Appendix A

Field Data

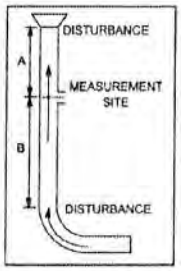
W/O POLLUTION CONTROL

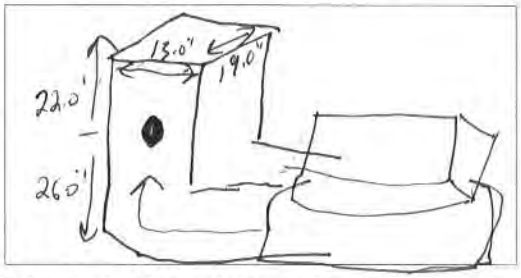
AirNova, Inc.

3485 Haddonfield Road, Pennsauken, New Jersey 08109
Phone (856) 486-1500 Fax (856) 486-9896 www.airnova.com

EPA Method 2 - Gas Velocity and Volumetric Flow Data Sheet

AirNova, Inc. Project No. 4835 Leak Check Pre ✓ Post ✓
Pitot No. P-3-B Cp 0.84
Facility FOGO DE CHAO
Location OVEN OUTLET
Date 9/30/22 Run No. ONE
Stack Diam. (") 19.0 x 13.0 Nipple (") 0.0
Distance A 22.0" Distance B 26.0"
Operators AM, EL
P_{bar} ("Hg) 30.33 Static ("H_2O) -0.90
1.715 ft²





Schematic of Stack Cross Section

Field Data

	Traverse Point No.	Position (inches)	Velocity Head ΔP ("H_2O)	Stack Temp. (°F)	Cyclonic Flow Determination (angle which yields a null ΔP)
PRE	1	1.6	~~0.~~ 1.2	90	
	2	4.8	1.0	91	
	3	7.9	1.1	91	
	4	11.1	1.2	92	
	5	14.3	1.3	93	
	6	17.4	0.95	92	
POST	1		0.98	90	
	2		1.0	91	
	3		1.1	90	
	4		1.2	91	
	5		1.3	92	
	6		0.95	92	
		STATIC:	-0.91		

W/O POLLUTION CONTROL

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Pennsauken, New Jersey 08109
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www.airnova.com

ISOKINETIC (NJ1 or EPA5)
Front Half with EPA202 CPM

Project No. 4835 Date 9/30/22
Facility FOGO DE CHAO
Location OVEN OUTLET
Operator(s) AM, EL
Run No. ONE P Bar ("Hg) 30.33
Static Press. ("H_2O) -0.90
Silica Gel No. x 9851
Leak Check: Pre= 0.003 @15"Hg

Probe No. ANI-3A C_p 0.84 Type GLASS
Nozzle No. 110 I.D. 0.219 Y Factor 1.015
Meter Box No. 10 ΔH@ 1.75 Sample Box No. 9
Method / Sample Type 5/202
Assumed Moisture (%) 3 Assumed Meter Temp. (°F) 60
O_2 20.5 (%) CO_2 0.1 (%)
H_2O Pickup (mL) 12.1 + 9 = 21.1
Post = 0.001 @ 7.0 "Hg

Traverse Point No.	Sample Time (min.)	Start Clock Time	Gas Meter Reading ft^3	ΔP ("H_2O)	Orifice Pressure ("H_2O) desired	Orifice Pressure ("H_2O) actual	Stack Temp (°F)	Condenser Outlet = Cond CPM Outlet = CPM: Cond (°F)	Condenser Outlet = Cond CPM Outlet = CPM: CPM (°F)	Meter Temp (°F)	Pump Vacuum ("H_g)	Sample Box Temp (°F)	Imp. Temp (°F)	Exit Filter Temp (°F) N/A
1	00	0753	987.818	1.2	2.56	2.56	90	54	71	57	5.0	247	62	–
2	10		996.540	1.0	2.13	2.13	91	54	68	54	4.5	245	51	–
3	20		1004.572	1.1	2.34	2.34	91	51	66	59	5.0	247	48	–
4	30		1012.947	1.2	2.56	2.56	92	51	75	60	5.0	246	49	–
5	40		1021.690	1.3	2.77	2.77	93	51	74	62	6.0	247	51	–
6	50		1030.820	0.95	2.02	2.02	92	52	69	62	4.5	248	51	–
	60	0853	1038.652	–	–	–	–	–	–	–	–	–	–	–
			52.834											

