Wheelabrator South Broward Inc.
A Waste Management Company
4400 South State Road 7
Ft. Lauderdale, FL 33314
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May 3, 2012

UPS# 1Z2ZW7390199472953

Mr. Lennon Anderson
Air Program Administrator
Florida Department of Environmental Protection
Southeast District
400 North Congress Ave., Suite 200
West Palm Beach, FL 33401

Re: Wheelabrator South Broward
2012 Annual Compliance Stack Test and RATA Reports

Dear Mr. Anderson:

Please find enclosed a copy of the final compliance stack test report and the continuous emissions monitoring system certification RATA report for testing conducted on March 20-22 of this year by Clean Air Engineering, Inc.

I, the undersigned, am a responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this submittal. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements and information in this document are true, accurate and complete.

If there are any questions, please contact this office at (954) 581-6606.

Sincerely,

Scott McIvaine
Plant Manager

cc: USEPA, Region IV, Pesticides and Toxics Management Division, Air & EPCRA Enforcement Branch, Air Enforcement Section (with) UPS# 1Z2AW7390198112361

FDEP, Tallahassee, Bureau of Air Regulation, New Source Review Section, (with) UPS# 1Z2AW7390198467372

Broward County Department of Planning and Environmental Protection, Air Quality Division (with) UPS# 1Z2AW7390195633983

Chuck Faller (with)
Ram Tewari – BCWRS (without)
Tim Porter (without)
Rob French – MPI (with) UPS# 1Z2AW7390196068191

WM WASTE MANAGEMENT

CleanAir.

CleanAir Engineering
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Palatine, IL 60067-4975
www.cleanair.com

Wheelabrator South Broward, Inc.
4400 South State Road 7
Ft. Lauderdale, FL 33314

REPORT ON A RELATIVE ACCURACY TEST AUDIT

Performed for:
WHEELABRATOR SOUTH BROWARD, INC.
UNITS 1, 2 AND 3 FF OUTLETS
FT. LAUDERDALE, FL

Client Reference No: Service Agreement
CleanAir Project No: 11414-2
Revision 0: May 2, 2012

To the best of our knowledge, the data presented in this report are accurate, complete, error free, legible and representative of the actual emissions during the test program. Clean Air Engineering operates in conformance with the requirements of ASTM D7036-04 Standard Practice for Competence of Air Emission Testing Bodies.

Submitted by,

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Project Manager
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Reviewed by,

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REPORT ON A RELATIVE ACCURACY TEST AUDIT

DRAFT REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
D0a	04/20/12	All	Draft version of original document.

FINAL REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
0	05/02/12	All	Final version of original document.

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PROJECT OVERVIEW

INTRODUCTION

Wheelabrator South Broward, Inc. contracted Clean Air Engineering (CleanAir) to perform the relative accuracy test audit (RATA) at the municipal waste combustor (MWC) facility, located in Ft. Lauderdale, Florida.

All testing was conducted in accordance with the regulations set-forth by the United States Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (DEP).

Key Project Participants

Individuals responsible for coordinating and conducting the test program were:

Chuck Faller – Wheelabrator South Broward, Inc.
Lee Hoefert – DEP
Scott Brown – CleanAir
Nic Hitchins – CleanAir

The testing performed at the Units 1, 2 and 3 fabric filter (FF) baghouse outlets from March 20 through 22, 2012, included the following emissions measurements:

- carbon monoxide (CO)
- nitrogen oxides (NO_X)
- sulfur dioxide (SO_2)
- carbon dioxide (CO_2)
- oxygen (O_2)

TEST PROGRAM SYNOPSIS

Results Summary

Tables 1-1 and 1-2 summarize the results of the test program. A more detailed presentation of the test conditions and results of analysis are shown in Tables 2-1 through 2-30 on pages 2-1 through 2-30.

Table 1-1:
Summary of Test Results

Monitor Constituent	CEM Serial Number	RM Avg	CEM Avg	Difference	95% CC	Relative Accuracy Result	Limit	Basis of Limit
Unit 1 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	278	7.7	6.6	1.1	0.678	6.2%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	278	191.2	198.7	-7.5	0.440	3.9%	10%	S[2]
CO (ppmdv @ 7% O_2)	278	7.4	8.2	-0.8	0.091	0.9	5 ppm	Mean Diff.[3]
CO_2 (lb/hr)	278	60,432.2	66,610.4	-6,178.2	1,140.171	12.1%	20%	RM[4]
Unit 2 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	277	4.8	5.7	-0.9	1.078	6.9%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	277	184.6	184.2	0.4	0.739	0.6%	10%	S[2]
CO (ppmdv @ 7% O_2)	277	15.5	16.0	-0.5	0.121	0.6	5 ppm	Mean Diff.[3]
CO_2 (lb/hr)	277	68,846.2	61,010.9	7,835.3	1,064.626	12.9%	20%	RM[4]
Unit 3 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	279	8.9	9.2	-0.3	0.982	4.3%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	279	182.5	200.7	-18.3	0.489	9.1%	10%	S[2]
CO (ppmdv @ 7% O_2)	279	13.1	15.7	-2.5	0.379	2.9	5 ppm	Mean Diff.[3]
CO_2 (lb/hr)	279	60,383.8	70,109.3	-9,725.5	1,708.282	18.9%	20%	RM[4]

[1] SO_2 FF Outlet Relative Accuracy calculated as a percentage of the 29 ppm standard as per Performance Specification 2, Section 13.2.
[2] NO_X FF Outlet Relative Accuracy calculated as a percentage of the 205 ppm standard as per Performance Specification 2, Section 13.2.
[3] CO FF Outlet Relative Accuracy calculated as the absolute mean difference per 40CFR60 Section 60.58b.
[4] Limit from 40 CFR 60 Appendix B Performance Specification 6.

Basis of Limit: RM = Reference Method S = Standard

Table 1-2:
Summary of GHG Test Results

South Broward	Unit 1	Unit 2	Unit 3
GHG_SCFM	112,874	131,680	118,440
GHG_CO2 %	10.2	9.7	9.5
GHG_H2O %	22.7	21.1	22.2

Discussion of Test Program

Each boiler was operated at greater than 50% (96,000 lbs/hr steam flow) during each RATA. The steam load is presented in Appendix G of this report with the plant CEM run data.

A nitrogen oxides (NO_X) analyzer converter check was performed after the final bias check each day and is presented along with each respective calibration error check in Appendix H of this report.

During this year's test program, a mass emission rate-based (lb/hr) RATA on each unit's newly-installed carbon dioxide (CO_2) continuous emission rate monitoring system (CO_2 CERMS) was also performed in conjunction with the usual sulfur dioxide (SO_2), NO_X and carbon monoxide (CO) RATAs. Each CO_2 CERMS consists of a new CO_2 channel configured in the Sick 100e analyzer and an optical-based stack gas flow rate monitor located in each FF outlet duct.

The CO_2 CERMS was installed on each unit to meet EPA Greenhouse Gas Monitoring and Reporting requirements in 40 CFR 98. The CO_2 CERMS RATA was performed utilizing EPA Methods 2, 3A and 4. Flow data was obtained from a single distinct pitot traverse performed during each RATA run and moisture data was obtained from simultaneous Method 26A or Method 4 testing. The O_2 and CO_2 utilized for volumetric flow calculations are obtained from each respective RATA test run.

Oxygen (O_2), flow and ppmdv of all measured constituents are presented in Section 2 of this report for comparison purposes only.

The Unit 2 CO_2 lb/hr RATA was delayed until the seventh RATA run due to the flow monitor giving extraneous high flow readings. The mirrors on the monitors were cleaned and the CO_2 lb/hr RATA commenced.

All RATA runs were 27 minutes in duration with 10 runs being performed on each unit with the exception of the following:

- On Unit 2, the CO_2 lb/hr relative accuracy was delayed; therefore, only nine (9) runs were performed with runs 8 and 9 being 24 minutes in duration.
- On Unit 3, the CO_2 lb/hr relative accuracy was close to the allowable 20% after 10 runs. Two (2) additional 27-minute runs were performed.

End of Section 1 – Project Overview

RESULTS

Table 2-1:
Relative Accuracy, Unit 1 FF Outlet – Oxygen (%dv)

Run No.	Start Time	Date (2012)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Difference Percent
1	06:48	Mar 22	8.56	8.90	-0.34	-3.9%
2	07:32	Mar 22	8.70	9.00	-0.30	-3.4%
3	08:14	Mar 22	8.57	8.90	-0.33	-3.9%
4	08:53	Mar 22	9.02	9.30	-0.28	-3.1%
5	09:32	Mar 22	9.34	9.70	-0.36	-3.8%
6	10:12	Mar 22	8.80	9.10	-0.30	-3.4%
7	10:51	Mar 22	8.69	9.00	-0.31	-3.5%
8	11:33	Mar 22	9.10	9.40	-0.30	-3.3%
9	12:14	Mar 22	9.16	9.50	-0.34	-3.7%
10 *	12:53	Mar 22	8.90	9.30	-0.40	-4.5%
Average			**8.88**	**9.20**	**-0.32**	**-3.6%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.0247	
Confidence Coefficient (CC)	0.0190	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**3.8%**	**NA**
Avg. Abs. Diff. + CC (%dv)	**0.3**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-2:
Relative Accuracy, Unit 1 FF Outlet – Volumetric Flow (SCFH)

Run No.	Start Time	Date (2012)	RM Data (scfh)	CEMS Data (scfh)	Difference	Difference Percent
1	06:48	Mar 22	6,731,485.0	6,654,521.3	76,963.7	1.1%
2	07:32	Mar 22	6,425,287.7	6,549,676.6	-124,388.9	-1.9%
3	08:14	Mar 22	6,848,689.0	6,713,203.6	135,485.4	2.0%
4	08:53	Mar 22	6,919,412.6	6,862,844.0	56,568.6	0.8%
5	09:32	Mar 22	6,925,579.9	6,961,794.4	-36,214.5	-0.5%
6	10:12	Mar 22	6,622,559.3	7,148,789.8	-526,230.5	-7.9%
7	10:51	Mar 22	6,734,466.6	6,966,978.5	-232,511.9	-3.5%
8	11:33	Mar 22	7,085,972.7	7,136,133.7	-50,161.0	-0.7%
9	12:14	Mar 22	6,658,480.3	7,002,478.0	-343,997.7	-5.2%
10 *	12:53	Mar 22	6,820,683.8	7,224,545.7	-403,861.9	-5.9%
Average			**6,772,437.0**	**6,888,491.1**	**-116,054.1**	**-1.7%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	216,471.1	
Confidence Coefficient (CC)	166,394.1	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**4.2%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-3:
Relative Accuracy, Unit 1 FF Outlet – Carbon Dioxide (lb/hr)

Run No.	Start Time	Date (2012)	RM Data (lb/hr)	CEMS Data (lb/hr)	Difference (lb/hr)	Difference Percent
1	06:48	Mar 22	62,817.32	66,744.90	-3,927.58	-6.3%
2	07:32	Mar 22	57,653.01	63,753.70	-6,100.69	-10.6%
3	08:14	Mar 22	62,156.60	66,740.40	-4,583.80	-7.4%
4	08:53	Mar 22	60,346.70	65,666.30	-5,319.60	-8.8%
5	09:32	Mar 22	56,646.70	64,213.90	-7,567.20	-13.4%
6	10:12	Mar 22	61,942.88	68,936.80	-6,993.92	-11.3%
7	10:51	Mar 22	61,299.47	68,320.40	-7,020.93	-11.5%
8	11:33	Mar 22	62,709.62	68,264.10	-5,554.48	-8.9%
9	12:14	Mar 22	58,317.65	66,853.20	-8,535.55	-14.6%
10 *	12:53	Mar 22	60,437.09	69,381.30	-8,944.21	-14.8%
	Average		**60,432.22**	**66,610.41**	**-6,178.19**	**-10.2%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	1,483.31	
Confidence Coefficient (CC)	1,140.17	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**12.1%**	**20.0%**

RM = Reference Method (CleanAir Data)

041612 144310

CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)

RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-4:
Relative Accuracy, Unit 1 FF Outlet – Carbon Dioxide (%dv)

Run No.	Start Time	Date (2012)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Difference Percent
1	06:48	Mar 22	10.61	11.40	-0.79	-7.5%
2	07:32	Mar 22	10.21	11.00	-0.79	-7.7%
3	08:14	Mar 22	10.42	11.30	-0.88	-8.4%
4 *	08:53	Mar 22	10.00	10.90	-0.90	-9.0%
5	09:32	Mar 22	9.66	10.50	-0.84	-8.7%
6	10:12	Mar 22	10.12	10.90	-0.78	-7.7%
7	10:51	Mar 22	10.30	11.10	-0.80	-7.8%
8	11:33	Mar 22	10.01	10.90	-0.89	-8.9%
9	12:14	Mar 22	10.00	10.80	-0.80	-8.0%
10	12:53	Mar 22	10.12	10.90	-0.78	-7.8%
	Average		**10.16**	**10.98**	**-0.82**	**-8.0%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.0418	
Confidence Coefficient (CC)	0.0321	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**8.4%**	**NA**
Avg. Abs. Diff. + CC (%dv)	**0.849**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

Table 2-5:
Relative Accuracy, Unit 1 FF Outlet – Sulfur Dioxide (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	06:48	Mar 22	13.02	13.70	-0.68	-5.2%
2	07:32	Mar 22	13.01	12.30	0.71	5.4%
3	08:14	Mar 22	12.45	12.20	0.25	2.0%
4	08:53	Mar 22	5.72	3.80	1.92	33.6%
5	09:32	Mar 22	5.94	3.80	2.14	36.1%
6	10:12	Mar 22	8.55	7.10	1.45	17.0%
7	10:51	Mar 22	5.52	4.00	1.52	27.6%
8	11:33	Mar 22	2.44	1.10	1.34	55.0%
9 *	12:14	Mar 22	3.44	1.70	1.74	50.5%
10	12:53	Mar 22	2.92	1.60	1.32	45.2%
	Average		**7.73**	**6.62**	**1.11**	**14.3%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.8826	
Confidence Coefficient (CC)	0.6784	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**23.1%**	**20.0%**
Relative Accuracy (as % of Appl. Std.)	**6.2%**	**20.0%**
Appl. Std. = 29 ppm@7%O2		

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-6:
Relative Accuracy, Unit 1 FF Outlet – Sulfur Dioxide (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1	06:48	Mar 22	11.55	11.80	-0.25	-2.1%
2	07:32	Mar 22	11.41	10.50	0.91	8.0%
3	08:14	Mar 22	11.04	10.40	0.64	5.8%
4	08:53	Mar 22	4.89	3.10	1.79	36.6%
5	09:32	Mar 22	4.94	3.10	1.84	37.2%
6	10:12	Mar 22	7.45	6.00	1.45	19.4%
7	10:51	Mar 22	4.85	3.40	1.45	29.9%
8	11:33	Mar 22	2.07	0.90	1.17	56.6%
9 *	12:14	Mar 22	2.90	1.40	1.50	51.8%
10	12:53	Mar 22	2.52	1.30	1.22	48.4%
	Average		**6.75**	**5.61**	**1.14**	**16.9%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.6452	
Confidence Coefficient (CC)	0.4960	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**24.2%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-7:
Relative Accuracy, Unit 1 FF Outlet – Nitrogen Oxides (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	06:48	Mar 22	185.20	193.20	-8.00	-4.3%
2	07:32	Mar 22	180.62	188.70	-8.08	-4.5%
3 *	08:14	Mar 22	194.04	203.40	-9.36	-4.8%
4	08:53	Mar 22	189.42	196.40	-6.98	-3.7%
5	09:32	Mar 22	195.11	202.50	-7.39	-3.8%
6	10:12	Mar 22	187.19	194.50	-7.31	-3.9%
7	10:51	Mar 22	199.92	207.90	-7.98	-4.0%
8	11:33	Mar 22	191.88	198.60	-6.72	-3.5%
9	12:14	Mar 22	198.05	206.30	-8.25	-4.2%
10	12:53	Mar 22	193.26	200.20	-6.94	-3.6%
Average			**191.18**	**198.70**	**-7.52**	**-3.9%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.5721	
Confidence Coefficient (CC)	0.4398	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**4.2%**	**20.0%**
Relative Accuracy (as % of Appl. Std.)	**3.9%**	**10.0%**
Appl. Std. = 205 ppm@7%O2		

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-8:
Relative Accuracy, Unit 1 FF Outlet – Nitrogen Oxides (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1	06:48	Mar 22	164.37	166.70	-2.33	-1.4%
2	07:32	Mar 22	158.52	160.90	-2.38	-1.5%
3 *	08:14	Mar 22	172.14	175.50	-3.36	-2.0%
4	08:53	Mar 22	161.88	163.20	-1.32	-0.8%
5	09:32	Mar 22	162.20	163.60	-1.40	-0.9%
6	10:12	Mar 22	162.97	164.40	-1.43	-0.9%
7	10:51	Mar 22	175.55	177.30	-1.75	-1.0%
8	11:33	Mar 22	162.89	164.00	-1.11	-0.7%
9	12:14	Mar 22	167.24	169.30	-2.06	-1.2%
10	12:53	Mar 22	166.82	167.60	-0.78	-0.5%
Average			**164.72**	**166.33**	**-1.62**	**-1.0%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.5511	
Confidence Coefficient (CC)	0.4236	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**1.2%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-9:
Relative Accuracy, Unit 1 FF Outlet – Carbon Monoxide (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	06:48	Mar 22	6.30	7.10	-0.80	-12.7%
2	07:32	Mar 22	5.63	6.50	-0.87	-15.4%
3	08:14	Mar 22	7.66	8.30	-0.64	-8.4%
4	08:53	Mar 22	6.08	7.00	-0.92	-15.1%
5	09:32	Mar 22	6.59	7.40	-0.81	-12.3%
6	10:12	Mar 22	6.30	7.10	-0.80	-12.7%
7 *	10:51	Mar 22	6.44	7.70	-1.26	-19.5%
8	11:33	Mar 22	9.22	10.20	-0.98	-10.6%
9	12:14	Mar 22	9.27	10.30	-1.03	-11.1%
10	12:53	Mar 22	9.14	9.90	-0.76	-8.3%
Average			**7.35**	**8.20**	**-0.85**	**-11.5%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.1185	
Confidence Coefficient (CC)	0.0911	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**12.7%**	**10.0%**
Avg. Abs. Diff. + CC (ppm@7%O2)	**0.9**	**5.0**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-10:
Relative Accuracy, Unit 1 FF Outlet – Carbon Monoxide (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1	06:48	Mar 22	5.59	6.10	-0.51	-9.1%
2	07:32	Mar 22	4.94	5.60	-0.66	-13.3%
3	08:14	Mar 22	6.79	7.20	-0.41	-6.0%
4	08:53	Mar 22	5.20	5.80	-0.60	-11.6%
5	09:32	Mar 22	5.48	5.90	-0.42	-7.7%
6	10:12	Mar 22	5.48	6.00	-0.52	-9.4%
7 *	10:51	Mar 22	5.66	6.60	-0.94	-16.7%
8	11:33	Mar 22	7.83	8.40	-0.57	-7.3%
9	12:14	Mar 22	7.83	8.40	-0.57	-7.3%
10	12:53	Mar 22	7.89	8.30	-0.41	-5.2%
Average			**6.34**	**6.86**	**-0.52**	**-8.2%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.0913	
Confidence Coefficient (CC)	0.0701	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**9.3%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-11:
Relative Accuracy, Unit 2 FF Outlet – Oxygen (%dv)

Run No.	Start Time	Date (2012)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Difference Percent
1	07:08	Mar 20	9.42	9.30	0.12	1.3%
2	07:53	Mar 20	9.53	9.40	0.13	1.4%
3	08:41	Mar 20	9.51	9.40	0.11	1.1%
4	09:18	Mar 20	9.53	9.40	0.13	1.4%
5	10:09	Mar 20	9.49	9.40	0.09	0.9%
6	10:48	Mar 20	9.55	9.40	0.15	1.6%
7	11:29	Mar 20	9.56	9.50	0.06	0.6%
8	12:10	Mar 20	9.78	9.70	0.08	0.8%
9	12:52	Mar 20	9.40	9.30	0.10	1.1%
10	13:33	Mar 20	9.72	9.60	0.12	1.2%
11	14:14	Mar 20	9.72	9.60	0.12	1.2%
12	14:44	Mar 20	9.50	9.40	0.10	1.0%
13	15:18	Mar 20	9.44	9.30	0.14	1.5%
14	15:51	Mar 20	9.71	9.60	0.11	1.1%
15	16:22	Mar 20	9.40	9.30	0.10	1.1%
Average			**9.55**	**9.44**	**0.11**	**1.2%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.0248	
Confidence Coefficient (CC)	0.0137	
t-Value for 15 Data Sets	2.145	
		Limit
Relative Accuracy (as % of RM)	**1.3%**	**NA**
Avg. Abs. Diff. + CC (%dv)	**0.124**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on all 15 runs.

RESULTS

Table 2-12:
Relative Accuracy, Unit 2 FF Outlet – Volumetric Flow (SCFH)

Run No.	Start Time	Date (2012)	RM Data (scfh)	CEMS Data (scfh)	Difference	Difference Percent
7	11:29	Mar 20	7,877,671.5	6,700,865.0	1,176,806.5	14.9%
8	12:10	Mar 20	7,663,062.2	6,703,782.2	959,280.0	12.5%
9	12:52	Mar 20	7,861,762.2	6,897,045.4	964,716.8	12.3%
10	13:33	Mar 20	8,236,634.3	6,889,707.2	1,346,927.1	16.4%
11	14:14	Mar 20	7,844,793.8	6,803,888.8	1,040,905.0	13.3%
12	14:44	Mar 20	7,950,810.9	6,695,714.0	1,255,096.9	15.8%
13	15:18	Mar 20	7,850,506.4	6,678,416.0	1,172,090.4	14.9%
14	15:51	Mar 20	7,961,557.6	6,695,214.6	1,266,343.0	15.9%
15	16:22	Mar 20	7,890,212.2	6,732,362.2	1,157,850.0	14.7%
Average			**7,904,112.4**	**6,755,221.7**	**1,148,890.6**	**14.5%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	135,657.7	
Confidence Coefficient (CC)	104,275.6	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**15.9%**	**NA**

RM = Reference Method (CleanAir Data)

041612 144310

CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)

RESULTS

Table 2-13:
Relative Accuracy, Unit 2 FF Outlet – Carbon Dioxide (lb/hr)

Run No.	Start Time	Date (2012)	RM Data (lb/hr)	CEMS Data (lb/hr)	Difference (lb/hr)	Difference Percent
7	11:29	Mar 20	68,164.50	60,251.30	7,913.20	11.6%
8	12:10	Mar 20	65,329.74	59,356.80	5,972.94	9.1%
9	12:52	Mar 20	68,878.91	63,237.80	5,641.11	8.2%
10	13:33	Mar 20	70,401.98	61,545.80	8,856.18	12.6%
11	14:14	Mar 20	68,202.38	60,900.00	7,302.38	10.7%
12	14:44	Mar 20	71,400.01	61,370.70	10,029.31	14.0%
13	15:18	Mar 20	69,392.34	61,025.50	8,366.84	12.1%
14	15:51	Mar 20	68,133.44	59,501.80	8,631.64	12.7%
15	16:22	Mar 20	69,712.63	61,908.50	7,804.13	11.2%
Average			**68,846.21**	**61,010.91**	**7,835.30**	**11.4%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	1,385.03	
Confidence Coefficient (CC)	1,064.63	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**12.9%**	**20.0%**

RM = Reference Method (CleanAir Data)

041612 144310

CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)

RESULTS

Table 2-14:
Relative Accuracy, Unit 2 FF Outlet – Carbon Dioxide (%dv)

Run No.	Start Time	Date (2012)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Difference Percent
1 *	07:08	Mar 20	9.77	10.40	-0.63	-6.5%
2 *	07:53	Mar 20	9.66	10.30	-0.64	-6.7%
3 *	08:41	Mar 20	9.63	10.30	-0.67	-6.9%
4 *	09:18	Mar 20	9.62	10.20	-0.58	-6.1%
5 *	10:09	Mar 20	9.57	10.20	-0.63	-6.6%
6 *	10:48	Mar 20	9.55	10.20	-0.65	-6.8%
7	11:29	Mar 20	9.58	10.20	-0.62	-6.5%
8	12:10	Mar 20	9.44	10.00	-0.56	-5.9%
9	12:52	Mar 20	9.78	10.40	-0.62	-6.3%
10	13:33	Mar 20	9.54	10.10	-0.56	-5.9%
11	14:14	Mar 20	9.60	10.10	-0.50	-5.3%
12	14:44	Mar 20	9.86	10.40	-0.54	-5.5%
13	15:18	Mar 20	9.83	10.40	-0.57	-5.8%
14	15:51	Mar 20	9.51	10.10	-0.59	-6.2%
15	16:22	Mar 20	9.82	10.40	-0.58	-6.0%
Average			**9.66**	**10.23**	**-0.57**	**-5.9%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.0362	
Confidence Coefficient (CC)	0.0278	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**6.2%**	**NA**
Avg. Abs. Diff. + CC (%dv)	**0.6**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 15 runs. * indicates the excluded runs.

RESULTS

Table 2-15:
Relative Accuracy, Unit 2 FF Outlet – Sulfur Dioxide (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	07:08	Mar 20	2.09	5.10	-3.01	-143.8%
2 *	07:53	Mar 20	4.74	8.40	-3.66	-77.1%
3	08:41	Mar 20	6.65	10.10	-3.45	-51.8%
4	09:18	Mar 20	6.07	7.50	-1.43	-23.5%
5	10:09	Mar 20	3.82	3.90	-0.08	-2.2%
6	10:48	Mar 20	4.47	4.70	-0.23	-5.2%
7	11:29	Mar 20	3.43	3.10	0.33	9.5%
8	12:10	Mar 20	6.65	7.20	-0.55	-8.2%
9	12:52	Mar 20	5.48	5.70	-0.22	-4.1%
10	13:33	Mar 20	4.16	3.90	0.26	6.3%
Average			**4.76**	**5.69**	**-0.93**	**-19.6%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	1.4028	
Confidence Coefficient (CC)	1.0783	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**42.2%**	**20.0%**
Relative Accuracy (as % of Appl. Std.)	**6.9%**	**20.0%**
Appl. Std. = 29 ppm@7%O2		

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-16:
Relative Accuracy, Unit 2 FF Outlet – Sulfur Dioxide (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1	07:08	Mar 20	1.73	4.20	-2.47	-143.1%
2 *	07:53	Mar 20	3.88	7.00	-3.12	-80.5%
3	08:41	Mar 20	5.46	8.30	-2.84	-52.1%
4	09:18	Mar 20	4.97	6.20	-1.23	-24.8%
5	10:09	Mar 20	3.13	3.20	-0.07	-2.1%
6	10:48	Mar 20	3.65	3.90	-0.25	-6.9%
7	11:29	Mar 20	2.80	2.50	0.30	10.6%
8	12:10	Mar 20	5.32	5.80	-0.48	-8.9%
9	12:52	Mar 20	4.53	4.70	-0.17	-3.8%
10	13:33	Mar 20	3.35	3.20	0.15	4.4%
Average			**3.88**	**4.67**	**-0.79**	**-20.2%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	1.1513	
Confidence Coefficient (CC)	0.8850	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**43.0%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-17:
Relative Accuracy, Unit 2 FF Outlet – Nitrogen Oxides (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	07:08	Mar 20	178.07	179.30	-1.23	-0.7%
2	07:53	Mar 20	179.76	179.60	0.16	0.1%
3	08:41	Mar 20	190.42	190.00	0.42	0.2%
4	09:18	Mar 20	177.65	176.20	1.45	0.8%
5	10:09	Mar 20	188.45	189.30	-0.85	-0.5%
6	10:48	Mar 20	176.37	174.90	1.47	0.8%
7 *	11:29	Mar 20	172.91	170.50	2.41	1.4%
8	12:10	Mar 20	181.56	180.60	0.96	0.5%
9	12:52	Mar 20	198.60	198.40	0.20	0.1%
10	13:33	Mar 20	190.41	189.30	1.11	0.6%
	Average		**184.59**	**184.18**	**0.41**	**0.2%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.9613	
Confidence Coefficient (CC)	0.7389	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**0.6%**	**20.0%**
Relative Accuracy (as % of Appl. Std.)	**0.6%**	**10.0%**
Appl. Std. = 205 ppm@7%O2		

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-18:
Relative Accuracy, Unit 2 FF Outlet – Nitrogen Oxides (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1 *	07:08	Mar 20	147.05	149.50	-2.45	-1.7%
2	07:53	Mar 20	146.98	148.30	-1.32	-0.9%
3	08:41	Mar 20	156.09	157.20	-1.11	-0.7%
4	09:18	Mar 20	145.26	145.20	0.06	0.0%
5	10:09	Mar 20	154.74	156.60	-1.86	-1.2%
6	10:48	Mar 20	144.03	144.10	-0.07	-0.1%
7	11:29	Mar 20	141.05	140.30	0.75	0.5%
8	12:10	Mar 20	145.31	146.10	-0.79	-0.5%
9	12:52	Mar 20	164.29	165.40	-1.11	-0.7%
10	13:33	Mar 20	153.14	154.00	-0.86	-0.6%
Average			**150.10**	**150.80**	**-0.70**	**-0.5%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.8035	
Confidence Coefficient (CC)	0.6176	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**0.9%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-19:
Relative Accuracy, Unit 2 FF Outlet – Carbon Monoxide (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	07:08	Mar 20	18.76	19.10	-0.34	-1.8%
2	07:53	Mar 20	11.25	11.90	-0.65	-5.8%
3	08:41	Mar 20	16.36	17.00	-0.64	-3.9%
4	09:18	Mar 20	18.45	19.00	-0.55	-3.0%
5	10:09	Mar 20	12.57	13.00	-0.43	-3.5%
6	10:48	Mar 20	16.67	17.10	-0.43	-2.6%
7 *	11:29	Mar 20	11.27	12.00	-0.73	-6.5%
8	12:10	Mar 20	15.53	16.10	-0.57	-3.7%
9	12:52	Mar 20	15.94	16.10	-0.16	-1.0%
10	13:33	Mar 20	14.01	14.50	-0.49	-3.5%
	Average		**15.50**	**15.98**	**-0.47**	**-3.1%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.1578	
Confidence Coefficient (CC)	0.1213	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**3.8%**	**10.0%**
Avg. Abs. Diff. + CC (ppm@7%O2)	**0.6**	**5.0**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-20:
Relative Accuracy, Unit 2 FF Outlet – Carbon Monoxide (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1	07:08	Mar 20	15.50	16.00	-0.50	-3.3%
2	07:53	Mar 20	9.20	9.80	-0.60	-6.6%
3 *	08:41	Mar 20	13.41	14.10	-0.69	-5.1%
4	09:18	Mar 20	15.08	15.60	-0.52	-3.4%
5	10:09	Mar 20	10.32	10.70	-0.38	-3.7%
6	10:48	Mar 20	13.61	14.10	-0.49	-3.6%
7	11:29	Mar 20	9.19	9.80	-0.61	-6.6%
8	12:10	Mar 20	12.43	13.00	-0.57	-4.6%
9	12:52	Mar 20	13.19	13.40	-0.21	-1.6%
10	13:33	Mar 20	11.27	11.70	-0.43	-3.8%
	Average		**12.20**	**12.68**	**-0.48**	**-3.9%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.1262	
Confidence Coefficient (CC)	0.0970	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**4.7%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-21:
Relative Accuracy, Unit 3 FF Outlet – Oxygen (%dv)

Run No.	Start Time	Date (2012)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Difference Percent
1	06:53	Mar 21	9.55	9.70	-0.15	-1.6%
2	07:34	Mar 21	9.50	9.60	-0.10	-1.1%
3	08:19	Mar 21	9.60	9.80	-0.20	-2.1%
4	09:04	Mar 21	9.30	9.50	-0.20	-2.2%
5	09:46	Mar 21	9.82	10.00	-0.18	-1.9%
6 *	10:29	Mar 21	9.26	9.50	-0.24	-2.6%
7	11:12	Mar 21	9.84	10.00	-0.16	-1.6%
8	11:57	Mar 21	10.45	10.60	-0.15	-1.4%
9	12:41	Mar 21	10.22	10.40	-0.18	-1.8%
10 *	13:20	Mar 21	9.42	9.70	-0.28	-3.0%
11	14:02	Mar 21	9.30	9.50	-0.20	-2.2%
12 *	14:43	Mar 21	9.39	9.60	-0.21	-2.2%
Average			**9.73**	**9.90**	**-0.17**	**-1.7%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.0336	
Confidence Coefficient (CC)	0.0258	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**2.0%**	**NA**
Avg. Abs. Diff. + CC (%dv)	**0.2**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 12 runs. * indicates the excluded runs.

RESULTS

Table 2-22:
Relative Accuracy, Unit 3 FF Outlet – Volumetric Flow (SCFH)

Run No.	Start Time	Date (2012)	RM Data (scfh)	CEMS Data (scfh)	Difference	Difference Percent
1 *	06:53	Mar 21	7,066,421.0	8,310,118.7	-1,243,697.7	-17.6%
2	07:34	Mar 21	6,661,811.8	7,577,894.3	-916,082.5	-13.8%
3	08:19	Mar 21	6,981,826.0	7,676,290.6	-694,464.6	-9.9%
4 *	09:04	Mar 21	6,868,103.2	8,107,047.4	-1,238,944.2	-18.0%
5	09:46	Mar 21	7,664,395.4	7,883,870.7	-219,475.3	-2.9%
6	10:29	Mar 21	7,195,967.9	8,033,342.4	-837,374.5	-11.6%
7	11:12	Mar 21	6,619,421.7	7,680,300.9	-1,060,879.2	-16.0%
8	11:57	Mar 21	7,384,319.0	8,576,812.8	-1,192,493.8	-16.1%
9	12:41	Mar 21	7,639,984.6	8,889,386.1	-1,249,401.5	-16.4%
10 *	13:20	Mar 21	6,803,315.4	7,961,696.6	-1,158,381.2	-17.0%
11	14:02	Mar 21	6,839,472.3	7,507,976.9	-668,504.6	-9.8%
12	14:43	Mar 21	6,970,166.7	7,588,136.8	-617,970.1	-8.9%
Average			**7,106,373.9**	**7,934,890.2**	**-828,516.2**	**-11.7%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	322,140.7	
Confidence Coefficient (CC)	247,618.8	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**15.1%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 12 runs. * indicates the excluded runs.

RESULTS

Table 2-23:
Relative Accuracy, Unit 3 FF Outlet – Carbon Dioxide (lb/hr)

Run No.	Start Time	Date (2012)	RM Data (lb/hr)	CEMS Data (lb/hr)	Difference (lb/hr)	Difference Percent
1 *	06:53	Mar 21	60,762.28	74,332.80	-13,570.52	-22.3%
2	07:34	Mar 21	57,524.56	68,441.20	-10,916.64	-19.0%
3	08:19	Mar 21	59,755.88	68,928.40	-9,172.52	-15.3%
4 *	09:04	Mar 21	59,696.35	74,093.20	-14,396.85	-24.1%
5	09:46	Mar 21	63,976.67	68,799.50	-4,822.83	-7.5%
6	10:29	Mar 21	62,562.97	73,319.40	-10,756.43	-17.2%
7	11:12	Mar 21	54,887.42	66,735.50	-11,848.08	-21.6%
8	11:57	Mar 21	60,320.32	71,187.90	-10,867.58	-18.0%
9	12:41	Mar 21	63,443.71	74,951.80	-11,508.09	-18.1%
10 *	13:20	Mar 21	59,230.01	72,231.20	-13,001.19	-22.0%
11	14:02	Mar 21	59,365.20	69,197.80	-9,832.60	-16.6%
12	14:43	Mar 21	61,617.54	69,422.10	-7,804.56	-12.7%
Average			**60,383.81**	**70,109.29**	**-9,725.48**	**-16.1%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	2,222.40	
Confidence Coefficient (CC)	1,708.28	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**18.9%**	**20.0%**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 12 runs. * indicates the excluded runs.

RESULTS

Table 2-24:
Relative Accuracy, Unit 3 FF Outlet – Carbon Dioxide (%dv)

Run No.	Start Time	Date (2012)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Difference Percent
1	06:53	Mar 21	9.61	10.30	-0.69	-7.2%
2 *	07:34	Mar 21	9.65	10.40	-0.75	-7.7%
3	08:19	Mar 21	9.62	10.30	-0.68	-7.0%
4 *	09:04	Mar 21	9.75	10.50	-0.75	-7.7%
5	09:46	Mar 21	9.36	10.00	-0.64	-6.8%
6 *	10:29	Mar 21	9.77	10.50	-0.73	-7.5%
7	11:12	Mar 21	9.32	10.00	-0.68	-7.3%
8	11:57	Mar 21	8.94	9.60	-0.66	-7.3%
9	12:41	Mar 21	9.11	9.70	-0.59	-6.5%
10	13:20	Mar 21	9.79	10.40	-0.61	-6.2%
11	14:02	Mar 21	9.89	10.60	-0.71	-7.2%
12	14:43	Mar 21	9.88	10.50	-0.62	-6.3%
Average			**9.50**	**10.16**	**-0.65**	**-6.9%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.0411	
Confidence Coefficient (CC)	0.0316	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**7.2%**	**NA**
Avg. Abs. Diff. + CC (%dv)	**0.7**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 12 runs. * indicates the excluded runs.

RESULTS

Table 2-25:
Relative Accuracy, Unit 3 FF Outlet – Sulfur Dioxide (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1 *	06:53	Mar 21	12.03	16.80	-4.77	-39.7%
2	07:34	Mar 21	15.10	17.70	-2.60	-17.2%
3	08:19	Mar 21	9.05	9.40	-0.35	-3.9%
4	09:04	Mar 21	12.14	12.30	-0.16	-1.3%
5	09:46	Mar 21	16.42	18.40	-1.98	-12.1%
6	10:29	Mar 21	13.69	14.00	-0.31	-2.2%
7	11:12	Mar 21	8.95	7.90	1.05	11.7%
8	11:57	Mar 21	2.48	1.50	0.98	39.4%
9	12:41	Mar 21	0.88	0.70	0.18	20.9%
10	13:20	Mar 21	1.83	1.00	0.83	45.4%
	Average		**8.95**	**9.21**	**-0.26**	**-2.9%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	1.2781	
Confidence Coefficient (CC)	0.9824	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**13.9%**	**20.0%**
Relative Accuracy (as % of Appl. Std.)	**4.3%**	**20.0%**
Appl. Std. = 29 ppm@7%O2		

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-26:
Relative Accuracy, Unit 3 FF Outlet – Sulfur Dioxide (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1 *	06:53	Mar 21	9.82	13.50	-3.68	-37.5%
2	07:34	Mar 21	12.39	14.30	-1.91	-15.4%
3	08:19	Mar 21	7.36	7.50	-0.14	-1.9%
4	09:04	Mar 21	10.13	10.10	0.03	0.3%
5	09:46	Mar 21	13.09	14.30	-1.21	-9.2%
6	10:29	Mar 21	11.47	11.50	-0.03	-0.3%
7	11:12	Mar 21	7.12	6.20	0.92	12.9%
8	11:57	Mar 21	1.86	1.10	0.76	40.9%
9	12:41	Mar 21	0.68	0.50	0.18	26.4%
10	13:20	Mar 21	1.51	0.80	0.71	47.1%
Average			**7.29**	**7.37**	**-0.08**	**-1.1%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.9381	
Confidence Coefficient (CC)	0.7211	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**10.9%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-27:
Relative Accuracy, Unit 3 FF Outlet – Nitrogen Oxides (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	06:53	Mar 21	182.02	199.40	-17.38	-9.6%
2	07:34	Mar 21	174.05	192.30	-18.25	-10.5%
3	08:19	Mar 21	190.19	209.60	-19.41	-10.2%
4	09:04	Mar 21	180.80	199.10	-18.30	-10.1%
5 *	09:46	Mar 21	182.27	202.10	-19.83	-10.9%
6	10:29	Mar 21	178.24	195.80	-17.56	-9.9%
7	11:12	Mar 21	182.29	201.30	-19.01	-10.4%
8	11:57	Mar 21	185.07	203.10	-18.03	-9.7%
9	12:41	Mar 21	180.33	198.40	-18.07	-10.0%
10	13:20	Mar 21	189.15	207.50	-18.35	-9.7%
	Average		**182.46**	**200.72**	**-18.26**	**-10.0%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.6361	
Confidence Coefficient (CC)	0.4890	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**10.3%**	**20.0%**
Relative Accuracy (as % of Appl. Std.)	**9.1%**	**10.0%**
Appl. Std. = 205 ppm@7%O2		

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-28:
Relative Accuracy, Unit 3 FF Outlet – Nitrogen Oxides (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1	06:53	Mar 21	148.61	160.50	-11.89	-8.0%
2	07:34	Mar 21	142.77	155.70	-12.93	-9.1%
3	08:19	Mar 21	154.62	167.50	-12.88	-8.3%
4	09:04	Mar 21	150.91	163.80	-12.89	-8.5%
5 *	09:46	Mar 21	145.35	158.60	-13.25	-9.1%
6	10:29	Mar 21	149.26	161.10	-11.84	-7.9%
7	11:12	Mar 21	145.00	157.90	-12.90	-8.9%
8	11:57	Mar 21	139.11	150.80	-11.69	-8.4%
9	12:41	Mar 21	138.56	150.20	-11.64	-8.4%
10	13:20	Mar 21	156.25	167.80	-11.55	-7.4%
Average			**147.23**	**159.48**	**-12.24**	**-8.3%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.6275	
Confidence Coefficient (CC)	0.4823	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**8.6%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-29:
Relative Accuracy, Unit 3 FF Outlet – Carbon Monoxide (ppm @ 7% O_2)

Run No.	Start Time	Date (2012)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Difference Percent
1	06:53	Mar 21	24.66	27.80	-3.14	-12.7%
2	07:34	Mar 21	16.14	19.30	-3.16	-19.6%
3 *	08:19	Mar 21	22.15	25.80	-3.65	-16.5%
4	09:04	Mar 21	14.59	16.70	-2.11	-14.5%
5	09:46	Mar 21	9.38	11.80	-2.42	-25.8%
6	10:29	Mar 21	9.19	11.10	-1.91	-20.8%
7	11:12	Mar 21	6.45	8.80	-2.35	-36.3%
8	11:57	Mar 21	15.53	18.70	-3.17	-20.4%
9	12:41	Mar 21	12.70	15.20	-2.50	-19.6%
10	13:20	Mar 21	9.39	11.50	-2.11	-22.5%
	Average		**13.12**	**15.66**	**-2.54**	**-19.4%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.4936	
Confidence Coefficient (CC)	0.3794	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**22.3%**	**10.0%**
Avg. Abs. Diff. + CC (ppm@7%O2)	**2.9**	**5.0**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

RESULTS

Table 2-30:
Relative Accuracy, Unit 3 FF Outlet – Carbon Monoxide (ppmdv)

Run No.	Start Time	Date (2012)	RM Data (ppmdv)	CEMS Data (ppmdv)	Difference (ppmdv)	Difference Percent
1	06:53	Mar 21	20.14	22.30	-2.16	-10.7%
2	07:34	Mar 21	13.24	15.60	-2.36	-17.8%
3	08:19	Mar 21	18.01	20.60	-2.59	-14.4%
4	09:04	Mar 21	12.18	13.70	-1.52	-12.5%
5	09:46	Mar 21	7.48	9.30	-1.82	-24.4%
6	10:29	Mar 21	7.70	9.10	-1.40	-18.3%
7 *	11:12	Mar 21	5.13	6.90	-1.77	-34.4%
8	11:57	Mar 21	11.67	13.60	-1.93	-16.5%
9	12:41	Mar 21	9.76	11.40	-1.64	-16.8%
10	13:20	Mar 21	7.76	9.30	-1.54	-19.9%
	Average		**11.99**	**13.88**	**-1.89**	**-15.7%**

Relative Accuracy Test Audit Results

Standard Deviation of Differences	0.4100	
Confidence Coefficient (CC)	0.3151	
t-Value for 9 Data Sets	2.306	
		Limit
Relative Accuracy (as % of RM)	**18.4%**	**NA**

RM = Reference Method (CleanAir Data)
CEMS = Continuous Emissions Monitoring System (Wheelabrator Data)
RATA calculations are based on 9 of 10 runs. * indicates the excluded run.

End of Section 2 – Results

DESCRIPTION OF INSTALLATION

PROCESS DESCRIPTION

The South Broward Resource Recovery facility, located in Ft. Lauderdale, Florida, operates three (3) 750 tons-per-day municipal refuse-fired, water-wall boiler trains. The trains were manufactured by Babcock and Wilcox to produce electricity for sale to a local utility company. Each boiler is equipped with a spray dryer absorber (SDA) for acid gas removal, followed by an FF baghouse for the control of particulate emissions. The control equipment is manufactured by Wheelabrator Air Pollution Control, Inc. Each FF baghouse is followed by an induced draft fan, which directs the flue gas to a dedicated flue in a common stack.

CEMS GENERAL DESCRIPTION

The CEMs was supplied by Aldora Technologies and consists of the following major components: three (3) Perkin Elmer MCS-100 /e infrared-based multi-gas measurement analyzers (one for each unit) and an Environmental System Corporation (ESC) UNIX-based data acquisition system (DAS). With the recent addition of M and C chillers, the MCS-100 /e analyzers measure pollutant and diluent concentrations on a cold-dry basis.

Each MCS-100 /e system includes the following: a SICK 100 /e analyzer with integrated zirconium oxide-based O_2 analyzer, programmable logic controller (PLC) and heated probe and sample line. The FF outlet 100 /e systems monitor O_2, CO_2, CO, SO_2 and NO_X from the respective stack ductwork.

The ESC DAS consists of three (3) Model 8816 data loggers (one for each MWC unit), a central polling (located in the CEM shelter), data archiving and reporting computer, and a remote engineering workstation (located in the control room). An environmentally-controlled shelter houses the MCS-100 /e analyzers, calibration gas systems and ESC Model 8816 data loggers. A general CEMs schematic is shown in Figure 3-1 on page 3-4.

PERKIN ELMER MCS-100 /E ANALYZER

The analyzer uses multiple infrared measurements, including Gas Filter Correlation for measuring NO_X and CO, a single beam-dual wavelength for SO_2 and an integrated heated zirconium oxide (ZrO_2) electrochemical cell for O_2, which is controlled by the 100 /e motherboard. All measurements are performed on a cold-dry basis in a single once-through sample cell with common optical bench (infrared source, filters, chopper wheel and detector). All sampling components (probe, sample line, pump) and measurement cell are maintained at 385°F to prevent condensation prior to the chillers.

The MSC-100 /e includes an integrated PLC that controls all analyzer functions, including optical bench operation, detector signal processing, dynamic gas calibrations, sample system operation and operational status alarms. The dry-based SO_2, NO_X, CO, CO_2 and O_2 measurement signals and operational status outputs are sent to the ESC 8816 data logger.

ESC DAS

The DAS consists of three (3) Model 8816 data loggers, a central data polling and reporting computer and engineering workstation. The 8816 data loggers receive the measurement signals from the MCS-100 /e analyzers and transmit the data to the central computer. The 8816 data loggers also receive the necessary status inputs from the MCS-100 /e to properly record analyzer calibrations, provide appropriate status flags to data and generate alarms to alert operators of CEM problems or excess emissions events.

The data loggers store up to four (4) weeks of hourly CEM data; consequently, in the event the central computer goes down, data recording and archiving is not affected. The data logger also receives the steam flow rate and fabric filter temperature signals from the control room to provide calculation of appropriate averages and permanent recording.

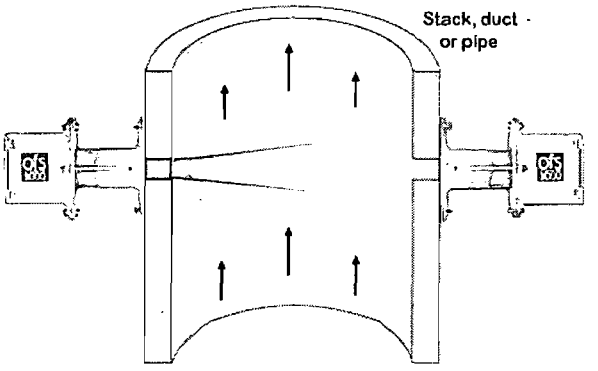
The Central Polling and Reporting Computer, located in the CEMS building, receives all data from the 8816 data loggers, calculates the required emission units and averaging times, generates the daily calibration reports and provides all required Subpart Cb data recording and reporting. Data from this computer is used for the relative accuracy testing and calibration drift determinations. The computer also provides the necessary permanent data storage using data storage tapes. The engineering workstation provides a remote link to the central computer for data review and generation of reports.

CEM CALIBRATION

The outlet CEM systems are calibrated daily using the appropriate calibration gases. Calibration gases are injected at the probes to provide a complete assessment of CEM response. The MCS-100 /e performs an automatic zero adjustment to all measurement channels after the calibration is completed and the zero and span responses recorded by the 8816 data logger. No other adjustments or corrections are performed on the data.

GAS FLOW MONITOR SYSTEM DESCRIPTION

The stack gas flow monitor is a primary component of the CO_2 CERM. Stack flow, along with flue gas temperature and CO_2 and H_2O data from the CEMS, is used to calculate and record mass CO_2 emissions in lbs/hr.



A stack gas flow monitor is installed on each MWC unit (see Table 3-1 below). The stack gas flow monitor is an Optical Scientific Inc. Model OFS 2000W Optical Flow Sensor. It consists of three (3) major components: the light transmitter, the receiver and control unit. The ESC Data Logger performs stack gas flow monitor data acquisition, data reduction and reporting functions.

The OFS 2000W uses an optical scintillation technique to continually measure gas velocity at the measurement location. The optical scintillation technique relies on advanced Digital Signal Processing (DSP) electronics to detect and measure the velocity of flue gas turbulence patterns in the stack gas flow stream. The technique provides a monitor path length averaged air velocity which is converted to gas volumetric flow rate using the duct cross-sectional area.

Table 3-1:
Stack Flow Monitor Information – Units 1, 2 & 3

Channel	Range	Sampling Location	Manufacturer / Model Number	Serial Number
Stack Flow (velocity)	0-7872 feet/min	#1 FF Outlet	Optical Scientific Inc. Model OFS 2000W	10080543
		#2 FF Outlet		10080544
		#3 FF Outlet		10080542

CEMS SCHEMATIC

Figure 3-1 is a general schematic of each of the outlet CEM systems. Figure 3-2, on page 3-5, presents the RM and CEM outlet sampling locations, as well as a general facility process flow diagram.

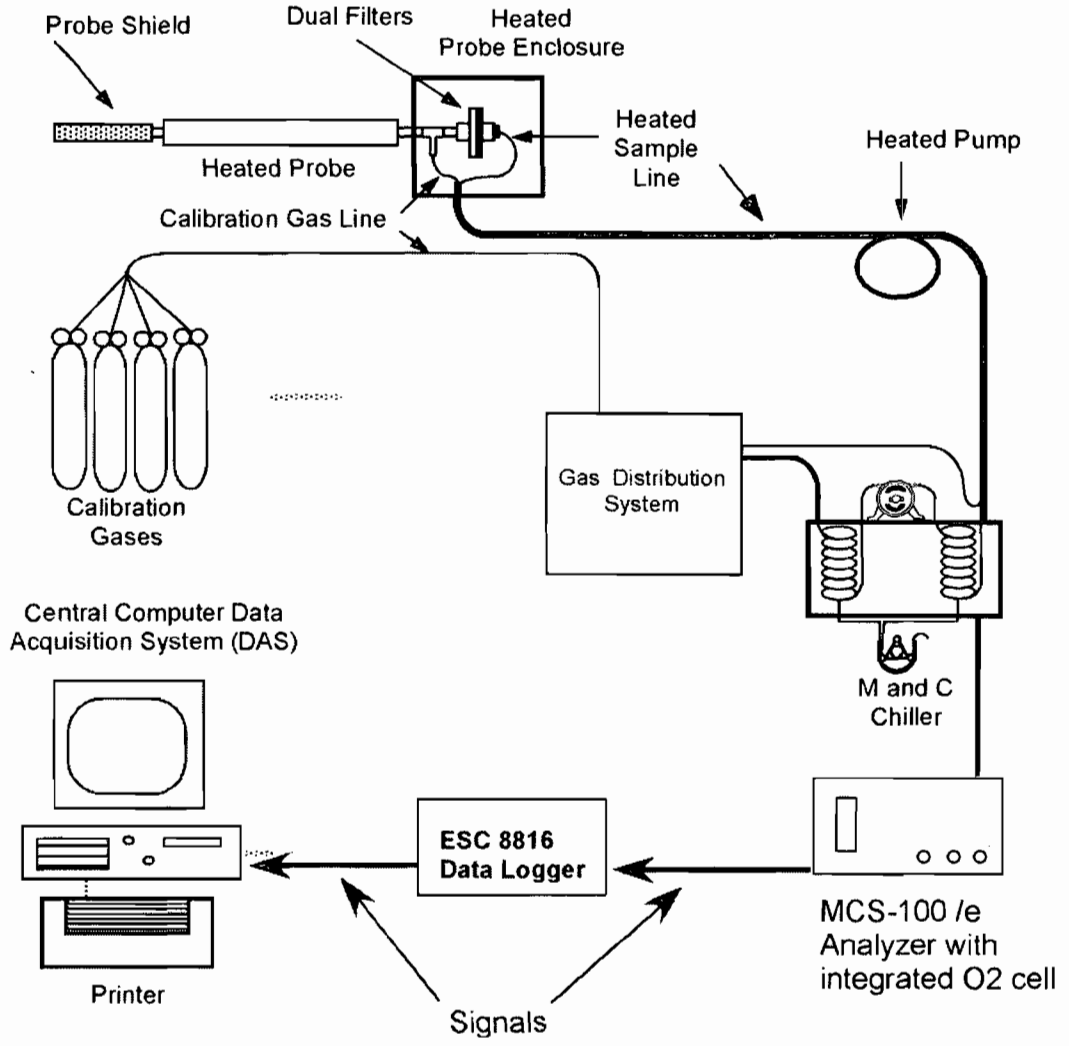


Figure 3-1: General CEMS Schematic

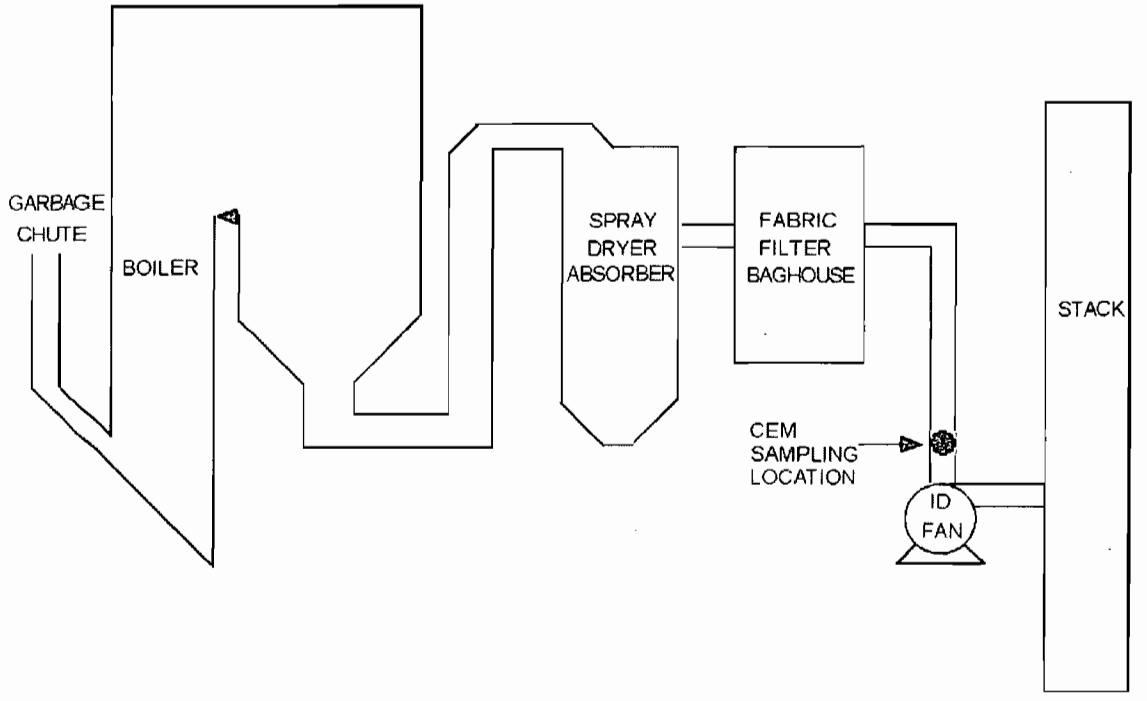


Figure 3-2: Process Flow Diagram and CEM Locations

DESCRIPTION OF SAMPLING LOCATIONS

Sampling point locations were determined according to EPA Method 1 and Performance Specification (PS) 2.

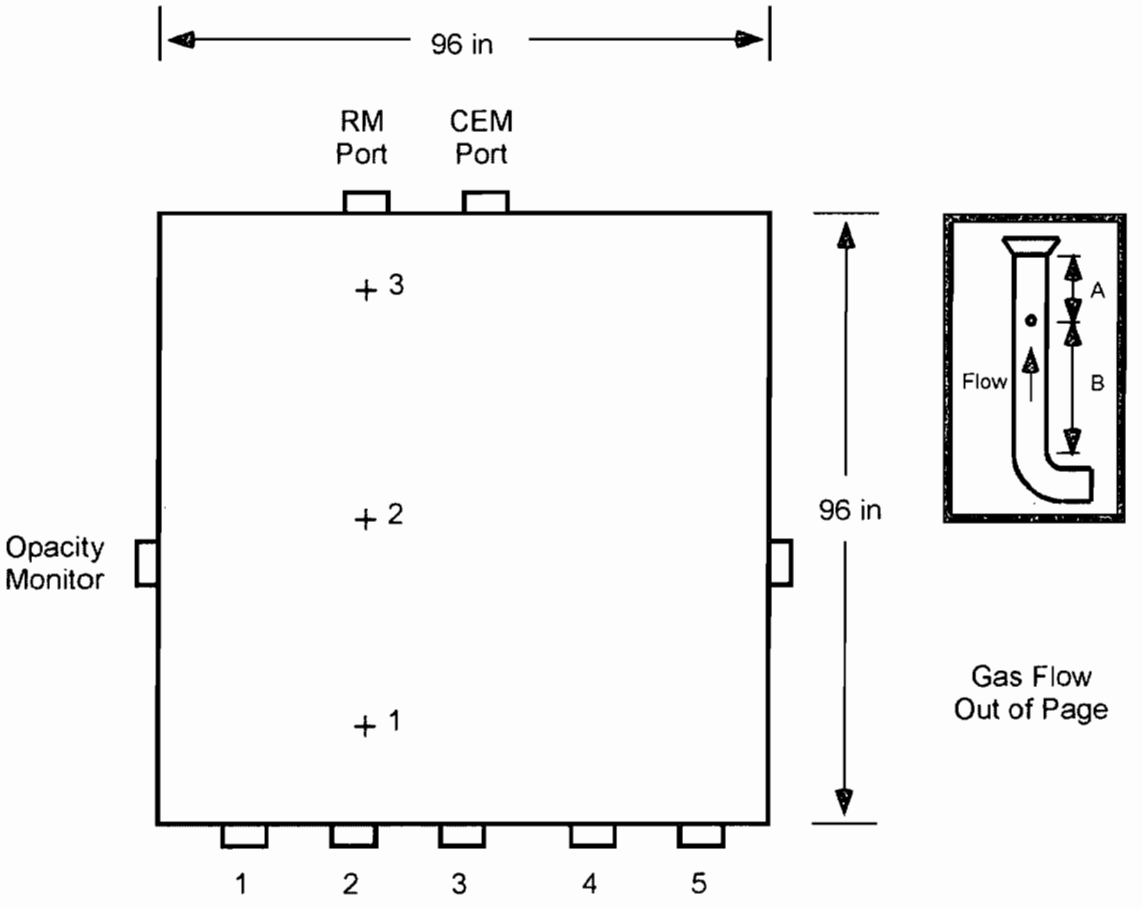
Table 3-2 outlines the sampling point configurations. Figures 3-3 and 3-4, on pages 3-7 and 3-8, illustrate the sampling points and orientation of sampling ports for each of the sources tested in the program.

Table 3-2:
Sampling Points

Location / Constituent	Methods	Run No.	Ports	Points per Port	Minutes per Point	Total Minutes	Figure
Unit 1 FF Outlet							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3
Volumetric Flow	1-4[1]	1-10	5	5	varies	varies	3-4
Unit 2 FF Outlet							
CEM	3A, 6C, 7E, 10	1-10	1	3	8/9	24/27	3-3
Volumetric Flow	1-4[1]	1-9	5	5	varies	varies	3-4
Unit 3 FF Outlet							
CEM	3A, 6C, 7E, 10	1-10/12[2]	1	3	9	27	3-3
Volumetric Flow	1-4[1]	1-12	5	5	varies	varies	3-4

[1] Moistures were obtained from the concurrent Method 26 or Method 4 sample trains.
[2] Twelve (12) CO_2 lb/hr RATA test runs were performed.

DESCRIPTION OF INSTALLATION



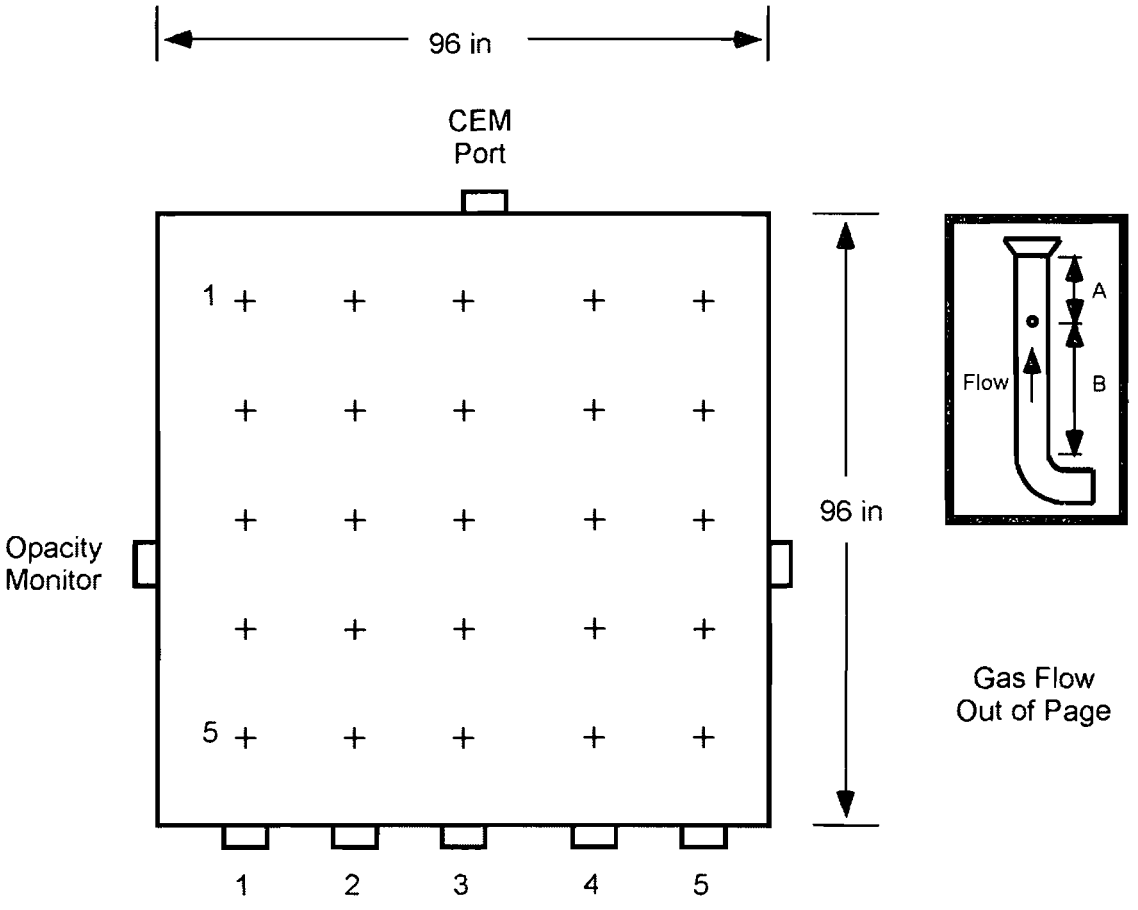
Sampling Point	Port to Point Distance (in.)
1	80
2	48
3	16

Equivalent Duct diameters upstream from flow disturbance (A):	0.92	Limit: 0.5
Equivalent Duct diameters downstream from flow disturbance (B):	2.0	Limit: 2.0

Port to point distances are 2.0 m, 1.2 m and 0.4 m, as specified in PS 2, Section 3.2.

Figure 3-3: Units 1, 2 and 3 FF Outlets – RATA Sampling Point Determination (PS 2)

DESCRIPTION OF INSTALLATION



Sampling Point	Port to Point Distance (in.)
1	86.4
2	67.2
3	48.0
4	28.8
5	9.6

Equivalent diameters to upstream disturbance: 2.0 Limit: 2.0
Equivalent diameters to downstream disturbance: 0.5 Limit: 0.5

Figure 3-4: FF Outlets – Velocity Traverse Point Determination (Units 1, 2 and 3 are identical)

End of Section 3 – Description of Installation

METHODOLOGY

Clean Air Engineering followed procedures as detailed in EPA Methods 1, 2, 3A, 4, 6C, 7E and 10, as well as Performance Specifications 2, 3, 4A and 6. The following table summarizes the methods and their respective sources.

Table 4-1:
Summary of Sampling Procedures

Title 40 CFR Part 60 Appendix A	
Method 1	"Sample and Velocity Traverses for Stationary Sources"
Method 2	"Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)"
Method 3A	"Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
Method 4	"Determination of Moisture Content in Stack Gases"
Method 6C	"Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
Method 7E	"Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
Method 10	"Determination of Carbon Monoxide Emissions from Stationary Sources"
Title 40 CFR Part 60 Appendix B (Performance Specifications)	
PS2	"Specifications and Test Procedures for SO_2 and NO_x Continuous Emission Monitoring Systems in Stationary Sources"
PS3	"Specifications and Test Procedures for O_2 and CO_2 Continuous Emission Monitoring Systems in Stationary Sources"
PS4A	"Specifications and Test Procedures for Carbon Monoxide Continuous Emission Monitoring Systems in Stationary Sources"
PS6	"Specifications and Test Procedures for Continuous Emission Rate Monitoring Systems in Stationary Sources "

These methods appear in detail in Title 40 of the Code of Federal Regulations (CFR) and are located on the internet at http://ecfr.gpoaccess.gov.

Diagrams of the sampling apparatus and major specifications of the sampling, recovery and analytical procedures are summarized for each method in Appendix A.

CleanAir followed specific quality assurance and quality control (QA/QC) procedures as outlined in the individual methods and as prescribed in CleanAir's internal Quality Manual. Results of all QA/QC activities performed by CleanAir are summarized in Appendix D.

End of Section 4 – Methodology

APPENDIX

TEST METHOD SPECIFICATIONS

A

I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified as accurate.

QA/QC Initials: MK

Date: 4/27/12

CleanAir

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Specification Sheet for EPA Methods 6C, 7E and 10

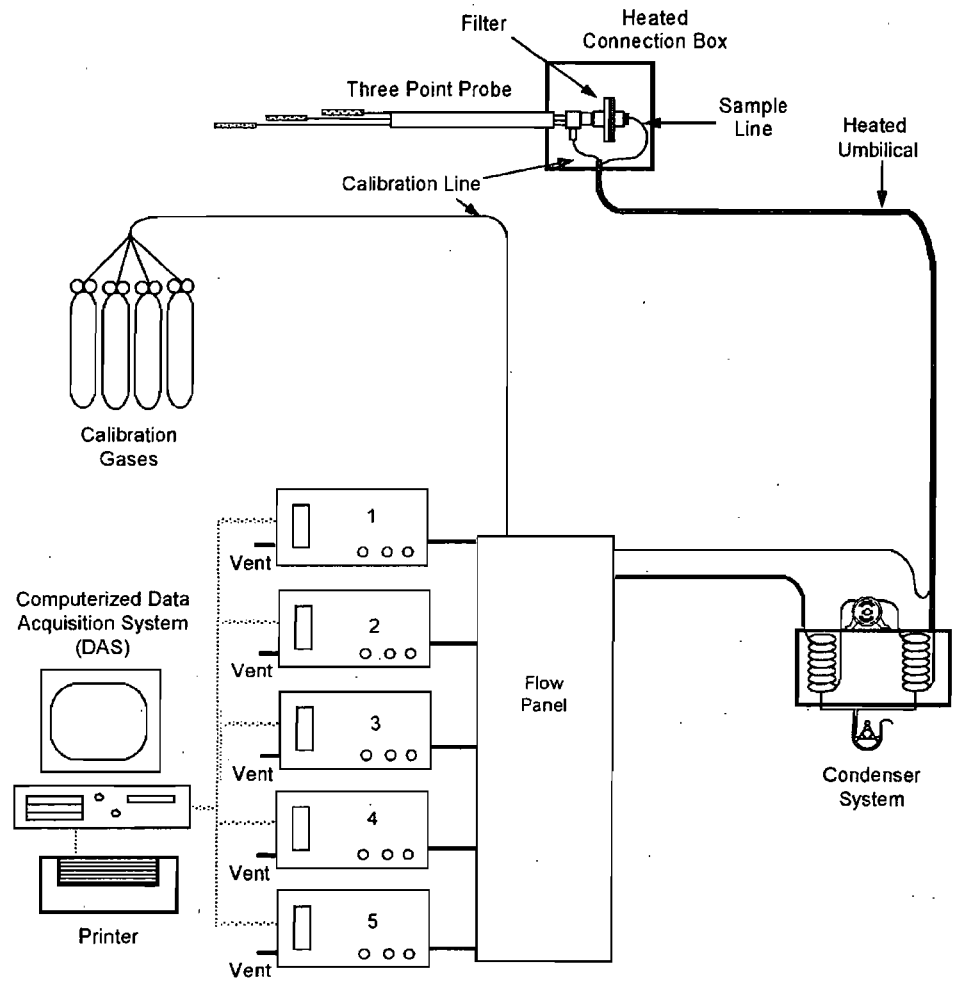
Source Location Name(s)	Units 1-3 FF Outlets
Pollutant(s) to be Determined	Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x) and Carbon Monoxide (CO)
Other Parameters to be Determined from Train	O2 and CO2 (EPA Method 3A)

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	24 to 27
No. of Sample Traverse Points	N/A	3
Sample Time per Point	N/A	8 to 9 minutes
Sampling Rate	Constant Rate	Constant Rate
Sampling Probe		
Nozzle Material	N/A	None
Nozzle Design	N/A	N/A
Probe Liner Material	Stainless Steel or Pyrex Glass	Stainless Steel
Effective Probe Length	Sufficient to Traverse Points	7 feet
Probe Temperature Set-Point	Prevent Condensation	248°F±25°F
Particulate Filter		
In-Stack Filter	Yes	Yes
In-Stack Filter Material	Non-reactive to gas	Fritted Stainless Steel
External Filter	Yes	Yes
External Filter Material	Borosilicate, Quartz Glass Wool or Fiber Mat	Borosilicate Glass Fiber Mat
External Filter Set-Point	Prevent Condensation	248°F±25°F
Sample Delivery System		
Heated Sample Line Material	Stainless Steel or Teflon	Teflon
Heated Sample Line Set-Point	Prevent Condensation	248°F±25°F
Heated Sample Line Connections	Probe Exit to Moisture Removal System	Probe to Moisture Removal System
Moisture Removal System	Refrigerator-type condenser or similar	Refrigerator-type condenser
Sample Pump Type	Leak-Free, minimal response time	Diaphragm
Sample Pump Material	Non-reactive to sample gases	Teflon
Sample Flow Control	Constant Rate	Constant Rate (±10%)
Non-Heated Sample Line Material	Stainless Steel or Teflon	Teflon
Non-Heated Sample Line Connections	Moisture Removal to Sample Gas Manifold	Moisture Removal to Sample Gas Manifold
Additional Filters	Optional	Yes
Additional Filter Type	N/A	Particulate Removal
Additional Filter Location	Optional	Entrance to Sample Manifold
Filter Material	Non-reactive to sample gases	Glass Fiber
Analyzer Description		
Oxygen (O_2)	EPA Method 3A (Paramagnetic)	EPA Method 3A (Paramagnetic)
Carbon Dioxide (CO_2)	EPA Method 3A (NDIR)	EPA Method 3A (NDIR)
Sulfur Dioxide (SO_2)	EPA Method 6C (UV, NDIR or Fluorescence)	EPA Method 6C (UV Absorption)
Nitrogen Oxides (NO_x)	EPA Method 7E (Chemiluminescent)	EPA Method 7E (Chemiluminescent)
Carbon Monoxide (CO)	EPA Method 10 (Gas Filter Correlation IR)	EPA Method 10 (Gas Filter Correlation IR)
Total Hydrocarbon (THC)	N/A	
Hydrogen Chloride (HCl)	N/A	
Ammonia (NH_3)	N/A	

Specification Sheet for EPA Methods 6C, 7E and 10

	Standard Method Specification	Approximate Specification to be Used
Instrument Span Range		
Oxygen (O_2)	≤ 1.33 x Expected Maximum	0-15%
Carbon Dioxide (CO_2)	≤ 1.33 x Expected Maximum	0-15%
Sulfur Dioxide (SO_2)	≤ 1.33 x Expected Maximum	0-100 ppm
Nitrogen Oxides (NO_x)	≤ 1.33 x Expected Maximum	0-500 ppm
Carbon Monoxide (CO)	≤ 1.33 x Expected Maximum	0-100 ppm
Total Hydrocarbon (THC)	N/A	N/A
Hydrogen Chloride (HCl)	N/A	N/A
Ammonia (NH_3)	N/A	N/A
Data Acquisition		
Data Recorder	Strip chart, Analog Computer or Digital Recorder	Digital Recorder
Recorder Resolution	0.5 Percent of Span	0.1 Percent of Span
Data Storage	Manually or Automatic	Automatic
Measurement Freq. ≤60 min. Sample Time	1-min. intervals or 30 measurements (less restrictive)	One reading per second
Recording Freq. ≤60 min. Sample Time	1-min. intervals or 30 measurements (less restrictive)	One Minute Average (60, 1 second readings)
Measurement Freq. >60 min. Sample Time	2-min. intervals or 96 measurements (less restrictive)	N/A
Recording Freq. >60 min. Sample Time	2-min. intervals or 96 measurements (less restrictive)	N/A
Calibration Gas Specifications		
Oxygen (O_2)	EPA Protocol 1	EPA Protocol 1
Carbon Dioxide (CO_2)	EPA Protocol 1	EPA Protocol 1
Sulfur Dioxide (SO_2)	EPA Protocol 1	EPA Protocol 1
Nitrogen Oxides (NO_x)	EPA Protocol 1	EPA Protocol 1
Carbon Monoxide (CO)	EPA Protocol 1	EPA Protocol 1
Total Hydrocarbon (THC)	N/A	
Hydrogen Chloride (HCl)	N/A	
Ammonia (NH_3)	N/A	

EPA Methods 3A, 6C, 7E and 10
FF Outlet RATA
Sampling Train Configuration



Number	Gas	Monitor	~Range	Calibration Gas Concentrations
1	O_2	Servomex 1440C	0–14.0	0, 6.0, 14.0
2	CO_2	Servomex 1440B	0-13.9	0, 5.99, 13.9
3	SO_2	W.R. 921L	0-90.8	0, 45.2, 90.8
4	NO_X	T.E.I. 42 iLS	0-448	0, 225.0, 448.0
5	CO	T.E.I. 48i	0-96.3	0, 48.6, 96.3

Specification Sheet for EPA Method 26A (modified)

Note: Modification includes the use of full-size impingers instead of midget impingers.

