	44474.01
10/10/2024	2788	12.1	187	74	43344.07
10/10/2024	2789	12.1	184	74	42250.61
10/10/2024	2790	12.1	182	74	42930.89
10/10/2024	2791	12.1	180	74	41776.97
10/10/2024	2792	12.1	178	74	44073.05
10/10/2024	2793	12.1	176	74	45650.69
10/10/2024	2794	11.8	183	75	38548.12
10/10/2024	2795	11.4	201	75	39011.76
10/10/2024	2796	11.1	217	75	38981.2
10/10/2024	2797	10.7	231	75	37715.01
10/10/2024	2798	10.3	243	75	41929.77
10/10/2024	2799	10	253	75	42329.57
10/10/2024	2800	9.4	261	75	42183.42
10/10/2024	2801	9.4	267	75	41436.05
10/10/2024	2802	8.7	272	75	41268.31
10/10/2024	2803	8.3	276	75	42065.21
10/10/2024	2804	7.9	280	75	39827.85
10/10/2024	2805	7.6	284	75	42415.7
10/10/2024	2806	7.4	287	75	43159.71
10/10/2024	2807	7.2	290	75	43027.16
10/10/2024	2808	7	293	75	43322.12
10/10/2024	2809	6.6	296	75	41916.15
10/10/2024	2810	6.3	299	75	42351.09
10/10/2024	2811	5.8	301	75	42711.84
10/10/2024	2812	5.5	303	74	43482.52
10/10/2024	2813	4.9	305	74	45994.27
10/10/2024	2814	4.5	306	74	45223.73
10/10/2024	2815	4.2	307	74	43313.2
10/10/2024	2816	3.8	308	74	40958.05
10/10/2024	2817	3.4	309	75	48401.53
10/10/2024	2818	3.1	309	74	58214.35
10/10/2024	2819	2.7	310	74	58096.52
10/10/2024	2820	2.3	311	75	61848.69
10/10/2024	2821	1.9	311	74	60061.26
10/10/2024	2822	1.6	312	74	59200.63
10/10/2024	2823	1.2	313	74	57461.28
10/10/2024	2824	0.8	314	74	59470.22

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/10/2024	2825	0.5	315	74	57598.03
10/10/2024	2826	0.1	316	75	57319.81
10/14/2024	2827	39.1	274	72	75340.21
10/14/2024	2828	166.9	265	72	60864.11
10/14/2024	2829	166.5	265	72	63478.78
10/14/2024	2830	166.1	267	72	58135.81
10/14/2024	2831	165.7	268	72	58476.9
10/14/2024	2832	165.2	270	72	56187.3
10/14/2024	2833	164.8	272	72	55466.01
10/14/2024	2834	164.4	273	72	60885.08
10/14/2024	2835	163.9	274	72	58983.88
10/14/2024	2836	163.5	274	72	58353.96
10/14/2024	2837	163.1	275	72	59360.59
10/14/2024	2838	162.7	276	72	58497.33
10/14/2024	2839	162.3	276	72	56369.18
10/14/2024	2840	162	276	72	58969.76
10/14/2024	2841	161.7	276	72	60389.71
10/14/2024	2842	161.3	277	72	59093.68
10/14/2024	2843	160.8	277	72	58481.42
10/14/2024	2844	160.4	278	72	57469.64
10/14/2024	2845	160	278	72	56635.04
10/14/2024	2846	159.6	278	72	61933.76
10/14/2024	2847	159.2	279	72	58643.06
10/14/2024	2848	158.8	279	72	59438.05
10/14/2024	2849	158.4	280	72	57838.83
10/14/2024	2850	157.9	280	72	59844.4
10/14/2024	2851	157.6	281	72	58586.22
10/14/2024	2852	157.2	281	72	58968.14
10/14/2024	2853	156.8	281	72	56084.31
10/14/2024	2854	156.4	282	72	60445.9
10/14/2024	2855	155.9	285	72	60369.83
10/14/2024	2856	155.5	289	72	59674.5
10/14/2024	2857	155	293	72	61119.57
10/14/2024	2858	154.5	296	72	61420.64
10/14/2024	2859	154	299	73	57910.92
10/14/2024	2860	153.6	302	73	58811.27
10/14/2024	2861	153.1	302	73	59786.49
10/14/2024	2862	152.7	303	73	62311.52
10/14/2024	2863	152.3	304	73	61690.86
10/14/2024	2864	151.8	304	73	61097.56
10/14/2024	2865	151.5	304	73	59762.56
10/14/2024	2866	151	302	73	58456.52
10/14/2024	2867	150.6	300	73	60999.59
10/14/2024	2868	150.3	299	73	61508.41
10/14/2024	2869	149.9	299	73	59776.48

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	2870	149.4	301	73	62303.75
10/14/2024	2871	149	302	73	58905.3
10/14/2024	2872	148.7	296	73	57020.62
10/14/2024	2873	148.6	285	73	56102.38
10/14/2024	2874	148.5	276	73	60402.09
10/14/2024	2875	148.4	267	73	57715.34
10/14/2024	2876	148.4	261	73	58810.48
10/14/2024	2877	148.4	257	73	56141.32
10/14/2024	2878	148.4	252	73	56036.5
10/14/2024	2879	148.3	247	73	56034.66
10/14/2024	2880	148.3	242	73	61966.02
10/14/2024	2881	148.3	238	73	60430.38
10/14/2024	2882	148.4	233	73	58319.36
10/14/2024	2883	148.4	229	73	57684.31
10/14/2024	2884	148.3	224	73	56664.65
10/14/2024	2885	148.4	219	73	58355.03
10/14/2024	2886	148.4	215	73	55619.37
10/14/2024	2887	148.4	211	73	54726.57
10/14/2024	2888	148.5	207	73	59442.47
10/14/2024	2889	148.5	204	73	56336.43
10/14/2024	2890	148.5	200	73	56310.25
10/14/2024	2891	148.5	197	73	57963.4
10/14/2024	2892	148.6	194	73	55940.57
10/14/2024	2893	148.6	191	73	56429.79
10/14/2024	2894	148.6	188	73	54957.5
10/14/2024	2895	148.6	185	73	55408.42
10/14/2024	2896	148.6	182	73	55494.6
10/14/2024	2897	148.7	179	73	54496.95
10/14/2024	2898	148.7	177	73	57832.26
10/14/2024	2899	148.2	179	73	50127.13
10/14/2024	2900	147.8	193	73	51159.43
10/14/2024	2901	147.3	209	73	52410.93
10/14/2024	2902	146.8	224	73	51786.5
10/14/2024	2903	146.3	239	73	53231.59
10/14/2024	2904	145.7	252	73	51019.29
10/14/2024	2905	145.1	261	73	50950.29
10/14/2024	2906	144.5	270	73	50174.62
10/14/2024	2907	143.8	278	73	54908.43
10/14/2024	2908	143.1	287	73	53753.21
10/14/2024	2909	142.4	293	73	54174.39
10/14/2024	2910	141.7	299	73	52350.38
10/14/2024	2911	141	303	73	53761.93
10/14/2024	2912	140.4	307	73	51443.36
10/14/2024	2913	139.6	310	73	53984.29
10/14/2024	2914	139	313	73	54757.65

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	2915	138.3	315	73	50894.46
10/14/2024	2916	137.7	317	73	51266.7
10/14/2024	2917	137	317	73	57525.07
10/14/2024	2918	136.4	318	73	53736.42
10/14/2024	2919	135.8	319	73	51853.52
10/14/2024	2920	135.1	320	73	54913.44
10/14/2024	2921	134.5	322	73	55218.38
10/14/2024	2922	133.9	323	73	52716.2
10/14/2024	2923	133.2	324	73	52906.82
10/14/2024	2924	132.6	326	73	53408.22
10/14/2024	2925	131.9	327	73	57541.58
10/14/2024	2926	131.3	328	73	53771.21
10/14/2024	2927	130.4	329	73	55285.29
10/14/2024	2928	130.2	330	73	53997.22
10/14/2024	2929	129.6	325	73	53240.39
10/14/2024	2930	129.3	311	73	50372.43
10/14/2024	2931	129	298	73	55313.54
10/14/2024	2932	128.8	286	73	55286.25
10/14/2024	2933	128.7	277	73	53598
10/14/2024	2934	128.6	271	73	53058.85
10/14/2024	2935	128.4	266	73	51956.25
10/14/2024	2936	128.4	260	73	53024.83
10/14/2024	2937	128.3	254	73	53024.73
10/14/2024	2938	128.3	249	73	49836.59
10/14/2024	2939	128.3	244	73	52119.09
10/14/2024	2940	128.2	239	73	53792.92
10/14/2024	2941	128.2	234	73	51020.53
10/14/2024	2942	128.2	229	73	50181.56
10/14/2024	2943	128.2	225	73	54332.63
10/14/2024	2944	128.2	221	73	52310.93
10/14/2024	2945	128.2	217	73	51363.12
10/14/2024	2946	128.2	213	73	54142.98
10/14/2024	2947	128.2	209	73	51982.43
10/14/2024	2948	128.2	206	73	52093.88
10/14/2024	2949	128.2	202	73	52028.48
10/14/2024	2950	128.2	199	72	52556.68
10/14/2024	2951	128.2	196	72	50127.57
10/14/2024	2952	128.2	193	72	51638.74
10/14/2024	2953	128.2	190	72	49567.13
10/14/2024	2954	128.2	187	72	49533.52
10/14/2024	2955	128.3	184	72	49587.56
10/14/2024	2956	128.2	181	72	50081.69
10/14/2024	2957	128.3	179	72	51693.98
10/14/2024	2958	128.3	176	72	51279.26
10/14/2024	2959	127.5	178	72	49132.65

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	2960	127	196	72	47988.54
10/14/2024	2961	126.7	213	72	48064.41
10/14/2024	2962	126.2	229	72	49057.35
10/14/2024	2963	125.8	244	72	49822.61
10/14/2024	2964	125.3	257	72	49321.02
10/14/2024	2965	124.8	268	72	48082.85
10/14/2024	2966	124.2	280	72	49877.6
10/14/2024	2967	123.6	290	72	54144.65
10/14/2024	2968	123	299	72	53946.21
10/14/2024	2969	122.4	306	72	51710.38
10/14/2024	2970	121.8	309	72	51415.75
10/14/2024	2971	121.2	311	72	53447.35
10/14/2024	2972	120.6	314	72	52073.18
10/14/2024	2973	120	317	72	52394.69
10/14/2024	2974	119.3	322	72	51712.89
10/14/2024	2975	118.7	325	72	49809.94
10/14/2024	2976	118	328	72	49744.62
10/14/2024	2977	117.4	329	72	54280.33
10/14/2024	2978	116.7	331	72	53541.82
10/14/2024	2979	116	331	72	53296.05
10/14/2024	2980	115.5	330	72	52236.3
10/14/2024	2981	114.9	330	72	54114.18
10/14/2024	2982	114.3	332	72	53317.99
10/14/2024	2983	113.6	334	72	53722.16
10/14/2024	2984	113	335	72	52956.07
10/14/2024	2985	112.4	335	72	52659.77
10/14/2024	2986	111.9	333	72	51932.96
10/14/2024	2987	111.5	319	72	58784.01
10/14/2024	2988	111.2	305	72	52947.17
10/14/2024	2989	111	292	72	52395.03
10/14/2024	2990	110.8	282	72	53022.68
10/14/2024	2991	110.6	276	72	51871.17
10/14/2024	2992	110.5	269	72	52321.09
10/14/2024	2993	110.4	263	72	52345.45
10/14/2024	2994	110.3	257	72	52913.77
10/14/2024	2995	110.2	251	72	50259.27
10/14/2024	2996	110.2	245	72	57274.16
10/14/2024	2997	110.1	240	72	54535.42
10/14/2024	2998	110	235	72	51611.13
10/14/2024	2999	110.1	231	72	53105.83
10/14/2024	3000	110	226	72	51919.42
10/14/2024	3001	110	222	72	52078.47
10/14/2024	3002	110	218	72	51095.4
10/14/2024	3003	110	214	72	51155.6
10/14/2024	3004	110	211	72	51072.23

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3005	110	207	72	54266.12
10/14/2024	3006	110	204	72	52826.34
10/14/2024	3007	110	201	72	53942.32
10/14/2024	3008	110	197	72	51893.25
10/14/2024	3009	110	195	72	51928.05
10/14/2024	3010	110	192	72	52973.87
10/14/2024	3011	110	189	72	50310.88
10/14/2024	3012	110	186	72	49291.71
10/14/2024	3013	110	184	72	52993.5
10/14/2024	3014	110	182	72	52982.4
10/14/2024	3015	110	179	72	50622.08
10/14/2024	3016	110.1	177	72	50943.39
10/14/2024	3017	110.1	175	72	51633.6
10/14/2024	3018	109	183	71	47237.26
10/14/2024	3019	108.6	202	71	49297.25
10/14/2024	3020	108.2	221	71	50338.87
10/14/2024	3021	107.6	240	71	49202.16
10/14/2024	3022	107.1	258	71	49790.8
10/14/2024	3023	106.5	272	72	50115.1
10/14/2024	3024	105.9	284	72	48746.48
10/14/2024	3025	105.4	293	72	49151.8
10/14/2024	3026	104.8	300	72	47964.71
10/14/2024	3027	104.1	306	72	49921.91
10/14/2024	3028	103.6	311	72	52279.6
10/14/2024	3029	102.9	315	72	53127.65
10/14/2024	3030	102.4	318	72	52981.37
10/14/2024	3031	101.8	321	72	53272.91
10/14/2024	3032	101.3	322	72	51552.54
10/14/2024	3033	100.8	323	72	53010.43
10/14/2024	3034	100.1	324	72	51265.04
10/14/2024	3035	99.6	326	72	50495.48
10/14/2024	3036	99	327	72	51842.2
10/14/2024	3037	98.4	329	72	51075.42
10/14/2024	3038	97.8	331	72	56080.45
10/14/2024	3039	97.3	332	72	58234.28
10/14/2024	3040	96.7	333	72	55309.36
10/14/2024	3041	96	335	72	54192.18
10/14/2024	3042	95.5	336	72	54496.64
10/14/2024	3043	94.8	337	72	52685.11
10/14/2024	3044	94.3	339	72	56143.6
10/14/2024	3045	93.8	324	72	50746.49
10/14/2024	3046	93.5	310	72	53836.7
10/14/2024	3047	93.1	297	72	50650.78
10/14/2024	3048	92.9	285	72	54623.58
10/14/2024	3049	92.7	279	72	52680.9

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3050	92.6	272	72	52669.7
10/14/2024	3051	92.4	266	72	51555.89
10/14/2024	3052	92.3	259	72	50025.54
10/14/2024	3053	92.2	253	72	52779.53
10/14/2024	3054	92.1	248	72	53875.24
10/14/2024	3055	92.1	242	72	50296.52
10/14/2024	3056	92	237	72	50721.87
10/14/2024	3057	92	233	72	51782.61
10/14/2024	3058	91.9	228	72	56066.47
10/14/2024	3059	92	224	71	52350.19
10/14/2024	3060	91.9	220	71	50866.84
10/14/2024	3061	91.9	217	71	52368.28
10/14/2024	3062	91.9	213	71	51483.09
10/14/2024	3063	91.9	209	71	51948.36
10/14/2024	3064	91.9	206	71	50965.61
10/14/2024	3065	91.9	203	71	52125.03
10/14/2024	3066	91.9	199	71	50506.48
10/14/2024	3067	91.9	196	71	51751.22
10/14/2024	3068	91.9	194	72	52709.76
10/14/2024	3069	91.9	191	71	51166.21
10/14/2024	3070	91.9	188	72	51695.01
10/14/2024	3071	91.9	186	71	48595.91
10/14/2024	3072	91.9	183	72	50299.51
10/14/2024	3073	91.9	181	72	53471.31
10/14/2024	3074	91.9	179	71	52448.48
10/14/2024	3075	92	177	71	51940.08
10/14/2024	3076	92	175	71	50826.77
10/14/2024	3077	91.2	182	71	50449.14
10/14/2024	3078	90.9	196	71	48808.06
10/14/2024	3079	90.5	209	71	48832.38
10/14/2024	3080	90	221	71	49182.92
10/14/2024	3081	89.5	235	71	49158.11
10/14/2024	3082	89	249	71	49186.28
10/14/2024	3083	88.5	263	72	48490.29
10/14/2024	3084	87.9	275	72	48895.35
10/14/2024	3085	87.3	286	72	47675.93
10/14/2024	3086	86.7	295	72	47471.99
10/14/2024	3087	86.1	303	72	50034.38
10/14/2024	3088	85.3	311	72	50729.69
10/14/2024	3089	84.7	316	72	52664.79
10/14/2024	3090	84.1	320	72	51407.35
10/14/2024	3091	83.5	323	72	52431.12
10/14/2024	3092	82.8	325	72	49520.4
10/14/2024	3093	82.2	328	72	51806.66
10/14/2024	3094	81.6	329	72	51777.57