W/ POLLUTION CONTROL

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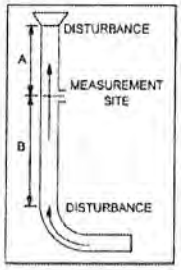
EPA Method 2 - Gas Velocity and Volumetric Flow Data Sheet

AirNova, Inc. Project No. 4835 Leak Check Pre ✓ Post ✓
Pitot No. P-3B Cp 0.84
Facility FOGO DE CHAO
Location OVEN OUTLET
Date 9/30/22 Run No. TWO
Stack Diam. (") 19.0 x 13.0 Nipple (") 0.0
Distance A 22.0 Distance B 26
Operators AM, EC
P_{bar} ("Hg) 30.33 Static ("H_2O) -0.94



Schematic of Stack Cross Section

Field Data				
Traverse Point No.	Position (inches)	Velocity Head ΔP ("H_2O)	Stack Temp. (°F)	Cyclonic Flow Determination (angle which yields a null ΔP)
PRE				
1		0.81	93	
2		0.99	96	
3		1.1	97	
4		1.2	99	
5		1.3	100	
6		0.79	99	
POST				
1		1.1	92	
2		1.0	93	
3		1.1	95	
4		1.2	96	
5		1.3	97	
6		0.81	95	
	Static:	-0.95		

EPA Method 2 Flow Data Sheet (Rev.8 Aug. 2020)

W/ POLLUTION CONTROL

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www.airnova.com

ISOKINETIC (NJ1 or EPA5)
Front Half with EPA202 CPM

Project No. 4835 Date 9/30/22
Facility FOGO DE CHAO
Location OVEN OUTLET
Operator(s) AM, EL
Run No. TWO P Bar ("Hg) 30.22
Static Press. ("H_2O) -0.94
Silica Gel No. X 9450
Leak Check: Pre= 0.008 @15"Hg

Probe No. ANT-3A C_p 0.84 Type GLASS
Nozzle No. 110 I.D. 0.219 Y Factor 1.015
Meter Box No. 10 ΔH@ 1.75 Sample Box No. 9
Method / Sample Type 5 / 202
Assumed Moisture (%) 3.0 Assumed Meter Temp. (°F) 62
O_2 20.5 (%) CO_2 0.1 (%)
H_2O Pickup (mL) 11.1 + 10 = 21.1
Post = 0.001 @ 7.5 "Hg

Traverse Point No.	Sample Time (min.)	Start Clock Time	Gas Meter Reading ft³	ΔP ("H_2O)	Orifice Pressure ("H_2O) desired	Orifice Pressure ("H_2O) actual	Stack Temp (°F)	Condenser Outlet = Cond CPM Outlet = CPM: Cond (°F)	CPM (°F)	Meter Temp (°F)	Pump Vacuum ("H_g)	Sample Box Temp (°F)	Imp. Temp (°F)	Exit Filter Temp (°F) NA
1	00	0932	38.825	0.81	1.75	1.75	93	51	72	61	4.5	245	54	–
2	10		46.341	0.99	2.14	2.14	96	53	67	62	5.0	253	53	–
3	20		54.472	1.1	2.38	2.38	97	55	66	63	5.5	252	50	–
4	30		63.181	1.2	2.59	2.59	99	56	70	64	6.0	254	50	–
5	40		72.241	1.3	2.81	2.81	100	58	72	65	6.5	253	52	–
6	50		81.381	0.79	1.71	1.71	99	58	70	65	5.0	249	53	–
	60	1032	88.832	–	–	–	–	–	–	–	–	–	–	–
			50.007											

AirNova, Inc.