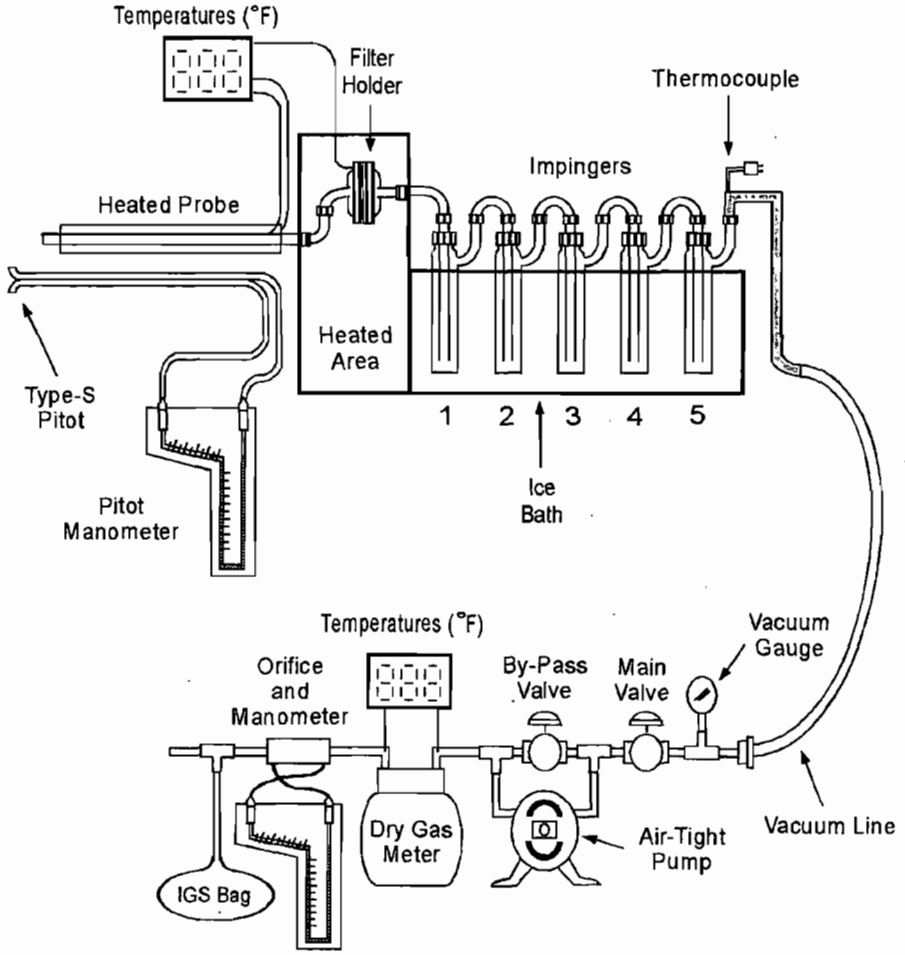
Source Location Name(s)	Units 1-3 SDA Inlets and Units 1-3 FF Outlets
Pollutant(s) to be Determined	Hydrogen Chloride (HCl)
Other Parameters to be Determined from Train	Gas Density, Moisture

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	60 minutes
No. of Sample Traverse Points	N/A	1
Sample Time per Point	N/A	60 minutes
Sampling Rate	Constant Rate (±10%)	Constant Rate (±10%)
Sampling Probe		
Nozzle Material	N/A	None
Nozzle Design	N/A	N/A
Probe Liner Material	Borosilicate Glass	Borosilicate Glass
Effective Probe Length	N/A	4 feet
Probe Temperature Set-Point	>248°F	350°F @ Inlet, Stack Temp @ FF Outlet
Velocity Measuring Equipment		
Pitot Tube Design	None	None
Pitot Tube Coefficient	N/A	N/A
Pitot Tube Calibration by	N/A	N/A
Pitot Tube Attachment	N/A	N/A
Metering System Console		
Meter Type	Dry Gas Meter or Critical Orifice	Dry Gas Meter
Meter Accuracy	±2%	±1%
Meter Resolution	N/A	0.01 cubic feet
Meter Size	2 liters/minute	0.1 dcf/revolution
Meter Calibrated Against	Wet Test Meter	Wet Test Meter
Pump Type	Diaphragm or equivalent	Rotary Vane
Temperature Measurements	Dial Thermometer or equivalent	Type K Thermocouple/Pyrometer
Temperature Resolution	2°F-5.4°F	1.0°F
ΔP Differential Pressure Gauge	N/A	N/A
ΔH Differential Pressure Gauge	N/A	Inclined Manometer
Barometer	Mercury, aneroid or other.	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	After Probe	Exit of Probe
Filter Holder Material	Teflon or Quartz	Borosilicate Glass
Filter Support Material	Teflon Frit	Teflon
Cyclone Material	N/A	None
Filter Heater Set-Point	>248°F	350°F @ Inlet, Stack Temp @ FF Outlet
Filter Material	Teflon/Glass Mat (Quartz, Optional High Temp>410F)	Quartz Fiber @ Inlet, Teflon on Glass @ Outlet
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

Specification Sheet for EPA Method 26A (modified)

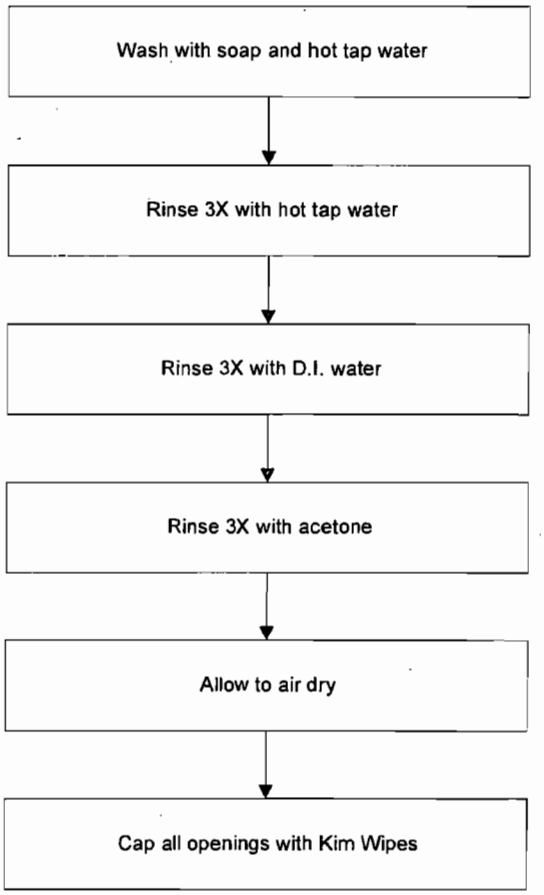
	Standard Method Specification	Actual Specification Used
Impinger Train Description		
Type of Glassware Connections	Ground Glass or Equivalent	Screw Joint with Silicone Gasket
Connection to Probe or Filter by	Direct Glass Connection	Direct Glass Connection
Number of Impingers	5 or 6 (Midget Impingers)	5
Impinger Stem Types		
Impinger 1	Shortened Stem	Shortened Stem (open tip)
Impinger 2	Greenburg-Smith	Greenburg-Smith
Impinger 3	Greenburg-Smith	Greenburg-Smith
Impinger 4	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 5	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 6		
Impinger 7		
Impinger 8		
Gas Density Determination		
Sample Collection	N/A	Single Point Integrated
Sample Collection Medium	N/A	Vinyl Bag
Sample Analysis	N/A	CEM
Sample Recovery Information		
Probe Brush Material	N/A	N/A
Probe Rinse Reagent	N/A	N/A
Probe Rinse Wash Bottle Material	N/A	N/A
Probe Rinse Storage Container	N/A	N/A
Filter Recovered?	No	No
Filter Storage Container	N/A	N/A
Impinger Contents Recovered?	Yes	Yes
Impinger Rinse Reagent	Deionized Distilled Water	Deionized Distilled Water
Impinger Wash Bottle	Polyethylene or glass	Polyethylene
Impinger Storage Container	Polyethylene	Polyethylene
Analytical Information		
Method 4 H_2O Determination by	N/A	Gravimetric
Filter Preparation Conditions	N/A	N/A
Front-Half Rinse Preparation	N/A	N/A
Back-Half Analysis	Ion Chromatography	Ion Chromatography
Additional Analysis	None	None

Modified EPA Method 26A
Sampling Train Configuration

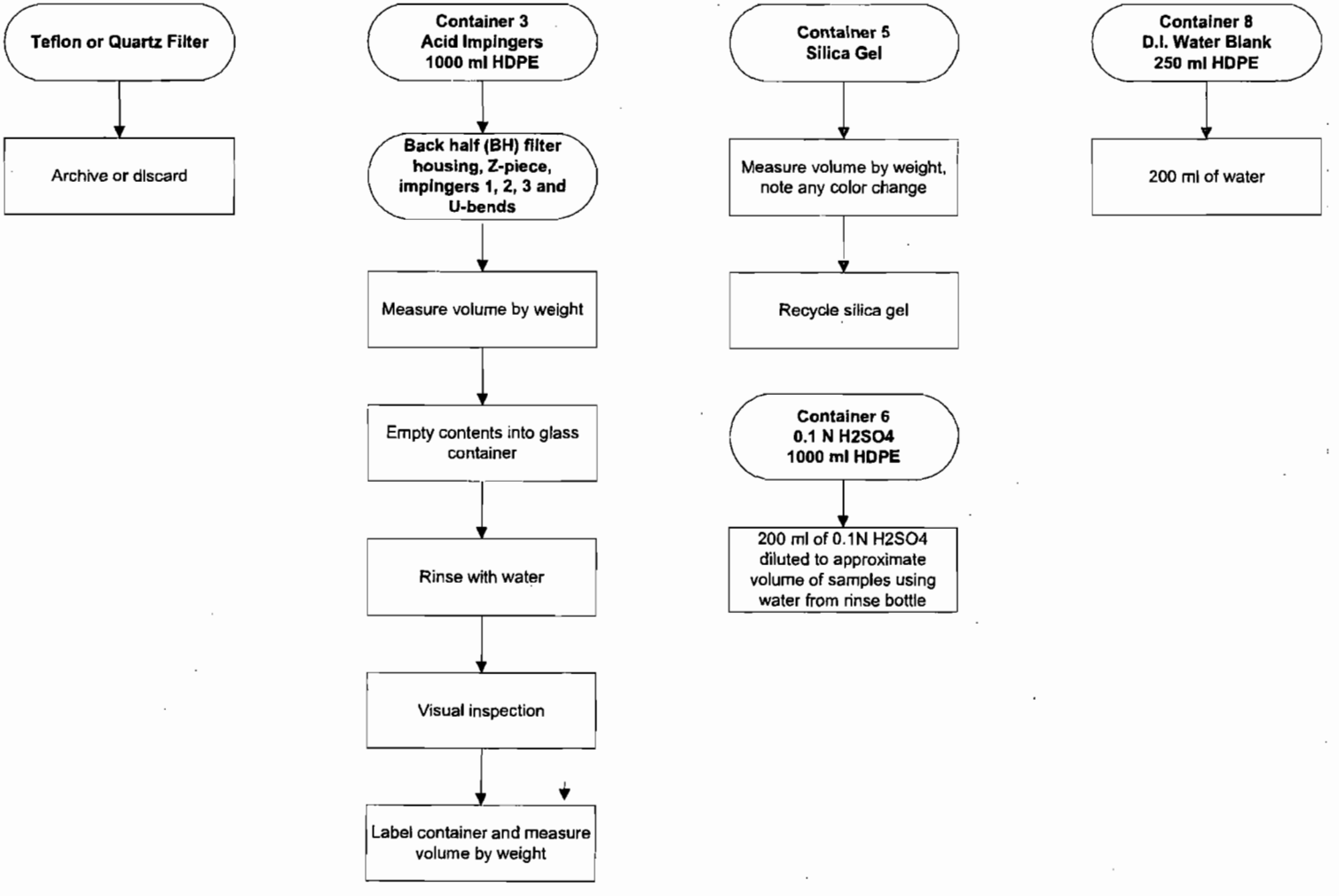


Impinger Contents	
Impinger 1	50 ml 0.1 N H_2SO_4
Impinger 2	100 ml 0.1 N H_2SO_4
Impinger 3	100 ml 0.1 N H_2SO_4
Impinger 4	Empty
Impinger 5	Silica Gel

EPA Method 26A
Glassware Preparation Procedures



Modified EPA Method 26A
Sample Recovery Flowchart
(without Halogens)



Specification Sheet for EPA Method 4

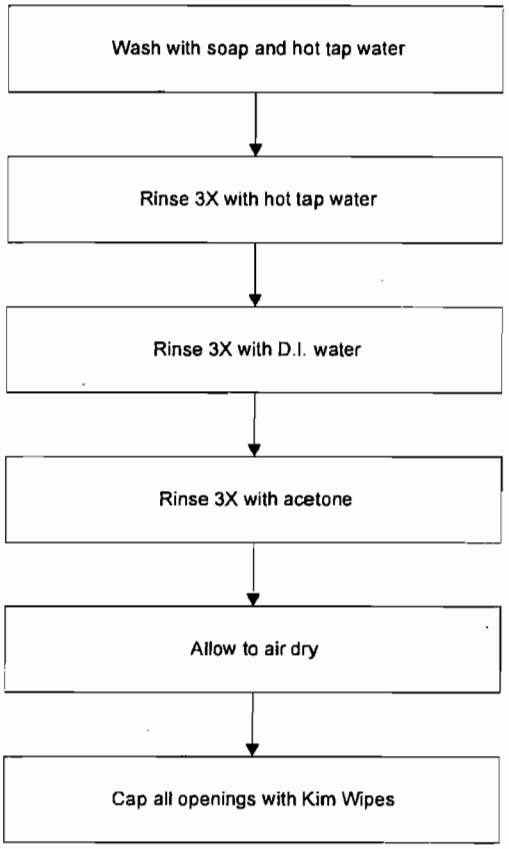
Source Location Name(s)	Units 1, 2 and 3 FF Outlets
Pollutant(s) to be Determined	None
Other Parameters to be Determined from Train	Moisture, Flow Rate

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	30 to 60
No. of Sample Traverse Points	N/A	1
Sample Time per Point	N/A	30 to 60
Sampling Rate	Within 10% of Constant Rate	Constant Rate (±10%)
Sampling Probe		
Nozzle Material	N/A	None
Nozzle Design	N/A	N/A
Probe.Liner Material	Stainless Steel, Glass, Other Metals, Plastic Tubing	Stainless Steel
Effective Probe Length	N/A	4 feet
Probe Temperature Set-Point	Prevent water condensation	None
Velocity Measuring Equipment		
Pitot Tube Design	N/A	Type S
Pitot Tube Coefficient	N/A	0.827
Pitot Tube Calibration by	N/A	Wind-Tunnel
Pitot Tube Attachment	N/A	Separate Probe
Metering System Console		
Meter Type	Dry Gas Meter	Dry Gas Meter
Meter Accuracy	±2%	±1%
Meter Resolution	N/A	0.01 cubic feet
Meter Size	N/A	0.1 dcf/revolution
Meter Calibrated Against	Wet Test Meter or Standard DGM	Wet Test Meter
Pump Type	N/A	Rotary Vane
Temperature Measurements	N/A	Type K Thermocouple/Pyrometer
Temperature Resolution	5.4°F	1.0°F
ΔP Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
ΔH Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
Barometer	Mercury or Aneroid	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	In Stack or Exit of Probe	None
Filter Holder Material	Borosilicate Glass (for probe exit location)	N/A
Filter Support Material	Glass Frit	N/A
Cyclone Material	N/A	None
Filter Heater Set-Point	Prevent condensation	N/A
Filter Material	Glass Wool (in-stack) or Fiberglass Mat (out of stack)	Glass Fiber
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

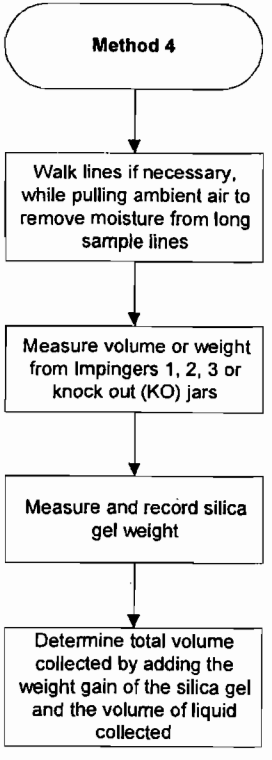
Specification Sheet for EPA Method 4

	Standard Method Specification	Actual Specification Used
Impinger Train Description		
Type of Glassware Connections	Ground Glass or Equivalent	Screw Joint with Silicone Gasket
Connection to Probe or Filter by	Flexible Line	Flexible Rubber Line
Number of Impingers	4	4
Impinger Stem Types		
Impinger 1	Modified-Greenburg Smith	Modified Greenburg-Smith
Impinger 2	Greenburg-Smith	Greenburg-Smith
Impinger 3	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 4	Modified Greenburg-Smith	Modified Greenburg-Smith
Impinger 5		
Impinger 6		
Impinger 7		
Impinger 8		
Gas Density Determination		
Sample Collection	N/A	N/A
Sample Collection Medium	N/A	N/A
Sample Analysis	N/A	N/A
Sample Recovery Information		
Probe Brush Material	N/A	N/A
Probe Rinse Reagent	N/A	N/A
Probe Rinse Wash Bottle Material	N/A	N/A
Probe Rinse Storage Container	N/A	N/A
Filter Recovered?	No	No
Filter Storage Container	N/A	N/A
Impinger Contents Recovered?	No	No
Impinger Rinse Reagent	N/A	N/A
Impinger Wash Bottle	N/A	N/A
Impinger Storage Container	N/A	N/A
Analytical Information		
Method 4 H_2O Determination by	Volumetric or Gravimetric	Gravimetric and Volumetric
Filter Preparation Conditions	N/A	N/A
Front-Half Rinse Preparation	N/A	N/A
Back-Half Analysis	N/A	N/A
Additional Analysis	N/A	None

EPA Method 4
Glassware Preparation Procedures



EPA Method 4
Analytical Recovery Flowchart

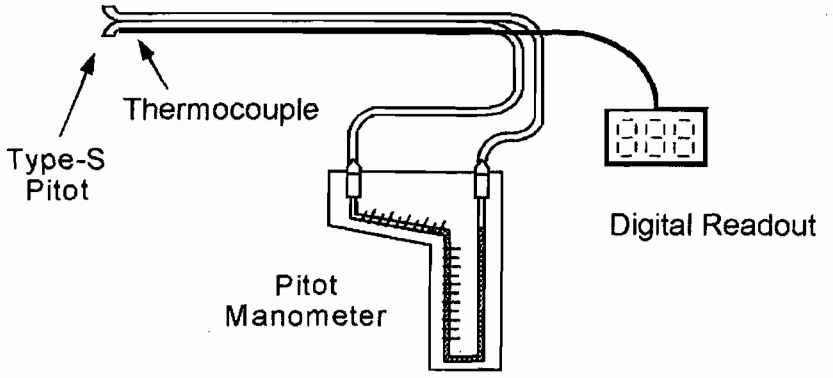


Specification Sheet for EPA Method 2

Source Location Name(s)	Units 1, 2 and 3 FF Outlets
Pollutant(s) to be Determined	None
Other Parameters to be Determined from Train	Flow Rate

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	Varied
No. of Sample Traverse Points	N/A	25
Sample Time per Point	N/A	Varied
Sampling Rate	N/A	N/A
Sampling Probe		
Nozzle Material	N/A	N/A
Nozzle Design	N/A	N/A
Probe Liner Material	N/A	N/A
Effective Probe Length	Sufficient to Traverse Points	8 feet
Probe Temperature Set-Point	N/A	N/A
Velocity Measuring Equipment		
Pitot Tube Design	Type S	Type S
Pitot Tube Coefficient	N/A	0.827
Pitot Tube Calibration by	Geometric or Wind Tunnel	Wind-Tunnel
Pitot Tube Attachment	Attached to Probe	Separate Probe
Metering System Console		
Meter Type	Dry Gas Meter	Dry Gas Meter
Meter Accuracy	N/A	N/A
Meter Resolution	N/A	N/A
Meter Size	N/A	N/A
Meter Calibrated Against	N/A	N/A
Pump Type	N/A	N/A
Temperature Measurements	N/A	Type K Thermocouple/Pyrometer
Temperature Resolution	5.4°F	1.0°F
ΔP Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
ΔH Differential Pressure Gauge	Inclined Manometer or Equivalent	Inclined Manometer
Barometer	Mercury or Aneroid	Digital Barometer calibrated w/Mercury Aneroid
Filter Description		
Filter Location	N/A	N/A
Filter Holder Material	N/A	N/A
Filter Support Material	N/A	N/A
Cyclone Material	N/A	N/A
Filter Heater Set-Point	N/A	N/A
Filter Material	N/A	N/A
Other Components		
Description	N/A	N/A
Location	N/A	N/A
Operating Temperature	N/A	N/A

EPA Method 2
Sampling Train Configuration



SAMPLE CALCULATIONS

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I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified as accurate.

QA/QC Initials: MK

Date: 4/27/12

CleanAir

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Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

CEM Field Sample Calculations for NOX FF Outlet

Sample data taken from Run 1 and Channel 3

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041612 142624

1. Average of a calibration series

$$C_{mce} = \frac{(C_1 + C_2 + C_3)}{3}$$

Where:

C_1, C_2, C_3 = concentrations of 3 consecutive gas samples that are representative of the calibration gas

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 3	=	225.587	ppmdv

2a. Calibration Error Check for Hydrocarbons (5% of actual calibration gas value error allowed by Method 25A)

$$E_{HC} = abs\left|\frac{C_{mce} - C_{ma}}{C_{ma}}\right| \le l_{cal}$$

Where:

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 3	=	225.587	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	225.000	ppmdv
l_{cal}	= limit for calibration error for hydrocarbons	=	5.0%	
E_{HC}	= calibration error check value	=	NA	

2b. Calibration Error Check for non-Hydrocarbons (2% of Instrument Span)

$$E = abs\left|\frac{C_{mce} - C_{ma}}{Span}\right| \le l_{cal}$$

Where:

C_{mce}	= average concentration of a calibration series In this case the low cal series for channel 3	=	225.587	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	225.000	ppmdv
Span	= instrument span value	=	448.000	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.13%	**Pass**

Wheelabrator

CleanAir Project No. 11414

South Broward

Unit 1

3. System Bias as Percent of Span Value (5% is allowed)

$$E_{Bias} = abs\left|\frac{C_{mf} - C_{mce}}{Span}\right| \leq l_{bias}$$

Where:

C_{mce}	= average concentration of a calibration series in this case the Low cal series for channel 3	=	225.587	ppmdv
C_{mf}	= calibration error response concentration for Cal01	=	223.557	ppmdv
Span	= instrument span value	=	448.000	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	0.45%	**Pass**

4. System Drift as Percent of Span Value (3%)

$$E_{Drift} = abs\left|\frac{C_{mf} - C_{mi}}{Span}\right| \leq l_{drift}$$

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	223.557	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	223.516	ppmdv
Span	= instrument span value	=	448.000	ppmdv
l_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.01%	**Pass**

5. Average Concentration for an entire Run

$$C = \frac{\sum_{i=1}^{N} C_i}{N}$$

Where: i=1

C_i	= All concentration readings for the entirety of Run 1 for the monitor looking for NOX on channel 3	=	170.098	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average NOX concentration for Run 1	=	163.340	ppmdv

Wheelabrator

CleanAir Project No. 11414

South Broward

Unit 1

6. Drift-Corrected Average Concentration for an entire Run

$$C_{DC} = \left(C - \frac{C_{oi} + C_{of}}{2} \right) \left(\frac{C_{ma}}{\frac{C_{mi} + C_{mf}}{2} - \frac{C_{oi} + C_{of}}{2}} \right)$$

C_{ma}	= concentration of actual calibration gas value	=	225.000	ppmdv
C	= average NOX concentration for Run 1	=	163.340	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	223.557	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	223.516	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.252	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.027	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	164.371	ppmdv

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

CEM Emissions Sample Calculations for NOX FF Outlet

Sample data taken from Run 1 and Channel 3

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

041112 140741

1. NOX concentration (ppmdv)

$$C(ppmdv) = k_1 \times C_{DC} \quad if \quad dry \quad gas$$

$$C(ppmdv) = \frac{k_1 \times C_{DC}}{\left(1 - B_W/100\right)} \quad if \quad wet \quad gas$$

Where:

C_{DC}	= drift corrected average concentration	=	164.371	ppmdv
B_w	= actual water vapor in gas (% v/v)	=	0.000	% v/v
100	= conversion factor to change percentage to decimal	=	100	
k_1	= ppm/% to ppm conversion factor for diluent gases	=	1	
C (ppmdv)	= NOX concentration (ppmdv)	=	164.371	ppmdv

2. NOX concentration (ppmwv)

$$C(ppmwv) = k_1 \times C_{DC} \quad if \quad wet \quad gas$$

$$C(ppmwv) = k_1 \times C_{DC} \times \left(1 - B_W/100\right) \quad if \quad dry \quad gas$$

Where:

C_{DC}	= drift corrected average concentration	=	164.371	ppmdv
B_w	= actual water vapor in gas (% v/v)	=	0.000	% v/v
100	= conversion factor to change percentage to decimal	=	100	
k_1	= ppm/% to ppm conversion factor for diluent gases	=	1	
C (ppmwv)	= NOX concentration (ppmwv)	=	164.371	ppmwv

Wheelabrator

CleanAir Project No. 11414

South Broward

Unit 1

3. NOX concentration (lb/dscf)

$$C(lb/dscf) = \frac{C(ppmdv) \times MW(gas)}{10^6\ ppm \times 385.3}$$

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	164.371	ppmdv
MW	= Molecular Weight of NOX gas	=	46.0055	lb/lb-mole
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
385.3	= molar volume	=	385.3	dscf/lb-mole
C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.963E-05	lb/dscf

4. NOX concentration (%dv)

$$C(\%dv) = C(ppmdv) \times \frac{100}{10^6}$$

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	164.371	ppmdv
100	= conversion factor from decimal to percentage	=	1.00E+02	
10^6	= conversion factor from decimal to ppm	=	1.00E+06	
C (%dv)	= NOX concentration (%dv)	=	0.0164%	%dv

5. NOX concentration (mg/dscm)

$$C(mg/dscm) = C(lb/dscf) \times k_2 \times 35.31$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.963E-05	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
C (mg/dscm)	= NOX concentration (mg/dscm)	=	314.286	mg/dscm

Wheelabrator

CleanAir Project No. 11414

South Broward

Unit 1

6. NOX concentration (mg/Nm3 dry)

$$C \quad (mg/Nm^3\ dry) \quad = C(lb/dscf) \times k_2 \times 35.31 \times \left(\frac{68+460}{32+460}\right)$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.963E-05	lb/dscf
k_2	= conversion factor from lb to mg	=	453515	mg/lb
35.31	= conversion factor from dscf to dscm	=	35.31	ft^3/m^3
68	= standard temperature (°F)	=	68	°F
32	= normal temperature (°F)	=	32	°F
460	= °F to °R conversion constant	=	460	
C (mg/Nm3 dr	= NOX concentration (mg/Nm3 dry)	=	337.283	mg/Nm^3 dry

7. NOX concentration corrected to 7% O2 (ppmdv example)

$$C(ppmdv@x\%02) \quad = C(ppmdv) \times \left(\frac{20.9-x}{20.9-O_2}\right)$$

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	164.371	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	8.563	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2	= NOX concentration corrected to 7% O2 (ppmdv example)	=	185.203	ppmdv @ 7%O2

8. NOX concentration corrected to 12% CO2 (ppmdv example)

$$C(ppmdv@y\%C0_2) \quad = C(ppmdv) \times \left(\frac{y}{CO_2}\right)$$

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	164.371	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.607	%
C (ppmdv -CC	= NOX concentration corrected to 12% CO2 (ppmdv example)	=	185.960	ppmdv @ 12%CO2

9. NOX emission rate (lb/hr)

$$E_{lb/hr} = C\,(lb/dscf) \times Q_{std} \times 60$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.963E-05	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	86725.86239	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
$E_{lb/hr}$	= NOX emission rate (lb/hr)	=	102.126	lb/hr

10. NOX emission rate (kg/hr)

$$E_{kg/hr} = C\,(lb/dscf) \times Q_{std} \times 60 \times 0.454$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.963E-05	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	86725.86239	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
0.454	= conversion factor (kg/lb)	=	0.454	kg/lb
$E_{kg/hr}$	= NOX emission rate (kg/hr)	=	46.316	kg/hr

11. NOX emission rate (gm/sec)

$$E_{gm/sec} = C(lb/dscf) \times Q_{std} \times \frac{454}{60}$$

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.963E-05	lb/dscf
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	86725.86239	dscfm
60	= conversion factor (sec/min)	=	60	sec/min
454	= conversion factor (g/lb)	=	453.515	kg/lb
$E_{gm/sec}$	= NOX emission rate (gm/sec)	=	12.865	gm/sec

CEM RATA Sample Calculations for NOX Unit 1 FF Outlet

Sample data taken from Run 1 and Channel 3

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

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1. NOX value difference between Plant CEM Data and CleanAir RM Data (ppm@7%O2)

$$D = C_R - C_P$$

Where:

C_P	= NOX value from Plant CEM Data	=	193.2000	ppm@7%O2
C_R	= NOX value from CleanAir RM Data	=	185.2026	ppm@7%O2
D	= NOX value difference between 2 methods	=	-7.9974	ppm@7%O2

2. Percent Value Difference (%)

$$D_{\%} = \frac{D}{C_R}$$

Where:

C_R	= NOX value from CleanAir RM Data	=	185.2026	ppm@7%O2
D	= NOX value difference between 2 methods	=	-7.9974	ppm@7%O2
$D_{\%}$	= NOX value difference as a percentage of RM Data	=	-4.3%	

3. Average NOX Value (Plant CEM Data example) (ppm@7%O2)

$$C_{p,avg} = \frac{\sum_{i=1}^{N} C_{p,i}}{N}$$

Where:

			i=1	
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	193.2000	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average NOX value from Plant CEM Data	=	198.7000	ppm@7%O2

4. Standard Deviation of Plant CEM data and CleanAir RM data

$$STDEV = \sqrt{\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)^2 - \frac{\left(\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)\right)^2}{N}}{N-1}}$$

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	185.2026	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	193.2000	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.5721	ppm@7%O2

5. Confidence Coefficient

$$CC = STDEV \times \frac{t}{\sqrt{N}}$$

Where:

STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.5721	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.4398	ppm@7%O2

6. Relative Accuracy (as a percentage of the reference method)

$$RA = \frac{abs\left|\frac{\sum_{i=1}^{N}\left(C_{R,i} - C_{p,i}\right)}{N}\right| + abs\left|CC\right|}{\frac{\sum_{i=1}^{N} C_{R,i}}{N}}$$

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	185.2026	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	193.2000	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.4398	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	4.16%	
		Limit =	20.00%	

7. Relative Accuracy (as a percentage of the applicable standard)

$$RA_{std} = \frac{abs\left|\frac{\sum_{i=1}^{N}(C_{R,i} - C_{p,i})}{N}\right| + abs|CC|}{C_{std}}$$

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	185.2026	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	193.2000	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.4398	
C_{std}	= NOX value of applicable standard	=	205.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	3.88%	
		Limit =	10.00%	

8. Average Absolute Difference

$$AAD = \frac{\sum_{i=1}^{N} abs\left|C_{R,i} - C_{p,i}\right|}{N}$$

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	185.2026	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	193.2000	ppm@7%O2
N	= total Number of RATA Runs	=	9	
AAD	= average absolute difference	=	7.5162	ppm@7%O2

9. Average Absolute Difference, including Confidence Coefficient

$$AAD_{CC} = \frac{\sum_{i=1}^{N} abs\left|C_{R,i} - C_{p,i}\right|}{N} + CC$$

Where:

$C_{R,i}$	= NOX value from CleanAir RM Data for ith run	=	185.2026	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	193.2000	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.4398	ppm@7%O2
AAD_{cc}	= average absolute difference plus confidence coefficient	=	7.9559	ppm@7%O2

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Sample Calculations

Sample data taken from Run 1

Note: The tables presenting the results are generated electronically from raw data. It may not be possible to exactly duplicate these results using a calculator. The reference method data, results, and all calculations are carried to sixteen decimal places throughout. The final table is formatted to an appropriate number of significant figures.

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1. Sample gas pressure (in. Hg)

$$P_s = P_{bar} + \left(\frac{P_g}{13.6}\right)$$

Where:

P_{bar}	= barometric pressure (in. Hg)	=	30.10	in. Hg
P_g	= sample gas static pressure (in. H_2O)	=	-10.50	in. H_2O
13.6	= conversion factor (in. H_2O/in. Hg)	=	85.49	in. H_2O/in. Hg
P_s	= absolute sample gas pressure (in. Hg)	=	29.33	in. Hg

2. Actual water vapor pressure at sample gas temperature less than 212°F (in. Hg)

$$P_v = \frac{e^{\left(18.3036 - \frac{3816.44}{\frac{5}{9}(T_s - 32) + 273.15 - 46.13}\right)}}{25.4}$$

Where:

T_s	= average sample gas temperature (°F)	=	301.08	°F
18.3036	= Antoine coefficient	=	18.3036	°K
3816.44	= Antoine coefficient	=	3816.44	°K
273.15	= temperature conversion factor	=	273.15	°K
46.13	= Antoine coefficient	=	46.13	°K
25.4	= conversion factor	=	25.4	mm Hg/in. Hg
5/9	= Fahrenheit to Celsius conversion factor	=	5/9	°C/°F
32	= temperature conversion (°F)	=	32	°F
P_v	= vapor pressure, actual (in. Hg)	=	29.33	in. Hg

3. Water vapor pressure at gas temperature greater than 212°F (in: Hg)

$$P_v = P_s$$

Where:

P_s	= absolute sample gas pressure (in. Hg)	=	29.33	in. Hg
P_v	= water vapor pressure, actual (in. Hg)	=	29.33	in. Hg

4. Actual water vapor in gas (% by volume)

$$B_w = MINIMUM \quad [B_{wo}, B_{ws}]$$

Where:

B_{ws}	= proportion of water vapor in the gas stream by volume at saturated conditions	=	1.0000	
B_{wo}	= proportion of water measured in the gas stream by volume	=	0.2270	
B_w	= actual water vapor in gas	=	0.2270	
		=	22.70	%

5. Nitrogen (plus carbon monoxide) in gas stream (% by volume, dry)

$$N_2 + CO = 100 - CO_2 - O_2$$

Where:

CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.6	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	8.6	%
100	= conversion factor (%)	=	100	%
N_2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	80.83	%

6. Molecular weight of dry gas stream (lb/lb·mole)

$$M_d = (M_{CO_2})\frac{(CO_2)}{(100)} + (M_{O_2})\frac{(O_2)}{(100)} + (M_{N_2+CO})\frac{(N_2+CO)}{(100)}$$

Where:

M_{CO2}	= molecular weight of carbon dioxide (lb/lb·mole)	=	0.00	lb/lb·mole
M_{O2}	= molecular weight of oxygen (lb/lb·mole)	=	44.00	lb/lb·mole
M_{N2+CO}	= molecular weight of nitrogen and carbon monoxide (lb/lb·mole)	=	32.00	lb/lb·mole
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	10.6	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	8.6	%
N_2+CO	= proportion of nitrogen and CO in the gas stream by volume (%)	=	80.8	%
100	= conversion factor (%)	=	100	%
M_d	= dry molecular weight of sample gas (lb/lb·mole)	=	30.04	lb/lb·mole

7. Molecular weight of sample gas (lb/lb·mole)

$$M_s = (M_d)(1 - B_w) + (M_{H_2O})(B_w)$$

Where:

B_w	= proportion of water vapor in the gas stream by volume	=	0.2270	
M_d	= dry molecular weight of sample gas (lb/lb·mole)	=	30.04	lb/lb·mole
M_{H2O}	= molecular weight of water (lb/lb·mole)	=	28.00	lb/lb·mole
M_s	= molecular weight of sample gas, wet basis (lb/lb·mole)	=	27.31	lb/lb·mole

8. Velocity of sample gas (ft/sec)

$$V_s = (K_p)(C_P)\left(\sqrt{\overline{\Delta P}}\right)\left(\sqrt{\frac{(\overline{T_s}+460)}{(M_s)(P_s)}}\right)$$

Where:

K_p	= velocity pressure constant	=	0.05	
C_p	= pitot tube coefficient	=	0.83	
M_s	= wet molecular weight of sample gas, wet basis (lb/lb·mole)	=	27.31	lb/lb·mole
P_s	= absolute sample gas pressure (in. Hg)	=	29.33	in. Hg
T_s	= average sample gas temperature (°F)	=	301.08	°F
$\sqrt{\Delta P}$	= average square roots of velocity heads of sample gas (in. H_2O)	=	0.623	$\sqrt{}$in. H_2O
460	= °F to °R conversion constant	=	68	
V_s	= sample gas velocity (ft/sec)	=	42.96	ft/sec

9. Volumetric flow rate of sample gas at actual gas conditions (acfm)

$$Q_a = (60)(A_s)(V_s)$$

Where:

A_s	= cross sectional area of sampling location (ft^2)	=	64.00	ft^2
V_s	= sample gas velocity (ft/sec)	=	42.96	ft/sec
60	conversion factor (sec/min)	=	60	sec/min
Q_a	= volumetric flow rate at actual conditions (acfm)	=	164,982	acfm

10. Total flow of sample gas (scfm)

$$Q_s = (Q_a)\left(\frac{P_s}{29.92}\right)\left(\frac{68+460}{T_s+460}\right)$$

Where:

Q_a	= volumetric flow rate at actual conditions (acfm)	=	164,982	acfm
P_s	= absolute sample gas pressure (in. Hg)	=	29.33	in. Hg
29.92	= standard pressure (in. Hg)	=	32.00	in. Hg
T_s	= average sample gas temperature (°F)	=	301.1	°F
68	= standard temperature (°F)	=	0.0945	°F
460	= °F to °R conversion constant	=	68	
Q_s	= volumetric flow rate at standard conditions, wet basis (scfm)	=	112,191	scfm

11. Dry flow of sample gas (dscfm)

$$Q_{std} = (Q_s)(1 - B_w)$$

Where:

B_w	= proportion of water vapor in the gas stream by volume	=	0.2270	
Q_s	= volumetric flow rate at standard conditions, wet basis (scfm)	=	112,191	scfm
Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	6,731,485	dscfm

12. Dry flow of sample gas corrected to 7%O_2 (dscfm)

$$Q_{std\,7} = (Q_{std})\left(\frac{20.9 - O_2}{20.9 - 7}\right)$$

Where:

Q_{std}	= volumetric flow rate at standard conditions, dry basis (dscfm)	=	6,731,485	dscfm
O_2	= proportion of oxygen in the gas stream by volume (%)	=	8.6	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
7	= oxygen content of corrected gas (%)	=	7.0	%
Q_{std7}	= volumetric flow rate at STP and 7%O_2, dry basis (dscfm)	=	86,726	dscfm

13. Hourly time basis conversion of volumetric flow rate (Q_{std} example)

$$Q_{std-hr} = (Q_{std-min})(60)$$

Where

$Q_{std-min}$	= volumetric flow rate, english units (ft^3/min)	=	6,731,485	dscfm
60	= conversion factor (min/hr)	=	60	min/hr
Q_{std-hr}	= volumetric flow rate, hourly basis (dscf/hr)	=	6,731,485	dscf/hr

14. Metric Conversion of Gas Volumes (Q_{std} example)

$$Q_{std-metric} = (Q_{std-english})\left(\frac{60}{35.31}\right)$$

Where:

$Q_{std-english}$	= volumetric flow rate, english units (ft^3/min)	=	6,731,485	dscfm
35.31	= conversion factor (ft^3/m^3)	=	460.00	ft^3/m^3
60	= conversion factor (min/hr)	=	60	min/hr
$Q_{std-metric}$	= volumetric flow rate, metric units (m^3/hr)	=	190,640	dry std m^3/hr

15. Standard to Normal Conversion of Gas Volumes (Q_{std} example)

$$Q_{Normal} = (Q_{std-metric})\left(\frac{32 + 460}{68 + 460}\right)$$

Where:

$Q_{std-metric}$	= volumetric flow rate, metric units (dry std m^3/hr)	=	190,640	dry std m^3/hr
32	= normal temperature (°F)	=	35.31	°F
68	standard temperature (°F)	=	0.0945	°F
460	= standard temperature in Rankine (68°F)	=	68	
Q_{Normal}	= volumetric flow rate, metric units (dry Nm^3/hr)	=	177,641	dry Nm^3/hr

PARAMETERS

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I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified as accurate.

QA/QC Initials: MC

Date: 4/27/12

CleanAir.

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Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2012)	Mar 22				
Start Time	6:48				
End Time	7:15				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.56	10.61	164.37	5.59	11.55
Concentration (ppmdv)		106068.56	164.37	5.59	11.55
Concentration (lb/dscf)		1.212E-02	1.963E-05	4.064E-07	1.921E-06
Concentration (%dv)	8.563	10.607	0.016	0.001	0.001
Concentration (mg/dscm)		194011.80	314.29	6.51	30.76
Concentration @7%O2 (ppm)		119511.12	185.20	6.30	13.02
Concentration @12%CO2 (ppm)		120000.00	185.96	6.32	13.07
Mass Rate (lb/hr)		63043.29	102.13	2.11	10.00
Run Number	2				
Date (2012)	Mar 22				
Start Time	7:32				
End Time	7:59				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.70	10.21	158.52	4.94	11.41
Concentration (ppmdv)		102138.97	158.52	4.94	11.41
Concentration (lb/dscf)		1.167E-02	1.893E-05	3.594E-07	1.898E-06
Concentration (%dv)	8.701	10.214	0.016	0.000	0.001
Concentration (mg/dscm)		186824.13	303.10	5.75	30.39
Concentration @7%O2 (ppm)		116377.13	180.62	5.63	13.01
Concentration @12%CO2 (ppm)		120000.00	186.24	5.81	13.41
Mass Rate (lb/hr)		57946.26	94.01	1.78	9.43
Run Number	3				
Date (2012)	Mar 22				
Start Time	8:14				
End Time	8:41				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.57	10.42	172.14	6.79	11.04
Concentration (ppmdv)		104235.22	172.14	6.79	11.04
Concentration (lb/dscf)		1.191E-02	2.055E-05	4.938E-07	1.836E-06
Concentration (%dv)	8.569	10.424	0.017	0.001	0.001
Concentration (mg/dscm)		190658.42	329.14	7.91	29.40
Concentration @7%O2 (ppm)		117497.77	194.04	7.66	12.45
Concentration @12%CO2 (ppm)		120000.00	198.18	7.82	12.71
Mass Rate (lb/hr)		62463.07	107.83	2.59	9.63

Wheelabrator
Clean Air Project No. 11414
South Broward
Unit 1

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2012)	Mar 22				
Start Time	8:53				
End Time	9:20				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.02	10.00	161.88	5.20	4.89
Concentration (ppmdv)		100038.82	161.88	5.20	4.89
Concentration (lb/dscf)		1.143E-02	1.933E-05	3.778E-07	8.133E-07
Concentration (%dv)	9.021	10.004	0.016	0.001	0.000
Concentration (mg/dscm)		182982.70	309.52	6.05	13.02
Concentration @7%O2 (ppm)		117056.84	189.42	6.08	5.72
Concentration @12%CO2 (ppm)		120000.00	194.18	6.23	5.87
Mass Rate (lb/hr)		60567.43	102.45	2.00	4.31
Run Number	5				
Date (2012)	Mar 22				
Start Time	9:32				
End Time	9:59				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.34	9.66	162.20	5.48	4.94
Concentration (ppmdv)		96635.63	162.20	5.48	4.94
Concentration (lb/dscf)		1.104E-02	1.937E-05	3.984E-07	8.214E-07
Concentration (%dv)	9.345	9.664	0.016	0.001	0.000
Concentration (mg/dscm)		176757.88	310.13	6.38	13.15
Concentration @7%O2 (ppm)		116244.64	195.11	6.59	5.94
Concentration @12%CO2 (ppm)		120000.00	201.41	6.81	6.13
Mass Rate (lb/hr)		59408.98	104.23	2.14	4.42
Run Number	6				
Date (2012)	Mar 22				
Start Time	10:12				
End Time	10:39				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.80	10.12	162.97	5.48	7.45
Concentration (ppmdv)		101208.47	162.97	5.48	7.45
Concentration (lb/dscf)		1.156E-02	1.946E-05	3.986E-07	1.238E-06
Concentration (%dv)	8.799	10.121	0.016	0.001	0.001
Concentration (mg/dscm)		185122.13	311.60	6.38	19.83
Concentration @7%O2 (ppm)		116252.90	187.19	6.30	8.55
Concentration @12%CO2 (ppm)		120000.00	193.23	6.50	8.83
Mass Rate (lb/hr)		59497.87	100.15	2.05	6.37

Wheelabrator
Clean Air Project No. 11414
South Broward
Unit 1

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2012)	Mar 22				
Start Time	10:51				
End Time	11:18				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.69	10.30	175.55	5.66	4.85
Concentration (ppmdv)		102955.21	175.55	5.66	4.85
Concentration (lb/dscf)		1.176E-02	2.096E-05	4.113E-07	8.066E-07
Concentration (%dv)	8.694	10.296	0.018	0.001	0.000
Concentration (mg/dscm)		188317.12	335.66	6.59	12.92
Concentration @7%O2 (ppm)		117248.24	199.92	6.44	5.52
Concentration @12%CO2 (ppm)		120000.00	204.61	6.59	5.65
Mass Rate (lb/hr)		61526.81	109.67	2.15	4.22
Run Number	8				
Date (2012)	Mar 22				
Start Time	11:33				
End Time	12:00				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.10	10.01	162.89	7.83	2.07
Concentration (ppmdv)		100079.83	162.89	7.83	2.07
Concentration (lb/dscf)		1.143E-02	1.945E-05	5.689E-07	3.449E-07
Concentration (%dv)	9.100	10.008	0.016	0.001	0.000
Concentration (mg/dscm)		183057.72	311.45	9.11	5.52
Concentration @7%O2 (ppm)		117893.39	191.88	9.22	2.44
Concentration @12%CO2 (ppm)		120000.00	195.31	9.38	2.49
Mass Rate (lb/hr)		62930.17	107.07	3.13	1.90

Wheelabrator
Clean Air Project No. 11414
South Broward
Unit 1

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2012)	Mar 22				
Start Time	12:14				
End Time	12:41				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.16	10.00	167.24	7.83	2.90
Concentration (ppmdv)		99982.96	167.24	7.83	2.90
Concentration (lb/dscf)		1.142E-02	1.997E-05	5.691E-07	4.827E-07
Concentration (%dv)	9.162	9.998	0.017	0.001	0.000
Concentration (mg/dscm)		182880.53	319.78	9.11	7.73
Concentration @7%O2 (ppm)		118399.66	198.05	9.27	3.44
Concentration @12%CO2 (ppm)		120000.00	200.73	9.40	3.48
Mass Rate (lb/hr)		58585.24	102.44	2.92	2.48
Run Number	10				
Date (2012)	Mar 22				
Start Time	12:53				
End Time	13:20				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	8.90	10.12	166.82	7.89	2.52
Concentration (ppmdv)		101156.33	166.82	7.89	2.52
Concentration (lb/dscf)		1.155E-02	1.992E-05	5.737E-07	4.191E-07
Concentration (%dv)	8.901	10.116	0.017	0.001	0.000
Concentration (mg/dscm)		185026.76	318.98	9.19	6.71
Concentration @7%O2 (ppm)		117186.73	193.26	9.14	2.92
Concentration @12%CO2 (ppm)		120000.00	197.90	9.36	2.99
Mass Rate (lb/hr)		60716.69	104.67	3.01	2.20

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 1 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		1	2	3	4
Date (2012)		Mar 22	Mar 22	Mar 22	Mar 22
Start Time (approx.)		07:55	08:31	09:19	09:58
Stop Time (approx.)		08:04	08:40	09:29	10:06
Sampling Conditions					
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-10.5000	-10.6000	-10.8000	-10.7000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.10	30.10	30.10	30.10
O_2	Oxygen (dry volume %)	8.5635	8.7006	8.5690	9.0208
CO_2	Carbon dioxide (dry volume %)	10.6069	10.2139	10.4235	10.0039
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.8297	81.0855	81.0075	80.9753
T_s	Sample temperature (°F)	301.0800	300.4400	301.2400	301.2400
Flow Results					
P_s	Sample gas pressure, absolute (in. Hg)	29.3279	29.3206	29.3059	29.3132
P_v	Vapor pressure, actual (in. Hg)	29.3279	29.3206	29.3059	29.3132
B_{wo}	Moisture measured in sample (% by volume)	22.6983	22.6983	23.3964	23.3964
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	22.6983	22.6983	23.3964	23.3964
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.6234	0.5944	0.6333	0.6393
M_d	MW of sample gas, dry (lb/lb-mole)	30.0396	29.9822	30.0105	29.9615
M_s	MW of sample gas, wet (lb/lb-mole)	27.3068	27.2625	27.2005	27.1629
V_s	Velocity of sample (ft/sec)	42.9640	40.9855	43.7542	44.1949
Q_a	Volumetric flow rate, actual (acfm)	164,982	157,384	168,016	169,708
Q_s	Volumetric flow rate, standard (scfm)	112,191	107,088	114,145	115,324
Q_s	Volumetric flow rate, standard (scfh)	6,731,485	6,425,288	6,848,689	6,919,413
Q_{std}	Volumetric flow rate, dry standard (dscfm)	86,726	82,781	87,439	88,342

Comments:

Moistures obtained from Method 26A Runs 1 and 2

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 1 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		**5**	**6**	**7**
Date (2012)		Mar 22	Mar 22	Mar 22
Start Time (approx.)		10:41	11:25	12:03
Stop Time (approx.)		10:50	11:34	12:13
Sampling Conditions				
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-10.7000	-10.7000	-11.5000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.10	30.10	30.10
O_2	Oxygen (dry volume %)	9.3448	8.7988	8.6945
CO_2	Carbon dioxide (dry volume %)	9.6636	10.1208	10.2955
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.9917	81.0803	81.0100
T_s	Sample temperature (°F)	301.7600	302.5200	303.6400
Flow Results				
P_s	Sample gas pressure, absolute (in. Hg)	29.3132	29.3132	29.2544
P_v	Vapor pressure, actual (in. Hg)	29.3132	29.3132	29.2544
B_{wo}	Moisture measured in sample (% by volume)	22.2847	22.2847	22.3108
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	22.2847	22.2847	22.3108
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.6413	0.6140	0.6256
M_d	MW of sample gas, dry (lb/lb-mole)	29.9200	29.9713	29.9951
M_s	MW of sample gas, wet (lb/lb-mole)	27.2636	27.3035	27.3189
V_s	Velocity of sample (ft/sec)	44.2645	42.3700	43.2360
Q_a	Volumetric flow rate, actual (acfm)	169,976	162,701	166,026
Q_s	Volumetric flow rate, standard (scfm)	115,426	110,376	112,241
Q_s	Volumetric flow rate, standard (scfh)	6,925,580	6,622,559	6,734,467
Q_{std}	Volumetric flow rate, dry standard (dscfm)	89,704	85,779	87,199

Comments:

Moistures obtained from Method 26A Runs 3 and Method 4 Run 1

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 1 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		8	9	10
Date (2012)		Mar 22	Mar 22	Mar 22
Start Time (approx.)		12:39	13:17	13:57
Stop Time (approx.)		12:49	13:27	14:06
Sampling Conditions				
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-11.6000	-11.7000	-11.6000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.10	30.10	30.10
O_2	Oxygen (dry volume %)	9.1003	9.1621	8.9014
CO_2	Carbon dioxide (dry volume %)	10.0080	9.9983	10.1156
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.8917	80.8396	80.9829
T_s	Sample temperature (°F)	303.6400	302.4800	302.4400
Flow Results				
P_s	Sample gas pressure, absolute (in. Hg)	29.2471	29.2397	29.2471
P_v	Vapor pressure, actual (in. Hg)	29.2471	29.2397	29.2471
B_{wo}	Moisture measured in sample (% by volume)	22.3108	22.9567	22.9567
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	22.3108	22.9567	22.9567
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.6581	0.6171	0.6321
M_d	MW of sample gas, dry (lb/lb-mole)	29.9653	29.9662	29.9746
M_s	MW of sample gas, wet (lb/lb-mole)	27.2957	27.2192	27.2256
V_s	Velocity of sample (ft/sec)	45.5042	42.7047	43.7317
Q_a	Volumetric flow rate, actual (acfm)	174,736	163,986	167,930
Q_s	Volumetric flow rate, standard (scfm)	118,100	110,975	113,678
Q_s	Volumetric flow rate, standard (scfh)	7,085,973	6,658,480	6,820,684
Q_{std}	Volumetric flow rate, dry standard (dscfm)	91,751	85,499	87,581

Comments:

Moistures obtained from Method 4 Runs 1 and 2

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 1 FF Outlet

USEPA Method 26A (HCl)
Sampling, Velocity and Moisture Parameters

Run No.		1	2	3	Average
Date (2012)		Mar 22	Mar 22	Mar 22	
Start Time (approx.)		07:44	09:07	10:32	
Stop Time (approx.)		08:44	10:07	11:32	
Sampling Conditions					
Y_d	Dry gas meter correction factor	0.9925	0.9925	0.9925	
P_g	Static pressure (in. H_2O)	-10.5000	-10.8000	-10.7000	
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000	
P_{bar}	Barometric pressure (in. Hg)	30.10	30.10	30.10	**30.1000**
O_2	Oxygen (dry volume %)	9.1500	8.6800	9.2000	**9.0100**
CO_2	Carbon dioxide (dry volume %)	9.9500	10.3400	9.7900	**10.0267**
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.9000	80.9800	81.0100	**80.9633**
V_{lc}	Total Liquid collected (ml)	250.50	260.80	246.00	
V_m	Volume metered, meter conditions (ft^3)	40.9350	41.2200	41.6450	
T_m	Dry gas meter temperature (°F)	79.2917	82.5417	85.5833	
T_s	Sample temperature (°F)	301.0000	302.3333	302.5000	**301.9444**
ΔH	Meter box orifice pressure drop (in. H_2O)	1.5000	1.5000	1.5000	
θ	Total sampling time (min)	60.0	60.0	60.0	
Flow Results					
V_{wstd}	Volume of water collected (ft^3)	11.7885	12.2732	11.5768	**11.8795**
V_{mstd}	Volume metered, standard (dscf)	40.1472	40.1845	40.3725	**40.2347**
P_s	Sample gas pressure, absolute (in. Hg)	29.3279	29.3059	29.3132	**29.3157**
P_v	Vapor pressure, actual (in. Hg)	29.3279	29.3059	29.3132	**29.3157**
B_{wo}	Moisture measured in sample (% by volume)	22.6983	23.3964	22.2847	**22.7932**
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	**100.0000**
B_w	Actual water vapor in gas (% by volume)	22.6983	23.3964	22.2847	**22.7932**
M_d	MW of sample gas, dry (lb/lb-mole)	29.9580	30.0016	29.9344	**29.9647**
M_s	MW of sample gas, wet (lb/lb-mole)	27.2437	27.1937	27.2749	**27.2374**

Comments:

Average includes 3 runs.

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Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 1 FF Outlet

USEPA Method 4
Sampling, Velocity and Moisture Parameters

Run No.		1	2	Average
Date (2012)		Mar 22	Mar 22	
Start Time (approx.)		12:00	13:17	
Stop Time (approx.)		12:45	14:02	
Sampling Conditions				
Y_d	Dry gas meter correction factor	0.9925	0.9925	
P_g	Static pressure (in. H_2O)	-11.5000	-11.7000	**-11.6000**
P_{bar}	Barometric pressure (in. Hg)	30.10	30.10	**30.1000**
V_{lc}	Total Liquid collected (ml)	170.10	175.80	
V_m	Volume metered, meter conditions (ft^3)	28.8150	28.7400	
T_m	Dry gas meter temperature (°F)	86.5000	87.2222	
ΔH	Meter box orifice pressure drop (in. H_2O)	1.3000	1.3000	
θ	Total sampling time (min)	45.0	45.0	
Flow Results				
V_{wstd}	Volume of water collected (ft^3)	8.0049	8.2731	**8.1390**
V_{mstd}	Volume metered, standard (dscf)	27.8741	27.7649	**27.8195**
P_s	Sample gas pressure, absolute (in. Hg)	29.2544	29.2397	**29.2471**
B_{wo}	Moisture measured in sample (% by volume)	22.3108	22.9567	**22.6338**
B_w	Actual water vapor in gas (% by volume)	22.3108	22.9567	**22.6338**

Comments:

Average includes 2 runs.

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Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2012)	Mar 20				
Start Time	7:08				
End Time	7:35				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.42	9.77	147.05	15.50	1.73
Concentration (ppmdv)			147.05	15.50	1.73
Concentration (lb/dscf)			1.756E-05	1.127E-06	2.873E-07
Concentration (%dv)	9.421	9.767	0.015	0.002	0.000
Concentration (mg/dscm)			281.17	18.04	4.60
Concentration @7%O2 (ppm)			178.07	18.76	2.09
Concentration @12%CO2 (ppm)			180.68	19.04	2.12
Run Number	2				
Date (2012)	Mar 20				
Start Time	7:53				
End Time	8:20				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.53	9.66	146.98	9.20	3.88
Concentration (ppmdv)			146.98	9.20	3.88
Concentration (lb/dscf)			1.755E-05	6.685E-07	6.448E-07
Concentration (%dv)	9.534	9.656	0.015	0.001	0.000
Concentration (mg/dscm)			281.04	10.71	10.33
Concentration @7%O2 (ppm)			179.76	11.25	4.74
Concentration @12%CO2 (ppm)			182.67	11.43	4.82
Run Number	3				
Date (2012)	Mar 20				
Start Time	8:41				
End Time	9:05				
Elapsed Time (hh:mm)	00:24				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.51	9.63	156.09	13.41	5.46
Concentration (ppmdv)			156.09	13.41	5.46
Concentration (lb/dscf)			1.864E-05	9.751E-07	9.070E-07
Concentration (%dv)	9.506	9.632	0.016	0.001	0.001
Concentration (mg/dscm)			298.46	15.62	14.52
Concentration @7%O2 (ppm)			190.42	16.36	6.65
Concentration @12%CO2 (ppm)			194.48	16.71	6.80

Wheelabrator
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Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2012)	Mar 20				
Start Time	9:18				
End Time	9:45				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.53	9.62	145.26	15.08	4.97
Concentration (ppmdv)			145.26	15.08	4.97
Concentration (lb/dscf)			1.734E-05	1.097E-06	8.257E-07
Concentration (%dv)	9.534	9.616	0.015	0.002	0.000
Concentration (mg/dscm)			277.75	17.56	13.22
Concentration @7%O2 (ppm)			177.65	18.45	6.07
Concentration @12%CO2 (ppm)			181.27	18.82	6.20

Run Number	5				
Date (2012)	Mar 20				
Start Time	10:09				
End Time	10:36				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.49	9.57	154.74	10.32	3.13
Concentration (ppmdv)			154.74	10.32	3.13
Concentration (lb/dscf)			1.848E-05	7.501E-07	5.212E-07
Concentration (%dv)	9.486	9.570	0.015	0.001	0.000
Concentration (mg/dscm)			295.87	12.01	8.35
Concentration @7%O2 (ppm)			188.45	12.57	3.82
Concentration @12%CO2 (ppm)			194.02	12.94	3.93

Run Number	6				
Date (2012)	Mar 20				
Start Time	10:48				
End Time	11:15				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.55	9.55	144.03	13.61	3.65
Concentration (ppmdv)			144.03	13.61	3.65
Concentration (lb/dscf)			1.720E-05	9.897E-07	6.068E-07
Concentration (%dv)	9.549	9.552	0.014	0.001	0.000
Concentration (mg/dscm)			275.38	15.85	9.72
Concentration @7%O2 (ppm)			176.37	16.67	4.47
Concentration @12%CO2 (ppm)			180.93	17.10	4.58

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Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2012)	Mar 20				
Start Time	11:29				
End Time	11:56				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.56	9.58	141.05	9.19	2.80
Concentration (ppmdv)		95798.10	141.05	9.19	2.80
Concentration (lb/dscf)		1.094E-02	1.684E-05	6.682E-07	4.648E-07
Concentration (%dv)	9.562	9.580	0.014	0.001	0.000
Concentration (mg/dscm)		175225.92	269.69	10.70	7.44
Concentration @7%O2 (ppm)		117440.10	172.91	11.27	3.43
Concentration @12%CO2 (ppm)		120000.00	176.68	11.51	3.50
Mass Rate (lb/hr)		68192.86	104.96	4.16	2.90
Run Number	8				
Date (2012)	Mar 20				
Start Time	12:10				
End Time	12:37				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.78	9.44	145.31	12.43	5.32
Concentration (ppmdv)		94389.70	145.31	12.43	5.32
Concentration (lb/dscf)		1.078E-02	1.735E-05	9.035E-07	8.853E-07
Concentration (%dv)	9.776	9.439	0.015	0.001	0.001
Concentration (mg/dscm)		172649.81	277.84	14.47	14.18
Concentration @7%O2 (ppm)		117940.50	181.56	15.53	6.65
Concentration @12%CO2 (ppm)		120000.00	184.73	15.80	6.77
Mass Rate (lb/hr)		65359.86	105.18	5.48	5.37
Run Number	9				
Date (2012)	Mar 20				
Start Time	12:52				
End Time	13:19				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.40	9.78	164.29	13.19	4.53
Concentration (ppmdv)		97798.73	164.29	13.19	4.53
Concentration (lb/dscf)		1.117E-02	1.962E-05	9.589E-07	7.531E-07
Concentration (%dv)	9.402	9.780	0.016	0.001	0.000
Concentration (mg/dscm)		178885.32	314.13	15.36	12.06
Concentration @7%O2 (ppm)		118224.79	198.60	15.94	5.48
Concentration @12%CO2 (ppm)		120000.00	201.58	16.18	5.56
Mass Rate (lb/hr)		68923.32	121.03	5.92	4.65

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Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2012)	Mar 20				
Start Time	13:33				
End Time	14:00				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.72	9.54	153.14	11.27	3.35
Concentration (ppmdv)		95389.77	153.14	11.27	3.35
Concentration (lb/dscf)		1.090E-02	1.829E-05	8.193E-07	5.564E-07
Concentration (%dv)	9.721	9.539	0.015	0.001	0.000
Concentration (mg/dscm)		174479.06	292.81	13.12	8.91
Concentration @7%O2 (ppm)		118606.89	190.41	14.01	4.16
Concentration @12%CO2 (ppm)		120000.00	192.65	14.18	4.21
Mass Rate (lb/hr)		70431.13	118.20	5.30	3.60

Run Number	11	
Date (2012)	Mar 20	
Start Time	14:14	
End Time	14:38	
Elapsed Time (hh:mm)	00:24	
Channel	1	2
Parameter	O2	CO2
Location	FF Outlet	FF Outlet
Measurement Units	%dv	%dv
Measured Average (drift-corrected)	9.72	9.60
Concentration (ppmdv)		95951.15
Concentration (lb/dscf)		1.096E-02
Concentration (%dv)	9.720	9.595
Concentration (mg/dscm)		175505.88
Concentration @7%O2 (ppm)		119293.87
Concentration @12%CO2 (ppm)		120000.00
Mass Rate (lb/hr)		68229.18

Run Number	12	
Date (2012)	Mar 20	
Start Time	14:44	
End Time	15:08	
Elapsed Time (hh:mm)	00:24	
Channel	1	2
Parameter	O2	CO2
Location	FF Outlet	FF Outlet
Measurement Units	%dv	%dv
Measured Average (drift-corrected)	9.50	9.86
Concentration (ppmdv)		98551.25
Concentration (lb/dscf)		1.126E-02
Concentration (%dv)	9.496	9.855
Concentration (mg/dscm)		180261.77
Concentration @7%O2 (ppm)		120118.65
Concentration @12%CO2 (ppm)		120000.00
Mass Rate (lb/hr)		71025.12

Wheelabrator
Clean Air Project No. 11414
South Broward
Unit 2

Continuous Emissions Monitoring Parameters

Run Number	13	
Date (2012)	Mar 20	
Start Time	15:18	
End Time	15:42	
Elapsed Time (hh:mm)	00:24	
Channel	1	2
Parameter	O2	CO2
Location	FF Outlet	FF Outlet
Measurement Units	%dv	%dv
Measured Average (drift-corrected)	9.44	9.83
Concentration (ppmdv)		98278.12
Concentration (lb/dscf)		1.123E-02
Concentration (%dv)	9.443	9.828
Concentration (mg/dscm)		179762.18
Concentration @7%O2 (ppm)		119231.20
Concentration @12%CO2 (ppm)		120000.00
Mass Rate (lb/hr)		69425.21
Run Number	14	
Date (2012)	Mar 20	
Start Time	15:51	
End Time	16:15	
Elapsed Time (hh:mm)	00:24	
Channel	1	2
Parameter	O2	CO2
Location	FF Outlet	FF Outlet
Measurement Units	%dv	%dv
Measured Average (drift-corrected)	9.71	9.51
Concentration (ppmdv)		95145.04
Concentration (lb/dscf)		1.087E-02
Concentration (%dv)	9.708	9.515
Concentration (mg/dscm)		174031.40
Concentration @7%O2 (ppm)		118165.96
Concentration @12%CO2 (ppm)		120000.00
Mass Rate (lb/hr)		68162.71
Run Number	15	
Date (2012)	40988	
Start Time	0.682118056	
End Time	0.698784722	
Elapsed Time (hh:mm)	0.016666667	
Channel	1.00	2.00
Parameter	O2	CO2
Measurement Units	%dv	%dv
Concentration (ppmwv)		98151.57
Concentration (lb/dscf)		0.011
Concentration (%dv)	9.399E+00	9.815E+00
Concentration (mg/dscm)		179530.695
Concentration @7%O2 (ppm)		118625.14
Concentration @12%CO2 (ppm)		120000.00
Mass Rate (lb/hr)		69758.63

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 2 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		1	2	3
Date (2012)		Mar 20	Mar 20	Mar 20
Start Time (approx.)		12:28	13:10	13:58
Stop Time (approx.)		12:39	13:21	14:08
Sampling Conditions				
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-15.8000	-15.3000	-13.9000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05
O_2	Oxygen (dry volume %)	9.5615	9.7756	9.4015
CO_2	Carbon dioxide (dry volume %)	9.5798	9.4390	9.7799
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.8587	80.7854	80.8186
T_s	Sample temperature (°F)	292.5600	292.5200	291.4400
Flow Results				
P_s	Sample gas pressure, absolute (in. Hg)	28.8882	28.9250	29.0279
P_v	Vapor pressure, actual (in. Hg)	28.8882	28.9250	29.0279
B_{wo}	Moisture measured in sample (% by volume)	20.8899	20.8899	21.5197
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	20.8899	20.8899	21.5197
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.7325	0.7119	0.7280
M_d	MW of sample gas, dry (lb/lb-mole)	29.9152	29.9013	29.9408
M_s	MW of sample gas, wet (lb/lb-mole)	27.4261	27.4151	27.3712
V_s	Velocity of sample (ft/sec)	50.4735	49.0334	50.0545
Q_a	Volumetric flow rate, actual (acfm)	193,818	188,288	192,209
Q_s	Volumetric flow rate, standard (scfm)	131,295	127,718	131,029
Q_s	Volumetric flow rate, standard (scfh)	7,877,671	7,663,062	7,861,762
Q_{std}	Volumetric flow rate, dry standard (dscfm)	103,867	101,038	102,832

Comments:

Moistures obtained from M26A Run 3 and Method 4 Run 1

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 2 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		4	5	6
Date (2012)		Mar 20	Mar 20	Mar 20
Start Time (approx.)		14:36	15:18	15:45
Stop Time (approx.)		14:47	15:29	15:55
Sampling Conditions				
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-13.8000	-13.9000	-13.9000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05
O_2	Oxygen (dry volume %)	9.7209	9.7199	9.4958
CO_2	Carbon dioxide (dry volume %)	9.5390	9.5951	9.8551
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.7401	80.6850	80.6491
T_s	Sample temperature (°F)	292.3600	291.9200	292.2000
Flow Results				
P_s	Sample gas pressure, absolute (in. Hg)	29.0353	29.0279	29.0279
P_v	Vapor pressure, actual (in. Hg)	29.0353	29.0279	29.0279
B_{wo}	Moisture measured in sample (% by volume)	21.5197	20.6429	20.6429
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	21.5197	20.6429	20.6429
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.7628	0.7279	0.7382
M_d	MW of sample gas, dry (lb/lb-mole)	29.9151	29.9240	29.9567
M_s	MW of sample gas, wet (lb/lb-mole)	27.3510	27.4626	27.4885
V_s	Velocity of sample (ft/sec)	52.4922	49.9784	50.6727
Q_a	Volumetric flow rate, actual (acfm)	201,570	191,917	194,583
Q_s	Volumetric flow rate, standard (scfm)	137,277	130,747	132,514
Q_s	Volumetric flow rate, standard (scfh)	8,236,634	7,844,794	7,950,811
Q_{std}	Volumetric flow rate, dry standard (dscfm)	107,736	103,757	105,159

Comments:

Moistures obtained from Method 4 Runs 1 and 2

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 2 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		7	8	9
Date (2012)		Mar 20	Mar 20	Mar 20
Start Time (approx.)		16:19	16:52	17:24
Stop Time (approx.)		16:28	17:04	17:33
Sampling Conditions				
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-14.9000	-15.1000	-14.7000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05
O_2	Oxygen (dry volume %)	9.4427	9.7080	9.3990
CO_2	Carbon dioxide (dry volume %)	9.8278	9.5145	9.8152
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.7295	80.7775	80.7858
T_s	Sample temperature (°F)	293.0400	294.2400	295.2800
Flow Results				
P_s	Sample gas pressure, absolute (in. Hg)	28.9544	28.9397	28.9691
P_v	Vapor pressure, actual (in. Hg)	28.9544	28.9397	28.9691
B_{wo}	Moisture measured in sample (% by volume)	21.2210	21.2210	21.1395
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	21.2210	21.2210	21.1395
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.7292	0.7399	0.7339
M_d	MW of sample gas, dry (lb/lb-mole)	29.9502	29.9106	29.9464
M_s	MW of sample gas, wet (lb/lb-mole)	27.4142	27.3831	27.4210
V_s	Velocity of sample (ft/sec)	50.2165	51.0339	50.5949
Q_a	Volumetric flow rate, actual (acfm)	192,831	195,970	194,284
Q_s	Volumetric flow rate, standard (scfm)	130,842	132,693	131,504
Q_s	Volumetric flow rate, standard (scfh)	7,850,506	7,961,558	7,890,212
Q_{std}	Volumetric flow rate, dry standard (dscfm)	103,076	104,534	103,704

Comments:

Average includes 3 runs.

Moistures obtained from Method 4 Runs 3 and 4

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 2 FF Outlet

USEPA Method 26A (HCl)
Sampling, Velocity and Moisture Parameters

Run No.		**3**
Date (2012)		Mar 20
Start Time (approx.)		12:22
Stop Time (approx.)		13:22
Sampling Conditions		
Y_d	Dry gas meter correction factor	0.9915
P_g	Static pressure (in. H_2O)	-15.8000
A_s	Sample location area (ft^2)	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.05
O_2	Oxygen (dry volume %)	9.6000
CO_2	Carbon dioxide (dry volume %)	9.8000
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.6000
V_{lc}	Total Liquid collected (ml)	222.90
V_m	Volume metered, meter conditions (ft^3)	41.3650
T_m	Dry gas meter temperature (°F)	89.2917
T_s	Sample temperature (°F)	293.3333
ΔH	Meter box orifice pressure drop (in. H_2O)	1.5000
θ	Total sampling time (min)	60.0
Flow Results		
V_{wstd}	Volume of water collected (ft^3)	10.4897
V_{mstd}	Volume metered, standard (dscf)	39.7244
P_s	Sample gas pressure, absolute (in. Hg)	28.8882
P_v	Vapor pressure, actual (in. Hg)	28.8882
B_{wo}	Moisture measured in sample (% by volume)	20.8899
B_{ws}	Saturated moisture content (% by volume)	100.0000
B_w	Actual water vapor in gas (% by volume)	20.8899
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.0000
M_d	MW of sample gas, dry (lb/lb-mole)	29.9520
M_s	MW of sample gas, wet (lb/lb-mole)	27.4552

Comments:

Wheelabrator South Broward, Inc.
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Unit 2 FF Outlet

USEPA Method 4
Sampling, Velocity and Moisture Parameters

Run No.		1	2	3	4	Average
Date (2012)		Mar 20	Mar 20	Mar 20	Mar 20	
Start Time (approx.)		13:52	15:18	16:18	17:22	
Stop Time (approx.)		14:52	16:03	17:03	17:52	
Sampling Conditions						
Y_d	Dry gas meter correction factor	1.0061	1.0061	1.0061	1.0061	
P_g	Static pressure (in. H_2O)	-13.9000	-13.9000	-14.9000	-14.7000	**-14.3500**
P_{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05	30.05	**30.0500**
V_{lc}	Total Liquid collected (ml)	197.10	153.60	156.20	125.30	
V_m	Volume metered, meter conditions (ft^3)	34.4600	28.3600	27.6600	22.3450	
T_m	Dry gas meter temperature (°F)	84.6250	85.8889	82.1667	84.0000	
ΔH	Meter box orifice pressure drop (in. H_2O)	1.0000	1.2000	1.2000	1.7000	
θ	Total sampling time (min)	60.0	45.0	45.0	30.0	
Flow Results						
V_{wstd}	Volume of water collected (ft^3)	9.2755	7.2284	7.3508	5.8966	**7.4378**
V_{mstd}	Volume metered, standard (dscf)	33.8270	27.7881	27.2883	21.9973	**27.7252**
P_s	Sample gas pressure, absolute (in. Hg)	29.0279	29.0279	28.9544	28.9691	**28.9949**
B_{wo}	Moisture measured in sample (% by volume)	21.5197	20.6429	21.2210	21.1395	**21.1308**
B_w	Actual water vapor in gas (% by volume)	21.5197	20.6429	21.2210	21.1395	**21.1308**

Comments:
Average includes 4 runs.