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3095	81	331	72	52019.57
10/14/2024	3096	80.4	332	72	53949.89
10/14/2024	3097	79.7	334	72	53930.58
10/14/2024	3098	79.1	335	72	54083.09
10/14/2024	3099	78.4	337	72	53957.53
10/14/2024	3100	77.8	338	72	53763.72
10/14/2024	3101	77.1	339	72	54129.31
10/14/2024	3102	76.4	341	72	52855.09
10/14/2024	3103	75.8	342	72	56394.17
10/14/2024	3104	75.1	343	72	54071.08
10/14/2024	3105	74.8	328	72	50767.88
10/14/2024	3106	74.3	313	72	51309.63
10/14/2024	3107	74.1	300	72	54966.17
10/14/2024	3108	73.8	288	72	54804.97
10/14/2024	3109	73.6	281	72	53640.48
10/14/2024	3110	73.4	275	72	54832.31
10/14/2024	3111	73.3	268	71	52057.74
10/14/2024	3112	73.2	262	71	53798.57
10/14/2024	3113	73	255	72	52685.56
10/14/2024	3114	73	249	71	50478.87
10/14/2024	3115	72.9	244	71	51074.51
10/14/2024	3116	72.8	239	71	50568.02
10/14/2024	3117	72.7	234	71	54390.74
10/14/2024	3118	72.7	229	71	53767.24
10/14/2024	3119	72.6	225	71	54384.83
10/14/2024	3120	72.6	221	71	54479.55
10/14/2024	3121	72.6	217	71	53441.55
10/14/2024	3122	72.5	213	71	51925.45
10/14/2024	3123	72.5	210	71	51849.48
10/14/2024	3124	72.5	207	71	51376.12
10/14/2024	3125	72.5	204	71	51455.96
10/14/2024	3126	72.5	201	71	51545.04
10/14/2024	3127	72.5	198	71	55872.1
10/14/2024	3128	72.5	195	71	54701.65
10/14/2024	3129	72.5	192	71	53342.25
10/14/2024	3130	72.5	190	71	52156.63
10/14/2024	3131	72.5	187	71	51800.19
10/14/2024	3132	72.5	185	71	51847.22
10/14/2024	3133	72.6	183	71	51766.72
10/14/2024	3134	72.6	180	71	50228.12
10/14/2024	3135	72.5	178	71	50859.15
10/14/2024	3136	72.5	176	71	49236.5
10/14/2024	3137	72.5	175	71	54256.63
10/14/2024	3138	71.7	176	72	48912.47
10/14/2024	3139	71.4	192	72	48517.33

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3140	71	208	72	48340.48
10/14/2024	3141	70.6	222	72	51111.05
10/14/2024	3142	70.1	236	72	49346.87
10/14/2024	3143	69.7	250	71	49776.03
10/14/2024	3144	69.2	263	71	51257.95
10/14/2024	3145	68.7	274	71	48483.66
10/14/2024	3146	68.2	283	71	50433.76
10/14/2024	3147	67.7	290	71	51377.93
10/14/2024	3148	67.1	296	71	50141.14
10/14/2024	3149	66.4	302	71	49802.53
10/14/2024	3150	65.9	307	71	54132.26
10/14/2024	3151	65.3	311	71	53290.25
10/14/2024	3152	64.7	315	71	53202.51
10/14/2024	3153	64.1	318	71	52440.88
10/14/2024	3154	63.4	321	71	53339.77
10/14/2024	3155	62.8	324	71	52470.74
10/14/2024	3156	62.2	327	71	52891.87
10/14/2024	3157	61.5	329	71	52023.51
10/14/2024	3158	60.9	331	71	51308.01
10/14/2024	3159	60.2	333	71	51598.93
10/14/2024	3160	59.5	335	71	53011.96
10/14/2024	3161	58.9	335	71	54096.53
10/14/2024	3162	58.1	335	71	53689.63
10/14/2024	3163	57.5	335	71	55632.83
10/14/2024	3164	56.8	337	71	54766.63
10/14/2024	3165	56.2	338	71	55761.57
10/14/2024	3166	55.8	326	71	53965.46
10/14/2024	3167	55.5	312	71	55612.18
10/14/2024	3168	55.3	298	71	52172.69
10/14/2024	3169	55	286	71	51162.44
10/14/2024	3170	54.9	280	71	53367.06
10/14/2024	3171	54.8	274	71	53453.77
10/14/2024	3172	54.6	268	71	53339.67
10/14/2024	3173	54.5	262	71	51851.13
10/14/2024	3174	54.4	256	71	51841.06
10/14/2024	3175	54.3	250	72	52512.59
10/14/2024	3176	54.2	245	72	53566.82
10/14/2024	3177	54.2	240	72	53570.47
10/14/2024	3178	54.1	235	72	51980.33
10/14/2024	3179	54.1	230	72	50794.78
10/14/2024	3180	54.2	226	72	57084.85
10/14/2024	3181	54.1	222	72	52592.83
10/14/2024	3182	54.2	218	72	51599.35
10/14/2024	3183	54.1	214	72	53360.18
10/14/2024	3184	54.2	211	72	52978.3

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3185	54.2	207	72	54548.76
10/14/2024	3186	54.2	204	72	51883.38
10/14/2024	3187	54.2	200	72	52382.03
10/14/2024	3188	54.2	197	72	51491.42
10/14/2024	3189	54.3	194	72	52996.69
10/14/2024	3190	54.3	192	72	54678.32
10/14/2024	3191	54.3	189	72	51505.53
10/14/2024	3192	54.3	186	72	53279.45
10/14/2024	3193	54.3	184	72	52790.3
10/14/2024	3194	54.3	181	72	51071.28
10/14/2024	3195	54.4	179	72	50575.34
10/14/2024	3196	54.4	177	72	50674.17
10/14/2024	3197	54.4	175	72	53881.66
10/14/2024	3198	53.4	188	71	48563.7
10/14/2024	3199	53.1	200	71	48543.42
10/14/2024	3200	52.8	211	71	50699.12
10/14/2024	3201	52.5	221	71	51138.49
10/14/2024	3202	52.2	230	71	50064.13
10/14/2024	3203	51.9	237	71	48740.22
10/14/2024	3204	51.6	244	71	51525.52
10/14/2024	3205	51.2	251	71	49194.1
10/14/2024	3206	50.8	257	71	49087.63
10/14/2024	3207	50.4	265	71	49499.78
10/14/2024	3208	49.9	274	71	48861.16
10/14/2024	3209	49.5	281	71	50127.13
10/14/2024	3210	49	287	71	52131.93
10/14/2024	3211	48.4	292	71	54783.83
10/14/2024	3212	48	296	71	52552.6
10/14/2024	3213	47.4	298	71	52324.96
10/14/2024	3214	46.9	301	71	50979.49
10/14/2024	3215	46.5	303	71	51321.57
10/14/2024	3216	45.9	305	71	53387.49
10/14/2024	3217	45.4	308	71	51931.87
10/14/2024	3218	44.9	311	71	51702.31
10/14/2024	3219	44.3	313	71	50505.96
10/14/2024	3220	43.8	314	72	57058.75
10/14/2024	3221	43.3	316	72	55510.77
10/14/2024	3222	42.8	318	72	55763.59
10/14/2024	3223	42.2	320	72	56215.3
10/14/2024	3224	41.6	322	72	52713.89
10/14/2024	3225	41	324	72	54136.01
10/14/2024	3226	40.5	326	72	52958.92
10/14/2024	3227	39.9	327	72	54448.04
10/14/2024	3228	39.3	328	72	53571.01
10/14/2024	3229	38.8	329	72	53954.21

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3230	38.4	315	72	56997.25
10/14/2024	3231	38.1	302	72	53177.93
10/14/2024	3232	37.8	290	71	52543.03
10/14/2024	3233	37.6	280	71	55258.23
10/14/2024	3234	37.4	274	71	53128.35
10/14/2024	3235	37.2	268	71	52144.47
10/14/2024	3236	37.1	262	71	52617.38
10/14/2024	3237	37	256	71	52679.66
10/14/2024	3238	36.9	251	71	52637.77
10/14/2024	3239	36.8	245	71	51374.09
10/14/2024	3240	36.7	240	71	54828.82
10/14/2024	3241	36.7	235	71	54856.42
10/14/2024	3242	36.6	230	71	54418.38
10/14/2024	3243	36.5	226	71	52884.36
10/14/2024	3244	36.5	222	71	51319.67
10/14/2024	3245	36.4	218	71	53575.09
10/14/2024	3246	36.4	214	71	51949.62
10/14/2024	3247	36.4	211	71	50239.36
10/14/2024	3248	36.4	208	71	51464.9
10/14/2024	3249	36.4	204	71	50433.22
10/14/2024	3250	36.3	201	71	52541.18
10/14/2024	3251	36.3	198	71	52542.21
10/14/2024	3252	36.3	196	71	53679.86
10/14/2024	3253	36.3	193	71	52045.3
10/14/2024	3254	36.3	190	71	53700.65
10/14/2024	3255	36.3	188	71	50655.88
10/14/2024	3256	36.3	185	71	51146.75
10/14/2024	3257	36.3	183	71	50706.56
10/14/2024	3258	36.3	181	71	51248.15
10/14/2024	3259	36.3	178	71	50140.12
10/14/2024	3260	36.3	176	71	54077.16
10/14/2024	3261	35.7	179	71	46228.57
10/14/2024	3262	35.4	196	71	49514.1
10/14/2024	3263	35	210	71	50496.2
10/14/2024	3264	34.7	223	72	49488.81
10/14/2024	3265	34.3	235	72	51905.03
10/14/2024	3266	34	245	72	49757.06
10/14/2024	3267	33.6	255	72	49659.91
10/14/2024	3268	33.2	265	71	49005.06
10/14/2024	3269	32.8	273	71	50980.17
10/14/2024	3270	32.4	279	71	51333.25
10/14/2024	3271	32	284	71	51104.06
10/14/2024	3272	31.6	288	71	50331.61
10/14/2024	3273	31.2	292	71	50907.72
10/14/2024	3274	30.6	298	71	46802.3

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3275	30	305	71	54750.54
10/14/2024	3276	29.5	311	71	52858.69
10/14/2024	3277	28.9	316	71	56527.37
10/14/2024	3278	28.3	321	71	53577.54
10/14/2024	3279	27.7	326	71	53336.53
10/14/2024	3280	27.1	330	71	52569.98
10/14/2024	3281	26.5	333	71	53953.89
10/14/2024	3282	25.9	333	71	51511
10/14/2024	3283	25.3	330	71	52850.68
10/14/2024	3284	24.7	332	71	51194.83
10/14/2024	3285	24.2	332	71	52509.59
10/14/2024	3286	23.6	334	71	56077.62
10/14/2024	3287	23	332	71	54272.47
10/14/2024	3288	22.5	330	71	55213.97
10/14/2024	3289	22.2	321	71	54402.69
10/14/2024	3290	21.8	307	71	52800.6
10/14/2024	3291	21.5	295	71	53789.62
10/14/2024	3292	21.4	284	71	51047.25
10/14/2024	3293	21.2	276	71	58279.36
10/14/2024	3294	21	270	71	55845.57
10/14/2024	3295	20.9	264	71	54197.87
10/14/2024	3296	20.7	258	71	53280.01
10/14/2024	3297	20.6	252	71	52207.17
10/14/2024	3298	20.5	246	71	52145.79
10/14/2024	3299	20.5	240	71	51495.32
10/14/2024	3300	20.4	235	71	51692.99
10/14/2024	3301	20.3	230	71	55977.4
10/14/2024	3302	20.2	226	71	54847.56
10/14/2024	3303	20.2	222	71	52660.33
10/14/2024	3304	20.2	218	71	51815.79
10/14/2024	3305	20.1	214	71	51851.93
10/14/2024	3306	20.1	210	71	51321.65
10/14/2024	3307	20.2	207	71	51277.59
10/14/2024	3308	20.1	204	71	51971.39
10/14/2024	3309	20.1	200	71	52942.37
10/14/2024	3310	20	197	71	53503.53
10/14/2024	3311	20	194	72	53108.68
10/14/2024	3312	20	192	72	51531.2
10/14/2024	3313	20	189	72	52608.17
10/14/2024	3314	20	187	72	53189.29
10/14/2024	3315	20	184	72	51581.19
10/14/2024	3316	20	182	72	50634.69
10/14/2024	3317	20	179	72	49006.45
10/14/2024	3318	20	177	72	51608.2
10/14/2024	3319	20	175	72	54011.8

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3320	19.4	193	72	50151.37
10/14/2024	3321	19	217	72	49932.74
10/14/2024	3322	18.6	238	72	48354.23
10/14/2024	3323	18.2	255	72	50315.4
10/14/2024	3324	17.7	269	72	48647.64
10/14/2024	3325	17.3	280	71	48918.94
10/14/2024	3326	16.9	289	71	49896.25
10/14/2024	3327	16.5	297	71	48576.61
10/14/2024	3328	16	303	71	53736.21
10/14/2024	3329	15.5	308	71	50907.8
10/14/2024	3330	15.1	312	71	51200.94
10/14/2024	3331	14.6	316	71	52045.16
10/14/2024	3332	14.1	320	71	52952.48
10/14/2024	3333	13.6	323	71	52035.1
10/14/2024	3334	13.1	326	71	54457.25
10/14/2024	3335	12.6	327	71	51401.11
10/14/2024	3336	12.2	329	71	51588.39
10/14/2024	3337	11.7	332	71	55473.34
10/14/2024	3338	11.2	333	71	52602.67
10/14/2024	3339	10.7	335	71	51898.8
10/14/2024	3340	10.4	337	71	57563.41
10/14/2024	3341	10	337	71	51461.78
10/14/2024	3342	9.5	337	71	56098.47
10/14/2024	3343	9.1	337	71	54944.04
10/14/2024	3344	8.8	326	71	53630.29
10/14/2024	3345	8.7	311	71	50972.8
10/14/2024	3346	8.5	298	71	49755.59
10/14/2024	3347	8.5	286	72	51385.06
10/14/2024	3348	8.4	280	72	56056.31
10/14/2024	3349	8.4	275	72	54164.59
10/14/2024	3350	8.3	269	72	51401.51
10/14/2024	3351	8.2	264	71	51454.71
10/14/2024	3352	8.1	258	71	48257.04
10/14/2024	3353	8.1	253	71	53544.79
10/14/2024	3354	8.1	247	71	48936.65
10/14/2024	3355	8	242	71	49956.78
10/14/2024	3356	8	237	71	50495.61
10/14/2024	3357	8	233	71	53820.44
10/14/2024	3358	8	228	71	51672.34
10/14/2024	3359	8	224	71	52072.99
10/14/2024	3360	8	219	71	53213.49
10/14/2024	3361	8	215	71	52659.77
10/14/2024	3362	8	211	71	49123.18
10/14/2024	3363	8.1	208	71	49568.66
10/14/2024	3364	8.1	204	71	49094.15

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/14/2024	3365	8.1	200	71	50934.85
10/14/2024	3366	8.1	197	71	50428.95
10/14/2024	3367	8.1	194	71	53968.19
10/14/2024	3368	8.1	191	71	52541.82
10/14/2024	3369	8.2	188	71	50526.67
10/14/2024	3370	8.2	185	71	50466.1
10/14/2024	3371	8.2	182	71	50529.89
10/14/2024	3372	8.2	179	71	51115.68
10/14/2024	3373	8.2	177	71	52273.27
10/14/2024	3374	7.6	198	71	50689.93
10/14/2024	3375	7.3	219	71	48427.55
10/14/2024	3376	6.9	236	71	47808.84
10/14/2024	3377	6.5	250	71	50920.24
10/14/2024	3378	6.3	260	71	51900.09
10/14/2024	3379	6	269	71	51172.98
10/14/2024	3380	5.6	276	71	52221.7
10/14/2024	3381	5.2	282	71	49297.58
10/14/2024	3382	4.3	288	71	49286.17
10/14/2024	3383	3.9	294	71	50108.16
10/14/2024	3384	3.5	299	71	54414.6
10/14/2024	3385	3.1	303	71	52469.06
10/14/2024	3386	2.7	307	71	52395.74
10/14/2024	3387	2.9	311	71	48347.24
10/14/2024	3388	2.4	313	71	56315.29
10/14/2024	3389	2	315	71	51517.36
10/14/2024	3390	1.6	316	71	52515.65
10/14/2024	3391	1.2	318	71	51399.6
10/14/2024	3392	0.8	319	71	52233.71
10/14/2024	3393	0.4	320	71	55165.97
10/14/2024	3394	0	321	71	52952.3
10/21/2024	3395	20.3	231	75	137036.37
10/21/2024	3396	66.3	231	75	143826.54
10/21/2024	3397	188.9	225	75	139843.24
10/21/2024	3398	188	234	75	22753.45
10/21/2024	3399	187.4	242	75	62093.75
10/21/2024	3400	186.9	248	75	63290.82
10/21/2024	3401	186.4	252	75	66329.35
10/21/2024	3402	185.9	254	75	65134.94
10/21/2024	3403	185.4	257	75	63310.65
10/21/2024	3404	185	259	75	67351.09
10/21/2024	3405	184.5	261	75	66318.1
10/21/2024	3406	184	263	75	66735.63
10/21/2024	3407	183.4	266	75	66501.93
10/21/2024	3408	183	266	75	66537.13
10/21/2024	3409	182.5	267	75	68859.7

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3410	182.2	269	75	69406.44
10/21/2024	3411	181.8	269	75	72042.11
10/21/2024	3412	181.1	273	75	68620.89
10/21/2024	3413	180.7	272	75	71310.72
10/21/2024	3414	180.1	275	75	66556.92
10/21/2024	3415	179.5	278	75	73223.85
10/21/2024	3416	178.9	281	75	73368.99
10/21/2024	3417	178.4	283	75	71104.67
10/21/2024	3418	177.8	285	75	71466.48
10/21/2024	3419	177.2	286	75	71274.92
10/21/2024	3420	176.7	287	75	76588.66
10/21/2024	3421	176.1	288	75	73635.7
10/21/2024	3422	175.6	289	76	75202.52
10/21/2024	3423	175.1	289	76	72467.46
10/21/2024	3424	174.6	290	76	75568.32
10/21/2024	3425	174	291	76	80090.06
10/21/2024	3426	173.5	291	76	73603.3
10/21/2024	3427	173	292	76	73849.04
10/21/2024	3428	172.4	293	76	74883.38
10/21/2024	3429	171.8	294	76	74222.14
10/21/2024	3430	171.4	294	76	77900.28
10/21/2024	3431	170.8	296	76	73808.41
10/21/2024	3432	170.2	297	76	77462.13
10/21/2024	3433	169.5	298	76	76736.39
10/21/2024	3434	169	298	76	80435.96
10/21/2024	3435	168.4	297	76	80369.96
10/21/2024	3436	167.8	298	76	83375.12
10/21/2024	3437	167.3	299	76	78911.55
10/21/2024	3438	166.8	300	76	78085.37
10/21/2024	3439	166.2	301	76	79669.14
10/21/2024	3440	165.7	301	76	77937.37
10/21/2024	3441	165.1	302	76	79065.41
10/21/2024	3442	164.5	302	76	79600.17
10/21/2024	3443	164	302	76	84295.54
10/21/2024	3444	163.5	302	76	80435.69
10/21/2024	3445	163	303	76	86583.34
10/21/2024	3446	162.4	303	76	81429.23
10/21/2024	3447	161.9	303	76	78369.71
10/21/2024	3448	161.4	304	76	88124.6
10/21/2024	3449	160.7	304	76	85700.47
10/21/2024	3450	160.3	305	76	82938.5
10/21/2024	3451	159.7	306	76	80047.73
10/21/2024	3452	159.3	304	76	84284.43
10/21/2024	3453	159	292	76	88136.3
10/21/2024	3454	158.8	281	77	83544.1