3485 Haddonfield Road, Pennsauken, New Jersey 08109
Phone (856) 486-1500 • Fax (856) 486-9896 • www.airnova.com

N_2 Purge Record Data Sheet - EPA Reference Method 202

Project No. 4835 Date: 9 / 30 / 22

Facility FoGo De Chao

Address

N_2 purge: >14 liters per min.

Record temp every 10 minutes

Temp must be 65-85 °F

Test Location: UNCONTROL				CONTROL					
Run									
1		Recovery		2 1		3		4	
Start Time 0909		Start Time 1025		Start Time 1046		Start Time		Start Time	
End Time 1009		End Time 1125		End Time 1146		End Time		End Time	
00	68	00	68	00	69	00		00	
10	69	10	69	10	67	10		10	
20	68	20	69	20	67	20		20	
30	69	30	69	30	67	30		30	
40	69	40	68	40	67	40		40	
50	69	50	67	50	67	50		50	
60	69	60	67	60	67	60		60	

Notes:

Data Recorded By: Tim McHale (printed name) Signature

AirNova, Inc.

3485 Haddonfield Road, Pennsauken, New Jersey 08109
Phone (856) 486-1500 • Fax (856) 486-9896 • www.airnova.com

Nozzle Field Calibration Data

Project No. 4835 Nozzle Type: (SS) Glass

Calibrator: Am Facility/Client Fogo De Chao

Test Location: Charcoal Broiler

Nozzle No.	Diameter "A"	Diameter "B"	Diameter "C"	Average Diameter	Time	Date
Pre 110	0.219	0.219	0.219	0.219	0737	9/30
Post 110	0.219	0.219	0.219	0.219	1049	9/30
Pre						/
Post						/

Test Location: _____

Nozzle No.	Diameter "A"	Diameter "B"	Diameter "C"	Average Diameter	Time	Date
Pre						/
Post						/
Pre						/
Post						/

Test Location: _____

Nozzle No.	Diameter "A"	Diameter "B"	Diameter "C"	Average Diameter	Time	Date
Pre						/
Post						/
Pre						/
Post						/

W/O POLLUTION CONTROL

AirNova, Inc.

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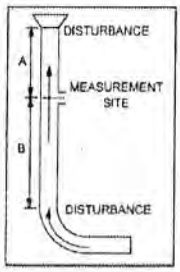
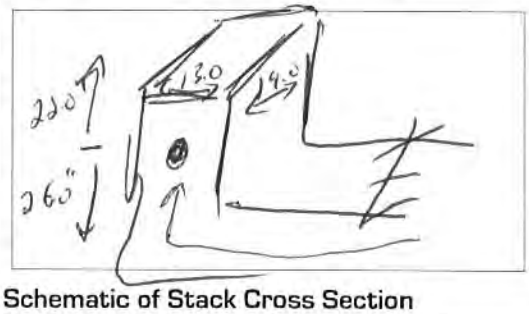
Phone (856) 486-1500 Fax (856) 486-9896 www.airnova.com

EPA Method 2 - Gas Velocity and Volumetric Flow Data Sheet

AirNova, Inc. Project No. 4835 Leak Check Pre ✓ Post ✓
Pitot No. P-3B Cp 0.84
Facility FOGO DE CHAO
Location OVEN OUTLET
Date 10/18/22 Run No. ONE
Stack Diam. (") 19.0 x 13.0 Nipple (") 0.0"
Distance A 22.0" Distance B 26.0"
Operators AM, CC
P_{bar} ("Hg) 29.62 Static ("H_2O) -0.60





Schematic of Stack Cross Section

Field Data				
Traverse Point No.	Position (inches)	Velocity Head ΔP ("H_2O)	Stack Temp. (°F)	Cyclonic Flow Determination (angle which yields a null ΔP)
PRE 1	1.6	0.66	93	
2	4.8	0.78	112	
3	7.9	0.84	117	
4	11.1	0.91	113	
5	14.3	0.88	113	
6	17.4	0.70	118	
POST 1		0.70	100	
2		0.76	110	
3		0.85	115	
4		0.90	122	
5		0.87	120	
6		0.71	117	
	Static	-0.62		