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Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2012)	Mar 21				
Start Time	6:53				
End Time	7:20				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.55	9.61	148.61	20.14	9.82
Concentration (ppmdv)		96112.13	148.61	20.14	9.82
Concentration (lb/dscf)		1.098E-02	1.774E-05	1.464E-06	1.633E-06
Concentration (%dv)	9.551	9.611	0.015	0.002	0.001
Concentration (mg/dscm)		175800.32	284.15	23.44	26.15
Concentration @7%O2 (ppm)		117717.85	182.02	24.66	12.03
Concentration @12%CO2 (ppm)		120000.00	185.54	25.14	12.26
Mass Rate (lb/hr)		60730.10	98.16	8.10	9.03
Run Number	2				
Date (2012)	Mar 21				
Start Time	7:34				
End Time	8:01				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.50	9.65	142.77	13.24	12.39
Concentration (ppmdv)		96528.41	142.77	13.24	12.39
Concentration (lb/dscf)		1.103E-02	1.705E-05	9.626E-07	2.060E-06
Concentration (%dv)	9.498	9.653	0.014	0.001	0.001
Concentration (mg/dscm)		176561.76	272.98	15.41	32.98
Concentration @7%O2 (ppm)		117677.36	174.05	16.14	15.10
Concentration @12%CO2 (ppm)		120000.00	177.48	16.46	15.40
Mass Rate (lb/hr)		57500.80	88.90	5.02	10.74
Run Number	3				
Date (2012)	Mar 21				
Start Time	8:19				
End Time	8:46				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.60	9.62	154.62	18.01	7.36
Concentration (ppmdv)		96240.62	154.62	18.01	7.36
Concentration (lb/dscf)		1.099E-02	1.846E-05	1.309E-06	1.223E-06
Concentration (%dv)	9.599	9.624	0.015	0.002	0.001
Concentration (mg/dscm)		176035.35	295.65	20.96	19.59
Concentration @7%O2 (ppm)		118375.75	190.19	22.15	9.05
Concentration @12%CO2 (ppm)		120000.00	192.80	22.45	9.17
Mass Rate (lb/hr)		60083.30	100.91	7.16	6.69

Wheelabrator
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South Broward
Unit 3

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2012)	Mar 21				
Start Time	9:04				
End Time	9:31				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.30	9.75	150.91	12.18	10.13
Concentration (ppmdv)		97464.74	150.91	12.18	10.13
Concentration (lb/dscf)		1.113E-02	1.802E-05	8.851E-07	1.685E-06
Concentration (%dv)	9.298	9.746	0.015	0.001	0.001
Concentration (mg/dscm)		178274.41	288.56	14.17	26.98
Concentration @7%O2 (ppm)		116768.27	180.80	14.59	12.14
Concentration @12%CO2 (ppm)		120000.00	185.81	14.99	12.48
Mass Rate (lb/hr)		59648.81	96.55	4.74	9.03
Run Number	5				
Date (2012)	Mar 21				
Start Time	9:46				
End Time	10:13				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.82	9.36	145.35	7.48	13.09
Concentration (ppmdv)		93603.52	145.35	7.48	13.09
Concentration (lb/dscf)		1.069E-02	1.735E-05	5.437E-07	2.177E-06
Concentration (%dv)	9.816	9.360	0.015	0.001	0.001
Concentration (mg/dscm)		171211.79	277.91	8.71	34.86
Concentration @7%O2 (ppm)		117383.16	182.27	9.38	16.42
Concentration @12%CO2 (ppm)		120000.00	186.33	9.59	16.79
Mass Rate (lb/hr)		63927.48	103.77	3.25	13.02
Run Number	6				
Date (2012)	Mar 21				
Start Time	10:29				
End Time	10:56				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.26	9.77	149.26	7.70	11.47
Concentration (ppmdv)		97667.66	149.26	7.70	11.47
Concentration (lb/dscf)		1.116E-02	1.782E-05	5.594E-07	1.907E-06
Concentration (%dv)	9.260	9.767	0.015	0.001	0.001
Concentration (mg/dscm)		178645.58	285.39	8.96	30.53
Concentration @7%O2 (ppm)		116630.73	178.24	9.19	13.69
Concentration @12%CO2 (ppm)		120000.00	183.38	9.45	14.09
Mass Rate (lb/hr)		62503.87	99.85	3.13	10.68

Wheelabrator
Clean Air Project No. 11414
South Broward
Unit 3

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2012)	Mar 21				
Start Time	11:12				
End Time	11:39				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.84	9.32	145.00	5.13	7.12
Concentration (ppmdv)		93167.13	145.00	5.13	7.12
Concentration (lb/dscf)		1.064E-02	1.731E-05	3.732E-07	1.183E-06
Concentration (%dv)	9.843	9.317	0.015	0.001	0.001
Concentration (mg/dscm)		170413.57	277.26	5.98	18.95
Concentration @7%O2 (ppm)		117126.15	182.29	6.45	8.95
Concentration @12%CO2 (ppm)		120000.00	186.77	6.61	9.17
Mass Rate (lb/hr)		54846.59	89.23	1.92	6.10
Run Number	8				
Date (2012)	Mar 21				
Start Time	11:57				
End Time	12:24				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.45	8.94	139.11	11.67	1.86
Concentration (ppmdv)		89442.28	139.11	11.67	1.86
Concentration (lb/dscf)		1.022E-02	1.661E-05	8.487E-07	3.096E-07
Concentration (%dv)	10.452	8.944	0.014	0.001	0.000
Concentration (mg/dscm)		163600.39	265.98	13.59	4.96
Concentration @7%O2 (ppm)		118994.10	185.07	15.53	2.48
Concentration @12%CO2 (ppm)		120000.00	186.63	15.66	2.50
Mass Rate (lb/hr)		58605.89	95.28	4.87	1.78
Run Number	9				
Date (2012)	Mar 21				
Start Time	12:41				
End Time	13:08				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.22	9.11	138.56	9.76	0.68
Concentration (ppmdv)		91101.84	138.56	9.76	0.68
Concentration (lb/dscf)		1.041E-02	1.654E-05	7.097E-07	1.130E-07
Concentration (%dv)	10.220	9.110	0.014	0.001	0.000
Concentration (mg/dscm)		166635.92	264.93	11.36	1.81
Concentration @7%O2 (ppm)		118567.69	180.33	12.70	0.88
Concentration @12%CO2 (ppm)		120000.00	182.51	12.86	0.90
Mass Rate (lb/hr)		61760.05	98.19	4.21	0.67

Wheelabrator
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South Broward
Unit 3

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2012)	Mar 21				
Start Time	13:20				
End Time	13:47				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	O2	CO2	NOX	CO	SO2
Location	FF Outlet	FF Outlet	FF Outlet	FF Outlet	FF Outlet
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.42	9.79	156.25	7.76	1.51
Concentration (ppmdv)		97904.00	156.25	7.76	1.51
Concentration (lb/dscf)		1.118E-02	1.866E-05	5.638E-07	2.514E-07
Concentration (%dv)	9.417	9.790	0.016	0.001	0.000
Concentration (mg/dscm)		179077.87	298.76	9.03	4.03
Concentration @7%O2 (ppm)		118514.86	189.15	9.39	1.83
Concentration @12%CO2 (ppm)		120000.00	191.52	9.51	1.85
Mass Rate (lb/hr)		58875.13	98.22	2.97	1.32

Run Number	11	
Date (2012)	Mar 21	
Start Time	14:02	
End Time	14:29	
Elapsed Time (hh:mm)	00:27	
Channel	1	2
Parameter	O2	CO2
Location	FF Outlet	FF Outlet
Measurement Units	%dv	%dv
Measured Average (drift-corrected)	9.30	9.89
Concentration (ppmdv)		98858.76
Concentration (lb/dscf)		1.129E-02
Concentration (%dv)	9.298	9.886
Concentration (mg/dscm)		180824.24
Concentration @7%O2 (ppm)		118442.91
Concentration @12%CO2 (ppm)		120000.00
Mass Rate (lb/hr)		59765.23

Run Number	12	
Date (2012)	Mar 21	
Start Time	14:43	
End Time	15:10	
Elapsed Time (hh:mm)	00:27	
Channel	1	2
Parameter	O2	CO2
Location	FF Outlet	FF Outlet
Measurement Units	%dv	%dv
Measured Average (drift-corrected)	9.39	9.88
Concentration (ppmdv)		98788.61
Concentration (lb/dscf)		1.128E-02
Concentration (%dv)	9.391	9.879
Concentration (mg/dscm)		180695.92
Concentration @7%O2 (ppm)		119314.77
Concentration @12%CO2 (ppm)		120000.00
Mass Rate (lb/hr)		61225.91

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 3 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		1	2	3	4
Date (2012)		Mar 21	Mar 21	Mar 21	Mar 21
Start Time (approx.)		08:02	08:57	09:21	10:09
Stop Time (approx.)		08:12	00:00	09:29	10:20
Sampling Conditions					
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-12.7000	-12.6000	-12.8000	-12.5000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05	30.05
O_2	Oxygen (dry volume %)	9.5512	9.4981	9.5992	9.2979
CO_2	Carbon dioxide (dry volume %)	9.6112	9.6528	9.6241	9.7465
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.8376	80.8491	80.7768	80.9556
T_s	Sample temperature (°F)	296.2000	296.8800	295.8800	296.7200
Flow Results					
P_s	Sample gas pressure, absolute (in. Hg)	29.1162	29.1235	29.1088	29.1309
P_v	Vapor pressure, actual (in. Hg)	29.1162	29.1235	29.1088	29.1309
B_{wo}	Moisture measured in sample (% by volume)	21.7158	21.7158	21.7158	21.9873
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	21.7158	21.7158	21.7158	21.9873
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.6549	0.6177	0.6471	0.6364
M_d	MW of sample gas, dry (lb/lb-mole)	29.9198	29.9244	29.9238	29.9314
M_s	MW of sample gas, wet (lb/lb-mole)	27.3313	27.3349	27.3345	27.3080
V_s	Velocity of sample (ft/sec)	45.1385	42.5815	44.5905	43.8797
Q_a	Volumetric flow rate, actual (acfm)	173,332	163,513	171,228	168,498
Q_s	Volumetric flow rate, standard (scfm)	117,774	111,030	116,364	114,468
Q_s	Volumetric flow rate, standard (scfh)	7,066,421	6,661,812	6,981,826	6,868,103
Q_{std}	Volumetric flow rate, dry standard (dscfm)	92,198	86,919	91,094	89,300

Comments:

Moistures obtained from Method 26A Runs 1 and 2

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 3 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		5	6	7	8
Date (2012)		Mar 21	Mar 21	Mar 21	Mar 21
Start Time (approx.)		11:05	11:33	12:18	13:06
Stop Time (approx.)		11:13	11:43	12:28	13:17
Sampling Conditions					
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-12.7000	-12.8000	-10.7000	-10.8000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05	30.05
O_2	Oxygen (dry volume %)	9.8159	9.2600	9.8433	10.4520
CO_2	Carbon dioxide (dry volume %)	9.3604	9.7668	9.3167	8.9442
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.8238	80.9732	80.8399	80.6037
T_s	Sample temperature (°F)	298.8000	296.6000	294.4400	296.2000
Flow Results					
P_s	Sample gas pressure, absolute (in. Hg)	29.1162	29.1088	29.2632	29.2559
P_v	Vapor pressure, actual (in. Hg)	29.1162	29.1088	29.2632	29.2559
B_{wo}	Moisture measured in sample (% by volume)	21.9873	22.1400	22.1400	22.3153
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	21.9873	22.1400	22.1400	22.3153
$\sqrt{\Delta P}$	Velocity head ($\sqrt{in.}$ H_2O)	0.7109	0.6667	0.6104	0.6812
M_d	MW of sample gas, dry (lb/lb-mole)	29.8903	29.9331	29.8844	29.8492
M_s	MW of sample gas, wet (lb/lb-mole)	27.2759	27.2911	27.2532	27.2050
V_s	Velocity of sample (ft/sec)	49.1265	46.0019	41.9728	46.9439
Q_a	Volumetric flow rate, actual (acfm)	188,646	176,647	161,175	180,265
Q_s	Volumetric flow rate, standard (scfm)	127,740	119,933	110,324	123,072
Q_s	Volumetric flow rate, standard (scfh)	7,664,395	7,195,968	6,619,422	7,384,319
Q_{std}	Volumetric flow rate, dry standard (dscfm)	99,653	93,380	85,898	95,608

Comments:

Moistures obtained from Method 26A Runs 2 and 3 and Method 4 Run 1

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 3 FF Outlet

USEPA Method 2 (Velocity & Flow Rate)
Sampling, Velocity and Moisture Parameters

Run No.		9	10	11	12
Date (2012)		Mar 21	Mar 21	Mar 21	Mar 21
Start Time (approx.)		13:49	13:25	15:07	15:46
Stop Time (approx.)		13:58	13:35	15:17	00:00
Sampling Conditions					
C_p	Pitot tube coefficient	0.8270	0.8270	0.8270	0.8270
P_g	Static pressure (in. H_2O)	-13.7000	-13.7000	0.0000	-10.7000
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000	64.0000
P_{bar}	Barometric pressure (in. Hg)	30.10	30.10	30.10	30.10
O_2	Oxygen (dry volume %)	10.2199	9.4173	9.2983	9.3913
CO_2	Carbon dioxide (dry volume %)	9.1102	9.7904	9.8859	9.8789
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.6699	80.7923	80.8158	80.7299
T_s	Sample temperature (°F)	298.5600	295.2400	295.5600	295.5200
Flow Results					
P_s	Sample gas pressure, absolute (in. Hg)	29.0926	29.0926	30.1000	29.3132
P_v	Vapor pressure, actual (in. Hg)	29.0926	29.0926	30.1000	29.3132
B_{wo}	Moisture measured in sample (% by volume)	22.3153	22.6147	22.6147	22.1546
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	100.0000
B_w	Actual water vapor in gas (% by volume)	22.3153	22.6147	22.6147	22.1546
$\sqrt{\Delta P}$	Velocity head ($\sqrt{}$in. H_2O)	0.7080	0.6294	0.6223	0.6433
M_d	MW of sample gas, dry (lb/lb-mole)	29.8664	29.9432	29.9537	29.9563
M_s	MW of sample gas, wet (lb/lb-mole)	27.2184	27.2422	27.2504	27.3074
V_s	Velocity of sample (ft/sec)	48.9942	43.4378	42.2251	44.1846
Q_a	Volumetric flow rate, actual (acfm)	188,138	166,801	162,144	169,669
Q_s	Volumetric flow rate, standard (scfm)	127,333	113,389	113,991	116,169
Q_s	Volumetric flow rate, standard (scfh)	7,639,985	6,803,315	6,839,472	6,970,167
Q_{std}	Volumetric flow rate, dry standard (dscfm)	98,918	87,746	88,212	90,433

Comments:

Moistures obtained from Method Method 4 Run 1 and 2. Run 12 is an average of all moistures.

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 3 FF Outlet

USEPA Method 26A (HCl)
Sampling, Velocity and Moisture Parameters

Run No.		1	2	3	Average
Date (2012)		Mar 21	Mar 21	Mar 21	
Start Time (approx.)		07:54	10:04	11:30	
Stop Time (approx.)		09:40	11:04	12:30	
Sampling Conditions					
Y_d	Dry gas meter correction factor	0.9953	0.9953	0.9953	
P_g	Static pressure (in. H_2O)	-12.7000	-12.7000	-10.7000	
A_s	Sample location area (ft^2)	64.0000	64.0000	64.0000	
P_{bar}	Barometric pressure (in. Hg)	30.05	30.05	30.05	**30.0500**
O_2	Oxygen (dry volume %)	9.4800	9.2200	9.2500	**9.3167**
CO_2	Carbon dioxide (dry volume %)	9.7700	10.0200	10.0600	**9.9500**
N_2+CO	Nitrogen plus carbon monoxide (dry volume %)	80.7500	80.7600	80.6900	**80.7333**
V_{lc}	Total Liquid collected (ml)	239.40	243.40	244.50	
V_m	Volume metered, meter conditions (ft^3)	41.4650	41.8350	41.7450	
T_m	Dry gas meter temperature (°F)	80.6250	85.0833	86.2917	
T_s	Sample temperature (°F)	295.3333	295.8333	295.3333	**295.5000**
ΔH	Meter box orifice pressure drop (in. H_2O)	1.5000	1.5000	1.5000	
θ	Total sampling time (min)	60.0	60.0	60.0	
Flow Results					
V_{wstd}	Volume of water collected (ft^3)	11.2662	11.4544	11.5062	**11.4089**
V_{mstd}	Volume metered, standard (dscf)	40.6138	40.6411	40.4639	**40.5729**
P_s	Sample gas pressure, absolute (in. Hg)	29.1162	29.1162	29.2632	**29.1652**
P_v	Vapor pressure, actual (in. Hg)	29.1162	29.1162	29.2632	**29.1652**
B_{wo}	Moisture measured in sample (% by volume)	21.7158	21.9873	22.1400	**21.9477**
B_{ws}	Saturated moisture content (% by volume)	100.0000	100.0000	100.0000	**100.0000**
B_w	Actual water vapor in gas (% by volume)	21.7158	21.9873	22.1400	**21.9477**
M_d	MW of sample gas, dry (lb/lb-mole)	29.9424	29.9720	29.9796	**29.9647**
M_s	MW of sample gas, wet (lb/lb-mole)	27.3490	27.3397	27.3273	**27.3387**

Comments:

Average includes 3 runs.

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SS ISOKINETIC Version 2006-13e

Wheelabrator South Broward, Inc.
Clean Air Project No: 11414
Unit 3 FF Outlet

USEPA Method 4
Sampling, Velocity and Moisture Parameters

Run No.		1	2	Average
Date (2012)		Mar 21	Mar 21	
Start Time (approx.)		12:59	14:21	
Stop Time (approx.)		13:44	15:00	
Sampling Conditions				
Y_d	Dry gas meter correction factor	0.9888	0.9888	
P_g	Static pressure (in. H_2O)	-10.8000	-13.7000	**-12.2500**
P_{bar}	Barometric pressure (in. Hg)	30.10	30.10	**30.1000**
V_{lc}	Total Liquid collected (ml)	173.90	170.80	
V_m	Volume metered, meter conditions (ft^3)	29.3450	28.3150	
T_m	Dry gas meter temperature (°F)	82.5000	82.2000	
T_s	Sample temperature (°F)	N/A	N/A	**N/A**
ΔH	Meter box orifice pressure drop (in. H_2O)	1.3000	1.3000	
θ	Total sampling time (min)	45.0	45.0	
Flow Results				
V_{wstd}	Volume of water collected (ft^3)	8.1837	8.0378	**8.1108**
V_{mstd}	Volume metered, standard (dscf)	28.4895	27.5047	**27.9971**
P_s	Sample gas pressure, absolute (in. Hg)	29.3059	29.0926	**29.1993**
P_v	Vapor pressure, actual (in. Hg)	N/A	N/A	**N/A**
B_{wo}	Moisture measured in sample (% by volume)	22.3153	22.6147	**22.4650**
B_{ws}	Saturated moisture content (% by volume)	N/A	N/A	**N/A**
B_w	Actual water vapor in gas (% by volume)	22.3153	22.6147	**22.4650**

Comments:

Average includes 2 runs.

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QA/QC DATA

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I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified as accurate.

QA/QC Initials: MC

Date: 4/27/12

CleanAir

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AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE™ OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 25377-66-65000
Document # : 40661163-001

Customer

CLEAN AIR ENGINEERING

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM048873 **Certification Date:** 21Feb2011 **Exp. Date:** 20Feb2013
Cylinder Pressure*:** 1935 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.0	%	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	225	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	45.2	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	225.	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION		COMPONENT
14% CO2	15Dec2011	K000893	13.94	%	CARBON DIOXIDE
NTRM 1685	17Mar2016	KAL003271	247.1	PPM	NITRIC OXIDE
NTRM 0260 SO	15Jan2012	KAL003928	255.5	PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	28Jan2011	FTIR
FTIR//0928621	04Feb2011	FTIR
FTIR//0928621	28Jan2011	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

CARBON DIOXIDE

First Triad Analysis

Date: 14Feb2011 Response Unit: %

Z1 = 0.00031	R1 = 13.93708	T1 = 10.02547
R2 = 13.95354	Z2 = 0.00868	T2 = 10.02747
Z3 = 0.01253	T3 = 10.03911	R3 = 13.95468

Avg. Concentration: 10.02 %

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99997E-1

Constants:	A = 0.00000E+0
B = 9.12626E-1	C = 1.19750E-2
D = 0.00000E+0	E = 0.00000E+0

NITRIC OXIDE

First Triad Analysis

Date: 14Feb2011 Response Unit: PPM

Z1 = -0.69897	R1 = 247.0797	T1 = 226.1795
R2 = 247.3445	Z2 = -0.52028	T2 = 226.3387
Z3 = -0.35322	T3 = 226.5970	R3 = 247.4250

Avg. Concentration: 226.2 PPM

Second Triad Analysis

Date: 21Feb2011 Response Unit: PPM

Z1 = -0.48582	R1 = 246.5937	T1 = 221.5001
R2 = 246.6289	Z2 = -0.33641	T2 = 222.9012
Z3 = 0.13518	T3 = 224.0443	R3 = 247.7465

Avg. Concentration: 223.9 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99997E-1

Constants:	A = 0.00000E+0
B = 9.62517E-1	C = 2.10000E-5
D = 0.00000E+0	E = 0.00000E+0

SULFUR DIOXIDE *

First Triad Analysis

Date: 14Feb2011 Response Unit: PPM

Z1 = -0.03584	R1 = 50.07821	T1 = 44.93508
R2 = 50.13437	Z2 = -0.01929	T2 = 45.02175
Z3 = 0.03353	T3 = 45.08021	R3 = 50.15265

Avg. Concentration: 45.08 PPM

Second Triad Analysis

Date: 21Feb2011 Response Unit: PPM

Z1 = -0.06436	R1 = 253.4292	T1 = 44.84587
R2 = 253.5297	Z2 = -0.00245	T2 = 44.86224
Z3 = 0.16339	T3 = 44.96050	R3 = 253.6678

Avg. Concentration: 45.21 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99995E-1

Constants:	A = 0.00000E+0
B = 1.01199E+0	C = 1.00000E-5
D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: _____
Rob McCrandall

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE™ OF ACCURACY: Interference Free Multi-Component EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22012

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: CAE
Document # : 44720881-002

Customer
ALA-CYL-ROMEOVILLE, IL (84131)

UNIT A FOR CAE
TRANSFER ACCOUNT
27 FORESTWOOD CT
ROMEOVILLE IL 60446
US

ANALYTICAL INFORMATION Gas Type : SNC2

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM012619 **Certification Date:** 24Jan2012 **Exp. Date:** 23Jan2014
Cylinder Pressure*:** 1968 PSIG **Batch No:** TRO0050002

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	9.97	%	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	448	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	90.8	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	448.	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION		COMPONENT
NTRM 1800 C	01Mar2013	1D004854	17.87	%	CARBON DIOXIDE
NTRM 1685	01Oct2015	AAL071072	246.1	PPM	NITRIC OXIDE
NTRM 0260 2	20May2016	AAL073224	255.3	PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	06Jan2012	FTIR
FTIR//0928621	19Jan2012	FTIR
FTIR//0928621	20Jan2012	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

CARBON DIOXIDE

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 17Jan2012	Response Unit: %					Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = -0.00072	R1 = 17.77379	T1 = 9.93180				r = 9.99984E-1	
R2 = 17.78153	Z2 = 0.00818	T2 = 9.93257				Constants:	A = 0.00000E+0
Z3 = 0.01745	T3 = 9.93373	R3 = 17.81853				B = 9.90204E-1	C = 1.23260E-2
Avg. Concentration:	9.973	%				D = 1.90000E-5	E = 0.00000E+0

NITRIC OXIDE

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 17Jan2012	Response Unit: PPM		Date: 24Jan2012	Response Unit: PPM		Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = -0.60538	R1 = 246.2617	T1 = 450.1221	Z1 = -0.21240	R1 = 247.5818	T1 = 448.0163	r = 9.99999E-1	
R2 = 246.3206	Z2 = -0.57518	T2 = 450.9347	R2 = 247.6069	Z2 = -0.08971	T2 = 450.0441	Constants:	A = 0.00000E+0
Z3 = -0.53722	T3 = 451.2103	R3 = 247.1208	Z3 = -0.04259	T3 = 450.2402	R3 = 247.9820	B = 9.99897E-1	C = 3.00000E-5
Avg. Concentration:	449.4	PPM	Avg. Concentration:	448.4	PPM	D = 0.00000E+0	E = 0.00000E+0

SULFUR DIOXIDE *

First Triad Analysis			Second Triad Analysis			Calibration Curve	
Date: 17Jan2012	Response Unit: PPM		Date: 24Jan2012	Response Unit: PPM		Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = -0.05065	R1 = 253.7164	T1 = 90.15717	Z1 = -0.00017	R1 = 253.6599	T1 = 90.14060	r = 9.99991E-1	
R2 = 253.9392	Z2 = 0.03183	T2 = 90.34216	R2 = 253.7981	Z2 = 0.04665	T2 = 90.32017	Constants:	A = 0.00000E+0
Z3 = 0.04278	T3 = 90.43878	R3 = 254.1837	Z3 = 0.18248	T3 = 90.45968	R3 = 253.8572	B = 1.00555E+0	C = -4.00000E-6
Avg. Concentration:	90.79	PPM	Avg. Concentration:	90.80	PPM	D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: Rob McCrandall

SPECIALTY GASES OF AMERICA, INC.
AMERICAN INDUSTRIAL GASES, INC.
AMERICAN RARE GASES, INC.

6055 BRENT DR. TOLEDO, OH 43611
419-729-7732 FAX 419-729-2411

THE AMERICAN GAS GROUP

www.americangasgroup.com

ANALYTICAL REPORT

Certificate ID:	061311042	**Date:**	6/13/2011
Customer Name:	Clean Air Engineering, Inc		
Customer Address:	500 West Wood Street		
	Palatine IL 60067		
	800-627-0033		
Purchase Order:	1813	**Work Order:**	120312-02
Lot Number:	0524UE11	**Product Name:**	3-Component Mixture, Certified
Size:	A31	**Pressure:**	2200 psig @ 80 Deg F
Content:	N/A		
Serial #:	EB0019471		

Component	Nominal	Actual	Accuracy	Method
Nitrogen Dioxide	50.0 ppm	49.2 ppm	+/- 5% rel	FTIR
Oxygen	1.00%	1.00%	+/- 2% rel	Paramagnetic
Nitrogen	Balance	Balance		

Note: Expiration Date: 05/24/2013

Issued by: Josh Jones

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 59092-71-65000
Document # : 42679778-006

Customer
CLEAN AIR ENGINEERING

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

ANALYTICAL INFORMATION Gas Type : OC2

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM036149 **Certification Date:** 15Aug2011 **Exp. Date:** 14Aug2014
Cylinder Pressure*:** 2000 PSIG **Batch No:** TRO0039465

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
OXYGEN	6.00	%	+/- 1%	Direct NIST and VSL
CARBON DIOXIDE	13.9	%	+/- 1%	Direct NIST and VSL
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2350	01Dec2011	K016398	23.20 %	OXYGEN
NTRM 2300	17Aug2016	K026052	23.04 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
CAI/110P/V03018	20Jul2011	PARAMAGNETIC
PIR/2000/609015	02Aug2011	NDIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

OXYGEN

Date: 16Aug2011 Response Unit: %
Z1 = 0.00000 R1 = 23.20000 T1 = 6.02000
R2 = 23.20000 Z2 = 0.00000 T2 = 6.02000
Z3 = 0.00000 T3 = 6.02000 R3 = 23.20000
Avg. Concentration: 6.005 %

CARBON DIOXIDE

Date: 15Aug2011 Response Unit: MV
Z1 = 0.00000 R1 = 98.40000 T1 = 74.50000
R2 = 98.40000 Z2 = 0.00000 T2 = 74.50000
Z3 = 0.00000 T3 = 74.50000 R3 = 98.40000
Avg. Concentration: 13.89 %

Second Triad Analysis

Calibration Curve

OXYGEN

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999998
Constants: A = -0.01525256
B = 1.000032519 C = 0
D = 0 E = 0

CARBON DIOXIDE

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.999996
Constants: A = -0.00179303
B = 0.134633752 C = -0.000327
D = 1.2834E-05 E = 0

APPROVED BY: JEFF CROTEAU

AIR LIQUIDE Air Liquide America Specialty Gases LLC Scott

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 58745-71-65000
Document # : 40716347-004

Customer

CLEAN AIR ENGINEERING

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALMX067937 **Certification Date:** 28Feb2011 **Exp. Date:** 27Feb2014
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
OXYGEN	14.0	%	+/- 1%	Direct NIST and VSL
CARBON DIOXIDE	5.99	%	+/- 1%	Direct NIST and VSL
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2350	01Dec2011	K016398	23.20 %	OXYGEN
NTRM 2300	17Aug2016	K026052	23.04 %	CARBON DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
CAI/110P/V03018	24Feb2011	PARAMAGNETIC
PIR/2000/609015	04Feb2011	NDIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

OXYGEN

First Triad Analysis			Second Triad Analysis	Calibration Curve	
Date: 01Mar2011	Response Unit: %			Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = 0.00000	R1 = 23.20000	T1 = 14.05000		r = 0.999998	
R2 = 23.20000	Z2 = 0.00000	T2 = 14.06000		Constants:	A = -0.01314124
Z3 = 0.00000	T3 = 14.06000	R3 = 23.20000		B = 1.000039653	C = 0
Avg. Concentration:	14.04 %			D = 0	E = 0

CARBON DIOXIDE

Date: 01Mar2011	Response Unit: MV			Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = 0.00000	R1 = 100.0000	T1 = 41.70000		r = 0.999994	
R2 = 100.0000	Z2 = 0.00000	T2 = 41.70000		Constants:	A = -0.0032159
Z3 = 0.00000	T3 = 41.70000	R3 = 100.0000		B = 0.134654642	C = -0.0003116
Avg. Concentration:	5.989 %			D = 1.26756E-05	E = 0

APPROVED BY: _____
JEFF CROTEAU

AIR LIQUIDE Air Liquide America Specialty Gases LLC

Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22011

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 58953-71-65000
Document # : 41867307-002

Customer
CLEAN AIR ENGINEERING

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM023610 **Certification Date:** 07Jun2011 **Exp. Date:** 06Jun2014
Cylinder Pressure*:** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	48.6 PPM	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

**** Do not use when cylinder pressure is below 150 psig.*
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2638 25	02Oct2011	KAL003767	240.8 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	18May2011	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 31May2011 Response Unit: PPM

Z1 = -0.04588	R1 = 240.7863	T1 = 48.68128
R2 = 240.7876	Z2 = 0.22589	T2 = 48.70651
Z3 = 0.31347	T3 = 48.73238	R3 = 241.1768

Avg. Concentration: 48.55 PPM

Second Triad Analysis

Date: 07Jun2011 Response Unit: PPM

Z1 = -0.05132	R1 = 241.1098	T1 = 48.71504
R2 = 241.3521	Z2 = 0.17028	T2 = 48.78989
Z3 = 0.19557	T3 = 48.83290	R3 = 241.4932

Avg. Concentration: 48.59 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99997E-1

Constants:	A = -9.18174E+2
B = 1.74557E+0	C = 0.00000E+0
D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: Robert McCrandall
Rob McCrandall

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22011

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 59343-71-65000
Document # : 44063920-001

Customer
CLEAN AIR

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

ANALYTICAL INFORMATION Gas Type : NONE

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: CC181272 **Certification Date:** 29Nov2011 **Exp. Date:** 28Nov2014
Cylinder Pressure*:** 1955 PSIG **Batch No:** TR0004652

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	96.3 PPM	+/- 1%	Direct NIST and VSL
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1679 1	25Aug2016	KAL003115	101.0 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	28Nov2011	FTIR

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

CARBON MONOXIDE

First Triad Analysis

Date: 21Nov2011 Response Unit: PPM

Z1 = -0.01152	R1 = 101.1684	T1 = 96.36357
R2 = 101.2626	Z2 = 0.07064	T2 = 96.46207
Z3 = 0.09866	T3 = 96.49303	R3 = 101.3349

Avg. Concentration: 96.19 PPM

Second Triad Analysis

Date: 29Nov2011 Response Unit: PPM

Z1 = -0.03962	R1 = 100.6843	T1 = 96.04078
R2 = 100.7658	Z2 = -0.01546	T2 = 96.14331
Z3 = 0.06891	T3 = 96.38446	R3 = 101.0479

Avg. Concentration: 96.35 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99998E-1

Constants:	A = 0.00000E+0
B = 6.94249E-1	C = 3.64000E-4
D = 0.00000E+0	E = 0.00000E+0

APPROVED BY: Rob McCrandall

Page 1 of 1

AIR LIQUIDE Air Liquide America Specialty Gases LLC Scott

1290 COMBERMERE STREET
Shipped TROY MI 48083
From: Phone: 248-589-2950 Fax: 248-589-2134

C E R T I F I C A T E O F A N A L Y S I S

ALA-CYL-ROMEOVILLE, IL (84131)
UNIT A FOR CAE
TRANSFER ACCOUNT
27 FORESTWOOD CT
ROMEOVILLE IL 60446
US

DOCUMENT#:44355918 -002
PO#: CAE
ITEM #: 763-30AL
DATE: 12Dec2011

CYLINDER #: ALM028189
FILL PRESSURE: 2015 PRODUCT EXPIRATION: 11Dec2014

PURE MATERIAL: NITROGEN CAS# 7727-37-9

GRADE: ZERO GAS

PURITY: 99.998%

IMPURITY	MAXIMUM CONCENTRATIONS	ACTUAL CONCENTRATIONS
THC	0.5 PPM	< 0.5 PPM

LOT# NITFILL112211

QC BATCH : TRO0048351

ANALYST: _____
ROBERT MCCRANDALL

Sample Probe Calibration

Probe Type: M5 with S-Type Pitot **I.D. Number:** 66-8P-13
Project Number: 11414

Thermocouple Calibration

Reference Type: Thermocouple Reference I.D. No: 15-078-39 Pyrometer I.D. No: 80512890 Units: °F

Point No.	Target Temp.	Reference Temp.	Indicated Temp.	Temp. Difference	% Difference*	Specification
1	Ambient	72	73	-1	0.19%	
2	200°F-250°F	252	255	-3	0.42%	%Difference ≤ 1.5

* Based on Absolute Temperature (Rankine)

Does thermocouple assembly meet specifications? ⟶ **YES**

Pitot Tube Calibration (Wind Tunnel Method @ 50 ft/sec)

Reference Pitot I.D. No: Wind Tunnel Reference Pitot Cp: 0.99

Pitot Side 'A' :

Trial No.	Reference ΔP	Probe ΔP	Probe $C_{p(S)}$*	Abs. Deviation from Avg. $C_{p(A)}$**
1	0.546	0.784	0.827	0.003
2	0.544	0.789	0.822	0.002
3	0.541	0.783	0.823	0.001
		Side 'A' Average Probe $C_{p(A)}$=	0.8240	0.0017

Specification Avg. C_p Deviations ≤ 0.01

Pitot Side 'B' :

Trial No.	Reference ΔP	Probe ΔP	Probe $C_{p(S)}$*	Abs. Deviation from Avg. $C_{p(B)}$**
1	0.539	0.765	0.831	0.000
2	0.541	0.771	0.829	0.001
3	0.545	0.772	0.832	0.001
		Side 'B' Average Probe $C_{p(B)}$=	0.8307	0.0009

Specification Avg. C_p Deviations ≤ 0.01

'A' Average C_p		'B' Average C_p		Difference	Specification
0.824	—	0.831	=	-0.007	|Difference| ≤ 0.01

Does assembly meet specifications? **YES** ⟶ **If "Yes", C_p= Average of Side 'A' and 'B' Cp values. If "No", Pitot must be replaced.**

$$^{*}C_{P(S)} = C_{P(STD)}\sqrt{\frac{\Delta p_{(STD)}}{\Delta p_{(S)}}} \qquad ^{**}Deviation = \left|C_{P(S)} - \overline{C_{P\,(\text{A or B})}}\right|$$

All specifications are from EPA-600/9-76-005, section 3.1

Probe Cp= 0.827 Calibrated by: B ARNOLD Date: 03/12/2012

CleanAir. ENGINEERING

Meter Box Full Test Calibration

Meter Box Serial No: 61-6 **Callbration Signature:** Martin Vaquero

Date of Calibration: 7/22/2011 **Meter Box Yd:** 1.0061

Standard Meter Serial No: 11AH6 **Meter Box ΔH@:** 1.7252

Date of Calibration: 10/26/2010 **Barometer Serial No:** W12637

Calibration Conducted by: Martin Vaquero **Barometric Pressure:** 29.30

				Standard Meter Gas Volume (ft^3)			Meter Box Gas Volume (ft^3)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)			Time (min.)	Calibration Results	
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds} Net	Initial	Final	V_d Net	T_{ls} In	T_{os} Out	T_{ds} Avg.	T_l In	T_o Out	T_d Avg.	Θ	Y_d	ΔH@
0.984	3.00	-1.80	1.0000	0.000	10.000	10.000	59.084	69.039	9.955	80.0	80.0	80.00	91.0	82.0	86.50	9.73	1.0045	1.6636
0.973	3.00	-1.80	1.0000	0.000	10.000	10.000	69.039	78.996	9.957	80.0	80.0	80.00	91.0	82.0	86.50	9.84	1.0043	1.7015
0.387	0.50	-1.00	1.0000	0.000	5.000	5.000	88.686	93.659	4.973	79.5	79.5	79.50	83.0	81.0	82.00	12.39	1.0063	1.7984
0.387	0.50	-1.00	1.0000	0.000	5.000	5.000	93.659	98.624	4.965	79.5	79.5	79.50	83.0	81.0	82.00	12.37	1.0079	1.7926
0.689	1.50	-1.20	1.0000	0.000	10.000	10.000	106.633	116.579	9.946	79.5	79.5	79.50	88.0	81.0	84.50	13.90	1.0079	1.6976
0.689	1.50	-1.20	1.0000	0.000	10.000	10.000	116.579	126.547	9.968	79.5	79.5	79.50	88.0	81.0	84.50	13.90	1.0057	1.6976
																Averages	1.00608	1.72520

Nomenclature

- P_b Barometric Pressure (in. Hg)
- Q Flow Rate (cfm)
- ΔH Orifice Pressure differential (in. H_2O)
- ΔP Inlet Pressure Differential (in. H_2O)
- V_d Gas Meter Volume - Dry (ft^3)
- V_{ds} Standard Meter Volume - Dry (ft^3)
- T_d Average Meter Box Temperature (°F)
- T_o Outlet Meter Box Temperature (°F)
- T_{ds} Average Standard Meter Temperature (°F)
- Y_d Meter Correction Factor (unitless), $Y_i \leq Y_{avg} \pm 0.02$
- Y_{ds} Standard Meter Correction Factor (unitless)
- ΔH@ Orifice Pressure Differential giving 0.75 cfm of air at 68°F and 29.92 in. Hg (in. H_2O) $\Delta H@_i \leq \Delta H@_{avg} \pm 0.2$
- Θ Duration of Run (minutes)

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + \Delta P/13.6}{P_b + \Delta H/13.6}\right]$$

$$\Delta H@ = \frac{(0.0319)(\Delta H)}{P_b(T_o + 460)}\left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_{ds})}\right]^2$$

$$Q = \frac{17.64(V_{ds})(P_b)}{(T_{ds} + 460)(\Theta)}$$

Vacuum Gauge

Standard (In.Hg)	Gauge (in.Hg)
5.0	5.8
10.0	10.9
15.0	15.7
20.0	20.5
24.0	24.0

CleanAir® ENGINEERING

Meter Box - Pyrometer Calibration Sheet

Meter Box No: 61-6 Office: _____

Calibrated by: Martin Vaquero Client: _____

Date: 7/22/11 Job No: _____

Temperature Scale Used: Fahrenheit Type of Calibration: Full-Test

Calibration Reference Settings (°F)	Pyrometer Reading for each Channel (°F)						
	1 Stack	2 Probe	3 Filter	4 Imp Out	5 Aux	6 DGM In	7 DGM Out
50	49	51	51				
100	99	102	101				
150	150	152	151				
200	200	202	201				
250	250	251	251				
300	300	302	301				
350	350	352	351				
400	399	401	401				
450	449	452	451				
500	500	501	501				
550	549	551	551				
600	600	601	601				

Tolerance = ±2°F difference from reference setting.

Calibration Reference Information

Reference Used: Omega CL23A Serial No: T-279500

Calibrated By: JH Metrology Date Calibrated: 8/17/2010

Calibration Report No: 1000150487 Calibration Due Date: 8/17/2011

Client:	Source	**Reviewed By:**	M. Vaquero	**Calibration Signature:**	
ID No:	66-4	**Calibrated By:**	Jeff Ivens	**Meter Box Yd:**	0.9953
Dept No:	66	**Date of Calibration:**	11/02/11	**Meter Box ΔH@:**	1.7374
Meter Box Serial No:	08R-5010-63-M	**Due Date of Calibration:**	11/02/12	**Barometer Serial No:**	W12637
Manufacturer Part No:	0028	**Meter Box Vacuum:**	1.0 in. H_2O	**Barometric Pressure:**	29.27 in. Hg

				Standard Meter Gas Volume (ft^3)			Meter Box Gas Volume (ft^3)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)			Time (min.)	Calibration Results	
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds} Net	Initial	Final	V_d Net	T_{ds} In	T_{os} Out	T_{ds} Avg.	T_d In	T_o Out	T_d Avg.	Θ	Y_d	ΔH@
0.398	0.50	-1.20	1.0000	0.000	5.000	5.000	916.700	921.788	5.088	70.5	70.5	70.50	80.0	77.0	78.50	12.23	0.9933	1.7086
0.398	0.50	-1.20	1.0000	0.000	5.000	5.000	921.788	926.864	5.076	70.5	70.5	70.50	80.0	77.0	78.50	12.23	0.9956	1.7086
0.681	1.50	-1.50	1.0000	0.000	10.000	10.000	888.600	898.746	10.146	70.5	70.5	70.50	83.0	77.0	80.00	14.30	0.9957	1.7520
0.679	1.50	-1.50	1.0000	0.000	10.000	10.000	898.746	908.895	10.149	70.5	70.5	70.50	84.0	78.0	81.00	14.33	0.9973	1.7581
0.967	3.00	-1.80	1.0000	0.000	10.000	10.000	855.200	865.292	10.092	70.5	70.5	70.50	83.0	76.0	79.50	10.07	0.9956	1.7408
0.962	3.00	-1.80	1.0000	0.000	10.000	10.000	865.292	875.408	10.116	70.5	70.5	70.50	84.0	76.0	80.00	10.12	0.9942	1.7582
																Averages	0.99529	1.73738

Nomenclature

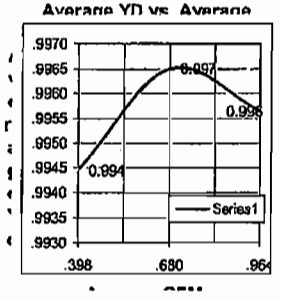
P_b	Barometric Pressure (in. Hg)
Q	Flow Rate (cfm)
ΔH	Orifice Pressure differential (in. H_2O)
ΔP	Inlet Pressure Differential (in. H_2O)
V_d	Gas Meter Volume - Dry (ft^3)
V_{ds}	Standard Meter Volume - Dry (ft^3)
T_d	Average Meter Box Temperature (°F)
T_o	Outlet Meter Box Temperature (°F)
T_{ds}	Average Standard Meter Temperature (°F)
Y_d	Meter Correction Factor (unitless), $Y_i \leq Y_{avg} \pm 0.02$
Y_{ds}	Standard Meter Correction Factor (unitless)
ΔH@	Orifice Pressure Differential giving 0.75 cfm of air at 68°F and 29.92 in. Hg (in. H_2O) $\Delta H@_i \leq \Delta H@_{avg} \pm 0.2$
Θ	Duration of Run (minutes)

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + \Delta P/13.6}{P_b + \Delta H/13.6}\right]$$

$$\Delta H@ = \frac{(0.0319)(\Delta H)}{P_b(T_o + 460)}\left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_{ds})}\right]^2$$

$$Q = \frac{17.64(V_{ds})(P_b)}{(T_{ds} + 460)(\Theta)}$$



Vacuum Gauge	
Standard (in.Hg)	Gauge (in.Hg)
5.2	5.0
10.2	10.0
15.2	15.0
20.0	20.0
25.3	25.0

Calibration Reference Information (Standard Meter)

Reference Used:	Wet Test Meter	Serial No:	11AH6
Calibrated By:	Martin Vaquero	Date Calibrated:	10/26/2011
Percent Error:	0.196%	Calibration Due Date:	10/26/2012

Meter Box Pre-Calibration Inspection

Positive Leak Check:	Pass	Electrical Check:	Pass
Negative Leak Check:	Pass	Pyrometer Check	Pass
Vacuum Gauge Check	Pass	YD Tolerance: ± 2%	Pass

CleanAir ENGINEERING

Meter Box - Pyrometer Calibration Sheet

Meter Box No: 66-4 Office: _____

Calibrated by: Jeff Ivens Client: SOURCE 66

Date: 11/2/11 Job No: _____

Temperature Scale Used: Fahrenheit Type of Calibration: Full-Test

Calibration Reference Settings (°F)	Pyrometer Reading for each Channel (°F)						
	1 Stack	2 Probe	3 Filter	4 Imp Out	5 Aux	6 DGM In	7 DGM Out
50	50	52	52				
100	100	102	102				
150	150	152	152				
200	200	202	202				
250	250	252	252				
300	300	302	302				
350	350	352	352				
400	400	402	402				
450	450	452	452				
500	500	502	502				
550	550	552	552				
600	600	602	602				

Tolerance = ±2°F difference from reference setting.

Calibration Reference Information

Reference Used: Omega CL23A Serial No: T-225950

Calibrated By: JH Metrology Date Calibrated: 11/10/2011

Calibration Report No: R044791 Calibration Due Date: 11/10/2012

Meter Box Full Test Calibration

Meter Box Serial No: 66-11

Calibration Signature: Martin Vaquero

Date of Calibration: 7/25/2011

Meter Box Yd: 0.9915

Standard Meter Serial No: 11AH6

Meter Box ΔH@: 1.8118

Date of Calibration: 10/26/2010

Barometer Serial No: W12637

Calibration Conducted by: Martin Vaquero

Barometric Pressure: 29.22

				Standard Meter Gas Volume (ft^3)			Meter Box Gas Volume (ft^3)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)			Time (min.)	Calibration Results	
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds} Net	Initial	Final	V_d Net	T_{is} In	T_{os} Out	T_{ds} Avg.	T_i In	T_o Out	T_d Avg.	Θ	Y_d	ΔH@
0.953	3.00	-1.80	1.0000	0.000	10.000	10.000	48.593	58.716	10.123	79.0	79.0	79.00	94.0	81.0	87.50	10.03	0.9914	1.7694
0.952	3.00	-1.80	1.0000	0.000	10.000	10.000	58.716	68.869	10.153	79.0	79.0	79.00	95.0	83.0	89.00	10.04	0.9912	1.7664
0.378	0.50	-0.90	1.0000	0.000	5.000	5.000	73.527	78.626	5.099	78.5	78.5	78.50	89.0	84.0	86.50	12.67	0.9917	1.8684
0.378	0.50	-0.90	1.0000	0.000	5.000	5.000	78.626	83.727	5.101	78.5	78.5	78.50	89.0	84.0	86.50	12.67	0.9913	1.8684
0.665	1.50	-1.50	1.0000	0.000	10.000	10.000	89.422	99.637	10.215	78.5	78.5	78.50	94.0	86.0	90.00	14.39	0.9923	1.8010
0.665	1.50	-1.50	1.0000	0.000	10.000	10.000	99.637	109.873	10.236	78.5	78.5	78.50	94.0	87.0	90.50	14.39	0.9912	1.7977
																Averages	0.99151	1.81185

Nomenclature

- P_b Barometric Pressure (In. Hg)
- Q Flow Rate (cfm)
- ΔH Orifice Pressure differential (in. H_2O)
- ΔP Inlet Pressure Differential (In. H_2O)
- V_d Gas Meter Volume - Dry (ft^3)
- V_{ds} Standard Meter Volume - Dry (ft^3)
- T_d Average Meter Box Temperature (°F)
- T_o Outlet Meter Box Temperature (°F)
- T_{ds} Average Standard Meter Temperature (°F)
- Y_d Meter Correction Factor (unitless), $Y_i \leq Y_{avg} \pm 0.02$
- Y_{ds} Standard Meter Correction Factor (unitless)
- ΔH@ Orifice Pressure Differential giving 0.75 cfm of air at 68°F and 29.92 in. Hg (In. H_2O) $\Delta H@_i \leq \Delta H@_{avg} \pm 0.2$
- Θ Duration of Run (minutes)

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + \Delta P/13.6}{P_b + \Delta H/13.6}\right]$$

$$\Delta H@ = \frac{(0.0319)(\Delta H)}{P_b(T_o + 460)}\left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_{ds})}\right]^2$$

$$Q = \frac{17.64(V_{ds})(P_b)}{(T_{ds} + 460)(\Theta)}$$

Vacuum Gauge

Standard (in.Hg)	Gauge (in.Hg)
5.0	4.7
10.0	9.9
15.0	15.0
20.0	20.3
25.0	25.9

CleanAir ENGINEERING

Meter Box - Pyrometer Calibration Sheet

Meter Box No: 66-11 Office: _____

Calibrated by: Martin Vaquero Client: _____

Date: 7/25/11 Job No: _____

Temperature Scale Used: Fahrenheit Type of Calibration: Full-Test

Calibration Reference Settings (°F)	Pyrometer Reading for each Channel (°F)						
	1 Stack	2 Probe	3 Filter	4 Imp Out	5 Aux	6 DGM In	7 DGM Out
50	48	51	51				
100	98	101	101				
150	148	151	151				
200	198	201	201				
250	248	251	250				
300	298	301	301				
350	348	351	351				
400	398	401	401				
450	448	451	451				
500	498	501	501				
550	548	551	550				
600	598	601	601				

Tolerance = ±2°F difference from reference setting.

Calibration Reference Information

Reference Used: Omega CL23A Serial No: T-279500

Calibrated By: JH Metrology Date Calibrated: 8/17/2010

Calibration Report No: 1000150487 Calibration Due Date: 8/17/2011

Meter Box Full Test Calibration

Meter Box Serial No: 66-21 **Calibration Signature:** Martin Vaquero

Date of Calibration: 8/17/11 **Meter Box Yd:** 0.9888

Standard Meter Serial No: 11AH6 **Meter Box ΔH@:** 1.8162

Date of Calibration: 10/26/10 **Barometer Serial No:** W12637

Calibration Conducted by: Martin Vaquero **Barometric Pressure:** 29.41

				Standard Meter Gas Volume (ft^3)			Meter Box Gas Volume (ft^3)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)			Time (min.)	Calibration Results	
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds} Net	Initial	Final	V_d Net	T_{is} In	T_{os} Out	T_{ds} Avg.	T_i In	T_o Out	T_d Avg.	Θ	Y_d	ΔH@
0.953	3.00	-1.80	1.0000	0.000	10.000	10.000	47.980	58.115	10.135	78.5	78.5	78.50	92.0	83.0	87.50	10.11	0.9912	1.7762
0.950	3.00	-1.80	1.0000	0.000	10.000	10.000	58.115	68.284	10.169	78.5	78.5	78.50	94.0	84.0	89.00	10.14	0.9906	1.7835
0.378	0.50	-1.20	1.0000	0.000	5.000	5.000	76.237	81.325	5.088	78.5	78.5	78.50	86.0	84.0	85.00	12.75	0.9903	1.8798
0.377	0.50	-1.20	1.0000	0.000	5.000	5.000	81.325	86.419	5.094	78.5	78.5	78.50	86.0	84.0	85.00	12.79	0.9892	1.8916
0.671	1.50	-1.40	1.0000	0.000	10.000	10.000	102.926	113.190	10.264	78.0	78.0	78.00	93.0	85.0	89.00	14.37	0.9870	1.7843
0.672	1.50	-1.40	1.0000	0.000	10.000	10.000	123.836	134.125	10.289	78.0	78.0	78.00	93.0	85.0	89.00	14.36	0.9846	1.7818
																Averages	0.98883	1.81621

Nomenclature

- P_b Barometric Pressure (in. Hg)
- Q Flow Rate (cfm)
- ΔH Orifice Pressure differential (in. H_2O)
- ΔP Inlet Pressure Differential (in. H_2O)
- V_d Gas Meter Volume - Dry (ft^3)
- V_{ds} Standard Meter Volume - Dry (ft^3)
- T_d Average Meter Box Temperature (°F)
- T_o Outlet Meter Box Temperature (°F)
- T_{ds} Average Standard Meter Temperature (°F)
- Y_d Meter Correction Factor (unitless), $Y_i \leq Y_{avg} \pm 0.02$
- Y_{ds} Standard Meter Correction Factor (unitless)
- ΔH@ Orifice Pressure Differential giving 0.75 cfm of air at 68°F and 29.92 in. Hg (in. H_2O) $\Delta H@_i \leq \Delta H@_{avg} \pm 0.2$
- Θ Duration of Run (minutes)

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + \Delta P/13.6}{P_b + \Delta H/13.6}\right]$$

$$\Delta H@ = \frac{(0.0319)(\Delta H)}{P_b(T_o + 460)}\left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_{ds})}\right]^2$$

$$Q = \frac{17.64(V_{ds})(P_b)}{(T_{ds} + 460)(\Theta)}$$

Vacuum Gauge

Standard (In.Hg)	Gauge (in.Hg)
5.1	5.0
10.0	10.0
14.9	15.0
19.5	20.0
24.7	25.0

CleanAir ENGINEERING

Meter Box - Pyrometer Calibration Sheet

Meter Box No: 66-21 Office: _____

Calibrated by: Martin Vaquero Client: _____

Date: 8/17/11 Job No: _____

Temperature Scale Used: Fahrenheit Type of Calibration: Full-Test

Calibration Reference Settings (°F)	Pyrometer Reading for each Channel (°F)						
	1 Stack	2 Probe	3 Filter	4 Imp Out	5 Aux	6 DGM In	7 DGM Out
50	50	50	51				
100	100	100	100				
150	150	150	150				
200	200	200	200				
250	250	250	250				
300	300	300	300				
350	350	350	350				
400	400	400	400				
450	450	451	450				
500	500	500	500				
550	550	550	550				
600	600	600	600				

Tolerance = ±2°F difference from reference setting.

Calibration Reference Information

Reference Used: Omega CL23A Serial No: T-225950

Calibrated By: JH Metrology Date Calibrated: 10/5/10

Calibration Report No: 1000150487 Calibration Due Date: 10/5/11

Meter Box Full Test Calibration

Meter Box Serial No: 85-3 **Calibration Signature:** Martin Vaquero

Date of Calibration: 5/16/2011 **Meter Box Yd:** 0.9925

Standard Meter Serial No: 11AH6 **Meter Box ΔH@:** 1.7792

Date of Calibration: 10/26/2010 **Barometer Serial No:** W12637

Calibration Conducted by: Martin Vaquero **Barometric Pressure:** 29.25

				Standard Meter Gas Volume (ft^3)			Meter Box Gas Volume (ft^3)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)			Time (min.)	Calibration Results	
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds} Net	Initial	Final	V_d Net	T_{is} In	T_{os} Out	T_{ds} Avg.	T_i In	T_o Out	T_d Avg.	Θ	Y_d	ΔH@
0.959	3.00	-1.70	1.0000	0.000	10.000	10.000	52.139	62.429	10.290	66.5	66.5	66.50	86.0	79.0	82.50	10.22	0.9896	1.7575
0.960	3.00	-1.70	1.0000	0.000	10.000	10.000	62.429	72.719	10.290	66.5	66.5	66.50	87.0	80.0	83.50	10.21	0.9914	1.7508
0.387	0.50	-0.80	1.0000	0.000	5.000	5.000	74.125	79.278	5.153	66.5	66.5	66.50	81.0	79.0	80.00	12.65	0.9919	1.7951
0.387	0.50	-0.80	1.0000	0.000	5.000	5.000	79.278	84.430	5.152	66.5	66.5	66.50	81.0	79.0	80.00	12.65	0.9921	1.7951
0.672	1.50	-1.30	1.0000	0.000	10.000	10.000	85.517	95.788	10.271	66.5	66.5	66.50	85.0	79.0	82.00	14.58	0.9952	1.7885
0.672	1.50	-1.30	1.0000	0.000	10.000	10.000	95.788	106.065	10.277	66.5	66.5	66.50	85.0	79.0	82.00	14.58	0.9947	1.7885
																Averages	0.99251	1.77923

Nomenclature

- P_b Barometric Pressure (in. Hg)
- Q Flow Rate (cfm)
- ΔH Orifice Pressure differential (in. H_2O)
- ΔP Inlet Pressure Differential (in. H_2O)
- V_d Gas Meter Volume - Dry (ft^3)
- V_{ds} Standard Meter Volume - Dry (ft^3)
- T_d Average Meter Box Temperature (°F)
- T_o Outlet Meter Box Temperature (°F)
- T_{ds} Average Standard Meter Temperature (°F)
- Y_d Meter Correction Factor (unitless), $Y_i \leq Y_{avg} \pm 0.02$
- Y_{ds} Standard Meter Correction Factor (unitless)
- ΔH@ Orifice Pressure Differential giving 0.75 cfm of air at 68°F and 29.92 in. Hg (in. H_2O) $\Delta H@_i \leq \Delta H@_{avg} \pm 0.2$
- Θ Duration of Run (minutes)

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + \Delta P/13.6}{P_b + \Delta H/13.6}\right]$$

$$\Delta H@ = \frac{(0.0319)(\Delta H)}{P_b(T_o + 460)}\left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_{ds})}\right]^2$$

$$Q = \frac{17.64(V_{ds})(P_b)}{(T_{ds} + 460)(\Theta)}$$

Vacuum Gauge

Standard (in.Hg)	Gauge (in.Hg)
4.4	5.0
9.6	10.0
14.4	15.0
19.2	20.0
24.6	25.0

CleanAir ENGINEERING

Meter Box - Pyrometer Calibration Sheet

Meter Box No: 85-3 Office: PALATINE

Calibrated by: Martin Vaquero Client: _____

Date: 5/16/11 Job No: _____

Temperature Scale Used: Fahrenheit Type of Calibration: Full-Test

Calibration Reference Settings (°F)	Pyrometer Reading for each Channel (°F)						
	1 Stack	2 Probe	3 Filter	4 Imp Out	5 Aux	6 DGM In	7 DGM Out
50	51	50	51				
100	100	100	102				
150	151	151	152				
200	201	201	202				
250	251	251	252				
300	301	301	302				
350	352	351	352				
400	401	401	402				
450	451	450	452				
500	501	500	502				
550	551	550	552				
600	601	600	601				

Tolerance = ±2°F difference from reference setting.

Calibration Reference Information

Reference Used: Omega CL23A Serial No: T-279500

Calibrated By: JH Metrology Date Calibrated: 8/17/2010

Calibration Report No: 1000150487 Calibration Due Date: 8/17/2011

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FIELD DATA

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I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified as accurate.

QA/QC Initials: MC

Date: 4/27/12

CleanAir.

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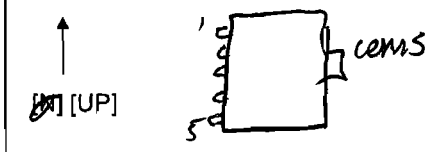
TEST LOCATION: EE out

UNIT: 1

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheel.	Project No.	11414
Plant	S Broward	Date	3/22/12
Meter Operator	K Sullivan		
Probe Operator	A Obuchowski		
Source of Moisture and Molecular Weight Data	M26 R1		

Cross-Section of Test Location



Amb. Temp. (°F)	75	Bar. Press.	30.10 [in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	66-SP-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run	1	Load		Run		Load		Run	2	Load		Run		Load	
Start Time	7:55	Stop Time	9:04	Start Time		Stop Time		Start Time	8:51	Stop Time	9:40	Start Time		Stop Time	
Static Press. (in. H_2O)		-10.5		Static Press. (in. H_2O)				Static Press. (in. H_2O)		-10.6		Static Press. (in. H_2O)			
Post-Test Leak Check:	Pass ☑	Fail ☐		Post-Test Leak Check:	Pass ☐	Fail ☐		Post-Test Leak Check:	Pass ☑	Fail ☐		Post-Test Leak Check:	Pass ☐	Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	300	0.35		4-1	302	0.37		1-1	300	0.29		4-1	300	0.36	
2	300	0.36		2	302	0.36		2	300	0.30		2	300	0.32	
3	300	0.30		3	302	0.34		3	300	0.33		3	300	0.29	
4	301	0.28		4	303	0.41		4	300	0.37		4	300	0.33	
5	300	0.44		5	303	0.47		5	300	0.39		5	300	0.46	
2-1	300	0.40		5-1	301	0.30		2-1	301	0.36		5-1	300	0.32	
2	300	0.38		2	301	0.37		2	302	0.34		2	300	0.32	
3	300	0.33		3	301	0.41		3	302	0.35		3	300	0.31	
4	301	0.37		4	302	0.45		4	302	0.41		4	300	0.28	
5	301	0.52		5	302	0.47		5	303	0.44		5	300	0.46	
3-1	301	0.39						3-1	299	0.33					
2	301	0.39						2	300	0.32					
3	301	0.38						3	300	0.34					
4	301	0.42						4	301	0.42					
5	301	0.49						5	301	0.44					
Total	7527	*15.5842				*			7511	*14.8569				*	
Average	301.0800	0.6234							300.4400	0.5942					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/22/12

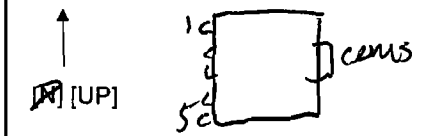
TEST LOCATION: EFGT

UNIT: 1

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheelabrator	Project No.	16424
Plant	S Broward	Date	3/22/12
Meter Operator	K Sullivan		
Probe Operator	A Obuchowski		
Source of Moisture and Molecular Weight Data			

Cross-Section of Test Location



Amb. Temp. (°F)	80	Bar. Press.	30.15 [in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	66-SP-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 3	Load	Run	Load	Run 4	Load	Run	Load
Start Time 9:19	Stop Time 9:29	Start Time	Stop Time	Start Time 9:58	Stop Time 10:06	Start Time	Stop Time
Static Press. (in. H_2O) ~10.8		Static Press. (in. H_2O)		Static Press. (in. H_2O) ~10.7		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	301	0.35		4-1	300	0.40		1-1	301	0.30		4-1	300	0.38	
2	301	0.35		2	301	0.37		2	302	0.37		2	300	0.37	
3	301	0.40		3	301	0.32		3	302	0.43		3	301	0.39	
4	301	0.46		4	301	0.34		4	303	0.45		4	301	0.41	
5	301	0.47		5	302	0.47		5	302	0.47		5	301	0.49	
2-1	302	0.40		5-1	300	0.39		2-1	302	0.45		5-1	300	0.35	
2	302	0.38		2	300	0.36		2	302	0.41		2	300	0.36	
3	303	0.40		3	301	0.35		3	302	0.40		3	300	0.32	
4	303	0.45		4	301	0.39		4	303	0.47		4	300	0.32	
5	303	0.48		5	301	0.44		5	303	0.51		5	301	0.49	
3-1	301	0.40						3-1	301	0.40					
2	301	0.38						2	301	0.38					
3	301	0.38						3	301	0.38					
4	301	0.43						4	301	0.44					
5	301	0.46						5	301	0.50					
Total	7531	*15.8323							7531	*15.9627					
Average	301.2400	0.6333							301.240	0.6393					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date 3/22/12

TEST LOCATION: FF outlet

UNIT: 1

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheelabrator	Project No.	11414
Plant	S Broward	Date	3/22/12
Meter Operator	K Sullivan		
Probe Operator	A Obuchowski		
Source of Moisture and Molecular Weight Data	M26		

Cross-Section of Test Location

Amb. Temp. (°F)	80	Bar. Press.	30.15 [in. Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	GGBP-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	70
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 6	Load	Run	Load	Run 5	Load	Run	Load
Start Time 10:41	Stop Time 11:34	Start Time	Stop Time	Start Time 10:41	Stop Time 10:58	Start Time	Stop Time
Static Press. (in. H_2O) -10.7		Static Press. (in. H_2O)		Static Press. (in. H_2O) -10.7		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	301	0.34		4-1	302	0.40		1-1	301	0.40		4-1	302	0.42	
2	301	0.37		2	302	0.35		2	301	0.41		2	302	0.38	
3	302	0.40		3	302	0.33		3	301	0.45		3	302	0.37	
4	303	0.43		4	302	0.38		4	301	0.52		4	302	0.40	
5	303	0.43		5	302	0.55		5	301	0.52		5	302	0.49	
2-1	303	0.36		5-1	302	0.34		2-1	301	0.39		5-1	300	0.38	
2	303	0.35		2	303	0.32		2	301	0.37		2	300	0.34	
3	303	0.36		3	303	0.27		3	301	0.40		3	300	0.28	
4	303	0.42		4	303	0.27		4	302	0.47		4	301	0.30	
5	303	0.45		5	303	0.35		5	303	0.50		5	301	0.44	
3-1	302	0.35						3-1	303	0.44					
2	303	0.35						2	304	0.37					
3	303	0.38						3	304	0.39					
4	303	0.44						4	304	0.42					
5	303	0.47						5	304	0.49					
Total	7563	15.3495							7544	16.0329					
Average	302.52	0.6140							301.76	0.6413					

Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

FDS002-Velocity.xls, August 2004

QA/QC KS

Date 3/24/12

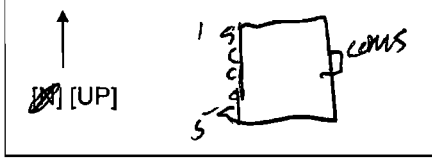
TEST LOCATION: FF out

UNIT: 1

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheel	Project No.	11414
Plant	S Broward	Date	3/22/12
Meter Operator	K Sullivan		
Probe Operator	B Arnold		
Source of Moisture and Molecular Weight Data			
	NA		

Cross-Section of Test Location



Amb. Temp. (°F)	65	Bar. Press.	30.10 [in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	66-SP-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In]	[Out]	Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96 x 96		

Run 7	Load	Run	Load	Run 8	Load	Run	Load
Start Time 12:03	Stop Time 12:13	Start Time	Stop Time	Start Time 12:39	Stop Time 12:49	Start Time	Stop Time
Static Press. (in. H_2O) -11.5		Static Press. (in. H_2O)		Static Press. (in. H_2O) -11.6		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	304	0.35		4-1	304	0.37		1-1	303	0.40		2-1	303	0.48	
2	304	0.40		2	304	0.32		2	303	0.40		2	303	0.41	
3	304	0.43		3	304	0.30		3	303	0.42		3	304	0.40	
4	304	0.46		4	303	0.35		4	304	0.47		4	304	0.45	
5	304	0.47		5	303	0.49		5	304	0.52		5	304	0.62	
2-1	303	0.38		5-1	303	0.44		2-1	303	0.45		5-1	304	0.40	
2	303	0.32		2	303	0.40		2	303	0.41		2	304	0.36	
3	304	0.35		3	303	0.30		3	303	0.38		3	304	0.34	
4	304	0.42		4	303	0.32		4	304	0.50		4	304	0.31	
5	304	0.48		5	303	0.45		5	304	0.50		5	304	0.47	
3-1	304	0.42						3-1	304	0.45					
2	304	0.37						2	304	0.40					
3	304	0.35						3	304	0.35					
4	304	0.42						4	304	0.43					
5	304	0.46						5	303	0.55					
Total	7591	*15.6404				*			7591	*16.4518				*	
Average	303.6400	0.6256							303.6400	0.6581					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/

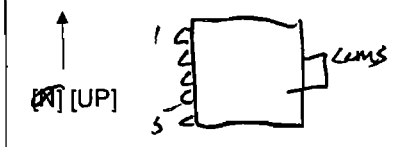
TEST LOCATION: FF out

UNIT: 1

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheel.	Project No.	11414
Plant	S Broward	Date	3/22/17
Meter Operator	K Sullivan		
Probe Operator	B Arnold		
Source of Moisture and Molecular Weight Data	MM		

Cross-Section of Test Location



Amb. Temp. (°F)	88	Bar. Press. 30.05	[in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	46-8P-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96 x 96		

Run	9	Load		Run		Load		Run	10	Load		Run		Load	
Start Time	13:17	Stop Time	13:27	Start Time		Stop Time		Start Time	13:57	Stop Time	14:06	Start Time		Stop Time	
Static Press. (in. H_2O)	-11.7			Static Press. (in. H_2O)				Static Press. (in. H_2O)	-11.6			Static Press. (in. H_2O)			
Post-Test Leak Check:	Pass ☑ Fail ☐			Post-Test Leak Check:	Pass ☐ Fail ☐			Post-Test Leak Check:	Pass ☑ Fail ☐			Post-Test Leak Check:	Pass ☐ Fail ☐		

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	303	0.35		4-1	303	0.38		1-1	302	0.38		4-1	302	0.38	
2	304	0.37		2	303	0.36		2	302	0.37		2	302	0.38	
3	303	0.40		3	303	0.33		3	302	0.40		3	302	0.36	
4	303	0.45		4	303	0.34		4	301	0.46		4	301	0.40	
5	303	0.45		5	302	0.48		5	301	0.46		5	302	0.53	
2-1	303	0.38		5-1	302	0.39		4-1	303	0.42		5-1	303	0.35	
2	303	0.34		2	302	0.35		2	303	0.38		2	303	0.33	
3	303	0.38		3	302	0.28		3	303	0.40		3	303	0.29	
4	303	0.46		4	301	0.27		4	303	0.45		4	303	0.29	
5	303	0.46		5	301	0.45		5	304	0.46		5	303	0.40	
3-1	301	0.39						3-1	302	0.41					
2	302	0.34						2	302	0.38					
3	302	0.34						3	303	0.40					
4	302	0.40						4	303	0.46					
5	302	0.43						5	303	0.50					
Total	7562	*15.4278				*			7561	*15.8031				*	
Average	302.4400	0.6171							302.4400	0.6321					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/22/17

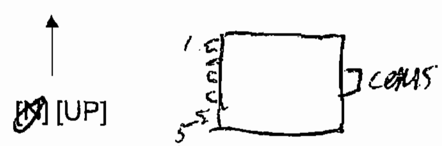
TEST LOCATION: FF out HCl **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 1 **RUN:** 1 **FIELD DATA SHEET**

Client	Wheel.	Project No.	112124
Plant	S Broward	Date	3/22/12
Meter Operator	K Sullivan		
Probe Operator	K Sullivan		

Meter Box	55-3	Sample Box No.	36
Meter Y_d	0.9925	Meter $\Delta H_@$	1.7792
K Factor	/	Pitot C_p	/
Leak Rate Before	0.004 [cfm] [Lpm] @ 15 (in. Hg)		
Leak Rate After	0.002 [cfm] [Lpm] @ 5 (in. Hg)		
Pitot Leak Check Before: ☐	After: Good ☑ Bad ☐		

Cross-Section of Test Location



Duct Dimensions (in.)	16		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.5	10		

Amb. Temp. (°F)	75	Bar. Press.	30.10 [in Hg] [mbar]
Probe I.D. No.	62-4-1		
Liner Material	Pyrex		

Filter No.	/	
Thimble No.	/	
Nozzle Diameter	/	Nozzle I.D. /

Start Time:	7:44	Stop Time:	8:44

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 27.300	Stack Temp. Ts (°F)	Probe T_p (°F) Set Point 300	Filter T_f (°F) Set Point 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐	Notes
3-3	5	N/A	1.5	30.67	301	299	300	65	76	75	3	8.3		
	10		1.5	34.03	301	297	301	65	79	75	3	8.4		
	15		1.5	37.46	301	298	300	63	80	75	4	8.7		
	20		1.5	40.87	301	299	300	59	81	76	4	8.6		
	25		1.5	44.27	301	299	301	57	82	76	4	8.8		
	30		1.5	47.70	301	299	299	57	83	77	4	8.7		
	35		1.5	51.06	301	299	301	56	83	77	4	8.4		
	40		1.5	54.45	301	298	300	58	83	77	4	8.5		
	45		1.5	57.89	301	300	300	61	84	78	4	8.8		
	50		1.5	61.33	301	299	300	61	84	78	4	8.4		
	55		1.5	64.80	301	298	300	63	84	78	4	8.5		
	60		1.5	68.235	301	300	300	65	84	78	4	8.4		
	Total	*	18.0	40.935	3612				983	920				
	Average		1.5000		301.0000				79.2917					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date [illegible]

new general datasheet, December 2006

TEST LOCATION: FF outlet **TESTING** HCl **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 1 **RUN:** 2

FIELD DATA SHEET

Client	Wheel	Project No.	11414
Plant	S Broward	Date	3/22/12
Meter Operator	K Sullivan		
Probe Operator	K Sullivan		

Meter Box	485-3	Sample Box No.	B3
Meter Y_d	0.9925	Meter $\Delta H_@$	1.7792
K Factor		Pitot C_p	
Leak Rate Before	0.006 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	5 (in. Hg)
Pitot Leak Check Before: ☒	After: Good ☒ Bad ☐		

Cross-Section of Test Location

Duct Dimensions (in.) 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.5	10		

Amb. Temp. (°F)	80	Bar. Press.	30.15 [in Hg] [mbar]
Probe I.D. No.	67-4-1		
Liner Material	Pyrex		

Filter No.		
Thimble No.		
Nozzle Diameter		Nozzle I.D.

Start Time:	9:07	Stop Time:	10:07

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. 58.950 [cf] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐	Notes
3-3	5	N/A	1.5	72.43	302	296	300	64	79	78	4	8.9		
1	10		1.5	75.84	302	298	301	64	77	78	4	8.6		
	15		1.5	79.18	302	302	301	63	83	78	4	8.7		
	20		1.5	82.55	302	301	301	62	84	79	4	8.3		
	25		1.5	86.11	302	300	301	64	85	80	4	8.5		
	30		1.5	89.45	302	300	300	64	86	80	4	8.5		
	35		1.5	92.91	302	299	301	62	87	81	4	8.1		
	40		1.5	96.36	302	299	300	65	87	81	4	8.2		
	45		1.5	99.82	303	299	300	65	87	81	4	8.4		
	50		1.5	103.27	303	299	301	65	87	81	4	8.8		
	55		1.5	106.69	303	298	300	66	88	82	4	8.9		
	60		1.5	110.126	303	300	301	66	88	82	4	8.7		
	Total	* 6	18.0	41.220	3628				1050	961				
	Average		1.5000		302.3333				87.5417					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date 3/22/12

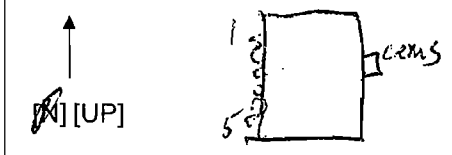
TEST LOCATION: FF outlet HCl **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 1 **RUN:** 3

FIELD DATA SHEET

Client	Wheel.
Plant	S Broward
Meter Operator	K Sullivan
Probe Operator	K Sullivan
Project No.	11414
Date	3/22/12

Cross-Section of Test Location



Amb. Temp. (°F)	80
Bar. Press.	30.10 [in Hg] [mbar]
Probe I.D. No.	67-4-1
Liner Material	Pyrex

Meter Box	85-3
Meter Y_d	0.9925
K Factor	/
Leak Rate Before	0.005 [cfm] [Lpm] @ 15 (in. Hg)
Leak Rate After	0.004 [cfm] [Lpm] @ 8 (in. Hg)
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐
Sample Box No.	N/A
Meter $\Delta H_@$	1.7792
Pitot C_p	/

Duct Dimensions (in.)	96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.7	10		

Filter No.	/	
Thimble No.	/	
Nozzle Diameter	/	Nozzle I.D. /

Start Time:	10:32
Stop Time:	11:32

Traverse Point Number	Min/pt 5' Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. 110.965 [L]	Stack Temp. Ts (°F)	ProbeT$_p$ (°F) Set Points 300	Filter T$_f$ (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐ ____	Notes
3.3	5'	N/A	1.5	116.38	302	297	299	65	84	83	7	9.2		
	10		1.5	117.81	302	296	300	64	86	82	7	9.3		
	15		1.5	121.22	302	295	301	64	86	83	7	9.0		
	20		1.5	124.65	302	297	300	64	87	83	7	9.6		
	25		1.5	128.11	302	300	299	63	87	83	7	9.4		
	30		1.5	131.60	302	301	301	62	87	83	7	8.8		
	35		1.5	135.11	303	297	301	55	88	84	7	9.5		
	40		1.5	138.50	303	298	300	52	88	84	7	9.7		
	45		1.5	142.10	303	300	301	47	89	85	7	9.3		
	50		1.5	145.60	303	302	300	48	89	85	7	9.3		
	55		1.5	149.10	303	303	300	52	89	85	7	9.3		
	60		1.5	152.610	303	303	301	53	89	85	7	9.2		
	Total	*	15.0	41.645	3630				1049	1005				
	Average		1.5000		302.5000				85.5833					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/[illegible]/12

Impinger Weight Sheet

Client Wheelabrator		Unit Name / Location	Unit 1 FF Outlet
Plant South Broward	Job No. 11414	Method	Modified M26A

Balance Calibration Check

Balance ID		Reference Weight Mass	
Reference Weight ID		Reference Weight Reading	

Check must be performed at least Once per Method per Job

Reference Weight Mass must agree with Reference Weight Reading to within ±0.5 g.