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3455	158.7	271	76	72182.15
10/21/2024	3456	158.6	262	76	59668.97
10/21/2024	3457	158.6	258	76	63319.34
10/21/2024	3458	158.6	254	76	61099.43
10/21/2024	3459	158.6	250	76	60073.81
10/21/2024	3460	158.7	246	76	62903.18
10/21/2024	3461	158.7	242	76	60658.62
10/21/2024	3462	158.7	238	76	56925.86
10/21/2024	3463	158.8	234	76	59556.58
10/21/2024	3464	158.8	230	76	60280.9
10/21/2024	3465	158.8	226	76	62488.98
10/21/2024	3466	158.9	222	76	60265.12
10/21/2024	3467	158.9	219	76	58678.55
10/21/2024	3468	158.9	215	76	60823.22
10/21/2024	3469	158.9	212	76	59840.58
10/21/2024	3470	159	208	76	58202.83
10/21/2024	3471	159	205	76	57813.81
10/21/2024	3472	159	202	76	58133.78
10/21/2024	3473	159.1	199	76	59393.59
10/21/2024	3474	159.1	196	76	58507.01
10/21/2024	3475	159.1	193	76	57399.89
10/21/2024	3476	159.1	190	76	57380.13
10/21/2024	3477	159.1	188	76	58653.46
10/21/2024	3478	159.1	185	76	58702.38
10/21/2024	3479	159.2	182	76	57619.79
10/21/2024	3480	159.2	180	76	55000.04
10/21/2024	3481	159.2	178	76	57568.23
10/21/2024	3482	159.2	175	76	58093.79
10/21/2024	3483	158.5	182	76	49577.01
10/21/2024	3484	158.3	190	76	48908.4
10/21/2024	3485	157.9	197	76	50031.64
10/21/2024	3486	157.6	205	76	48405.36
10/21/2024	3487	157.1	215	76	48287.9
10/21/2024	3488	156.6	225	76	49348.25
10/21/2024	3489	156.1	236	76	50286.63
10/21/2024	3490	155.5	245	76	51988.07
10/21/2024	3491	154.8	253	76	49947.49
10/21/2024	3492	154.1	260	76	50916.87
10/21/2024	3493	153.4	266	76	50361.23
10/21/2024	3494	152.7	271	76	49523.68
10/21/2024	3495	152.1	274	76	50536.59
10/21/2024	3496	151.5	276	76	50252.27
10/21/2024	3497	150.8	279	76	49606.62
10/21/2024	3498	150.1	282	76	52809.26
10/21/2024	3499	149.4	284	76	53100.75

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3500	148.7	286	76	52994.9
10/21/2024	3501	148	288	75	52853.73
10/21/2024	3502	147.4	289	75	53565.46
10/21/2024	3503	146.7	290	75	52944.72
10/21/2024	3504	146.1	291	75	54425.95
10/21/2024	3505	145.4	292	75	52047.82
10/21/2024	3506	144.8	293	75	51376.88
10/21/2024	3507	144.1	294	75	57813.59
10/21/2024	3508	143.5	295	75	54701.79
10/21/2024	3509	142.8	297	75	56169.47
10/21/2024	3510	142.2	298	75	53827.06
10/21/2024	3511	141.5	300	75	53504.74
10/21/2024	3512	140.9	301	75	53477.75
10/21/2024	3513	140.3	302	75	52843.54
10/21/2024	3514	139.7	303	75	56381.8
10/21/2024	3515	139.1	301	75	52418.2
10/21/2024	3516	138.8	290	75	55528.47
10/21/2024	3517	138.5	279	75	55006.07
10/21/2024	3518	138.3	268	75	53272.74
10/21/2024	3519	138.3	260	75	54380.88
10/21/2024	3520	138.2	255	75	53736.75
10/21/2024	3521	138.2	251	75	53331.75
10/21/2024	3522	138.2	247	75	53249.75
10/21/2024	3523	138.2	243	75	51703.22
10/21/2024	3524	138.1	239	75	50547.85
10/21/2024	3525	138.1	235	75	55043.52
10/21/2024	3526	138.2	231	75	53368.01
10/21/2024	3527	138.2	227	75	54531.34
10/21/2024	3528	138.1	223	75	54495.76
10/21/2024	3529	138.1	219	75	52428.37
10/21/2024	3530	138.1	215	75	52431
10/21/2024	3531	138.1	212	75	52910.16
10/21/2024	3532	138.2	208	75	50886.7
10/21/2024	3533	138.2	205	75	50877.67
10/21/2024	3534	138.3	202	75	53126.5
10/21/2024	3535	138.2	199	75	53658.77
10/21/2024	3536	138.2	196	75	51167.41
10/21/2024	3537	138.3	193	75	53138.24
10/21/2024	3538	138.3	191	75	50495.86
10/21/2024	3539	138.3	188	75	51661.11
10/21/2024	3540	138.3	185	75	50671.61
10/21/2024	3541	138.3	183	75	51357.48
10/21/2024	3542	138.3	181	75	50068.97
10/21/2024	3543	138.3	178	75	54004.06
10/21/2024	3544	138.3	176	75	52903.33

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3545	137.2	182	75	47209.43
10/21/2024	3546	136.7	192	75	46687.24
10/21/2024	3547	136.2	200	75	46662.62
10/21/2024	3548	135.7	209	75	47643.18
10/21/2024	3549	135.1	219	75	47195.57
10/21/2024	3550	134.5	229	75	45831.83
10/21/2024	3551	133.8	239	75	50220.54
10/21/2024	3552	133.1	248	75	51046.22
10/21/2024	3553	132.4	255	75	49716.67
10/21/2024	3554	131.7	262	75	50728.01
10/21/2024	3555	131	268	75	50074.44
10/21/2024	3556	130.3	273	75	48826.09
10/21/2024	3557	129.6	277	75	49177.01
10/21/2024	3558	128.8	280	75	49535.93
10/21/2024	3559	128.1	283	75	48401.79
10/21/2024	3560	127.3	287	75	52627.1
10/21/2024	3561	126.6	290	75	50120.38
10/21/2024	3562	125.9	293	75	53088.22
10/21/2024	3563	125.1	295	75	53057.25
10/21/2024	3564	124.4	297	75	50203.75
10/21/2024	3565	123.6	298	75	54987.97
10/21/2024	3566	122.8	300	75	52445.25
10/21/2024	3567	122.1	302	75	51143.1
10/21/2024	3568	121.4	303	75	49864.09
10/21/2024	3569	120.6	304	75	52995.88
10/21/2024	3570	119.9	305	75	53940.7
10/21/2024	3571	119.2	307	75	53635.3
10/21/2024	3572	118.4	308	75	54586.32
10/21/2024	3573	117.7	310	75	56460.57
10/21/2024	3574	116.9	311	75	57380.47
10/21/2024	3575	116.2	308	75	54453.17
10/21/2024	3576	115.8	297	75	54347.78
10/21/2024	3577	115.5	285	75	53241.27
10/21/2024	3578	115.3	274	75	51417.35
10/21/2024	3579	115.2	265	75	54562.44
10/21/2024	3580	115.1	261	75	54166.42
10/21/2024	3581	115.1	256	75	54643.1
10/21/2024	3582	115	252	75	53592.27
10/21/2024	3583	115	247	75	54126.05
10/21/2024	3584	115	243	75	52617.1
10/21/2024	3585	115	239	75	51488.31
10/21/2024	3586	115	235	75	51009.19
10/21/2024	3587	115	230	75	51565.24
10/21/2024	3588	115	226	75	54248.6
10/21/2024	3589	115	223	75	53207.16

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3590	115.1	219	75	53814.03
10/21/2024	3591	115	215	75	52671.85
10/21/2024	3592	115.1	212	75	52879.32
10/21/2024	3593	115.1	208	75	52285.07
10/21/2024	3594	115.1	205	75	51213.34
10/21/2024	3595	115.1	202	75	50221.36
10/21/2024	3596	115.1	199	75	54081.95
10/21/2024	3597	115.2	196	75	56727.32
10/21/2024	3598	115.2	193	75	53563.36
10/21/2024	3599	115.2	190	75	53160.83
10/21/2024	3600	115.2	188	75	52087.12
10/21/2024	3601	115.2	185	75	52211.42
10/21/2024	3602	115.2	183	75	52133.92
10/21/2024	3603	115.3	180	75	52529.31
10/21/2024	3604	115.3	178	75	49534
10/21/2024	3605	115.3	176	75	50718.46
10/21/2024	3606	113.4	178	74	43863.04
10/21/2024	3607	113	184	74	43916.84
10/21/2024	3608	112.7	190	74	44837.87
10/21/2024	3609	112.3	197	74	44826.64
10/21/2024	3610	111.8	204	74	43206.52
10/21/2024	3611	111.4	211	74	43592.65
10/21/2024	3612	110.9	219	74	45785.48
10/21/2024	3613	110.3	227	74	46108.28
10/21/2024	3614	109.8	234	74	46539.88
10/21/2024	3615	109.3	239	74	47440.69
10/21/2024	3616	108.7	244	74	46294.7
10/21/2024	3617	108.1	250	74	45541.18
10/21/2024	3618	107.6	254	74	45402.78
10/21/2024	3619	107	259	74	47400.52
10/21/2024	3620	106.3	262	74	44920.14
10/21/2024	3621	105.7	265	74	48114.67
10/21/2024	3622	105.1	267	74	50091.48
10/21/2024	3623	104.5	269	74	47057.37
10/21/2024	3624	103.9	270	74	48650.32
10/21/2024	3625	103.3	272	74	48492.07
10/21/2024	3626	102.7	274	74	49409.3
10/21/2024	3627	102.1	276	74	49790.1
10/21/2024	3628	101.5	279	74	49027.97
10/21/2024	3629	100.9	281	74	49358.84
10/21/2024	3630	100.2	282	74	48553.25
10/21/2024	3631	99.6	284	74	51663.15
10/21/2024	3632	99	284	74	51544.53
10/21/2024	3633	98.4	285	74	50288.84
10/21/2024	3634	97.9	284	74	51275.02

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3635	97.3	285	74	50938.78
10/21/2024	3636	96.7	285	74	50227.33
10/21/2024	3637	96.1	285	74	50013.4
10/21/2024	3638	95.6	285	74	52021.94
10/21/2024	3639	95	285	74	49766.46
10/21/2024	3640	94.6	279	74	50683
10/21/2024	3641	94.3	269	74	53986.65
10/21/2024	3642	94.1	260	74	52297.89
10/21/2024	3643	93.9	252	74	52762.91
10/21/2024	3644	93.8	246	74	50690.68
10/21/2024	3645	93.7	242	74	50585.37
10/21/2024	3646	93.6	238	74	50133.42
10/21/2024	3647	93.5	234	74	50077.95
10/21/2024	3648	93.5	230	74	50035.42
10/21/2024	3649	93.5	226	74	50047.11
10/21/2024	3650	93.5	223	74	50599.93
10/21/2024	3651	93.5	219	74	51132.3
10/21/2024	3652	93.6	215	74	49565.85
10/21/2024	3653	93.5	212	74	49183.58
10/21/2024	3654	93.5	208	74	48729.33
10/21/2024	3655	93.5	205	74	50283.24
10/21/2024	3656	93.5	202	74	49845.69
10/21/2024	3657	93.6	199	74	49887.65
10/21/2024	3658	93.6	196	74	49291.16
10/21/2024	3659	93.5	193	74	48319.51
10/21/2024	3660	93.6	190	74	52807.48
10/21/2024	3661	93.6	188	74	50528.87
10/21/2024	3662	93.6	185	74	50176.54
10/21/2024	3663	93.6	182	74	50086.63
10/21/2024	3664	93.6	180	74	49038.14
10/21/2024	3665	93.6	178	74	48474.15
10/21/2024	3666	93.6	175	74	48955.71
10/21/2024	3667	91.8	178	74	44750.65
10/21/2024	3668	91.4	188	74	45274.56
10/21/2024	3669	91	198	74	45788.14
10/21/2024	3670	90.6	208	74	45597.2
10/21/2024	3671	90.1	217	74	45558.1
10/21/2024	3672	89.7	226	74	45426.41
10/21/2024	3673	89.2	235	74	47479.94
10/21/2024	3674	88.7	243	74	46300.34
10/21/2024	3675	88.1	250	74	46604.66
10/21/2024	3676	87.6	256	74	49748.01
10/21/2024	3677	87	261	74	49595.34
10/21/2024	3678	86.4	266	74	48351.72
10/21/2024	3679	85.8	270	74	51203.87

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3680	85.1	275	74	51567.62
10/21/2024	3681	84.4	279	74	51971.49
10/21/2024	3682	83.7	283	74	50570.88
10/21/2024	3683	83	287	74	51397.98
10/21/2024	3684	82.3	290	74	48963.68
10/21/2024	3685	81.5	294	74	56530.08
10/21/2024	3686	80.6	296	74	53901.35
10/21/2024	3687	79.9	296	74	52550.95
10/21/2024	3688	79.2	293	74	54064.29
10/21/2024	3689	78.5	293	74	52237.79
10/21/2024	3690	77.7	295	74	51935.97
10/21/2024	3691	77	296	74	55459.95
10/21/2024	3692	76.3	297	74	55329.09
10/21/2024	3693	75.6	298	74	54471.33
10/21/2024	3694	75.1	290	74	53864.18
10/21/2024	3695	74.8	280	74	52152.1
10/21/2024	3696	74.6	270	74	52492.64
10/21/2024	3697	74.4	261	74	55210.57
10/21/2024	3698	74.3	255	74	53064.59
10/21/2024	3699	74.1	250	74	53079.44
10/21/2024	3700	74	246	74	53526.54
10/21/2024	3701	74	241	74	52462.95
10/21/2024	3702	73.9	237	74	54108.21
10/21/2024	3703	73.9	233	74	53653.11
10/21/2024	3704	73.8	229	74	53756.78
10/21/2024	3705	73.8	224	74	53234.3
10/21/2024	3706	73.8	220	74	52046.41
10/21/2024	3707	73.8	217	74	50965.85
10/21/2024	3708	73.8	213	74	54834.06
10/21/2024	3709	73.8	209	74	52804.83
10/21/2024	3710	73.8	206	74	52228.27
10/21/2024	3711	73.8	203	74	52280.75
10/21/2024	3712	73.8	199	74	51258.02
10/21/2024	3713	73.8	197	74	51369.24
10/21/2024	3714	73.8	194	74	54723.65
10/21/2024	3715	73.8	191	74	52560.11
10/21/2024	3716	73.8	188	74	51969.12
10/21/2024	3717	73.8	186	74	51978.35
10/21/2024	3718	73.8	183	74	52502.78
10/21/2024	3719	73.8	181	74	49920.56
10/21/2024	3720	73.8	178	74	58815.53
10/21/2024	3721	73.8	176	74	50659.06
10/21/2024	3722	72.8	180	74	47636.64
10/21/2024	3723	72.3	197	74	48564.71
10/21/2024	3724	71.7	214	74	48552.5

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3725	71.2	228	74	46639.77
10/21/2024	3726	70.6	241	74	47118.09
10/21/2024	3727	70.1	250	74	52345.33
10/21/2024	3728	69.5	257	74	50626.03
10/21/2024	3729	69	263	74	50958.66
10/21/2024	3730	68.5	268	74	51987.33
10/21/2024	3731	67.9	272	74	52228.22
10/21/2024	3732	67.3	275	74	50901.7
10/21/2024	3733	66.7	279	74	49980.67
10/21/2024	3734	66.1	282	74	50865.55
10/21/2024	3735	65.5	284	74	52238.07
10/21/2024	3736	64.8	287	74	54758.72
10/21/2024	3737	64.2	290	74	55566.61
10/21/2024	3738	63.5	292	74	54317.66
10/21/2024	3739	62.9	295	74	54645.64
10/21/2024	3740	62.2	298	74	55807.96
10/21/2024	3741	61.5	300	74	54531.46
10/21/2024	3742	60.7	303	74	52680.13
10/21/2024	3743	60	304	74	54477.51
10/21/2024	3744	59.5	298	74	52596.35
10/21/2024	3745	59.2	287	74	56890.82
10/21/2024	3746	58.9	276	74	55712.08
10/21/2024	3747	58.7	266	74	56260.67
10/21/2024	3748	58.6	259	74	54603.54
10/21/2024	3749	58.5	254	74	54082.24
10/21/2024	3750	58.4	250	74	53041.97
10/21/2024	3751	58.4	245	74	51813.93
10/21/2024	3752	58.3	240	74	51856.25
10/21/2024	3753	58.3	236	74	53073.73
10/21/2024	3754	58.3	231	74	55265.81
10/21/2024	3755	58.3	227	74	53633.21
10/21/2024	3756	58.3	223	74	53186.04
10/21/2024	3757	58.3	219	74	53241.19
10/21/2024	3758	58.3	215	74	52606.88
10/21/2024	3759	58.3	212	74	51600.31
10/21/2024	3760	58.3	208	74	51015.28
10/21/2024	3761	58.3	205	74	52154.07
10/21/2024	3762	58.3	202	74	51625.02
10/21/2024	3763	58.3	199	74	54883.08
10/21/2024	3764	58.3	196	74	56718.68
10/21/2024	3765	58.3	193	74	52969.83
10/21/2024	3766	58.4	190	74	53558.16
10/21/2024	3767	58.4	187	74	51911.19
10/21/2024	3768	58.4	185	74	51436.31
10/21/2024	3769	58.4	182	74	52408.6