W/O POLLUTION CONTROL

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ISOKINETIC (NJ1 or EPA5)
Front Half with EPA202 CPM

Project No. 4835 Date 10/18/22
Facility FOGO DE CHAO
Location OVEN OUTLET
Operator(s) AM, CC
Run No. ONE P Bar ("Hg) 29.62
Static Press. ("H_2O) -0.60
Silica Gel No. X9802
Leak Check: Pre= 0.007 @15"Hg

Probe No. AN-3C C_p 0.84 Type GLASS
Nozzle No. 310 I.D. 0.216 Y Factor 1.010
Meter Box No. 8 ΔH@ 1.53 Sample Box No. 10
Method / Sample Type 5/202
Assumed Moisture (%) 2.0 Assumed Meter Temp. (°F) 62
O_2 20.5 (20.6) (%) CO_2 0.1 (%)
H_2O Pickup (mL) 5 + 8.0 = 13.0
Post = 0.001 @ 6.0 "Hg

Traverse Point No.	Sample Time (min.)	Start Clock Time	Gas Meter Reading ft^3	ΔP ("H_2O)	Orifice Pressure ("H_2O) desired	Orifice Pressure ("H_2O) actual	Stack Temp (°F)	Condenser Outlet = Cond (°F)	CPM Outlet = CPM (°F)	Meter Temp (°F)	Pump Vacuum ("H_g)	Sample Box Temp (°F)	Imp. Temp (°F)	Exit Filter Temp (°F) N/A
1	00	0810	245.028	0.66	1.18	1.18	93	45	68	54	3.0	236	35	—
2	10		251.610	0.78	1.40	1.40	112	42	70	55	4.0	254	35	—
3	20		258.750	0.84	1.51	1.51	117	46	71	56	4.5	239	37	—
4	30		266.174	0.91	1.57	1.57	113	47	72	57	5.0	243	38	—
5	40		273.770	0.88	1.51	1.51	113	50	74	59	5.0	252	38	—
6	50		281.028	0.70	1.21	1.21	118	51	72	61	4.0	253	40	—
	60	0910	287.610	—	—	—	—	—	—	—	—	—	—	—
			42.582							(56.8)				

W/ POLLUTION CONTROL

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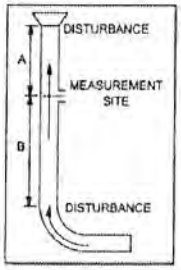
EPA Method 2 - Gas Velocity and Volumetric Flow Data Sheet

AirNova, Inc. Project No. 4835
Leak Check Pre ✓ Post ✓
Pitot No. P-3-B Cp 0.84
Facility FOGO DE CHAO
Location OVEN OUTLET
Date 10/18/22 Run No. TWO
Stack Diam. (") 19.0 x 13.0 Nipple (") 0.0
Distance A 20.0 Distance B 26.0
Operators AM, CC
P_{bar} ("Hg) 29.61 Static ("H_2O) -0.54



Schematic of Stack Cross Section

Field Data				
Traverse Point No.	Position (inches)	Velocity Head ΔP ("H_2O)	Stack Temp. (°F)	Cyclonic Flow Determination (angle which yields a null ΔP)
1		0.65	111	
2		0.77	110	
3		0.86	104	
4		0.90	101	
5		0.81	99	
6		0.77	100	
1		0.70	110	
2		0.75	115	
3		0.84	111	
4		0.92	109	
5		0.79	100	
6		0.75	101	
	Static:	-0.56		

PRE

POST

EPA Method 2 Flow Data Sheet (Rev.8 Aug. 2020)

W/ POLLUTION CONTROL

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Pennsauken, New Jersey 08109
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www.airnova.com

ISOKINETIC (NJ1 or EPA5)
Front Half with EPA202 CPM

Project No. 4835 Date 10/18/22
Facility FOGO DE CHAO
Location OVEN OUTLET
Operator(s) AM, CC
Run No. TWO P Bar ("Hg) 29.64
Static Press. ("H_2O) -0.54
Silica Gel No. X9870
Leak Check: Pre= 0.004 @15"Hg