Run No. 1	Filter Type Teflon Mat	Sample Box No.	B6
Date 3/22/12	Lot No. MA	pH	MA
Analyst R. Vicere	Filter No. NA	Rinse	NA

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	632.2	552.2	80.0	
Impinger 2	100 mL 01.N H2SO4	752.3	628.1	124.2	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	567.8	535.9	31.9	Date 3/22
Impinger 4	Empty	479.7	475.0	4.7	
Impinger 5	Silica Gel	759.4	749.7	9.7	Total Weight (gm)
Impinger 6					240.8
Impinger 7					250.5

Run No. 2	Filter Type Teflon Mat	Sample Box No.	B3
Date 3/22/12	Lot No. MA	pH	MA
Analyst R. Vicere	Filter No. NA	Rinse	NA

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	568.0	458.2	109.8	
Impinger 2	100 mL 01.N H2SO4	654.7	541.3	113.4	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	655.3	634.9	20.4	Date 3/22
Impinger 4	Empty	443.9	439.0	4.9	
Impinger 5	Silica Gel	719.9	707.6	12.3	Total Weight (gm)
Impinger 6					248.5
Impinger 7					260.8

Run No. 3	Filter Type Teflon Mat	Sample Box No.	B4
Date 3/22/12	Lot No. MA	pH	MA
Analyst R. Vicere	Filter No. NA	Rinse	NA

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	545.9	459.0	86.9	
Impinger 2	100 mL 01.N H2SO4	669.1	554.0	115.1	QA/QC SB
Impinger 3	100 mL 01.N H2SO4	567.7	544.8	22.9	Date 3/22
Impinger 4	Empty	443.9	438.6	5.3	
Impinger 5	Silica Gel	785.0	769.2	15.8	Total Weight (gm)
Impinger 6					230.2
Impinger 7					246.0

QA/QC SB
Date 3/22

CleanAir. ENGINEERING

TEST LOCATION: FF outlet

UNIT: 1 **RUN:** 1

MOISTURE DETERMINATION FIELD DATA SHEET

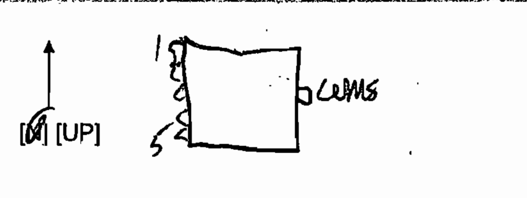
PAGE 1 OF 1

Client	Wheel	Project No.	11414
Plant	S Broward	Date	
Meter Operator	K Sullivan		
Probe Operator	B Arnold		

Meter Box No	85-3
Meter Y_d	0.9925

Leak Rate Before	0.004	(cfm) @	15	(in Hg)
Leak Rate After	0.002	(cfm) @	4	(in Hg)

Cross Section of Test Location



Duct Dimensions (in)	96x96		
Static Press (in H_2O)	Port Length (in)	Gas Flow [In] [Out] of page	Point No. 1 all the way [In] [Out]
-11.5	10		

Amb. Temp (°F)	85	Bar. Press	30.10	[in Hg] [mbar]
Liner Material	SS			

H_2O	161 [ml] [gm]	Silica Gel (gm)	9.1
Total V_{lc}	170.1		

Start Time	12:00	Stop Time	12:45

Traverse Point Number	Min/pt 5 Elapsed Time	Orifice Setting ΔH (in H_2O)	Gas Sample Volume V_m Init Vol. [ft³] [L] 153.225	Stack Temp Ts (°F)	Cond. Temp (°F)	DGM Inlet Temp (°F)	DGM Outlet Temp (°F)	Pump Vacuum (in Hg)	Notes
3-3	5	1.3	156.46	NA	65	87	84	3	
	10	1.3	159.69		64	87	84	3	
	15	1.3	162.89		62	87	84	3	
	20	1.3	166.10		58	88	85	3	
	25	1.3	169.30		57	88	85	3	
	30	1.3	172.47		52	88	85	3	
	35	1.3	175.65		52	89	86	3	
	40	1.3	178.83		53	89	86	3	
	45	1.3	182.040		53	89	86	3	
	Total	11.7	28.815			792	765		
	Average	1.3000				86.5000			

Circle correct bracketed units on data sheet.

QA/QC KS
Date 3/22/12

CleanAir ENGINEERING

E - 12

TEST LOCATION: FF out

UNIT: 1 RUN: 2

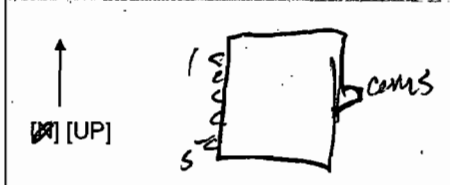
MOISTURE DETERMINATION FIELD DATA SHEET

Client	Wheel	Project No.	112419
Plant	S Broward	Date	3/22/12
Meter Operator	K Sullivan		
Probe Operator	B Arnold		

Meter Box No	85-3
Meter Y_d	0.9925

Leak Rate Before	0.004	(cfm) @	15	(in. Hg)
Leak Rate After	0.002	(cfm) @	5	(in. Hg)

Cross Section of Test Location



Duct Dimensions (in.)	96 x 96		
Static Press. (in. H_2O)	Port Lens. (in.)	Gas Flow [In] [Out] of page	Point No. 1 all the way [In] [Out]
-11.7	10		

Amb. Temp. (°F)	85	Bar. Press.	30.10 [in Hg] [mbar]
Liner Material	SS		

H_2O	170 [ml] [gm]	Silica Gel (gm)	5.8
Total V	175.8		

Start Time	13:12	Stop Time	14:02

Traverse Point Number	Min/pt 5 Elapsed Time	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 182.160	Stack Temp. T_s (°F)	Cond. Temp. T_c (°F)	DGM Inlet T_{in} (°F)	DGM Outlet T_{out} (°F)	Pump Vacuum (in. Hg)	Notes
3-3	5	1.3	185.38	N/A	59	86	86	4	
	10	1.3	188.58		55	89	86	4	
	15	1.3	191.80		57	90	87	4	
	20	1.3	194.95		57	90	87	4	
	25	1.3	198.14		55	90	87	4	
	30	1.3	201.33		55	89	87	4	
	35	1.3	204.49		56	87	85	4	
	40	1.3	207.67		58	87	85	4	
	45	1.3	210.980		59	87	85	4	
	Total	11.7	28.740			795	775		
	Average	1.3000				87.2222			

Circle correct bracketed units on data sheet.

QA/QC KS
Date 3/22/12

CleanAir ENGINEERING

TEST LOCATION: FF out

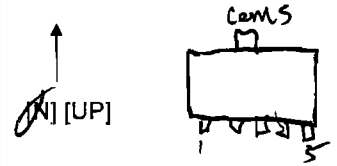
UNIT: 2

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheelabrator
Plant	S Broward
Meter Operator	K Sullivan
Probe Operator	
Source of Moisture and Molecular Weight Data	M26

Project No.	11414
Date	3/20/17

Cross-Section of Test Location



Amb. Temp. (°F)	85	Bar. Press.	30.05 [inHg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	6L-SP-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	90
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 3	1	Load		Run		Load		Run 3	4/2	Load		Run		Load	
Start Time	12:28	Stop Time	12:39	Start Time		Stop Time		Start Time	13:10	Stop Time	13:21	Start Time		Stop Time	
Static Press. (in. H_2O)		-15.8		Static Press. (in. H_2O)				Static Press. (in. H_2O)		-15.3		Static Press. (in. H_2O)			
Post-Test Leak Check:	Pass ☒	Fail ☐		Post-Test Leak Check:	Pass ☐	Fail ☐		Post-Test Leak Check:	Pass ☒	Fail ☐		Post-Test Leak Check:	Pass ☐	Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	289	0.52		4-1	294	0.52		5-1	293	0.44		4-1	291	0.52	
2	290	0.52		2	294	0.51		2	293	0.44		2	291	0.49	
3	291	0.55		3	294	0.52		3	292	0.45		3	293	0.52	
4	292	0.61		4	295	0.56		4	291	0.45		4	293	0.53	
5	292	0.59		5	294	0.65		5	290	0.45		5	293	0.60	
2-1	291	0.52		5-1	293	0.48		2-1	294	0.48		5-1	290	0.51	
2	293	0.52		2	292	0.48		2	294	0.47		2	291	0.53	
3	293	0.52		3	293	0.49		3	294	0.50		3	292	0.50	
4	293	0.57		4	292	0.46		4	294	0.56		4	292	0.48	
5	293	0.58		5	292	0.54		5	294	0.56		5	292	0.55	
3-1	292	0.50						3-1	293	0.55					
2	292	0.49						2	293	0.49					
3	293	0.54						3	293	0.50					
4	293	0.56						4	293	0.49					
5	294	0.64						5	294	0.64					
Total	7314	18.3128*				*			7313	17.7985*				*	
Average	292.56	0.73251							292.5200	0.7119					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date

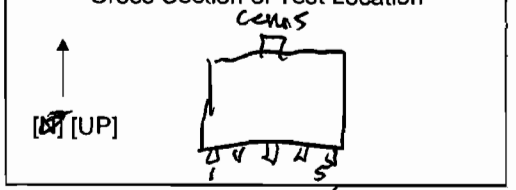
TEST LOCATION: EF outlet

UNIT: 2

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheelabrator	Project No.	11414
Plant	S' Broward	Date	3/20
Meter Operator	K Sullivan		
Probe Operator	B Arnold		
Source of Moisture and Molecular Weight Data			

Cross-Section of Test Location



Amb. Temp. (°F)	85	Bar. Press.	30.05 [in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	GL-SP-13
Duct Diameters from Disturbance Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 3	Load	Run	Load	Run 4	Load	Run	Load
Start Time 13:58	Stop Time 14:08	Start Time	Stop Time	Start Time 14:36	Stop Time 14:47	Start Time	Stop Time
Static Press. (in. H_2O) -13.9		Static Press. (in. H_2O)		Static Press. (in. H_2O) -13.8		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	290	0.49		4-1	290	0.53		1-1	291	0.57		4-1	290	0.59	
2	291	0.50		2	291	0.52		2	293	0.52		2	291	0.59	
3	291	0.49		3	292	0.55		3	293	0.55		3	292	0.60	
4	292	0.49		4	292	0.61		4	294	0.55		4	293	0.64	
5	291	0.45		5	292	0.68		5	289	0.52		5	290	0.65	
2-1	290	0.51		5-1	291	0.50		2-1	292	0.58		5-1	292	0.60	
2	291	0.52		2	293	0.49		2	293	0.56		2	294	0.58	
3	292	0.52		3	293	0.48		3	294	0.57		3	294	0.57	
4	293	0.56		4	293	0.50		4	295	0.62		4	294	0.55	
5	292	0.53		5	290	0.65		5	293	0.60		5	290	0.65	
3-1	291	0.54						3-1	290	0.57					
2	291	0.52						2	292	0.57					
3	291	0.52						3	293	0.54					
4	292	0.53						4	294	0.60					
5	291	0.60						5	293	0.63					
Total	7286	*15.2500				*			7309	*19.0766				*	
Average	291.4400	0.7280							292.3600	0.7628					

*Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC ks

Date 3/24/11

TEST LOCATION: FF out

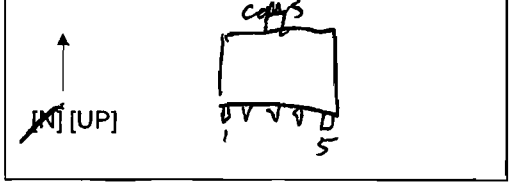
UNIT: 7

VELOCITY DETERMINATION FIELD DATA SHEET

PAGE ~~3~~ 38 3 OF ~~5~~ 40 5

Client Wheelabrator	Project No. 114124
Plant S Broward	Date 3/28/12
Meter Operator K Sullivan	
Probe Operator B Arnold	
Source of Moisture and Molecular Weight Data	

Cross-Section of Test Location



Amb. Temp. (°F)	85	Bar. Press. 30.05	[in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	6-9P-15
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 5	Load	Run	Load	Run 6	Load	Run	Load
Start Time 15:18	Stop Time 15:29	Start Time	Stop Time	Start Time 15:46	Stop Time 15:55	Start Time	Stop Time
Static Press. (in. H_2O) -13.9		Static Press. (in. H_2O)		Static Press. (in. H_2O) -13.9		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	294	0.47		4-1	291	0.50		1-1	290	0.56		4-1	290	0.52	
2	294	0.48		2	292	0.49		2	292	0.53		2	292	0.52	
3	294	0.50		3	292	0.51		3	291	0.52		3	292	0.54	
4	294	0.51		4	293	0.53		4	292	0.55		4	293	0.58	
5	292	0.47		5	290	0.61		5	290	0.54		5	291	0.64	
2-1	289	0.52		5-1	290	0.55		2-1	294	0.52		5-1	294	0.48	
2	292	0.52		2	290	0.55		2	294	0.52		2	294	0.53	
3	293	0.52		3	291	0.55		3	294	0.51		3	294	0.51	
4	294	0.55		4	292	0.52		4	294	0.51		4	294	0.54	
5	291	0.55		5	290	0.58		5	293	0.59		5	292	0.57	
3-1	290	0.57						3-1	291	0.55					
2	293	0.54						2	291	0.53					
3	293	0.52						3	291	0.54					
4	293	0.60						4	292	0.59					
5	291	0.55						5	290	0.65					
		18.196													
Total	7298	~~19.4557~~				*			7305	*18.4448				*	
Average	291.920	0.7279							292.200	0.7382					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date 3

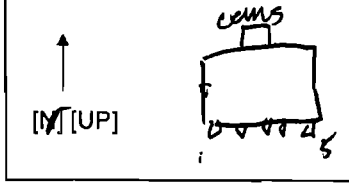
TEST LOCATION: FF out

UNIT: 2

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheelabrator
Plant	S Broward
Meter Operator	K Sullivan
Probe Operator	B Arnold
Source of Moisture and Molecular Weight Data	
Project No.	11414
Date	3/20/12

Cross-Section of Test Location



Amb. Temp. (°F)	80	Bar. Press.	30.05 [in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	GC-8P-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	70
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run	7	Load		Run		Load		Run	8	Load		Run		Load	
Start Time	16:19	Stop Time	16:28	Start Time		Stop Time		Start Time	16:52	Stop Time	17:04	Start Time		Stop Time	
Static Press. (in. H_2O)		-14.9		Static Press. (in. H_2O)				Static Press. (in. H_2O)		-15.1		Static Press. (in. H_2O)			
Post-Test Leak Check:	Pass ☑	Fail ☐		Post-Test Leak Check:	Pass ☐	Fail ☐		Post-Test Leak Check:	Pass ☑	Fail ☐		Post-Test Leak Check:	Pass ☐	Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	295	0.53		4-1	291	0.55		1-1	291	0.52		4-1	293	0.53	
2	295	0.50		2	293	0.52		2	294	0.52		2	295	0.52	
3	295	0.54		3	294	0.54		3	295	0.55		3	295	0.54	
4	295	0.55		4	294	0.58		4	295	0.58		4	295	0.56	
5	294	0.56		5	293	0.62		5	293	0.55		5	292	0.59	
2-1	290	0.51		5-1	291	0.51		2-1	293	0.52		5-1	295	0.53	
2	293	0.52		2	292	0.51		2	294	0.52		2	296	0.54	
3	293	0.54		3	293	0.49		3	295	0.54		3	296	0.55	
4	294	0.55		4	295	0.47		4	295	0.55		4	296	0.53	
5	295	0.52		5	290	0.64		5	292	0.59		5	294	0.63	
3-1	292	0.52						3-1	293	0.53					
2	292	0.52						2	295	0.49					
3	291	0.51						3	295	0.50					
4	293	0.52						4	295	0.59					
5	293	0.49						5	294	0.63					
Total	*7326	*18.2326				*			7356	*18.4994				*	
Average	293.040	0.7292							294.240	0.7399					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC ks
Date 3/26/12

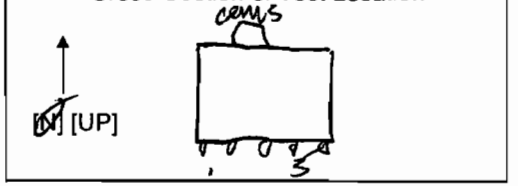
TEST LOCATION: FF outlet

UNIT: 2

VELOCITY DETERMINATION FIELD DATA SHEET

Client Wheel.	Project No. 114/4
Plant S Broward	Date 3/20/17
Meter Operator K Sullivan	
Probe Operator B Arnold	
Source of Moisture and Molecular Weight Data M24	

Cross-Section of Test Location



Amb. Temp. (°F) 80		Bar. Press. 30.23 [in Hg] [mbar]	
Pitot Cp 0.827		Probe I.D. No. 66-SP-15	
Duct Diameters from Disturbance			
Downstream	Upstream		
First point all the way [In] [Out]		Port Len. (in.) 10	
Gas Flow [In] [Out] of page			
Duct Dimensions (in.) 96			

Run 9	Load	Run	Load	Run	Load	Run	Load
Start Time 12:24	Stop Time 12:33	Start Time	Stop Time	Start Time	Stop Time	Start Time	Stop Time
Static Press. (in. H_2O) -14.7		Static Press. (in. H_2O)		Static Press. (in. H_2O)		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	298	0.53		4-1	293	0.53									
2	298	0.53		2	294	0.50									
3	298	0.57		3	294	0.54									
4	298	0.58		4	295	0.56									
5	294	0.57		5	294	0.65									
2-1	294	0.53		5-1	293	0.57									
2	295	0.55		2	294	0.52									
3	297	0.53		3	296	0.48									
4	297	0.56		4	296	0.47									
5	293	0.57		5	295	0.58									
3-1	295	0.52													
2	295	0.52													
3	296	0.52													
4	296	0.56													
5	294	0.55													
Total	2362	*18.3477				*				*				*	
Average	295.2500	0.7339													

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/

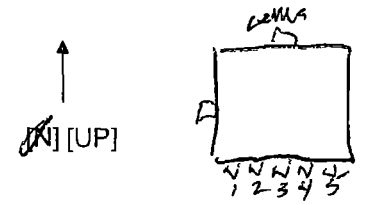
TEST LOCATION: FF outlet **HCl TESTING METHOD:** 26A **PAGE** 1 **OF** 1

UNIT: 2 **RUN:** 1

FIELD DATA SHEET

Client	Wheelabrator
Plant	S Broward
Meter Operator	L Sullivan
Probe Operator	L Sullivan
Project No.	114141
Date	3/20

Cross-Section of Test Location



Amb. Temp. (°F)	85
Bar. Press.	30.05 [in Hg] [mbar]
Probe I.D. No.	67-4-1
Liner Material	Pyrex

Meter Box	66-1)	Sample Box No.	86
Meter Y_d	0.9915	Meter $\Delta H_@$	1.8118
K Factor	N/A	Pitot C_p	N/A
Leak Rate Before	0.005 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.006 [cfm] [Lpm]	@	5 (in. Hg)
Pitot Leak Check Before: ☑	After: Good ☑	Bad ☐	

Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	N/A	Nozzle I.D.	N/A

Duct Dimensions (in.) 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-14.7	4		

Start Time:	8:08	Stop Time:	9:08

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. 271.910 [ft³] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐ N/A	Notes
3-3	5	N/A	1.5	275.39	292	301	298	55	80	77	4	9.6		
	10		1.5	278.84	293	302	298	58	82	77	4	10.3		
	15		1.5	282.25	293	301	299	57	84	78	4	9.8		
	20		1.5	285.66	293	300	299	57	87	79	4	10.4		
	25		1.5	289.08	292	299	298	57	90	81	4	10.4		
	30		1.5	292.47	292	299	299	49	92	83	4	10.3		
	35		1.5	295.88	292	300	299	57	94	84	4	10.8		
	40		1.5	299.30	293	301	300	53	95	86	5	9.8		
	45		1.5	302.75	292	300	299	54	96	87	5	10.3		
	50		1.5	306.28	292	301	300	55	97	89	5	10.6		
	55		1.5	309.62	292	300	299	57	98	90	5	10.0		
	60		1.5	313.180	292	300	298	58	99	91	5	10.2		
	Total	N/A	18.0	41.270	3508				1394	1302				
	Average	N/A	1.5000		292.3333				97.3333					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/25/12

TEST LOCATION: FF out HCl **TESTING METHOD:** 26A **PAGE** 1 **OF** 1

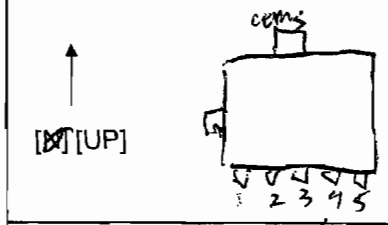
UNIT: 2 **RUN:** 2

FIELD DATA SHEET

Client	Wheelabrator	Project No.	11414
Plant	S Broward	Date	3/20/12
Meter Operator	K Sullivan		
Probe Operator	K Sullivan		

Meter Box	66-11	Sample Box No.	B3
Meter Y_d	0.9915	Meter $\Delta H_@$	1.6118
K Factor	N/A	Pitot C_p	N/A
Leak Rate Before	0.005 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	6 (in. Hg)
Pitot Leak Check Before: ☒	After: Good ☒	Bad ☐	

Cross-Section of Test Location



Duct Dimensions (in.) 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-16.0	18		

Amb. Temp. (°F)	85	Bar. Press.	30.05 [in Hg] [mbar]
Probe I.D. No.	62-4-1		
Liner Material	Pyrex		

Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	N/A	Nozzle I.D.	N/A

Start Time:	9:49	Stop Time:	10:49

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 313.755	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐ ____	Notes
3-3	5	N/A	1.5	317.22	295	295	295	66	98	97	4	10.0		
	10		1.5	320.70	294	297	298	67	100	98	4	9.8		
	15		1.5	324.17	294	300	298	66	102	98	4	10.3		
	20		1.5	327.66	294	298	298	61	102	99	4	10.5		
	25		1.5	331.13	296	300	297	58	102	99	4	10.6		
	30		1.5	334.62	295	300	299	59	102	98	4	10.3		
	35		1.5	338.09	295	299	299	61	100	98	4	10.6		
	40		1.5	341.70	294	299	299	62	100	98	5	10.5		
	45		1.5	345.27	294	299	299	63	100	98	5	10.2		
	50		1.5	348.55	295	299	299	63	100	98	5	10.5		
	55		1.5	352.02	295	300	299	63	100	97	5	10.3		
	60		1.5	355.510	295	300	300	63	100	97	5	10.2		
	Total		18.0	41.755	3532				1206	1175				
	Average		1.5000		294.6667				99.2583					

Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/22

TEST LOCATION: FF outlet | HCl | **TESTING METHOD:** 26A | **PAGE** 1 **OF** 1

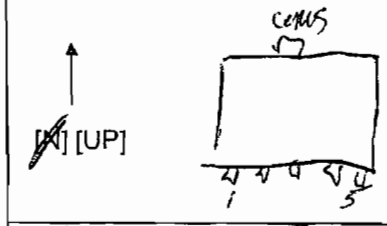
UNIT: 2 **RUN:** 3

FIELD DATA SHEET

Client	Wheelabrator	Project No.	11414
Plant	S Broward	Date	3/20/12
Meter Operator	K Sullivan		
Probe Operator	K Sullivan		

Meter Box	66-11	Sample Box No.	N/A
Meter Y_d	0.9915	Meter $\Delta H_@$	1.6118
K Factor	N/A	Pitot C_p	N/A
Leak Rate Before	0.004 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	7 (in. Hg)
Pitot Leak Check Before: ☑	After: Good ☑ Bad ☐		

Cross-Section of Test Location



Duct Dimensions (in.) 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-15.8	10		

Amb. Temp. (°F)	85	Bar. Press.	30.05 [in Hg] [mbar]
Probe I.D. No.	67-4-1		
Liner Material	Pyrex		

Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	N/A	Nozzle I.D.	N/A

Start Time:	12:22	Stop Time:	13:27

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. 358.785 [cf] [L] 358.330 ks	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐	Notes
3-3	5	N/A	1.5	362.25	295	299	297	65	88	86	5	10.3		
	10		1.5	365.63	294	299	297	62	89	89	5	10.2		
	15		1.5	369.18	293	297	297	60	89	84	6	10.4		
	20		1.5	372.50	292	297	296	55	91	85	6	10.6		
	25		1.5	375.95	293	300	297	56	92	85	6	10.8		
	30		1.5	379.40	293	304	297	56	93	86	6	10.8		
	35		1.5	382.88	295	310	298	58	94	86	6	10.7		
	40		1.5	386.33	294	299	298	59	93	86	6	10.7		
	45		1.5	389.78	294	299	298	60	94	86	6	10.5		
	50		1.5	393.25	293	297	299	62	97	88	6	10.5		
	55		1.5	396.69	292	300	298	60	94	87	6	10.7		
	60		1.5	400.150	292	300	297	60	94	87	6	10.6		
	Total	*	18.0	41.365	3520				1104	1035				
	Average		15.000		293.3333				89.2917					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date 3/25/12

Impinger Weight Sheet

Client Wheelabrator		Unit Name / Location Unit 2 FF Outlet
Plant South Broward	Job No. 11414	Method Modified M26A

Balance Calibration Check			
Balance ID	SN 802530106	Reference Weight Mass	500
Reference Weight ID	22548	Reference Weight Reading	499.5

Check must be performed at least Once per Method per Job — Reference Weight Mass must agree with Reference Weight Reading to within ±0.5 g.

Run No. 1		Filter Type Teflon Mat		Sample Box No. B6	
Date 3/20/12		Lot No. N/A		pH N/A	
Analyst R. Vicere		Filter No. NA		Rinse NA	

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	602.0	550.1	51.9	
Impinger 2	100 mL 01.N H2SO4	730.5	625.3	105.2	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	573.9	533.4	40.5	Date 3/20/12
Impinger 4	Empty	485.5	472.2	13.3	
Impinger 5	Silica Gel	740.9	725.0	15.9	Total Weight (gm)
Impinger 6					210.9
Impinger 7					226.8

Run No. 2		Filter Type Teflon Mat		Sample Box No. B3	
Date 3/20/12		Lot No. N/A		pH N/A	
Analyst R. Vicere		Filter No. NA	455.2	Rinse NA	

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	517.3	~~504.7~~ ~~480.7~~ 455.2	62.1	
Impinger 2	100 mL 01.N H2SO4	644.7	536.7	108.0	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	659.5	628.5	31.0	Date 3/20/12
Impinger 4	Empty	442.4	434.9	7.5	
Impinger 5	Silica Gel	730.3	716.8	13.5	Total Weight (gm)
Impinger 6					208.6
Impinger 7					222.1

Run No. 3		Filter Type Teflon Mat		Sample Box No. Blank	
Date 3/20/12		Lot No. NA		pH N/A	
Analyst R. Vicere		Filter No. NA		Rinse NA	

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	531.4	~~504.7~~ 475.7	14.0	
Impinger 2	100 mL 01.N H2SO4	660.8	550.1	110.7	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	561.3	539.4	21.9	Date 3/20/12
Impinger 4	Empty	439.6	436.3	3.3	
Impinger 5	Silica Gel	744.8	731.8	13.0	Total Weight (gm)
Impinger 6			457.4		209.9
Impinger 7					222.9

QA/QC RV
Date 3/20/12

CleanAir. ENGINEERING

TEST LOCATION: FF outlet

UNIT: 2 **RUN:** 1

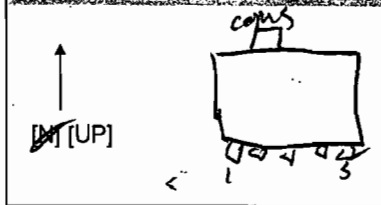
MOISTURE DETERMINATION FIELD DATA SHEET

Client	Wheelabrator	Project No.	114/4
Plant	S Broward	Date	3/26/12
Meter Operator	K Sullivan		
Probe Operator	B Arnold		

Meter Box No.	61-L
Meter Y_d	1.006

Leak Rate Before	0.005	(cfm) @	15	(in. Hg)
Leak Rate After	0.001	(cfm) @	4	(in. Hg)

Cross Section of Test Location



Duct Dimensions (in.)	96		
Static Press. (in. H_2O)	Port Lens (in.)	Gas Flow [In] [Out]	Point No. 1 all the way [In] [Out]
-13.9	10	of page	

Amb. Temp. (°F)	85	Bar. Press.	30.05 [in. Hg] [mbar]
Liner Material	SS		

H_2O	187 [ml] [gm]	Silica Gel (gm)	310.1
Total V_w	197.1		

Start Time	13:52	Stop Time	14:52

Traverse Point Number	Min/pt. 5 Elapsed Time	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Vm Init. Vol. [ft³] [L] 262.780	Stack Temp. Ts (°F)	Cond. Temp. (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
3-3	5	1.0	265.70	N/A	65	80	80	2	
	10	1.0	268.53		64	81	81	2	
	15	1.0	271.33		58	85	84	2	
	20	1.0	274.28		51	85	82	3	
	25	1.0	277.17		55	87	84	3	
	30	1.0	280.04		56	88	84	3	
	35	1.0	282.92		52	88	83	3	
	40	1.0	285.80		50	88	83	3	
	45	1.0	288.64		53	88	83	3	
	50	1.0	291.48		55	86	83	3	
	55	1.0	294.35		51	89	84	3	
	60	1.0	297.240		59	89	84	3	
	Total	12.0	34.460			1036	995		
	Average	1.0000				86.3333	82.9167		

Circle correct bracketed units on data sheet.

QA/QC KS
Date 3/26/12

CleanAir ENGINEERING

TEST LOCATION: FF outlet

UNIT: 2 RUN: 2

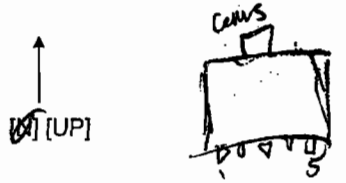
MOISTURE DETERMINATION FIELD DATA SHEET

Client	Wheelabrator	Project No.	11414
Plant	S Broward	Date	3/20/12
Meter Operator	K Sullivan		
Probe Operator	B Arnold		

Meter Box No.	61-6
Meter Y_d	1.0061

Leak Rate Before	0.004	(cfm) @	15	(in. Hg)
Leak Rate After	0.002	(cfm) @	4	(in. Hg)

Cross Section of Test Location



Duct Dimensions (in.)			
96			
Static Press. (in. H_2O)	Port Len. (in.)	Gas Flow: [In] [Out] of page	Point No.? all the way [In] [Out]
-13.9	10		

Amb. Temp. (°F)	65	Bar. Press.	30.05 [in Hg] [mbar]
Liner Material	SS		

H_2O	147 [ml] [gm]	Silica Gel (gm)	6.6
Total V	153.6		

Start Time	15:18	Stop Time	16:03

Traverse Point Number	Min/pt 5 Elapsed Time	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. 297.655 [L]	Stack Temp. T_s (°F)	Cond. Temp. T_c (°F)	DGM Inlet T_m (°F)	DGM Outlet T_m (°F)	Pump Vacuum (in. Hg)	Notes
3-3	5	1.2	300.83	N/A	66	85	84	3	
	10	1.2	303.94		65	86	84	3	
	15	1.2	307.18		64	87	84	3	
	20	1.2	310.27		61	89	83	3	
	25	1.2	313.42		57	90	84	3	
	30	1.2	316.57		55	89	84	3	
	35	1.2	319.74		54	89	84	3	
	40	1.2	322.89		56	88	84	3	
	45	1.2	326.015		58	88	84	3	
	Total	14.4	28.360			791	755 / 1007 45		
	Average	1.2/2000				85.8887			

Circle correct bracketed units on data sheet.

QA/QC KS
Date 3/20/12

CleanAir ENGINEERING

TEST LOCATION: FF out

UNIT: 2 RUN: 3

MOISTURE DETERMINATION FIELD DATA SHEET

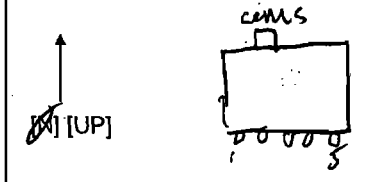
PAGE 3 OF 4

Client	Wheelabrator	Project No.	11414
Plant	S Broward	Date	3/20/12
Meter Operator	K Sullivan		
Probe Operator	B Arnold		

Meter Box No.	61-6
Meter Y_d	1.0061

Leak Rate Before	0.003	(cfm) @	15	(in. Hg)
Leak Rate After	0.002	(cfm) @	6	(in. Hg)

Cross-Section of Test Location



Duct Dimensions (in)	96			
Static Press. (in. H_2O)	Port Leng. (in.)	Gas Flow [In] [Out] of page	Point No. 1 all the way	[In] [Out]
-14.9	10			

Amb. Temp. (°F)	85	Bar. Press.	30.05 [in Hg] [mbar]
Liner Material	SS		

H_2O	150 [ml] [gm]	Silica Gel (gm)	6.2
Total V_{lc}	156.2		

Start Time	16:18	Stop Time	17:03

Traverse Point Number	Min/pt 5 Elapsed Time	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. 326.410 [ft³] [L]	Stack Temp. (°F)	Cond. Temp. (°F)	DGM Inlet Temp. (°F)	DGM Outlet Temp. (°F)	Pump Vacuum (in. Hg)	Notes
3-3	5	1.2	329.17	N/A	59	81	81	3	
	10	1.2	332.27		58	81	81	3	
	15	1.2	335.37		58	83	79	3	
	20	1.2	338.49		59	83	79	3	
	25	1.2	341.65		59	85	79	3	
	30	1.2	344.78		59	86	80	3	
	35	1.2	347.90		59	86	80	3	
	40	1.2	350.98		59	86	81	3	
	45	1.2	354.070		60	87	81	3	
	Total	14.4	27.660			758	721		
	Average	1.2000				82.1667			

Circle correct bracketed units on data sheet.

QA/QC KS
Date 3/26/12

CleanAir ENGINEERING

TEST LOCATION: FF exit

UNIT: 2 RUN: 4

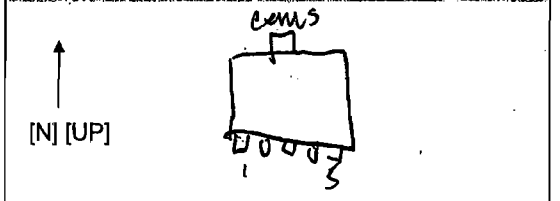
MOISTURE DETERMINATION FIELD DATA SHEET

Client	Wheelabrator	Project No.	1141 14
Plant	S. Broward	Date	3/20/12
Meter Operator	K Sullivan		
Probe Operator	B Arnold		

Meter Box No.	61-6
Meter Y	1.0061

Leak Rate Before	0.003	(cfm) @	15	(in Hg)
Leak Rate After	0.002	(cfm) @	5	(in Hg)

Cross-Section of Test Location



Duct Dimensions (in)	96			
Static Press (in H_2O)	Port Leng (in)	Gas Flow [In] [Out]	Point No. all the way [In] [Out]	
-14.7	10	Slippage		

Amb. Temp. (°F)	80	Bar. Press.	30.05 [in Hg] [mbar]
Liner Material	SS		

H_2O	120 [ml] [gm]	Silica Gel (gm)	5.3
Total V_{lc}	125.3		

Start Time	17:22	Stop Time	17:52

Traverse Point Number	Min/pt 5 Elapsed Time	Orifice Setting ΔH (in H_2O)	Gas Sample Volume V_m Init. Vol. 354.525 [ft³] [L]	Stack Temp T_s (°F)	Cond. Temp T_c (°F)	DGM Inlet $T_{m(in)}$ (°F)	DGM Outlet $T_{m(out)}$ (°F)	Pump Vacuum (in Hg)	Notes
3-3	5	1.7	358.29	N/A	65	83	81	3	
	10	1.7	362.06		63	85	81	3	
	15	1.7	365.78		61	86	82	4	
	20	1.7	369.47		55	88	82	4	
	25	1.7	373.17		58	88	82	4	
	30	1.7	376.870		59	88	82	4	
	Total	10.2	22.345			518	490		
	Average	1.7000				84.8000			

Circle correct bracketed units on data sheet.

QA/QC KS
Date 3/20/12

CleanAir ENGINEERING

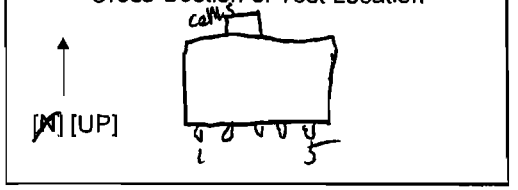
TEST LOCATION: FF outlet

UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client	Wheel.	Project No.	1414
Plant	S Broadward	Date	3/21/12
Meter Operator	K Sullivan		
Probe Operator	A Obuchowski		
Source of Moisture and Molecular Weight Data	HCl R1		

Cross-Section of Test Location



Amb. Temp. (°F)	80	Bar. Press. 30.05	[in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	6L-8P-13
Duct Diameters from Disturbance Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 1	Load	Run	Load	Run 2	Load	Run	Load
Start Time 8:02	Stop Time 8:12	Start Time	Stop Time	Start Time 8:57	Stop Time	Start Time	Stop Time
Static Press. (in. H_2O) -12.7		Static Press. (in. H_2O)		Static Press. (in. H_2O) -12.6		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	296	0.36		4-1	295	0.51		1-1	299	0.36		4-1	297	0.43	
2	296	0.36		2	297	0.51		2	299	0.37		2	297	0.38	
3	296	0.35		3	298	0.47		3	299	0.40		3	297	0.37	
4	296	0.37		4	298	0.51		4	299	0.40		4	297	0.33	
5	296	0.36		5	298	0.52		5	299	0.38		5	297	0.33	
2-1	295	0.36		5-1	297	0.55		2-1	298	0.45		5-1	294	0.33	
2	296	0.37		2	297	0.54		2	298	0.45		2	295	0.30	
3	297	0.38		3	297	0.52		3	298	0.41		3	296	0.42	
4	297	0.39		4	297	0.49		4	298	0.36		4	296	0.45	
5	294	0.38		5	297	0.50		5	298	0.35		5	296	0.43	
3-1	295	0.39						3-1	294	0.40					
2	295	0.40						2	294	0.40					
3	295	0.40						3	295	0.38					
4	296	0.40						4	296	0.34					
5	294	0.40						5	296	0.34					
Total	7405	*16.3737				*			7422	*17.4369				*	
Average	296.200	0.6549							296.8800	0.6975					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date 3/21/12

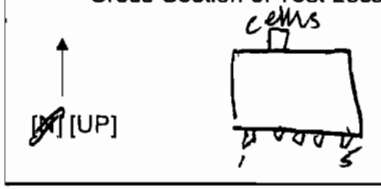
TEST LOCATION: FF outlet

UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client	wheel.	Project No.	11424
Plant	S Broward	Date	3/21/12
Meter Operator	K Sullivan		
Probe Operator	A Obuchowski		
Source of Moisture and Molecular Weight Data	M26 R1/2		

Cross-Section of Test Location



Amb. Temp. (°F)	68	Bar. Press.	30.05 [in Hg] [mbar]
Pitot Cp	0.827	Probe I.D. No.	66-SP-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 3	Load	Run	Load	Run 4	Load	Run	Load
Start Time 9:21	Stop Time 9:29	Start Time	Stop Time	Start Time 10:09	Stop Time 10:20	Start Time	Stop Time
Static Press. (in. H_2O) -12.8		Static Press. (in. H_2O)		Static Press. (in. H_2O) -12.5		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	295	0.31		4-1	295	0.50		1-1	296	0.31		4-1	298	0.48	
2	295	0.34		2	295	0.50		2	296	0.32		2	298	0.48	
3	296	0.35		3	296	0.44		3	296	0.31		3	298	0.45	
4	296	0.35		4	297	0.41		4	297	0.32		4	298	0.45	
5	295	0.34		5	297	0.42		5	297	0.32		5	298	0.43	
2-1	297	0.44		5-1	293	0.48		2-1	296	0.34		5-1	296	0.52	
2	297	0.46		2	295	0.46		2	296	0.33		2	294	0.51	
3	298	0.43		3	296	0.42		3	296	0.33		3	296	0.48	
4	298	0.40		4	296	0.45		4	296	0.33		4	296	0.43	
5	296	0.38		5	297	0.48		5	296	0.31		5	297	0.45	
3-1	295	0.45						3-1	296	0.46					
2	295	0.45						2	297	0.51					
3	295	0.47						3	298	0.46					
4	296	0.40						4	298	0.44					
5	296	0.38						5	298	0.44					
Total	7397	16.1772							7418	15.9888					
Average	295.8800	0.6471							296.7200	0.6364					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date

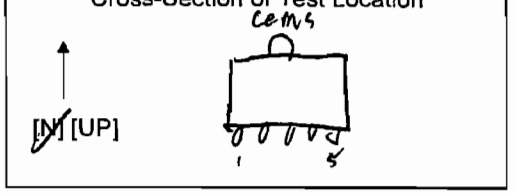
TEST LOCATION: FF out

UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client Wheel	Project No. 11414
Plant S Broward	Date 3/21/12
Meter Operator K. Sullivan	
Probe Operator A Obuchowski	
Source of Moisture and Molecular Weight Data M26	

Cross-Section of Test Location



Amb. Temp. (°F) 85	Bar. Press. 30.05 [in] [Hg] [mbar]
Pitot Cp 0.827	Probe I.D. No. 46-SP-13
Duct Diameters from Disturbance Downstream	Upstream
First point all the way [In] [Out]	Port Len. (in.) 10
Gas Flow [In] [Out] of page	
Duct Dimensions (in.) 96	

Run 5	Load	Start Time 11:05	Stop Time 11:13	Static Press. (in. H_2O) -12.7	Post-Test Leak Check: Pass ☑ Fail ☐

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	298	0.53	0.50
2	298	0.52	
3	298	0.50	
4	298	0.48	
5	297	0.46	
2-1	299	0.57	
2	299	0.53	
3	299	0.49	
4	299	0.46	
5	299	0.45	
3-1	299	0.61	
2	299	0.58	
3	299	0.55	
4	299	0.46	
5	299	0.42	
Total	7470	12.7717	
Average	298.8800	0.7109	

Sum of square roots.

Run	Load	Start Time	Stop Time	Static Press. (in. H_2O)	Post-Test Leak Check: Pass ☐ Fail ☐

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
4-1	296	0.61	
2	297	0.58	
3	298	0.56	
4	298	0.51	
5	299	0.45	
5-1	297	0.53	
2	301	0.45	
3	301	0.42	
4	302	0.45	
5	302	0.50	

Circle correct bracketed units on data sheet.

Run 6	Load	Start Time 11:33	Stop Time 11:43	Static Press. (in. H_2O) -12.8	Post-Test Leak Check: Pass ☑ Fail ☐

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	295	0.48	
2	295	0.48	
3	295	0.44	
4	296	0.41	
5	296	0.40	
2-1	298	0.42	
2	298	0.48	
3	298	0.43	
4	297	0.40	
5	297	0.39	
3-1	296	0.55	
2	296	0.54	
3	296	0.52	
4	297	0.45	
5	297	0.41	
	7415	16.6681	
	296.6000	0.6667	

Run	Load	Start Time	Stop Time	Static Press. (in. H_2O)	Post-Test Leak Check: Pass ☐ Fail ☐

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
4-1	298	0.50	
2	298	0.51	
3	298	0.48	
4	298	0.45	
5	298	0.43	
5-1	296	0.45	
2	296	0.38	
3	295	0.35	
4	295	0.38	
5	296	0.42	

CleanAir ENGINEERING

QA/QC KS

Date 3/21/12

TEST LOCATION: EFact

UNIT: 3

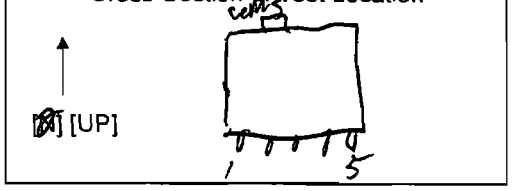
VELOCITY DETERMINATION FIELD DATA SHEET

PAGE 4 OF 6

Client	Wheel.
Plant	S Broward
Meter Operator	K Sullivan
Probe Operator	A Onuchowski
Source of Moisture and Molecular Weight Data	

Project No.	11414
Date	3/22/12

Cross-Section of Test Location



Amb. Temp. (°F)	85	Bar. Press. 30.25 [in Hg] [mbar]	
Pitot Cp	0.827	Probe I.D. No.	66-SP-13
Duct Diameters from Disturbance			
Downstream		Upstream	
First point all the way [In] [Out]		Port Len. (in.)	10
Gas Flow [In] [Out] of page			
Duct Dimensions (in.)	96		

Run 7	Load	Run	Load	Run 8	Load	Run	Load
Start Time 1218	Stop Time 1226	Start Time	Stop Time	Start Time 1306	Stop Time 1317	Start Time	Stop Time
Static Press. (in. H_2O) -10.7		Static Press. (in. H_2O)		Static Press. (in. H_2O) -10.8		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐		Post-Test Leak Check: Pass ☑ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	294	0.37		4-1	294	0.44		1-1	297	0.35		4-1	295	0.70	
2	294	0.38		2	294	0.41		2	296	0.36		2	296	0.67	
3	294	0.34		3	294	0.36		3	296	0.30		3	298	0.64	
4	294	0.34		4	294	0.35		4	296	0.34		4	298	0.58	
5	294	0.33		5	295	0.35		5	296	0.33		5	298	0.55	
2-1	294	0.42		5-1	294	0.39		2-1	295	0.41		5-1	296	0.67	
2	294	0.39		2	294	0.35		2	295	0.42		2	297	0.64	
3	295	0.37		3	294	0.34		3	294	0.41		3	298	0.61	
4	295	0.36		4	295	0.35		4	296	0.32		4	298	0.57	
5	295	0.37		5	295	0.37		5	295	0.37		5	298	0.59	
3-1	295	0.41						3-1	295	0.42					
2	295	0.42						2	296	0.45					
3	295	0.38						3	296	0.40					
4	295	0.37						4	296	0.38					
5	295	0.34						5	296	0.36					
Total	7361	*15.2596				*				*17.6484				*	
Average	294.4400	0.61024							296.2060	0.66819					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/22/12

TEST LOCATION: FF outlet

UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client: Wheelabrator	Project No. 11414
Plant: S. Broward	Date: 3-21-12
Meter Operator: B. Arnold	
Probe Operator: —	
Source of Moisture and Molecular Weight Data	

Cross-Section of Test Location

(N) [UP]

Amb. Temp. (°F) 81	Bar. Press. 30.10 [(in. Hg)] [mbar]
Pitot Cp 0.827	Probe I.D. No. 6-8P13
Duct Diameters from Disturbance	
Downstream	Upstream
First point all the way [(In)] [Out]	Port Len. (in.)
Gas Flow [In] [(Out)] of page	
Duct Dimensions (in.)	

Run 9 — Load: — Start Time 13:49 — Stop Time 13:58 — Static Press. (in. H_2O) -13.7 — Post-Test Leak Check: Pass ☒ Fail ☐

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	299	0.29		4-1	295	0.60	
2	300	0.30		2	296	0.71	
3	300	0.31		3	296	0.71	
4	300	0.32		4	297	0.62	
5	300	0.34		5	297	0.55	
2-1	300	0.67		5-1	296	0.50	
2	302	0.60		2	295	0.40	
3	303	0.52		3	295	0.39	
4	303	0.43		4	296	0.44	
5	304	0.47		5	296	~~0.50~~ 0.48	
3-1	297	0.58					
2	298	0.70					
3	299	0.70					
4	300	0.54					
5	300	0.60					
Total		*17.7007				*	
Average	298.5600	0.7080					

Run 10 — Load: — Start Time 13:25 — Stop Time 13:35 — Static Press. (in. H_2O) -13.7 — Post-Test Leak Check: Pass ☒ Fail ☐

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	296	0.26		4-1	295	0.53	
2	296	0.31		2	295	0.52	
3	296	0.34		3	295	0.43	
4	296	0.34		4	295	0.40	
5	296	0.33		5	295	0.38	
2-1	295	0.40		5-1	295	0.52	
2	295	0.46		2	295	0.42	
3	295	0.35		3	295	0.41	
4	296	0.32		4	295	0.37	
5	295	0.32		5	295	0.38	
3-1	295	0.59					
2	295	0.50					
3	295	0.45					
4	295	0.41					
5	295	0.35					
Total		*15.7347				*	
Average	295.2400	0.6294					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC BF

Date 3-21-12

E - 31

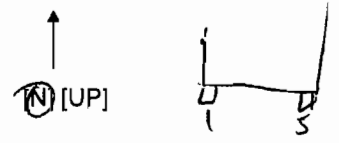
TEST LOCATION: FF outlet

UNIT: 3

VELOCITY DETERMINATION FIELD DATA SHEET

Client Wheelabrator	Project No. 1414
Plant S. Broward	Date 3-21-12
Meter Operator B. Aprees	
Probe Operator	
Source of Moisture and Molecular Weight Data	

Cross-Section of Test Location



Amb. Temp. (°F) 81	Bar. Press. 30.10 (in. Hg) [mbar]
Pitot Cp 0.827	Probe I.D. No. 66-SP-13
Duct Diameters from Disturbance Downstream	Upstream
First point all the way [In] [Out]	Port Len. (in.) 10
Gas Flow [In] [Out] of page	
Duct Dimensions (in.) 105	

Run 11	Load	Run	Load	Run 12	Load	Run	Load
Start Time 15:07	Stop Time 15:17	Start Time	Stop Time	Start Time 15:46	Stop Time	Start Time	Stop Time
Static Press. (in. H_2O)		Static Press. (in. H_2O)		Static Press. (in. H_2O) -10.7		Static Press. (in. H_2O)	
Post-Test Leak Check: Pass ☒ Fail ☐		Post-Test Leak Check: Pass ☒ Fail ☐		Post-Test Leak Check: Pass ☒ Fail ☐		Post-Test Leak Check: Pass ☐ Fail ☐	

Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes	Traverse Point Number	Stack Temp. T_s (°F)	Velocity Head ΔP (in.H_2O)	Notes
1-1	295	0.43		4-1	296	0.44		1-1	296	0.42		4-1	295	0.47	
2	295	0.41		2	296	0.42		2	296	0.44		2	295	0.48	
3	295	0.35		3	296	0.38		3	296	0.45		3	295	0.44	
4	295	0.36		4	296	0.36		4	296	0.42		4	295	0.38	
5	295	0.43		5	296	0.35		5	296	0.40		5	295	0.37	
2-1	295	0.52		5-1	295	0.34		2-1	296	0.47		5-1	295	0.37	
2	296	0.47		2	295	0.32		2	296	0.49		2	296	0.32	
3	296	0.42		3	295	0.31		3	296	0.45		3	295	0.33	
4	296	0.36		4	295	0.32		4	296	0.39		4	295	0.38	
5	296	0.35		5	295	0.31		5	295	0.37		5	295	0.42	
3-1	296	0.47						3-1	295	0.47					
2	296	0.47						2	295	0.48					
3	296	0.41						3	296	0.43					
4	296	0.36						4	296	0.37					
5	296	0.37						5	296	0.37					
Total		*15.5570				*				*16.0820				*	
Average	295.5600	0.6223							295.5600	0.6433					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC

Date

TEST LOCATION: FF outlet HCl **TESTING** **METHOD:** 26A **PAGE** 1 **OF** 1

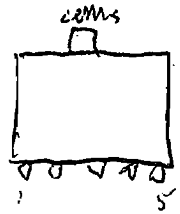
UNIT: 3 **RUN:** 1

FIELD DATA SHEET

Client	Wheat.	Project No.	11414
Plant	S Broward	Date	3/21/12
Meter Operator	K Sullivan		
Probe Operator	K Sullivan		

Meter Box	66-4	Sample Box No.	86
Meter Y_d	0.9953	Meter $\Delta H_@$	1.7324
K Factor	N/A	Pitot C_p	N/A
Leak Rate Before	0.004 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	5 (in. Hg)
Pitot Leak Check Before: ☒		After: Good ☒ Bad ☐	

Cross-Section of Test Location



[X] [UP]

Duct Dimensions (in.)	96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.7	10		

Amb. Temp. (°F)	80	Bar. Press.	30.05 [in Hg] [mbar]
Probe I.D. No.	67-4-1		
Liner Material	Pyrex		

Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	N/A	Nozzle I.D.	N/A

Start Time:	7:54	Stop Time:	9:40

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 944.445	Stack Temp. Ts (°F)	Probe T_p (°F) Set Point 300	Filter T_f (°F) Set Point 305	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\ in}$ (°F)	DGM Outlet $T_{m\ out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐	Notes
3-3	5	N/A	1.5	947.92	289	300	303	67	78	76	3	10.4		
	10		1.5	951.36	297	297	301	65	78	76	3	10.3		
	15		1.5	954.66	294	303	302	65	81	77	3	11.3		
	20		1.5	958.13	296	300	296	65	81	78	3	11.5		
	25		1.5	961.60	297	310	297	66	81	79	3	11.2		
	30		1.5	965.12	297	297	299	65	83	80	3	11.0		
	35		1.5	968.64	295	300	303	50	83	80	3	11.8		
	40		1.5	972.13	295	301	302	50	84	80	3	11.5		
	45		1.5	975.75	296	298	299	54	84	80	3	11.8		
	50		1.5	979.04	296	297	300	55	84	80	3	11.2		
	55		1.5	982.46	296	300	300	56	85	81	3	11.8		
	60		1.5	985.910	296	299	300	57	85	81	3	11.6		
	Total	*	18.0	41.465	3544				957	948				
	Average		1.5000		295.3333				80.6250					

* Sum of square roots. Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS
Date 3/21/12

TEST LOCATION: FF out **HCl** **TESTING METHOD:** 26A **PAGE** 1 **OF** 1

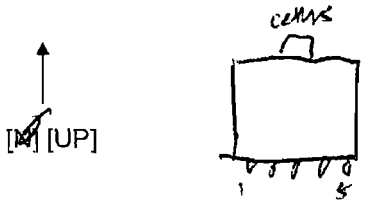
UNIT: 3 **RUN:** 2

FIELD DATA SHEET

Client	wheel.	Project No.	11414
Plant	S Broward	Date	
Meter Operator	K Sullivan		
Probe Operator	K Sullivan		

Meter Box	66-4	Sample Box No.	B3
Meter Y_d	0.9953	Meter $\Delta H_@$	1.7374
K Factor	N/A	Pitot C_p	N/A
Leak Rate Before	0.004 [cfm] [Lpm]	@	15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm]	@	5 (in. Hg)
Pitot Leak Check Before: ☑	After: Good ☒ Bad ☐		

Cross-Section of Test Location



Duct Dimensions (in.)	96		
Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-12.7	10		

Amb. Temp. (°F)	80	Bar. Press.	30.05 [in. Hg] [mbar]
Probe I.D. No.	62-4-1		
Liner Material	Pyrex		

Filter No.	N/A		
Thimble No.	N/A		
Nozzle Diameter	N/A	Nozzle I.D.	N/A

Start Time:	10:04	Stop Time:	11:04

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. 986.745 [cf] [L]	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points	Filter T_f (°F) Set Points	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐ ____	Notes
3.9	5	N/A	1.5	990.30	296	304	300	66	82	81	4	11.4		
	10		1.5	993.93	296	305	300	65	82	81	4	11.0		
	15		1.5	997.30	296	301	301	55	86	82	4	10.9		
	20		1.5	1000.73	296	300	300	58	87	82	4	10.8		
	25		1.5	1004.16	295	300	300	63	88	83	4	11.0		
	30		1.5	1007.60	295	300	300	64	88	83	4	11.1		
	35		1.5	1011.01	295	300	299	60	88	84	4	11.3		
	40		1.5	1014.43	297	300	300	58	89	84	4	10.8		
	45		1.5	1018.00	296	300	300	56	88	84	4	11.3		
	50		1.5	1021.54	296	300	300	55	88	84	4	11.1		
	55		1.5	1025.08	296	298	300	56	89	85	4	10.9		
	60		1.5	1028.580	296	300	300	57	89	85	4	11.3		
	Total	*	18.0	41.835	3550				1044	998				
	Average		1.5000		296.9333				87.0333					

* Sum of square roots.

Circle correct bracketed units on data sheet.

CleanAir ENGINEERING

QA/QC KS

Date 3/[illegible]/12

TEST LOCATION: FF out | HCl | **TESTING METHOD:** 22A **PAGE** 1 **OF** 1

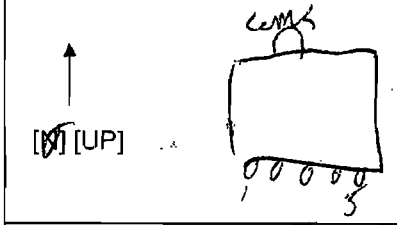
UNIT: 3 **RUN:** 3

FIELD DATA SHEET

Client	Wheel.
Plant	S Broward
Meter Operator	K Sullivan
Probe Operator	K Sullivan
Project No.	11414
Date	3/21/12

Meter Box	66-4
Meter Y_d	0.9753
K Factor	/
Sample Box No.	
Meter $\Delta H_@$	1.7374
Pitot C_p	/
Leak Rate Before	0.004 [cfm] [Lpm] @ 15 (in. Hg)
Leak Rate After	0.002 [cfm] [Lpm] @ 9 (in. Hg)
Pitot Leak Check Before: ☑	After: Good ☐ Bad ☐

Cross-Section of Test Location



Duct Dimensions (in.) 96

Static Pres (in. H_2O)	Port Len. (in.)	Gas Flow [In] [Out] of page	First point all the way [In] [Out]
-10.7	10		

Amb. Temp. (°F)	55
Probe I.D. No.	67-4-1
Liner Material	Pyrex
Bar. Press.	30.05 [in. Hg] [mbar]

Filter No.	/	
Thimble No.	/	
Nozzle Diameter	/	Nozzle I.D. /

Start Time: 11:30 Stop Time: 12:30

Traverse Point Number	Min/pt 5 Elapsed Time	Velocity Head ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L] 29.295	Stack Temp. Ts (°F)	Probe T_p (°F) Set Points 300	Filter T_f (°F) Set Points 300	Cond. Temp. T_c (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in.Hg)	Oxygen Indicator, approx (%,dv)	☐ Amb Filter ☐ Dioxin Trap ☐ ____	Notes
3-3	5	N/A	1.5	32.74	296	299	306	65	55	85	6	11.1		
	10		1.5	36.02	296	304	300	65	86	86	6	11.0		
	15		1.5	39.23	296	302	300	63	87	85	6	10.8		
	20		1.5	42.80	297	300	301	62	88	85	8	10.9		
	25		1.5	46.42	299	300	299	65	88	85	8	11.0		
	30		1.5	50.04	293	300	300	60	88	85	8	10.3		
	35		1.5	53.52	295	300	300	60	88	85	8	10.4		
	40		1.5	57.00	295	300	300	61	88	85	8	11.0		
	45		1.5	60.49	295	300	300	58	88	85	8	11.1		
	50		1.5	64.00	294	297	298	57	88	85	8	11.6		
	55		1.5	67.53	294	299	299	57	88	85	8	11.0		
	60		1.5	71.040	294	300	300	58	88	85	8	12.0		
	Total	*	13.0	41.745	3544				1050	1021				
	Average		1.5500		295.3333				86.2917					

* Sum of square roots.

Circle correct bracketed units on data sheet.

E-35

QA/QC. KS
Date 3/21/12

CleanAir ENGINEERING

Impinger Weight Sheet

Client Wheelabrator		Unit Name / Location	Unit 3 FF Outlet
Plant South Broward	Job No. 11414	Method	Modified M26A

Balance Calibration Check			
Balance ID	SWA 8028301069	Reference Weight Mass	500
Reference Weight ID	225-40	Reference Weight Reading	499.5

Check must be performed at least Once per Method per Job

Reference Weight Mass must agree with Reference Weight Reading to within ±0.5 g.

Run No. 1	Filter Type Teflon Mat	Sample Box No. B6
Date 3/21/12	Lot No. NA	pH NA
Analyst R. Vicere	Filter No. NA	Rinse NA

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	631.0	552.3	78.7	
Impinger 2	100 mL 01.N H2SO4	749.7	629.1	120.6	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	564.2	536.5	27.7	Date 3/21/12
Impinger 4	Empty	478.2	474.6	3.6	
Impinger 5	Silica Gel	749.8	741.0	8.8	Total Weight (gm)
Impinger 6					230.6
Impinger 7					239.4

Run No. 2	Filter Type Teflon Mat	Sample Box No. B3
Date 3/21/12	Lot No. NA	pH NA
Analyst R. Vicere	Filter No. NA	Rinse NA

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	534.4	460.0	74.4	
Impinger 2	100 mL 01.N H2SO4	655.6	539.4	116.2	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	666.1	632.1	34.0	Date 3/21/12
Impinger 4	Empty	445.9	438.7	7.2	
Impinger 5	Silica Gel	741.7	730.1	11.6	Total Weight (gm)
Impinger 6					231.8
Impinger 7					243.4

Run No. 3	Filter Type Teflon Mat	Sample Box No. Black
Date 3/21/12	Lot No. NA	pH NA
Analyst R. Vicere	Filter No. NA	Rinse NA

	Contents	Gross Weight (gm)	Tare Weight (gm)	Net Weight Gain (gm)	
Impinger 1	50 mL 0.1N H2SO4	511.5	459.1	52.4	
Impinger 2	100 mL 01.N H2SO4	677.3	552.3	125.0	QA/QC RV
Impinger 3	100 mL 01.N H2SO4	587.2	546.2	41.0	Date 3/21/12
Impinger 4	Empty	448.6	438.1	10.5	
Impinger 5	Silica Gel	760.1	744.5	15.6	Total Weight (gm)
Impinger 6					228.9
Impinger 7					244.5

QA/QC RV

Date 3/21/12

NS ImpFieldWtSht. August 2004

CleanAir ENGINEERING

TEST LOCATION: FF Outlet

UNIT: 3 **RUN:** 2

MOISTURE DETERMINATION FIELD DATA SHEET

PAGE 1 **OF** 1

Client	Wheelabrator	Project No	11414
Plant	S. Broward	Date	3-21-12
Meter Operator	B. ARNOLD		
Probe Operator	—		

Meter Box No	64-21
Meter Y_d	0.9888

Leak Rate Before	0.002	(cfm) @	15	(in Hg)	
Leak Rate After		(cfm) @		(in Hg)	

Cross Section of Test Location

[N] [UP]

Duct Dimensions (in)	105		
Static Press. (in H2O)	Port Lens (in)	Gas Flow [In] [Out]	Point No 1 all the way [In] [Out]
-13.7	10	of page	

Amb. Temp (°F)	81	Bar. Press	30.10 [in Hg] [mbar]
Liner Material	SSteel		

H_2O	165 [ml] [gm]	Silica Gel (gm)	5.8
Total V_{lc}	170.8		

Start Time	14:20	Stop Time	15:

Traverse Point Number	Min/pt 10 Elapsed Time	Orifice Setting ΔH (in H2O)	Gas Sample Volume V_m Init. Vol [ft³] [L] 535.045	Stack Temp T_s (°F)	Cond. Temp (°F)	DGM Inlet $T_{m\,in}$ (°F)	DGM Outlet $T_{m\,out}$ (°F)	Pump Vacuum (in Hg)	Notes
1-1	10	1.3	541.58	~~64~~	62 ~~80~~ BA	80	80	3.0	
	20	1.3	548.04		62	83	80	3.5	
	30	1.3	554.68		59	83	80	3.5	
	40	1.3	~~560~~ 561.10		61	86	81	3.5	
	45	1.3	563.360		63	87	82	3.5	
	Total		29.3150						
	Average	1.3000				82.2000			

Circle correct bracketed units on data sheet.

QA/QC BA
Date 3-21-12

CleanAir ENGINEERING

TEST LOCATION: FF outlet

UNIT: 3 RUN: 1

MOISTURE DETERMINATION FIELD DATA SHEET

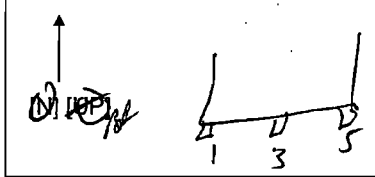
PAGE 1 OF 1

Client	Wheelabrator	Project No.	11414
Plant	S. Brownfield	Date	3-21-12
Meter Operator	BARNES		
Probe Operator	—		

Meter Box No.	16-21
Meter Y	0.9888

Leak Rate Before	0.001	(cfm) @	15	(in. Hg)
Leak Rate After	0.002	(cfm) @	14	(in. Hg)

Cross Section of Test Location



Duct Dimensions (in.)		96		
Static Press. ("H2O)	Port Len. (in.)	Gas Flow [In] [Out]	Point No. 1 all the way	
-10.8	10	% of page	[In] [Out]	

Amb. Temp. (°F)	84	Bar. Press.	30.10 [in. Hg] [mbar]
Liner Material	SS	S STEEL	

H_2O	166 [ml] [gm]	Silica Gel (gm)	7.9
Total V	173.9		
Start Time	12:59	Stop Time	13:44

Traverse Point Number	Min/pt 5 Elapsed Time	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume V_m Init. Vol. [ft³] [L]	Stack Temp. TS (°F)	Cond. Temp (°F)	DGM Inlet Tm (°F)	DGM Outlet Tm (°F)	Pump Vacuum (in. Hg)	Notes
			505.565						
3-1	5	1.3	508.86		65	81	81	3.0	314.5
	~~10~~								306.6
	15		515.29		59	82	80	3.5	7.9
	~~20~~								
	25		521.89		55	86	81	3.0	
	~~30~~								
	35		528.48		57	86	81	3.0	
	~~40~~								
	45		534.910		58	86	81	3.6	
	Total		34.3450						
	Average					82.5000			

Circle correct bracketed units on data sheet.

QA/QC BR
Date 3-21-12

CleanAir ENGINEERING

FIELD DATA PRINTOUTS

F

I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified as accurate.

QA/QC Initials: VNL

Date: 4/27/12

CleanAir.