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3770	58.4	180	74	50970.95
10/21/2024	3771	58.5	177	74	49979.7
10/21/2024	3772	58.5	175	74	50466.42
10/21/2024	3773	57.4	177	74	48102.13
10/21/2024	3774	57	194	74	47579.33
10/21/2024	3775	56.5	210	74	49029.79
10/21/2024	3776	56.1	222	74	47787.17
10/21/2024	3777	55.7	233	74	47204.38
10/21/2024	3778	55.3	241	74	50248.05
10/21/2024	3779	54.8	248	74	47287.99
10/21/2024	3780	54.4	254	74	52127.64
10/21/2024	3781	53.9	259	74	51265.4
10/21/2024	3782	53.5	264	73	51768.89
10/21/2024	3783	52.9	267	73	51516.19
10/21/2024	3784	52.5	271	73	50752.65
10/21/2024	3785	51.9	274	74	51128.35
10/21/2024	3786	51.4	277	74	50267.7
10/21/2024	3787	50.8	279	74	54979.37
10/21/2024	3788	50.3	280	74	53636.25
10/21/2024	3789	49.8	282	74	54097.72
10/21/2024	3790	49.3	284	74	53183.04
10/21/2024	3791	48.7	286	74	52352.39
10/21/2024	3792	48.2	287	74	53310.64
10/21/2024	3793	47.6	289	74	52637.11
10/21/2024	3794	47.1	290	74	52945.67
10/21/2024	3795	46.4	293	74	57388.06
10/21/2024	3796	45.8	295	74	57960.53
10/21/2024	3797	45.3	293	74	56367.79
10/21/2024	3798	45	282	74	53624.38
10/21/2024	3799	44.7	272	74	53121.62
10/21/2024	3800	44.4	263	74	52035.62
10/21/2024	3801	44.3	255	74	51374.83
10/21/2024	3802	44.2	251	74	50795.72
10/21/2024	3803	44	246	74	53593.61
10/21/2024	3804	43.9	242	74	54741.21
10/21/2024	3805	43.9	237	74	53126.58
10/21/2024	3806	43.8	232	74	53108.5
10/21/2024	3807	43.7	228	74	52489.98
10/21/2024	3808	43.7	224	74	52704.67
10/21/2024	3809	43.6	220	74	51453.53
10/21/2024	3810	43.6	216	74	54322.44
10/21/2024	3811	43.6	212	74	54443.29
10/21/2024	3812	43.6	209	74	52853.33
10/21/2024	3813	43.6	205	74	53291.95
10/21/2024	3814	43.6	202	74	53517.29

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3815	43.5	199	74	52423.29
10/21/2024	3816	43.5	196	74	51201.97
10/21/2024	3817	43.5	193	74	51799.86
10/21/2024	3818	43.5	190	74	51251.73
10/21/2024	3819	43.5	188	74	53045.3
10/21/2024	3820	43.5	185	74	54147.32
10/21/2024	3821	43.5	183	74	53620.23
10/21/2024	3822	43.5	180	74	51959.89
10/21/2024	3823	43.5	178	74	51501.25
10/21/2024	3824	43.5	176	74	49821.57
10/21/2024	3825	42.1	183	74	47580.85
10/21/2024	3826	41.7	199	74	49036.27
10/21/2024	3827	41.3	213	74	49552
10/21/2024	3828	40.9	225	74	48176.54
10/21/2024	3829	40.5	234	74	51517.51
10/21/2024	3830	40.1	242	74	50175.72
10/21/2024	3831	39.7	248	74	52682.36
10/21/2024	3832	39.3	254	74	50999.53
10/21/2024	3833	38.8	259	74	51802.52
10/21/2024	3834	38.3	264	74	51158.91
10/21/2024	3835	37.8	268	74	49225.39
10/21/2024	3836	37.4	271	74	49766.08
10/21/2024	3837	36.9	274	74	53773.58
10/21/2024	3838	36.3	276	74	49205.09
10/21/2024	3839	35.9	278	74	53306.23
10/21/2024	3840	35.3	281	74	53614.62
10/21/2024	3841	34.8	283	74	51746.51
10/21/2024	3842	34.3	286	74	53122.88
10/21/2024	3843	33.8	288	74	55757.42
10/21/2024	3844	33.2	291	74	54412.67
10/21/2024	3845	32.6	293	74	54698.6
10/21/2024	3846	32	295	74	56033.61
10/21/2024	3847	31.4	297	74	55197.69
10/21/2024	3848	30.9	298	74	53527.6
10/21/2024	3849	30.4	292	74	53730.82
10/21/2024	3850	30.1	282	74	56450.46
10/21/2024	3851	29.9	272	74	53662.7
10/21/2024	3852	29.6	263	74	53664.73
10/21/2024	3853	29.5	256	74	53588.58
10/21/2024	3854	29.3	251	74	52371.53
10/21/2024	3855	29.2	246	74	54033.88
10/21/2024	3856	29.1	241	74	55725.85
10/21/2024	3857	29	236	74	53053.9
10/21/2024	3858	28.9	232	74	54089.38
10/21/2024	3859	28.9	227	74	53668.78

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3860	28.8	223	74	55401.29
10/21/2024	3861	28.8	219	74	56275.93
10/21/2024	3862	28.8	215	74	54196.07
10/21/2024	3863	28.7	211	74	53135.98
10/21/2024	3864	28.7	208	74	52712.64
10/21/2024	3865	28.7	204	74	52677.17
10/21/2024	3866	28.7	201	74	51645.77
10/21/2024	3867	28.7	198	74	54428.84
10/21/2024	3868	28.7	195	74	54403.93
10/21/2024	3869	28.7	192	74	52337.59
10/21/2024	3870	28.7	190	74	53300.49
10/21/2024	3871	28.7	187	74	51248.99
10/21/2024	3872	28.6	185	74	49640.01
10/21/2024	3873	28.7	182	74	54070.38
10/21/2024	3874	28.7	180	74	52437.54
10/21/2024	3875	28.7	177	74	51377.57
10/21/2024	3876	28.7	175	74	51964.02
10/21/2024	3877	27.6	180	74	49601.81
10/21/2024	3878	27.2	198	74	49003.94
10/21/2024	3879	26.8	213	74	48391.15
10/21/2024	3880	26.4	226	74	47753.86
10/21/2024	3881	26	237	74	48696.76
10/21/2024	3882	25.6	245	74	48634.3
10/21/2024	3883	25.2	252	74	48790.54
10/21/2024	3884	24.8	258	74	49235.97
10/21/2024	3885	24.4	263	74	50760.02
10/21/2024	3886	24	267	74	52260.37
10/21/2024	3887	23.6	272	74	52578.16
10/21/2024	3888	23.2	276	74	51415.63
10/21/2024	3889	22.7	279	73	52649.87
10/21/2024	3890	22.3	282	73	52588.11
10/21/2024	3891	21.8	286	73	52254.6
10/21/2024	3892	21.4	289	73	54297.54
10/21/2024	3893	20.9	291	73	54543.2
10/21/2024	3894	20.4	293	73	54335.59
10/21/2024	3895	19.9	295	73	54119.97
10/21/2024	3896	19.5	296	74	53382.06
10/21/2024	3897	19	297	74	53012.17
10/21/2024	3898	18.5	298	74	51816.84
10/21/2024	3899	18	300	74	52520.07
10/21/2024	3900	17.6	301	74	57052.9
10/21/2024	3901	17.3	293	74	54992.97
10/21/2024	3902	17.1	282	74	52179.11
10/21/2024	3903	16.9	272	74	56359.2
10/21/2024	3904	16.9	262	73	54144.7

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3905	16.9	256	73	54533.18
10/21/2024	3906	16.8	252	73	54122.75
10/21/2024	3907	16.7	247	73	54157.87
10/21/2024	3908	16.6	242	73	52127.11
10/21/2024	3909	16.5	237	73	55190.49
10/21/2024	3910	16.5	233	73	54769.96
10/21/2024	3911	16.4	228	73	54749.53
10/21/2024	3912	16.4	224	73	54214.26
10/21/2024	3913	16.3	220	73	51017.73
10/21/2024	3914	16.3	216	73	54341.99
10/21/2024	3915	16.3	212	73	53179.97
10/21/2024	3916	16.2	209	73	53297.13
10/21/2024	3917	16.2	205	73	52327.56
10/21/2024	3918	16.2	202	73	52164.71
10/21/2024	3919	16.2	199	73	54028.46
10/21/2024	3920	16.2	196	73	54517.02
10/21/2024	3921	16.2	193	73	52415.48
10/21/2024	3922	16.3	190	73	54007.17
10/21/2024	3923	16.3	187	73	52435.73
10/21/2024	3924	16.3	185	73	49855.15
10/21/2024	3925	16.2	182	73	54740.06
10/21/2024	3926	16.3	179	73	53141.34
10/21/2024	3927	16.3	177	73	52106.97
10/21/2024	3928	15.9	176	74	46475.06
10/21/2024	3929	15.5	194	74	50596.28
10/21/2024	3930	15.1	208	74	47934.42
10/21/2024	3931	14.8	221	74	48915.24
10/21/2024	3932	14.4	230	74	47019.74
10/21/2024	3933	14	238	74	48604.83
10/21/2024	3934	13.7	244	74	49602.74
10/21/2024	3935	13.3	251	74	49473.77
10/21/2024	3936	12.9	256	74	50471.56
10/21/2024	3937	12.6	260	74	52367.16
10/21/2024	3938	12.2	264	74	53310.33
10/21/2024	3939	11.8	267	74	50945.8
10/21/2024	3940	11.5	270	74	49562.86
10/21/2024	3941	11.2	271	74	53131.17
10/21/2024	3942	10.8	273	74	53644.59
10/21/2024	3943	10.4	275	74	52838.42
10/21/2024	3944	10.1	277	74	51099.06
10/21/2024	3945	9.7	279	74	52094.82
10/21/2024	3946	9.3	281	74	52882.91
10/21/2024	3947	8.9	283	74	51579.75
10/21/2024	3948	8.6	284	74	54103.4
10/21/2024	3949	8.3	284	74	52290.53

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3950	8	284	74	54380.11
10/21/2024	3951	7.6	285	74	54613.01
10/21/2024	3952	7.3	285	74	53315.27
10/21/2024	3953	7	285	74	58382.72
10/21/2024	3954	6.7	286	74	57453.64
10/21/2024	3955	6.5	283	74	55053.35
10/21/2024	3956	6.5	272	74	53840.88
10/21/2024	3957	6.4	262	74	52546.1
10/21/2024	3958	6.3	253	74	51186.87
10/21/2024	3959	6.3	246	74	55031.29
10/21/2024	3960	6.3	243	74	53917.56
10/21/2024	3961	6.3	239	74	53814.59
10/21/2024	3962	6.3	235	74	53398.4
10/21/2024	3963	6.3	231	74	52994.37
10/21/2024	3964	6.3	227	74	52339.36
10/21/2024	3965	6.3	223	74	54636.43
10/21/2024	3966	6.3	219	74	54535.62
10/21/2024	3967	6.3	216	74	51893.65
10/21/2024	3968	6.3	212	74	50868.59
10/21/2024	3969	6.3	209	74	54156.02
10/21/2024	3970	6.3	205	74	53168.04
10/21/2024	3971	6.3	202	74	52059.64
10/21/2024	3972	6.3	199	74	51098.79
10/21/2024	3973	6.3	196	74	52147.81
10/21/2024	3974	6.3	193	74	52124.89
10/21/2024	3975	6.4	190	74	51609.43
10/21/2024	3976	6.4	187	74	51207.24
10/21/2024	3977	6.4	184	74	50762.12
10/21/2024	3978	6.4	181	74	54522.87
10/21/2024	3979	6.4	179	74	53010.29
10/21/2024	3980	6.5	176	74	54016.98
10/21/2024	3981	6.4	179	74	48801.58
10/21/2024	3982	6.1	190	74	48741.33
10/21/2024	3983	5.8	200	74	48236.84
10/21/2024	3984	5.6	209	74	48149.69
10/21/2024	3985	5.2	217	74	48525.6
10/21/2024	3986	5	224	74	49118.1
10/21/2024	3987	4.7	231	74	48943.61
10/21/2024	3988	4.4	237	74	50008.46
10/21/2024	3989	4.1	241	74	49864.95
10/21/2024	3990	3.9	244	74	50359.94
10/21/2024	3991	3.6	246	74	49020.45
10/21/2024	3992	3.4	247	74	49637.16
10/21/2024	3993	3.2	247	74	49466.38
10/21/2024	3994	2.9	247	74	48190.98

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/21/2024	3995	2.8	247	74	48169.88
10/21/2024	3996	2.6	247	74	51869.82
10/21/2024	3997	2.4	247	74	49075.56
10/21/2024	3998	2.1	247	74	50053.59
10/21/2024	3999	1.9	247	74	49484.42
10/21/2024	4000	1.6	247	74	50451.17
10/21/2024	4001	1.4	247	74	47987.8
10/21/2024	4002	1.3	246	74	51227.34
10/21/2024	4003	1.1	246	74	50771.26
10/21/2024	4004	0.9	245	74	48405.36
10/21/2024	4005	0.7	245	74	50961.23
10/21/2024	4006	0.5	244	74	55376.5
10/21/2024	4007	0.3	244	74	51675.16
10/24/2024	4008	171.1	290	73	47125.86
10/24/2024	4009	170.4	292	73	50886.96
10/24/2024	4010	169.9	294	73	51695.64
10/24/2024	4011	169.4	295	73	50784.93
10/24/2024	4012	168.8	296	73	55515.2
10/24/2024	4013	168.3	297	73	53817.2
10/24/2024	4014	167.8	298	73	54002.6
10/24/2024	4015	167.2	298	73	53262.38
10/24/2024	4016	166.7	299	73	52892.56
10/24/2024	4017	166.2	300	73	51043.51
10/24/2024	4018	165.7	302	73	54182.85
10/24/2024	4019	165.3	302	73	53851.43
10/24/2024	4020	164.5	304	73	54756.79
10/24/2024	4021	164.1	305	73	52930.03
10/24/2024	4022	163.7	296	73	51121.06
10/24/2024	4023	163.5	285	73	51001.52
10/24/2024	4024	163.5	275	73	53167.38
10/24/2024	4025	163.5	265	73	52023.19
10/24/2024	4026	163.4	258	73	51510.24
10/24/2024	4027	163.4	252	74	50548.31
10/24/2024	4028	163.3	245	74	49778.62
10/24/2024	4029	163.3	239	74	52152.82
10/24/2024	4030	163.3	234	74	50956.44
10/24/2024	4031	163.3	231	73	50970.56
10/24/2024	4032	163.3	227	74	46533.13
10/24/2024	4033	163.3	224	74	49328.52
10/24/2024	4034	163.3	221	74	49924
10/24/2024	4035	163.4	217	74	49419.62
10/24/2024	4036	163.4	214	74	51520.73
10/24/2024	4037	163.5	211	74	49488.39
10/24/2024	4038	163.5	207	74	49931.23
10/24/2024	4039	163.5	204	74	49945.9

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4040	163.6	201	74	51052.32
10/24/2024	4041	163.6	198	74	50618.27
10/24/2024	4042	163.7	195	74	49039.46
10/24/2024	4043	163.8	192	74	49637.02
10/24/2024	4044	163.8	189	74	48602.37
10/24/2024	4045	163.8	187	74	49061.85
10/24/2024	4046	163.8	184	74	49585.52
10/24/2024	4047	163.8	181	74	49142.72
10/24/2024	4048	163.8	179	74	48640.94
10/24/2024	4049	163.8	176	74	50810.87
10/24/2024	4050	161.7	179	74	44431.51
10/24/2024	4051	161	198	74	44974.76
10/24/2024	4052	160.3	215	74	44157.27
10/24/2024	4053	159.7	230	74	45137.66
10/24/2024	4054	158.9	243	74	44524.56
10/24/2024	4055	158.2	254	74	43785.23
10/24/2024	4056	157.5	263	74	45239.87
10/24/2024	4057	156.8	271	74	43866.94
10/24/2024	4058	156.1	277	74	44791.06
10/24/2024	4059	155.3	283	74	47352.74
10/24/2024	4060	154.6	288	74	46664.88
10/24/2024	4061	154	291	74	49498.53
10/24/2024	4062	153.3	295	74	46131.01
10/24/2024	4063	152.7	298	74	48017.15
10/24/2024	4064	151.9	301	74	48360.92
10/24/2024	4065	151.3	304	74	46405.79
10/24/2024	4066	150.7	307	74	48294.79
10/24/2024	4067	150	309	74	47047.19
10/24/2024	4068	149.4	312	74	47293.42
10/24/2024	4069	148.6	314	74	44972.38
10/24/2024	4070	148.2	315	74	47958.54
10/24/2024	4071	147.4	314	74	48227.84
10/24/2024	4072	147.1	302	74	46457.11
10/24/2024	4073	146.8	290	74	46386.7
10/24/2024	4074	146.7	279	74	47477.14
10/24/2024	4075	146.6	269	74	47950.55
10/24/2024	4076	146.5	261	74	45284.07
10/24/2024	4077	146.4	253	74	45809.23
10/24/2024	4078	146.3	246	74	45230.65
10/24/2024	4079	146.3	240	74	44718.78
10/24/2024	4080	146.2	235	74	44175.1
10/24/2024	4081	146.2	231	74	48434.95
10/24/2024	4082	146.2	228	74	47847.74
10/24/2024	4083	146.2	224	74	45329.92
10/24/2024	4084	146.2	221	74	46854.33