Probe No. AN-3C C_p 0.84 Type GLASS
Nozzle No. 310 I.D. 0.216 Y Factor 1.010
Meter Box No. 8 ΔH@ 1.53 Sample Box No. 1.010
Method / Sample Type 5/202
Assumed Moisture (%) 20 Assumed Meter Temp. (°F) 65
O_2 20.5 (20.6) (%) CO_2 0.1 (%)
H_2O Pickup (mL) 4 + 73 = 113
Post = 0.001 @ 5.5 "Hg

Traverse Point No.	Sample Time (min.)	Start Clock Time	Gas Meter Reading ft^3	ΔP ("H_2O)	Orifice Pressure ("H_2O) desired	Orifice Pressure ("H_2O) actual	Stack Temp (°F)	Condenser Outlet = Cond CPM Outlet = CPM: Cond (°F)	CPM (°F)	Meter Temp (°F)	Pump Vacuum ("H_g)	Sample Box Temp (°F)	Imp. Temp (°F)	Exit Filter Temp (°F) N/A
					1.13									
1	00	1001	287.741	0.65	~~1.13~~	1.13	111	50	72	56	3.0	241	42	—
2	10		294.120	0.77	1.34	1.34	110	40	70	57	4.0	249	38	—
3	20		300.961	0.86	1.49	1.49	104	38	71	58	4.5	249	38	—
4	30		308.365	0.90	1.56	1.56	101	40	74	60	4.5	254	38	—
5	40		315.674	0.81	1.41	1.41	99	42	77	61	4.0	246	39	—
6	50		322.471	0.77	1.34	1.34	100	45	75	62	4.0	248	40	—
	60	1101	329.742	—	—	—	—	—	—	—	—	—	—	—
			42.001							59.0				

AirNova, Inc.

3485 Haddonfield Road, Pennsauken, New Jersey 08109
Phone (856) 486-1500 • Fax (856) 486-9896 • www.airnova.com

N_2 Purge Record Data Sheet - EPA Reference Method 202

Project No. 4835 Date: 10/18/22

Facility Fogo De Chao

Address 92-50 59th Ave.
Queens, NY

N_2 purge: >14 liters per min.
Record temp every 10 minutes
Temp must be 65-85 °F

Test Location: Charcoal Broiler

Run 1		Recovery		Run 2		Run 3		Run 4	
Start Time 0931		Start Time 1049		Start Time 1117		Start Time		Start Time	
End Time 1031		End Time 1149		End Time 1217		End Time		End Time	
00	65	00	66	00	67	00		00	
10	65	10	67	10	68	10		10	
20	66	20	67	20	68	20		20	
30	66	30	67	30	68	30		30	
40	66	40	67	40	67	40		40	
50	65	50	67	50	67	50		50	
60	66	60	67	60	68	60		60	

Notes:

Data Recorded By: Lenny Katarzynczuk (printed name) Signature [signature]

AirNova, Inc.

3485 Haddonfield Road, Pennsauken, New Jersey 08109
Phone (856) 486-1500 • Fax (856) 486-9896 • www.airnova.com

Nozzle Field Calibration Data

Project No. 4835 Nozzle Type: (SS) Glass

Calibrator: LDK/AM Facility/Client Fogo De Chao

Test Location: Charcoal Broiler

Nozzle No.	Diameter "A"	Diameter "B"	Diameter "C"	Average Diameter	Time	Date
Pre 310	0.216	0.216	0.216	0.216	0749	10/18
Post 310	0.216	0.216	0.215	0.216	1140	10/18
Pre						/
Post						/

Test Location:

Nozzle No.	Diameter "A"	Diameter "B"	Diameter "C"	Average Diameter	Time	Date
Pre						/
Post						/
Pre						/
Post						/

Test Location:

Nozzle No.	Diameter "A"	Diameter "B"	Diameter "C"	Average Diameter	Time	Date
Pre						/
Post						/
Pre						/
Post						/