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/22/12
Start Time: 07:55
Stop Time: 08:04
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -10.5
O_2 (dry volume %): 8.56
CO_2 (dry volume %): 10.61
N_2+CO (dry volume %): 80.83

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.}$ H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.35			300			0.59		
1-02		0.36			300			0.60		
1-03		0.30			300			0.55		
1-04		0.28			301			0.53		
1-05		0.44			300			0.66		
2-01		0.40			300			0.63		
2-02		0.38			300			0.62		
2-03		0.33			300			0.57		
2-04		0.37			301			0.61		
2-05		0.52			301			0.72		
3-01		0.39			301			0.62		
3-02		0.39			301			0.62		
3-03		0.38			301			0.62		
3-04		0.42			301			0.65		
3-05		0.49			301			0.70		
4-01		0.39			302			0.62		
4-02		0.36			302			0.60		
4-03		0.34			302			0.58		
4-04		0.41			303			0.64		
4-05		0.47			303			0.69		
5-01		0.30			301			0.55		
5-02		0.37			301			0.61		
5-03		0.41			301			0.64		
5-04		0.45			302			0.67		
5-05		0.47			302			0.69		
Final	0.0				301.08000			0.62337		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6234			301.0800					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/22/12
Start Time: 08:31
Stop Time: 08:40
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -10.6
O_2 (dry volume %): 8.70
CO_2 (dry volume %): 10.21
N_2+CO (dry volume %): 81.09

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.29			300			0.54		
1-02		0.30			300			0.55		
1-03		0.33			300			0.57		
1-04		0.37			300			0.61		
1-05		0.39			300			0.62		
2-01		0.36			301			0.60		
2-02		0.34			302			0.58		
2-03		0.35			302			0.59		
2-04		0.41			302			0.64		
2-05		0.44			303			0.66		
3-01		0.33			299			0.57		
3-02		0.32			300			0.57		
3-03		0.34			300			0.58		
3-04		0.42			301			0.65		
3-05		0.44			301			0.66		
4-01		0.36			300			0.60		
4-02		0.32			300			0.57		
4-03		0.29			300			0.54		
4-04		0.33			300			0.57		
4-05		0.46			300			0.68		
5-01		0.32			300			0.57		
5-02		0.32			300			0.57		
5-03		0.31			300			0.56		
5-04		0.28			300			0.53		
5-05		0.46			300			0.68		
Final	0.0				300.44000			0.59435		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.5944			300.4400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Meter Operator:	K. Sullivan	579
Probe Operator:	A. Obuchowski	567

Test Date: 3/22/12
Start Time: 09:19
Stop Time: 09:29

Leak Rate Before:	NA	cfm
Leak Rate After:	NA	cfm

Bar. Press. (in. Hg): 30.10
Static P: -10.8
O_2 (dry volume %): 8.57
CO_2 (dry volume %): 10.42
N_2+CO (dry volume %): 81.01

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.35			301			0.59		
1-02		0.35			301			0.59		
1-03		0.40			301			0.63		
1-04		0.46			301			0.68		
1-05		0.47			301			0.69		
2-01		0.40			302			0.63		
2-02		0.38			302			0.62		
2-03		0.40			303			0.63		
2-04		0.45			303			0.67		
2-05		0.48			303			0.69		
3-01		0.40			301			0.63		
3-02		0.38			301			0.62		
3-03		0.38			301			0.62		
3-04		0.43			301			0.66		
3-05		0.46			301			0.68		
4-01		0.40			300			0.63		
4-02		0.37			301			0.61		
4-03		0.32			301			0.57		
4-04		0.34			301			0.58		
4-05		0.47			302			0.69		
5-01		0.39			300			0.62		
5-02		0.36			300			0.60		
5-03		0.35			301			0.59		
5-04		0.39			301			0.62		
5-05		0.48			301			0.69		
Final	0.0				301.24000			0.63329		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages.		0.6333			301.2400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 4
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/22/12
Start Time: 09:58
Stop Time: 10:06
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -10.7
O_2 (dry volume %): 9.02
CO_2 (dry volume %): 10.00
N_2+CO (dry volume %): 80.98

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s	Sample ΔH	Metered	Stack	Dry Gas Meter		$\sqrt{\Delta P_s}$	Volume	Isokinetics
	0.0	(in. H_2O)	(in. H_2O)	(dcf)	T_s (°F)	$T_{m\text{-}in}$ (°F)	$T_{m\text{-}out}$ (°F)	(calculated) ($\sqrt{in.}$ H_2O)	(calculated) (ft^3)	(calculated) (%)
1-01		0.30			301			0.55		
1-02		0.37			302			0.61		
1-03		0.43			302			0.66		
1-04		0.45			303			0.67		
1-05		0.47			302			0.69		
2-01		0.45			302			0.67		
2-02		0.41			302			0.64		
2-03		0.40			302			0.63		
2-04		0.47			303			0.69		
2-05		0.51			303			0.71		
3-01		0.40			301			0.63		
3-02		0.38			301			0.62		
3-03		0.38			301			0.62		
3-04		0.44			301			0.66		
3-05		0.50			301			0.71		
4-01		0.38			300			0.62		
4-02		0.37			300			0.61		
4-03		0.39			301			0.62		
4-04		0.44			301			0.66		
4-05		0.49			301			0.70		
5-01		0.35			300			0.59		
5-02		0.36			300			0.60		
5-03		0.32			300			0.57		
5-04		0.32			300			0.57		
5-05		0.49			301			0.70		
Final	0.0				301.24000			0.63931		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6393			301.2400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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SS ISOKINETIC Version 2006-13e

USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.60686		8.56347	80.82968	30.03964	1.16307	☑ Fo value within expected range.
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.21390		8.70059	81.08551	29.98225	1.19439	☑ Fo value within expected range.
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.42352		8.56896	81.00752	30.01052	1.18300	☑ Fo value within expected range.
4	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.00388		9.02082	80.97530	29.96145	1.18746	☑ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 5
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/22/12
Start Time: 10:41
Stop Time: 10:50
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -10.7
O_2 (dry volume %): 9.34
CO_2 (dry volume %): 9.66
N_2+CO (dry volume %): 80.99

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.40			301			0.63		
1-02		0.41			301			0.64		
1-03		0.45			301			0.67		
1-04		0.52			301			0.72		
1-05		0.52			301			0.72		
2-01		0.39			301			0.62		
2-02		0.37			301			0.61		
2-03		0.40			301			0.63		
2-04		0.47			302			0.69		
2-05		0.50			303			0.71		
3-01		0.44			303			0.66		
3-02		0.37			304			0.61		
3-03		0.39			304			0.62		
3-04		0.42			304			0.65		
3-05		0.49			304			0.70		
4-01		0.42			302			0.65		
4-02		0.38			302			0.62		
4-03		0.37			302			0.61		
4-04		0.40			302			0.63		
4-05		0.49			302			0.70		
5-01		0.38			300			0.62		
5-02		0.34			300			0.58		
5-03		0.28			300			0.53		
5-04		0.30			301			0.55		
5-05		0.44			301			0.66		
Final	0.0				301.76000			0.64128		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6413			301.7600					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 6
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/22/12
Start Time: 11:25
Stop Time: 11:34
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -10.7
O_2 (dry volume %): 8.80
CO_2 (dry volume %): 10.12
N_2+CO (dry volume %): 81.08

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.}$ H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.34			301			0.58		
1-02		0.37			301			0.61		
1-03		0.40			302			0.63		
1-04		0.43			303			0.66		
1-05		0.43			303			0.66		
2-01		0.36			303			0.60		
2-02		0.35			303			0.59		
2-03		0.36			303			0.60		
2-04		0.42			303			0.65		
2-05		0.45			303			0.67		
3-01		0.35			302			0.59		
3-02		0.35			303			0.59		
3-03		0.38			303			0.62		
3-04		0.44			303			0.66		
3-05		0.47			303			0.69		
4-01		0.40			302			0.63		
4-02		0.35			302			0.59		
4-03		0.33			302			0.57		
4-04		0.38			302			0.62		
4-05		0.55			302			0.74		
5-01		0.34			302			0.58		
5-02		0.32			303			0.57		
5-03		0.29			303			0.54		
5-04		0.27			303			0.52		
5-05		0.35			303			0.59		
Final	0.0				302.52000			0.61398		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6140			302.5200					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 7
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Meter Operator:	K. Sullivan	579
Probe Operator:	B. Arnold	770

Test Date: 3/22/12
Start Time: 12:03
Stop Time: 12:13
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -11.5
O_2 (dry volume %): 8.69
CO_2 (dry volume %): 10.30
N_2+CO (dry volume %): 81.01

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s	Sample ΔH	Metered (dcf)	Stack T_s	Dry Gas Meter $T_{m\text{-}in}$	Dry Gas Meter $T_{m\text{-}out}$	$\sqrt{\Delta P_s}$ (calculated)	Volume (calculated)	Isokinetics (calculated)
	0.0	(in. H_2O)	(in. H_2O)		(°F)	(°F)	(°F)	($\sqrt{in.}$ H_2O)	(ft^3)	(%)
1-01		0.35			304			0.59		
1-02		0.40			304			0.63		
1-03		0.43			304			0.66		
1-04		0.48			304			0.69		
1-05		0.47			304			0.69		
2-01		0.38			303			0.62		
2-02		0.32			303			0.57		
2-03		0.35			304			0.59		
2-04		0.42			304			0.65		
2-05		0.48			304			0.69		
3-01		0.42			304			0.65		
3-02		0.37			304			0.61		
3-03		0.35			304			0.59		
3-04		0.42			304			0.65		
3-05		0.46			304			0.68		
4-01		0.37			304			0.61		
4-02		0.32			304			0.57		
4-03		0.30			304			0.55		
4-04		0.35			303			0.59		
4-05		0.49			303			0.70		
5-01		0.44			303			0.66		
5-02		0.40			303			0.63		
5-03		0.30			303			0.55		
5-04		0.32			303			0.57		
5-05		0.45			303			0.67		
Final	0.0				303.64000			0.62562		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6256			303.6400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
5	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.66356		9.34475	80.99168	29.91996	1.19575	☑ Fo value within expected range.
6	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.12085		8.79882	81.08034	29.97129	1.19567	☑ Fo value within expected range.
7	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.29552		8.69447	81.01001	29.99506	1.18552	☑ Fo value within expected range.
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 8
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/22/12
Start Time: 12:39
Stop Time: 12:49
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -11.6
O_2 (dry volume %): 9.10
CO_2 (dry volume %): 10.01
N_2+CO (dry volume %): 80.89

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.40			303			0.63		
1-02		0.40			303			0.63		
1-03		0.42			303			0.65		
1-04		0.47			304			0.69		
1-05		0.52			304			0.72		
2-01		0.45			303			0.67		
2-02		0.41			303			0.64		
2-03		0.38			303			0.62		
2-04		0.50			304			0.71		
2-05		0.50			304			0.71		
3-01		0.45			304			0.67		
3-02		0.40			304			0.63		
3-03		0.35			304			0.59		
3-04		0.43			304			0.66		
3-05		0.55			303			0.74		
4-01		0.48			303			0.69		
4-02		0.41			303			0.64		
4-03		0.40			304			0.63		
4-04		0.45			304			0.67		
4-05		0.62			304			0.79		
5-01		0.40			304			0.63		
5-02		0.38			304			0.62		
5-03		0.34			304			0.58		
5-04		0.31			304			0.56		
5-05		0.47			304			0.69		
Final	0.0				303.64000			0.65807		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6581			303.6400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 9
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/22/12
Start Time: 13:17
Stop Time: 13:27
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -11.7
O_2 (dry volume %): 9.16
CO_2 (dry volume %): 10.00
N_2+CO (dry volume %): 80.84

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.}$ H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.35			303			0.59		
1-02		0.37			304			0.61		
1-03		0.40			303			0.63		
1-04		0.45			303			0.67		
1-05		0.45			303			0.67		
2-01		0.38			303			0.62		
2-02		0.34			303			0.58		
2-03		0.38			303			0.62		
2-04		0.46			303			0.68		
2-05		0.46			303			0.68		
3-01		0.39			301			0.62		
3-02		0.34			302			0.58		
3-03		0.34			302			0.58		
3-04		0.40			302			0.63		
3-05		0.43			302			0.66		
4-01		0.38			303			0.62		
4-02		0.36			303			0.60		
4-03		0.33			303			0.57		
4-04		0.34			303			0.58		
4-05		0.48			302			0.69		
5-01		0.39			302			0.62		
5-02		0.35			302			0.59		
5-03		0.28			302			0.53		
5-04		0.27			301			0.52		
5-05		0.45			301			0.67		
Final	0.0				302.48000			0.61711		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6171			302.4800					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 1 FF Outlet
Test Run: 10
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/22/12
Start Time: 13:57
Stop Time: 14:06
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -11.6
O_2 (dry volume %): 8.90
CO_2 (dry volume %): 10.12
N_2+CO (dry volume %): 80.98

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.38			302			0.62		
1-02		0.37			302			0.61		
1-03		0.40			302			0.63		
1-04		0.46			301			0.68		
1-05		0.46			301			0.68		
2-01		0.42			303			0.65		
2-02		0.38			303			0.62		
2-03		0.40			303			0.63		
2-04		0.45			303			0.67		
2-05		0.46			304			0.68		
3-01		0.41			302			0.64		
3-02		0.38			302			0.62		
3-03		0.40			303			0.63		
3-04		0.46			303			0.68		
3-05		0.50			303			0.71		
4-01		0.38			302			0.62		
4-02		0.38			302			0.62		
4-03		0.36			302			0.60		
4-04		0.40			301			0.63		
4-05		0.53			302			0.73		
5-01		0.35			303			0.59		
5-02		0.33			303			0.57		
5-03		0.29			303			0.54		
5-04		0.29			303			0.54		
5-05		0.40			303			0.63		
Final	0.0				302.44000			0.63212		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6321			302.4400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 1 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
8	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.00798		9.10027	80.89174	29.96529	1.17903	☑ Fo value within expected range.
9	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.99830		9.16210	80.83960	29.96621	1.17399	☑ Fo value within expected range.
10	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.11563		8.90143	80.98294	29.97456	1.18614	☑ Fo value within expected range.
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 1 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: K. Sullivan 579
Test Date: 3/22/12
Start Time: 07:44
Stop Time: 08:44
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.5
O_2 (dry volume %): 9.15
CO_2 (dry volume %): 9.95
N_2+CO (dry volume %): 80.90
H_2O (condensate, ml or gm): 240.8
H_2O (silica, g): 9.7
Actual Moisture (%): 22.70

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
Pitot C_p: NA
Pitot Leak Check: ☑ Pass ☐ Fail
Meter Box ID. No: 85-3
Meter ΔH@: 1.77920
Meter Y_d: 0.99250

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			27.300						
3-03	5.0		1.50	30.670	301	76	75		3.37	
3-03	10.0		1.50	34.030	301	79	75		3.36	
3-03	15.0		1.50	37.460	301	80	75		3.43	
3-03	20.0		1.50	40.870	301	81	76		3.41	
3-03	25.0		1.50	44.270	301	82	76		3.40	
3-03	30.0		1.50	47.700	301	83	77		3.43	
3-03	35.0		1.50	51.060	301	83	77		3.36	
3-03	40.0		1.50	54.450	301	83	77		3.39	
3-03	45.0		1.50	57.890	301	84	78		3.44	
3-03	50.0		1.50	61.330	301	84	78		3.44	
3-03	55.0		1.50	64.800	301	84	78		3.47	
3-03	60.0		1.50	68.235	301	84	78		3.44	
Final	60.0		1.50000	40.93500	301.00000	79.29167		0.00000	40.93500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	40.9350	301.0000	79.2917				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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P

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 1 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: K. Sullivan 579
Test Date: 3/22/12
Start Time: 09:07
Stop Time: 10:07
Leak Rate Before: 0.006 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.8
O_2 (dry volume %): 8.68
CO_2 (dry volume %): 10.34
N_2+CO (dry volume %): 80.98
H_2O (condensate, ml or gm): 248.5
H_2O (silica, g): 12.3
Actual Moisture (%): 23.40

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
Pitot C_p: NA
Pitot Leak Check: ☑ Pass ☐ Fail
Meter Box ID. No: 85-3
Meter ΔH@: 1.77920
Meter Y_d: 0.99250

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			68.900						
3-03	5.0		1.50	72.430	302	79	78		3.53	
3-03	10.0		1.50	75.840	302	79	78		3.41	
3-03	15.0		1.50	79.180	302	83	78		3.34	
3-03	20.0		1.50	82.550	302	84	79		3.37	
3-03	25.0		1.50	86.110	302	85	80		3.56	
3-03	30.0		1.50	89.450	302	86	80		3.34	
3-03	35.0		1.50	92.910	302	87	81		3.46	
3-03	40.0		1.50	96.360	302	87	81		3.45	
3-03	45.0		1.50	99.820	303	87	81		3.46	
3-03	50.0		1.50	103.270	303	87	81		3.45	
3-03	55.0		1.50	106.690	303	88	82		3.42	
3-03	60.0		1.50	110.120	303	88	82		3.43	
Final	60.0		1.50000	41.22000	302.33333	82.54167		0.00000	41.22000	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.2200	302.3333	82.5417				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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Field Data Printout

				Test Method:	**USEPA Method 26A**
Location:	Unit 1 FF Outlet			**Analyte:**	**HCl**
Test Run:	3				
Client:	Wheelabrator South Broward, Inc.		Bar. Press. (in. Hg):	30.10	Nozzle ID No: NA
Project No:	11414		Static P:	-10.7	Nozzle Diameter (D_n): NA
Source Area (ft^2):	64.00000		O_2 (dry volume %):	9.20	Probe ID No: 67-4-1
Meter Operator:	K. Sullivan	579	CO_2 (dry volume %):	9.79	Pitot C_p: NA
Probe Operator:	K. Sullivan	579	N_2+CO (dry volume %):	81.01	Pitot Leak Check: ☑ Pass ☐ Fail
Test Date:	3/22/12				
Start Time:	10:32				
Stop Time:	11:32		H_2O (condensate, ml or gm):	230.2	Meter Box ID. No: 85-3
Leak Rate Before:	0.005 cfm	@ 15 "Hg	H_2O (silica, g):	15.8	Meter ΔH@: 1.77920
Leak Rate After:	0.004 cfm	@ 8 "Hg	Actual Moisture (%):	22.28	Meter Y_d: 0.99250

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			110.965						
3-03	5.0		1.50	114.380	302	84	83		3.41	
3-03	10.0		1.50	117.810	302	86	82		3.43	
3-03	15.0		1.50	121.220	302	86	83		3.41	
3-03	20.0		1.50	124.650	302	87	83		3.43	
3-03	25.0		1.50	128.110	302	87	83		3.46	
3-03	30.0		1.50	131.610	302	87	83		3.50	
3-03	35.0		1.50	135.110	303	88	84		3.50	
3-03	40.0		1.50	138.500	303	88	84		3.39	
3-03	45.0		1.50	142.100	303	89	85		3.60	
3-03	50.0		1.50	145.600	303	89	85		3.50	
3-03	55.0		1.50	149.100	303	89	85		3.50	
3-03	60.0		1.50	152.610	303	89	85		3.51	
Final	60.0		1.50000	41.64500	302.50000	85.58333		0.00000	41.64500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.6450	302.5000	85.5833				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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H

USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 1 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.95000		9.15000	80.90000	29.95800	1.18090	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.34000		8.68000	80.98000	30.00160	1.18182	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.79000		9.20000	81.01000	29.93440	1.19510	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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PKH

Field Data Printout

Test Method: **USEPA Method 4**
Analyte: **Moisture**

Location: Unit 1 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Test Date: 3/22/12
Start Time: 12:00
Stop Time: 12:45
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 4 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.5
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

H_2O (condensate, ml or gm): 161.0
H_2O (silica, g): 9.1
Actual Moisture (%): 22.31

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Meter Box ID. No: 85-3
Meter ΔH@: NA
Meter Y_d: 0.99250

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			153.23						
3-03	5.0	N/A	1.30	156.46	N/A	87	84	N/A	3.24	N/A
3-03	10.0		1.30	159.69		87	84		3.23	
3-03	15.0		1.30	162.89		87	84		3.20	
3-03	20.0		1.30	166.10		88	85		3.21	
3-03	25.0		1.30	169.30		88	85		3.20	
3-03	30.0		1.30	172.47		88	85		3.17	
3-03	35.0		1.30	175.65		89	86		3.18	
3-03	40.0		1.30	178.83		89	86		3.18	
3-03	45.0		1.30	182.04		89	86		3.21	
Final	45.0		1.30000	28.81500	N/A	86.50000		N/A	28.81500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		N/A	1.3000	28.8150	N/A	86.5000				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☐ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 4**
Analyte: **Moisture**

Location: Unit 1 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Test Date: 3/22/12
Start Time: 13:17
Stop Time: 14:02
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -11.7
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

H_2O (condensate, ml or gm): 170.0
H_2O (silica, g): 5.8
Actual Moisture (%): 22.96

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Meter Box ID. No: 85-3
Meter ΔH@: NA
Meter Y_d: 0.99250

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			182.16						
3-03	5.0	N/A	1.30	185.38	N/A	86	86	N/A	3.22	N/A
3-03	10.0		1.30	188.58		89	86		3.20	
3-03	15.0		1.30	191.80		90	87		3.22	
3-03	20.0		1.30	194.95		90	87		3.15	
3-03	25.0		1.30	198.14		90	87		3.19	
3-03	30.0		1.30	201.33		89	87		3.19	
3-03	35.0		1.30	204.49		87	85		3.16	
3-03	40.0		1.30	207.67		87	85		3.18	
3-03	45.0		1.30	210.90		87	85		3.23	
Final	45.0		1.30000	28.74000	N/A	87.22222		N/A	28.74000	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		N/A	1.3000	28.7400	N/A	87.2222				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☐ Avg. OK	☑ Avg. OK				

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USEPA Method 4 Laboratory Data

Test Method: USEPA Method 4
Analyte: Moisture

Location: Unit 1 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	261.0	100.0	161.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	309.1	300.0	9.1
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
161.0	Liquid (gm)		
0.0	less rinse (gm)		
161.0	Net Liquid (gm)	161.0	☑ QA/QC OK
+ 9.1	Silica Gel (gm)	9.1	☑ QA/QC OK
170.1	Total Vlc (gm)	170.1	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	270.0	100.0	170.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	305.8	300.0	5.8
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
170.0	Liquid (gm)		
0.0	less rinse (gm)		
170.0	Net Liquid (gm)	170.0	☑ QA/QC OK
+ 5.8	Silica Gel (gm)	5.8	☑ QA/QC OK
175.8	Total Vlc (gm)	175.8	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator:
Test Date: 3/20/12
Start Time: 12:28
Stop Time: 12:39
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -15.8
O_2 (dry volume %): 9.56
CO_2 (dry volume %): 9.58
N_2+CO (dry volume %): 80.86

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.52			289			0.72		
1-02		0.52			290			0.72		
1-03		0.55			291			0.74		
1-04		0.61			292			0.78		
1-05		0.59			292			0.77		
2-01		0.52			291			0.72		
2-02		0.52			293			0.72		
2-03		0.52			293			0.72		
2-04		0.57			293			0.75		
2-05		0.58			293			0.76		
3-01		0.50			292			0.71		
3-02		0.49			292			0.70		
3-03		0.54			293			0.73		
3-04		0.56			293			0.75		
3-05		0.64			294			0.80		
4-01		0.52			294			0.72		
4-02		0.51			294			0.71		
4-03		0.52			294			0.72		
4-04		0.56			295			0.75		
4-05		0.65			294			0.81		
5-01		0.48			293			0.69		
5-02		0.48			292			0.69		
5-03		0.49			293			0.70		
5-04		0.46			292			0.68		
5-05		0.54			292			0.73		
Final	0.0				292.56000			0.73251		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7325			292.5600					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator:
Test Date: 3/20/12
Start Time: 13:10
Stop Time: 13:21
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -15.3
O_2 (dry volume %): 9.78
CO_2 (dry volume %): 9.44
N_2+CO (dry volume %): 80.79

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.44			293			0.66		
1-02		0.44			293			0.66		
1-03		0.45			292			0.67		
1-04		0.45			291			0.67		
1-05		0.45			290			0.67		
2-01		0.48			294			0.69		
2-02		0.47			294			0.69		
2-03		0.50			294			0.71		
2-04		0.56			294			0.75		
2-05		0.56			294			0.75		
3-01		0.55			293			0.74		
3-02		0.49			293			0.70		
3-03		0.50			293			0.71		
3-04		0.49			293			0.70		
3-05		0.64			294			0.80		
4-01		0.52			291			0.72		
4-02		0.49			291			0.70		
4-03		0.52			293			0.72		
4-04		0.53			293			0.73		
4-05		0.60			293			0.77		
5-01		0.51			290			0.71		
5-02		0.53			291			0.73		
5-03		0.50			292			0.71		
5-04		0.48			292			0.69		
5-05		0.55			292			0.74		
Final	0.0				292.52000			0.71194		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7119			292.5200					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Meter Operator:	K. Sullivan	579
Probe Operator:	B. Arnold	770

Test Date: 3/20/12
Start Time: 13:58
Stop Time: 14:08

Leak Rate Before:	NA	cfm
Leak Rate After:	NA	cfm

Bar. Press. (in. Hg): 30.05
Static P: -13.9
O_2 (dry volume %): 9.40
CO_2 (dry volume %): 9.78
N_2+CO (dry volume %): 80.82

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.49			290			0.70		
1-02		0.50			291			0.71		
1-03		0.49			291			0.70		
1-04		0.49			292			0.70		
1-05		0.45			291			0.67		
2-01		0.51			290			0.71		
2-02		0.52			291			0.72		
2-03		0.52			292			0.72		
2-04		0.56			293			0.75		
2-05		0.53			292			0.73		
3-01		0.54			291			0.73		
3-02		0.52			291			0.72		
3-03		0.52			291			0.72		
3-04		0.53			292			0.73		
3-05		0.60			291			0.77		
4-01		0.53			290			0.73		
4-02		0.52			291			0.72		
4-03		0.55			292			0.74		
4-04		0.61			292			0.78		
4-05		0.68			292			0.82		
5-01		0.50			291			0.71		
5-02		0.49			293			0.70		
5-03		0.48			293			0.69		
5-04		0.50			293			0.71		
5-05		0.65			290			0.81		
Final	0.0				291.44000			0.72800		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7280			291.4400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.57981		9.56151	80.85868	29.91523	1.18358	☑ Fo value within expected range.
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.43897		9.77560	80.78543	29.90126	1.17856	☑ Fo value within expected range.
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.77987		9.40155	80.81858	29.94084	1.17573	☑ Fo value within expected range.
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 4
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/20/12
Start Time: 14:36
Stop Time: 14:47
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -13.8
O_2 (dry volume %): 9.72
CO_2 (dry volume %): 9.54
N_2+CO (dry volume %): 80.74

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.57			291			0.75		
1-02		0.52			293			0.72		
1-03		0.55			293			0.74		
1-04		0.55			294			0.74		
1-05		0.52			289			0.72		
2-01		0.58			292			0.76		
2-02		0.56			293			0.75		
2-03		0.57			294			0.75		
2-04		0.62			295			0.79		
2-05		0.60			293			0.77		
3-01		0.57			290			0.75		
3-02		0.57			292			0.75		
3-03		0.58			293			0.76		
3-04		0.60			294			0.77		
3-05		0.63			293			0.79		
4-01		0.54			290			0.73		
4-02		0.59			291			0.77		
4-03		0.60			292			0.77		
4-04		0.64			293			0.80		
4-05		0.65			290			0.81		
5-01		0.60			292			0.77		
5-02		0.58			294			0.76		
5-03		0.57			294			0.75		
5-04		0.55			294			0.74		
5-05		0.65			290			0.81		
Final	0.0				292.36000			0.76280		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7628			292.3600					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 5
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Meter Operator:	K. Sullivan	579
Probe Operator:	B. Arnold	770

Test Date: 3/20/12
Start Time: 15:18
Stop Time: 15:29

Leak Rate Before:	NA	cfm
Leak Rate After:	NA	cfm

Bar. Press. (in. Hg): 30.05
Static P: -13.9
O_2 (dry volume %): 9.72
CO_2 (dry volume %): 9.60
N_2+CO (dry volume %): 80.69

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.}$ H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.47			294			0.69		
1-02		0.48			294			0.69		
1-03		0.50			294			0.71		
1-04		0.51			294			0.71		
1-05		0.47			292			0.69		
2-01		0.52			289			0.72		
2-02		0.52			292			0.72		
2-03		0.52			293			0.72		
2-04		0.55			294			0.74		
2-05		0.55			291			0.74		
3-01		0.57			290			0.75		
3-02		0.54			293			0.73		
3-03		0.52			293			0.72		
3-04		0.60			293			0.77		
3-05		0.55			291			0.74		
4-01		0.50			291			0.71		
4-02		0.49			292			0.70		
4-03		0.51			292			0.71		
4-04		0.53			293			0.73		
4-05		0.61			290			0.78		
5-01		0.55			290			0.74		
5-02		0.55			290			0.74		
5-03		0.55			291			0.74		
5-04		0.52			292			0.72		
5-05		0.58			290			0.76		
Final	0.0				291.92000			0.72787		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7279			291.9200					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 6
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/20/12
Start Time: 15:45
Stop Time: 15:55
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -13.9
O_2 (dry volume %): 9.50
CO_2 (dry volume %): 9.86
N_2+CO (dry volume %): 80.65

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.56			290			0.75		
1-02		0.53			292			0.73		
1-03		0.52			291			0.72		
1-04		0.55			292			0.74		
1-05		0.54			290			0.73		
2-01		0.52			294			0.72		
2-02		0.52			294			0.72		
2-03		0.51			294			0.71		
2-04		0.51			294			0.71		
2-05		0.59			293			0.77		
3-01		0.55			291			0.74		
3-02		0.53			291			0.73		
3-03		0.54			291			0.73		
3-04		0.59			292			0.77		
3-05		0.65			290			0.81		
4-01		0.52			290			0.72		
4-02		0.52			292			0.72		
4-03		0.54			292			0.73		
4-04		0.58			293			0.76		
4-05		0.64			291			0.80		
5-01		0.48			294			0.69		
5-02		0.53			294			0.73		
5-03		0.51			294			0.71		
5-04		0.54			294			0.73		
5-05		0.57			292			0.75		
Final	0.0				292.20000			0.73819		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7382			292.2000					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 2 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
4	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.53898		9.72090	80.74012	29.91507	1.17194	☑ Fo value within expected range.
5	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.59511		9.71987	80.68502	29.92401	1.16519	☑ Fo value within expected range.
6	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.85513		9.49576	80.64912	29.95665	1.15719	☑ Fo value within expected range.
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 7
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/20/12
Start Time: 16:19
Stop Time: 16:28
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -14.9
O_2 (dry volume %): 9.44
CO_2 (dry volume %): 9.83
N_2+CO (dry volume %): 80.73

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.53			295			0.73		
1-02		0.50			295			0.71		
1-03		0.54			295			0.73		
1-04		0.55			295			0.74		
1-05		0.56			294			0.75		
2-01		0.51			290			0.71		
2-02		0.52			293			0.72		
2-03		0.54			293			0.73		
2-04		0.55			294			0.74		
2-05		0.52			295			0.72		
3-01		0.52			292			0.72		
3-02		0.52			292			0.72		
3-03		0.51			291			0.71		
3-04		0.52			293			0.72		
3-05		0.49			293			0.70		
4-01		0.55			291			0.74		
4-02		0.52			293			0.72		
4-03		0.54			294			0.73		
4-04		0.58			294			0.76		
4-05		0.62			293			0.79		
5-01		0.51			291			0.71		
5-02		0.51			292			0.71		
5-03		0.49			293			0.70		
5-04		0.47			295			0.69		
5-05		0.64			290			0.80		
Final	0.0				293.04000			0.72923		

25 points sampled
Sq.Rt.ΔP

QC-Check: Field Averages					
	0.7292			293.0400	
	☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 8
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/20/12
Start Time: 16:52
Stop Time: 17:04
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -15.1
O_2 (dry volume %): 9.71
CO_2 (dry volume %): 9.51
N_2+CO (dry volume %): 80.78

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.52			291			0.72		
1-02		0.52			294			0.72		
1-03		0.55			295			0.74		
1-04		0.58			295			0.76		
1-05		0.55			293			0.74		
2-01		0.52			293			0.72		
2-02		0.52			294			0.72		
2-03		0.54			295			0.73		
2-04		0.55			295			0.74		
2-05		0.59			292			0.77		
3-01		0.53			293			0.73		
3-02		0.49			295			0.70		
3-03		0.50			295			0.71		
3-04		0.59			295			0.77		
3-05		0.63			294			0.79		
4-01		0.53			293			0.73		
4-02		0.52			295			0.72		
4-03		0.54			295			0.73		
4-04		0.56			295			0.75		
4-05		0.59			292			0.77		
5-01		0.53			295			0.73		
5-02		0.54			296			0.73		
5-03		0.55			296			0.74		
5-04		0.53			296			0.73		
5-05		0.63			294			0.79		
Final	0.0				294.24000			0.73990		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7399			294.2400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Test Run: 9
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: B. Arnold 770
Test Date: 3/20/12
Start Time: 17:24
Stop Time: 17:33
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -14.7
O_2 (dry volume %): 9.40
CO_2 (dry volume %): 9.82
N_2+CO (dry volume %): 80.79

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s	Sample ΔH	Metered (dcf)	Stack T_s	Dry Gas Meter $T_{m\text{-}in}$	Dry Gas Meter $T_{m\text{-}out}$	$\sqrt{\Delta P_s}$ (calculated)	Volume (calculated)	Isokinetics (calculated)
	0.0	(in. H_2O)	(in. H_2O)		(°F)	(°F)	(°F)	($\sqrt{in.}$ H_2O)	(ft^3)	(%)
1-01		0.53			298			0.73		
1-02		0.53			298			0.73		
1-03		0.57			298			0.75		
1-04		0.58			298			0.76		
1-05		0.51			294			0.71		
2-01		0.53			294			0.73		
2-02		0.55			295			0.74		
2-03		0.53			297			0.73		
2-04		0.56			297			0.75		
2-05		0.57			293			0.75		
3-01		0.52			295			0.72		
3-02		0.52			295			0.72		
3-03		0.52			296			0.72		
3-04		0.56			296			0.75		
3-05		0.55			294			0.74		
4-01		0.53			293			0.73		
4-02		0.50			294			0.71		
4-03		0.54			294			0.73		
4-04		0.56			295			0.75		
4-05		0.65			294			0.81		
5-01		0.52			293			0.72		
5-02		0.52			294			0.72		
5-03		0.48			296			0.69		
5-04		0.47			296			0.69		
5-05		0.58			295			0.76		
Final	0.0				295.28000			0.73391		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7339			295.2800					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 2 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
7	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.82781		9.44271	80.72947	29.95016	1.16580	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
8	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.51450		9.70798	80.77752	29.91064	1.17631	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
9	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.81516		9.39901	80.78584	29.94639	1.17176	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 2 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Meter Operator:	K. Sullivan	579
Probe Operator:	K. Sullivan	579

Test Date: 3/20/12
Start Time: 12:22
Stop Time: 13:22

Leak Rate Before:	0.004	cfm	@ 15 "Hg
Leak Rate After:	0.002	cfm	@ 7 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -15.8
O_2 (dry volume %): 9.60
CO_2 (dry volume %): 9.80
N_2+CO (dry volume %): 80.60

H_2O (condensate, ml or gm): 209.9
H_2O (silica, g): 13.0
Actual Moisture (%): 20.89

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
Pitot C_p: NA
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: 66-11
Meter ΔH@: 1.81180
Meter Y_d: 0.99150

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			358.785						
3-03	5.0		1.50	362.250	295	88	86		3.46	
3-03	10.0		1.50	365.630	294	89	89		3.38	
3-03	15.0		1.50	369.180	293	89	84		3.55	
3-03	20.0		1.50	372.500	292	91	85		3.32	
3-03	25.0		1.50	375.950	293	92	85		3.45	
3-03	30.0		1.50	379.400	293	93	86		3.45	
3-03	35.0		1.50	382.880	295	94	86		3.48	
3-03	40.0		1.50	386.330	294	93	86		3.45	
3-03	45.0		1.50	389.780	294	94	86		3.45	
3-03	50.0		1.50	393.250	293	97	88		3.47	
3-03	55.0		1.50	396.690	292	94	87		3.44	
3-03	60.0		1.50	400.150	292	94	87		3.46	
Final	60.0		1.50000	41.36500	293.33333	89.29167		0.00000	41.36500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.3650	293.3333	89.2917				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 2 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst:
Analyst Emp No:

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.52000		9.64000	80.84000	29.90880	1.18277	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.72000		9.69000	80.59000	29.94280	1.15329	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.80000		9.60000	80.60000	29.95200	1.15306	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Field Data Printout

Test Method: USEPA Method 4
Analyte: Moisture

Location: Unit 2 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Test Date: 3/20/12
Start Time: 13:52
Stop Time: 14:52
Leak Rate Before: 0.005 cfm @ 15 "Hg
Leak Rate After: 0.001 cfm @ 4 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -13.9
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

H_2O (condensate, ml or gm): 187.0
H_2O (silica, g): 10.1
Actual Moisture (%): 21.52

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Meter Box ID. No: 61-6
Meter ΔH@: NA
Meter Y_d: 1.00610

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			262.78						
3-03	5.0	N/A	1.00	265.70	N/A	80	80	N/A	2.92	N/A
3-03	10.0		1.00	268.53		81	81		2.83	
3-03	15.0		1.00	271.33		85	84		2.80	
3-03	20.0		1.00	274.28		85	82		2.95	
3-03	25.0		1.00	277.17		87	84		2.89	
3-03	30.0		1.00	280.04		88	84		2.87	
3-03	35.0		1.00	282.92		88	83		2.88	
3-03	40.0		1.00	285.86		88	83		2.94	
3-03	45.0		1.00	288.64		88	83		2.78	
3-03	50.0		1.00	291.48		88	83		2.84	
3-03	55.0		1.00	294.35		89	84		2.87	
3-03	60.0		1.00	297.24		89	84		2.89	
Final	60.0		1.00000	34.46000	N/A	84.62500		N/A	34.46000	

9 points sampled

QC-Check: Field Averages	Sq.Rt.ΔP				
	N/A	1.0000	34.4600	N/A	84.6250
	☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☐ Avg. OK	☑ Avg. OK

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Field Data Printout

Test Method: **USEPA Method 4**
Analyte: **Moisture**

Location: Unit 2 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Test Date: 3/20/12
Start Time: 15:18
Stop Time: 16:03
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 4 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -13.9
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

H_2O (condensate, ml or gm): 147.0
H_2O (silica, g): 6.6
Actual Moisture (%): 20.64

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Meter Box ID. No: 61-6
Meter ΔH@: NA
Meter Y_d: 1.00610

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s	Sample ΔH	Metered (dcf)	Stack T_s	Dry Gas Meter $T_{m\text{-}in}$	Dry Gas Meter $T_{m\text{-}out}$	$\sqrt{\Delta P_s}$ (calculated)	Volume (calculated)	Isokinetics (calculated)
	0.0	(in. H_2O)	(in. H_2O)	297.66	(°F)	(°F)	(°F)	($\sqrt{}$in. H_2O)	(ft^3)	(%)
3-03	5.0	N/A	1.20	300.83	N/A	85	84	N/A	3.18	N/A
3-03	10.0		1.20	303.94		86	84		3.11	
3-03	15.0		1.20	307.18		87	84		3.24	
3-03	20.0		1.20	310.27		89	83		3.09	
3-03	25.0		1.20	313.42		90	84		3.15	
3-03	30.0		1.20	316.57		89	84		3.15	
3-03	35.0		1.20	319.74		89	84		3.17	
3-03	40.0		1.20	322.89		88	84		3.15	
3-03	45.0		1.20	326.02		88	84		3.13	
Final	45.0		1.20000	28.36000	N/A	85.88889		N/A	28.36000	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		N/A	1.2000	28.3600	N/A	85.8887				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☐ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 4**
Analyte: **Moisture**

Location: Unit 2 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Bar. Press. (in. Hg): 30.05
Static P: -14.9
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Test Date: 3/20/12
Start Time: 16:18
Stop Time: 17:03
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 6 "Hg

H_2O (condensate, ml or gm): 150.0
H_2O (silica, g): 6.2
Actual Moisture (%): 21.22

Meter Box ID. No: 61-6
Meter ΔH@: N/A
Meter Y_d: 1.006 10

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			326.41						
3-03	5.0	N/A	1.20	329.17	N/A	81	81	N/A	2.76	N/A
3-03	10.0		1.20	332.27		81	81		3.10	
3-03	15.0		1.20	335.37		83	79		3.10	
3-03	20.0		1.20	338.49		83	79		3.12	
3-03	25.0		1.20	341.65		85	79		3.16	
3-03	30.0		1.20	344.78		86	80		3.13	
3-03	35.0		1.20	347.90		86	80		3.12	
3-03	40.0		1.20	350.98		86	81		3.08	
3-03	45.0		1.20	354.07		87	81		3.09	
Final	45.0		1.20000	27.66000	N/A	82.16667		N/A	27.66000	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		N/A	1.2000	27.6600	N/A	82.1667				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☐ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: USEPA Method 4
Analyte: Moisture

Location: Unit 2 FF Outlet
Test Run: 4
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Test Date: 3/20/12
Start Time: 17:22
Stop Time: 17:52
Leak Rate Before: 0.003 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -14.7
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

H_2O (condensate, ml or gm): 120.0
H_2O (silica, g): 5.3
Actual Moisture (%): 21.14

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Meter Box ID. No: 61-6
Meter ΔH@: N/A
Meter Y_d: 1.00610

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			354.53						
3-03	5.0	N/A	1.70	358.29	N/A	83	81	N/A	3.77	N/A
3-03	10.0		1.70	362.06		85	81		3.77	
3-03	15.0		1.70	365.78		86	82		3.72	
3-03	20.0		1.70	369.47		88	82		3.69	
3-03	25.0		1.70	373.17		88	82		3.70	
3-03	30.0		1.70	376.87		88	82		3.70	
Final	30.0		1.70000	22.34500	N/A	84.00000		N/A	22.34500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		N/A	1.7000	22.3450	N/A	84.0000				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☐ Avg. OK	☑ Avg. OK				

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USEPA Method 4 Laboratory Data

Test Method: USEPA Method 4
Analyte: Moisture

Location: Unit 2 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	287.0	100.0	187.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	310.1	300.0	10.1
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
187.0	Liquid (gm)		
0.0	less rinse (gm)		
187.0	Net Liquid (gm)	187.0	☑ QA/QC OK
+ 10.1	Silica Gel (gm)	10.1	☑ QA/QC OK
197.1	Total Vlc (gm)	197.1	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	247.0	100.0	147.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	306.6	300.0	6.6
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
147.0	Liquid (gm)		
0.0	less rinse (gm)		
147.0	Net Liquid (gm)	147.0	☑ QA/QC OK
+ 6.6	Silica Gel (gm)	6.6	☑ QA/QC OK
153.6	Total Vlc (gm)	153.6	☑ QA/QC OK

Test Run: 3

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	250.0	100.0	150.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	306.2	300.0	6.2
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
150.0	Liquid (gm)		
0.0	less rinse (gm)		
150.0	Net Liquid (gm)	150.0	☑ QA/QC OK
+ 6.2	Silica Gel (gm)	6.2	☑ QA/QC OK
156.2	Total Vlc (gm)	156.2	☑ QA/QC OK

Test Run: 4

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	220.0	100.0	120.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	305.3	300.0	5.3
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
120.0	Liquid (gm)		
0.0	less rinse (gm)		
120.0	Net Liquid (gm)	120.0	☑ QA/QC OK
+ 5.3	Silica Gel (gm)	5.3	☑ QA/QC OK
125.3	Total Vlc (gm)	125.3	☑ QA/QC OK

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/21/12
Start Time: 08:02
Stop Time: 08:12
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -12.7
O_2 (dry volume %): 9.55
CO_2 (dry volume %): 9.61
N_2+CO (dry volume %): 80.84

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.36			296			0.60		
1-02		0.36			296			0.60		
1-03		0.35			296			0.59		
1-04		0.37			296			0.61		
1-05		0.36			296			0.60		
2-01		0.36			295			0.60		
2-02		0.37			296			0.61		
2-03		0.38			297			0.62		
2-04		0.39			297			0.62		
2-05		0.38			294			0.62		
3-01		0.39			295			0.62		
3-02		0.40			295			0.63		
3-03		0.40			295			0.63		
3-04		0.40			296			0.63		
3-05		0.40			294			0.63		
4-01		0.51			295			0.71		
4-02		0.51			297			0.71		
4-03		0.47			298			0.69		
4-04		0.51			298			0.71		
4-05		0.52			298			0.72		
5-01		0.55			297			0.74		
5-02		0.54			297			0.73		
5-03		0.52			297			0.72		
5-04		0.49			297			0.70		
5-05		0.50			297			0.71		
Final	0.0				296.20000			0.65495	#VALUE!	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6549			296.2000					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan | 579
Probe Operator: A. Obuchowski | 567
Test Date: 3/21/12
Start Time: 08:57
Stop Time:
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -12.6
O_2 (dry volume %): 9.50
CO_2 (dry volume %): 9.65
N_2+CO (dry volume %): 80.85

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.36			299			0.60		
1-02		0.37			299			0.61		
1-03		0.40			299			0.63		
1-04		0.40			299			0.63		
1-05		0.38			299			0.62		
2-01		0.45			298			0.67		
2-02		0.45			298			0.67		
2-03		0.41			298			0.64		
2-04		0.36			298			0.60		
2-05		0.35			298			0.59		
3-01		0.40			294			0.63		
3-02		0.40			294			0.63		
3-03		0.38			295			0.62		
3-04		0.34			296			0.58		
3-05		0.34			296			0.58		
4-01		0.43			297			0.66		
4-02		0.38			297			0.62		
4-03		0.37			297			0.61		
4-04		0.34			297			0.58		
4-05		0.33			297			0.57		
5-01		0.33			294			0.57		
5-02		0.30			295			0.55		
5-03		0.42			296			0.65		
5-04		0.45			296			0.67		
5-05		0.43			296			0.66		
Final	0.0				296.88000			0.61768		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6175			296.8800					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/21/12
Start Time: 09:21
Stop Time: 09:29
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -12.8
O_2 (dry volume %): 9.60
CO_2 (dry volume %): 9.62
N_2+CO (dry volume %): 80.78

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s	Sample ΔH	Metered (dcf)	Stack T_s	Dry Gas Meter $T_{m\text{-}in}$	Dry Gas Meter $T_{m\text{-}out}$	$\sqrt{\Delta P_s}$ (calculated)	Volume (calculated)	Isokinetics (calculated)
	0.0	(in. H_2O)	(in. H_2O)		(°F)	(°F)	(°F)	($\sqrt{in.}$ H_2O)	(ft^3)	(%)
1-01		0.31			295			0.56		
1-02		0.34			295			0.58		
1-03		0.35			296			0.59		
1-04		0.35			296			0.59		
1-05		0.34			295			0.58		
2-01		0.44			297			0.66		
2-02		0.46			297			0.68		
2-03		0.43			298			0.66		
2-04		0.40			298			0.63		
2-05		0.38			296			0.62		
3-01		0.45			295			0.67		
3-02		0.45			295			0.67		
3-03		0.47			295			0.69		
3-04		0.40			296			0.63		
3-05		0.38			296			0.62		
4-01		0.50			295			0.71		
4-02		0.50			295			0.71		
4-03		0.44			296			0.66		
4-04		0.41			297			0.64		
4-05		0.42			297			0.65		
5-01		0.48			293			0.69		
5-02		0.46			295			0.68		
5-03		0.42			296			0.65		
5-04		0.45			296			0.67		
5-05		0.48			297			0.69		
Final	0.0				295.88000			0.64709	#VALUE!	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6471			295.8800					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 4
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/21/12
Start Time: 10:09
Stop Time: 10:20
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -12.5
O_2 (dry volume %): 9.30
CO_2 (dry volume %): 9.75
N_2+CO (dry volume %): 80.96

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.31			296			0.56		
1-02		0.32			296			0.57		
1-03		0.31			296			0.56		
1-04		0.32			297			0.57		
1-05		0.32			297			0.57		
2-01		0.34			296			0.58		
2-02		0.33			296			0.57		
2-03		0.33			296			0.57		
2-04		0.33			296			0.57		
2-05		0.31			296			0.56		
3-01		0.46			296			0.68		
3-02		0.51			297			0.71		
3-03		0.46			298			0.68		
3-04		0.44			298			0.66		
3-05		0.44			298			0.66		
4-01		0.48			298			0.69		
4-02		0.48			298			0.69		
4-03		0.45			298			0.67		
4-04		0.45			298			0.67		
4-05		0.43			298			0.66		
5-01		0.52			296			0.72		
5-02		0.51			294			0.71		
5-03		0.48			296			0.69		
5-04		0.43			296			0.66		
5-05		0.45			297			0.67		
Final	0.0				296.72000			0.63635	#VALUE!	
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6364			296.7200					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK		☐ Avg. OK			

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USEPA Method 3 Laboratory Data

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.61121		9.55118	80.83761	29.91984	1.18079	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.65284		9.49810	80.84905	29.92438	1.18120	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.62406		9.59917	80.77677	29.92382	1.17423	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
4	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.74647		9.29788	80.95565	29.93135	1.19039	☑ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 5
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/21/12
Start Time: 11:05
Stop Time: 11:13
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -12.7
O_2 (dry volume %): 9.82
CO_2 (dry volume %): 9.36
N_2+CO (dry volume %): 80.82
H_2O (condensate, ml or gm):
H_2O (silica, g):
Actual Moisture (%): 21.99

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail
Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.50			298			0.71		
1-02		0.52			298			0.72		
1-03		0.50			298			0.71		
1-04		0.48			298			0.69		
1-05		0.46			297			0.68		
2-01		0.57			299			0.75		
2-02		0.53			299			0.73		
2-03		0.49			299			0.70		
2-04		0.46			299			0.68		
2-05		0.45			299			0.67		
3-01		0.61			299			0.78		
3-02		0.58			299			0.76		
3-03		0.55			299			0.74		
3-04		0.46			299			0.68		
3-05		0.42			299			0.65		
4-01		0.61			296			0.78		
4-02		0.58			297			0.76		
4-03		0.56			298			0.75		
4-04		0.51			298			0.71		
4-05		0.45			299			0.67		
5-01		0.53			297			0.73		
5-02		0.48			301			0.69		
5-03		0.42			301			0.65		
5-04		0.45			302			0.67		
5-05		0.50			302			0.71		
Final	0.0				298.80000			0.71087		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7109			298.8000					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 6
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Meter Operator:	K. Sullivan	579
Probe Operator:	A. Obuchowski	567

Test Date: 3/21/12
Start Time: 11:33
Stop Time: 11:43

Leak Rate Before:	NA	cfm
Leak Rate After:	NA	cfm

Bar. Press. (in. Hg): 30.05
Static P: -12.8
O_2 (dry volume %): 9.26
CO_2 (dry volume %): 9.77
N_2+CO (dry volume %): 80.97

H_2O (condensate, ml or gm):
H_2O (silica, g):
Actual Moisture (%): 22.14

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
1-01		0.48			295			0.69		
1-02		0.48			295			0.69		
1-03		0.44			295			0.66		
1-04		0.41			296			0.64		
1-05		0.40			296			0.63		
2-01		0.42			298			0.65		
2-02		0.48			298			0.69		
2-03		0.43			298			0.66		
2-04		0.40			297			0.63		
2-05		0.39			297			0.62		
3-01		0.55			296			0.74		
3-02		0.54			296			0.73		
3-03		0.52			296			0.72		
3-04		0.45			297			0.67		
3-05		0.41			297			0.64		
4-01		0.50			298			0.71		
4-02		0.51			298			0.71		
4-03		0.48			298			0.69		
4-04		0.45			298			0.67		
4-05		0.43			298			0.66		
5-01		0.45			296			0.67		
5-02		0.38			296			0.62		
5-03		0.35			295			0.59		
5-04		0.38			295			0.62		
5-05		0.42			296			0.65		
Final	0.0				296.60000			0.66672		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6667			296.6000					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 7
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/21/12
Start Time: 12:18
Stop Time: 12:28
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -10.7
O_2 (dry volume %): 9.84
CO_2 (dry volume %): 9.32
N_2+CO (dry volume %): 80.84
H_2O (condensate, ml or gm):
H_2O (silica, g):
Actual Moisture (%): 22.14

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.37			294			0.61		
1-02		0.38			294			0.62		
1-03		0.34			294			0.58		
1-04		0.34			294			0.58		
1-05		0.33			294			0.57		
2-01		0.42			294			0.65		
2-02		0.39			294			0.62		
2-03		0.37			295			0.61		
2-04		0.36			295			0.60		
2-05		0.37			295			0.61		
3-01		0.41			295			0.64		
3-02		0.42			295			0.65		
3-03		0.38			295			0.62		
3-04		0.37			295			0.61		
3-05		0.34			295			0.58		
4-01		0.44			294			0.66		
4-02		0.44			294			0.66		
4-03		0.36			294			0.60		
4-04		0.35			294			0.59		
4-05		0.35			295			0.59		
5-01		0.39			294			0.62		
5-02		0.35			294			0.59		
5-03		0.34			294			0.58		
5-04		0.35			295			0.59		
5-05		0.37			295			0.61		
Final	0.0				294.44000			0.61039		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6104			294.4400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 8
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: A. Obuchowski 567
Test Date: 3/21/12
Start Time: 13:06
Stop Time: 13:17
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.05
Static P: -10.8
O_2 (dry volume %): 10.45
CO_2 (dry volume %): 8.94
N_2+CO (dry volume %): 80.60
H_2O (condensate, ml or gm):
H_2O (silica, g):
Actual Moisture (%): 22.32

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
1-01		0.35			297			0.59		
1-02		0.36			296			0.60		
1-03		0.30			296			0.55		
1-04		0.34			296			0.58		
1-05		0.33			295			0.57		
2-01		0.41			295			0.64		
2-02		0.42			295			0.65		
2-03		0.41			294			0.64		
2-04		0.32			295			0.57		
2-05		0.37			295			0.61		
3-01		0.42			295			0.65		
3-02		0.45			296			0.67		
3-03		0.40			296			0.63		
3-04		0.38			296			0.62		
3-05		0.36			296			0.60		
4-01		0.70			295			0.84		
4-02		0.67			296			0.82		
4-03		0.64			298			0.80		
4-04		0.58			298			0.76		
4-05		0.55			298			0.74		
5-01		0.64			296			0.80		
5-02		0.64			297			0.80		
5-03		0.61			298			0.78		
5-04		0.57			298			0.75		
5-05		0.59			298			0.77		
Final	0.0				296.20000			0.68119		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6819			296.2000					
		☐ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
5	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.36035		9.81588	80.82377	29.89029	1.18416	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
6	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.76677		9.26001	80.97322	29.93308	1.19180	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
7	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.31671		9.84335	80.83994	29.88441	1.18675	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
8	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		8.94423		10.45202	80.60375	29.84916	1.16813	☑ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 9
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: A. Obuchowski 567
Probe Operator:
Test Date: 3/21/12
Start Time: 13:49
Stop Time: 13:58
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -13.7
O_2 (dry volume %): 10.22
CO_2 (dry volume %): 9.11
N_2+CO (dry volume %): 80.67

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.29			299			0.54		
1-02		0.30			300			0.55		
1-03		0.31			300			0.56		
1-04		0.32			300			0.57		
1-05		0.34			300			0.58		
2-01		0.67			300			0.82		
2-02		0.60			302			0.77		
2-03		0.52			303			0.72		
2-04		0.43			303			0.66		
2-05		0.47			304			0.69		
3-01		0.58			297			0.76		
3-02		0.70			298			0.84		
3-03		0.70			299			0.84		
3-04		0.54			300			0.73		
3-05		0.60			300			0.77		
4-01		0.60			295			0.77		
4-02		0.71			296			0.84		
4-03		0.71			296			0.84		
4-04		0.62			297			0.79		
4-05		0.55			297			0.74		
5-01		0.50			296			0.71		
5-02		0.40			295			0.63		
5-03		0.39			295			0.62		
5-04		0.44			296			0.66		
5-05		0.48			296			0.69		
Final	0.0				298.56000			0.70803		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.7080			298.5600					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 10
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: B. Arnold 770
Probe Operator:
Test Date: 3/21/12
Start Time: 13:25
Stop Time: 13:35
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -13.7
O_2 (dry volume %): 9.42
CO_2 (dry volume %): 9.79
N_2+CO (dry volume %): 80.79

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.}$ H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.26			296			0.51		
1-02		0.31			296			0.56		
1-03		0.34			296			0.58		
1-04		0.34			296			0.58		
1-05		0.33			296			0.57		
2-01		0.40			295			0.63		
2-02		0.40			295			0.63		
2-03		0.35			295			0.59		
2-04		0.32			296			0.57		
2-05		0.32			295			0.57		
3-01		0.55			295			0.74		
3-02		0.50			295			0.71		
3-03		0.45			295			0.67		
3-04		0.41			295			0.64		
3-05		0.35			295			0.59		
4-01		0.53			295			0.73		
4-02		0.52			295			0.72		
4-03		0.43			295			0.66		
4-04		0.40			295			0.63		
4-05		0.38			295			0.62		
5-01		0.52			295			0.72		
5-02		0.42			295			0.65		
5-03		0.41			295			0.64		
5-04		0.37			295			0.61		
5-05		0.38			295			0.62		
Final	0.0				295.24000			0.62939		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6294			295.2400					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 11
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: B. Arnold 770
Probe Operator:
Test Date: 3/21/12
Start Time: 15:07
Stop Time: 15:17
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P:
O_2 (dry volume %): 9.30
CO_2 (dry volume %): 9.89
N_2+CO (dry volume %): 80.82

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0									
1-01		0.43			295			0.66		
1-02		0.41			295			0.64		
1-03		0.35			295			0.59		
1-04		0.36			295			0.60		
1-05		0.43			295			0.66		
2-01		0.52			295			0.72		
2-02		0.47			296			0.69		
2-03		0.42			296			0.65		
2-04		0.36			296			0.60		
2-05		0.35			296			0.59		
3-01		0.47			296			0.69		
3-02		0.47			296			0.69		
3-03		0.41			296			0.64		
3-04		0.36			296			0.60		
3-05		0.37			296			0.61		
4-01		0.44			296			0.66		
4-02		0.42			296			0.65		
4-03		0.38			296			0.62		
4-04		0.36			296			0.60		
4-05		0.35			296			0.59		
5-01		0.34			295			0.58		
5-02		0.32			295			0.57		
5-03		0.31			295			0.56		
5-04		0.32			295			0.57		
5-05		0.31			295			0.56		
Final	0.0				295.56000			0.62228		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6223			295.5600					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 2**
Analyte: **Velocity & Flow Rate**

Location: Unit 3 FF Outlet
Test Run: 12
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: B. Arnold 770
Probe Operator:
Test Date: 3/21/12
Start Time: 15:46
Stop Time:
Leak Rate Before: NA cfm
Leak Rate After: NA cfm

Bar. Press. (in. Hg): 30.10
Static P: -10.7
O_2 (dry volume %): 9.39
CO_2 (dry volume %): 9.88
N_2+CO (dry volume %): 80.73

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 66-8P-13
Pitot C_p: 0.827
Pitot Leak Check: ☑ Pass ☐ Fail

Meter Box ID. No: NA
Meter ΔH@: NA
Meter Y_d: NA

Traverse Point	Run Time 5.0 min/read 0.0	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.}$ H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
1-01		0.42			296			0.65		
1-02		0.44			296			0.66		
1-03		0.45			296			0.67		
1-04		0.42			296			0.65		
1-05		0.40			296			0.63		
2-01		0.47			296			0.69		
2-02		0.49			296			0.70		
2-03		0.45			296			0.67		
2-04		0.39			296			0.62		
2-05		0.37			295			0.61		
3-01		0.47			295			0.69		
3-02		0.48			295			0.69		
3-03		0.43			296			0.66		
3-04		0.37			296			0.61		
3-05		0.37			296			0.61		
4-01		0.47			295			0.69		
4-02		0.48			295			0.69		
4-03		0.44			295			0.66		
4-04		0.38			295			0.62		
4-05		0.37			295			0.61		
5-01		0.37			295			0.61		
5-02		0.32			296			0.57		
5-03		0.33			295			0.57		
5-04		0.38			295			0.62		
5-05		0.42			295			0.65		
Final	0.0				295.52000			0.64328		
25 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		0.6433			295.5200					
		☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK	☐ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 2
Analyte: Velocity & Flow Rate

Location: Unit 3 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: N. Hitchins
Analyst Emp No: 569

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
9	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.11018		10.21989	80.66992	29.86643	1.17233	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
10	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.79040		9.41734	80.79226	29.94316	1.17285	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
11	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.88588		9.29832	80.81580	29.95367	1.17356	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
12	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.87886		9.39127	80.72987	29.95627	1.16499	☑ Fo value within expected range.

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 3 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Meter Operator:	K. Sullivan	579	
Probe Operator:	K. Sullivan	579	

Test Date: 3/21/12
Start Time: 07:54
Stop Time: 09:40

Leak Rate Before:	0.004	cfm	@ 15 "Hg
Leak Rate After:	0.002	cfm	@ 5 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -12.7
O_2 (dry volume %): 9.48
CO_2 (dry volume %): 9.77
N_2+CO (dry volume %): 80.75
H_2O (condensate, ml or gm): 230.6
H_2O (silica, g): 8.8
Actual Moisture (%): 21.72

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
Pitot C_p: NA
Pitot Leak Check: ☑Pass ☐Fail
Meter Box ID. No: 66-4
Meter ΔH@: 1.73740
Meter Y_d: 0.99530

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			944.445						
3-03	5.0		1.50	947.920	289	78	76		3.47	
3-03	10.0		1.50	951.350	297	78	76		3.43	
3-03	15.0		1.50	954.660	294	81	77		3.31	
3-03	20.0		1.50	958.130	296	81	78		3.47	
3-03	25.0		1.50	961.600	297	81	79		3.47	
3-03	30.0		1.50	965.120	297	83	80		3.52	
3-03	35.0		1.50	968.640	295	83	80		3.52	
3-03	40.0		1.50	972.130	295	84	80		3.49	
3-03	45.0		1.50	975.750	296	84	80		3.62	
3-03	50.0		1.50	979.040	296	84	80		3.29	
3-03	55.0		1.50	982.460	296	85	81		3.42	
3-03	60.0		1.50	985.910	296	85	81		3.45	
Final	60.0		1.50000	41.46500	295.33333	80.62500		0.00000	41.46500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.4650	295.3333	80.6250				
		☐Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK	☑Avg. OK				

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SS ISOKINETIC Version 2006-13e

Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 3 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: K. Sullivan 579
Test Date: 3/21/12
Start Time: 10:04
Stop Time: 11:04
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 5 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -12.7
O_2 (dry volume %): 9.22
CO_2 (dry volume %): 10.02
N_2+CO (dry volume %): 80.76
H_2O (condensate, ml or gm): 231.8
H_2O (silica, g): 11.6
Actual Moisture (%): 21.99

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
Pitot C_p: NA
Pitot Leak Check: ☑ Pass ☐ Fail
Meter Box ID. No: 66-4
Meter ΔH@: 1.73740
Meter Y_d: 0.99530

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			986.745						
3-03	5.0		1.50	990.300	296	82	81		3.55	
3-03	10.0		1.50	993.830	296	82	81		3.53	
3-03	15.0		1.50	997.300	296	86	82		3.47	
3-03	20.0		1.50	1000.730	296	87	82		3.43	
3-03	25.0		1.50	1004.160	295	88	83		3.43	
3-03	30.0		1.50	1007.600	295	88	83		3.44	
3-03	35.0		1.50	1011.010	295	88	84		3.41	
3-03	40.0		1.50	1014.430	297	89	84		3.42	
3-03	45.0		1.50	1018.000	296	88	84		3.57	
3-03	50.0		1.50	1021.540	296	88	84		3.54	
3-03	55.0		1.50	1025.080	296	89	85		3.54	
3-03	60.0		1.50	1028.580	296	89	85		3.50	
Final	60.0		1.50000	41.83500	295.83333	85.08333		0.00000	41.83500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.8350	295.8333	85.0833				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: **USEPA Method 26A**
Analyte: **HCl**

Location: Unit 3 FF Outlet
Test Run: 3
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000
Meter Operator: K. Sullivan 579
Probe Operator: K. Sullivan 579
Test Date: 3/21/12
Start Time: 11:30
Stop Time: 12:30
Leak Rate Before: 0.004 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 9 "Hg

Bar. Press. (in. Hg): 30.05
Static P: -10.7
O_2 (dry volume %): 9.25
CO_2 (dry volume %): 10.06
N_2+CO (dry volume %): 80.69
H_2O (condensate, ml or gm): 228.9
H_2O (silica, g): 15.6
Actual Moisture (%): 22.14

Nozzle ID No: NA
Nozzle Diameter (D_n): NA
Probe ID No: 67-4-1
Pitot C_p: NA
Pitot Leak Check: ☑ Pass ☐ Fail
Meter Box ID. No: 66-4
Meter ΔH@: 1.73740
Meter Y_d: 0.99530

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.}$ H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			29.295						
3-03	5.0		1.50	32.740	296	85	85		3.45	
3-03	10.0		1.50	36.020	296	86	86		3.28	
3-03	15.0		1.50	39.230	296	87	85		3.21	
3-03	20.0		1.50	42.800	297	88	85		3.57	
3-03	25.0		1.50	46.420	299	88	85		3.62	
3-03	30.0		1.50	50.040	293	88	85		3.62	
3-03	35.0		1.50	53.520	295	88	85		3.48	
3-03	40.0		1.50	57.000	295	88	85		3.48	
3-03	45.0		1.50	60.490	295	88	85		3.49	
3-03	50.0		1.50	64.000	294	88	85		3.51	
3-03	55.0		1.50	67.530	294	88	85		3.53	
3-03	60.0		1.50	71.040	294	88	85		3.51	
Final	60.0		1.50000	41.74500	295.33333	86.29167		0.00000	41.74500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages			1.5000	41.7450	295.3330	86.2917				
		☐ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK	☑ Avg. OK				

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USEPA Method 3 Laboratory Data

Test Method: USEPA Method 26A
Analyte: HCl

Location: Unit 3 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Method: EPA Method 3A
Fuel Type: Municipal Waste
F_o for Fuel: 1.03 to 1.3

Analyst: S. Brown
Analyst Emp No: 433

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
1	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		9.77000		9.48000	80.75000	29.94240	1.16888	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
2	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.02000		9.22000	80.76000	29.97200	1.16567	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis: CEM
3	1							
	2							
	3							
	Avg.							
CEM or Other Avg:		10.06000		9.25000	80.69000	29.97960	1.15805	☑ Fo value within expected range.

Run Number	Trial	Percent CO_2	Percent O_2+CO_2	Percent O_2	Percent N_2	Dry Mol. Weight	F_o	Method of Analysis:
	1							
	2							
	3							
	Avg.							
CEM or Other Avg:								☐ Fo value within expected range.

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Field Data Printout

Test Method: USEPA Method 4
Analyte: Moisture

Location: Unit 3 FF Outlet
Test Run: 1
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Test Date: 3/21/12
Start Time: 12:59
Stop Time: 13:44
Leak Rate Before: 0.001 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 14 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -10.8
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

H_2O (condensate, ml or gm): 166.0
H_2O (silica, g): 7.9
Actual Moisture (%): 22.32

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Meter Box ID. No: 66-21
Meter ΔH@: NA
Meter Y_d: 0.98880

Traverse Point	Run Time 5.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{in.\ H_2O}$)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			505.57						
3-01	5.0	N/A	1.30	508.86	N/A	81	81	N/A	3.30	N/A
3-01	15.0		1.30	515.29		82	80		6.43	
3-01	25.0		1.30	521.89		86	81		6.60	
3-01	35.0		1.30	528.48		86	81		6.59	
3-01	45.0		1.30	534.91		86	81		6.43	
Final	45.0		1.30000	29.34500	N/A	82.50000		N/A	29.34500	
3 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		N/A	1.3000	34.3450	N/A	82.5000				
		☐ Avg. OK	☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK				

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Field Data Printout

Test Method: USEPA Method 4
Analyte: Moisture

Location: Unit 3 FF Outlet
Test Run: 2
Client: Wheelabrator South Broward, Inc.
Project No: 11414
Source Area (ft^2): 64.00000

Test Date: 3/21/12
Start Time: 14:21
Stop Time: 15:00
Leak Rate Before: 0.002 cfm @ 15 "Hg
Leak Rate After: 0.002 cfm @ 15 "Hg

Bar. Press. (in. Hg): 30.10
Static P: -13.7
O_2 (dry volume %): N/A
CO_2 (dry volume %): N/A
N_2+CO (dry volume %): N/A

H_2O (condensate, ml or gm): 165.0
H_2O (silica, g): 5.8
Actual Moisture (%): 22.61

Nozzle ID No: N/A
Nozzle Diameter (D_n): N/A
Probe ID No: N/A
Pitot C_p: N/A
Pitot Leak Check: ☐ Pass ☐ Fail

Meter Box ID. No: 66-21
Meter ΔH@: NA
Meter Y_d: 0.98880

Traverse Point	Run Time 10.0 min/read	Pitot ΔP_s (in. H_2O)	Sample ΔH (in. H_2O)	Metered (dcf)	Stack T_s (°F)	Dry Gas Meter $T_{m\text{-}in}$ (°F)	Dry Gas Meter $T_{m\text{-}out}$ (°F)	$\sqrt{\Delta P_s}$ (calculated) ($\sqrt{}$in. H_2O)	Volume (calculated) (ft^3)	Isokinetics (calculated) (%)
	0.0			535.05						
1-01	10.0	N/A	1.30	541.58	N/A	80	80	N/A	6.54	N/A
3-03	20.0		1.30	548.04		83	80		6.46	
3-03	30.0		1.30	554.68		83	80		6.64	
3-03	40.0		1.30	561.10		86	81		6.42	
3-03	45.0		1.30	563.36		87	82		2.26	
Final	45.0		1.30000	28.31500	N/A	82.20000		N/A	28.31500	
9 points sampled		Sq.Rt.ΔP								
QC-Check: Field Averages		N/A	1.3000	29.3150	N/A	82.2000				
		☐ Avg. OK	☑ Avg. OK	☐ Avg. OK	☐ Avg. OK	☑ Avg. OK				

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SS Moisture-1_v2008-05b.xls

USEPA Method 4 Laboratory Data

Location: Unit 3 FF Outlet
Client: Wheelabrator South Broward, Inc.
Project No: 11414

Test Method: USEPA Method 4
Analyte: Moisture

Test Run: 1

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	266.0	100.0	166.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	307.9	300.0	7.9
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
166.0	Liquid (gm)		
0.0	less rinse (gm)		
166.0	Net Liquid (gm)	166.0	☑ QA/QC OK
+ 7.9	Silica Gel (gm)	7.9	☑ QA/QC OK
173.9	Total Vlc (gm)	173.9	☑ QA/QC OK

Test Run: 2

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water	265.0	100.0	165.0
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel	305.8	300.0	5.8
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
165.0	Liquid (gm)		
0.0	less rinse (gm)		
165.0	Net Liquid (gm)	165.0	☑ QA/QC OK
+ 5.8	Silica Gel (gm)	5.8	☑ QA/QC OK
170.8	Total Vlc (gm)	170.8	☑ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

Test Run:

	Contents	Gross (gm)	Tare (gm)	Net (gm)
Impinger 1	DI Water			
Impinger 2	DI Water			
Impinger 3	Empty			
Impinger 4	Silica Gel			
Impinger 5				
Impinger 6				
Impinger 7				
Impinger 8				

Rinse: (ml or gm)

		Field Data Check	
	Liquid (gm)		
	less rinse (gm)		
	Net Liquid (gm)		☐ QA/QC OK
	Silica Gel (gm)		☐ QA/QC OK
	Total Vlc (gm)		☐ QA/QC OK

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PLANT CEM DATA

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I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my ability, verified as accurate.

QA/QC Initials: MK

Date: 4/27/12

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Plant Name: SBWD

R1

Page: 1

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 07:24

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	06:49	6707685.5	67436.0	14.5	203.6	3.8	8.8	12.6	176.7	3.3
	06:50	6703961.5	66474.1	13.0	205.4	6.0	9.0	11.1	176.2	5.1
	06:51	6675195.0	65665.4	10.6	200.8	7.4	9.2	9.0	169.3	6.2
	06:52	6623589.0	65540.0	11.0	194.7	5.4	9.0	9.4	166.1	4.6
	06:53	6576101.0	66069.7	15.1	191.0	7.4	8.8	13.1	165.7	6.4
	06:54	6576029.0	64905.2	16.4	195.1	6.6	9.1	13.8	165.0	5.6
	06:55	6586501.0	65236.9	14.0	191.9	7.0	9.0	12.0	164.6	6.0
	06:56	6616484.5	66159.6	12.0	192.7	8.0	8.9	10.3	165.8	6.9
	06:57	6624782.0	65745.4	13.9	198.3	8.7	9.1	11.8	168.6	7.4
	06:58	6623250.0	66499.6	19.2	197.4	7.4	8.9	16.6	170.2	6.4
	06:59	6641645.5	67340.7	20.9	193.2	8.2	8.8	18.2	168.5	7.1
	07:00	6658447.5	66640.5	20.4	191.4	7.7	9.0	17.5	163.8	6.6
	07:01	6660400.5	66365.9	20.1	193.1	7.5	9.0	17.2	165.5	6.5
	07:02	6695781.0	66531.6	14.0	190.8	8.0	9.0	12.0	163.0	6.9
	07:03	6699304.5	67225.8	10.3	190.7	7.3	8.9	8.9	164.3	6.3
	07:04	6670142.5	67305.4	12.6	191.9	8.9	8.8	11.0	167.0	7.8
	07:05	6636731.0	65399.1	13.0	188.3	8.6	9.1	11.0	159.5	7.3
	07:06	6628687.0	67889.8	13.9	185.3	8.5	8.7	12.3	163.3	7.5
	07:07	6644364.0	69504.3	16.7	188.7	6.7	8.3	15.1	170.8	6.1
	07:08	6667179.0	65904.8	15.4	197.1	7.0	9.1	13.0	167.1	5.9
	07:09	6677943.0	67443.0	14.0	192.5	8.3	8.9	12.1	166.6	7.2
	07:10	6670953.0	69655.0	15.6	192.9	6.7	8.4	14.1	174.2	6.1
	07:11	6693071.0	67536.8	12.0	193.4	6.0	8.9	10.4	167.5	5.2
	07:12	6687786.0	65921.9	8.7	191.4	6.3	9.1	7.4	162.3	5.4
	07:13	6678229.0	66014.0	8.0	189.7	6.2	9.1	6.8	161.1	5.2
	07:14	6669509.0	67387.2	7.6	189.2	5.9	8.8	6.6	164.6	5.2
	07:15	6678324.0	68315.7	7.3	186.6	6.0	8.7	6.5	164.3	5.3
Average =		6654521.3	66744.9	13.7	193.2	7.1	8.9	11.8	166.7	6.1
Geometric Avg. =		6654417.9	66734.8	13.2	193.2	7.0	8.9	11.4	166.7	6.0
Maximum =		6707685.5	69655.0	20.9	205.4	8.9	9.2	18.2	176.7	7.8
Minimum =		6576029.0	64905.2	7.3	185.3	3.8	8.3	6.5	159.5	3.3
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.797E+08	1802113.6	370.5	5217.2	191.4	240.4	319.9	4501.7	165.2

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 07:24

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	06:49	188.5	11.4
	06:50	186.0	11.3
	06:51	184.9	11.2
	06:52	187.1	11.2
	06:53	186.9	11.4
	06:54	186.2	11.2
	06:55	184.6	11.2
	06:56	183.4	11.3
	06:57	185.4	11.3
	06:58	186.9	11.4
	06:59	186.0	11.5
	07:00	186.9	11.4
	07:01	185.8	11.3
	07:02	184.6	11.3
	07:03	185.5	11.4
	07:04	185.4	11.5
	07:05	186.7	11.2
	07:06	190.0	11.6
	07:07	187.5	11.9
	07:08	187.1	11.2
	07:09	190.1	11.5
	07:10	188.8	11.9
	07:11	187.5	11.5
	07:12	187.1	11.2
	07:13	187.3	11.2
	07:14	188.2	11.5
	07:15	191.2	11.6
Average =		186.9	11.4
Geometric Avg. =		186.9	11.4
Maximum =		191.2	11.9
Minimum =		183.4	11.2
Possible Values =		27	27
Included Values =		27	27
Total =		5045.8	307.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R2

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/22/12 08:10

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	07:33	6632500.5	66286.6	10.2	172.5	4.1	8.7	8.9	151.0	3.6
	07:34	6641274.5	65125.9	8.6	177.2	5.6	9.0	7.4	152.0	4.8
	07:35	6604901.5	64575.2	8.9	180.7	5.0	9.0	7.6	154.8	4.3
	07:36	6565201.0	64997.0	10.5	178.7	5.4	8.8	9.1	155.8	4.7
	07:37	6534187.5	64467.3	12.4	176.3	5.0	8.8	10.8	153.5	4.3
	07:38	6527534.0	63709.6	12.9	179.3	5.0	9.0	11.1	153.7	4.3
	07:39	6510238.0	64288.4	14.0	177.1	5.0	8.8	12.2	154.0	4.3
	07:40	6491492.0	62621.8	13.9	181.8	5.9	9.2	11.8	153.4	5.0
	07:41	6485495.5	62712.5	14.2	185.6	4.6	9.1	12.0	157.3	3.9
	07:42	6484856.5	62018.8	14.0	188.1	5.6	9.3	11.7	157.6	4.6
	07:43	6499935.5	62292.8	13.1	187.8	8.4	9.2	11.0	157.7	7.0
	07:44	6515786.0	62502.1	11.7	181.8	8.8	9.2	9.9	153.2	7.4
	07:45	6548844.0	62340.6	12.0	184.1	8.2	9.3	10.0	153.1	6.8
	07:46	6567007.0	63651.2	13.2	180.9	8.4	9.1	11.2	153.7	7.2
	07:47	6560016.0	64261.6	14.3	181.8	6.5	8.9	12.3	156.5	5.6
	07:48	6564818.5	62300.5	13.7	189.8	7.5	9.4	11.3	157.2	6.2
	07:49	6571758.0	61951.4	12.5	189.2	8.9	9.5	10.3	155.6	7.3
	07:50	6557029.0	66245.9	15.4	181.7	6.4	8.4	13.8	162.9	5.7
	07:51	6534010.5	65673.7	17.9	189.0	7.2	8.7	15.6	165.4	6.3
	07:52	6534517.5	62415.0	13.5	196.8	6.9	9.3	11.3	164.6	5.8
	07:53	6543067.5	61930.7	11.5	203.1	7.1	9.5	9.5	167.0	5.8
	07:54	6534517.5	62685.6	11.3	204.0	8.3	9.3	9.5	170.9	6.9
	07:55	6539526.0	64543.0	12.3	199.7	6.2	8.9	10.6	172.4	5.3
	07:56	6556484.0	63922.8	11.9	206.9	6.9	9.1	10.1	176.0	5.9
	07:57	6574728.5	63521.3	10.5	213.3	6.3	9.2	8.8	179.2	5.3
	07:58	6579795.5	64975.3	8.9	204.9	6.2	8.8	7.8	178.4	5.4
	07:59	6581745.0	65331.9	8.4	203.7	7.1	8.9	7.3	176.2	6.1
Average =		6549676.6	63753.7	12.3	188.7	6.5	9.0	10.5	160.9	5.6
Geometric Avg. =		6549561.4	63739.5	12.1	188.4	6.4	9.0	10.3	160.6	5.4
Maximum =		6641274.5	66286.6	17.9	213.3	8.9	9.5	15.6	179.2	7.4
Minimum =		6484856.5	61930.7	8.4	172.5	4.1	8.4	7.3	151.0	3.6
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.768E+08	1721348.6	331.8	5096.0	176.2	244.3	282.9	4343.4	149.9

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 08:10

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	07:33	190.1	11.3
	07:34	188.9	11.1
	07:35	189.8	11.1
	07:36	190.0	11.2
	07:37	189.1	11.2
	07:38	189.8	11.1
	07:39	188.3	11.2
	07:40	188.8	10.9
	07:41	187.8	11.0
	07:42	186.7	10.9
	07:43	187.2	10.9
	07:44	184.8	10.9
	07:45	185.3	10.8
	07:46	188.5	11.0
	07:47	187.0	11.1
	07:48	183.9	10.8
	07:49	188.0	10.7
	07:50	190.0	11.5
	07:51	188.1	11.4
	07:52	185.7	10.8
	07:53	185.3	10.7
	07:54	187.0	10.9
	07:55	186.5	11.2
	07:56	186.7	11.1
	07:57	187.2	11.0
	07:58	186.3	11.2
	07:59	186.1	11.3
Average =		187.5	11.0
Geometric Avg. =		187.5	11.0
Maximum =		190.1	11.5
Minimum =		183.9	10.7
Possible Values =		27	27
Included Values =		27	27
Total =		5062.8	298.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R3

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 08:44

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	08:15	6620310.0	64262.7	39.1	207.0	10.8	9.2	32.8	173.7	9.0
	08:16	6645240.0	63741.0	39.4	207.1	11.9	9.4	32.6	171.4	9.8
	08:17	6671971.0	64726.4	41.8	206.4	13.1	9.3	35.0	172.9	10.9
	08:18	6680145.0	67658.5	40.4	202.9	10.9	8.7	35.4	177.6	9.6
	08:19	6679297.0	67724.5	33.7	199.3	7.6	8.6	29.8	175.8	6.7
	08:20	6693381.0	66797.8	22.5	201.5	8.7	8.9	19.5	174.5	7.5
	08:21	6668204.5	67794.1	14.4	204.8	8.6	8.6	12.7	180.7	7.6
	08:22	6659090.5	66702.0	10.3	208.6	9.2	8.8	9.0	181.0	7.9
	08:23	6645804.5	66684.1	7.9	201.8	10.2	8.8	6.9	175.7	8.9
	08:24	6635276.5	66578.5	6.7	201.0	7.5	8.7	5.8	175.9	6.6
	08:25	6619382.5	66192.5	5.8	199.4	8.7	8.8	5.1	173.6	7.5
	08:26	6628379.5	65031.6	5.3	199.4	8.7	9.1	4.5	169.7	7.4
	08:27	6654219.0	65237.2	5.0	198.2	8.3	9.1	4.2	168.7	7.1
	08:28	6684455.0	66134.4	4.9	201.2	8.0	9.0	4.2	172.9	6.9
	08:29	6714705.5	67047.1	4.7	206.2	7.2	8.9	4.1	178.2	6.2
	08:30	6729857.0	66184.4	4.7	207.8	7.6	9.0	4.0	177.4	6.5
	08:31	6732533.0	65997.1	4.6	213.0	7.5	9.1	3.9	181.5	6.4
	08:32	6737885.0	66174.2	4.4	212.2	7.4	9.0	3.8	181.4	6.3
	08:33	6751270.0	66335.4	4.3	207.8	8.4	9.0	3.7	177.7	7.2
	08:34	6764634.0	67668.8	4.2	195.8	8.0	8.8	3.6	170.7	7.0
	08:35	6772666.0	68413.6	4.1	196.9	7.3	8.7	3.6	172.7	6.4
	08:36	6795048.0	67925.1	3.8	198.6	6.3	8.8	3.3	172.5	5.4
	08:37	6795887.0	68155.1	3.4	194.9	6.2	8.8	3.0	170.0	5.4
	08:38	6795813.0	68391.9	3.5	198.7	5.5	8.7	3.0	174.2	4.8
	08:39	6815463.0	66449.7	3.4	208.1	6.2	9.2	2.9	175.7	5.3
	08:40	6831483.0	68602.4	3.1	202.3	7.9	8.7	2.7	177.0	6.9
	08:41	6834097.0	69381.4	3.1	210.7	7.0	8.7	2.7	185.5	6.2
Average =		6713203.6	66740.4	12.2	203.4	8.3	8.9	10.4	175.5	7.2
Geometric Avg. =		6712868.4	66726.6	7.6	203.3	8.2	8.9	6.5	175.5	7.0
Maximum =		6834097.0	69381.4	41.8	213.0	13.1	9.4	35.4	185.5	10.9
Minimum =		6619382.5	63741.0	3.1	194.9	5.5	8.6	2.7	168.7	4.8
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.813E+08	1801991.5	328.5	5491.7	224.8	240.4	281.8	4738.6	193.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 08:44

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	08:15	183.8	11.0
	08:16	183.3	10.9
	08:17	185.8	11.0
	08:18	188.5	11.5
	08:19	187.8	11.5
	08:20	188.0	11.3
	08:21	187.0	11.5
	08:22	187.2	11.4
	08:23	187.4	11.4
	08:24	187.7	11.4
	08:25	186.0	11.3
	08:26	186.2	11.1
	08:27	186.5	11.1
	08:28	186.2	11.2
	08:29	186.3	11.3
	08:30	185.8	11.2
	08:31	186.1	11.1
	08:32	184.7	11.1
	08:33	187.1	11.2
	08:34	189.0	11.4
	08:35	186.9	11.5
	08:36	186.6	11.3
	08:37	189.1	11.4
	08:38	186.1	11.4
	08:39	187.2	11.1
	08:40	188.4	11.4
	08:41	190.3	11.5
Average =		186.8	11.3
Geometric Avg. =		186.8	11.3
Maximum =		190.3	11.5
Minimum =		183.3	10.9
Possible Values =		27	27
Included Values =		27	27
Total =		5044.8	304.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