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4085	146.1	217	74	45284.5
10/24/2024	4086	146.1	214	74	45816.06
10/24/2024	4087	146.1	211	74	45798.41
10/24/2024	4088	146.1	207	74	45876.39
10/24/2024	4089	146.1	204	74	44800.36
10/24/2024	4090	146.1	201	74	43686.33
10/24/2024	4091	146.1	198	74	43744.77
10/24/2024	4092	146.2	195	74	46413.18
10/24/2024	4093	146.1	192	74	45392.4
10/24/2024	4094	146.1	190	74	45002.02
10/24/2024	4095	146.2	187	74	45949.54
10/24/2024	4096	146.2	185	74	45946.69
10/24/2024	4097	146.2	182	74	45521.17
10/24/2024	4098	146.1	180	74	44501.56
10/24/2024	4099	146.1	177	74	43984.34
10/24/2024	4100	146.2	175	74	43500.48
10/24/2024	4101	144.3	182	73	42693.37
10/24/2024	4102	143.8	200	73	42076.49
10/24/2024	4103	143.3	218	73	41388.22
10/24/2024	4104	142.8	234	73	41856.77
10/24/2024	4105	142.2	247	73	44265.8
10/24/2024	4106	141.7	258	73	44224.28
10/24/2024	4107	141.2	268	73	43918.67
10/24/2024	4108	140.5	277	73	43280.09
10/24/2024	4109	139.9	285	73	42929.11
10/24/2024	4110	139.2	291	73	42348.94
10/24/2024	4111	138.6	296	73	45921.16
10/24/2024	4112	137.9	300	73	45032.16
10/24/2024	4113	137.1	303	73	45428.77
10/24/2024	4114	136.5	305	73	44599.53
10/24/2024	4115	135.8	307	73	43918.38
10/24/2024	4116	135.2	309	73	44068.27
10/24/2024	4117	134.5	311	73	43870.34
10/24/2024	4118	133.8	313	73	47388.81
10/24/2024	4119	133.2	314	73	46178.88
10/24/2024	4120	132.4	316	73	45365.88
10/24/2024	4121	131.7	318	73	45575.77
10/24/2024	4122	130.9	320	73	47034.52
10/24/2024	4123	130.3	313	73	45874.67
10/24/2024	4124	129.9	300	73	47216.95
10/24/2024	4125	129.7	289	73	45518.24
10/24/2024	4126	129.5	277	73	44913.08
10/24/2024	4127	129.2	268	73	45381.06
10/24/2024	4128	129	260	73	44916.59
10/24/2024	4129	128.9	252	73	44826.82

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4130	128.7	245	73	45808.05
10/24/2024	4131	128.6	239	73	43842.06
10/24/2024	4132	128.5	234	73	44750.98
10/24/2024	4133	128.5	231	73	42696.08
10/24/2024	4134	128.4	227	73	46026.68
10/24/2024	4135	128.4	223	73	46560.49
10/24/2024	4136	128.3	220	73	46461.86
10/24/2024	4137	128.3	217	73	45001.8
10/24/2024	4138	128.3	213	73	46007.24
10/24/2024	4139	128.3	210	73	45938.48
10/24/2024	4140	128.3	207	73	44863.51
10/24/2024	4141	128.2	204	73	43848.84
10/24/2024	4142	128.2	201	73	44492.86
10/24/2024	4143	128.2	199	73	43417.02
10/24/2024	4144	128.2	196	73	42822.22
10/24/2024	4145	128.2	193	73	47718.72
10/24/2024	4146	128.2	191	73	42988.17
10/24/2024	4147	128.2	189	73	47213.37
10/24/2024	4148	128.2	186	73	45051.75
10/24/2024	4149	128.2	184	73	45568.01
10/24/2024	4150	128.2	182	73	44618.11
10/24/2024	4151	128.2	181	73	45247.41
10/24/2024	4152	128.2	178	73	43653.08
10/24/2024	4153	128.2	177	73	44127.88
10/24/2024	4154	128.2	175	73	43603.8
10/24/2024	4155	125.9	181	72	40195.95
10/24/2024	4156	125.4	198	72	41285.52
10/24/2024	4157	124.9	215	72	41181.6
10/24/2024	4158	124.4	230	72	42673.69
10/24/2024	4159	123.9	243	72	42584.62
10/24/2024	4160	123.3	255	72	43029.99
10/24/2024	4161	122.7	266	72	43301.9
10/24/2024	4162	122.1	276	72	43779.44
10/24/2024	4163	121.3	283	72	44551.83
10/24/2024	4164	120.7	289	72	43857.07
10/24/2024	4165	120	293	72	43630.91
10/24/2024	4166	119.3	297	72	42326.09
10/24/2024	4167	118.7	299	72	43734.98
10/24/2024	4168	118	302	72	42472.98
10/24/2024	4169	117.4	304	72	47051.81
10/24/2024	4170	116.6	306	72	46850.25
10/24/2024	4171	115.9	308	72	46002.85
10/24/2024	4172	115.2	310	72	47018.98
10/24/2024	4173	114.4	311	72	46773.63
10/24/2024	4174	113.7	312	72	47406.71

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4175	113.1	313	72	46285.47
10/24/2024	4176	112.3	315	72	48685.58
10/24/2024	4177	111.6	317	72	46452.35
10/24/2024	4178	110.9	309	72	46019.74
10/24/2024	4179	110.6	297	72	43926.64
10/24/2024	4180	110.3	285	72	50709.12
10/24/2024	4181	109.9	275	72	46381.99
10/24/2024	4182	109.7	265	72	48563.27
10/24/2024	4183	109.5	257	72	46864.3
10/24/2024	4184	109.4	249	72	45203.45
10/24/2024	4185	109.2	243	72	44705.64
10/24/2024	4186	109	237	72	45266.45
10/24/2024	4187	108.9	232	72	45168.38
10/24/2024	4188	108.8	229	72	45072.55
10/24/2024	4189	108.8	225	72	45153.41
10/24/2024	4190	108.7	222	72	44116.74
10/24/2024	4191	108.8	218	72	48326.15
10/24/2024	4192	108.6	215	72	46715.67
10/24/2024	4193	108.6	212	72	46730.41
10/24/2024	4194	108.6	209	72	44627.53
10/24/2024	4195	108.6	206	72	45269.68
10/24/2024	4196	108.6	203	72	45327.41
10/24/2024	4197	108.5	200	72	44741.94
10/24/2024	4198	108.5	198	72	45753.62
10/24/2024	4199	108.5	195	72	44883.83
10/24/2024	4200	108.4	193	72	44234.15
10/24/2024	4201	108.4	191	72	45214.94
10/24/2024	4202	108.3	188	72	44832.54
10/24/2024	4203	108.4	186	72	46528.76
10/24/2024	4204	108.4	184	72	45405.38
10/24/2024	4205	108.4	182	72	45352.13
10/24/2024	4206	108.4	180	72	45491.65
10/24/2024	4207	108.4	179	72	46067.76
10/24/2024	4208	108.4	177	72	44420.8
10/24/2024	4209	108.4	175	72	45082.9
10/24/2024	4210	106.3	177	71	41913.36
10/24/2024	4211	105.9	190	71	41931.88
10/24/2024	4212	105.4	204	71	41911.95
10/24/2024	4213	105	218	71	42373.26
10/24/2024	4214	104.4	231	71	42223.71
10/24/2024	4215	103.9	243	71	42545.23
10/24/2024	4216	103.4	254	71	42995.27
10/24/2024	4217	102.7	264	71	42779.68
10/24/2024	4218	102.2	273	71	46425.5
10/24/2024	4219	101.6	281	71	47243.65

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4220	100.9	287	71	44261.61
10/24/2024	4221	100.3	291	71	44713.22
10/24/2024	4222	99.6	296	71	45579.15
10/24/2024	4223	98.8	299	71	45827.08
10/24/2024	4224	98.3	303	71	45490.56
10/24/2024	4225	97.7	305	71	47448.64
10/24/2024	4226	97	307	71	46698.14
10/24/2024	4227	96.3	309	71	46405.53
10/24/2024	4228	95.6	309	71	45220.59
10/24/2024	4229	94.9	311	71	46040.45
10/24/2024	4230	94.4	311	71	47194.14
10/24/2024	4231	93.7	311	71	46916.03
10/24/2024	4232	93	312	71	47159.35
10/24/2024	4233	92.3	314	71	46514.28
10/24/2024	4234	91.8	315	71	46176.04
10/24/2024	4235	91.1	304	71	45470.27
10/24/2024	4236	90.7	293	71	46387.98
10/24/2024	4237	90.3	283	71	45279.43
10/24/2024	4238	89.9	274	71	45637.52
10/24/2024	4239	89.7	265	71	44889.34
10/24/2024	4240	89.4	256	71	47333.02
10/24/2024	4241	89	249	71	47873.85
10/24/2024	4242	88.8	242	71	47175.13
10/24/2024	4243	88.6	236	71	45044.39
10/24/2024	4244	88.4	232	71	46197.51
10/24/2024	4245	88.3	229	71	46185.36
10/24/2024	4246	88.2	225	71	45499.48
10/24/2024	4247	88.2	222	71	45110.8
10/24/2024	4248	88.1	219	71	46077.69
10/24/2024	4249	88	215	71	44507.92
10/24/2024	4250	88	212	71	44599.21
10/24/2024	4251	87.9	209	71	47150.86
10/24/2024	4252	87.9	206	71	48162.22
10/24/2024	4253	87.8	203	71	46136.43
10/24/2024	4254	87.7	201	71	47663.7
10/24/2024	4255	87.8	198	71	45585.41
10/24/2024	4256	87.7	196	71	45083.93
10/24/2024	4257	87.7	193	71	45602.02
10/24/2024	4258	87.7	191	71	44887.5
10/24/2024	4259	87.7	189	71	45377.5
10/24/2024	4260	87.7	187	71	43294.59
10/24/2024	4261	87.7	185	71	45352.58
10/24/2024	4262	87.7	183	71	47410.2
10/24/2024	4263	87.7	181	71	48551.8
10/24/2024	4264	87.7	179	71	45879.09

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4265	87.6	177	71	46264.81
10/24/2024	4266	87.6	175	71	45423.5
10/24/2024	4267	85.2	188	71	41790.1
10/24/2024	4268	84.8	203	71	42238.37
10/24/2024	4269	84.3	219	71	43301.93
10/24/2024	4270	83.8	232	71	44206.65
10/24/2024	4271	83.3	244	71	41885.8
10/24/2024	4272	82.6	255	71	42837.03
10/24/2024	4273	82	263	71	44195.48
10/24/2024	4274	81.4	271	71	45078.07
10/24/2024	4275	80.8	277	71	43838.42
10/24/2024	4276	80.3	283	71	45813.28
10/24/2024	4277	79.7	287	71	44523.32
10/24/2024	4278	79	291	71	44796.98
10/24/2024	4279	78.3	294	71	45155.38
10/24/2024	4280	77.6	297	71	44943.13
10/24/2024	4281	76.9	298	71	45832.69
10/24/2024	4282	76.2	301	71	44545.55
10/24/2024	4283	75.6	303	71	43781.05
10/24/2024	4284	74.9	304	71	47174.04
10/24/2024	4285	74.2	306	71	45950.68
10/24/2024	4286	73.4	307	71	46697.75
10/24/2024	4287	72.8	310	71	47075.76
10/24/2024	4288	72.2	310	71	47332.89
10/24/2024	4289	71.4	312	71	48150.3
10/24/2024	4290	70.7	301	71	47281.65
10/24/2024	4291	70.4	291	71	45398.65
10/24/2024	4292	70.1	281	71	46351.24
10/24/2024	4293	69.7	272	71	47754.58
10/24/2024	4294	69.4	263	71	44535.71
10/24/2024	4295	69.1	255	71	47831.68
10/24/2024	4296	68.8	247	71	46086.48
10/24/2024	4297	68.6	241	71	48179.55
10/24/2024	4298	68.3	235	71	46526.93
10/24/2024	4299	68.1	231	71	45469.4
10/24/2024	4300	68	227	71	44878.74
10/24/2024	4301	67.8	224	71	46457.38
10/24/2024	4302	67.6	221	71	45402.11
10/24/2024	4303	67.5	217	71	46460.05
10/24/2024	4304	67.2	214	71	44205.34
10/24/2024	4305	67.1	211	71	44882.69
10/24/2024	4306	67	208	71	46015.6
10/24/2024	4307	67	205	71	46236.58
10/24/2024	4308	67	203	71	46167.01
10/24/2024	4309	66.9	200	71	46156.09

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4310	66.9	197	71	45549.07
10/24/2024	4311	66.9	195	71	45587.64
10/24/2024	4312	66.9	193	71	44600.88
10/24/2024	4313	66.8	190	71	45076.24
10/24/2024	4314	66.8	188	71	45496.82
10/24/2024	4315	66.9	186	71	44602.64
10/24/2024	4316	66.9	184	71	43510.08
10/24/2024	4317	66.9	182	71	44103.37
10/24/2024	4318	66.9	180	71	46710.52
10/24/2024	4319	66.9	178	71	46161.82
10/24/2024	4320	66.9	177	71	45189.03
10/24/2024	4321	66.9	175	71	46258.16
10/24/2024	4322	63	245	71	42678.53
10/24/2024	4323	62.5	255	71	42152.43
10/24/2024	4324	62.1	264	71	43449.72
10/24/2024	4325	61.5	272	71	45840.83
10/24/2024	4326	61	279	71	47444.05
10/24/2024	4327	60.4	284	71	44913.26
10/24/2024	4328	59.8	289	71	45722.3
10/24/2024	4329	59.2	294	71	45056.26
10/24/2024	4330	58.6	298	71	47026.84
10/24/2024	4331	57.8	301	71	47187.29
10/24/2024	4332	57.2	304	71	45994.44
10/24/2024	4333	56.6	305	71	46215.01
10/24/2024	4334	55.9	308	71	46548.97
10/24/2024	4335	55.2	310	71	49473.37
10/24/2024	4336	54.5	313	71	47012.74
10/24/2024	4337	53.7	314	71	46671.46
10/24/2024	4338	53.1	313	71	48073.7
10/24/2024	4339	52.5	303	71	48511.71
10/24/2024	4340	52.1	292	71	47429.62
10/24/2024	4341	51.7	282	71	45687.39
10/24/2024	4342	51.5	272	71	46072.26
10/24/2024	4343	51.3	264	71	46591.06
10/24/2024	4344	51.1	256	71	45600.49
10/24/2024	4345	50.9	248	71	45010.6
10/24/2024	4346	50.7	242	71	45300.76
10/24/2024	4347	50.6	236	71	44899.24
10/24/2024	4348	50.4	232	71	48572.69
10/24/2024	4349	50.2	228	71	45411.28
10/24/2024	4350	50	225	71	45420.34
10/24/2024	4351	49.9	221	71	44892.12
10/24/2024	4352	49.8	218	71	46121.87
10/24/2024	4353	49.8	214	71	45020.15
10/24/2024	4354	49.8	211	71	46016.59

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4355	49.7	208	71	45474.78
10/24/2024	4356	49.6	205	71	46436.12
10/24/2024	4357	49.6	203	70	44592.27
10/24/2024	4358	49.6	200	70	44941.17
10/24/2024	4359	49.6	197	70	46702.41
10/24/2024	4360	49.5	195	71	47200.62
10/24/2024	4361	49.5	192	71	45961.98
10/24/2024	4362	49.5	190	71	46066.59
10/24/2024	4363	49.6	188	71	46070.35
10/24/2024	4364	49.5	186	70	45189.93
10/24/2024	4365	49.5	184	70	45188.57
10/24/2024	4366	49.6	182	70	45238.48
10/24/2024	4367	49.5	180	70	45143.63
10/24/2024	4368	49.6	178	70	46313.98
10/24/2024	4369	49.5	176	70	46889.82
10/24/2024	4370	47.7	191	71	40932.37
10/24/2024	4371	47.2	210	71	41945.29
10/24/2024	4372	46.7	227	71	43385.13
10/24/2024	4373	46.2	241	71	43377.53
10/24/2024	4374	45.8	253	71	44177.12
10/24/2024	4375	45.3	263	71	43369.36
10/24/2024	4376	44.8	272	71	43640.01
10/24/2024	4377	44.2	279	71	44617.49
10/24/2024	4378	43.7	284	71	43298.53
10/24/2024	4379	43.1	289	71	46244.05
10/24/2024	4380	42.5	293	71	46067.23
10/24/2024	4381	42	296	71	46453.5
10/24/2024	4382	41.5	299	71	45467.22
10/24/2024	4383	40.9	301	71	48086.66
10/24/2024	4384	40.4	303	71	47849.97
10/24/2024	4385	39.8	305	71	55047.01
10/24/2024	4386	39.2	306	71	48373.87
10/24/2024	4387	38.6	308	72	45488.5
10/24/2024	4388	38	309	72	47884.98
10/24/2024	4389	37.3	311	72	47194.18
10/24/2024	4390	36.6	312	72	46881.8
10/24/2024	4391	35.9	309	72	46635.85
10/24/2024	4392	35.5	297	72	47709.97
10/24/2024	4393	35.3	286	72	48303.1
10/24/2024	4394	35.1	275	72	46662.54
10/24/2024	4395	34.9	266	72	43264.77
10/24/2024	4396	34.8	258	72	48131.2
10/24/2024	4397	34.6	251	72	47736.35
10/24/2024	4398	34.5	244	72	46615.37
10/24/2024	4399	34.4	238	72	44291.82