24

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/22/12 09:23

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	08:54	6850163.0	67121.0	4.0	193.5	6.4	9.1	3.4	164.9	5.5
	08:55	6848429.0	67232.8	4.1	189.5	5.8	9.1	3.5	161.0	4.9
	08:56	6850272.0	65587.9	4.0	186.5	6.1	9.4	3.3	153.9	5.0
	08:57	6858300.0	64277.9	3.7	183.6	7.0	9.7	3.0	148.3	5.7
	08:58	6836799.5	64228.0	3.9	183.8	7.3	9.6	3.1	148.8	5.9
	08:59	6798438.0	66398.5	3.9	180.6	6.0	9.1	3.3	153.2	5.1
	09:00	6777114.0	64828.0	4.1	183.2	5.6	9.4	3.4	151.4	4.6
	09:01	6776270.0	63012.5	3.7	192.4	6.0	9.8	3.0	154.2	4.8
	09:02	6794149.5	64056.8	3.4	189.0	7.4	9.6	2.7	153.1	6.0
	09:03	6807399.5	64981.5	3.4	191.3	7.7	9.4	2.8	157.6	6.4
	09:04	6820640.0	64837.4	3.7	200.8	6.4	9.4	3.1	165.5	5.3
	09:05	6855508.5	63437.2	3.6	206.8	7.1	9.8	2.9	165.8	5.7
	09:06	6881621.0	65073.5	3.3	205.6	7.9	9.6	2.7	167.8	6.4
	09:07	6892176.5	67926.4	3.2	201.4	7.7	9.0	2.7	172.7	6.6
	09:08	6893782.0	68428.2	3.2	201.0	5.6	8.8	2.8	174.6	4.9
	09:09	6907436.5	66200.2	3.2	211.9	6.4	9.3	2.7	176.6	5.4
	09:10	6920229.5	67257.8	2.9	208.0	6.9	9.1	2.4	176.3	5.9
	09:11	6918209.0	65734.5	2.8	213.1	7.5	9.4	2.3	175.7	6.2
	09:12	6898272.0	64937.2	3.1	211.2	7.5	9.6	2.5	172.2	6.1
	09:13	6888437.5	67181.4	3.6	207.6	6.9	9.1	3.0	176.6	5.9
	09:14	6895708.0	67242.2	3.9	198.6	6.4	9.0	3.3	169.6	5.4
	09:15	6901114.0	65700.2	3.9	196.4	6.7	9.3	3.2	163.3	5.6
	09:16	6909141.5	65923.3	4.1	191.4	8.2	9.3	3.4	159.6	6.9
	09:17	6906466.0	66123.9	4.5	186.6	7.8	9.3	3.8	156.3	6.5
	09:18	6890410.5	65863.9	5.1	190.5	7.4	9.2	4.3	159.8	6.2
	09:19	6867277.0	64545.6	5.1	196.5	8.5	9.5	4.2	161.4	7.0
	09:20	6853023.0	64852.4	4.6	202.3	8.2	9.4	3.8	166.9	6.8
Average =		6862844.0	65666.3	3.8	196.4	7.0	9.3	3.1	163.2	5.8
Geometric Avg. =		6862709.4	65652.5	3.7	196.2	6.9	9.3	3.1	163.0	5.8
Maximum =		6920229.5	68428.2	5.1	213.1	8.5	9.8	4.3	176.6	7.0
Minimum =		6776270.0	63012.5	2.8	180.6	5.6	8.8	2.3	148.3	4.6
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.853E+08	1772990.1	102.1	5303.1	188.6	252.4	84.8	4406.9	156.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Site Name: UNIT1
Data Averaging Type: 1m

Time of Report: 03/22/12 09:23
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	08:54	188.7	11.1
	08:55	187.1	11.1
	08:56	185.8	10.9
	08:57	185.1	10.6
	08:58	187.7	10.7
	08:59	187.8	11.1
	09:00	185.2	10.9
	09:01	183.6	10.6
	09:02	184.9	10.7
	09:03	186.2	10.8
	09:04	185.0	10.8
	09:05	184.2	10.5
	09:06	187.2	10.7
	09:07	190.4	11.2
	09:08	188.2	11.3
	09:09	188.5	10.9
	09:10	187.3	11.0
	09:11	185.8	10.8
	09:12	186.9	10.7
	09:13	187.4	11.1
	09:14	187.2	11.1
	09:15	187.3	10.8
	09:16	187.3	10.8
	09:17	187.8	10.9
	09:18	187.1	10.8
	09:19	186.0	10.7
	09:20	186.2	10.7
Average =		186.7	10.9
Geometric Avg. =		186.7	10.9
Maximum =		190.4	11.3
Minimum =		183.6	10.5
Possible Values =		27	27
Included Values =		27	27
Total =		5041.9	293.2

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

R5

Site Name: UNIT1

Data Averaging Type: lm

Time of Report: 03/22/12 10:02

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	09:33	7008446.5	67330.9	4.8	213.4	6.5	9.2	4.0	180.2	5.5
	09:34	6997540.5	66192.3	4.5	212.2	5.7	9.4	3.7	176.0	4.7
	09:35	6970687.0	65145.9	4.3	217.9	5.9	9.5	3.6	178.4	4.8
	09:36	6935900.5	67151.3	4.3	212.0	5.5	9.0	3.7	181.2	4.7
	09:37	6893139.5	65016.4	4.3	217.8	5.6	9.4	3.6	180.2	4.7
	09:38	6877031.0	63345.5	4.4	214.9	6.0	9.7	3.5	173.1	4.8
	09:39	6873357.0	63000.8	4.4	209.9	6.6	9.8	3.5	167.9	5.3
	09:40	6889294.0	64120.2	4.8	202.9	7.9	9.6	3.9	164.8	6.4
	09:41	6909754.0	63923.0	5.1	202.3	8.6	9.7	4.1	163.7	7.0
	09:42	6940408.5	62302.6	4.7	207.6	7.7	10.0	3.7	162.7	6.1
	09:43	6950501.5	63475.2	4.3	202.0	8.9	9.8	3.4	161.1	7.1
	09:44	6953105.0	65594.3	4.0	193.4	7.1	9.3	3.3	160.8	5.9
	09:45	6958305.0	63539.6	3.6	195.0	6.8	9.8	2.9	156.2	5.4
	09:46	6947446.0	63244.2	3.6	190.7	6.3	9.7	2.9	153.2	5.1
	09:47	6943781.5	64527.4	3.2	195.0	5.7	9.5	2.7	160.3	4.7
	09:48	6952719.5	64153.0	3.2	198.1	6.5	9.6	2.6	161.3	5.3
	09:49	6955471.5	61720.7	3.1	195.9	8.2	10.1	2.4	152.4	6.4
	09:50	6949129.0	61710.4	3.2	193.3	9.2	10.1	2.5	150.8	7.1
	09:51	6953714.0	61547.9	3.2	191.9	9.2	10.2	2.4	148.4	7.1
	09:52	6961499.5	61286.6	3.0	183.2	10.2	10.2	2.3	140.6	7.8
	09:53	6980774.5	62001.7	3.1	183.3	9.9	10.1	2.4	142.1	7.7
	09:54	7012997.5	64872.9	3.3	190.2	8.2	9.6	2.7	154.2	6.6
	09:55	7039442.5	64554.1	3.3	202.7	7.1	9.8	2.6	161.3	5.6
	09:56	7044795.5	66376.5	3.1	201.7	8.1	9.5	2.5	165.4	6.7
	09:57	7021113.0	67580.4	3.3	203.8	7.9	9.3	2.8	170.5	6.6
	09:58	7021320.5	64443.6	3.3	220.1	6.7	9.9	2.6	174.9	5.4
	09:59	7026774.5	65617.5	3.1	216.4	6.7	9.6	2.5	175.9	5.4
Average =		6961794.4	64213.9	3.8	202.5	7.4	9.7	3.1	163.6	5.9
Geometric Avg. =		6961633.1	64189.3	3.7	202.2	7.2	9.7	3.0	163.2	5.8
Maximum =		7044795.5	67580.4	5.1	220.1	10.2	10.2	4.1	181.2	7.8
Minimum =		6873357.0	61286.6	3.0	183.2	5.5	9.0	2.3	140.6	4.7
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.880E+08	1733774.7	102.5	5467.6	198.8	261.3	82.9	4417.5	160.0

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I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 10:02

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	09:33	189.1	10.9
	09:34	188.3	10.7
	09:35	189.7	10.6
	09:36	189.1	11.0
	09:37	187.3	10.7
	09:38	185.3	10.5
	09:39	186.0	10.4
	09:40	187.8	10.6
	09:41	185.9	10.5
	09:42	185.3	10.2
	09:43	187.8	10.4
	09:44	187.5	10.7
	09:45	187.4	10.4
	09:46	188.4	10.3
	09:47	188.3	10.5
	09:48	186.1	10.5
	09:49	185.3	10.1
	09:50	182.4	10.1
	09:51	181.3	10.0
	09:52	181.5	10.0
	09:53	184.9	10.1
	09:54	183.7	10.5
	09:55	185.1	10.4
	09:56	188.0	10.7
	09:57	185.9	10.9
	09:58	184.7	10.4
	09:59	186.9	10.6
Average =		186.3	10.5
Geometric Avg. =		186.2	10.5
Maximum =		189.7	11.0
Minimum =		181.3	10.0
Possible Values =		27	27
Included Values =		27	27
Total =		5029.0	282.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R6

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 10:46

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	10:13	7325320.0	73733.7	5.4	178.1	8.8	8.7	4.8	157.0	7.8
	10:14	7260605.0	73391.5	7.0	175.5	7.4	8.5	6.3	156.5	6.6
	10:15	7228735.5	68955.2	7.8	183.6	6.0	9.2	6.5	154.0	5.1
	10:16	7250716.0	65356.5	6.6	191.9	8.0	9.9	5.2	151.6	6.3
	10:17	7263918.0	67580.2	6.8	198.6	8.9	9.6	5.5	162.1	7.3
	10:18	7251636.0	69097.4	8.3	199.5	7.1	9.2	6.9	167.5	6.0
	10:19	7253915.0	67393.4	9.5	198.7	5.9	9.5	7.8	163.0	4.8
	10:20	7266953.0	66279.8	8.6	198.8	7.5	9.8	6.9	159.4	6.0
	10:21	7264520.0	68262.2	7.6	196.3	7.2	9.4	6.3	161.9	5.9
	10:22	7235022.5	69506.5	7.5	194.4	6.7	9.1	6.3	164.4	5.7
	10:23	7210207.5	70094.0	7.6	188.3	5.7	9.0	6.5	161.1	4.9
	10:24	7196411.5	68926.3	6.9	190.5	5.8	9.2	5.8	160.5	4.9
	10:25	7181805.0	68428.9	6.3	198.7	5.8	9.3	5.2	165.8	4.8
	10:26	7156110.5	70401.5	6.6	192.0	6.6	8.8	5.8	166.6	5.8
	10:27	7106331.0	69416.1	8.0	197.6	5.9	8.9	6.9	170.1	5.0
	10:28	7105419.0	66832.9	7.6	206.0	5.7	9.5	6.3	168.9	4.7
	10:29	7117205.5	71661.9	6.3	190.3	4.2	8.5	5.6	169.3	3.7
	10:30	7105944.5	73822.4	6.8	185.9	4.7	8.2	6.2	170.3	4.3
	10:31	7100337.5	70155.2	6.9	192.3	5.3	8.9	6.0	166.7	4.6
	10:32	7094310.0	70352.0	6.2	191.8	5.7	8.9	5.4	166.2	5.0
	10:33	7072619.5	71412.4	6.4	191.3	7.0	8.5	5.7	170.5	6.2
	10:34	7044682.0	68310.1	6.4	200.3	7.6	9.1	5.5	170.5	6.5
	10:35	7019469.5	66876.0	6.6	205.5	7.8	9.4	5.5	170.4	6.4
	10:36	6992738.5	68313.7	7.1	199.8	8.0	9.0	6.1	170.4	6.8
	10:37	6972273.5	66498.0	7.4	200.4	9.9	9.4	6.2	166.3	8.2
	10:38	6965171.5	63965.1	6.9	203.7	11.0	9.8	5.5	162.4	8.8
	10:39	6974947.0	66271.5	6.6	201.4	11.3	9.5	5.4	165.6	9.3
Average =		7148789.8	68936.8	7.1	194.5	7.1	9.1	6.0	164.4	6.0
Geometric Avg. =		7148005.4	68894.1	7.1	194.3	6.9	9.1	6.0	164.3	5.8
Maximum =		7325320.0	73822.4	9.5	206.0	11.3	9.9	7.8	170.5	9.3
Minimum =		6965171.5	63965.1	5.4	175.5	4.2	8.2	4.8	151.6	3.7
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.930E+08	1861294.2	191.7	5251.3	191.7	246.8	162.0	4439.2	161.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 10:46

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	10:13	194.1	11.4
	10:14	194.2	11.5
	10:15	189.5	10.8
	10:16	189.1	10.2
	10:17	191.6	10.6
	10:18	192.4	10.8
	10:19	190.4	10.5
	10:20	189.9	10.4
	10:21	191.5	10.7
	10:22	193.8	10.9
	10:23	192.4	11.0
	10:24	189.4	10.9
	10:25	190.9	10.8
	10:26	193.5	11.2
	10:27	190.2	11.1
	10:28	191.2	10.7
	10:29	195.7	11.4
	10:30	193.8	11.8
	10:31	193.7	11.2
	10:32	195.5	11.3
	10:33	193.0	11.5
	10:34	190.8	11.0
	10:35	190.3	10.8
	10:36	190.2	11.1
	10:37	186.9	10.8
	10:38	185.9	10.4
	10:39	188.1	10.8
Average =		191.4	10.9
Geometric Avg. =		191.4	10.9
Maximum =		195.7	11.8
Minimum =		185.9	10.2
Possible Values =		27	27
Included Values =		27	27
Total =		5168.1	295.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R7

Page: 1

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 11:25

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	10:52	7032884.5	70519.5	2.5	222.2	7.4	8.8	2.2	194.2	6.4
	10:53	6991171.5	68806.6	2.6	229.6	8.3	9.0	2.2	196.5	7.1
	10:54	6964090.5	70783.9	2.9	226.4	6.2	8.4	2.6	202.8	5.6
	10:55	6971607.0	70777.4	3.8	224.8	5.0	8.5	3.3	200.0	4.4
	10:56	6970354.5	67785.9	4.4	224.3	6.3	9.0	3.7	191.3	5.3
	10:57	6949583.0	67619.6	5.9	216.5	6.7	9.1	5.0	183.9	5.7
	10:58	6934845.5	67428.3	6.9	214.0	7.6	9.1	5.9	182.4	6.5
	10:59	6940048.5	68335.0	7.6	209.8	6.4	8.9	6.6	180.6	5.5
	11:00	6945539.0	67511.1	7.0	203.9	7.2	9.1	5.9	172.7	6.1
	11:01	6954632.0	65743.5	6.2	208.8	8.3	9.5	5.1	171.7	6.8
	11:02	6965499.5	66593.0	5.9	210.5	8.8	9.4	4.9	174.4	7.3
	11:03	6974027.5	68610.2	5.6	205.1	6.5	9.0	4.8	174.9	5.6
	11:04	6982789.5	68665.6	5.0	203.5	6.3	9.1	4.3	172.7	5.3
	11:05	6983888.0	69650.8	4.5	205.9	6.1	8.8	3.9	178.5	5.3
	11:06	6994220.5	68788.3	4.0	210.9	7.1	9.1	3.4	179.5	6.1
	11:07	6984066.5	68698.7	3.5	206.9	6.5	9.0	3.0	177.1	5.6
	11:08	6970519.0	67060.7	3.4	201.7	5.4	9.3	2.9	168.8	4.5
	11:09	6973363.0	65736.2	3.2	200.7	7.2	9.6	2.6	162.7	5.8
	11:10	6980469.5	67023.1	2.8	198.9	7.7	9.4	2.3	164.9	6.4
	11:11	6961934.0	69012.7	2.9	199.1	7.9	8.9	2.5	171.4	6.8
	11:12	6950430.5	68265.8	2.9	208.0	7.5	9.0	2.5	177.8	6.4
	11:13	6963741.0	67711.3	2.7	205.9	8.2	9.1	2.3	174.6	6.9
	11:14	6972115.0	68642.6	2.5	196.5	7.9	9.0	2.1	168.2	6.8
	11:15	6959983.5	68459.0	2.5	194.2	7.5	9.0	2.1	165.6	6.4
	11:16	6955316.0	67972.6	2.5	196.3	10.0	9.1	2.2	166.0	8.5
	11:17	6940048.5	69643.7	2.6	192.9	20.4	8.8	2.3	167.8	17.8
	11:18	6941252.5	68804.6	2.8	194.9	8.4	9.0	2.4	166.2	7.2
Average =		6966978.5	68320.4	4.0	207.9	7.7	9.0	3.4	177.3	6.6
Geometric Avg. =		6966948.3	68308.3	3.8	207.6	7.4	9.0	3.2	177.0	6.3
Maximum =		7032884.5	70783.9	7.6	229.6	20.4	9.6	6.6	202.8	17.8
Minimum =		6934845.5	65736.2	2.5	192.9	5.0	8.4	2.1	162.7	4.4
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.881E+08	1844649.7	109.1	5612.2	208.7	244.3	92.8	4787.2	178.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 11:25

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	10:52	190.7	11.4
	10:53	193.1	11.2
	10:54	194.4	11.5
	10:55	191.7	11.5
	10:56	190.6	11.0
	10:57	190.0	11.0
	10:58	190.4	11.0
	10:59	190.3	11.2
	11:00	188.1	11.0
	11:01	186.9	10.7
	11:02	187.5	10.9
	11:03	187.7	11.2
	11:04	189.1	11.2
	11:05	188.0	11.3
	11:06	188.1	11.2
	11:07	187.4	11.2
	11:08	184.7	10.9
	11:09	184.2	10.7
	11:10	187.8	10.9
	11:11	189.0	11.3
	11:12	187.3	11.1
	11:13	186.1	11.0
	11:14	187.3	11.2
	11:15	187.2	11.2
	11:16	188.7	11.1
	11:17	189.1	11.4
	11:18	187.4	11.2
Average =		188.6	11.1
Geometric Avg. =		188.6	11.1
Maximum =		194.4	11.5
Minimum =		184.2	10.7
Possible Values =		27	27
Included Values =		27	27
Total =		5092.7	300.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

RB

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 12:04

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	11:34	7126392.0	68034.9	1.0	205.1	8.5	9.5	0.9	168.8	7.0
	11:35	7131240.5	67966.0	1.0	200.0	8.1	9.4	0.8	165.0	6.7
	11:36	7142248.0	66789.1	1.0	201.5	7.9	9.7	0.8	162.9	6.4
	11:37	7140698.5	66678.2	1.1	203.6	12.0	9.7	0.9	164.0	9.7
	11:38	7122854.0	67522.0	1.1	197.9	11.9	9.5	0.9	162.6	9.8
	11:39	7125307.5	66044.7	1.1	206.7	10.4	9.7	0.8	165.9	8.3
	11:40	7142552.5	64517.9	1.0	205.7	12.6	10.1	0.8	160.4	9.8
	11:41	7132975.0	64617.8	1.0	198.7	15.6	10.1	0.7	154.6	12.2
	11:42	7114199.0	65691.0	1.1	196.5	13.6	9.9	0.9	156.0	10.8
	11:43	7106853.5	67176.2	1.1	198.9	12.9	9.5	0.9	162.5	10.5
	11:44	7127040.0	69225.9	1.2	195.8	9.8	9.2	1.0	164.5	8.2
	11:45	7159261.5	67867.0	1.2	195.7	8.9	9.5	1.0	160.9	7.4
	11:46	7171577.5	66842.2	1.0	189.3	9.4	9.7	0.8	152.7	7.6
	11:47	7170628.5	66589.1	1.0	185.1	11.9	9.7	0.8	149.7	9.7
	11:48	7149028.0	66424.2	1.1	186.9	13.6	9.7	0.9	150.0	10.9
	11:49	7121917.5	66463.0	1.2	190.3	12.6	9.7	0.9	152.9	10.2
	11:50	7125521.0	68514.2	1.3	191.7	11.1	9.4	1.1	158.8	9.2
	11:51	7154066.0	72620.3	1.2	191.2	9.8	8.7	1.0	167.7	8.6
	11:52	7176611.0	73592.2	1.0	194.9	7.6	8.7	0.9	171.7	6.7
	11:53	7193297.5	71543.8	0.9	207.1	7.1	9.0	0.8	178.0	6.1
	11:54	7189825.5	73100.5	0.9	202.4	7.0	8.6	0.8	178.7	6.2
	11:55	7159898.0	73862.4	1.1	197.2	7.4	8.5	0.9	175.6	6.6
	11:56	7107404.5	70568.5	1.1	198.6	7.8	9.1	0.9	169.1	6.7
	11:57	7080440.5	67447.5	1.1	200.1	9.6	9.5	0.9	163.5	7.8
	11:58	7090839.0	66643.7	1.0	207.9	10.0	9.7	0.8	168.2	8.1
	11:59	7105007.5	68173.0	1.0	207.2	9.0	9.4	0.8	171.3	7.4
	12:00	7107926.5	68615.5	0.9	206.8	8.4	9.3	0.7	171.9	7.0
Average =		7136133.7	68264.1	1.1	198.6	10.2	9.4	0.9	164.0	8.4
Geometric Avg. =		7136077.1	68216.4	1.0	198.5	9.9	9.4	0.9	163.8	8.2
Maximum =		7193297.5	73862.4	1.3	207.9	15.6	10.1	1.1	178.7	12.2
Minimum =		7080440.5	64517.9	0.9	185.1	7.0	8.5	0.7	149.7	6.1
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.927E+08	1843130.6	28.4	5362.7	274.7	254.4	23.4	4427.9	225.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 12:04

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	11:34	187.4	10.8
	11:35	185.3	10.8
	11:36	184.6	10.6
	11:37	186.5	10.6
	11:38	185.4	10.8
	11:39	182.9	10.5
	11:40	182.0	10.3
	11:41	183.7	10.3
	11:42	184.7	10.5
	11:43	186.8	10.7
	11:44	187.6	11.0
	11:45	186.7	10.8
	11:46	185.7	10.6
	11:47	185.2	10.5
	11:48	186.6	10.5
	11:49	187.8	10.6
	11:50	190.4	10.9
	11:51	193.2	11.5
	11:52	191.5	11.6
	11:53	190.4	11.3
	11:54	189.9	11.5
	11:55	189.3	11.7
	11:56	187.0	11.3
	11:57	184.1	10.8
	11:58	183.7	10.7
	11:59	185.1	10.9
	12:00	187.4	11.0
Average =		186.7	10.9
Geometric Avg. =		186.7	10.8
Maximum =		193.2	11.7
Minimum =		182.0	10.3
Possible Values =		27	27
Included Values =		27	27
Total =		5040.8	293.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R9

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 12:47

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	12:15	6890410.5	67795.3	1.6	199.2	7.3	9.0	1.4	170.3	6.3
	12:16	6882383.0	66592.8	1.5	206.8	7.0	9.3	1.2	173.2	5.8
	12:17	6895871.0	66985.6	1.4	203.8	6.9	9.2	1.2	171.3	5.8
	12:18	6906466.0	66789.3	1.6	205.8	7.0	9.3	1.3	172.0	5.9
	12:19	6902650.5	65212.6	1.7	211.9	8.1	9.6	1.3	172.2	6.6
	12:20	6905321.5	65142.5	1.7	212.3	7.7	9.6	1.4	172.2	6.2
	12:21	6923239.0	67982.4	1.9	206.0	8.3	9.2	1.6	173.8	7.0
	12:22	6926825.5	68242.5	2.1	203.7	8.5	9.1	1.8	173.0	7.2
	12:23	6917169.5	64522.8	2.1	214.5	9.6	9.8	1.7	171.1	7.7
	12:24	6917295.0	66035.6	1.9	206.2	9.3	9.5	1.5	168.4	7.6
	12:25	6911817.5	68108.8	1.9	201.9	9.6	9.1	1.6	170.8	8.1
	12:26	6914370.0	65310.1	1.8	211.5	9.4	9.7	1.5	170.4	7.6
	12:27	6914370.0	64436.8	1.8	209.1	9.4	9.8	1.4	166.6	7.5
	12:28	6919717.5	66559.7	1.9	202.6	10.3	9.5	1.5	166.6	8.5
	12:29	6918805.0	65692.4	2.1	204.2	11.3	9.6	1.7	166.3	9.2
	12:30	6907083.0	63003.8	2.1	206.1	10.9	10.1	1.6	160.6	8.5
	12:31	6922067.5	63561.1	2.0	202.8	10.7	10.0	1.6	159.7	8.4
	12:32	6948752.5	65492.0	1.8	209.4	11.7	9.6	1.5	169.5	9.5
	12:33	6981390.5	64667.7	1.8	211.9	10.8	9.9	1.4	168.1	8.5
	12:34	6980118.5	63483.2	1.7	209.5	12.7	10.1	1.3	163.3	9.9
	12:35	7025742.0	63722.8	1.5	213.3	12.7	10.1	1.2	166.3	9.9
	12:36	7083623.0	64220.7	1.5	214.1	13.9	10.1	1.1	166.6	10.8
	12:37	7169912.0	66805.6	1.5	208.0	16.2	9.8	1.2	165.4	12.9
	12:38	7309091.0	72153.4	1.5	200.6	13.3	9.1	1.3	170.8	11.3
	12:39	7342173.0	73543.2	1.4	200.0	11.7	8.8	1.2	173.9	10.2
	12:40	7371092.5	74073.1	1.0	198.0	11.4	8.8	0.9	172.9	9.9
	12:41	7379151.5	74901.9	0.9	196.8	12.2	8.6	0.8	174.4	10.8
Average =		7002478.1	66853.2	1.7	206.3	10.3	9.5	1.4	169.3	8.4
Geometric Avg. =		7000738.3	66779.3	1.7	206.2	10.0	9.5	1.4	169.2	8.2
Maximum =		7379151.5	74901.9	2.1	214.5	16.2	10.1	1.8	174.4	12.9
Minimum =		6882383.0	63003.8	0.9	196.8	6.9	8.6	0.8	159.7	5.8
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.891E+08	1805037.6	45.5	5569.9	277.8	256.2	37.2	4569.8	227.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 12:47

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	12:15	189.4	11.2
	12:16	188.3	11.0
	12:17	188.4	11.0
	12:18	186.4	11.0
	12:19	184.9	10.7
	12:20	186.5	10.7
	12:21	189.2	11.1
	12:22	186.2	11.2
	12:23	185.5	10.6
	12:24	187.5	10.8
	12:25	186.5	11.2
	12:26	184.0	10.7
	12:27	184.0	10.6
	12:28	184.4	10.9
	12:29	182.6	10.8
	12:30	181.6	10.4
	12:31	181.9	10.4
	12:32	181.6	10.7
	12:33	181.5	10.5
	12:34	180.9	10.3
	12:35	180.3	10.3
	12:36	181.0	10.3
	12:37	185.5	10.6
	12:38	187.9	11.2
	12:39	188.9	11.4
	12:40	189.7	11.4
	12:41	192.7	11.5
Average =		185.5	10.8
Geometric Avg. =		185.4	10.8
Maximum =		192.7	11.5
Minimum =		180.3	10.3
Possible Values =		27	27
Included Values =		27	27
Total =		5007.2	292.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R10

Page: 1

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1

Time of Report: 03/22/12 13:24

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW1SCFH (SCFM)	CO2LBHR1 (Lb/Hr)	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)
03/22/12	12:54	7259154.5	72279.8	1.3	206.2	9.6	8.8	1.1	179.1	8.4
	12:55	7244397.5	72458.5	1.2	213.9	9.6	8.8	1.1	185.6	8.3
	12:56	7224159.0	71528.2	1.3	217.9	9.8	8.9	1.1	187.7	8.5
	12:57	7202856.0	75694.5	1.5	209.8	9.0	8.0	1.4	194.1	8.3
	12:58	7199863.0	72872.7	1.7	208.8	8.7	8.7	1.5	183.0	7.6
	12:59	7194166.0	70048.0	1.4	196.9	9.5	9.1	1.2	167.1	8.1
	13:00	7176943.0	70662.1	1.4	195.0	9.9	9.0	1.2	167.3	8.5
	13:01	7135352.0	71004.2	1.5	199.0	10.3	8.9	1.3	172.3	8.9
	13:02	7124368.5	70277.6	1.5	202.0	9.8	8.9	1.3	173.9	8.4
	13:03	7127040.0	67980.4	1.3	209.0	10.8	9.4	1.1	173.6	8.9
	13:04	7135054.0	67993.9	1.2	207.8	12.8	9.4	1.0	172.1	10.6
	13:05	7162086.0	69944.9	1.2	203.0	10.5	9.1	1.0	172.2	8.9
	13:06	7175453.0	70117.6	1.5	195.4	10.5	9.1	1.2	166.1	9.0
	13:07	7192785.5	67857.5	1.5	191.2	12.0	9.5	1.3	156.6	9.8
	13:08	7192442.0	68815.4	1.7	187.5	14.1	9.4	1.4	155.0	11.6
	13:09	7215554.5	70753.2	2.1	193.9	10.6	9.0	1.8	165.3	9.0
	13:10	7257007.0	69571.7	2.3	202.8	9.8	9.3	1.9	169.4	8.2
	13:11	7289538.5	67796.1	2.4	196.7	9.2	9.5	2.0	161.5	7.6
	13:12	7303893.0	65441.1	2.1	194.5	9.5	10.0	1.6	152.8	7.5
	13:13	7307849.0	70316.7	1.7	187.4	9.6	9.2	1.4	157.7	8.1
	13:14	7303777.0	70052.3	1.9	189.9	8.3	9.2	1.6	159.2	6.9
	13:15	7298430.5	67687.5	1.8	192.1	10.9	9.6	1.5	155.5	8.8
	13:16	7294795.0	68311.0	1.8	198.0	9.0	9.6	1.4	161.5	7.3
	13:17	7284103.0	69445.3	1.9	205.4	8.4	9.3	1.6	171.0	7.0
	13:18	7270792.0	67506.4	1.8	209.4	8.4	9.7	1.4	168.9	6.8
	13:19	7265168.0	64574.5	1.4	202.7	7.2	10.2	1.1	155.8	5.5
	13:20	7225707.5	62303.1	1.0	190.0	8.4	10.6	0.8	141.4	6.3
Average =		7224545.7	69381.3	1.6	200.2	9.9	9.3	1.3	167.6	8.3
Geometric Avg. =		7224308.9	69330.1	1.6	200.1	9.8	9.3	1.3	167.2	8.2
Maximum =		7307849.0	75694.5	2.4	217.9	14.1	10.6	2.0	194.1	11.6
Minimum =		7124368.5	62303.1	1.0	187.4	7.2	8.0	0.8	141.4	5.5
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.951E+08	1873294.1	43.4	5406.2	266.3	250.4	36.3	4525.5	223.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/22/2012 to 03/22/2012

Site Name: UNIT1
Time of Report: 03/22/12 13:24

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_1 (KLB/HR)	CO2_1 (PERCENTD)
03/22/12	12:54	188.3	11.3
	12:55	187.4	11.4
	12:56	193.6	11.2
	12:57	192.8	11.9
	12:58	189.4	11.5
	12:59	188.1	11.1
	13:00	188.2	11.2
	13:01	188.7	11.3
	13:02	187.2	11.2
	13:03	185.9	10.8
	13:04	185.5	10.8
	13:05	185.6	11.1
	13:06	183.8	11.1
	13:07	182.9	10.7
	13:08	184.4	10.9
	13:09	184.3	11.1
	13:10	184.3	10.9
	13:11	184.1	10.6
	13:12	184.9	10.2
	13:13	185.8	10.9
	13:14	185.1	10.9
	13:15	184.3	10.5
	13:16	184.0	10.6
	13:17	182.6	10.8
	13:18	176.9	10.5
	13:19	170.0	10.1
	13:20	165.8	9.8
Average =		184.6	10.9
Geometric Avg. =		184.5	10.9
Maximum =		193.6	11.9
Minimum =		165.8	9.8
Possible Values =		27	27
Included Values =		27	27
Total =		4983.9	294.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

R1

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/21/12 12:28

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	07:09	1.951E+07	177536.7	5.1	180.5	14.3	9.3	4.3	150.4	11.9
	07:10	1.948E+07	185585.0	5.3	169.1	18.3	8.7	4.7	148.2	16.0
	07:11	1.953E+07	187755.6	5.5	166.2	33.4	8.6	4.8	147.1	29.6
	07:12	1.959E+07	181816.5	5.4	173.2	11.8	9.0	4.6	148.0	10.1
	07:13	1.963E+07	178910.8	5.0	176.0	12.5	9.3	4.2	147.2	10.5
	07:14	1.964E+07	177651.0	4.8	178.9	20.2	9.4	4.0	147.5	16.6
	07:15	1.964E+07	183104.7	4.7	167.3	40.7	9.0	4.0	143.1	34.8
	07:16	1.961E+07	181801.9	4.8	163.9	41.5	9.1	4.1	138.8	35.2
	07:17	1.961E+07	181882.6	4.8	166.9	19.5	9.1	4.0	141.8	16.6
	07:18	1.963E+07	182089.2	4.6	168.3	15.6	9.1	3.9	143.2	13.3
	07:19	1.963E+07	179254.3	4.7	180.1	11.0	9.3	3.9	150.6	9.2
	07:20	1.961E+07	177335.0	4.7	183.5	12.1	9.4	3.9	152.1	10.1
	07:21	1.961E+07	176385.3	4.9	180.3	13.6	9.5	4.0	148.4	11.2
	07:22	1.964E+07	174202.8	4.9	181.0	14.3	9.7	3.9	146.4	11.6
	07:23	1.964E+07	176893.1	4.3	177.1	14.2	9.5	3.5	145.7	11.7
	07:24	1.959E+07	179940.9	4.3	177.6	15.4	9.3	3.6	148.3	12.8
	07:25	1.955E+07	181920.6	4.6	180.4	17.4	9.1	3.9	153.1	14.8
	07:26	1.951E+07	179516.6	4.7	180.0	16.7	9.2	4.0	151.7	14.0
	07:27	1.949E+07	175794.7	4.7	187.8	21.2	9.4	3.9	154.8	17.4
	07:28	1.945E+07	176380.5	5.0	191.7	20.0	9.4	4.1	158.1	16.5
	07:29	1.943E+07	175791.3	5.5	191.7	17.4	9.4	4.5	158.1	14.3
	07:30	1.943E+07	173978.0	5.6	195.4	16.2	9.6	4.5	159.0	13.2
	07:31	1.945E+07	173986.0	5.5	191.2	17.2	9.6	4.5	155.5	14.0
	07:32	1.947E+07	174001.7	5.4	186.7	22.5	9.6	4.4	151.7	18.2
	07:33	1.952E+07	177058.8	5.7	179.8	21.4	9.5	4.7	147.5	17.6
	07:34	1.956E+07	178846.7	6.0	179.3	18.1	9.4	5.0	148.7	15.0
	07:35	1.961E+07	174508.0	6.0	187.9	19.7	9.7	4.8	150.8	15.8
Average =		1.956E+07	178664.0	5.1	179.3	19.1	9.3	4.2	149.5	16.0
Geometric Avg. =		1.956E+07	178628.5	5.0	179.1	18.0	9.3	4.2	149.4	15.0
Maximum =		1.964E+07	187755.6	6.0	195.4	41.5	9.7	5.0	159.0	35.2
Minimum =		1.943E+07	173978.0	4.3	163.9	11.0	8.6	3.5	138.8	9.2
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		5.280E+08	4823928.1	136.6	4841.8	516.2	251.2	113.9	4035.6	432.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Time of Report: 03/21/12 12:28

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	07:09	187.7	10.3
	07:10	189.5	10.8
	07:11	189.8	10.9
	07:12	189.0	10.5
	07:13	188.3	10.3
	07:14	189.2	10.3
	07:15	188.7	10.6
	07:16	188.8	10.5
	07:17	190.0	10.5
	07:18	188.9	10.5
	07:19	188.0	10.4
	07:20	186.9	10.2
	07:21	185.4	10.2
	07:22	185.5	10.1
	07:23	186.2	10.2
	07:24	187.7	10.4
	07:25	187.3	10.5
	07:26	186.1	10.4
	07:27	185.1	10.2
	07:28	185.7	10.3
	07:29	186.1	10.3
	07:30	184.7	10.1
	07:31	183.3	10.1
	07:32	184.0	10.1
	07:33	185.9	10.3
	07:34	184.6	10.4
	07:35	182.6	10.1
Average =		186.9	10.4
Geometric Avg. =		186.8	10.4
Maximum =		190.0	10.9
Minimum =		182.6	10.1
Possible Values =		27	27
Included Values =		27	27
Total =		5045.2	279.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

R2

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:28

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	07:54	1.968E+07	181816.8	10.5	180.7	12.6	9.2	8.9	151.9	10.6
	07:55	1.966E+07	177683.8	11.5	180.8	12.7	9.5	9.4	148.8	10.4
	07:56	1.967E+07	176866.2	11.3	188.2	13.9	9.6	9.2	152.9	11.3
	07:57	1.970E+07	187556.1	12.0	186.0	11.2	8.9	10.3	160.3	9.6
	07:58	1.975E+07	188287.4	11.9	176.4	11.9	8.8	10.3	153.1	10.3
	07:59	1.978E+07	176807.9	10.6	182.9	11.5	9.5	8.7	149.4	9.4
	08:00	1.981E+07	170674.8	9.2	186.8	14.0	10.0	7.2	146.0	11.0
	08:01	1.983E+07	172962.3	8.3	179.1	14.6	9.9	6.6	141.3	11.5
	08:02	1.983E+07	181064.3	8.4	173.6	10.8	9.4	6.9	143.7	8.9
	08:03	1.976E+07	184018.3	9.3	172.4	10.6	9.1	7.9	146.0	8.9
	08:04	1.969E+07	177118.1	9.8	181.9	10.1	9.5	8.0	149.3	8.3
	08:05	1.960E+07	171478.9	9.2	187.2	11.9	9.8	7.3	148.9	9.4
	08:06	1.952E+07	175190.9	8.5	183.4	11.9	9.6	6.9	148.6	9.6
	08:07	1.950E+07	182365.7	8.2	170.5	10.3	9.1	6.9	144.6	8.7
	08:08	1.952E+07	183796.6	7.7	169.9	10.3	9.0	6.6	145.5	8.8
	08:09	1.957E+07	180749.3	7.4	177.3	10.7	9.2	6.2	149.2	9.0
	08:10	1.959E+07	179060.4	7.4	184.6	11.3	9.3	6.2	153.5	9.4
	08:11	1.960E+07	177357.0	7.5	185.5	10.9	9.5	6.1	152.2	8.9
	08:12	1.964E+07	181170.5	7.3	181.9	10.9	9.3	6.1	152.2	9.1
	08:13	1.970E+07	182450.2	7.4	175.2	9.9	9.1	6.3	148.3	8.3
	08:14	1.980E+07	175744.3	6.6	180.0	11.8	9.7	5.3	145.4	9.5
	08:15	1.988E+07	175062.4	5.5	176.9	14.4	9.8	4.4	141.8	11.6
	08:16	1.985E+07	182271.7	5.6	170.5	11.3	9.3	4.7	142.8	9.5
	08:17	1.974E+07	180165.5	6.0	171.0	13.1	9.3	5.0	142.7	10.9
	08:18	1.962E+07	175361.4	6.5	179.7	12.2	9.6	5.3	146.1	9.9
	08:19	1.947E+07	172928.1	6.9	187.1	12.7	9.6	5.6	151.4	10.3
	08:20	1.934E+07	175959.4	7.2	178.8	14.0	9.4	6.0	148.1	11.6
Average =		1.967E+07	178739.6	8.4	179.6	11.9	9.4	7.0	148.3	9.8
Geometric Avg. =		1.967E+07	178683.7	8.2	179.5	11.8	9.4	6.8	148.2	9.8
Maximum =		1.988E+07	188287.4	12.0	188.2	14.6	10.0	10.3	160.3	11.6
Minimum =		1.934E+07	170674.8	5.5	169.9	9.9	8.8	4.4	141.3	8.3
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		5.311E+08	4825968.3	227.8	4848.2	321.2	254.2	188.4	4004.0	264.9

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:28

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	07:54	186.9	10.5
	07:55	185.8	10.2
	07:56	187.1	10.2
	07:57	189.3	10.8
	07:58	189.2	10.8
	07:59	186.0	10.1
	08:00	185.4	9.8
	08:01	185.9	9.9
	08:02	188.4	10.4
	08:03	188.3	10.6
	08:04	187.2	10.2
	08:05	186.4	9.9
	08:06	187.1	10.2
	08:07	189.4	10.6
	08:08	190.1	10.7
	08:09	189.5	10.5
	08:10	187.9	10.4
	08:11	189.0	10.3
	08:12	190.2	10.5
	08:13	188.1	10.5
	08:14	186.9	10.1
	08:15	188.6	10.0
	08:16	189.2	10.4
	08:17	188.1	10.3
	08:18	186.9	10.1
	08:19	186.7	10.1
	08:20	187.3	10.3
Average =		187.8	10.3
Geometric Avg. =		187.8	10.3
Maximum =		190.2	10.8
Minimum =		185.4	9.8
Possible Values =		27	27
Included Values =		27	27
Total =		5071.2	278.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R3

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:28

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	08:42	1.814E+07	162889.3	8.9	194.5	15.4	9.5	7.3	159.4	12.7
	08:43	1.817E+07	164873.1	8.6	196.2	15.9	9.4	7.1	162.2	13.1
	08:44	1.817E+07	167831.8	10.1	193.9	15.2	9.2	8.5	163.6	12.8
	08:45	1.817E+07	164268.2	12.3	196.0	17.7	9.4	10.2	162.1	14.6
	08:46	1.812E+07	164652.6	13.8	190.8	18.0	9.3	11.5	158.9	15.0
	08:47	1.804E+07	162676.7	13.7	188.8	16.0	9.4	11.3	155.6	13.2
	08:48	1.801E+07	161563.2	12.4	188.4	17.0	9.5	10.1	154.3	13.9
	08:49	1.804E+07	161305.2	10.6	194.5	16.4	9.6	8.6	158.0	13.3
	08:50	1.811E+07	164463.3	9.0	193.1	16.5	9.4	7.4	159.7	13.6
	08:51	1.820E+07	166327.2	7.8	184.5	15.5	9.3	6.5	153.8	12.9
	08:52	1.830E+07	170239.1	7.2	182.6	17.1	9.1	6.1	154.9	14.5
	08:53	1.836E+07	174410.7	7.6	176.8	24.2	8.9	6.6	153.1	21.0
	08:54	1.839E+07	171336.8	8.7	173.8	15.7	9.0	7.4	148.9	13.5
	08:55	1.839E+07	166359.4	9.1	182.9	17.7	9.4	7.5	151.4	14.6
	08:56	1.836E+07	164589.2	10.2	189.5	15.4	9.5	8.3	154.9	12.6
	08:57	1.827E+07	165568.0	10.7	187.6	16.3	9.4	8.8	155.2	13.5
	08:58	1.816E+07	162741.8	10.2	187.4	16.3	9.6	8.3	152.6	13.2
	08:59	1.806E+07	162791.7	10.1	187.8	16.6	9.5	8.3	154.4	13.7
	09:00	1.795E+07	161970.4	9.7	194.5	16.0	9.5	8.0	160.0	13.2
	09:01	1.755E+07	158699.1	9.6	197.2	15.1	9.4	7.9	162.6	12.5
	09:02	1.729E+07	157871.0	9.9	195.2	15.5	9.3	8.2	163.2	13.0
	09:03	1.676E+07	150725.9	10.2	192.7	18.2	9.4	8.4	158.8	15.0
	09:04	1.659E+07	144953.2	10.4	199.0	20.4	9.8	8.3	158.9	16.3
	09:05	1.649E+07	145267.9	10.6	192.9	20.0	9.7	8.6	155.3	16.1
Average =		1.792E+07	162432.3	10.1	190.0	17.0	9.4	8.3	157.2	14.1
Geometric Avg. =		1.791E+07	162279.4	9.9	189.9	16.9	9.4	8.2	157.1	14.0
Maximum =		1.839E+07	174410.7	13.8	199.0	24.2	9.8	11.5	163.6	21.0
Minimum =		1.649E+07	144953.2	7.2	173.8	15.1	8.9	6.1	148.9	12.5
Possible Values =		24	24	24	24	24	24	24	24	24
Included Values =		24	24	24	24	24	24	24	24	24
Total =		4.301E+08	3898374.8	241.3	4560.6	408.2	225.6	199.4	3771.7	337.8

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General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:28

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	08:42	190.8	10.2
	08:43	190.7	10.3
	08:44	189.9	10.5
	08:45	190.3	10.2
	08:46	190.0	10.3
	08:47	190.1	10.2
	08:48	189.2	10.2
	08:49	189.1	10.1
	08:50	189.5	10.3
	08:51	190.5	10.4
	08:52	192.3	10.5
	08:53	193.2	10.8
	08:54	191.0	10.6
	08:55	189.6	10.3
	08:56	189.5	10.2
	08:57	188.5	10.3
	08:58	187.4	10.2
	08:59	187.1	10.2
	09:00	187.1	10.2
	09:01	187.4	10.2
	09:02	187.5	10.4
	09:03	185.2	10.2
	09:04	183.9	9.9
	09:05	184.3	10.0
Average =		188.9	10.3
Geometric Avg. =		188.9	10.3
Maximum =		193.2	10.8
Minimum =		183.9	9.9
Possible Values =		24	24
Included Values =		24	24
Total =		4533.9	246.5

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Plant Name: SBWD

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Page: 1

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:29

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	09:19	1.770E+07	158367.8	6.0	198.9	14.8	9.5	4.9	163.1	12.2
	09:20	1.774E+07	159492.2	5.6	199.7	14.6	9.5	4.6	163.9	12.0
	09:21	1.778E+07	163890.9	5.8	193.9	13.7	9.2	4.9	163.6	11.5
	09:22	1.783E+07	163562.8	6.0	193.2	15.6	9.3	5.0	161.2	13.0
	09:23	1.788E+07	164844.9	6.0	178.9	15.9	9.1	5.1	151.3	13.5
	09:24	1.791E+07	159507.8	6.1	183.8	20.9	9.6	5.0	149.3	17.0
	09:25	1.793E+07	159924.3	6.2	185.3	21.3	9.6	5.1	151.1	17.3
	09:26	1.794E+07	159273.1	6.7	178.9	26.7	9.7	5.4	144.6	21.6
	09:27	1.795E+07	159342.5	7.7	169.8	24.7	9.7	6.3	137.2	19.9
	09:28	1.802E+07	162400.6	8.3	165.7	22.9	9.4	6.9	136.7	18.9
	09:29	1.835E+07	168688.1	8.7	162.0	22.1	9.2	7.3	136.4	18.6
	09:30	1.863E+07	170911.4	8.5	163.0	21.1	9.3	7.1	136.4	17.6
	09:31	1.905E+07	174528.6	8.3	167.5	18.7	9.3	7.0	140.4	15.6
	09:32	1.909E+07	174904.3	8.5	170.7	18.0	9.2	7.1	143.2	15.1
	09:33	1.912E+07	171620.9	8.4	175.7	17.5	9.5	6.9	143.7	14.3
	09:34	1.914E+07	173072.3	8.2	171.3	19.0	9.4	6.8	141.8	15.7
	09:35	1.912E+07	174409.6	8.2	167.5	17.6	9.3	6.9	139.8	14.6
	09:36	1.921E+07	166991.9	8.2	172.6	18.6	9.9	6.5	136.4	14.7
	09:37	1.899E+07	165377.8	8.1	174.5	17.5	9.8	6.5	139.5	14.0
	09:38	1.668E+07	150195.5	8.7	173.1	17.7	9.5	7.1	142.5	14.6
	09:39	1.371E+07	123947.3	8.8	170.1	20.0	9.4	7.2	140.4	16.5
	09:40	1.155E+07	103368.6	8.6	173.6	22.1	9.6	7.0	141.6	18.0
	09:41	1.009E+07	90152.4	8.2	175.6	22.6	9.6	6.6	142.4	18.4
	09:42	9106498.0	84413.5	7.8	170.9	18.5	9.1	6.6	145.1	15.7
	09:43	8502069.0	78628.1	7.5	169.7	15.5	9.2	6.3	143.1	13.0
	09:44	8019597.0	72519.9	6.9	172.4	15.6	9.4	5.7	142.6	12.9
	09:45	7545577.0	66430.2	6.5	178.8	19.8	9.7	5.2	143.6	15.9
Average =		1.610E+07	145213.6	7.5	176.2	19.0	9.4	6.2	145.2	15.6
Geometric Avg. =		1.547E+07	139620.4	7.4	175.9	18.7	9.4	6.1	145.0	15.4
Maximum =		1.921E+07	174904.3	8.8	199.7	26.7	9.9	7.3	163.9	21.6
Minimum =		7545577.0	66430.2	5.6	162.0	13.7	9.1	4.6	136.4	11.5
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		4.346E+08	3920767.5	202.6	4757.2	512.9	254.9	167.0	3920.9	422.3

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-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:29
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	09:19	189.6	10.1
	09:20	189.7	10.2
	09:21	189.1	10.4
	09:22	190.8	10.4
	09:23	189.8	10.5
	09:24	187.8	10.1
	09:25	187.7	10.1
	09:26	186.8	10.1
	09:27	186.1	10.1
	09:28	187.2	10.2
	09:29	186.6	10.4
	09:30	187.5	10.4
	09:31	188.5	10.4
	09:32	187.5	10.4
	09:33	187.2	10.2
	09:34	188.8	10.2
	09:35	188.9	10.3
	09:36	187.1	9.9
	09:37	187.0	9.9
	09:38	187.4	10.2
	09:39	187.4	10.2
	09:40	187.0	10.1
	09:41	188.3	10.1
	09:42	188.3	10.5
	09:43	188.3	10.5
	09:44	186.8	10.2
	09:45	186.7	10.0
Average =		187.9	10.2
Geometric Avg. =		187.9	10.2
Maximum =		190.8	10.5
Minimum =		186.1	9.9
Possible Values =		27	27
Included Values =		27	27
Total =		5074.0	276.2

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Plant Name: SBWD

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

R5

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/21/12 12:29

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	10:10	6785326.0	58952.0	5.3	193.6	16.7	9.9	4.2	153.7	13.3
	10:11	6805022.0	60159.8	5.0	189.5	14.1	9.6	4.0	153.4	11.4
	10:12	6823798.0	62529.3	4.9	183.7	11.8	9.2	4.1	154.5	9.9
	10:13	6833642.5	62822.5	4.6	192.9	10.0	9.2	3.9	162.9	8.5
	10:14	6831919.5	61733.7	4.0	194.6	12.6	9.3	3.4	162.0	10.5
	10:15	6834761.0	61098.3	3.6	199.7	12.4	9.4	3.0	164.6	10.3
	10:16	6845680.5	60832.3	3.4	208.7	14.6	9.5	2.7	170.5	12.0
	10:17	6856517.5	62192.9	3.3	197.1	15.3	9.3	2.7	164.7	12.8
	10:18	6851005.5	62315.2	3.2	183.3	19.6	9.3	2.7	153.0	16.3
	10:19	6834700.0	63279.5	3.2	177.4	14.0	9.1	2.7	150.8	11.9
	10:20	6822996.5	62739.7	3.3	187.4	10.9	9.1	2.8	158.4	9.2
	10:21	6814039.5	60954.0	3.2	191.1	10.9	9.5	2.6	156.5	9.0
	10:22	6788030.5	60283.1	3.0	186.8	12.0	9.5	2.5	152.9	9.8
	10:23	6770083.5	61490.6	2.9	182.3	13.8	9.3	2.4	152.0	11.5
	10:24	6745813.0	61503.2	2.9	185.1	12.0	9.2	2.4	155.2	10.1
	10:25	6728722.5	60193.7	3.2	185.4	13.3	9.5	2.6	152.3	10.9
	10:26	6733232.5	61733.1	3.5	188.0	12.3	9.1	3.0	159.1	10.4
	10:27	6735947.0	59460.0	4.1	186.9	14.6	9.7	3.3	151.0	11.8
	10:28	6745833.0	59506.6	4.5	183.2	13.5	9.6	3.6	148.9	11.0
	10:29	6753915.5	59854.0	4.5	181.7	16.8	9.6	3.7	148.0	13.7
	10:30	6741369.5	62072.0	4.3	178.5	10.0	9.1	3.6	151.2	8.5
	10:31	6731485.0	61340.9	4.2	175.7	12.2	9.2	3.5	147.4	10.2
	10:32	6715318.5	61019.8	4.2	181.3	12.8	9.3	3.5	151.3	10.7
	10:33	6713481.5	60300.2	4.3	188.7	11.8	9.4	3.6	156.4	9.8
	10:34	6725169.5	59726.8	4.4	199.3	11.4	9.6	3.6	162.5	9.3
	10:35	6744926.5	59775.3	4.2	204.4	10.9	9.5	3.5	167.4	8.9
	10:36	6766484.0	59892.8	4.4	205.8	10.0	9.6	3.6	167.6	8.2
Average =		6780711.9	61028.2	3.9	189.3	13.0	9.4	3.2	156.6	10.7
Geometric Avg. =		6780550.4	61017.1	3.9	189.1	12.8	9.4	3.2	156.5	10.6
Maximum =		6856517.5	63279.5	5.3	208.7	19.6	9.9	4.2	170.5	16.3
Minimum =		6713481.5	58952.0	2.9	175.7	10.0	9.1	2.4	147.4	8.2
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.831E+08	1647761.6	105.6	5112.1	350.5	253.8	87.3	4228.3	289.7

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-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:29
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	10:10	186.7	9.8
	10:11	188.5	10.0
	10:12	188.5	10.4
	10:13	189.3	10.4
	10:14	189.5	10.2
	10:15	187.2	10.1
	10:16	188.0	10.1
	10:17	188.7	10.3
	10:18	189.6	10.3
	10:19	190.5	10.5
	10:20	189.9	10.4
	10:21	190.0	10.1
	10:22	190.4	10.1
	10:23	190.7	10.3
	10:24	190.7	10.3
	10:25	191.3	10.1
	10:26	189.5	10.4
	10:27	188.7	10.0
	10:28	188.1	10.0
	10:29	188.7	10.0
	10:30	190.0	10.4
	10:31	190.1	10.3
	10:32	190.4	10.3
	10:33	189.7	10.2
	10:34	189.0	10.1
	10:35	188.0	10.0
	10:36	190.0	10.0
Average =		189.3	10.2
Geometric Avg. =		189.3	10.2
Maximum =		191.3	10.5
Minimum =		186.7	9.8
Possible Values =		27	27
Included Values =		27	27
Total =		5111.4	275.4

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Plant Name: SBWD

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/21/12 12:29

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	10:49	6701833.0	64056.8	4.9	164.9	18.6	8.7	4.3	144.7	16.3
	10:50	6682977.5	61606.5	5.1	168.1	10.2	9.0	4.4	143.6	8.7
	10:51	6672987.0	58335.1	4.5	180.7	14.8	9.7	3.6	145.3	11.9
	10:52	6660308.5	60555.2	4.3	173.6	13.8	9.3	3.6	144.9	11.5
	10:53	6637971.0	61367.3	4.6	168.8	20.3	9.2	3.9	142.5	17.1
	10:54	6626358.0	62078.4	5.3	166.6	13.4	8.9	4.5	144.1	11.5
	10:55	6621957.5	58181.1	5.1	178.0	18.7	9.7	4.1	143.7	15.1
	10:56	6611244.0	58991.1	4.8	173.4	18.0	9.4	3.9	143.0	14.9
	10:57	6612005.5	57695.1	4.6	175.6	21.8	9.8	3.6	140.6	17.5
	10:58	6616458.5	59514.4	4.3	176.2	17.0	9.4	3.6	145.8	14.1
	10:59	6615522.0	60167.5	4.4	175.7	15.7	9.3	3.7	146.5	13.1
	11:00	6612884.0	59219.7	4.4	176.7	16.4	9.5	3.6	145.3	13.5
	11:01	6616345.0	59534.8	4.3	175.9	17.5	9.4	3.6	145.8	14.5
	11:02	6606556.0	58558.8	4.2	178.5	18.5	9.6	3.4	144.5	15.0
	11:03	6595904.0	59539.0	4.2	172.9	16.4	9.4	3.4	142.7	13.5
	11:04	6579227.0	59703.9	4.5	168.5	17.5	9.4	3.8	139.9	14.5
	11:05	6591725.0	58603.7	4.8	168.7	16.7	9.6	3.9	137.3	13.6
	11:06	6602416.0	57498.8	4.6	170.8	20.9	9.8	3.6	136.0	16.6
	11:07	6621957.5	58259.0	4.4	172.0	17.1	9.7	3.5	139.0	13.8
	11:08	6648799.5	57797.1	4.4	175.6	17.6	9.8	3.5	140.2	14.1
	11:09	6678445.5	57206.3	4.5	181.9	20.8	10.0	3.5	142.4	16.3
	11:10	6691974.0	57780.8	4.7	182.4	18.3	10.0	3.7	143.1	14.3
	11:11	6696519.5	61751.0	5.1	177.1	21.1	9.2	4.3	148.7	17.7
	11:12	6688504.0	63465.1	5.5	171.3	15.0	8.8	4.8	149.5	13.1
	11:13	6684871.0	60959.4	5.3	181.5	15.3	9.3	4.4	151.3	12.8
	11:14	6694616.0	59394.4	4.8	186.1	15.3	9.6	3.9	150.9	12.4
	11:15	6687334.5	60540.4	4.5	180.7	15.4	9.4	3.7	150.0	12.7
Average =		6642877.8	59717.1	4.7	174.9	17.1	9.4	3.9	144.1	14.1
Geometric Avg. =		6642768.1	59691.1	4.7	174.8	16.9	9.4	3.8	144.1	13.9
Maximum =		6701833.0	64056.8	5.5	186.1	21.8	10.0	4.8	151.3	17.7
Minimum =		6579227.0	57206.3	4.2	164.9	10.2	8.7	3.4	136.0	8.7
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.794E+08	1612360.9	126.0	4722.1	462.2	254.9	104.0	3891.2	380.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Time of Report: 03/21/12 12:29

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	10:49	191.3	10.8
	10:50	188.5	10.4
	10:51	188.4	9.9
	10:52	188.9	10.3
	10:53	190.5	10.5
	10:54	187.6	10.6
	10:55	187.9	10.0
	10:56	186.0	10.1
	10:57	185.4	9.9
	10:58	186.6	10.2
	10:59	186.3	10.3
	11:00	187.6	10.1
	11:01	185.6	10.2
	11:02	185.5	10.0
	11:03	185.9	10.2
	11:04	186.0	10.3
	11:05	186.1	10.1
	11:06	185.7	9.9
	11:07	183.7	10.0
	11:08	182.4	9.9
	11:09	182.2	9.7
	11:10	185.0	9.8
	11:11	188.2	10.5
	11:12	187.7	10.8
	11:13	186.6	10.3
	11:14	186.9	10.1
	11:15	187.0	10.3
Average =		186.7	10.2
Geometric Avg. =		186.6	10.2
Maximum =		191.3	10.8
Minimum =		182.2	9.7
Possible Values =		27	27
Included Values =		27	27
Total =		5039.6	275.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

R7

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/21/12 12:29

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	11:30	6723382.5	60293.7	3.6	182.6	15.3	9.5	3.0	149.3	12.5
	11:31	6724303.0	61091.6	3.3	182.2	13.0	9.4	2.8	151.2	10.8
	11:32	6725182.5	60951.2	3.1	182.2	11.2	9.4	2.6	151.2	9.3
	11:33	6732347.5	60944.9	3.0	184.7	11.7	9.4	2.5	152.7	9.7
	11:34	6737737.5	61911.1	2.8	178.6	11.1	9.2	2.3	150.2	9.3
	11:35	6736842.0	61690.9	2.7	178.8	11.9	9.3	2.3	149.5	10.0
	11:36	6735956.0	61258.9	2.8	181.3	11.2	9.3	2.3	151.0	9.3
	11:37	6744931.5	59842.8	2.7	177.1	13.1	9.6	2.2	143.8	10.7
	11:38	6749422.5	59136.3	2.8	177.9	13.2	9.8	2.3	142.2	10.6
	11:39	6742238.0	60229.4	2.8	172.4	13.5	9.6	2.3	140.6	11.0
	11:40	6723396.5	59740.7	2.8	174.1	11.7	9.7	2.3	140.7	9.5
	11:41	6707179.5	59789.9	2.6	169.5	12.1	9.6	2.1	138.3	9.9
	11:42	6700828.0	60769.9	2.4	165.1	12.7	9.4	2.0	136.6	10.5
	11:43	6682857.0	61792.1	2.8	167.5	9.4	9.1	2.3	142.0	8.0
	11:44	6664122.0	60201.8	3.1	173.2	11.0	9.5	2.5	142.2	9.0
	11:45	6657930.0	63045.1	3.2	162.9	7.8	8.8	2.8	142.2	6.8
	11:46	6658814.0	58720.4	3.1	169.9	9.2	9.6	2.5	137.7	7.4
	11:47	6672168.5	59112.9	2.9	169.5	9.8	9.7	2.4	136.9	7.9
	11:48	6681937.5	60535.7	2.8	159.1	12.6	9.4	2.3	131.3	10.4
	11:49	6682857.0	62519.3	3.1	151.6	9.5	8.9	2.7	130.4	8.2
	11:50	6671316.5	58928.7	3.6	166.2	11.6	9.7	2.9	134.4	9.4
	11:51	6655239.0	59178.2	4.2	164.4	12.4	9.5	3.4	134.6	10.2
	11:52	6655198.0	58042.6	3.9	165.0	14.9	9.8	3.1	131.9	11.9
	11:53	6686358.5	59877.7	3.1	158.9	11.3	9.4	2.5	131.0	9.3
	11:54	6698009.0	58938.0	2.8	162.6	11.7	9.7	2.3	131.3	9.4
	11:55	6697115.5	58871.0	3.0	164.4	13.2	9.7	2.4	132.7	10.6
	11:56	6675684.5	59369.8	3.5	162.1	17.3	9.6	2.8	131.9	14.1
Average =		6700865.0	60251.3	3.1	170.5	12.0	9.5	2.5	140.3	9.8
Geometric Avg. =		6700793.7	60238.7	3.0	170.3	11.8	9.5	2.5	140.1	9.7
Maximum =		6749422.5	63045.1	4.2	184.7	17.3	9.8	3.4	152.7	14.1
Minimum =		6655198.0	58042.6	2.4	151.6	7.8	8.8	2.0	130.4	6.8
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.809E+08	1626784.6	82.5	4603.8	323.5	255.5	67.8	3788.0	265.7

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Time of Report: 03/21/12 12:29

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	11:30	188.6	10.2
	11:31	189.4	10.3
	11:32	189.8	10.3
	11:33	190.5	10.3
	11:34	190.3	10.4
	11:35	190.3	10.4
	11:36	189.3	10.3
	11:37	187.7	10.1
	11:38	187.3	9.9
	11:39	187.1	10.1
	11:40	186.6	10.1
	11:41	186.5	10.1
	11:42	188.6	10.3
	11:43	188.4	10.5
	11:44	191.3	10.2
	11:45	188.8	10.7
	11:46	187.5	10.0
	11:47	187.7	10.0
	11:48	189.9	10.3
	11:49	187.9	10.6
	11:50	188.3	10.0
	11:51	186.6	10.1
	11:52	186.9	9.9
	11:53	186.0	10.1
	11:54	186.0	10.0
	11:55	186.6	10.0
	11:56	185.5	10.1
Average =		188.1	10.2
Geometric Avg. =		188.1	10.2
Maximum =		191.3	10.7
Minimum =		185.5	9.9
Possible Values =		27	27
Included Values =		27	27
Total =		5079.6	275.2

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

RB

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/21/12 12:29

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	12:11	6663971.0	58240.6	5.6	175.0	9.9	9.8	4.5	139.9	7.9
	12:12	6650610.5	58700.9	5.9	174.2	9.6	9.7	4.8	140.8	7.8
	12:13	6636352.0	59162.5	6.3	171.1	10.0	9.5	5.2	140.2	8.2
	12:14	6634590.0	57825.8	6.3	168.5	10.2	9.9	5.0	133.9	8.1
	12:15	6644383.5	58338.3	6.1	166.3	11.2	9.7	4.9	133.5	9.0
	12:16	6652463.5	59267.0	6.5	163.5	14.5	9.6	5.3	132.9	11.8
	12:17	6653389.0	60008.0	7.1	160.5	14.4	9.4	5.8	132.3	11.9
	12:18	6660504.0	58992.9	7.0	167.9	17.5	9.7	5.6	135.4	14.1
	12:19	6667556.5	58130.8	6.9	176.8	15.8	9.9	5.4	139.5	12.5
	12:20	6642434.0	57585.5	7.5	178.9	15.5	10.0	5.9	140.9	12.2
	12:21	6623717.0	58117.7	8.3	174.1	17.8	9.8	6.7	138.9	14.2
	12:22	6622066.0	59076.0	9.7	168.0	20.8	9.6	7.9	136.2	16.9
	12:23	6625847.0	58340.0	10.4	169.5	20.4	9.8	8.3	135.7	16.3
	12:24	6629412.5	57798.2	9.7	171.2	19.9	9.8	7.7	136.3	15.8
	12:25	6628482.5	56883.6	8.7	179.3	20.9	10.0	6.8	140.4	16.4
	12:26	6644338.0	57331.4	8.7	183.7	21.8	10.0	6.8	144.5	17.1
	12:27	6672953.0	56239.9	8.6	184.3	21.3	10.2	6.6	141.4	16.3
	12:28	6709022.5	56336.7	8.3	184.8	23.9	10.2	6.4	141.6	18.3
	12:29	6748545.5	58217.6	8.5	183.6	23.2	10.0	6.7	144.6	18.2
	12:30	6767337.5	60658.5	8.0	185.2	19.0	9.5	6.5	151.9	15.6
	12:31	6782518.0	60924.3	7.0	184.8	17.6	9.5	5.8	151.8	14.4
	12:32	6804028.5	61421.7	6.1	185.1	18.4	9.4	5.0	152.9	15.2
	12:33	6834761.0	61618.7	5.0	196.0	14.6	9.5	4.1	161.4	12.1
	12:34	6856556.5	63551.4	4.3	199.1	13.0	9.1	3.6	169.5	11.1
	12:35	6873866.5	64753.0	4.7	202.6	11.0	8.9	4.1	174.9	9.5
	12:36	6851153.5	64081.6	6.9	207.5	11.0	9.0	5.9	177.8	9.4
	12:37	6821260.5	61031.6	7.2	214.4	12.6	9.5	5.9	175.5	10.3
Average =		6703782.2	59356.8	7.2	180.6	16.1	9.7	5.8	146.1	13.0
Geometric Avg. =		6703256.7	59316.8	7.1	180.1	15.5	9.7	5.7	145.5	12.5
Maximum =		6873866.5	64753.0	10.4	214.4	23.9	10.2	8.3	177.8	18.3
Minimum =		6622066.0	56239.9	4.3	160.5	9.6	8.9	3.6	132.3	7.8
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.810E+08	1602634.3	195.4	4875.7	435.8	261.0	157.3	3944.2	350.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:29
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	12:11	186.7	9.9
	12:12	188.2	10.0
	12:13	187.2	10.1
	12:14	186.1	9.9
	12:15	185.7	10.0
	12:16	186.5	10.1
	12:17	186.3	10.2
	12:18	184.3	10.0
	12:19	182.6	9.9
	12:20	182.4	9.8
	12:21	183.8	9.9
	12:22	184.3	10.1
	12:23	183.3	10.0
	12:24	181.9	9.9
	12:25	180.9	9.7
	12:26	179.2	9.8
	12:27	179.8	9.6
	12:28	181.5	9.5
	12:29	183.6	9.8
	12:30	185.5	10.2
	12:31	186.7	10.2
	12:32	186.8	10.2
	12:33	188.6	10.2
	12:34	190.0	10.5
	12:35	190.7	10.7
	12:36	189.9	10.6
	12:37	188.5	10.1
Average =		185.2	10.0
Geometric Avg. =		185.2	10.0
Maximum =		190.7	10.7
Minimum =		179.2	9.5
Possible Values =		27	27
Included Values =		27	27
Total =		5001.1	270.9

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

R9

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/21/12 12:30

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	12:53	6903229.5	64956.5	9.5	194.6	20.7	9.0	8.2	167.1	17.7
	12:54	6887037.0	63548.3	8.6	205.8	19.0	9.2	7.2	173.5	16.0
	12:55	6870755.5	61549.2	7.8	212.6	17.3	9.5	6.4	173.9	14.2
	12:56	6855333.0	61562.3	7.0	211.4	18.0	9.5	5.8	172.7	14.7
	12:57	6848129.0	63803.6	6.3	199.6	15.3	9.0	5.3	170.3	13.0
	12:58	6843688.0	63973.5	5.8	202.0	16.3	9.1	4.9	171.8	13.9
	12:59	6850894.5	64030.8	6.1	200.8	14.5	9.0	5.2	171.8	12.4
	13:00	6868146.5	60780.6	6.4	205.2	16.8	9.7	5.2	165.3	13.5
	13:01	6867189.0	61709.1	6.5	205.1	16.9	9.5	5.3	168.5	13.9
	13:02	6875280.5	62562.3	7.0	198.5	17.7	9.4	5.8	164.8	14.7
	13:03	6885002.0	63252.1	7.3	197.3	17.0	9.3	6.1	164.5	14.2
	13:04	6901164.0	63124.6	7.0	199.8	15.4	9.2	5.9	167.5	12.9
	13:05	6911939.0	60674.1	6.7	206.0	18.7	9.8	5.3	164.2	14.9
	13:06	6916344.5	61396.2	6.2	202.7	19.1	9.7	5.0	162.8	15.3
	13:07	6905634.0	64207.3	5.6	196.6	14.3	9.2	4.7	165.8	12.1
	13:08	6883272.5	63971.1	5.3	195.1	15.1	9.2	4.5	164.4	12.7
	13:09	6869797.5	62716.5	4.8	202.3	13.9	9.4	4.0	167.4	11.5
	13:10	6879663.0	63565.3	4.7	200.4	14.7	9.3	3.9	167.7	12.3
	13:11	6886627.5	64775.9	4.5	200.8	12.5	9.1	3.9	171.1	10.6
	13:12	6902653.5	65018.0	4.4	200.1	13.7	9.0	3.8	171.2	11.7
	13:13	6921534.0	64086.5	4.3	195.4	14.9	9.2	3.6	164.5	12.5
	13:14	6918972.5	64323.2	4.2	191.0	14.4	9.2	3.6	161.2	12.2
	13:15	6932706.0	64396.7	4.0	186.9	15.6	9.2	3.4	157.8	13.2
	13:16	6950803.5	64723.4	3.8	184.7	15.3	9.1	3.2	156.6	13.0
	13:17	6967237.0	62667.6	3.6	186.9	14.6	9.6	2.9	151.8	11.8
	13:18	6967237.0	62479.1	3.0	187.2	18.7	9.6	2.5	152.6	15.3
	13:19	6949955.5	63566.8	3.1	187.5	13.9	9.3	2.6	156.4	11.6
Average =		6897045.4	63237.8	5.7	198.4	16.1	9.3	4.7	165.4	13.4
Geometric Avg. =		6896959.0	63225.2	5.4	198.2	16.0	9.3	4.5	165.3	13.3
Maximum =		6967237.0	65018.0	9.5	212.6	20.7	9.8	8.2	173.9	17.7
Minimum =		6843688.0	60674.1	3.0	184.7	12.5	9.0	2.5	151.8	10.6
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.862E+08	1707420.6	153.5	5356.4	434.2	251.2	128.0	4467.1	361.8

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Time of Report: 03/21/12 12:30

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	12:53	189.6	10.7
	12:54	189.2	10.5
	12:55	188.6	10.2
	12:56	190.4	10.2
	12:57	190.1	10.6
	12:58	192.1	10.6
	12:59	190.1	10.6
	13:00	188.3	10.0
	13:01	188.6	10.2
	13:02	188.2	10.3
	13:03	189.2	10.4
	13:04	186.5	10.4
	13:05	185.5	9.9
	13:06	188.0	10.1
	13:07	187.6	10.5
	13:08	186.2	10.5
	13:09	187.2	10.3
	13:10	189.1	10.5
	13:11	190.0	10.7
	13:12	189.4	10.7
	13:13	188.7	10.5
	13:14	189.9	10.5
	13:15	189.6	10.5
	13:16	189.2	10.6
	13:17	188.7	10.2
	13:18	189.0	10.2
	13:19	186.9	10.4
Average =		188.7	10.4
Geometric Avg. =		188.7	10.4
Maximum =		192.1	10.7
Minimum =		185.5	9.9
Possible Values =		27	27
Included Values =		27	27
Total =		5096.1	280.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

RID

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:30
Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	13:34	6833762.5	61030.9	3.2	182.2	14.8	9.6	2.6	147.5	12.0
	13:35	6834730.5	59871.7	3.1	186.4	18.0	9.8	2.5	148.2	14.3
	13:36	6841060.5	59794.4	3.3	188.7	17.8	9.9	2.6	149.2	14.1
	13:37	6850931.5	60456.9	3.1	186.0	18.3	9.8	2.5	148.7	14.6
	13:38	6885866.0	60862.4	3.3	189.1	18.5	9.8	2.6	151.1	14.8
	13:39	6930451.5	62481.4	3.4	193.1	17.3	9.5	2.8	158.2	14.2
	13:40	6972455.0	62778.1	3.5	197.8	16.4	9.5	2.9	161.7	13.4
	13:41	6983202.5	63273.3	3.7	200.2	15.9	9.4	3.0	165.2	13.1
	13:42	6966240.5	64297.6	3.4	208.3	13.9	9.2	2.8	174.9	11.7
	13:43	6966571.5	64046.6	3.3	211.2	12.6	9.2	2.7	177.2	10.6
	13:44	6970442.5	63825.9	3.2	207.9	12.0	9.3	2.7	173.0	10.0
	13:45	6965299.0	65619.2	3.2	201.7	9.6	8.9	2.7	173.5	8.3
	13:46	6951805.5	63594.0	3.2	204.2	11.3	9.3	2.7	170.3	9.4
	13:47	6932915.0	63054.1	3.2	200.8	11.2	9.3	2.7	167.3	9.3
	13:48	6902253.0	61760.3	3.2	201.0	11.7	9.6	2.6	163.4	9.5
	13:49	6872629.0	62849.4	3.5	192.3	8.8	9.3	2.9	160.8	7.3
	13:50	6856439.0	61047.9	3.9	189.8	12.2	9.6	3.1	153.6	9.8
	13:51	6841027.5	61765.8	4.2	177.5	9.7	9.4	3.5	146.9	8.0
	13:52	6839242.0	59768.4	4.0	178.8	12.9	9.9	3.2	142.1	10.3
	13:53	6847362.0	61279.2	3.5	176.9	11.2	9.6	2.8	144.4	9.2
	13:54	6855565.5	60455.4	3.1	178.5	12.1	9.8	2.5	142.8	9.7
	13:55	6860131.5	59708.9	3.3	179.9	13.2	10.0	2.6	141.3	10.4
	13:56	6860050.5	59970.4	4.1	177.8	16.1	9.9	3.2	140.5	12.7
	13:57	6864534.0	61160.4	5.7	170.3	17.4	9.6	4.6	137.9	14.1
	13:58	6860800.0	59260.7	7.0	173.8	18.8	10.0	5.5	136.5	14.7
	13:59	6846276.0	58511.1	7.2	177.9	19.4	10.1	5.6	138.5	15.1
	14:00	6830050.0	59213.3	7.0	180.3	20.2	9.9	5.5	142.2	16.0
Average =		6889707.2	61545.8	3.9	189.3	14.5	9.6	3.2	154.0	11.7
Geometric Avg. =		6889505.9	61519.6	3.8	189.0	14.1	9.6	3.1	153.5	11.4
Maximum =		6983202.5	65619.2	7.2	211.2	20.2	10.1	5.6	177.2	16.0
Minimum =		6830050.0	58511.1	3.1	170.3	8.8	8.9	2.5	136.5	7.3
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		1.860E+08	1661737.5	105.6	5112.3	391.3	259.5	85.4	4157.1	316.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
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B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:30
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	13:34	183.9	10.1
	13:35	183.1	9.9
	13:36	182.5	9.9
	13:37	182.4	10.0
	13:38	184.1	10.0
	13:39	185.9	10.2
	13:40	187.1	10.2
	13:41	188.3	10.3
	13:42	188.9	10.5
	13:43	189.0	10.4
	13:44	191.2	10.4
	13:45	191.1	10.7
	13:46	191.6	10.4
	13:47	190.2	10.3
	13:48	190.9	10.1
	13:49	189.3	10.4
	13:50	190.6	10.1
	13:51	188.4	10.2
	13:52	188.2	9.9
	13:53	187.8	10.1
	13:54	185.4	10.0
	13:55	185.2	9.9
	13:56	186.5	9.9
	13:57	185.3	10.1
	13:58	184.4	9.8
	13:59	183.9	9.7
	14:00	184.5	9.8
Average =		187.0	10.1
Geometric Avg. =		187.0	10.1
Maximum =		191.6	10.7
Minimum =		182.4	9.7
Possible Values =		27	27
Included Values =		27	27
Total =		5049.7	273.3