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4400	34.3	233	72	47557.5
10/24/2024	4401	34.2	229	71	45318.27
10/24/2024	4402	34.2	226	71	44364.56
10/24/2024	4403	34.1	222	71	45478.09
10/24/2024	4404	34.1	219	71	49598.12
10/24/2024	4405	34	216	71	46934.12
10/24/2024	4406	34	212	71	47063.89
10/24/2024	4407	33.9	209	71	45390.35
10/24/2024	4408	33.9	206	71	46333.84
10/24/2024	4409	33.8	203	72	45369.07
10/24/2024	4410	33.8	200	71	44819.13
10/24/2024	4411	33.8	198	72	44875.99
10/24/2024	4412	33.8	195	71	47077.69
10/24/2024	4413	33.8	192	72	47637.66
10/24/2024	4414	33.8	190	71	45987.81
10/24/2024	4415	33.8	188	72	45555.82
10/24/2024	4416	33.8	185	72	44465.27
10/24/2024	4417	33.8	183	72	46638.9
10/24/2024	4418	33.8	181	72	47081.38
10/24/2024	4419	33.9	179	72	46025.96
10/24/2024	4420	33.9	177	72	45176.54
10/24/2024	4421	33.8	175	72	45090.87
10/24/2024	4422	32.4	175	72	41935.07
10/24/2024	4423	32	194	72	41946.92
10/24/2024	4424	31.5	211	72	43462.42
10/24/2024	4425	31.2	227	72	47073.79
10/24/2024	4426	30.7	240	72	57231.51
10/24/2024	4427	30.4	251	72	56136.09
10/24/2024	4428	30	261	72	63742.38
10/24/2024	4429	29.6	269	72	61056.72
10/24/2024	4430	29.1	276	72	61973.67
10/24/2024	4431	28.7	282	72	60544.43
10/24/2024	4432	28.1	286	72	57660.87
10/24/2024	4433	27.5	291	72	58636.53
10/24/2024	4434	26.9	294	72	63073.81
10/24/2024	4435	26.3	298	72	62274.61
10/24/2024	4436	25.8	300	72	62577.14
10/24/2024	4437	25.2	303	72	61645.87
10/24/2024	4438	24.7	306	72	61286.19
10/24/2024	4439	24.1	308	72	61914
10/24/2024	4440	23.3	309	72	64024.05
10/24/2024	4441	22.7	309	72	62673.65
10/24/2024	4442	22.1	308	72	63458.07
10/24/2024	4443	21.5	308	72	62798.64
10/24/2024	4444	20.8	307	72	64591.67

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4445	20.4	300	72	60254.21
10/24/2024	4446	20.1	289	72	75387.24
10/24/2024	4447	19.8	278	72	62309.55
10/24/2024	4448	19.6	268	72	63782.4
10/24/2024	4449	19.5	260	72	62680.07
10/24/2024	4450	19.2	253	72	66821.03
10/24/2024	4451	19.1	246	72	67690.21
10/24/2024	4452	19	240	72	62553.95
10/24/2024	4453	18.9	234	72	67906.01
10/24/2024	4454	18.8	230	72	65401.14
10/24/2024	4455	18.6	226	72	62787.07
10/24/2024	4456	18.6	222	72	64472.71
10/24/2024	4457	18.5	219	72	64667.12
10/24/2024	4458	18.4	215	72	62092.6
10/24/2024	4459	18.3	212	72	69678.48
10/24/2024	4460	18.2	209	72	62981.62
10/24/2024	4461	18.2	206	72	60690.67
10/24/2024	4462	18.1	203	72	62143.78
10/24/2024	4463	18	200	72	59948.28
10/24/2024	4464	18	197	72	61829.39
10/24/2024	4465	18	195	72	63863.69
10/24/2024	4466	18	192	72	59621.4
10/24/2024	4467	18	189	72	63373.47
10/24/2024	4468	17.9	187	72	63537.73
10/24/2024	4469	18	185	72	61640.89
10/24/2024	4470	18	182	72	58958.88
10/24/2024	4471	18	180	72	60499.33
10/24/2024	4472	17.9	178	72	63244.42
10/24/2024	4473	17.9	176	72	62130.57
10/24/2024	4474	16.9	175	73	56211.71
10/24/2024	4475	16.5	194	73	56652.88
10/24/2024	4476	16.1	211	73	58150.74
10/24/2024	4477	15.6	227	73	55991.59
10/24/2024	4478	15.2	241	73	55783.9
10/24/2024	4479	14.9	252	73	57196.71
10/24/2024	4480	14.4	262	73	57029.96
10/24/2024	4481	14	269	73	60138.12
10/24/2024	4482	13.6	276	73	59907.24
10/24/2024	4483	13.2	282	73	61116.13
10/24/2024	4484	12.6	287	73	59218.22
10/24/2024	4485	12.1	290	73	62317.89
10/24/2024	4486	11.6	291	73	60983.54
10/24/2024	4487	11.2	291	73	65294.93
10/24/2024	4488	10.7	291	73	60674.18
10/24/2024	4489	10.2	293	73	62488.78

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/24/2024	4490	9.6	293	73	61691.46
10/24/2024	4491	9.1	293	73	61789.08
10/24/2024	4492	8.6	294	73	63544.63
10/24/2024	4493	8.1	295	73	64264.24
10/24/2024	4494	7.5	297	73	64127.71
10/24/2024	4495	7.1	301	73	63445.4
10/24/2024	4496	6.4	303	73	63139.07
10/24/2024	4497	6.1	304	73	62461.66
10/24/2024	4498	5.7	293	73	64067.07
10/24/2024	4499	5.5	283	73	62300.64
10/24/2024	4500	5.3	273	73	61728.41
10/24/2024	4501	5.1	264	73	62301.72
10/24/2024	4502	5.1	257	73	59010.3
10/24/2024	4503	4.9	250	74	63271.85
10/24/2024	4504	4.8	243	74	61677.82
10/24/2024	4505	4.8	237	73	64252.18
10/24/2024	4506	4.7	232	73	59476.38
10/24/2024	4507	4.5	228	74	62311.46
10/24/2024	4508	4.4	225	74	63827.66
10/24/2024	4509	4.3	221	74	62764.8
10/24/2024	4510	4.3	218	74	61454.67
10/24/2024	4511	4.3	214	74	61314.27
10/24/2024	4512	4.1	211	74	61816.5
10/24/2024	4513	4.2	208	74	61590.88
10/24/2024	4514	4.1	205	74	62505.52
10/24/2024	4515	4.1	202	74	62913.45
10/24/2024	4516	4	199	74	63029.08
10/24/2024	4517	4	196	74	57793.45
10/24/2024	4518	4	194	74	60383.78
10/24/2024	4519	4	191	74	60462.53
10/24/2024	4520	4	189	74	63832.47
10/24/2024	4521	4	187	74	62115.74
10/24/2024	4522	4	184	74	59902.58
10/24/2024	4523	4	182	74	60218.97
10/24/2024	4524	3.9	180	74	57373.07
10/24/2024	4525	3.9	178	74	58781.16
10/24/2024	4526	3.9	176	74	62695.32
10/24/2024	4527	2.7	176	74	55894.1
10/24/2024	4528	2.4	195	74	54352.04
10/24/2024	4529	1.9	211	74	57989.59
10/24/2024	4530	1.5	224	74	56770.73
10/24/2024	4531	1.2	235	74	56148.24
10/24/2024	4532	0.9	245	74	55976.07
10/24/2024	4533	0.5	254	74	58178.4
10/24/2024	4534	0.1	262	74	57870.11

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4535	170.9	290	73	74751.51
10/29/2024	4536	176.3	290	73	62945.99
10/29/2024	4537	175.8	291	73	59869.81
10/29/2024	4538	175.3	292	73	61269.56
10/29/2024	4539	174.7	294	73	50920.81
10/29/2024	4540	174.3	295	73	51741.92
10/29/2024	4541	173.7	296	73	51113.85
10/29/2024	4542	173.3	297	73	51278.64
10/29/2024	4543	172.7	298	73	51603.49
10/29/2024	4544	172.2	300	73	50407.93
10/29/2024	4545	171.7	301	73	50576.11
10/29/2024	4546	171.3	302	73	49257.68
10/29/2024	4547	170.9	302	73	50673.86
10/29/2024	4548	170.5	304	73	51712.49
10/29/2024	4549	170.2	294	73	49238.97
10/29/2024	4550	170	283	73	48128.83
10/29/2024	4551	170	273	73	49754.46
10/29/2024	4552	170	264	73	49155.1
10/29/2024	4553	170.1	257	73	47400.14
10/29/2024	4554	170	251	73	49006.79
10/29/2024	4555	170	244	73	49556.67
10/29/2024	4556	170	239	73	50085.55
10/29/2024	4557	170	234	73	49580.04
10/29/2024	4558	170	230	73	47920.66
10/29/2024	4559	170	227	74	48483.01
10/29/2024	4560	170	224	74	47423.73
10/29/2024	4561	170	220	74	46864.98
10/29/2024	4562	170	217	74	46233.07
10/29/2024	4563	170.1	213	74	48856.99
10/29/2024	4564	170.1	210	73	47964.54
10/29/2024	4565	170.1	207	73	47352.68
10/29/2024	4566	170.1	204	73	46372.93
10/29/2024	4567	170.1	201	73	47435.85
10/29/2024	4568	170.1	198	74	46865.29
10/29/2024	4569	170.1	195	74	46390.64
10/29/2024	4570	170.1	192	74	45372.22
10/29/2024	4571	170.2	189	74	48501.59
10/29/2024	4572	170.2	186	74	48021.03
10/29/2024	4573	170.2	183	74	46359.04
10/29/2024	4574	170.2	181	73	45496.26
10/29/2024	4575	170.2	178	74	46552.62
10/29/2024	4576	170.2	176	74	47059.7
10/29/2024	4577	168.4	188	73	42052.5
10/29/2024	4578	167.8	206	73	41477.84
10/29/2024	4579	167.2	222	73	41862.88

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4580	166.6	236	73	42193
10/29/2024	4581	165.9	247	73	41573.41
10/29/2024	4582	165.3	257	73	42996.34
10/29/2024	4583	164.5	265	73	44952.63
10/29/2024	4584	163.8	271	73	44279.24
10/29/2024	4585	163.1	276	73	44077.55
10/29/2024	4586	162.5	280	73	44384.57
10/29/2024	4587	161.8	283	73	43147.86
10/29/2024	4588	161.1	286	73	46135.87
10/29/2024	4589	160.4	289	73	44339.78
10/29/2024	4590	159.7	292	73	44082.67
10/29/2024	4591	159	294	73	44978.44
10/29/2024	4592	158.3	296	73	46848.58
10/29/2024	4593	157.5	297	73	46188.2
10/29/2024	4594	156.9	298	73	44843.9
10/29/2024	4595	156.3	298	73	46862.05
10/29/2024	4596	155.5	299	73	45513.26
10/29/2024	4597	154.8	300	73	44817.66
10/29/2024	4598	154.4	290	73	44624.12
10/29/2024	4599	154.1	279	73	45081.02
10/29/2024	4600	153.9	269	73	44030.68
10/29/2024	4601	153.8	260	73	42380.76
10/29/2024	4602	153.7	253	73	42365.3
10/29/2024	4603	153.5	246	73	48099
10/29/2024	4604	153.5	240	73	45561.92
10/29/2024	4605	153.4	234	73	43989.64
10/29/2024	4606	153.4	228	73	43932.56
10/29/2024	4607	153.3	225	73	43995.84
10/29/2024	4608	153.3	221	73	44455.79
10/29/2024	4609	153.2	218	73	43346.42
10/29/2024	4610	153.2	215	73	42883.51
10/29/2024	4611	153.2	211	73	42408.13
10/29/2024	4612	153.2	208	73	42316.18
10/29/2024	4613	153.2	205	73	42820.49
10/29/2024	4614	153.2	202	73	42904.39
10/29/2024	4615	153.2	199	73	45065.02
10/29/2024	4616	153.2	196	73	42991.31
10/29/2024	4617	153.2	193	73	44099.65
10/29/2024	4618	153.2	190	73	42513.34
10/29/2024	4619	153.2	188	73	43100.81
10/29/2024	4620	153.3	185	73	43705.61
10/29/2024	4621	153.3	183	73	44048.93
10/29/2024	4622	153.2	180	73	42131.62
10/29/2024	4623	153.3	178	73	43119.83
10/29/2024	4624	153.3	175	73	45269.43

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4625	151.4	189	72	39769.17
10/29/2024	4626	150.9	206	72	41294.26
10/29/2024	4627	150.4	220	72	40703.08
10/29/2024	4628	149.8	232	72	39962.98
10/29/2024	4629	149.2	242	72	40437.91
10/29/2024	4630	148.7	251	72	41289.09
10/29/2024	4631	148	258	72	40112.09
10/29/2024	4632	147.3	265	72	41105.48
10/29/2024	4633	146.6	271	72	40306.88
10/29/2024	4634	145.9	276	72	42706.59
10/29/2024	4635	145.2	281	72	44148.5
10/29/2024	4636	144.5	285	72	43482.48
10/29/2024	4637	143.7	288	72	41702.39
10/29/2024	4638	143	291	72	43110.22
10/29/2024	4639	142.3	293	72	41830.58
10/29/2024	4640	141.5	294	72	41665.48
10/29/2024	4641	140.8	296	72	42515.33
10/29/2024	4642	140.2	296	72	40195.72
10/29/2024	4643	139.4	298	72	43723.66
10/29/2024	4644	138.7	299	72	43991.99
10/29/2024	4645	138.2	301	72	46474.99
10/29/2024	4646	137.5	302	72	43080.14
10/29/2024	4647	136.8	304	72	44556.18
10/29/2024	4648	136.3	303	72	42114.3
10/29/2024	4649	135.8	292	72	41425.2
10/29/2024	4650	135.6	282	72	41921.61
10/29/2024	4651	135.4	272	72	48253.76
10/29/2024	4652	135.2	263	72	44563.54
10/29/2024	4653	135.1	255	72	42877.79
10/29/2024	4654	134.9	249	72	43905.32
10/29/2024	4655	134.9	242	72	41348.34
10/29/2024	4656	134.8	236	72	43932.09
10/29/2024	4657	134.8	231	72	41797.45
10/29/2024	4658	134.7	227	72	42363.15
10/29/2024	4659	134.6	224	72	41773.79
10/29/2024	4660	134.6	221	72	41324.53
10/29/2024	4661	134.5	217	72	41207.4
10/29/2024	4662	134.5	214	72	40766.34
10/29/2024	4663	134.5	211	72	43258.23
10/29/2024	4664	134.5	208	72	43431.27
10/29/2024	4665	134.5	205	72	43436.33
10/29/2024	4666	134.5	202	72	42224.67
10/29/2024	4667	134.5	199	72	41828.74
10/29/2024	4668	134.5	196	72	41947.92
10/29/2024	4669	134.5	193	72	41999.62

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4670	134.5	191	72	42350.86
10/29/2024	4671	134.5	188	72	40312.02
10/29/2024	4672	134.5	186	72	41486.43
10/29/2024	4673	134.5	183	72	41448.48
10/29/2024	4674	134.6	181	72	38804.78
10/29/2024	4675	134.5	179	72	42594.85
10/29/2024	4676	134.6	176	72	44162.66
10/29/2024	4677	132.6	184	72	38938.35
10/29/2024	4678	132.2	196	72	38764.67
10/29/2024	4679	131.7	207	72	38729.25
10/29/2024	4680	131.2	218	72	40276.29
10/29/2024	4681	130.8	228	72	40033.45
10/29/2024	4682	130.3	237	72	41612.78
10/29/2024	4683	129.8	245	72	42419.08
10/29/2024	4684	129.3	252	72	43323.79
10/29/2024	4685	128.8	258	72	41601.11
10/29/2024	4686	128.2	264	72	43139.72
10/29/2024	4687	127.7	269	72	42410.17
10/29/2024	4688	127.1	274	72	41624.48
10/29/2024	4689	126.6	278	72	40831.76
10/29/2024	4690	126	281	72	41378.53
10/29/2024	4691	125.4	284	72	43184.79
10/29/2024	4692	124.9	287	72	41511.83
10/29/2024	4693	124.3	289	72	45519.7
10/29/2024	4694	123.7	291	72	44191
10/29/2024	4695	123.1	294	72	43608.56
10/29/2024	4696	122.5	296	72	42241.9
10/29/2024	4697	121.9	296	72	45765.29
10/29/2024	4698	121.3	296	72	44971.06
10/29/2024	4699	120.7	297	72	43116.6
10/29/2024	4700	120.1	298	72	43550.14
10/29/2024	4701	119.5	299	72	44315.87
10/29/2024	4702	119	297	72	42246.12
10/29/2024	4703	118.7	287	72	42566.49
10/29/2024	4704	118.4	277	72	41364.21
10/29/2024	4705	118.2	267	72	45596.54
10/29/2024	4706	118	259	72	44008.92
10/29/2024	4707	117.9	252	72	43418.45
10/29/2024	4708	117.7	245	72	43347.44
10/29/2024	4709	117.5	239	72	42911.03
10/29/2024	4710	117.4	234	72	42877.86
10/29/2024	4711	117.4	229	72	43794.71
10/29/2024	4712	117.3	225	72	42336.66
10/29/2024	4713	117.2	222	72	41800.13
10/29/2024	4714	117.1	218	72	41846.78

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4715	117.1	215	72	41775.76
10/29/2024	4716	117.1	212	72	40755.37
10/29/2024	4717	117.1	209	72	45528.47
10/29/2024	4718	117	206	72	43906.55
10/29/2024	4719	117	203	72	44406.64
10/29/2024	4720	117	200	72	44502.58
10/29/2024	4721	117	197	72	42877.45
10/29/2024	4722	117	195	72	41953.8
10/29/2024	4723	117	192	72	41332.31
10/29/2024	4724	117	190	72	41905.48
10/29/2024	4725	117	187	72	41881.69
10/29/2024	4726	117	185	72	41422.65
10/29/2024	4727	117	183	72	41428.37
10/29/2024	4728	117	181	72	39380.55
10/29/2024	4729	117.1	179	72	44636.66
10/29/2024	4730	117.1	176	72	44227.74
10/29/2024	4731	115.1	189	71	40243.58
10/29/2024	4732	114.6	205	71	41890.74
10/29/2024	4733	114.2	220	71	42273.83
10/29/2024	4734	113.7	235	71	42106.19
10/29/2024	4735	113.2	247	71	41560.16
10/29/2024	4736	112.6	258	71	39735.34
10/29/2024	4737	112.1	268	71	41154.17
10/29/2024	4738	111.5	275	71	41036.35
10/29/2024	4739	111	281	71	41837.28
10/29/2024	4740	110.4	287	71	41011.85
10/29/2024	4741	109.9	291	71	43512.6
10/29/2024	4742	109.2	295	71	44425.92
10/29/2024	4743	108.6	298	71	43661.02
10/29/2024	4744	107.9	301	71	43634.03
10/29/2024	4745	107.4	304	71	43379.08
10/29/2024	4746	106.6	307	71	43087.1
10/29/2024	4747	106	309	71	43815.85
10/29/2024	4748	105.5	311	71	45689.33
10/29/2024	4749	104.7	313	71	47184.15
10/29/2024	4750	104.1	312	71	44236.67
10/29/2024	4751	103.5	312	71	44616.13
10/29/2024	4752	102.8	311	71	44393.32
10/29/2024	4753	102.3	304	71	43068.99
10/29/2024	4754	102	293	71	44532.4
10/29/2024	4755	101.7	282	71	44423.78
10/29/2024	4756	101.5	272	71	44683.44
10/29/2024	4757	101.3	263	71	42526.24
10/29/2024	4758	101.1	256	71	41355.61
10/29/2024	4759	101.1	249	71	41906.08

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4760	100.9	242	71	55577.08
10/29/2024	4761	100.8	236	71	42795.23
10/29/2024	4762	100.7	232	71	44475.13
10/29/2024	4763	100.7	228	71	44430.22
10/29/2024	4764	100.6	225	71	45085.1
10/29/2024	4765	100.5	221	71	43835.52
10/29/2024	4766	100.5	218	71	44424.16
10/29/2024	4767	100.5	215	71	42912.86
10/29/2024	4768	100.4	211	71	43338.99
10/29/2024	4769	100.4	208	71	43885.42
10/29/2024	4770	100.4	205	71	43907.56
10/29/2024	4771	100.4	202	71	41719.73
10/29/2024	4772	100.4	200	71	43727.82
10/29/2024	4773	100.4	197	71	45763.42
10/29/2024	4774	100.4	194	71	44709.03
10/29/2024	4775	100.4	192	71	44704.15
10/29/2024	4776	100.4	190	71	42622.22
10/29/2024	4777	100.4	187	71	43555.83
10/29/2024	4778	100.4	185	71	43163.76
10/29/2024	4779	100.4	183	71	42030.48
10/29/2024	4780	100.3	181	71	42078.15
10/29/2024	4781	100.4	179	71	42637.52
10/29/2024	4782	100.4	177	71	41134.24
10/29/2024	4783	100.4	175	71	40595.86
10/29/2024	4784	98.5	183	71	39803.24
10/29/2024	4785	98.1	202	71	39843.85
10/29/2024	4786	97.6	219	71	41270.73
10/29/2024	4787	97.1	235	71	42185.83
10/29/2024	4788	96.6	249	71	42064.35
10/29/2024	4789	96.1	261	71	41944.83
10/29/2024	4790	95.5	270	71	42223.62
10/29/2024	4791	94.9	278	71	42625.44
10/29/2024	4792	94.3	285	71	43884.68
10/29/2024	4793	93.7	290	71	42116.92
10/29/2024	4794	93.2	294	71	43015.47
10/29/2024	4795	92.6	298	71	42767.78
10/29/2024	4796	92	301	71	41457.51
10/29/2024	4797	91.4	304	71	41754.78
10/29/2024	4798	90.8	306	71	41632.72
10/29/2024	4799	90.2	308	71	45604.69
10/29/2024	4800	89.6	310	71	46476.48
10/29/2024	4801	88.9	312	71	45051.03
10/29/2024	4802	88.3	314	71	44391
10/29/2024	4803	87.6	316	71	44682.35
10/29/2024	4804	86.9	318	71	44844.36

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4805	86.2	319	71	43221.32
10/29/2024	4806	85.8	308	71	42465.35
10/29/2024	4807	85.5	296	71	41814.2
10/29/2024	4808	85.2	285	71	42286.23
10/29/2024	4809	85	274	71	43317.43
10/29/2024	4810	84.9	266	71	41618.28
10/29/2024	4811	84.7	258	71	43777.37
10/29/2024	4812	84.5	251	71	43705.34
10/29/2024	4813	84.4	244	71	44749.08
10/29/2024	4814	84.3	238	71	44667.56
10/29/2024	4815	84.2	234	71	44246.14
10/29/2024	4816	84.1	230	71	42548.11
10/29/2024	4817	84	226	71	43183.51
10/29/2024	4818	83.9	223	71	42653.14
10/29/2024	4819	83.8	219	71	41009.42
10/29/2024	4820	83.7	216	71	42641.23
10/29/2024	4821	83.7	213	71	40599.98
10/29/2024	4822	83.6	210	71	42676.05
10/29/2024	4823	83.5	207	71	49505.54
10/29/2024	4824	83.5	204	71	44843.91
10/29/2024	4825	83.5	201	71	42785.97
10/29/2024	4826	83.5	199	71	43261.92
10/29/2024	4827	83.4	196	71	41569
10/29/2024	4828	83.4	194	71	43335.38
10/29/2024	4829	83.4	192	71	42773.9
10/29/2024	4830	83.4	189	71	42314.12
10/29/2024	4831	83.4	187	71	42870.99
10/29/2024	4832	83.4	185	71	41264.51
10/29/2024	4833	83.3	184	71	41337.04
10/29/2024	4834	83.3	182	71	44032.45
10/29/2024	4835	83.3	180	71	42839.31
10/29/2024	4836	83.3	179	71	42441.85
10/29/2024	4837	83.3	178	71	41950.13
10/29/2024	4838	83.3	176	71	43545.16
10/29/2024	4839	83.3	175	71	42430.86
10/29/2024	4840	81.3	178	71	39808.37
10/29/2024	4841	80.8	197	71	39708.91
10/29/2024	4842	80.3	214	71	41644.41
10/29/2024	4843	79.9	228	71	39461.69
10/29/2024	4844	79.4	241	71	38715.62
10/29/2024	4845	78.9	252	71	41846.96
10/29/2024	4846	78.4	261	71	42709.89
10/29/2024	4847	78	268	71	43144.14
10/29/2024	4848	77.4	275	71	42407.6
10/29/2024	4849	76.8	282	71	43107.66

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4850	76.1	288	71	41952.78
10/29/2024	4851	75.5	293	71	41288.47
10/29/2024	4852	74.7	298	71	41006.52
10/29/2024	4853	74	303	71	46099.89
10/29/2024	4854	73.3	306	71	42684.21
10/29/2024	4855	72.6	310	71	45070.3
10/29/2024	4856	71.8	313	71	43204.14
10/29/2024	4857	71.1	313	71	45736.39
10/29/2024	4858	70.3	312	71	43342.8
10/29/2024	4859	69.7	311	71	44087.28
10/29/2024	4860	69	312	70	44350.47
10/29/2024	4861	68.4	313	70	43724.45
10/29/2024	4862	68	306	70	40933.03
10/29/2024	4863	67.7	294	71	44459.42
10/29/2024	4864	67.4	283	71	43060.94
10/29/2024	4865	67.2	273	71	44762.44
10/29/2024	4866	67	264	71	45810.94
10/29/2024	4867	67	257	71	44121.68
10/29/2024	4868	66.8	249	71	44100.2
10/29/2024	4869	66.6	243	71	43968.38
10/29/2024	4870	66.5	237	70	43029.77
10/29/2024	4871	66.4	232	70	52990.58
10/29/2024	4872	66.3	229	70	41951.27
10/29/2024	4873	66.2	225	71	41490.83
10/29/2024	4874	66.2	222	71	46722.39
10/29/2024	4875	66.1	218	71	46216.81
10/29/2024	4876	66.1	215	71	45190.09
10/29/2024	4877	66	212	71	42768.64
10/29/2024	4878	66	209	71	43756.81
10/29/2024	4879	65.9	206	70	42717.11
10/29/2024	4880	65.9	203	70	41752.35
10/29/2024	4881	65.9	200	70	44920.19
10/29/2024	4882	65.9	197	70	43830.1
10/29/2024	4883	65.9	195	70	42437.2
10/29/2024	4884	65.9	193	70	44910.62
10/29/2024	4885	65.8	191	70	42849.65
10/29/2024	4886	65.8	189	70	43553.2
10/29/2024	4887	65.8	187	70	42963.25
10/29/2024	4888	65.8	185	70	38742.7
10/29/2024	4889	65.8	183	70	45148.86
10/29/2024	4890	65.8	181	70	39813.25
10/29/2024	4891	65.7	179	70	43704.81
10/29/2024	4892	65.8	178	70	39973.51
10/29/2024	4893	65.8	176	70	43681.13
10/29/2024	4894	65.8	175	70	42681.99

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4895	63.4	186	71	41024.2
10/29/2024	4896	63	202	71	41532.56
10/29/2024	4897	62.5	218	71	40687.63
10/29/2024	4898	62	232	71	41282.14
10/29/2024	4899	61.5	243	71	40546.53
10/29/2024	4900	61	253	71	41415.9
10/29/2024	4901	60.5	262	71	46631
10/29/2024	4902	59.9	270	71	45463.32
10/29/2024	4903	59.3	277	71	44186.76
10/29/2024	4904	58.7	283	71	42887.46
10/29/2024	4905	58.2	289	71	41020.79
10/29/2024	4906	57.5	294	71	46871.41
10/29/2024	4907	56.9	299	71	45996.82
10/29/2024	4908	56.2	303	71	44760.58
10/29/2024	4909	55.5	306	71	44467.14
10/29/2024	4910	54.8	309	71	44133.66
10/29/2024	4911	54.2	310	71	44420.48
10/29/2024	4912	53.6	311	71	42591.34
10/29/2024	4913	53	312	71	47840.02
10/29/2024	4914	52.3	314	71	45382.02
10/29/2024	4915	51.7	315	70	46756.64
10/29/2024	4916	51.1	317	70	44782.62
10/29/2024	4917	50.5	313	71	44692.05
10/29/2024	4918	50.2	301	70	53752.93
10/29/2024	4919	49.9	289	71	51551.28
10/29/2024	4920	49.6	278	70	53386.71
10/29/2024	4921	49.5	269	70	58056.12
10/29/2024	4922	49.2	260	70	53598.73
10/29/2024	4923	49	253	70	55710.47
10/29/2024	4924	48.9	246	70	57223.72
10/29/2024	4925	48.7	240	70	58539.96
10/29/2024	4926	48.7	235	70	55107.7
10/29/2024	4927	48.6	231	70	55668.21
10/29/2024	4928	48.4	227	70	54566.22
10/29/2024	4929	48.4	223	70	53067.08
10/29/2024	4930	48.4	220	71	56921.64
10/29/2024	4931	48.3	216	71	56872.51
10/29/2024	4932	48.3	213	71	52681.3
10/29/2024	4933	48.3	210	71	52064.16
10/29/2024	4934	48.3	207	71	55401.53
10/29/2024	4935	48.3	204	71	57077.48
10/29/2024	4936	48.3	201	70	54386.58
10/29/2024	4937	48.3	198	70	52086.51
10/29/2024	4938	48.2	195	70	51622.35
10/29/2024	4939	48.2	193	70	55017.64

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4940	48.1	190	71	50183.36
10/29/2024	4941	48.1	188	70	56187.06
10/29/2024	4942	48.1	186	70	55125.67
10/29/2024	4943	48.1	184	70	54675.03
10/29/2024	4944	48.1	182	70	53459.08
10/29/2024	4945	48.1	179	70	52010.69
10/29/2024	4946	48.1	177	70	53718.44
10/29/2024	4947	48.1	176	70	49981.55
10/29/2024	4948	46.9	186	71	49714.43
10/29/2024	4949	46.5	202	71	50133.56
10/29/2024	4950	46.1	216	71	49576.18
10/29/2024	4951	45.7	229	71	51093.43
10/29/2024	4952	45.3	240	71	49344.4
10/29/2024	4953	44.9	250	71	48599.08
10/29/2024	4954	44.5	259	71	53359.69
10/29/2024	4955	44.1	266	71	51115.24
10/29/2024	4956	43.6	273	71	50925.2
10/29/2024	4957	43.2	280	71	50227.53
10/29/2024	4958	42.7	286	71	51143.37
10/29/2024	4959	42.1	291	71	51475.21
10/29/2024	4960	41.6	295	71	53380.64
10/29/2024	4961	41	299	71	53589.39
10/29/2024	4962	40.5	303	71	52949.77
10/29/2024	4963	39.9	305	71	51561.05
10/29/2024	4964	39.3	308	71	51447.29
10/29/2024	4965	38.7	310	71	54359.03
10/29/2024	4966	38.1	312	71	52462.1
10/29/2024	4967	37.6	313	71	57480.02
10/29/2024	4968	37	315	71	57441.98
10/29/2024	4969	36.4	316	71	58758.41
10/29/2024	4970	35.9	318	71	56934.89
10/29/2024	4971	35.3	319	71	54565.65
10/29/2024	4972	34.8	320	71	58554.93
10/29/2024	4973	34.4	307	71	55334.89
10/29/2024	4974	34.1	295	71	56904.37
10/29/2024	4975	33.9	283	71	56157
10/29/2024	4976	33.7	273	71	55326.51
10/29/2024	4977	33.5	265	71	56132.25
10/29/2024	4978	33.4	257	71	56034.74
10/29/2024	4979	33.3	249	72	53576.66
10/29/2024	4980	33.1	243	72	53382.74
10/29/2024	4981	33	237	72	54389.82
10/29/2024	4982	32.9	234	72	58827.88
10/29/2024	4983	32.8	230	72	55729.46
10/29/2024	4984	32.8	226	72	53959.67

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	4985	32.7	222	72	50468.2
10/29/2024	4986	32.7	219	72	53329.04
10/29/2024	4987	32.7	215	72	56272.06
10/29/2024	4988	32.6	212	72	53645.31
10/29/2024	4989	32.6	209	72	49928.75
10/29/2024	4990	32.6	206	72	54655.31
10/29/2024	4991	32.6	203	72	55083.01
10/29/2024	4992	32.6	200	72	53130.88
10/29/2024	4993	32.6	197	72	54280.44
10/29/2024	4994	33	195	72	53358.21
10/29/2024	4995	32.6	192	72	49431.12
10/29/2024	4996	32.6	190	72	54891.02
10/29/2024	4997	32.6	188	72	53235.54
10/29/2024	4998	32.6	185	72	51796.93
10/29/2024	4999	32.6	183	72	52357.15
10/29/2024	5000	32.6	181	72	53427.09
10/29/2024	5001	32.6	179	72	51906.56
10/29/2024	5002	32.6	177	72	51973.97
10/29/2024	5003	32.7	175	72	53984.72
10/29/2024	5004	31.6	187	72	47852.3
10/29/2024	5005	31.2	204	72	47869.83
10/29/2024	5006	30.8	220	72	49350.92
10/29/2024	5007	30.3	234	72	47173.38
10/29/2024	5008	29.9	247	72	51988.64
10/29/2024	5009	29.4	259	72	50543.94
10/29/2024	5010	28.9	269	72	50315.44
10/29/2024	5011	28.5	278	72	50273.08
10/29/2024	5012	27.9	285	72	51099
10/29/2024	5013	27.3	291	72	54248.11
10/29/2024	5014	26.9	295	72	54895.48
10/29/2024	5015	26.4	299	72	53086.5
10/29/2024	5016	25.9	301	72	53010.97
10/29/2024	5017	25.3	304	72	53703.66
10/29/2024	5018	24.7	306	72	53486.53
10/29/2024	5019	24.2	308	73	57686.72
10/29/2024	5020	23.7	309	73	53094.86
10/29/2024	5021	23.2	311	73	54421.82
10/29/2024	5022	22.6	311	72	53740.39
10/29/2024	5023	22.5	313	73	56641.05
10/29/2024	5024	21.8	314	72	55944.62
10/29/2024	5025	21.2	316	72	54143.95
10/29/2024	5026	20.6	318	72	55574.91
10/29/2024	5027	20	320	72	55198.64
10/29/2024	5028	19.7	310	72	56687.46
10/29/2024	5029	19.5	297	72	55013.55

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	5030	19.2	286	72	53831.66
10/29/2024	5031	19.1	276	72	53767.74
10/29/2024	5032	18.9	267	72	54710.12
10/29/2024	5033	18.7	260	72	54253.18
10/29/2024	5034	18.6	252	72	52657.1
10/29/2024	5035	18.5	246	72	55182.7
10/29/2024	5036	18.4	240	72	55922.98
10/29/2024	5037	18.3	236	72	55902.67
10/29/2024	5038	18.2	232	72	55356.89
10/29/2024	5039	18.1	228	72	52537.1
10/29/2024	5040	18.1	224	72	54734.6
10/29/2024	5041	18.1	221	72	53246.03
10/29/2024	5042	18	217	72	55890.47
10/29/2024	5043	18	214	72	54323.56
10/29/2024	5044	18	211	72	50164.14
10/29/2024	5045	17.9	208	72	51272.8
10/29/2024	5046	17.9	205	72	55443.11
10/29/2024	5047	17.9	202	72	55695.72
10/29/2024	5048	17.9	199	72	54449.74
10/29/2024	5049	17.9	196	72	51735.65
10/29/2024	5050	17.9	194	72	55014.77
10/29/2024	5051	17.9	191	72	53472.41
10/29/2024	5052	17.9	189	72	54054.03
10/29/2024	5053	17.9	186	72	53020.18
10/29/2024	5054	17.9	184	72	54220.22
10/29/2024	5055	17.9	182	72	53670.09
10/29/2024	5056	17.9	180	72	52529.71
10/29/2024	5057	18	178	72	53158.4
10/29/2024	5058	18	176	72	52141.67
10/29/2024	5059	17.3	179	73	73385.11
10/29/2024	5060	16.9	198	73	74864.64
10/29/2024	5061	16.5	216	73	76719.67
10/29/2024	5062	16	232	73	72480.11
10/29/2024	5063	15.6	245	73	73979.14
10/29/2024	5064	15.1	257	73	73235.82
10/29/2024	5065	14.7	266	73	80602.83
10/29/2024	5066	14.3	273	73	86175.74
10/29/2024	5067	14	279	73	77729.96
10/29/2024	5068	13.5	284	73	75500.87
10/29/2024	5069	13	288	73	79570.08
10/29/2024	5070	12.5	292	73	81584.94
10/29/2024	5071	12	295	73	75404.16
10/29/2024	5072	11.5	299	73	85171.23
10/29/2024	5073	11	302	73	84446.97
10/29/2024	5074	10.6	304	73	90544.86