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-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:30

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	14:15	6859807.5	62667.1	4.4	168.4	12.1	9.4	3.7	139.8	10.1
	14:16	6877882.5	63331.4	4.0	166.6	11.8	9.2	3.4	140.0	9.9
	14:17	6897024.5	61561.4	3.8	177.2	12.6	9.7	3.0	143.0	10.2
	14:18	6887140.0	62839.4	3.4	183.3	11.2	9.4	2.8	152.2	9.3
	14:19	6855526.5	63424.9	3.5	182.5	10.2	9.2	3.0	153.6	8.5
	14:20	6821235.5	62080.6	3.7	178.9	9.5	9.4	3.1	147.6	7.9
	14:21	6804119.5	59219.3	3.7	180.0	11.8	9.9	2.9	142.0	9.3
	14:22	6807731.5	57338.8	3.5	186.2	15.4	10.3	2.6	142.2	11.7
	14:23	6819424.0	59462.9	3.1	179.1	15.6	9.9	2.4	141.5	12.3
	14:24	6842846.5	62047.8	3.2	168.3	21.3	9.4	2.6	139.0	17.6
	14:25	6838365.0	63368.7	3.4	159.4	27.8	9.1	2.9	135.3	23.6
	14:26	6820403.5	61006.9	3.4	172.3	13.8	9.6	2.7	139.9	11.2
	14:27	6818662.5	60129.0	3.3	183.5	33.2	9.8	2.6	146.3	26.5
	14:28	6814084.0	63488.4	3.5	163.4	44.6	9.1	2.9	138.9	37.9
	14:29	6814922.0	63435.1	4.2	163.0	37.7	9.1	3.5	137.9	31.9
	14:30	6809518.5	60508.1	4.4	173.5	15.5	9.7	3.6	139.2	12.5
	14:31	6801447.0	59770.2	4.4	178.6	13.0	9.8	3.5	142.1	10.3
	14:32	6788030.5	58995.5	4.6	174.4	15.6	9.9	3.6	137.5	12.3
	14:33	6758400.0	59908.7	4.9	166.0	19.0	9.7	3.9	133.4	15.3
	14:34	6741308.5	59360.6	5.2	161.9	27.8	9.9	4.1	128.6	22.1
	14:35	6720628.5	59668.7	5.5	162.4	20.6	9.7	4.4	130.9	16.6
	14:36	6700943.0	60723.7	6.2	166.3	14.6	9.4	5.1	137.0	12.0
	14:37	6693803.5	59489.6	6.1	170.5	15.2	9.7	4.9	137.4	12.2
	14:38	6700076.0	57783.8	5.8	177.6	21.5	10.1	4.5	138.6	16.8
Average =		6803888.8	60900.4	4.2	172.6	18.8	9.6	3.4	140.2	15.3
Geometric Avg. =		6803650.6	60872.5	4.1	172.4	17.1	9.6	3.3	140.1	13.9
Maximum =		6897024.5	63488.4	6.2	186.2	44.6	10.3	5.1	153.6	37.9
Minimum =		6693803.5	57338.8	3.1	159.4	9.5	9.1	2.4	128.6	7.9
Possible Values =		24	24	24	24	24	24	24	24	24
Included Values =		24	24	24	24	24	24	24	24	24
Total =		1.633E+08	1461610.2	101.1	4143.0	451.4	230.6	82.0	3364.0	368.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
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B - invalid (PADER)
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-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Time of Report: 03/21/12 12:30

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	14:15	188.0	10.4
	14:16	187.4	10.4
	14:17	187.8	10.1
	14:18	187.4	10.3
	14:19	187.9	10.5
	14:20	187.1	10.3
	14:21	184.2	9.9
	14:22	183.6	9.5
	14:23	185.5	9.9
	14:24	188.4	10.3
	14:25	187.2	10.5
	14:26	184.9	10.1
	14:27	187.2	10.0
	14:28	189.7	10.6
	14:29	188.7	10.6
	14:30	186.7	10.1
	14:31	184.9	10.0
	14:32	185.9	9.9
	14:33	185.6	10.0
	14:34	186.3	10.0
	14:35	186.9	10.1
	14:36	187.5	10.3
	14:37	185.0	10.1
	14:38	186.3	9.8
Average =		186.7	10.1
Geometric Avg. =		186.7	10.1
Maximum =		189.7	10.6
Minimum =		183.6	9.5
Possible Values =		24	24
Included Values =		24	24
Total =		4480.1	243.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
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I - invalid
S - suspect
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-999 - missing value
-888 - value could not be calculated

R12

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:30
Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	14:45	6736850.5	61837.0	5.6	159.6	17.7	9.4	4.7	132.5	14.7
	14:46	6749426.0	61186.8	6.2	159.0	15.0	9.5	5.1	130.3	12.3
	14:47	6740447.0	59807.0	6.4	164.4	17.8	9.7	5.2	132.2	14.3
	14:48	6728769.5	58704.0	6.6	167.3	20.1	9.9	5.2	132.0	15.8
	14:49	6718887.5	59625.6	7.3	166.8	31.6	9.8	5.8	133.7	25.3
	14:50	6698273.5	60063.2	7.4	160.0	30.8	9.7	6.0	129.4	24.9
	14:51	6690197.0	61131.9	7.0	159.5	28.4	9.4	5.8	132.2	23.5
	14:52	6705396.5	59160.8	6.8	178.4	16.2	9.8	5.4	142.5	12.9
	14:53	6708983.5	59942.2	6.3	182.0	26.4	9.8	5.0	145.9	21.2
	14:54	6705396.5	64445.8	6.0	163.2	40.5	8.7	5.3	142.7	35.4
	14:55	6708131.5	62933.3	6.1	168.7	21.2	9.1	5.1	142.8	17.9
	14:56	6701900.5	62214.5	5.5	173.1	14.0	9.1	4.7	147.1	11.9
	14:57	6688448.5	60211.1	5.1	181.6	16.6	9.6	4.1	147.9	13.5
	14:58	6668623.0	61003.4	4.7	178.5	17.2	9.5	3.9	147.0	14.2
	14:59	6651537.0	61199.3	4.5	176.3	15.9	9.3	3.8	147.0	13.2
	15:00	6643409.5	60984.7	4.4	174.0	21.4	9.4	3.6	144.3	17.7
	15:01	6642572.5	62871.1	4.6	166.2	60.0	9.0	3.9	141.8	51.2
	15:02	6639139.5	63549.3	5.5	168.2	28.1	8.9	4.7	145.0	24.3
	15:03	6649770.0	61705.2	5.7	180.1	15.8	9.2	4.8	151.4	13.3
	15:04	6668587.5	61454.2	5.5	189.7	15.6	9.3	4.6	158.3	13.1
	15:05	6690142.5	63069.5	5.6	181.9	12.3	9.0	4.8	155.3	10.5
	15:06	6703701.5	63199.3	5.8	176.6	9.8	9.0	4.9	151.4	8.4
	15:07	6718091.5	61722.7	5.8	177.3	10.9	9.3	4.9	147.8	9.0
	15:08	6740454.0	60875.5	5.4	176.2	14.7	9.5	4.4	144.0	12.0
Average =		6695714.0	61370.7	5.8	172.0	21.6	9.4	4.8	142.7	17.9
Geometric Avg. =		6695633.8	61353.9	5.8	171.8	19.6	9.4	4.8	142.4	16.3
Maximum =		6749426.0	64445.8	7.4	189.7	60.0	9.9	6.0	158.3	51.2
Minimum =		6639139.5	58704.0	4.4	159.0	9.8	8.7	3.6	129.4	8.4
Possible Values =		24	24	24	24	24	24	24	24	24
Included Values =		24	24	24	24	24	24	24	24	24
Total =		1.607E+08	1472897.2	139.9	4128.8	517.9	224.9	115.8	3424.2	430.6

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-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Time of Report: 03/21/12 12:30

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	14:45	187.8	10.4
	14:46	187.8	10.3
	14:47	186.3	10.1
	14:48	185.9	9.9
	14:49	186.1	10.1
	14:50	188.9	10.2
	14:51	186.8	10.4
	14:52	185.4	10.0
	14:53	189.6	10.1
	14:54	190.4	10.9
	14:55	190.7	10.6
	14:56	188.0	10.5
	14:57	188.2	10.2
	14:58	188.7	10.4
	14:59	188.6	10.4
	15:00	189.2	10.4
	15:01	190.3	10.7
	15:02	189.4	10.8
	15:03	188.7	10.5
	15:04	189.3	10.4
	15:05	189.8	10.7
	15:06	188.6	10.7
	15:07	187.9	10.4
	15:08	187.5	10.2
Average =		188.3	10.4
Geometric Avg. =		188.3	10.4
Maximum =		190.7	10.9
Minimum =		185.4	9.9
Possible Values =		24	24
Included Values =		24	24
Total =		4519.7	249.3

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< - missing
T - out-of-control
I - invalid
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B - invalid (PADER)
U - missing data substituted
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-888 - value could not be calculated

Plant Name: SBWD

R13

Page: 1

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:31

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	15:19	6701810.5	63000.1	3.1	175.0	13.3	9.1	2.7	149.2	11.4
	15:20	6698249.5	62660.3	3.2	172.2	13.7	9.1	2.7	146.4	11.6
	15:21	6695556.0	61989.2	3.0	172.8	16.8	9.2	2.6	145.3	14.1
	15:22	6688448.5	62080.8	3.2	175.3	14.0	9.2	2.7	147.6	11.8
	15:23	6691139.0	60693.8	3.3	176.3	13.6	9.5	2.7	144.7	11.2
	15:24	6699210.0	58542.7	3.2	183.1	14.9	9.9	2.6	145.4	11.8
	15:25	6701878.0	60510.4	3.2	176.7	13.9	9.5	2.6	145.3	11.4
	15:26	6709022.5	62555.9	3.1	172.3	13.5	9.1	2.6	146.8	11.5
	15:27	6711697.5	61686.7	3.0	180.9	10.5	9.3	2.5	151.0	8.8
	15:28	6704462.0	60678.6	2.8	186.3	11.9	9.4	2.3	153.8	9.8
	15:29	6688337.0	61802.4	2.8	182.9	21.4	9.2	2.3	154.4	18.0
	15:30	6666003.5	63299.9	3.0	175.3	13.8	8.9	2.6	151.8	11.9
	15:31	6648179.5	62903.0	3.1	175.0	8.9	8.9	2.7	151.3	7.7
	15:32	6641876.0	60876.0	3.3	184.7	8.2	9.3	2.8	154.7	6.9
	15:33	6667773.5	60936.8	3.3	188.1	9.6	9.3	2.8	156.8	8.0
	15:34	6693726.5	60731.1	3.5	185.2	10.0	9.4	2.9	152.9	8.3
	15:35	6708944.0	62033.3	4.0	179.6	7.6	9.2	3.4	151.7	6.4
	15:36	6702701.5	61177.2	4.8	181.0	7.6	9.4	4.0	150.3	6.3
	15:37	6681140.5	61275.1	5.6	178.4	7.6	9.2	4.7	149.8	6.4
	15:38	6655959.0	59057.3	6.5	179.7	10.2	9.6	5.2	145.7	8.3
	15:39	6643271.5	58866.6	7.1	176.5	10.1	9.7	5.7	142.7	8.2
	15:40	6628120.0	58937.0	8.2	173.6	9.9	9.6	6.7	141.0	8.1
	15:41	6624543.5	58544.8	8.8	173.0	14.3	9.8	7.1	138.7	11.5
	15:42	6629934.0	59772.1	8.9	165.3	14.6	9.5	7.3	135.2	12.0
Average =		6678416.0	61025.5	4.3	177.9	12.1	9.3	3.6	148.0	10.1
Geometric Avg. =		6678356.3	61008.6	4.0	177.8	11.7	9.3	3.3	147.9	9.7
Maximum =		6711697.5	63299.9	8.9	188.1	21.4	9.9	7.3	156.8	18.0
Minimum =		6624543.5	58542.7	2.8	165.3	7.6	8.9	2.3	135.2	6.3
Possible Values =		24	24	24	24	24	24	24	24	24
Included Values =		24	24	24	24	24	24	24	24	24
Total =		1.603E+08	1464611.4	104.2	4269.4	290.0	224.0	86.2	3552.5	241.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/21/12 12:31

Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
'20/12	15:19	187.5	10.7
	15:20	188.1	10.6
	15:21	188.3	10.5
	15:22	187.5	10.5
	15:23	185.6	10.3
	15:24	185.8	9.9
	15:25	187.4	10.2
	15:26	187.3	10.6
	15:27	186.8	10.4
	15:28	187.2	10.3
	15:29	189.3	10.5
	15:30	191.0	10.8
	15:31	190.4	10.7
	15:32	189.0	10.4
	15:33	187.7	10.4
	15:34	189.2	10.3
	15:35	189.3	10.5
	15:36	189.5	10.3
	15:37	187.8	10.4
	15:38	187.6	10.1
	15:39	187.5	10.0
	15:40	185.2	10.1
	15:41	186.2	10.0
	15:42	185.8	10.2
Average =		187.8	10.4
Geometric Avg. =		187.8	10.4
Maximum =		191.0	10.8
Minimum =		185.2	9.9
Possible Values =		24	24
Included Values =		24	24
Total =		4506.8	248.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/20/2012 to 03/20/2012

R 14

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:31
Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	15:52	6687391.5	57128.6	13.1	176.8	12.4	10.1	10.3	138.0	9.7
	15:53	6672237.0	59419.6	13.1	173.9	14.0	9.6	10.6	141.3	11.4
	15:54	6648223.5	60960.5	12.2	172.2	13.5	9.3	10.2	144.3	11.3
	15:55	6634885.5	60329.0	10.8	176.7	12.3	9.3	9.0	147.3	10.2
	15:56	6640995.0	59944.1	9.3	178.5	11.8	9.4	7.7	148.0	9.8
	15:57	6643546.5	61404.2	8.3	176.4	10.2	9.1	7.1	150.0	8.7
	15:58	6652421.0	61139.9	7.7	184.4	9.9	9.2	6.5	155.4	8.3
	15:59	6663160.5	61946.0	7.1	189.7	9.2	9.0	6.1	162.5	7.9
	16:00	6672953.0	59965.7	7.2	193.7	10.2	9.4	6.0	159.8	8.4
	16:01	6675783.5	58926.0	7.3	193.3	10.0	9.6	5.9	156.8	8.1
	16:02	6683954.5	61009.0	7.6	179.6	9.5	9.2	6.4	151.4	8.0
	16:03	6697457.0	60257.7	7.5	172.2	9.6	9.4	6.2	142.2	7.9
	16:04	6728793.5	58858.6	6.9	178.1	9.2	9.8	5.5	142.8	7.3
	16:05	6764686.0	59545.6	6.8	178.2	9.8	9.7	5.5	144.1	7.9
	16:06	6778164.0	60378.9	7.3	177.1	12.3	9.6	5.9	144.4	10.1
	16:07	6768279.5	60457.0	7.2	182.7	11.4	9.6	5.8	148.5	9.2
	16:08	6743134.0	60584.4	6.9	180.0	10.4	9.4	5.7	148.5	8.6
	16:09	6710786.5	59445.1	7.0	180.9	11.6	9.6	5.7	146.6	9.4
	16:10	6686531.0	58803.6	6.8	177.9	13.0	9.7	5.4	142.8	10.5
	16:11	6687419.5	56819.1	6.3	175.6	12.1	10.1	4.9	136.3	9.4
	16:12	6698201.5	55798.7	5.9	177.5	12.7	10.3	4.5	135.2	9.7
	16:13	6711716.0	57672.9	5.8	174.7	14.0	10.0	4.6	137.3	11.0
	16:14	6715387.0	58337.5	6.4	173.0	17.1	9.9	5.0	136.9	13.5
	16:15	6719044.5	58910.4	6.4	171.5	16.8	9.8	5.1	137.2	13.4
Average =		6695214.6	59501.8	8.0	178.9	11.8	9.6	6.5	145.7	9.6
Geometric Avg. =		6695096.6	59482.6	7.7	178.8	11.6	9.6	6.3	145.6	9.4
Maximum =		6778164.0	61946.0	13.1	193.7	17.1	10.3	10.6	162.5	13.5
Minimum =		6634885.5	55798.7	5.8	171.5	9.2	9.0	4.5	135.2	7.3
Possible Values =		24	24	24	24	24	24	24	24	24
Included Values =		24	24	24	24	24	24	24	24	24
Total =		1.607E+08	1428042.1	190.9	4294.5	282.9	230.0	155.7	3497.7	229.8

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2

Time of Report: 03/21/12 12:31

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	15:52	184.8	9.7
	15:53	185.8	10.1
	15:54	186.4	10.4
	15:55	187.3	10.3
	15:56	187.9	10.2
	15:57	188.0	10.5
	15:58	189.6	10.4
	15:59	188.5	10.5
	16:00	186.4	10.2
	16:01	188.0	10.0
	16:02	189.1	10.3
	16:03	187.2	10.2
	16:04	186.7	9.9
	16:05	187.4	10.0
	16:06	187.7	10.1
	16:07	187.5	10.1
	16:08	186.2	10.2
	16:09	185.9	10.0
	16:10	183.9	10.0
	16:11	181.0	9.6
	16:12	180.6	9.4
	16:13	181.7	9.7
	16:14	184.3	9.8
	16:15	186.1	9.9
Average =		186.2	10.1
Geometric Avg. =		186.2	10.1
Maximum =		189.6	10.5
Minimum =		180.6	9.4
Possible Values =		24	24
Included Values =		24	24
Total =		4468.0	241.8

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

R15

Plant Name: SBWD
General Average Report
Reporting Period: 03/20/2012 to 03/20/2012

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:31
Rolling Average Interval: 1

Date	Time	FLW2SCFH (SCFM)	CO2LBHR2 (Lb/Hr)	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)
03/20/12	16:23	6730668.5	61674.0	5.3	169.2	16.4	9.3	4.5	141.3	13.7
	16:24	6717315.5	60698.2	5.1	169.0	15.5	9.4	4.2	139.4	12.8
	16:25	6731549.0	61523.6	4.5	166.1	13.6	9.3	3.7	138.4	11.4
	16:26	6748526.0	61645.1	4.0	176.2	14.7	9.4	3.3	146.2	12.2
	16:27	6767409.0	61994.7	3.5	179.2	17.1	9.3	2.9	149.1	14.2
	16:28	6768327.0	63082.0	3.5	174.5	16.3	9.1	3.0	148.6	13.9
	16:29	6748486.5	61736.0	3.7	175.1	13.8	9.4	3.0	145.2	11.5
	16:30	6723326.5	60489.2	4.2	180.4	15.1	9.6	3.4	147.2	12.3
	16:31	6706371.0	59770.9	4.9	186.6	14.3	9.7	4.0	150.7	11.6
	16:32	6686759.5	59124.1	5.2	182.6	12.8	9.8	4.2	146.1	10.2
	16:33	6679616.0	59100.3	5.2	174.2	13.3	9.8	4.1	139.2	10.6
	16:34	6685729.0	59410.0	4.9	171.4	16.1	9.8	3.9	136.9	12.8
	16:35	6705417.5	61823.2	4.9	162.4	19.6	9.4	4.0	134.3	16.2
	16:36	6728769.5	64423.1	5.3	161.4	18.8	8.9	4.6	139.7	16.3
	16:37	6736868.0	63272.2	5.6	174.7	16.0	9.1	4.8	148.6	13.6
	16:38	6738672.5	60484.9	5.2	194.5	15.9	9.6	4.2	157.9	12.9
	16:39	6727032.5	63644.7	4.6	190.0	21.9	9.0	3.9	162.5	18.7
	16:40	6728769.5	65580.7	4.4	175.3	16.6	8.6	3.9	155.1	14.7
	16:41	6734137.5	62622.7	4.3	183.3	15.6	9.1	3.6	155.0	13.2
	16:42	6744007.0	61990.6	4.2	191.8	17.2	9.4	3.5	159.3	14.3
	16:43	6743109.5	63896.0	4.1	193.1	15.3	9.0	3.5	165.4	13.2
	16:44	6750316.0	64768.3	4.5	191.4	14.3	8.8	3.9	167.0	12.5
	16:45	6767369.5	62600.8	4.6	196.3	12.5	9.2	3.9	165.2	10.5
	16:46	6778140.5	60439.5	4.7	199.9	14.9	9.7	3.8	161.6	12.0
Average =		6732362.2	61908.1	4.6	179.9	15.7	9.3	3.8	150.0	13.1
Geometric Avg. =		6732313.3	61883.4	4.6	179.6	15.6	9.3	3.8	149.7	13.0
Maximum =		6778140.5	65580.7	5.6	199.9	21.9	9.8	4.8	167.0	18.7
Minimum =		6679616.0	59100.3	3.5	161.4	12.5	8.6	2.9	134.3	10.2
Possible Values =		24	24	24	24	24	24	24	24	24
Included Values =		24	24	24	24	24	24	24	24	24
Total =		1.616E+08	1485794.7	110.3	4318.7	377.6	223.5	91.9	3600.0	315.2

* - excluded values (missing, OOC, invalid, suspect)
< - missing
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S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/21/12 12:31
Rolling Average Interval: 1

Date	Time	STMRPT_2 (KLB/HR)	CO2_2 (PERCENTD)
03/20/12	16:23	188.7	10.4
	16:24	189.4	10.2
	16:25	188.4	10.4
	16:26	188.3	10.4
	16:27	190.9	10.4
	16:28	190.0	10.6
	16:29	188.9	10.4
	16:30	187.4	10.2
	16:31	186.5	10.1
	16:32	185.5	10.0
	16:33	183.9	10.0
	16:34	183.9	10.1
	16:35	188.3	10.4
	16:36	189.6	10.9
	16:37	186.2	10.6
	16:38	186.7	10.2
	16:39	189.4	10.7
	16:40	189.8	11.0
	16:41	188.8	10.5
	16:42	189.4	10.4
	16:43	190.0	10.7
	16:44	189.9	10.9
	16:45	188.3	10.5
	16:46	186.8	10.1
Average =		188.1	10.4
Geometric Avg. =		188.1	10.4
Maximum =		190.9	11.0
Minimum =		183.9	10.0
Possible Values =		24	24
Included Values =		24	24
Total =		4515.0	250.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

R1

Site Name: UNIT3

Data Averaging Type: 1m

Time of Report: 03/21/12 11:28

Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	06:54	8058709.5	67779.1	6.1	203.0	36.1	10.5	4.6	152.0	27.0
	06:55	8014661.0	67698.7	10.6	191.9	35.3	10.5	7.9	144.2	26.5
	06:56	7998546.5	70518.7	17.2	185.1	34.1	9.9	13.7	146.6	27.0
	06:57	8028363.5	74477.3	17.2	198.3	33.3	9.4	14.3	164.4	27.6
	06:58	8107950.5	77131.2	12.7	212.4	29.7	9.0	10.9	181.5	25.4
	06:59	8220905.5	76187.3	9.4	221.8	26.5	9.3	7.9	184.7	22.1
	07:00	8340363.5	74923.8	6.2	224.7	24.0	9.6	5.0	181.9	19.4
	07:01	8411475.0	73747.6	5.6	218.9	24.5	9.9	4.5	173.5	19.4
	07:02	8425496.0	75513.5	8.0	207.6	26.7	9.6	6.5	168.1	21.6
	07:03	8383713.0	73886.5	14.1	194.0	28.3	9.9	11.1	153.4	22.4
	07:04	8350819.5	72049.3	16.5	183.0	30.0	10.1	12.8	141.8	23.2
	07:05	8349557.0	72651.2	15.7	177.0	32.3	10.0	12.2	138.2	25.3
	07:06	8349871.0	75756.8	17.7	181.4	32.2	9.6	14.5	148.1	26.3
	07:07	8364656.5	78022.1	19.4	192.2	30.1	9.3	16.2	161.0	25.2
	07:08	8390015.0	77606.4	19.0	205.0	25.7	9.4	15.8	169.9	21.3
	07:09	8416273.0	76851.4	16.4	216.2	23.7	9.4	13.6	178.7	19.6
	07:10	8430979.0	76570.8	14.6	210.7	24.5	9.5	12.0	173.5	20.2
	07:11	8408561.0	74764.1	15.8	200.4	25.7	9.7	12.7	161.2	20.7
	07:12	8382886.5	75097.6	17.6	196.6	25.2	9.7	14.2	158.5	20.3
	07:13	8364392.0	75212.9	20.7	197.2	26.2	9.6	16.8	159.7	21.2
	07:14	8372093.0	76695.3	25.0	195.7	25.3	9.4	20.7	161.9	20.9
	07:15	8398884.0	76302.3	25.6	196.0	26.4	9.6	20.8	159.7	21.5
	07:16	8433689.0	75240.2	25.7	194.9	24.4	9.8	20.6	156.3	19.6
	07:17	8413591.0	74717.4	25.4	198.8	23.9	9.7	20.4	159.5	19.2
	07:18	8381417.0	75290.7	24.9	196.3	22.6	9.6	20.2	159.5	18.4
	07:19	8323333.5	72845.9	24.2	193.9	24.8	10.0	19.0	152.0	19.5
	07:20	8252003.5	69447.9	21.8	191.6	27.7	10.4	16.4	144.7	20.9
Average =		8310118.7	74332.8	16.8	199.4	27.8	9.7	13.5	160.5	22.3
Geometric Avg. =		8308965.6	74281.6	15.4	199.1	27.5	9.7	12.4	160.0	22.1
Maximum =		8433689.0	78022.1	25.7	224.7	36.1	10.5	20.8	184.7	27.6
Minimum =		7998546.5	67698.7	5.6	177.0	22.6	9.0	4.5	138.2	18.4
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.244E+08	2006986.0	453.0	5384.7	749.3	262.4	365.0	4334.4	601.7

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

SO2 correct

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3

Time of Report: 03/21/12 11:28

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	06:54	181.9	9.7
	06:55	182.8	9.7
	06:56	187.6	10.2
	06:57	192.7	10.7
	06:58	193.7	11.0
	06:59	192.6	10.7
	07:00	191.0	10.3
	07:01	191.8	10.1
	07:02	190.8	10.3
	07:03	188.6	10.1
	07:04	186.2	9.9
	07:05	186.4	10.0
	07:06	188.7	10.4
	07:07	188.9	10.7
	07:08	188.5	10.6
	07:09	188.9	10.5
	07:10	188.4	10.5
	07:11	187.4	10.2
	07:12	186.9	10.3
	07:13	188.5	10.4
	07:14	188.6	10.5
	07:15	187.4	10.5
	07:16	187.2	10.3
	07:17	187.8	10.2
	07:18	186.2	10.3
	07:19	183.1	10.1
	07:20	183.3	9.7
Average =		188.0	10.3
Geometric Avg. =		188.0	10.3
Maximum =		193.7	11.0
Minimum =		181.9	9.7
Possible Values =		27	27
Included Values =		27	27
Total =		5075.9	278.0

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/21/2012 to 03/21/2012

R2

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 11:29
Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	07:35	7738953.5	68300.6	34.5	190.1	19.5	9.8	27.5	151.4	15.5
	07:36	7623325.0	66248.2	31.1	183.7	19.3	10.1	24.1	142.1	14.9
	07:37	7509631.5	65616.8	19.9	183.9	20.1	9.9	15.7	145.4	15.9
	07:38	7482642.0	71220.5	14.6	179.9	19.3	8.9	12.6	155.7	16.7
	07:39	7482674.0	70322.8	12.8	184.4	16.8	9.2	10.7	154.6	14.1
	07:40	7472359.5	65200.3	9.1	196.3	18.7	10.0	7.1	154.6	14.7
	07:41	7454633.0	66369.7	9.4	204.6	20.8	9.8	7.5	163.4	16.6
	07:42	7446547.5	67707.7	12.5	197.5	21.3	9.6	10.1	160.9	17.4
	07:43	7438986.0	66894.8	20.2	190.2	20.8	9.7	16.2	152.9	16.7
	07:44	7414884.5	65546.7	31.9	185.5	21.7	9.9	25.3	146.9	17.2
	07:45	7412668.5	63708.8	35.0	187.6	23.3	10.2	26.8	143.7	17.9
	07:46	7430142.0	64783.5	34.0	186.6	21.9	10.1	26.4	144.8	17.0
	07:47	7461103.0	69176.1	29.9	184.9	20.5	9.4	24.7	152.5	16.9
	07:48	7481437.0	70931.8	21.8	189.8	18.0	9.1	18.5	161.4	15.3
	07:49	7535585.0	67936.9	13.7	195.4	16.7	9.5	11.2	159.9	13.6
	07:50	7627656.0	65511.8	8.6	205.3	17.4	10.0	6.7	160.7	13.7
	07:51	7697566.0	66218.1	5.6	206.9	18.8	10.1	4.4	161.4	14.7
	07:52	7727233.0	69056.2	4.5	205.1	18.7	9.8	3.6	164.0	15.0
	07:53	7717204.0	71786.3	5.0	196.4	18.2	9.3	4.1	163.9	15.2
	07:54	7667634.0	69487.0	8.2	196.2	15.4	9.6	6.7	159.4	12.5
	07:55	7659698.5	70486.3	14.9	192.4	17.2	9.4	12.3	158.7	14.2
	07:56	7678055.5	72411.4	16.8	189.9	18.2	9.2	14.2	160.3	15.4
	07:57	7698256.5	69791.3	14.7	191.7	20.2	9.7	11.9	155.1	16.3
	07:58	7702430.5	71073.5	14.4	191.2	21.3	9.5	11.8	157.4	17.6
	07:59	7701141.5	72479.7	17.3	190.4	19.7	9.3	14.4	159.1	16.4
	08:00	7677356.5	71300.6	19.4	186.7	18.4	9.3	16.3	156.4	15.4
	08:01	7663343.0	68344.4	18.2	199.1	18.8	9.9	14.4	157.8	14.9
Average =		7577894.3	68441.2	17.7	192.3	19.3	9.6	14.3	155.7	15.6
Geometric Avg. =		7577014.4	68394.4	15.2	192.1	19.2	9.6	12.3	155.6	15.6
Maximum =		7738953.5	72479.7	35.0	206.9	23.3	10.2	27.5	164.0	17.9
Minimum =		7412668.5	63708.8	4.5	179.9	15.4	8.9	3.6	142.1	12.5
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.046E+08	1847911.7	477.8	5191.6	521.1	260.2	385.4	4204.7	421.7

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< - missing
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B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Time of Report: 03/21/12 11:29

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	07:35	187.4	10.2
	07:36	185.3	10.0
	07:37	189.8	10.1
	07:38	190.2	11.0
	07:39	186.9	10.8
	07:40	186.1	10.0
	07:41	186.5	10.3
	07:42	185.7	10.5
	07:43	184.6	10.4
	07:44	182.5	10.2
	07:45	181.6	9.9
	07:46	184.8	10.0
	07:47	189.8	10.7
	07:48	191.6	10.9
	07:49	191.0	10.4
	07:50	188.9	9.9
	07:51	186.8	9.9
	07:52	189.4	10.3
	07:53	188.6	10.7
	07:54	188.6	10.4
	07:55	190.2	10.6
	07:56	188.2	10.9
	07:57	189.1	10.4
	07:58	190.2	10.6
	07:59	191.4	10.8
	08:00	188.7	10.7
	08:01	187.6	10.3
Average =		187.8	10.4
Geometric Avg. =		187.8	10.4
Maximum =		191.6	11.0
Minimum =		181.6	9.9
Possible Values =		27	27
Included Values =		27	27
Total =		5071.5	280.7

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-999 - missing value
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Plant Name: SBWD

R3

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3

Time of Report: 03/21/12 11:30

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	08:20	7653287.0	69665.0	13.8	204.2	23.6	9.6	11.2	165.3	19.1
	08:21	7662435.5	68994.0	11.1	203.6	22.8	9.8	8.9	163.1	18.3
	08:22	7681708.0	67799.8	9.0	206.0	25.9	10.0	7.0	161.5	20.3
	08:23	7694481.5	70126.9	8.4	212.3	28.5	9.6	6.8	172.5	23.1
	08:24	7694013.5	72163.1	9.7	215.2	26.5	9.3	8.1	179.8	22.2
	08:25	7679878.0	70978.8	8.4	218.1	26.4	9.5	6.9	179.4	21.7
	08:26	7671190.5	69654.8	5.6	216.8	26.5	9.7	4.5	175.4	21.4
	08:27	7687724.5	66920.3	4.6	218.4	28.0	10.2	3.5	168.6	21.6
	08:28	7660891.5	69241.9	4.0	208.9	26.2	9.7	3.2	168.5	21.1
	08:29	7633775.5	68490.6	3.9	208.2	28.9	9.8	3.1	165.6	23.0
	08:30	7616652.0	66235.7	3.9	212.0	27.7	10.2	3.0	163.0	21.3
	08:31	7616979.5	65394.8	3.9	213.0	29.9	10.3	3.0	163.0	22.9
	08:32	7619940.0	67006.4	4.7	209.7	29.6	10.0	3.7	164.5	23.2
	08:33	7639620.5	68443.5	6.0	208.9	29.2	9.8	4.8	167.0	23.3
	08:34	7665275.0	69615.5	6.9	213.0	27.4	9.7	5.6	171.3	22.1
	08:35	7712579.5	70595.5	7.4	206.3	24.7	9.5	6.0	168.5	20.2
	08:36	7753146.5	68404.5	7.0	207.1	24.1	10.0	5.5	162.7	19.0
	08:37	7786405.5	67059.0	5.5	212.5	27.5	10.3	4.2	162.6	21.0
	08:38	7778958.0	72763.9	4.6	201.2	23.4	9.2	3.9	169.4	19.7
	08:39	7751255.5	70691.5	4.8	199.0	23.8	9.7	3.9	160.9	19.2
	08:40	7728239.5	67575.0	4.6	200.1	25.9	10.1	3.6	155.6	20.1
	08:41	7724910.5	68929.2	4.7	204.4	22.0	9.9	3.7	162.4	17.5
	08:42	7730020.5	70446.3	4.7	210.3	24.4	9.6	3.8	171.0	19.8
	08:43	7703295.0	71381.5	7.7	213.8	23.0	9.4	6.4	176.4	19.0
	08:44	7627349.5	67327.7	19.9	215.7	23.2	10.0	15.6	168.8	18.2
	08:45	7552066.0	66724.7	34.6	211.3	23.9	10.0	27.3	166.4	18.8
	08:46	7533769.0	68436.4	44.3	209.8	23.7	9.6	35.9	170.0	19.2
Average =		7676290.6	68928.4	9.4	209.6	25.8	9.8	7.5	167.5	20.6
Geometric Avg. =		7676054.7	68904.5	7.3	209.6	25.7	9.8	5.8	167.4	20.5
Maximum =		7786405.5	72763.9	44.3	218.4	29.9	10.3	35.9	179.8	23.3
Minimum =		7533769.0	65394.8	3.9	199.0	22.0	9.2	3.0	155.6	17.5
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.073E+08	1861066.2	253.9	5659.8	696.7	264.4	203.2	4523.1	556.4

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U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Time of Report: 03/21/12 11:30

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	08:20	187.7	10.5
	08:21	187.6	10.4
	08:22	189.7	10.2
	08:23	192.2	10.5
	08:24	192.8	10.8
	08:25	192.4	10.6
	08:26	189.6	10.5
	08:27	189.1	10.0
	08:28	187.5	10.4
	08:29	184.2	10.3
	08:30	182.8	10.0
	08:31	183.6	9.9
	08:32	184.9	10.1
	08:33	185.9	10.3
	08:34	188.3	10.5
	08:35	188.0	10.5
	08:36	185.0	10.2
	08:37	188.6	9.9
	08:38	189.4	10.8
	08:39	187.6	10.5
	08:40	187.0	10.1
	08:41	187.9	10.3
	08:42	190.7	10.5
	08:43	189.0	10.7
	08:44	187.6	10.2
	08:45	188.6	10.2
	08:46	189.2	10.5
Average =		188.0	10.3
Geometric Avg. =		188.0	10.3
Maximum =		192.8	10.8
Minimum =		182.8	9.9
Possible Values =		27	27
Included Values =		27	27
Total =		5077.1	279.1

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U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/21/2012 to 03/21/2012

R4

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 11:30
Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	09:05	8447106.0	78473.2	5.6	201.6	23.1	9.2	4.7	169.0	19.4
	09:06	8428986.0	76477.0	7.2	193.6	19.7	9.5	5.9	158.4	16.1
	09:07	8422709.0	74776.5	7.9	187.6	20.2	9.7	6.3	150.9	16.2
	09:08	8400302.0	75136.9	8.1	186.3	19.9	9.6	6.5	151.1	16.1
	09:09	8368866.5	74566.2	7.0	188.7	21.2	9.8	5.6	151.0	17.0
	09:10	8319684.5	75156.5	8.0	189.0	20.5	9.6	6.6	154.1	16.7
	09:11	8279643.5	75003.4	11.7	194.6	22.3	9.5	9.6	159.4	18.2
	09:12	8264930.0	74238.3	16.1	202.1	22.0	9.6	13.1	164.1	17.9
	09:13	8274169.0	74687.9	16.7	202.3	22.3	9.5	13.7	166.1	18.3
	09:14	8258481.0	73507.3	20.7	202.2	22.2	9.8	16.6	161.8	17.7
	09:15	8245087.5	75048.3	24.9	198.1	22.2	9.5	20.3	161.7	18.1
	09:16	8248947.5	76489.0	21.3	196.2	23.3	9.3	17.8	164.2	19.5
	09:17	8248631.0	74859.7	17.7	187.4	26.3	9.5	14.5	153.1	21.4
	09:18	8248131.0	74313.1	15.3	186.5	15.5	9.7	12.3	150.5	12.5
	09:19	8229172.5	76188.9	14.4	190.1	13.8	9.4	12.0	157.9	11.5
	09:20	8201716.5	76998.5	15.5	195.1	13.9	9.1	13.2	165.4	11.8
	09:21	8186155.5	74672.0	16.7	202.6	11.8	9.6	13.6	164.3	9.6
	09:22	8171122.5	74281.7	15.9	205.7	13.4	9.5	13.0	169.0	11.0
	09:23	8149652.0	75540.0	16.0	205.1	11.7	9.4	13.2	170.2	9.8
	09:24	8102061.0	75326.4	14.8	208.5	11.8	9.3	12.4	174.5	9.9
	09:25	7915147.0	73893.4	11.4	210.5	11.6	9.3	9.5	175.3	9.7
	09:26	7805791.0	71909.7	8.3	208.5	10.1	9.4	6.8	171.9	8.3
	09:27	7662623.5	71631.3	6.6	205.4	9.7	9.2	5.6	172.8	8.2
	09:28	7544135.5	69936.1	6.3	210.3	9.9	9.3	5.2	174.8	8.2
	09:29	7508638.0	68631.0	6.2	209.5	10.0	9.5	5.1	172.4	8.3
	09:30	7488579.0	69512.9	6.1	206.1	11.5	9.3	5.1	171.8	9.6
	09:31	7469810.5	69260.1	6.5	202.4	9.9	9.3	5.4	168.3	8.2
Average =		8107047.4	74093.2	12.3	199.1	16.7	9.5	10.1	163.8	13.7
Geometric Avg. =		8101108.6	74053.5	11.1	199.0	15.8	9.5	9.2	163.6	13.0
Maximum =		8447106.0	78473.2	24.9	210.5	26.3	9.8	20.3	175.3	21.4
Minimum =		7469810.5	68631.0	5.6	186.3	9.7	9.1	4.7	150.5	8.2
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.189E+08	2000515.3	332.9	5376.4	449.9	255.6	273.6	4423.9	369.3

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S - suspect
H - exceedance
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B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Time of Report: 03/21/12 11:30

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	09:05	189.6	10.7
	09:06	190.1	10.4
	09:07	190.4	10.2
	09:08	189.1	10.3
	09:09	189.1	10.3
	09:10	189.7	10.4
	09:11	188.9	10.4
	09:12	188.8	10.3
	09:13	186.7	10.4
	09:14	187.2	10.2
	09:15	188.6	10.5
	09:16	188.3	10.7
	09:17	187.1	10.4
	09:18	187.5	10.4
	09:19	188.7	10.7
	09:20	187.1	10.8
	09:21	186.2	10.5
	09:22	187.4	10.5
	09:23	188.9	10.7
	09:24	189.1	10.7
	09:25	187.7	10.7
	09:26	188.2	10.6
	09:27	188.4	10.8
	09:28	187.5	10.7
	09:29	187.7	10.5
	09:30	187.8	10.7
	09:31	187.7	10.7
Average =		188.3	10.5
Geometric Avg. =		188.3	10.5
Maximum =		190.4	10.8
Minimum =		186.2	10.2
Possible Values =		27	27
Included Values =		27	27
Total =		5083.5	284.2

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S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

R5

Site Name: UNIT3

Data Averaging Type: 1m

Time of Report: 03/21/12 11:31

Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	09:47	7962956.0	70448.1	6.5	192.4	8.4	9.9	5.2	152.8	6.7
	09:48	7936920.5	71805.6	8.6	193.8	9.6	9.6	7.0	157.3	7.8
	09:49	7914817.5	71980.3	11.4	195.7	9.1	9.5	9.4	160.1	7.5
	09:50	7913903.0	71941.1	14.7	196.0	9.2	9.5	12.0	160.4	7.5
	09:51	7920752.0	71395.6	15.0	196.9	8.9	9.6	12.2	159.5	7.2
	09:52	7934704.0	70982.7	17.2	198.6	9.0	9.7	13.9	160.4	7.3
	09:53	7927387.0	70380.2	23.5	198.3	8.3	9.7	18.9	159.5	6.7
	09:54	7889836.5	67327.3	30.6	195.1	8.9	10.2	23.5	149.5	6.8
	09:55	7835414.5	66500.0	37.9	194.6	10.2	10.3	28.9	148.4	7.8
	09:56	7737111.5	67633.6	48.9	197.1	10.0	9.9	38.6	155.5	7.9
	09:57	7606143.5	63982.6	61.5	197.6	10.4	10.4	46.6	149.6	7.9
	09:58	7504457.0	62754.6	68.1	196.0	14.4	10.4	51.2	147.4	10.8
	09:59	7490888.0	64917.3	47.5	201.4	16.1	10.1	37.0	156.9	12.5
	10:00	7613258.5	65361.6	29.7	204.1	14.9	10.1	23.0	158.0	11.5
	10:01	7798154.0	66403.9	13.6	203.7	14.7	10.2	10.5	157.5	11.3
	10:02	7932840.0	68220.3	6.7	201.2	15.4	10.1	5.2	156.2	12.0
	10:03	7996959.0	69883.0	4.2	208.0	14.4	10.0	3.3	163.5	11.3
	10:04	7963428.0	68228.5	3.5	217.2	10.2	10.2	2.7	167.0	7.8
	10:05	7905161.0	67535.9	3.6	217.2	11.9	10.3	2.7	166.2	9.1
	10:06	7866479.5	71553.3	3.9	211.1	10.3	9.5	3.2	172.4	8.4
	10:07	7874766.5	69180.0	4.9	202.4	9.5	9.9	3.9	160.9	7.6
	10:08	7918915.5	65794.0	4.8	195.5	12.9	10.6	3.6	145.5	9.6
	10:09	7971286.0	66488.8	4.4	197.2	14.8	10.5	3.3	148.1	11.1
	10:10	8008731.0	69580.1	4.8	206.5	16.5	10.1	3.7	160.8	12.9
	10:11	8043586.5	72349.1	5.2	208.5	14.2	9.7	4.2	168.1	11.5
	10:12	8101495.5	72023.3	6.4	212.9	12.6	9.8	5.1	169.5	10.0
	10:13	8294156.0	72936.4	8.8	218.7	14.9	10.0	6.9	172.2	11.7
Average =		7883870.7	68799.5	18.4	202.1	11.8	10.0	14.3	158.6	9.3
Geometric Avg. =		7882011.6	68741.5	11.6	202.0	11.5	10.0	9.1	158.5	9.1
Maximum =		8294156.0	72936.4	68.1	218.7	16.5	10.6	51.2	172.4	12.9
Minimum =		7490888.0	62754.6	3.5	192.4	8.3	9.5	2.7	145.5	6.7
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.129E+08	1857587.1	496.2	5457.6	319.8	269.8	385.7	4283.3	250.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 11:31
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	09:47	186.1	10.2
	09:48	186.9	10.4
	09:49	188.0	10.5
	09:50	186.9	10.5
	09:51	186.2	10.4
	09:52	186.9	10.3
	09:53	185.0	10.2
	09:54	182.3	9.8
	09:55	183.8	9.8
	09:56	183.5	10.1
	09:57	182.7	9.7
	09:58	185.0	9.6
	09:59	186.3	10.0
	10:00	186.9	9.9
	10:01	187.7	9.8
	10:02	188.6	9.9
	10:03	188.3	10.1
	10:04	187.5	9.9
	10:05	191.3	9.8
	10:06	191.5	10.5
	10:07	187.9	10.1
	10:08	185.2	9.6
	10:09	184.9	9.6
	10:10	186.4	10.0
	10:11	188.3	10.4
	10:12	187.3	10.2
	10:13	188.5	10.1
Average =		186.7	10.0
Geometric Avg. =		186.7	10.0
Maximum =		191.5	10.5
Minimum =		182.3	9.6
Possible Values =		27	27
Included Values =		27	27
Total =		5039.9	271.2

* - excluded values (missing, OOC, invalid, suspect)
< - missing
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I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 11:31
Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	10:30	8326549.0	74891.3	14.6	210.2	8.2	9.6	11.8	170.3	6.7
	10:31	8311706.0	74059.3	12.0	204.6	9.7	9.7	9.7	165.4	7.8
	10:32	8290506.0	74920.5	9.7	206.2	10.7	9.5	8.0	168.4	8.7
	10:33	8253526.5	74193.3	9.1	203.3	9.2	9.6	7.4	165.0	7.4
	10:34	8221411.5	74652.0	9.2	196.2	9.8	9.5	7.6	161.3	8.0
	10:35	8187752.5	76066.2	9.6	192.9	7.8	9.2	8.1	162.0	6.6
	10:36	8153047.5	70793.8	8.5	192.8	7.9	10.1	6.6	149.5	6.1
	10:37	8118677.0	70406.0	7.0	190.8	11.4	10.0	5.5	149.5	8.9
	10:38	8068811.5	73642.5	8.2	204.7	11.4	9.4	6.8	169.1	9.4
	10:39	8033116.0	74958.7	10.8	208.3	10.9	9.3	9.0	174.1	9.1
	10:40	8007090.0	73727.1	12.1	211.8	10.7	9.4	10.0	175.4	8.8
	10:41	8001263.0	72848.7	12.0	209.2	10.5	9.5	9.9	171.4	8.6
	10:42	8003999.5	74572.3	10.0	200.8	9.8	9.2	8.5	169.6	8.2
	10:43	8011566.0	74558.1	10.0	195.6	12.9	9.2	8.4	164.6	10.8
	10:44	8044066.5	72709.8	12.0	190.7	16.7	9.6	9.8	155.6	13.6
	10:45	8088807.5	73627.0	23.7	186.8	20.9	9.4	19.5	154.0	17.2
	10:46	8078234.0	74018.5	33.9	183.5	17.4	9.4	27.9	151.3	14.3
	10:47	7981424.0	73689.5	42.3	186.2	15.1	9.4	35.1	154.4	12.6
	10:48	7909309.5	73336.3	49.2	197.3	12.8	9.3	41.2	165.3	10.7
	10:49	7910652.0	71997.4	36.6	195.0	11.6	9.5	30.0	159.8	9.5
	10:50	7686737.0	69222.9	13.9	193.6	12.2	9.7	11.3	156.3	9.9
	10:51	7673424.5	69896.1	7.3	192.1	10.3	9.5	6.0	157.4	8.4
	10:52	7783460.0	71108.0	5.1	190.3	8.6	9.4	4.2	156.9	7.1
	10:53	7918512.0	73069.7	3.6	190.6	8.3	9.4	3.0	157.9	6.9
	10:54	7998750.0	75132.4	2.6	186.9	7.7	9.2	2.2	157.4	6.5
	10:55	7977083.0	75575.6	2.0	181.7	8.1	8.9	1.7	156.5	7.0
	10:56	7860763.5	71950.8	1.8	183.4	8.4	9.4	1.5	151.5	6.9
Average =		8033342.4	73319.4	14.0	195.8	11.1	9.5	11.5	161.1	9.1
Geometric Avg. =		8031582.1	73298.1	10.1	195.6	10.7	9.5	8.3	160.9	8.8
Maximum =		8326549.0	76066.2	49.2	211.8	20.9	10.1	41.2	175.4	17.2
Minimum =		7673424.5	69222.9	1.8	181.7	7.7	8.9	1.5	149.5	6.1
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.169E+08	1979623.5	376.9	5285.8	298.6	255.4	310.5	4349.8	245.7

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S - suspect
H - exceedance
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-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 11:31
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	10:30	186.8	10.4
	10:31	187.0	10.3
	10:32	186.2	10.4
	10:33	188.0	10.3
	10:34	190.2	10.5
	10:35	186.7	10.7
	10:36	185.0	10.0
	10:37	187.5	10.0
	10:38	189.6	10.5
	10:39	190.0	10.7
	10:40	188.7	10.6
	10:41	189.9	10.5
	10:42	190.4	10.7
	10:43	188.5	10.7
	10:44	188.9	10.4
	10:45	189.0	10.5
	10:46	188.6	10.5
	10:47	190.2	10.6
	10:48	189.9	10.7
	10:49	187.9	10.5
	10:50	188.9	10.4
	10:51	188.7	10.5
	10:52	188.2	10.5
	10:53	188.6	10.6
	10:54	190.2	10.8
	10:55	189.8	10.9
	10:56	188.1	10.5
Average =		188.6	10.5
Geometric Avg. =		188.6	10.5
Maximum =		190.4	10.9
Minimum =		185.0	10.0
Possible Values =		27	27
Included Values =		27	27
Total =		5091.2	283.8

* - excluded values (missing, OOC, invalid, suspect)
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S - suspect
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U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R7

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3

Time of Report: 03/21/12 11:54

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	11:13	7628346.0	66210.1	4.1	200.5	6.9	10.0	3.2	156.8	5.4
	11:14	7598841.5	66339.1	4.8	209.2	5.8	9.9	3.8	164.9	4.6
	11:15	7580391.5	67255.0	4.2	205.5	7.9	9.7	3.4	165.4	6.4
	11:16	7571662.5	66357.2	3.9	199.6	6.0	9.9	3.1	158.3	4.8
	11:17	7592792.5	66683.1	4.1	197.1	5.2	9.7	3.3	158.3	4.2
	11:18	7606221.5	68071.7	4.0	191.9	7.0	9.6	3.3	155.5	5.7
	11:19	7606221.5	66627.0	4.6	190.9	5.7	9.8	3.6	152.0	4.6
	11:20	7594472.5	62845.5	4.3	193.6	7.4	10.4	3.2	145.7	5.6
	11:21	7565974.0	63354.5	4.7	197.1	9.7	10.3	3.6	149.6	7.4
	11:22	7544322.5	67428.1	6.8	189.9	8.8	9.7	5.5	153.4	7.1
	11:23	7549049.0	70434.1	8.6	190.9	6.6	9.2	7.2	160.8	5.6
	11:24	7546375.0	66716.7	8.0	203.9	9.1	9.9	6.3	161.8	7.2
	11:25	7534232.0	65708.5	8.6	208.0	8.7	10.0	6.7	162.7	6.8
	11:26	7517078.0	65273.8	9.5	212.1	8.6	10.0	7.4	165.7	6.7
	11:27	7517680.5	66410.8	8.9	202.0	7.9	9.7	7.1	162.1	6.3
	11:28	7505258.5	66177.2	8.0	197.2	8.4	9.8	6.3	157.3	6.7
	11:29	7483792.0	65747.4	9.6	192.5	9.4	9.9	7.6	152.4	7.4
	11:30	7497208.5	64830.5	14.4	194.5	10.2	10.1	11.1	150.5	7.9
	11:31	7541516.0	64637.7	13.3	201.5	11.1	10.2	10.2	155.6	8.5
	11:32	7602530.0	64537.7	10.4	206.4	10.6	10.3	7.9	157.6	8.1
	11:33	7675822.0	65021.0	9.8	211.9	10.5	10.3	7.5	161.7	8.0
	11:34	7841385.5	68086.5	9.7	211.8	11.3	10.1	7.6	165.0	8.8
	11:35	7994910.5	69413.7	9.1	207.0	8.4	10.0	7.1	161.7	6.6
	11:36	8046778.5	65570.4	8.6	211.1	8.8	10.7	6.3	155.0	6.4
	11:37	8069331.0	66756.4	8.0	206.3	12.0	10.5	6.0	154.6	9.0
	11:38	8226183.0	72199.3	9.7	200.2	11.2	9.9	7.7	158.9	8.9
	11:39	8329748.0	73165.0	12.6	202.1	13.7	10.0	9.9	158.9	10.7
Average =		7680300.9	66735.5	7.9	201.3	8.8	10.0	6.2	157.9	6.9
Geometric Avg. =		7676894.4	66696.1	7.3	201.2	8.5	10.0	5.7	157.8	6.7
Maximum =		8329748.0	73165.0	14.4	212.1	13.7	10.7	11.1	165.7	10.7
Minimum =		7483792.0	62845.5	3.9	189.9	5.2	9.2	3.1	145.7	4.2
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.074E+08	1801858.2	212.1	5434.9	236.9	269.9	166.1	4262.0	185.3

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S - suspect
H - exceedance
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B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 11:54
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	11:13	188.4	10.0
	11:14	189.1	10.1
	11:15	188.2	10.2
	11:16	187.7	10.1
	11:17	188.4	10.1
	11:18	188.3	10.3
	11:19	185.1	10.1
	11:20	183.8	9.5
	11:21	186.6	9.6
	11:22	190.3	10.3
	11:23	188.6	10.7
	11:24	186.7	10.2
	11:25	186.5	10.0
	11:26	187.8	10.0
	11:27	187.1	10.2
	11:28	187.0	10.2
	11:29	185.5	10.1
	11:30	184.9	10.0
	11:31	185.0	9.9
	11:32	185.2	9.8
	11:33	186.0	9.8
	11:34	187.1	10.0
	11:35	184.6	10.0
	11:36	182.5	9.4
	11:37	184.8	9.5
	11:38	185.8	10.1
	11:39	184.9	10.1
Average =		186.5	10.0
Geometric Avg. =		186.5	10.0
Maximum =		190.3	10.7
Minimum =		182.5	9.4
Possible Values =		27	27
Included Values =		27	27
Total =		5036.0	270.2

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3

Data Averaging Type: 1m

Time of Report: 03/21/12 12:43

Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	11:58	8837770.0	73576.7	2.7	192.1	14.3	10.5	2.0	143.4	10.7
	11:59	8777073.0	68733.6	2.6	196.1	19.8	11.2	1.8	137.5	13.9
	12:00	8712377.0	67792.8	2.3	210.2	18.9	11.3	1.6	145.3	13.1
	12:01	8473058.0	71652.9	2.0	205.4	14.8	10.5	1.5	154.1	11.1
	12:02	8432811.0	78007.1	1.8	200.0	11.3	9.5	1.5	164.2	9.3
	12:03	8412479.0	78216.1	1.7	206.3	8.1	9.2	1.4	173.6	6.8
	12:04	8432738.0	74035.4	1.6	200.0	8.7	9.9	1.2	158.3	6.9
	12:05	8421923.0	72322.6	1.4	201.9	9.7	10.1	1.1	156.8	7.5
	12:06	8392526.0	72308.3	1.3	198.7	10.7	10.1	1.0	154.6	8.4
	12:07	8356525.0	71748.9	1.3	190.1	12.7	10.2	1.0	146.6	9.8
	12:08	8298175.5	71764.5	1.4	187.6	15.7	10.1	1.1	145.7	12.2
	12:09	8269373.5	70332.6	1.6	191.2	16.0	10.3	1.2	145.6	12.2
	12:10	8263332.0	71314.8	1.8	195.5	19.4	10.2	1.4	150.9	14.9
	12:11	8306179.5	69730.6	1.8	212.3	17.3	10.5	1.3	158.9	12.9
	12:12	8360879.5	68862.1	1.6	222.3	18.8	10.7	1.2	162.8	13.8
	12:13	8416171.0	67736.1	1.6	226.5	22.5	10.9	1.1	162.3	16.1
	12:14	8477315.0	70946.4	1.4	219.5	28.1	10.6	1.0	162.4	20.8
	12:15	8543370.0	77659.0	1.3	209.9	21.2	9.6	1.0	170.7	17.3
	12:16	8665003.0	76062.0	1.2	207.6	19.5	10.1	0.9	160.9	15.1
	12:17	8921730.0	72702.6	1.1	209.7	20.7	10.9	0.8	151.3	14.9
	12:18	9006123.0	72819.3	1.1	209.6	25.1	10.9	0.8	150.7	18.0
	12:19	9024409.0	71247.9	1.0	209.8	25.5	11.1	0.7	147.4	17.9
	12:20	8973467.0	67031.8	1.0	201.9	25.7	11.7	0.7	134.0	17.1
	12:21	8882987.0	62822.2	1.0	192.0	29.4	12.2	0.6	120.6	18.5
	12:22	8742766.0	62559.6	1.0	192.2	29.4	12.0	0.6	122.8	18.8
	12:23	8624084.0	66516.8	0.9	197.5	23.0	11.3	0.6	136.4	15.9
	12:24	8549300.0	73571.1	0.8	198.9	18.7	10.2	0.6	153.2	14.4
Average =		8576812.8	71187.9	1.5	203.1	18.7	10.6	1.1	150.8	13.6
Geometric Avg. =		8573533.4	71079.7	1.4	202.9	17.6	10.6	1.0	150.2	13.0
Maximum =		9024409.0	78216.1	2.7	226.5	29.4	12.2	2.0	173.6	20.8
Minimum =		8263332.0	62559.6	0.8	187.6	8.1	9.2	0.6	120.6	6.8
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.316E+08	1922074.0	40.0	5484.9	505.0	285.8	29.8	4071.1	368.2

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< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3

Time of Report: 03/21/12 12:43

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	11:58	186.4	9.6
	11:59	183.4	9.0
	12:00	184.7	9.0
	12:01	191.5	9.7
	12:02	196.3	10.7
	12:03	193.2	10.7
	12:04	189.5	10.1
	12:05	187.1	9.9
	12:06	186.3	9.9
	12:07	186.1	9.9
	12:08	184.0	10.0
	12:09	184.5	9.8
	12:10	183.5	9.9
	12:11	182.2	9.7
	12:12	180.6	9.5
	12:13	181.1	9.3
	12:14	187.1	9.6
	12:15	189.9	10.5
	12:16	187.0	10.1
	12:17	185.5	9.4
	12:18	182.4	9.3
	12:19	176.0	9.1
	12:20	167.9	8.6
	12:21	163.0	8.1
	12:22	159.6	8.2
	12:23	162.3	8.9
	12:24	168.2	9.9
Average =		181.8	9.6
Geometric Avg. =		181.6	9.5
Maximum =		196.3	10.7
Minimum =		159.6	8.1
Possible Values =		27	27
Included Values =		27	27
Total =		4909.5	258.3

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD
General Average Report
Reporting Period: 03/21/2012 to 03/21/2012

R9

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 13:11
Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	12:42	8530420.0	73601.3	0.7	207.8	8.6	10.1	0.5	161.8	6.7
	12:43	8564175.0	73420.2	0.6	197.5	9.2	10.2	0.5	152.7	7.1
	12:44	8576412.0	74786.5	0.6	192.9	9.3	9.9	0.5	152.2	7.4
	12:45	8545857.0	75176.7	0.6	194.5	10.2	9.9	0.4	154.2	8.1
	12:46	8490727.0	73108.9	0.5	194.6	11.1	10.1	0.4	151.8	8.7
	12:47	8443540.0	71798.1	0.6	194.8	10.4	10.2	0.4	149.5	8.0
	12:48	8441978.0	71858.1	0.6	196.1	10.8	10.2	0.5	150.6	8.3
	12:49	8451348.0	66359.0	0.7	197.5	14.8	11.1	0.5	139.5	10.5
	12:50	8460904.0	68504.0	0.7	192.5	19.4	10.8	0.5	140.0	14.1
	12:51	8463683.0	71418.0	0.6	197.5	25.5	10.3	0.5	150.2	19.4
	12:52	8516797.0	70090.8	0.7	202.1	20.9	10.7	0.5	148.7	15.4
	12:53	8779440.0	70460.3	0.8	211.3	22.6	10.9	0.6	151.8	16.3
	12:54	9046423.0	76165.0	0.9	217.8	15.7	10.4	0.7	164.1	11.8
	12:55	9143047.0	77534.4	1.0	218.7	10.6	10.3	0.8	166.6	8.1
	12:56	9242165.0	72795.9	0.9	215.4	12.5	11.0	0.6	152.9	8.9
	12:57	9325029.0	71126.7	0.7	200.4	15.2	11.4	0.5	137.1	10.4
	12:58	9362579.0	75208.1	0.6	187.3	21.3	10.9	0.4	134.2	15.3
	12:59	9343610.0	78910.6	0.6	183.4	20.1	10.4	0.5	138.5	15.2
	13:00	9283141.0	78842.9	0.6	185.0	20.6	10.4	0.5	140.3	15.6
	13:01	9209670.0	78539.4	0.6	189.3	15.1	10.3	0.5	144.7	11.5
	13:02	9147590.0	77223.4	0.7	195.7	13.7	10.4	0.5	147.6	10.3
	13:03	9113829.0	75199.5	0.7	193.0	14.6	10.6	0.5	142.6	10.8
	13:04	9110466.0	76229.4	0.6	196.8	17.7	10.5	0.5	147.6	13.3
	13:05	9101348.0	79533.9	0.6	200.5	16.9	10.0	0.5	157.0	13.2
	13:06	9110702.0	79130.3	0.6	197.5	15.5	10.1	0.5	153.1	12.0
	13:07	9105340.0	80459.8	0.6	197.8	14.8	10.0	0.5	155.7	11.6
	13:08	9103206.0	86218.2	0.5	198.7	12.6	9.1	0.4	169.2	10.7
Average =		8889386.1	74951.8	0.7	198.4	15.2	10.4	0.5	150.2	11.4
Geometric Avg. =		8882774.6	74836.1	0.7	198.2	14.5	10.4	0.5	149.9	11.0
Maximum =		9362579.0	86218.2	1.0	218.7	25.5	11.4	0.8	169.2	19.4
Minimum =		8441978.0	66359.0	0.5	183.4	8.6	9.1	0.4	134.2	6.7
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.400E+08	2023699.5	18.2	5356.3	409.6	280.1	13.7	4054.5	308.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
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S - suspect
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B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Time of Report: 03/21/12 13:11

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	12:42	189.0	9.9
	12:43	187.5	9.9
	12:44	187.5	10.0
	12:45	187.4	10.1
	12:46	185.9	9.9
	12:47	186.8	9.8
	12:48	183.2	9.8
	12:49	181.6	9.0
	12:50	188.3	9.3
	12:51	191.7	9.7
	12:52	191.8	9.5
	12:53	193.1	9.2
	12:54	194.7	9.7
	12:55	189.4	9.8
	12:56	181.0	9.1
	12:57	177.8	8.8
	12:58	180.5	9.2
	12:59	182.5	9.7
	13:00	182.8	9.8
	13:01	180.8	9.8
	13:02	178.4	9.7
	13:03	176.3	9.5
	13:04	176.3	9.6
	13:05	176.3	10.1
	13:06	176.2	10.0
	13:07	179.6	10.2
	13:08	187.2	10.9
Average =		184.2	9.7
Geometric Avg. =		184.1	9.7
Maximum =		194.7	10.9
Minimum =		176.2	8.8
Possible Values =		27	27
Included Values =		27	27
Total =		4973.5	262.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
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-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R10

Page: 1

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3

Time of Report: 03/11/12 13:50

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	13:21	8030685.0	72359.8	0.5	189.6	10.4	9.7	0.4	153.1	8.4
	13:22	7979722.0	68541.4	0.6	194.5	9.3	10.2	0.4	150.0	7.1
	13:23	7960946.5	68937.9	0.6	197.5	8.2	9.8	0.4	157.1	6.5
	13:24	7948479.5	75552.0	0.5	203.3	8.0	9.1	0.4	172.4	6.8
	13:25	7923023.5	72540.1	0.5	207.7	6.3	9.7	0.4	167.7	5.1
	13:26	7729011.5	69002.7	0.5	205.1	10.3	9.8	0.4	163.8	8.2
	13:27	7635485.5	69886.5	0.6	202.0	8.4	9.6	0.5	164.9	6.9
	13:28	7582071.5	71114.3	0.6	197.1	7.4	9.2	0.5	165.8	6.3
	13:29	7559289.5	68229.4	0.7	197.6	9.6	9.8	0.6	158.2	7.7
	13:30	7545508.5	67277.7	0.8	201.5	10.9	9.9	0.6	159.7	8.7
	13:31	7335751.0	66213.9	0.8	204.4	9.7	9.8	0.6	163.9	7.7
	13:32	7339681.5	67049.5	0.9	205.1	10.4	9.6	0.8	166.3	8.5
	13:33	7364763.0	65911.8	1.0	210.3	10.1	9.9	0.8	167.1	8.0
	13:34	7419917.5	67016.6	1.3	212.2	9.8	9.7	1.1	171.0	7.9
	13:35	7449895.0	67824.4	1.9	212.3	10.7	9.6	1.5	171.9	8.6
	13:36	7476161.5	66660.9	2.3	214.5	13.1	9.9	1.8	170.4	10.4
	13:37	7561060.5	66430.6	1.9	216.1	15.3	10.0	1.5	169.0	12.0
	13:38	7813982.5	68071.4	1.7	212.8	14.6	10.1	1.3	164.7	11.3
	13:39	8002736.0	71604.0	1.5	216.0	17.7	9.9	1.2	171.2	14.0
	13:40	8188164.5	74360.8	1.5	219.2	16.4	9.7	1.2	176.7	13.2
	13:41	8491712.0	77143.2	1.3	213.8	17.9	9.7	1.1	171.9	14.4
	13:42	8775393.0	83749.9	1.0	213.0	15.7	9.1	0.8	181.4	13.4
	13:43	8829047.0	82084.0	1.0	214.2	14.8	9.4	0.9	177.9	12.3
	13:44	8830821.0	80837.5	1.0	211.7	13.0	9.5	0.9	173.2	10.7
	13:45	8794160.0	79299.1	1.0	212.0	12.7	9.8	0.8	170.0	10.2
	13:46	8728518.0	81941.7	0.9	211.0	10.7	9.2	0.7	177.7	9.0
	13:47	8669821.0	80599.9	0.9	207.2	9.1	9.3	0.7	172.4	7.5
Average =		7961696.6	72231.2	1.0	207.5	11.5	9.7	0.8	167.8	9.3
Geometric Avg. =		7945659.4	72015.0	0.9	207.3	11.1	9.7	0.7	167.6	9.0
Maximum =		8830821.0	83749.9	2.3	219.2	17.9	10.2	1.8	181.4	14.4
Minimum =		7335751.0	65911.8	0.5	189.6	6.3	9.1	0.4	150.0	5.1
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.150E+08	1950241.1	27.8	5601.5	310.3	260.8	22.4	4529.5	250.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Time of Report: 03/21/12 13:50

Data Averaging Type: 1m
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	13:21	188.3	10.4
	13:22	190.0	9.9
	13:23	192.7	10.0
	13:24	191.0	10.9
	13:25	187.7	10.5
	13:26	186.4	10.3
	13:27	188.9	10.5
	13:28	187.4	10.8
	13:29	185.7	10.4
	13:30	185.1	10.3
	13:31	186.7	10.4
	13:32	186.2	10.5
	13:33	186.1	10.3
	13:34	186.4	10.4
	13:35	185.6	10.5
	13:36	184.2	10.3
	13:37	183.0	10.1
	13:38	184.5	10.0
	13:39	186.8	10.3
	13:40	187.1	10.5
	13:41	190.7	10.5
	13:42	192.6	11.0
	13:43	192.1	10.7
	13:44	190.2	10.5
	13:45	191.1	10.4
	13:46	192.3	10.8
	13:47	190.7	10.7
Average =		188.1	10.4
Geometric Avg. =		188.1	10.4
Maximum =		192.7	11.0
Minimum =		183.0	9.9
Possible Values =		27	27
Included Values =		27	27
Total =		5079.6	281.8

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
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S - suspect
H - exceedance
F - stack not operating
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U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Plant Name: SBWD

R11

Page: 1

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3

Time of Report: 03/21/12 14:40

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	14:03	7475457.5	70111.1	9.4	188.0	7.3	9.3	7.8	157.5	6.1
	14:04	7456127.5	68235.2	12.2	194.0	7.6	9.5	10.0	159.1	6.2
	14:05	7452187.5	68686.7	13.7	197.7	7.5	9.5	11.3	162.7	6.2
	14:06	7449508.5	68649.1	16.3	197.3	8.4	9.4	13.4	162.8	6.9
	14:07	7441472.5	69212.8	18.1	201.4	8.2	9.4	14.9	166.4	6.7
	14:08	7422004.0	68911.4	19.8	196.2	8.9	9.3	16.5	163.1	7.4
	14:09	7418868.0	69417.1	24.1	194.0	9.0	9.3	20.1	161.5	7.5
	14:10	7413505.5	67686.3	27.7	192.0	10.9	9.6	22.5	155.8	8.8
	14:11	7404482.5	67443.1	29.4	189.6	12.9	9.7	23.7	153.0	10.4
	14:12	7400314.0	69667.7	32.9	187.4	10.9	9.2	27.6	157.3	9.2
	14:13	7395648.5	66574.7	37.0	190.1	14.0	9.8	29.6	152.1	11.2
	14:14	7388307.5	67890.5	39.3	192.1	11.8	9.6	32.0	156.5	9.6
	14:15	7363419.0	69190.2	45.8	192.9	10.4	9.3	38.3	161.3	8.7
	14:16	7316361.0	66491.1	43.4	193.3	11.2	9.7	34.9	155.4	9.0
	14:17	7341337.0	68008.3	36.5	188.8	11.8	9.3	30.4	157.1	9.8
	14:18	7493240.5	69053.2	18.3	188.5	11.7	9.5	15.0	154.8	9.6
	14:19	7619394.0	71526.1	6.9	190.3	10.8	9.3	5.7	159.3	9.0
	14:20	7664816.5	71300.1	4.3	191.9	11.9	9.4	3.6	158.8	9.8
	14:21	7665773.5	69553.4	3.3	193.8	11.9	9.8	2.6	155.3	9.5
	14:22	7665047.5	70809.6	2.5	194.7	12.2	9.4	2.1	160.8	10.1
	14:23	7659880.0	71481.5	2.2	194.4	12.0	9.4	1.8	160.7	9.9
	14:24	7651932.0	69291.6	2.4	198.8	11.4	9.7	1.9	160.4	9.2
	14:25	7623946.5	68384.8	3.1	199.4	12.4	9.8	2.5	159.0	9.9
	14:26	7612214.5	68261.9	4.5	195.4	12.4	9.8	3.6	156.1	9.9
	14:27	7617202.0	70682.9	7.9	195.8	13.0	9.3	6.6	163.8	10.8
	14:28	7637881.5	71657.6	11.0	198.3	11.7	9.2	9.2	166.6	9.8
	14:29	7665047.0	70163.8	10.4	200.5	13.1	9.6	8.5	163.2	10.7
Average =		7507976.9	69197.8	17.9	193.9	10.9	9.5	14.7	159.3	9.0
Geometric Avg. =		7507036.0	69183.4	12.1	193.9	10.8	9.5	10.0	159.2	8.8
Maximum =		7665773.5	71657.6	45.8	201.4	14.0	9.8	38.3	166.6	11.2
Minimum =		7316361.0	66491.1	2.2	187.4	7.3	9.2	1.8	152.1	6.1
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.027E+08	1868341.7	482.2	5236.5	295.1	256.1	396.1	4300.3	242.1

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

General Average Report

Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Time of Report: 03/21/12 14:40

Data Averaging Type: lm
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	14:03	187.9	10.8
	14:04	188.0	10.5
	14:05	187.7	10.6
	14:06	188.0	10.6
	14:07	188.1	10.7
	14:08	188.2	10.7
	14:09	187.5	10.8
	14:10	186.1	10.5
	14:11	187.8	10.5
	14:12	185.7	10.8
	14:13	186.4	10.4
	14:14	188.6	10.6
	14:15	187.4	10.8
	14:16	188.1	10.5
	14:17	187.2	10.7
	14:18	188.0	10.6
	14:19	188.8	10.8
	14:20	187.2	10.7
	14:21	187.8	10.4
	14:22	188.5	10.6
	14:23	187.6	10.7
	14:24	185.5	10.4
	14:25	184.5	10.3
	14:26	186.4	10.3
	14:27	187.9	10.7
	14:28	187.2	10.8
	14:29	187.0	10.5
Average =		187.4	10.6
Geometric Avg. =		187.4	10.6
Maximum =		188.8	10.8
Minimum =		184.5	10.3
Possible Values =		27	27
Included Values =		27	27
Total =		5059.1	286.5

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

R12

Plant Name: SBWD
General Average Report
Reporting Period: 03/21/2012 to 03/21/2012

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 15:28
Rolling Average Interval: 1

Date	Time	FLW3SCFH (SCFM)	CO2LBHR3 (Lb/Hr)	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)
03/21/12	14:44	7586069.0	68374.5	3.9	208.2	11.4	9.7	3.2	168.0	9.2
	14:45	7580041.0	69242.7	4.0	205.8	11.6	9.5	3.3	168.5	9.5
	14:46	7582398.5	68086.8	4.1	200.3	11.6	9.7	3.3	161.2	9.4
	14:47	7595146.0	67486.6	4.6	197.8	12.7	9.9	3.7	156.4	10.1
	14:48	7593145.5	71118.1	6.1	195.7	10.7	9.3	5.1	163.5	9.0
	14:49	7603870.5	72341.3	8.0	199.2	10.6	9.1	6.8	168.6	8.9
	14:50	7606551.5	70197.6	8.3	202.2	10.1	9.5	6.9	166.2	8.3
	14:51	7610915.5	70469.3	8.1	202.9	9.8	9.4	6.7	167.8	8.1
	14:52	7584735.0	70556.2	9.0	202.7	11.7	9.4	7.4	168.1	9.7
	14:53	7565934.5	67566.5	9.5	198.5	11.2	9.7	7.6	159.4	9.0
	14:54	7573992.0	65599.1	9.8	193.1	13.5	10.1	7.6	149.6	10.5
	14:55	7571017.0	67721.5	10.9	191.5	15.9	9.8	8.7	152.8	12.7
	14:56	7550358.0	69515.1	13.1	196.5	16.2	9.4	10.8	162.2	13.4
	14:57	7552091.0	68973.5	12.1	196.8	15.7	9.6	9.9	160.5	12.8
	14:58	7561784.0	69029.1	9.4	197.4	14.0	9.6	7.7	161.1	11.4
	14:59	7553348.5	70811.0	7.2	198.8	12.7	9.2	6.1	167.0	10.7
	15:00	7563291.0	70859.6	5.9	202.7	12.7	9.3	4.9	169.1	10.6
	15:01	7587421.0	69080.9	5.0	203.0	13.1	9.6	4.1	164.5	10.6
	15:02	7605884.5	71195.6	4.9	201.2	13.1	9.2	4.1	168.7	11.0
	15:03	7609908.5	70832.3	5.7	200.3	14.0	9.4	4.7	165.5	11.6
	15:04	7613270.5	68866.5	6.0	200.5	15.1	9.9	4.8	159.2	12.0
	15:05	7598832.0	66181.7	6.0	193.1	16.3	10.2	4.6	148.8	12.6
	15:06	7594804.5	68534.6	5.8	188.1	16.0	9.7	4.7	151.6	12.9
	15:07	7590794.5	72304.9	8.1	193.7	13.2	9.1	6.9	165.1	11.3
	15:08	7599517.0	70744.4	12.3	200.9	12.6	9.5	10.1	165.0	10.4
	15:09	7610231.5	68869.9	12.2	209.0	11.8	9.7	9.9	168.5	9.5
	15:10	7634340.0	69837.4	11.0	212.1	11.7	9.6	8.9	172.5	9.5
Average =		7588136.8	69422.1	7.8	199.7	12.9	9.6	6.4	163.0	10.5
Geometric Avg. =		7588107.8	69402.3	7.3	199.6	12.8	9.6	6.0	162.8	10.4
Maximum =		7634340.0	72341.3	13.1	212.1	16.3	10.2	10.8	172.5	13.4
Minimum =		7550358.0	65599.1	3.9	188.1	9.8	9.1	3.2	148.8	8.1
Possible Values =		27	27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27	27
Total =		2.049E+08	1874396.6	211.2	5391.9	349.3	258.1	172.3	4399.7	284.6

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

Site Name: UNIT3
Data Averaging Type: 1m

Time of Report: 03/21/12 15:28
Rolling Average Interval: 1

Date	Time	STMRPT_3 (KLB/HR)	CO2_3 (PERCENTD)
03/21/12	14:44	188.9	10.4
	14:45	187.9	10.5
	14:46	185.8	10.3
	14:47	188.1	10.2
	14:48	189.9	10.8
	14:49	188.6	11.0
	14:50	189.1	10.6
	14:51	189.2	10.7
	14:52	187.6	10.7
	14:53	184.2	10.3
	14:54	184.3	10.0
	14:55	186.6	10.3
	14:56	187.8	10.6
	14:57	188.3	10.5
	14:58	189.0	10.5
	14:59	189.8	10.8
	15:00	187.4	10.8
	15:01	189.1	10.5
	15:02	190.4	10.8
	15:03	189.4	10.7
	15:04	186.2	10.4
	15:05	186.5	10.0
	15:06	189.4	10.4
	15:07	189.7	11.0
	15:08	187.5	10.7
	15:09	187.0	10.4
	15:10	188.3	10.5
Average =		188.0	10.5
Geometric Avg. =		188.0	10.5
Maximum =		190.4	11.0
Minimum =		184.2	10.0
Possible Values =		27	27
Included Values =		27	27
Total =		5076.0	284.4

* - excluded values (missing, OOC, invalid, suspect)
< - missing
T - out-of-control
I - invalid
S - suspect
H - exceedance
F - stack not operating
B - invalid (PADER)
U - missing data substituted
-999 - missing value
-888 - value could not be calculated

REFERENCE METHOD DATA

H

I herby certify that all pages contained within this Appendix have been reviewed and, to the best of my abillty, verified as accurate.