Date	Elapsed Time, min	Fuel Weight,	Stack Temp., °F	Ambient Temp., °F	Btu Draw
10/29/2024	5075	10	308	73	83469.85
10/29/2024	5076	9.4	311	73	82486.06
10/29/2024	5077	8.9	313	73	83355.71
10/29/2024	5078	8.4	314	73	83039.33
10/29/2024	5079	7.9	316	73	85705.52
10/29/2024	5080	7.3	317	73	85335.81
10/29/2024	5081	6.9	318	73	99955.39
10/29/2024	5082	6.4	319	73	94714.81
10/29/2024	5083	5.9	320	73	111400.57
10/29/2024	5084	5.6	321	73	188025.81
10/29/2024	5085	5.1	321	73	129430.67
10/29/2024	5086	4.6	321	73	123907.24
10/29/2024	5087	4.1	322	73	116851.62
10/29/2024	5088	3.5	322	73	124149.16
10/29/2024	5089	3.1	323	73	126828.61
10/29/2024	5090	2.6	324	73	124247.62
10/29/2024	5091	2.1	325	73	125967.74
10/29/2024	5092	1.6	325	73	127215.67
10/29/2024	5093	1.3	325	73	185351.17
10/29/2024	5094	0.9	326	73	159125.51
10/29/2024	5095	0.4	326	73	168070.32

Appendix B

EPA 30-Day Notice



OMB Control No. 2060-0161
Approval expires 03/31/2019

OMB Control No. 2060-0693
Approval expires 03/31/2019

30-DAY NOTIFICATION

2015 CLEAN AIR ACT (CAA) STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES 40 CFR PART 60 SUBPARTS AAA AND QQQQ

The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, sections 60.537 and 60.5479. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at sanchez.rafael@epa.gov.

Instructions: The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to WoodHeaterReports@epa.gov. This notice must be received by the EPA at least 30 days before the start of testing.

GENERAL INFORMATION						
Manufacturer's Name: Central Boiler Inc./WoodMaster Inc.						
Heater Type (Circle One):	<input type="checkbox"/> Adjustable Burn Rate Wood Heater	<input type="checkbox"/> Pellet Stove	<input type="checkbox"/> Single Burn Rate Heater	<input checked="" type="checkbox"/> Hydronic Heater	<input type="checkbox"/> Forced Air Furnace	<input type="checkbox"/> Other:
Hydronic Heater Type (Check one):	<input type="checkbox"/> Full Storage	<input type="checkbox"/> Partial Storage	<input type="checkbox"/> Indoor	<input checked="" type="checkbox"/> Outdoor	<input type="checkbox"/> Other:	
Forced-Air Furnace Type (Check one):	<input type="checkbox"/> Small (less than 65,000 BTU/hr heat output)		<input type="checkbox"/> Large (greater than 65,000 BTU/hr heat output)			
Fuel Tested (Check one):	<input type="checkbox"/> Crib	<input type="checkbox"/> Pellet	<input checked="" type="checkbox"/> Cordwood	<input type="checkbox"/> Wood Chips	<input type="checkbox"/> Other:	
Model Name(s) (as will appear on test report): Classic Edge/CleanFire						
Model Number(s) (as will appear on test report): 560.1/500.1						
Equipped with a catalytic combustor? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
Mailing Address: 20502 160th St. Greenbush, MN 56726						
Street Address: Same as Mailing Address						



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City: Greenbush	State: MN	ZIP Code: 56726
Phone: 218-782-2575	Fax: 218-782-2580	Web Site: www.centralboiler.com www.woodmaster.com
Address of Manufacturer: 20502 160th St.		
City: Greenbush	State: MN	ZIP Code: 56726
EPA APPROVED TEST LABORATORY		
Name and Title of Authorized Representative: Ken Morgan		
Company: OMNI- Test 13327 NE Airport Way		
Phone: 503-643-3788	E-mail: kmorgan@omni-test.com	Fax: 503-643-3799
City: Portland	State: OR	ZIP Code: 97230
EPA APPROVED THIRD-PARTY CERTIFIER		
Name and Title of Authorized Representative: Alex Tiegs		
Company: OMNI-Test		



OMB Control No. 2060-0161
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Instructions: The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to WoodHeaterReports@epa.gov. This notice must be received by the EPA at least 30 days before the start of testing.

Phone: 503-643-3788	E-mail: atiegs@omni-test.com	Fax: 503-643-3799
City: Portland	State: OR	ZIP Code: 97230
COMPLIANCE TEST INFORMATION		
Test Method(s): 40 CFR 60 Subpart QQQQ requirements for outdoor wood boilers (2020 compliance) ASTM 2618 "Standard Test Method for Measurement of Particulate Emissions and Heating Efficiency of Solid Fuel-Fired Hydronic Heating Appliances" ASTM E2515-11 "Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel" CSA B415.1-10 "Performance testing of solid-fuel-burning heating appliances"		
Date(s) of Proposed Test: THE WINDOW OF: December 2 nd 2024– January 17 TH 2025 The start and end date are variable within this window due to Lab constraints such as supplies, schedule, and personnel.		
Testing Location: OMNI-Test 13327 NE Airport Way PORTLAND, OR 97230		



OMB Control No. 2060-0161
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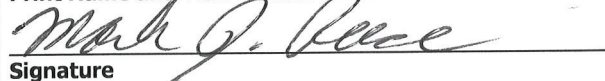
The public reporting and recordkeeping burden for this collection of information is estimated to average 2 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Regulatory Support Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

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Mark J. Reese Engineer

Print Name and Title of Authorized Official


Signature

Date 10-28-24

Telephone Number: **218-782-2575**

Email Address: **markr@centralboiler.com**

Remarks: This model is dual branded as both a Central Boiler and WoodMaster model.

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Appendix C

EPA ALT-154



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Mr. Ken Morgan
Technical Services Director
OMNI-Test Laboratories, INC
Post Office Box 301367
Portland, Oregon, 97294

01/21/2025

Dear Mr. Morgan,

This letter is a modification of my original response letter dated December 13, 2024. This modification is made to include approval to use this alternative 40 CFR part 60, Subpart QQQQ - Standards of Performance for New Residential Hydronic Heaters and Forced-Air Furnaces (Subpart QQQQ). The approval to also use this alternative on central heaters under Subpart QQQQ should have been included in the original response letter. These letters are written in response to your emails and letter dated November 20, 2023, requesting that the Environmental Protection Agency approve for use an alternative test method (ATM) for demonstrating compliance with New Source Performance Standard (NSPS) Subpart AAA, Standards of Performance for New Residential Wood Heaters (Subpart AAA). Specifically, the filter weighing procedures as outlined in ASTM E2515-11 to determine compliance for wood heaters under 40 CFR Part 60. The Office of Air Quality Planning and Standards, as the delegated authority, must make the determination on any major alternatives to test methods and procedures required under 40 CFR parts 59, 60, 61, 63, and 65. Your proposed alternative test method and our approval decisions are discussed below.

Your letter outlines concerns with the gravimetric analysis of the pair of filters used to capture particulate during each compliance test. Specifically, you state that the method suggests that weighing filters and filter assemblies in pairs will reduce measurement error, but that the method provides direction inconsistent with achieving error reduction.

As detailed in your letter ASTM E2515-11 section 9.4.4 states:

"9.4.4 Desiccate the filters, filter gaskets, and the probe assemblies at 20 +/- 5.6°C (68 +/- 10°F) and ambient pressure for at least 24 h. Weigh each component at intervals of not less than 6 h until a constant weight is achieved. Record results to the nearest 0.1 mg. During each weighing, the period for which the components are exposed to the laboratory environment shall be less than 2 min. The filter gaskets can be weighed in sets to be used in each filter holder and kept in an identified container at all times except during sampling and weighing. The filter holder assembly after the front filter need not

be desiccated or weighed.”

As shown above, section 9.4.4 states that “...the filter gaskets may be weighed in pairs”, however it does not say that you may do so for the filter tares.

In contrast, section 10.2.1 of ASTM E2515-11 states:

“10.2.1 Desiccate the filters and filter gaskets at 20 +/- 5.6°C (68 +/-10°F) and ambient pressure for at least 24 h. Weigh each component at intervals of at least 6 h until a constant weight is achieved. Report the results to the nearest 0.1 mg. Filters and filter gaskets may be weighed directly without a Petri dish. They may be weighed in pairs (front and back filters and front and back filter gaskets from same filter train) to reduce handling and weighing errors. During each weighing, the components shall not be exposed to the laboratory atmosphere for longer than 2 min. For the room air background sample filter and filter gasket, treat negative particulate catch weights as “zero” when determining total room air particulate weight in accordance with 10.2.”

Additionally, you point out that section 10.2.1 allows, during post-test analysis, the filters to be weighed in pairs. You also assert that not only does this section state that filters may be weighed in pairs, but it also expresses that it is advantageous to do in order to reduce handling and weighing errors.

Furthermore, during our recent discussions of this issue, you pointed out that since ASTM E2515-11 does not specify that filters may be weighed in pairs during pre-test processing, doing so would likely lead to concerns regarding whether proper procedures were being followed. Also, in response to our inquiry of whether ASTM E2515-11 could be followed as written, where one would weigh both filters independently during pre-test processing (clause 9.4.4) and in pairs during post-test processing (section 10.2.1), you point out that this defeats the intent of section 10.2.1 in that more measurements are being performed than necessary and this goes against the stated intent of reducing handling and weighing errors.

It is your opinion, given the language in ASTM E2515-11 discussed above, that the authors originally intended that both filter gaskets and filters should be weighed in pairs during both pre-test and post-test procedures in order to reduce such errors (as evidenced by the language in section 10.2.1). Based on this, you are asking for consideration and approval of an alternative test method that would allow pre-test processing (taring) of filters in pairs as is currently allowed for filter gaskets in section 9.4.4. As you state, you seek this alternative because the errors imposed by the extra weighing of independent filters can account for a very high degree of error on today’s cleaner stoves where a ± 0.1 mg of measured catch can mean ± 0.2 grams of emissions under ordinary conditions. In light of these circumstances, we agree that appropriate paired weighings must be done during both pre and post test weighings.

We have reviewed your request to perform the pre-test processing (taring) of filters in pairs as is currently allowed for filter gaskets in section 9.4.4 when conducting testing of wood heaters under Subpart AAA. Because of the similarities in the requirements, we are also approving this alternative for use on central heaters under Subpart QQQQ. This approval is contingent on the following conditions:

- All of the pieces of the filter and filter assemblies that are tared together during pre-test assessment must also be weighed together when the post-test gravimetric assessment is made and the results of these assessments must be recorded to the nearest 0.1 mg. Please note that this alternative method approval is valid until such time that Subpart AAA and QQQQ are revised or replaced to require a different certification method, and at such time, this alternative will be reconsidered and possibly withdrawn. A copy of this letter must be included in each certification test report where this alternative test method is utilized.

Since this alternative test method may be of interest to others performing testing as described in ASTM2515-11 on wood heaters subject to 40 CFR 60, Subpart AAA or central heaters subject to Subpart QQQQ, we believe it is reasonable to make it broadly applicable. Therefore, we will post this letter as ALT-154 on the EPA website at <https://www.epa.gov/emc/broadly-applicable-approved-alternative-test-methods> for use by other interested parties.

If you have additional questions regarding this approval, please contact Michael Toney of my staff at 919-541-5247 or toney.mike@epa.gov.

Sincerely,

Steffan M. Johnson, Group Leader
Measurement Technology Group

cc: Shannon Banner, EPA/OAQPS/SPPD
Lessard, Patrick, EPA/OAQPS/SPPD
Rafael Sanchez, EPA/OECA
Robert Scinta, EPA/OECA
Michael Toney, EPA/OAQPS/AQAD
Mark Turner, EPA/OAQPS/SPPD
Richard Wayland, EPA/OAQPS/AQAD

Appendix D

Analysis of Test Fuel



MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 North Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890
2616 East Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724
1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com



Workorder: Wood Sample (49783) **Client:** Central Boiler, Inc.
Account #: 7413 **PO:** PO148069

Mark Reese
Central Boiler Inc.
20502 160th St.
Greenbush, MN 56726

Certificate of Analysis

Approval

All data reported has been reviewed and approved by:

Stacy Zander

Stacy Zander, Bismarck Assistant Lab Manager Bismarck, ND

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

Report Date: Thursday, May 30, 2024 6:28:31 PM

Page 1 of 3

**MINNESOTA VALLEY TESTING LABORATORIES, INC.**

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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com



Workorder: Wood Sample (49783) **Client:** Central Boiler, Inc.

Analytical Results

Lab ID: 49783001 **Date Collected:** **Matrix:** WO
Sample ID: Maple Cordwood #2 **Date Received:** 05/29/2024 11:25 **Collector:** Client

* PROXIMATE *					* ULTIMATE *				
ANALYTE	AS RECEIVED		DRY BASIS		ANALYTE	AS RECEIVED		DRY BASIS	
Total Moisture	15.70	wt. %			Total Moisture	15.70	wt. %		
Oven Dry Moisture	15.70	wt. %			Oven Dry Moisture	15.70	wt. %		
Ash	0.58	wt. %	0.69	wt. %	Ash	0.58	wt. %	0.69	wt. %
BTU/lb	7037	BTU/lb	8348	BTU/lb	Carbon	42.40	wt. %	50.30	wt. %
Net Calorific Value	6398	BTU/lb	7590	BTU/lb	Hydrogen	6.90	wt. %	6.10	wt. %
Total Sulfur	<0.01	wt. %	<0.01	wt. %	Nitrogen	<0.2	wt. %	<0.2	wt. %
					Total Sulfur	<0.01	wt. %	<0.01	wt. %
					Oxygen by Difference	50.12	wt. %	42.92	wt. %
* SULFUR FORMS *					* ASH FUSION *				
ANALYTE	AS RECEIVED		DRY BASIS		ANALYTE	REDUCING		OXIDIZING	
Total Sulfur	<0.01	wt. %	<0.01	wt. %					
* MINERAL ANALYSIS OF ASH *					* MISCELLANEOUS *				
ANALYTE	DRY BASIS				ANALYTE	AS RECEIVED		DRY BASIS	
					Hydrogen Less Water	5.14	wt. %		
					Oxygen Less Water	36.18	wt. %		

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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Page 2 of 3



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1201 Lincoln Hwy. ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885
www.MVTL.com



Workorder: Wood Sample (49783) Client: Central Boiler, Inc.



Central Boiler, Inc.
20502 160th Street
Greenbush, MN 56726
Phone 218-782-2575
Fax 218-782-3416

Central Boiler, Inc.
WO: 49783



SE ORDER

Central Boiler Part Number
and packing lists

Page Number: 1
P.O. Number: PO148069

Vendor Address
MVTL 2616 E. BROADWAY AVE BISMARCK, ND 58501 USA
Phone: 800-279-6885 Fax: 701-258-9724

Ship To Address
CENTRAL BOILER, INC. 20502 160TH STREET GREENBUSH, MN 56726
E-mail Invoices to: AP@CENTRALBOILER.COM

VENDOR ID		BUYER		TERMS		F.O.B.		
3166		AEW		Net 15		EXWORKS		
CONTACT			SHIPPING METHOD			ORDER DATE	DATE REQUIRED	
STACY ZANDER			UPS GROUND			5/28/2024	5/28/2024	
QTY	PART ID	UM	DESCRIPTION			TAX	UNIT COST	EXTENDED COST

1.00 MAPLE CORDWOOD #2 20 (EA) Deliver On 6/7/2024 \$202.00 \$202.00

ATTN: MARK REESE

ORDER TOTAL: \$202.00



ACKNOWLEDGEMENT REQUIRED

INSPECTION REQUIRED

Authorized Signature

- * Enclose packing list with all shipments showing buyer's purchase order number, part number, description and quantity.
- * Do NOT deliver more than 5 days before PO deliver on date unless otherwise approved by buyer's authorized agent.
- * Please notify buyer immediately if you are unable to ship as specified.
- * Please enter our order for the above, subject to the terms and conditions stated above and on the General Terms and Conditions provided by purchasing. Any additional or different terms proposed by seller are rejected unless expressly assented to in writing by buyer's authorized agent. Contact buyer for General Terms and Conditions if you do not have on file.

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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Page 3 of 3

11. Revision History

Closure Date	Project # / CR ID #	Technician / Evaluator	Report Sect.	Report Item	Summary of Changes
1/15/2025	0117WB043E	R. Tiegs T. Tong K. Morgan	All	All	First issue Report. Note this was not submitted to EPA as minor revision were made due to issues found by client during their review process.
2/3/2025	0117WB043E edition 001	K. Morgan	All	All	The drawing section of the CBI version was cleaned-up of superfluous extra pages and extra white space.