QA/QC Initials: MC

Date: 4/27/12

CleanAir

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Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

Date: March 22, 2012
Start Time 6:02
Stop Time 6:31

CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
	O2	CO2	NOX	CO	SO2	
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Instrument Information						
Manufacturer:	Servomex	Servomex	Thermo	Thermo	Wstrn Rsrch	
Model:	1440C	1440B	42i-LS	48i	921L UV	
Detection:	Paramagn.	NDIR	Chemilumi.	GFC/NDIR	Photo.	
Asset or Serial No:	207361	207364	205174	204433	204654	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Response Time (seconds)						
	90	90	90	90	90	
Manufacturer Certified Cylinder Value (C_V)						
Zero	0.000	0.000	0.000	0.000	0.000	
Low	6.000	5.990	225.000	23.500	45.200	
Mid				48.600		
High	14.000	13.900	448.000	96.300	90.800	
Actual gas to be used for bias checks						
	14.000	5.990	225.000	48.600	45.200	
Cylinder ID						
Zero	alm028189	alm028189	alm028189	alm028189	alm028189	
Low	alm036149	almx067937	alm048873	alm042811	alm048873	
Mid				alm023610		
High	almx067937	alm036149	alm012619	cc181272	alm012619	
Analyzer Calibration Response (C_{Dir})						
Zero	-0.001	-0.008	0.000	-0.001	-0.053	
Low	6.002	6.056	225.587		45.346	
Mid				49.326		
High	14.000	13.914	447.909	96.326	90.881	
Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)						
Zero	0.0%	-0.1%	0.0%	0.0%	-0.1%	
Low	0.0%	0.5%	0.1%	N/A	0.2%	
Mid	N/A	N/A	N/A	0.8%	N/A	
High	0.0%	0.1%	0.0%	0.0%	0.1%	
Calibration Error Status						
Zero	OK	OK	OK	OK	OK	
Low	OK	OK	OK	N/A	OK	
Mid	N/A	N/A	N/A	OK	N/A	
High	OK	OK	OK	OK	OK	

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06:08:51	0.011	0.001	0.000	-0.041	-0.114
06:09:06	-0.003	-0.002	-0.147	-0.008	-0.117
06:09:21	-0.001	-0.007	0.000	0.000	-0.086
06:09:36	-0.005	-0.034	0.000	-0.002	-0.109
06:09:51	0.000	0.003	0.000	0.000	-0.119
06:10:06	-0.002	0.003	0.000	0.000	-0.086
06:10:21	0.000	-0.019	0.000	0.000	-0.042
06:10:36	-0.001	-0.008	0.000	-0.002	-0.032
06:10:51	0.751	0.057	0.000	0.000	-0.021
06:11:06	11.536	4.531	0.000	-0.046	-0.109
06:11:21	13.827	5.929	0.000	-0.057	-0.115
06:11:36	13.961	6.024	0.000	-0.088	-0.111
06:11:51	13.994	6.032	0.000	-0.025	-0.075
06:12:06	14.001	6.032	0.000	0.005	-0.078
06:12:21	14.005	6.034	0.000	-0.028	-0.073
06:12:36	13.997	6.035	0.000	-0.073	-0.073

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

Date: March 22, 2012
Start Time 6:02
Stop Time 6:31

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:12:51	9.255	9.010	0.000	-0.070	0.003	
06:13:06	6.186	13.498	-0.033	-0.055	-0.042	
06:13:21	6.013	13.886	-0.692	-0.021	-0.044	
06:13:36	5.997	13.922	0.016	0.000	-0.096	
06:13:51	5.997	13.935	0.000	0.000	-0.116	
06:14:06	6.503	13.797	0.000	0.000	-0.107	
06:14:21	12.749	7.772	0.000	0.000	-0.528	
06:14:36	13.936	6.162	0.000	-0.052	-0.331	
06:14:51	14.002	6.058	0.000	-0.034	-0.186	
06:15:06	14.008	6.055	0.000	0.005	-0.155	
06:15:21	14.010	6.056	0.000	-0.044	-0.111	
06:15:36	12.534	5.653	-0.098	0.112	-0.077	
06:15:51	1.782	1.008	-0.057	7.642	-0.016	
06:16:06	0.086	0.095	-0.098	39.943	-0.072	
06:16:21	0.003	0.005	-0.065	72.332	-0.108	
06:16:36	-0.006	-0.003	-0.244	89.970	-0.122	
06:16:51	-0.003	0.006	0.000	95.276	-0.122	
06:17:06	-0.006	0.009	0.000	96.075	-0.147	
06:17:21	-0.006	-0.011	0.000	96.273	-0.169	
06:17:36	-0.008	-0.019	0.000	96.319	-0.185	
06:17:51	-0.010	-0.005	0.000	96.386	-0.151	
06:18:06	0.041	-0.006	0.000	96.383	-0.168	
06:18:21	0.290	0.190	0.000	94.237	-0.147	
06:18:36	0.004	0.011	0.000	80.786	-0.155	
06:18:51	-0.011	-0.021	0.000	63.961	-0.161	
06:19:06	-0.012	-0.028	0.000	52.879	-0.174	
06:19:21	-0.014	-0.018	0.000	49.827	-0.177	
06:19:36	-0.021	-0.006	0.000	49.413	-0.185	
06:19:51	-0.012	-0.023	0.000	49.317	-0.184	
06:20:06	-0.014	-0.017	0.000	49.375	-0.174	
06:20:21	-0.016	-0.017	0.000	49.284	-0.171	
06:20:36	0.060	0.029	0.000	49.260	0.075	
06:20:51	0.113	6.840	-0.138	46.948	5.740	
06:21:06	-0.015	9.641	140.814	33.097	41.312	
06:21:21	-0.024	9.846	327.366	16.762	75.617	
06:21:36	-0.026	9.848	404.233	5.933	85.853	
06:21:51	-0.024	9.848	432.552	1.394	88.379	
06:22:06	-0.025	9.847	443.606	0.003	89.231	
06:22:21	-0.025	9.847	448.604	-0.233	89.729	
06:22:36	-0.024	9.847	446.634	-0.244	90.382	
06:22:51	-0.025	9.847	447.522	-0.244	91.183	
06:23:06	-0.025	9.847	448.042	-0.254	91.525	
06:23:21	-0.025	9.847	447.936	-0.293	92.091	
06:23:36	-0.026	9.847	448.262	-0.291	90.973	
06:23:51	-0.024	9.847	448.205	-0.287	91.215	
06:24:06	-0.027	9.847	448.026	-0.285	91.350	
06:24:21	-0.026	9.847	447.855	-0.291	91.476	
06:24:36	-0.029	9.847	447.855	-0.290	90.826	
06:24:51	-0.027	9.847	447.855	-0.285	90.888	
06:25:06	-0.027	9.847	448.018	-0.283	90.929	
06:25:21	0.152	9.695	448.116	-0.293	87.367	
06:25:36	0.086	9.678	438.258	-0.212	50.042	
06:25:51	-0.029	9.850	341.799	-0.109	44.203	
06:26:06	-0.035	9.864	277.078	-0.098	44.392	
06:26:21	-0.037	9.866	242.906	-0.111	44.596	
06:26:36	-0.037	9.865	232.389	-0.156	44.855	
06:26:51	-0.037	9.867	228.229	-0.161	45.014	
06:27:06	-0.035	9.870	226.447	-0.161	45.104	
06:27:21	-0.035	9.872	225.885	-0.165	45.198	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

Date: March 22, 2012
Start Time 6:02
Stop Time 6:31

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:27:36	-0.033	9.876	225.674	-0.182	45.283	
06:27:51	-0.032	9.876	225.568	-0.177	45.363	
06:28:06	-0.033	9.874	225.519	-0.169	45.394	
06:28:21	0.384	8.454	225.511	-0.155	40.708	
06:28:36	0.980	1.177	216.850	-0.040	12.705	
06:28:51	0.989	0.111	130.972	-0.013	2.924	
06:29:06	0.989	0.025	79.968	-0.042	1.271	
06:29:21	0.990	-0.014	58.966	-0.098	0.889	
06:29:36	0.989	-0.008	54.099	-0.093	0.801	
06:29:51	0.997	-0.018	52.063	-0.071	0.747	
06:30:06	0.982	-0.010	51.534	-0.073	0.760	
06:30:21	0.996	0.000	51.290	-0.054	0.757	
06:30:36	0.990	-0.012	51.062	-0.027	0.759	
06:30:51	0.992	-0.010	50.834	-0.055	0.759	
06:31:06	0.986	-0.011	50.948	-0.068	0.754	
06:31:21	0.987	-0.006	51.176	-0.073	0.724	
06:31:36	0.991	-0.011	51.290	-0.073	0.744	
06:31:51	0.969	-0.005	51.241	-0.067	0.723	

NOX Conversion Efficiency
NO2 Cylinder Value = 49.200
Average Response = 50.986
Conversion Efficiency = 103.6%

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 6:35
Stop Time 6:46

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.004	0.019	0.027	-0.031	-0.027	
C_{uf} Upscale gas	13.845	5.931	223.516	49.222	43.615	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oca} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mca} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.2%	0.0%	0.0%	0.0%	
Upscale gas	-1.1%	-0.9%	-0.5%	-0.1%	-1.9%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	N/A	N/A	N/A	N/A	N/A	
C_{ui} Upscale gas	N/A	N/A	N/A	N/A	N/A	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	N/A	N/A	N/A	N/A	N/A	
Upscale gas	N/A	N/A	N/A	N/A	N/A	
Drift Assessment Status						
Zero gas	N/A	N/A	N/A	N/A	N/A	
Upscale gas	N/A	N/A	N/A	N/A	N/A	

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06:35:55	8.539	10.377	159.121	5.913	9.086
06:36:10	9.036	10.220	156.955	5.472	8.189
06:36:25	6.968	3.448	145.108	8.962	6.890
06:36:39	0.610	0.440	112.373	28.495	5.175
06:36:54	0.108	0.127	51.998	59.435	3.362
06:37:09	0.048	0.077	20.073	84.384	1.976
06:37:25	1.006	0.701	8.148	93.356	1.169
06:37:40	4.227	4.776	14.855	89.662	0.589
06:37:55	11.431	4.764	50.672	73.366	0.707
06:38:10	13.687	5.821	30.769	43.419	1.150
06:38:24	13.818	5.896	13.504	19.399	1.159
06:38:39	13.842	5.916	4.697	4.376	0.876
06:38:54	13.846	5.923	2.491	0.970	0.694
06:39:10	13.847	5.953	1.042	0.322	0.508
06:39:25	13.852	5.956	0.651	0.267	0.401
06:39:40	13.854	5.958	0.415	0.180	0.231
06:39:55	13.787	5.953	0.139	0.082	0.288
06:40:09	5.335	2.908	0.138	1.498	0.007
06:40:24	0.407	0.343	0.366	12.645	-0.003
06:40:39	0.054	0.079	0.228	32.807	-0.070
06:40:55	0.066	0.077	0.179	44.083	-0.039
06:41:10	0.028	0.021	-0.114	48.611	0.006
06:41:25	0.042	0.025	0.220	49.099	-0.070
06:41:40	0.008	0.028	0.113	49.186	-0.070
06:41:54	-0.025	0.005	0.049	49.175	-0.036
06:42:09	0.026	0.031	0.244	49.236	-0.041
06:42:24	0.011	0.022	-0.212	49.255	-0.003
06:42:40	0.005	0.018	-0.334	49.236	-0.046
06:42:55	-0.034	-0.002	-0.065	49.156	-0.049
06:43:10	0.021	0.032	-0.374	49.224	-0.036
06:43:25	0.012	6.040	7.858	47.610	0.513
06:43:39	-0.015	9.363	48.832	33.280	16.816
06:43:54	-0.011	9.640	153.203	15.910	34.344

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 6:35
Stop Time 6:46

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:44:09	-0.010	9.681	199.251	4.228	39.805	
06:44:25	0.000	9.702	213.993	0.902	41.385	
06:44:40	0.000	9.720	220.301	0.087	42.183	
06:44:55	0.000	9.727	222.182	-0.056	42.672	
06:45:10	-0.001	9.737	223.007	-0.012	43.025	
06:45:24	-0.002	9.743	223.158	-0.003	43.300	
06:45:39	-0.002	9.747	223.508	-0.058	43.489	
06:45:54	-0.004	9.748	223.524	-0.011	43.630	
06:46:09	-0.004	9.752	223.516	-0.024	43.726	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 6:48
Stop time 7:15

REFERENCE METHOD RUN 1

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.004	0.019	0.027	-0.031	-0.027	
C_{ui}	Initial upscale	13.845	5.931	223.516	49.222	43.615	
C_{of}	Final zero	0.000	0.027	0.252	-0.035	-0.055	
C_{uf}	Final upscale	13.837	6.005	223.557	49.189	43.871	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.467	10.550	163.340	5.630	11.151	
C_{Gas}	**Bias adjusted**	**8.563**	**10.607**	**164.371**	**5.590**	**11.554**	

Clock Time (at end of sample period)

041612_111549

06:49	8.357	10.613	170.098	4.013	11.780
06:50	8.561	10.405	169.544	3.858	10.929
06:51	8.660	10.348	170.102	4.808	9.441
06:52	8.584	10.428	162.458	4.899	8.733
06:53	8.465	10.515	162.481	5.004	10.901
06:54	8.657	10.381	164.227	5.048	13.287
06:55	8.545	10.461	160.452	4.580	11.789
06:56	8.515	10.525	159.459	5.148	10.857
06:57	8.705	10.356	165.026	6.304	10.577
06:58	8.492	10.543	165.448	6.976	14.328
06:59	8.362	10.632	166.620	6.242	16.211
07:00	8.548	10.482	162.800	6.363	13.993
07:01	8.576	10.465	162.108	6.313	15.688
07:02	8.576	10.462	164.035	6.624	12.227
07:03	8.454	10.578	160.226	6.482	8.905
07:04	8.358	10.685	163.285	6.168	9.361
07:05	8.752	10.327	160.362	6.601	10.617
07:06	8.323	10.699	158.510	6.905	10.873
07:07	7.696	11.295	164.626	7.267	13.105
07:08	8.674	10.364	166.760	5.474	11.739
07:09	8.592	10.414	160.228	5.606	10.414
07:10	7.785	11.216	165.659	6.183	11.920
07:11	8.456	10.571	166.597	5.393	11.865
07:12	8.614	10.424	162.265	4.928	8.385
07:13	8.716	10.292	155.544	4.591	7.718
07:14	8.397	10.586	160.112	5.202	7.767
07:15	8.190	10.782	161.138	5.030	7.681

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 7:16
Stop Time 7:26

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.000	0.027	0.252	-0.035	-0.055	
C_{uf} Upscale gas	13.837	6.005	223.557	49.189	43.871	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mce} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.3%	0.1%	0.0%	0.0%	
Upscale gas	-1.2%	-0.4%	-0.5%	-0.1%	-1.6%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.004	0.019	0.027	-0.031	-0.027	
C_{ui} Upscale gas	13.845	5.931	223.516	49.222	43.615	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.0%	0.1%	0.1%	0.0%	0.0%	
Upscale gas	-0.1%	0.5%	0.0%	0.0%	0.3%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

011612_111549

07:16:56	12.927	6.607	156.264	4.208	8.900
07:17:11	13.729	6.074	87.220	2.406	5.889
07:17:26	11.108	5.804	40.187	1.143	2.878
07:17:41	13.391	6.007	17.574	2.085	2.051
07:17:56	13.795	6.007	14.611	2.152	1.937
07:18:11	13.824	6.007	7.733	1.177	1.516
07:18:26	13.830	6.006	3.809	0.278	0.972
07:18:41	13.834	6.006	2.458	0.117	0.737
07:18:56	13.836	6.005	1.669	0.130	0.576
07:19:11	13.842	6.005	1.180	0.148	0.425
07:19:26	12.952	5.846	0.847	0.095	0.282
07:19:41	2.766	1.790	0.667	2.946	0.122
07:19:56	0.237	0.270	0.659	17.592	-0.026
07:20:11	0.057	0.141	0.700	36.247	0.086
07:20:26	0.048	0.108	0.733	45.481	0.098
07:20:41	0.024	0.072	0.057	48.733	0.057
07:20:56	0.012	0.062	0.285	49.060	0.007
07:21:11	0.006	0.039	0.855	49.058	0.043
07:21:26	0.008	0.067	0.529	49.104	0.057
07:21:41	0.017	0.059	0.163	49.112	0.088
07:21:56	0.003	0.043	0.505	49.141	0.010
07:22:11	-0.016	0.029	0.415	49.132	0.016
07:22:26	-0.006	0.028	0.293	49.192	-0.077
07:22:41	-0.002	0.022	0.293	49.182	0.042
07:22:56	0.007	0.031	0.171	49.193	-0.132
07:23:11	0.009	1.235	-0.139	49.133	-0.017
07:23:26	0.000	8.293	29.923	43.694	7.556
07:23:41	-0.006	9.569	93.277	26.216	30.139
07:23:56	-0.006	9.681	177.900	10.312	38.981
07:24:11	-0.007	9.713	207.505	2.591	41.462
07:24:26	-0.010	9.731	217.461	0.383	42.362
07:24:41	-0.010	9.741	221.335	0.019	42.903
07:24:56	-0.012	9.754	222.483	-0.005	43.166

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 7:16
Stop Time 7:26

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
07:25:11	-0.012	9.756	222.914	-0.018	43.490	
07:25:26	-0.012	9.758	223.459	0.000	43.619	
07:25:41	-0.012	9.768	223.475	-0.018	43.733	
07:25:56	-0.012	9.777	223.516	-0.015	43.813	
07:26:11	-0.012	9.770	223.622	-0.044	43.850	
07:26:26	-0.012	9.774	223.533	-0.047	43.950	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 7:32
Stop time 7:59

REFERENCE METHOD RUN 2

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.000	0.027	0.252	-0.035	-0.055	
C_{ui}	Initial upscale	13.837	6.005	223.557	49.189	43.871	
C_{of}	Final zero	-0.003	0.039	0.065	-0.035	-0.025	
C_{uf}	Final upscale	13.848	6.015	223.329	49.174	44.211	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.602	10.225	157.470	4.971	11.091	
C_{Gas}	**Bias adjusted**	**8.701**	**10.214**	**158.520**	**4.943**	**11.414**	

Clock Time (at end of sample period)

041612*111549

07:33	8.164	10.613	151.927	3.513	11.682	
07:34	8.556	10.261	151.017	3.112	9.308	
07:35	8.394	10.378	150.446	3.653	8.530	
07:36	8.675	10.110	152.367	3.540	8.913	
07:37	8.146	10.594	154.044	3.876	10.661	
07:38	8.644	10.147	151.526	3.039	11.501	
07:39	8.235	10.509	151.013	3.296	12.002	
07:40	8.733	10.118	152.051	3.901	12.784	
07:41	8.514	10.286	151.262	4.147	12.167	
07:42	8.953	9.936	155.739	4.012	12.365	
07:43	8.631	10.169	155.492	4.120	11.880	
07:44	8.822	10.022	154.699	5.169	10.815	
07:45	8.923	9.980	151.394	7.293	9.878	
07:46	8.793	10.055	149.619	6.258	10.103	
07:47	8.474	10.230	151.929	6.805	11.131	
07:48	8.666	10.194	156.838	5.992	12.279	
07:49	9.138	9.826	153.918	6.281	11.039	
07:50	8.717	10.141	152.943	6.722	10.493	
07:51	7.713	11.046	160.971	6.542	13.896	
07:52	8.753	10.134	162.100	5.281	14.163	
07:53	8.784	10.058	162.249	5.388	11.619	
07:54	8.974	9.912	164.473	4.837	10.159	
07:55	8.755	10.108	167.428	6.004	10.656	
07:56	8.476	10.378	167.847	6.104	11.551	
07:57	8.606	10.231	170.153	5.618	10.956	
07:58	8.769	10.063	174.247	4.906	9.798	
07:59	8.251	10.566	174.005	4.809	9.139	

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CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 8:00
Stop Time 8:11

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	-0.003	0.039	0.065	-0.035	-0.025	
C_{uf} Upscale gas	13.848	6.015	223.329	49.174	44.211	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oca} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mca} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.3%	0.0%	0.0%	0.0%	
Upscale gas	-1.1%	-0.3%	-0.5%	-0.2%	-1.3%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.000	0.027	0.252	-0.035	-0.055	
C_{ui} Upscale gas	13.837	6.005	223.557	49.189	43.871	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.0%	0.1%	0.0%	0.0%	0.0%	
Upscale gas	0.1%	0.1%	-0.1%	0.0%	0.4%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

08:00:45	8.778	10.139	159.479	4.873	8.515
08:01:00	8.778	10.130	168.751	5.283	8.780
08:01:15	8.754	10.214	171.282	5.644	8.773
08:01:30	11.928	7.842	173.521	5.535	7.985
08:01:45	13.634	6.191	131.746	3.971	5.706
08:02:00	13.806	6.048	58.559	1.817	3.202
08:02:15	13.825	6.028	26.097	0.547	1.771
08:02:30	13.833	6.020	11.022	0.112	1.026
08:02:45	13.842	6.020	5.397	0.143	0.682
08:03:00	13.849	6.013	2.825	0.081	0.469
08:03:15	13.852	6.011	2.076	0.091	0.314
08:03:30	13.258	5.916	1.310	0.104	0.223
08:03:45	3.132	1.954	1.351	2.561	-0.002
08:04:00	0.243	0.283	0.895	17.255	-0.012
08:04:15	0.055	0.146	1.026	34.735	0.096
08:04:30	0.035	0.114	0.724	45.524	0.103
08:04:45	0.012	0.097	0.643	48.633	0.137
08:05:00	0.017	0.068	0.814	49.068	0.016
08:05:15	0.004	0.058	0.285	49.078	0.098
08:05:30	0.001	0.069	0.513	49.091	0.024
08:05:45	-0.011	0.062	0.562	49.084	-0.039
08:06:00	-0.049	0.064	0.652	49.093	0.050
08:06:15	-0.009	0.036	0.505	49.195	0.067
08:06:30	-0.020	0.031	0.619	49.200	0.043
08:06:45	0.000	0.041	0.138	49.180	0.018
08:07:00	-0.001	0.043	-0.025	49.159	-0.013
08:07:15	-0.008	0.032	0.081	49.182	-0.081
08:07:30	-0.009	0.020	0.342	49.182	0.056
08:07:45	0.009	0.658	0.073	49.089	0.082
08:08:00	-0.006	7.787	21.083	44.658	6.118
08:08:15	-0.006	9.560	93.293	28.677	28.755
08:08:30	-0.010	9.698	169.052	11.564	38.722
08:08:45	-0.011	9.728	204.509	3.380	41.333

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CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 8:00
Stop Time 8:11

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
08:09:00	-0.012	9.746	217.346	0.467	42.357	
08:09:15	-0.011	9.760	220.725	-0.010	42.906	
08:09:30	-0.012	9.761	222.613	-0.002	43.185	
08:09:45	-0.012	9.762	223.109	-0.026	43.549	
08:10:00	-0.012	9.780	223.305	-0.002	43.726	
08:10:15	-0.012	9.781	223.125	-0.021	43.777	
08:10:30	-0.012	9.793	223.337	-0.029	43.896	
08:10:45	-0.012	9.777	223.362	-0.058	44.023	
08:11:00	-0.012	9.787	223.207	-0.029	44.122	
08:11:15	-0.012	9.783	223.305	-0.039	44.184	
08:11:30	-0.012	9.800	223.475	-0.036	44.327	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 8:14
Stop time 8:41

REFERENCE METHOD RUN 3

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	-0.003	0.039	0.065	-0.035	-0.025	
C_{ui}	Initial upscale	13.848	6.015	223.329	49.174	44.211	
C_{of}	Final zero	-0.001	0.040	0.266	-0.024	0.053	
C_{uf}	Final upscale	13.830	6.037	223.324	49.175	43.840	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.469	10.457	170.900	6.847	10.767	
C_{Gas}	**Bias adjusted**	**8.569**	**10.424**	**172.141**	**6.793**	**11.043**	

Clock Time (at end of sample period)

041612 111549

08:15	8.665	10.309	171.263	8.258	30.600
08:16	8.944	10.051	168.187	8.626	27.716
08:17	8.927	10.082	167.546	9.104	28.147
08:18	8.484	10.465	168.818	10.062	30.077
08:19	8.085	10.832	173.968	10.311	28.380
08:20	8.529	10.399	169.556	7.704	19.555
08:21	8.196	10.683	170.696	7.347	13.943
08:22	8.236	10.681	177.662	7.285	10.324
08:23	8.438	10.485	173.631	7.380	8.068
08:24	8.314	10.592	170.775	7.788	7.188
08:25	8.298	10.598	171.133	6.647	6.487
08:26	8.600	10.348	168.002	6.505	5.832
08:27	8.655	10.290	166.923	6.553	5.308
08:28	8.605	10.318	166.941	6.466	5.362
08:29	8.415	10.504	170.938	6.155	5.112
08:30	8.509	10.432	174.644	5.705	5.267
08:31	8.630	10.294	174.670	5.583	5.018
08:32	8.576	10.351	178.667	6.350	5.146
08:33	8.640	10.283	177.918	6.155	5.038
08:34	8.461	10.443	172.737	6.346	4.940
08:35	8.269	10.629	164.843	6.206	5.054
08:36	8.171	10.718	167.363	5.999	5.020
08:37	8.531	10.375	167.735	4.880	4.763
08:38	8.166	10.737	166.783	5.746	4.684
08:39	8.742	10.223	169.575	5.361	4.715
08:40	8.466	10.439	169.304	4.620	4.503
08:41	8.123	10.775	174.015	5.737	4.453

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 8:43
Stop Time 8:51

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	-0.001	0.040	0.266	-0.024	0.053	
C_{uf} Upscale gas	13.830	6.037	223.324	49.175	43.840	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mce} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.3%	0.1%	0.0%	0.1%	
Upscale gas	-1.2%	-0.1%	-0.5%	-0.2%	-1.7%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	-0.003	0.039	0.065	-0.035	-0.025	
C_{ui} Upscale gas	13.848	6.015	223.329	49.174	44.211	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.0%	0.0%	0.0%	0.0%	0.1%	
Upscale gas	-0.1%	0.2%	0.0%	0.0%	-0.4%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

08:43:05	13.448	6.322	146.219	3.917	6.891
08:43:20	13.790	6.059	77.046	1.754	4.023
08:43:35	13.822	6.049	34.335	0.492	2.038
08:43:50	13.831	6.037	13.935	0.010	1.180
08:44:05	13.837	6.026	6.488	0.126	0.775
08:44:20	13.844	6.026	3.321	0.158	0.594
08:44:35	13.353	5.963	2.125	0.127	0.454
08:44:50	3.334	2.096	1.318	2.519	0.171
08:45:05	0.254	0.298	1.156	16.409	0.109
08:45:20	0.060	0.149	1.180	34.769	0.213
08:45:35	0.021	0.117	0.814	44.915	0.203
08:45:50	0.026	0.102	1.058	48.609	0.197
08:46:05	0.021	0.075	0.521	49.074	0.104
08:46:20	0.003	0.058	0.814	49.078	0.186
08:46:35	0.005	0.062	0.627	49.074	0.094
08:46:50	0.007	0.051	0.513	49.081	0.104
08:47:05	-0.005	0.073	0.611	49.123	0.155
08:47:20	-0.006	0.040	0.603	49.081	0.093
08:47:35	0.001	0.040	0.472	49.162	0.096
08:47:50	-0.005	0.026	0.269	49.187	0.034
08:48:05	-0.002	0.030	0.464	49.180	0.049
08:48:20	-0.004	0.047	0.171	49.164	0.055
08:48:35	0.002	0.044	0.162	49.180	0.055
08:48:50	0.009	4.599	0.268	48.002	1.664
08:49:05	-0.006	9.309	53.121	36.432	22.457
08:49:20	-0.011	9.674	146.553	17.895	37.120
08:49:35	-0.016	9.724	193.634	6.095	41.050
08:49:50	-0.012	9.750	213.219	1.193	42.225
08:50:05	-0.012	9.757	219.218	0.124	42.838
08:50:20	-0.012	9.770	222.271	-0.067	43.279
08:50:35	-0.012	9.773	223.069	-0.016	43.601
08:50:50	-0.012	9.772	223.264	0.000	43.800
08:51:05	-0.013	9.777	223.353	-0.033	43.867

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 8:43
Stop Time 8:51

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
08:51:20	-0.015	9.786	223.353	-0.041	43.855	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 8:53
Stop time 9:20

REFERENCE METHOD RUN 4

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	-0.001	0.040	0.266	-0.024	0.053	
C_{ui}	Initial upscale	13.830	6.037	223.324	49.175	43.840	
C_{of}	Final zero	0.006	0.029	0.230	-0.037	0.111	
C_{uf}	Final upscale	13.846	6.025	223.202	49.130	44.099	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.917	10.050	160.700	5.229	4.831	
C_{Gas}	**Bias adjusted**	**9.021**	**10.004**	**161.881**	**5.197**	**4.891**	

Clock Time (at end of sample period)

041612 1115:19

08:54	8.908	10.064	163.164	6.128	5.953
08:55	8.485	10.470	162.456	6.323	5.512
08:56	8.813	10.169	158.527	4.345	5.311
08:57	9.100	9.936	151.622	4.082	4.852
08:58	9.354	9.759	146.657	4.953	4.599
08:59	8.933	10.095	146.203	5.809	4.603
09:00	8.667	10.318	151.591	5.504	4.888
09:01	9.211	9.854	151.007	4.566	4.965
09:02	9.339	9.767	152.843	4.304	4.723
09:03	9.054	9.986	150.906	4.941	4.523
09:04	8.991	10.032	155.350	5.676	4.547
09:05	9.176	9.891	161.551	5.540	4.617
09:06	9.322	9.748	162.709	4.937	4.237
09:07	8.898	10.065	164.709	5.394	3.935
09:08	8.347	10.571	170.250	5.901	4.322
09:09	8.650	10.287	172.814	5.103	4.606
09:10	8.910	9.997	174.035	4.556	4.151
09:11	8.640	10.276	171.848	4.797	4.087
09:12	9.180	9.829	172.987	4.774	3.996
09:13	8.949	9.982	169.056	4.698	4.109
09:14	8.536	10.324	171.428	5.168	4.690
09:15	8.721	10.140	167.566	5.231	5.057
09:16	8.911	9.969	161.681	4.865	5.114
09:17	8.885	9.973	156.386	5.553	5.258
09:18	8.785	10.050	155.041	6.095	5.767
09:19	8.833	10.009	157.481	5.886	6.022
09:20	9.169	9.777	159.041	6.042	6.006

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 9:21
Stop Time 9:30

CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.006	0.029	0.230	-0.037	0.111	
C_{uf} Upscale gas	13.846	6.025	223.202	49.130	44.099	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{ocs} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mcs} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ms} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.3%	0.1%	0.0%	0.2%	
Upscale gas	-1.1%	-0.2%	-0.5%	-0.2%	-1.4%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	-0.001	0.040	0.266	-0.024	0.053	
C_{ui} Upscale gas	13.830	6.037	223.324	49.175	43.840	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.1%	-0.1%	0.0%	0.0%	0.1%	
Upscale gas	0.1%	-0.1%	0.0%	0.0%	0.3%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

09:21:23	13.760	6.127	118.934	3.902	3.803
09:21:38	13.826	6.053	44.778	1.474	2.283
09:21:53	13.837	6.041	20.252	0.413	1.340
09:22:08	13.842	6.027	8.156	0.096	0.860
09:22:23	13.847	6.026	4.200	0.091	0.658
09:22:38	13.850	6.023	2.312	0.113	0.544
09:22:53	13.855	6.019	1.693	0.105	0.417
09:23:08	10.078	4.925	0.814	0.345	0.321
09:23:23	1.039	0.796	0.977	6.072	0.093
09:23:38	0.129	0.191	1.750	25.799	0.091
09:23:53	0.048	0.128	0.790	39.692	0.228
09:24:08	0.038	0.110	0.838	47.521	0.270
09:24:23	0.013	0.095	0.676	48.916	0.202
09:24:38	0.018	0.069	0.399	49.091	0.220
09:24:53	0.013	0.066	0.554	49.087	0.200
09:25:08	-0.003	0.056	0.391	49.096	0.155
09:25:23	0.012	0.066	0.383	49.135	0.111
09:25:38	-0.001	0.055	0.619	49.104	0.078
09:25:53	0.003	0.049	0.480	49.092	0.103
09:26:08	0.006	0.025	0.260	49.092	0.065
09:26:23	0.004	0.038	0.276	49.156	0.135
09:26:38	0.008	0.024	0.154	49.143	0.134
09:26:53	-0.005	0.037	-0.057	49.141	0.173
09:27:08	-0.005	0.026	0.244	49.167	0.124
09:27:23	-0.002	1.638	0.138	49.166	0.134
09:27:38	-0.006	8.577	18.917	41.952	10.704
09:27:53	-0.011	9.620	112.658	25.641	32.934
09:28:08	-0.012	9.720	178.885	8.786	40.168
09:28:23	-0.013	9.749	208.156	2.549	42.081
09:28:38	-0.012	9.762	218.014	0.298	42.899
09:28:53	-0.016	9.779	220.977	-0.072	43.302
09:29:08	-0.043	9.780	222.360	-0.026	43.609
09:29:23	-0.047	9.777	222.735	-0.026	43.798

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 9:21
Stop Time 9:30

CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
09:29:38	-0.039	9.778	223.069	-0.060	43.904	
09:29:53	-0.012	9.799	223.248	-0.047	44.015	
09:30:08	-0.014	9.809	223.093	-0.033	44.109	
09:30:23	-0.015	9.807	223.264	-0.031	44.174	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 9:32
Stop time 9:59

REFERENCE METHOD RUN 5

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.006	0.029	0.230	-0.037	0.111	
C_{ui}	Initial upscale	13.846	6.025	223.202	49.130	44.099	
C_{of}	Final zero	0.000	0.055	0.461	-0.038	0.085	
C_{uf}	Final upscale	13.850	6.035	223.158	49.127	44.250	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.245	9.703	160.980	5.506	4.915	
C_{Gas}	**Bias adjusted**	**9.345**	**9.664**	**162.196**	**5.480**	**4.940**	

Clock Time (at end of sample period)						
041612 111549						
	09:33	8.848	9.971	170.061	4.501	7.293
	09:34	8.718	10.079	175.653	4.708	6.059
	09:35	9.057	9.831	173.407	4.620	5.488
	09:36	9.045	9.825	172.955	4.497	5.289
	09:37	8.533	10.246	176.984	4.646	5.493
	09:38	9.170	9.750	176.573	4.884	5.425
	09:39	9.275	9.679	172.304	4.500	5.190
	09:40	9.351	9.631	165.090	4.697	5.482
	09:41	9.094	9.838	162.987	5.152	5.754
	09:42	9.304	9.709	160.081	5.783	6.000
	09:43	9.637	9.429	161.294	5.557	5.608
	09:44	9.214	9.710	159.098	5.972	4.999
	09:45	8.982	9.901	159.741	6.304	4.662
	09:46	9.402	9.555	156.394	5.495	4.474
	09:47	9.271	9.621	151.693	4.805	4.179
	09:48	8.983	9.824	156.123	4.513	4.157
	09:49	9.285	9.629	160.440	4.669	4.159
	09:50	9.675	9.350	151.475	5.087	3.960
	09:51	9.617	9.406	149.746	5.866	4.048
	09:52	9.734	9.321	150.124	6.601	4.106
	09:53	9.819	9.271	142.745	6.865	4.034
	09:54	9.651	9.400	139.674	7.451	4.110
	09:55	9.156	9.798	149.815	7.232	4.495
	09:56	9.441	9.588	158.081	6.091	4.621
	09:57	9.010	9.940	160.916	5.812	4.501
	09:58	8.828	10.114	165.079	6.724	4.601
	09:59	9.505	9.559	167.926	5.643	4.531

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 10:00
Stop Time 10:09

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.000	0.055	0.461	-0.038	0.085	
C_{uf} Upscale gas	13.850	6.035	223.158	49.127	44.250	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mce} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.5%	0.1%	0.0%	0.2%	
Upscale gas	-1.1%	-0.2%	-0.5%	-0.2%	-1.2%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{ol} Zero gas	0.006	0.029	0.230	-0.037	0.111	
C_{ul} Upscale gas	13.846	6.025	223.202	49.130	44.099	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.0%	0.2%	0.1%	0.0%	0.0%	
Upscale gas	0.0%	0.1%	0.0%	0.0%	0.2%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

10:00:06	8.879	10.021	170.794	4.851	4.404
10:00:21	8.996	9.992	169.735	4.970	4.540
10:00:36	8.707	9.176	168.124	4.983	4.654
10:00:51	13.122	6.530	158.429	4.124	6.098
10:01:06	13.783	6.081	103.264	2.126	4.860
10:01:21	13.832	6.053	37.509	0.692	2.515
10:01:36	13.845	6.047	16.329	0.215	1.451
10:01:51	13.850	6.032	6.960	0.113	0.908
10:02:06	13.856	6.026	3.769	0.067	0.707
10:02:21	13.496	5.989	2.271	0.090	0.547
10:02:36	3.652	2.257	1.327	2.243	0.244
10:02:51	0.272	0.309	1.237	15.503	0.151
10:03:06	0.065	0.151	1.221	34.136	0.242
10:03:21	0.031	0.116	1.001	44.904	0.267
10:03:36	0.021	0.099	0.773	48.495	0.215
10:03:51	0.020	0.077	0.464	49.109	0.220
10:04:06	-0.008	0.052	0.057	49.109	0.220
10:04:21	0.007	0.048	0.399	49.109	0.285
10:04:36	-0.005	0.067	0.155	49.107	0.218
10:04:51	-0.001	0.070	0.595	49.106	0.109
10:05:06	0.002	0.058	0.481	49.109	0.080
10:05:21	0.006	0.048	0.595	49.132	0.119
10:05:36	-0.008	0.058	0.309	49.140	0.057
10:05:51	0.016	2.885	0.268	49.034	0.252
10:06:06	-0.008	9.027	43.695	39.941	14.676
10:06:21	-0.007	9.665	116.907	22.242	34.760
10:06:36	-0.009	9.737	185.959	8.005	40.619
10:06:51	-0.019	9.767	209.508	1.874	42.211
10:07:06	-0.019	9.774	218.071	0.226	42.943
10:07:21	-0.011	9.783	221.229	-0.029	43.377
10:07:36	-0.012	9.808	222.303	-0.018	43.658
10:07:51	-0.012	9.803	222.874	0.000	43.757
10:08:06	-0.012	9.814	222.857	-0.008	43.842

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 10:00
Stop Time 10:09

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
10:08:21	-0.012	9.828	222.735	-0.041	43.977	
10:08:36	-0.015	9.824	223.142	-0.037	44.129	
10:08:51	-0.016	9.829	223.264	-0.037	44.269	
10:09:06	-0.016	9.824	223.069	-0.041	44.353	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 10:12
Stop time 10:39

REFERENCE METHOD RUN 6

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.000	0.055	0.461	-0.038	0.085	
C_{ui}	Initial upscale	13.850	6.035	223.158	49.127	44.250	
C_{of}	Final zero	0.011	0.061	0.437	-0.025	0.248	
C_{uf}	Final upscale	13.857	6.028	222.803	49.137	43.993	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.709	10.151	161.630	5.516	7.409	
C_{Gas}	**Bias adjusted**	**8.799**	**10.121**	**162.968**	**5.484**	**7.447**	

Clock Time (at end of sample period)

041612 111549						
	10:13	8.491	10.333	154.225	6.532	5.856
	10:14	7.942	10.866	154.611	7.747	6.769
	10:15	8.363	10.452	154.847	6.495	8.220
	10:16	9.419	9.562	151.998	5.017	7.552
	10:17	9.350	9.587	152.737	5.099	6.607
	10:18	8.829	10.006	162.393	6.143	7.409
	10:19	8.839	9.978	163.789	5.881	9.296
	10:20	9.390	9.561	158.793	4.591	9.289
	10:21	9.105	9.774	157.552	4.937	8.141
	10:22	8.889	9.938	160.228	5.232	7.750
	10:23	8.479	10.269	161.632	5.793	8.125
	10:24	8.734	10.071	158.832	4.391	8.244
	10:25	8.962	9.928	158.995	4.831	7.226
	10:26	8.608	10.199	163.089	5.107	6.231
	10:27	8.320	10.491	163.907	4.770	7.055
	10:28	8.972	9.961	167.670	4.852	7.783
	10:29	8.702	10.149	165.338	4.644	7.017
	10:30	7.662	11.086	167.118	4.605	7.062
	10:31	8.061	10.751	166.595	4.314	7.530
	10:32	8.597	10.205	163.738	3.501	6.856
	10:33	8.128	10.649	163.405	4.490	6.464
	10:34	8.379	10.464	166.473	5.147	7.024
	10:35	8.901	10.012	167.890	5.840	7.126
	10:36	8.753	10.126	167.234	6.101	7.028
	10:37	8.647	10.232	167.733	6.637	7.664
	10:38	9.274	9.749	163.195	7.921	7.633
	10:39	9.343	9.688	159.982	8.302	7.081

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 10:40
Stop Time 10:49

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.011	0.061	0.437	-0.025	0.248	
C_{uf} Upscale gas	13.857	6.028	222.803	49.137	43.993	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mce} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.5%	0.1%	0.0%	0.3%	
Upscale gas	-1.0%	-0.2%	-0.6%	-0.2%	-1.5%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.000	0.055	0.461	-0.038	0.085	
C_{ui} Upscale gas	13.850	6.035	223.158	49.127	44.250	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.1%	0.0%	0.0%	0.0%	0.2%	
Upscale gas	0.0%	0.0%	-0.1%	0.0%	-0.3%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612-111549

10:40:40	13.421	6.549	143.110	7.757	6.071
10:40:55	13.806	6.084	78.974	4.555	3.775
10:41:10	13.836	6.056	35.002	1.535	2.063
10:41:25	13.845	6.049	14.685	0.350	1.247
10:41:40	13.849	6.032	5.723	0.114	0.791
10:41:55	13.854	6.028	3.232	0.126	0.615
10:42:10	13.856	6.028	2.035	0.149	0.479
10:42:25	13.860	6.028	1.270	0.129	0.415
10:42:40	7.264	3.841	1.286	0.596	0.270
10:42:55	0.552	0.488	1.188	9.867	0.122
10:43:10	0.094	0.175	1.245	28.616	0.213
10:43:25	0.031	0.128	0.904	41.975	0.268
10:43:40	0.007	0.108	0.749	47.941	0.244
10:43:55	0.022	0.086	0.651	49.045	0.268
10:44:10	0.016	0.065	0.741	49.109	0.242
10:44:25	0.017	0.047	0.301	49.109	0.213
10:44:40	0.013	0.068	0.619	49.125	0.244
10:44:55	0.004	0.067	0.391	49.177	0.288
10:45:10	0.002	0.049	0.285	49.169	0.176
10:45:25	-0.003	0.033	0.065	49.146	0.181
10:45:40	0.001	0.028	0.171	49.109	0.161
10:45:55	-0.005	0.040	0.382	49.197	0.189
10:46:10	-0.011	0.039	0.285	49.201	0.129
10:46:25	-0.009	0.041	0.154	49.123	0.080
10:46:40	-0.004	4.523	7.261	48.143	0.840
10:46:55	-0.010	9.309	37.590	37.128	19.090
10:47:10	-0.012	9.684	139.153	18.592	36.120
10:47:25	-0.012	9.740	193.732	6.496	40.835
10:47:40	-0.012	9.760	212.902	1.366	42.281
10:47:55	-0.015	9.779	218.991	0.171	42.904
10:48:10	-0.041	9.776	221.335	-0.065	43.235
10:48:25	-0.013	9.809	222.336	0.000	43.560
10:48:40	-0.017	9.810	222.532	0.000	43.725

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 10:40
Stop Time 10:49

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
10:48:55	-0.016	9.802	222.459	-0.005	43.819	
10:49:10	-0.014	9.820	223.036	-0.032	44.029	
10:49:25	-0.016	9.816	222.914	-0.037	44.132	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 10:51
Stop time 11:18

REFERENCE METHOD RUN 7

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.011	0.061	0.437	-0.025	0.248	
C_{ui}	Initial upscale	13.857	6.028	222.803	49.137	43.993	
C_{of}	Final zero	-0.005	0.060	0.385	-0.026	0.332	
C_{uf}	Final upscale	13.840	6.032	222.746	49.195	44.277	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.601	10.321	173.905	5.701	4.996	
C_{Gas}	**Bias adjusted**	**8.694**	**10.296**	**175.551**	**5.658**	**4.851**	

Clock Time (at end of sample period)

041612 111549						
	10:52	8.003	10.811	184.963	4.633	5.855
	10:53	8.459	10.389	187.816	5.017	4.156
	10:54	8.538	10.341	189.782	5.831	3.780
	10:55	7.759	10.981	194.760	5.333	4.089
	10:56	8.469	10.378	193.915	4.016	4.997
	10:57	8.606	10.247	185.499	3.835	5.421
	10:58	8.761	10.131	179.672	4.197	6.727
	10:59	8.527	10.333	176.573	5.016	7.478
	11:00	8.527	10.353	175.804	5.309	8.346
	11:01	8.814	10.112	170.073	5.514	7.372
	11:02	9.106	9.889	170.030	6.471	6.782
	11:03	8.753	10.224	170.820	6.390	5.924
	11:04	8.646	10.339	169.123	5.912	5.796
	11:05	8.609	10.353	169.886	4.900	5.486
	11:06	8.484	10.481	175.586	4.762	4.983
	11:07	8.637	10.326	176.136	5.077	4.601
	11:08	8.636	10.323	173.993	4.649	4.462
	11:09	9.056	9.967	166.449	4.256	4.082
	11:10	9.238	9.831	160.468	5.019	3.820
	11:11	8.695	10.250	161.502	5.716	3.949
	11:12	8.464	10.464	166.258	5.882	4.055
	11:13	8.610	10.305	172.745	5.545	4.061
	11:14	8.711	10.207	171.488	5.586	3.927
	11:15	8.506	10.415	164.284	6.321	3.654
	11:16	8.686	10.265	163.349	6.296	3.543
	11:17	8.681	10.261	161.632	6.678	3.667
	11:18	8.256	10.685	162.833	15.772	3.882

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 11:19
Stop Time 11:29

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	-0.005	0.060	0.385	-0.026	0.332	
C_{uf} Upscale gas	13.840	6.032	222.746	49.195	44.277	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oco} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mco} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.5%	0.1%	0.0%	0.4%	
Upscale gas	-1.1%	-0.2%	-0.6%	-0.1%	-1.2%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.011	0.061	0.437	-0.025	0.248	
C_{ui} Upscale gas	13.857	6.028	222.803	49.137	43.993	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	0.0%	0.0%	0.0%	0.1%	
Upscale gas	-0.1%	0.0%	0.0%	0.1%	0.3%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

11:19:03	6.420	9.962	164.127	8.928	3.987
11:19:18	0.681	9.847	167.953	6.178	13.745
11:19:33	0.044	9.846	191.835	3.465	31.959
11:19:48	0.005	9.830	209.222	0.970	38.862
11:20:03	-0.003	9.849	217.786	0.138	41.161
11:20:18	0.000	9.849	221.474	-0.042	42.216
11:20:33	1.842	9.597	222.450	-0.049	42.628
11:20:48	11.929	6.843	206.675	-0.046	33.109
11:21:03	13.679	6.131	153.073	-0.018	13.906
11:21:18	13.798	6.049	54.001	-0.020	5.841
11:21:33	13.820	6.050	23.663	0.003	3.189
11:21:48	13.831	6.046	9.801	0.105	2.126
11:22:03	13.829	6.034	4.420	0.093	1.560
11:22:18	13.844	6.034	2.320	0.126	1.255
11:22:33	13.846	6.027	1.652	0.105	0.982
11:22:48	9.380	4.681	0.936	0.459	0.847
11:23:03	0.873	0.709	1.099	6.802	0.640
11:23:18	0.111	0.188	0.496	26.940	0.643
11:23:33	0.033	0.136	0.676	40.337	0.588
11:23:48	0.023	0.115	0.627	47.701	0.513
11:24:03	0.017	0.099	0.318	49.026	0.433
11:24:18	0.010	0.078	-0.057	49.133	0.392
11:24:33	0.004	0.068	0.464	49.133	0.356
11:24:48	0.002	0.068	0.033	49.133	0.317
11:25:03	0.004	0.062	0.374	49.133	0.377
11:25:18	-0.020	0.066	0.390	49.190	0.298
11:25:33	0.006	0.067	0.382	49.206	0.356
11:25:48	-0.002	0.046	0.382	49.190	0.342
11:26:03	0.003	1.342	0.268	49.192	0.309
11:26:18	-0.002	8.413	17.981	42.815	10.001
11:26:33	-0.008	9.607	106.903	26.846	32.086
11:26:48	-0.010	9.718	174.733	9.490	39.699
11:27:03	-0.012	9.750	206.740	2.869	41.809

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 11:19
Stop Time 11:29

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
11:27:18	-0.012	9.759	217.184	0.324	42.732	
11:27:33	-0.012	9.769	220.407	0.021	43.152	
11:27:48	-0.012	9.782	221.994	0.000	43.497	
11:28:03	-0.012	9.785	222.662	0.000	43.718	
11:28:18	-0.013	9.800	222.320	0.000	43.915	
11:28:33	-0.013	9.794	222.776	-0.024	44.177	
11:28:48	-0.015	9.792	222.686	-0.039	44.285	
11:29:03	-0.018	9.808	222.776	-0.015	44.370	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 11:33
Stop time 12:00

REFERENCE METHOD RUN 8

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	-0.005	0.060	0.385	-0.026	0.332	
C_{ui}	Initial upscale	13.840	6.032	222.746	49.195	44.277	
C_{of}	Final zero	-0.017	0.032	0.233	-0.003	0.248	
C_{uf}	Final upscale	13.833	6.034	222.434	49.187	43.892	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.990	10.049	161.229	7.909	2.300	
C_{Gas}	**Bias adjusted**	**9.100**	**10.008**	**162.888**	**7.826**	**2.074**	

Clock Time (at end of sample period)					
041612_111549					
11:34	9.033	9.976	165.629	5.700	2.418
11:35	8.924	10.074	165.309	6.809	2.301
11:36	9.133	9.898	164.015	6.017	2.299
11:37	9.342	9.744	161.034	5.927	2.254
11:38	9.084	9.834	161.394	7.189	2.208
11:39	9.150	9.907	161.359	9.594	2.293
11:40	9.499	9.635	162.354	8.579	2.277
11:41	9.736	9.436	159.093	7.824	2.247
11:42	9.516	9.610	153.999	10.054	2.239
11:43	9.329	9.769	155.045	11.078	2.300
11:44	8.817	10.153	161.199	9.728	2.371
11:45	8.919	10.067	163.059	9.051	2.439
11:46	9.103	9.907	158.054	7.478	2.268
11:47	9.268	9.774	152.935	7.014	2.122
11:48	9.260	9.836	148.689	8.408	2.030
11:49	9.381	9.753	147.607	10.706	2.256
11:50	9.170	9.895	149.455	10.272	2.281
11:51	8.787	10.236	156.018	9.231	2.392
11:52	7.889	11.031	164.574	9.252	2.464
11:53	8.467	10.510	168.030	8.192	2.455
11:54	8.471	10.462	173.044	5.474	2.309
11:55	8.077	10.863	173.274	5.365	2.286
11:56	8.188	10.817	170.722	6.326	2.348
11:57	8.847	10.210	167.406	6.519	2.410
11:58	9.251	9.871	160.376	7.402	2.283
11:59	9.146	9.941	163.496	7.268	2.261
12:00	8.942	10.106	166.013	7.079	2.278

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 12:01
Stop Time 12:11

CALIBRATION BIAS 08

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	-0.017	0.032	0.233	-0.003	0.248	
C_{uf}	Upscale gas	13.833	6.034	222.434	49.187	43.892	
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mce}	Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)							
		14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	-0.1%	0.3%	0.1%	0.0%	0.3%	
	Upscale gas	-1.2%	-0.2%	-0.7%	-0.1%	-1.6%	
System Bias Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	-0.005	0.060	0.385	-0.026	0.332	
C_{ui}	Upscale gas	13.840	6.032	222.746	49.195	44.277	
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	-0.1%	-0.2%	0.0%	0.0%	-0.1%	
	Upscale gas	0.0%	0.0%	-0.1%	0.0%	-0.4%	
Drift Assessment Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	

041612 111549

12:01:22	8.622	10.135	173.130	4.950	11.083
12:01:37	8.596	10.360	161.628	5.286	6.507
12:01:52	8.573	10.352	163.883	5.902	4.042
12:02:07	8.455	10.472	163.916	6.009	2.952
12:02:22	8.409	10.526	163.126	6.028	2.455
12:02:37	8.458	10.525	162.588	6.214	2.289
12:02:52	11.518	8.361	161.490	6.060	1.996
12:03:07	13.602	6.293	113.464	4.335	1.700
12:03:22	13.808	6.059	64.566	2.232	1.633
12:03:37	13.826	6.046	23.541	0.697	1.252
12:03:52	13.834	6.032	10.867	0.158	0.822
12:04:07	13.839	6.024	5.120	0.150	0.669
12:04:22	10.179	4.976	2.743	0.169	0.487
12:04:37	1.087	0.835	1.497	6.483	0.205
12:04:52	0.134	0.206	1.172	22.861	0.270
12:05:07	0.022	0.144	0.586	39.655	0.225
12:05:22	0.026	0.119	0.692	46.763	0.293
12:05:37	0.012	0.106	0.407	48.993	0.156
12:05:52	0.018	0.098	0.562	49.092	0.269
12:06:07	0.012	0.080	0.057	49.097	0.272
12:06:22	0.003	0.077	0.855	49.104	0.251
12:06:37	0.001	0.058	0.627	49.117	0.255
12:06:52	-0.008	0.062	0.717	49.167	0.216
12:07:07	0.006	0.056	0.277	49.158	0.161
12:07:22	0.000	0.067	0.163	49.184	0.155
12:07:37	-0.013	0.068	0.496	49.145	0.252
12:07:52	-0.003	0.037	0.260	49.183	0.260
12:08:07	-0.026	0.028	0.163	49.193	0.219
12:08:22	-0.022	0.032	0.276	49.183	0.265
12:08:37	-0.034	0.044	-0.041	49.164	0.171
12:08:52	-0.015	0.048	0.073	49.206	0.236
12:09:07	0.036	4.865	0.497	47.883	1.032
12:09:22	-0.008	9.332	44.819	37.294	19.132

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 12:01
Stop Time 12:11

CALIBRATION BIAS 08

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
12:09:37	-0.012	9.666	151.005	17.744	35.253	
12:09:52	-0.012	9.723	193.781	6.349	39.971	
12:10:07	-0.012	9.743	212.479	1.290	41.534	
12:10:22	-0.012	9.760	218.738	0.189	42.255	
12:10:37	-0.014	9.764	221.384	-0.042	42.785	
12:10:52	-0.012	9.785	222.092	-0.008	43.102	
12:11:07	-0.012	9.786	222.303	-0.002	43.455	
12:11:22	-0.016	9.778	222.353	-0.002	43.705	
12:11:37	-0.018	9.773	222.467	0.000	43.854	
12:11:52	-0.018	9.775	222.483	-0.006	44.117	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 12:14
Stop time 12:41

REFERENCE METHOD RUN 9

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	-0.017	0.032	0.233	-0.003	0.248	
C_{ui}	Initial upscale	13.833	6.034	222.434	49.187	43.892	
C_{of}	Final zero	0.002	0.064	0.171	-0.033	0.278	
C_{uf}	Final upscale	13.831	6.020	222.436	49.175	44.244	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.050	10.027	165.389	7.907	3.076	
C_{Gas}	**Bias adjusted**	**9.162**	**9.998**	**167.243**	**7.828**	**2.903**	

Clock Time (at end of sample period)

041612_111549

12:15	8.402	10.499	162.672	6.084	3.887
12:16	8.630	10.301	165.313	6.095	3.452
12:17	8.889	10.088	168.673	6.038	3.083
12:18	8.698	10.282	168.028	5.245	2.988
12:19	9.036	10.028	167.706	5.410	3.016
12:20	9.211	9.884	169.060	5.305	3.054
12:21	9.080	10.001	168.537	5.943	3.082
12:22	8.449	10.578	169.412	6.621	3.287
12:23	9.057	10.078	168.968	7.219	3.597
12:24	9.424	9.758	166.384	7.277	3.236
12:25	8.760	10.278	163.350	6.854	3.176
12:26	8.872	10.206	166.097	7.417	3.281
12:27	9.459	9.725	167.621	7.798	3.088
12:28	9.218	9.905	163.482	7.389	2.953
12:29	8.968	10.119	163.541	8.567	3.083
12:30	9.369	9.799	163.287	8.699	3.142
12:31	9.695	9.532	159.469	8.376	3.155
12:32	9.338	9.806	159.518	8.206	3.136
12:33	9.210	9.905	166.302	9.190	3.153
12:34	9.540	9.639	166.060	9.109	3.021
12:35	9.601	9.564	160.757	9.015	2.794
12:36	9.589	9.585	162.643	9.531	2.682
12:37	9.624	9.556	161.239	9.791	2.728
12:38	9.098	9.972	161.791	11.121	2.784
12:39	8.500	10.463	166.276	11.627	2.890
12:40	8.316	10.599	168.883	9.993	2.842
12:41	8.303	10.593	170.429	9.564	2.473

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 12:42
Stop Time 12:50

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.002	0.064	0.171	-0.033	0.278	
C_{uf} Upscale gas	13.831	6.020	222.436	49.175	44.244	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mco} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.5%	0.0%	0.0%	0.4%	
Upscale gas	-1.2%	-0.3%	-0.7%	-0.2%	-1.2%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	-0.017	0.032	0.233	-0.003	0.248	
C_{ui} Upscale gas	13.833	6.034	222.434	49.187	43.892	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.1%	0.2%	0.0%	0.0%	0.0%	
Upscale gas	0.0%	-0.1%	0.0%	0.0%	0.4%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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12:42:11	12.825	6.754	162.076	8.191	4.120
12:42:26	13.732	6.091	108.938	4.498	4.261
12:42:41	13.805	6.053	41.311	1.595	2.499
12:42:56	13.819	6.036	17.917	0.394	1.473
12:43:11	13.823	6.030	7.872	0.117	0.996
12:43:26	13.827	6.020	3.940	0.020	0.770
12:43:41	13.833	6.020	2.361	0.126	0.651
12:43:56	13.834	6.019	1.555	0.085	0.534
12:44:11	8.776	4.422	0.586	0.288	0.404
12:44:26	0.768	0.629	1.237	8.630	0.234
12:44:41	0.108	0.180	1.734	26.517	0.249
12:44:56	0.057	0.132	1.107	41.312	0.353
12:45:11	0.008	0.110	0.814	47.561	0.371
12:45:26	0.019	0.100	0.505	49.039	0.371
12:45:41	0.022	0.082	0.733	49.136	0.387
12:45:56	0.012	0.068	0.708	49.148	0.364
12:46:11	-0.008	0.073	0.122	49.169	0.278
12:46:26	0.005	0.062	0.358	49.177	0.255
12:46:41	0.007	0.056	0.033	49.180	0.299
12:46:56	0.013	0.058	-0.139	49.206	0.293
12:47:11	-0.011	0.044	0.374	49.206	0.270
12:47:26	0.011	1.669	-0.196	48.908	0.293
12:47:41	-0.012	8.578	27.220	42.754	10.735
12:47:56	-0.006	9.607	109.695	24.959	32.103
12:48:11	-0.015	9.708	176.199	9.867	39.605
12:48:26	-0.010	9.738	206.423	2.530	41.732
12:48:41	-0.012	9.752	216.891	0.380	42.538
12:48:56	-0.012	9.764	220.138	0.011	43.036
12:49:11	-0.012	9.762	221.587	-0.034	43.394
12:49:26	-0.012	9.770	221.929	-0.024	43.634
12:49:41	-0.012	9.785	222.295	-0.002	43.834
12:49:56	-0.012	9.786	222.532	-0.031	43.940
12:50:11	-0.012	9.780	222.295	0.000	44.041

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 12:42
Stop Time 12:50

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
12:50:26	-0.012	9.784	222.393	-0.008	44.142	
12:50:41	-0.012	9.802	222.393	-0.041	44.239	
12:50:56	-0.014	9.790	222.524	-0.049	44.352	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 12:53
Stop time 13:20

REFERENCE METHOD RUN 10

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.002	0.064	0.171	-0.033	0.278	
C_{ui}	Initial upscale	13.831	6.020	222.436	49.175	44.244	
C_{of}	Final zero	0.010	0.068	0.478	-0.033	0.541	
C_{uf}	Final upscale	13.799	6.037	222.222	49.155	43.795	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	8.786	10.135	164.927	7.957	2.842	
C_{Gas}	**Bias adjusted**	**8.901**	**10.116**	**166.824**	**7.892**	**2.521**	

Clock Time (at end of sample period)

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12:54	8.487	10.391	168.329	6.964	3.880
12:55	8.257	10.539	174.591	7.257	2.994
12:56	8.598	10.314	181.091	7.892	2.646
12:57	8.089	10.757	182.147	8.316	2.762
12:58	7.676	11.135	187.175	9.169	3.016
12:59	8.656	10.211	174.500	7.035	2.919
13:00	8.577	10.271	164.090	6.661	2.548
13:01	8.507	10.368	166.135	7.837	2.564
13:02	8.402	10.491	168.087	8.841	2.744
13:03	8.712	10.232	168.924	8.754	2.589
13:04	9.089	9.895	168.232	8.298	2.455
13:05	8.803	10.125	167.839	9.698	2.375
13:06	8.540	10.356	167.318	8.498	2.309
13:07	8.908	10.037	160.454	8.115	2.371
13:08	9.132	9.874	153.685	8.969	2.695
13:09	8.682	10.237	154.387	10.294	2.949
13:10	8.710	10.226	163.565	9.315	3.208
13:11	9.113	9.899	164.347	7.586	3.396
13:12	9.221	9.794	156.431	7.978	3.026
13:13	8.920	9.983	153.441	7.328	2.872
13:14	8.613	10.245	156.475	7.362	2.962
13:15	9.074	9.828	154.971	6.970	3.016
13:16	9.161	9.718	152.393	7.949	2.902
13:17	8.950	9.926	159.082	7.692	2.952
13:18	8.920	9.987	167.147	6.891	3.115
13:19	9.445	9.602	165.657	7.178	3.006
13:20	9.979	9.194	152.546	5.983	2.453

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 13:21
Stop Time 13:30

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.010	0.068	0.478	-0.033	0.541	
C_{uf} Upscale gas	13.799	6.037	222.222	49.155	43.795	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oca} Zero gas	-0.001	-0.008	0.000	-0.001	-0.053	
C_{mca} Upscale gas	14.000	6.056	225.587	49.326	45.346	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.5%	0.1%	0.0%	0.7%	
Upscale gas	-1.4%	-0.1%	-0.8%	-0.2%	-1.7%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{ol} Zero gas	0.002	0.064	0.171	-0.033	0.278	
C_{ul} Upscale gas	13.831	6.020	222.436	49.175	44.244	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.1%	0.0%	0.1%	0.0%	0.3%	
Upscale gas	-0.2%	0.1%	0.0%	0.0%	-0.5%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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13:21:20	6.925	9.163	139.894	5.237	2.116
13:21:35	1.094	9.567	144.583	4.573	12.106
13:21:50	0.079	9.755	177.419	2.888	30.315
13:22:05	0.009	9.784	201.042	0.988	37.756
13:22:20	0.004	9.797	214.913	0.158	40.410
13:22:35	-0.013	9.811	219.650	0.000	41.604
13:22:50	0.000	9.804	221.693	-0.057	42.248
13:23:05	-0.002	9.813	222.524	-0.044	42.670
13:23:20	5.877	8.626	219.838	-0.042	41.584
13:23:35	13.131	6.342	201.547	-0.007	24.570
13:23:50	13.731	6.064	101.376	-0.002	9.936
13:24:05	13.785	6.049	41.482	-0.023	4.838
13:24:20	13.800	6.036	15.295	0.147	2.956
13:24:35	13.811	6.026	7.041	0.105	2.097
13:24:50	11.416	5.419	3.321	0.090	1.556
13:25:05	1.535	1.115	2.230	4.541	1.115
13:25:20	0.153	0.227	1.595	21.915	0.991
13:25:35	0.037	0.151	0.830	38.605	0.900
13:25:50	0.024	0.125	0.708	46.709	0.798
13:26:05	0.010	0.108	0.423	48.949	0.736
13:26:20	0.001	0.097	0.741	49.097	0.744
13:26:35	-0.003	0.078	0.261	49.102	0.655
13:26:50	0.017	0.059	0.367	49.140	0.586
13:27:05	0.007	0.074	0.350	49.185	0.545
13:27:20	0.006	0.071	0.717	49.141	0.491
13:27:35	-0.006	0.045	0.098	49.145	0.478
13:27:50	0.012	0.189	0.162	49.249	0.467
13:28:05	0.010	6.670	9.133	46.281	3.849
13:28:20	-0.006	9.481	54.823	31.770	26.312
13:28:35	-0.010	9.686	159.650	13.918	38.190
13:28:50	-0.011	9.725	199.789	4.475	41.399
13:29:05	-0.012	9.745	213.985	0.907	42.571
13:29:20	-0.012	9.754	219.471	0.083	43.036

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 1

March 22, 2012
Start Time 13:21
Stop Time 13:30

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
13:29:35	-0.012	9.754	221.197	-0.049	43.420	
13:29:50	-0.012	9.769	221.970	-0.018	43.642	
13:30:05	-0.012	9.779	222.222	-0.036	43.798	
13:30:20	-0.013	9.768	222.474	-0.044	43.946	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

Date: March 20, 2012
Start Time 6:11
Stop Time 6:43

CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
	O2	CO2	NOX	CO	SO2	
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Instrument Information						
Manufacturer:	Servomex	Servomex	Thermo	Thermo	Wstrn Rsrch	
Model:	1440C	1440B	42i-LS	48i	921L UV	
Detection:	Paramagn.	NDIR	Chemilumi.	GFC/NDIR	Photo.	
Asset or Serial No:	207361	207364	205174	204433	204654	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Response Time (seconds)						
	90	90	90	90	90	
Manufacturer Certified Cylinder Value (C_V)						
Zero	0.000	0.000	0.000	0.000	0.000	
Low	6.000	5.990	225.000	23.500	45.200	
Mid				48.600		
High	14.000	13.900	448.000	96.300	90.800	
Actual gas to be used for bias checks						
	14.000	5.990	225.000	48.600	45.200	
Cylinder ID						
Zero	alm028189	alm028189	alm028189	alm028189	alm028189	
Low	alm036149	almx067937	alm048873	alm042811	alm048873	
Mid				alm023610		
High	almx067937	alm036149	alm012619	cc181272	alm012619	
Analyzer Calibration Response (C_{Dir})						
Zero	0.011	-0.004	0.000	-0.049	-0.057	
Low	6.003	6.057	225.050		44.793	
Mid				49.237		
High	14.001	13.900	449.122	96.413	90.797	
Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)						
Zero	0.1%	0.0%	0.0%	-0.1%	-0.1%	
Low	0.0%	0.5%	0.0%	N/A	-0.4%	
Mid	N/A	N/A	N/A	0.7%	N/A	
High	0.0%	0.0%	0.3%	0.1%	0.0%	
Calibration Error Status						
Zero	OK	OK	OK	OK	OK	
Low	OK	OK	OK	N/A	OK	
Mid	N/A	N/A	N/A	OK	N/A	
High	OK	OK	OK	OK	OK	

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06:11:17	0.001	0.007	0.000	-0.068	-1.021
06:11:32	-0.007	0.002	0.000	-0.055	-1.048
06:11:47	0.019	0.011	0.000	-0.068	-0.908
06:12:02	-0.015	0.013	0.000	-0.055	-0.114
06:12:17	0.007	-0.008	0.000	0.000	-0.047
06:12:32	0.012	-0.010	0.000	-0.085	-0.050
06:12:47	0.012	0.006	0.000	-0.063	-0.073
06:13:02	2.018	0.284	0.000	-0.042	-0.072
06:13:17	12.349	4.760	0.000	-0.014	-0.081
06:13:32	13.875	5.944	0.000	-0.026	-0.054
06:13:47	13.968	6.023	0.000	-0.031	-0.041
06:14:02	13.974	6.032	0.000	0.023	-0.073
06:14:17	13.978	6.043	0.000	-0.033	-0.068
06:14:32	13.994	6.046	0.000	-0.047	-0.055
06:14:47	14.003	6.050	0.000	-0.055	-0.055
06:15:02	14.005	6.050	0.000	-0.015	-0.068

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

Date: March 20, 2012
Start Time 6:11
Stop Time 6:43

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:15:17	13.191	6.340	0.000	-0.034	-0.116	
06:15:32	7.180	12.089	0.000	-0.031	-0.191	
06:15:47	6.073	13.737	0.000	-0.034	-0.161	
06:16:02	6.006	13.860	0.000	0.029	-0.087	
06:16:17	6.005	13.861	0.000	-0.067	-0.072	
06:16:32	6.005	13.863	0.000	-0.031	-0.078	
06:16:47	6.005	13.892	0.000	-0.003	-0.100	
06:17:02	6.004	13.899	0.000	0.000	-0.093	
06:17:17	6.002	13.911	0.000	0.000	-0.100	
06:17:32	6.002	13.914	0.000	0.000	-0.100	
06:17:47	11.044	9.760	0.000	0.000	-0.391	
06:18:02	13.816	6.336	0.000	-0.026	-0.544	
06:18:17	13.985	6.097	0.000	-0.049	-0.234	
06:18:32	13.999	6.061	0.000	-0.023	-0.195	
06:18:47	14.000	6.045	0.000	-0.018	-0.163	
06:19:02	14.001	6.064	0.000	-0.015	-0.152	
06:19:17	14.005	6.052	0.000	0.007	-0.160	
06:19:32	13.793	6.037	0.000	-0.078	-0.161	
06:19:47	3.731	1.960	0.016	3.140	-0.259	
06:20:02	0.242	0.193	0.065	24.795	-0.259	
06:20:17	0.015	0.055	0.000	57.104	-0.199	
06:20:32	-0.003	0.023	0.000	80.668	-0.182	
06:20:47	0.002	0.033	0.000	92.007	-0.168	
06:21:02	-0.011	0.015	0.000	95.564	-0.155	
06:21:17	-0.010	0.031	0.000	96.153	-0.165	
06:21:32	-0.017	0.007	0.000	96.378	-0.195	
06:21:47	-0.014	-0.004	0.000	96.462	-0.171	
06:22:02	0.001	0.002	0.000	96.485	-0.179	
06:22:17	-0.005	0.019	0.000	96.464	-0.190	
06:22:32	-0.005	0.013	0.000	96.500	-0.208	
06:22:47	-0.008	0.000	-0.024	96.378	-0.213	
06:23:02	-0.022	-0.022	-0.171	96.327	-0.220	
06:23:17	-0.001	0.016	0.000	96.534	-0.173	
06:23:32	0.176	0.069	0.000	96.498	-0.185	
06:23:47	0.324	0.170	0.000	93.032	-0.192	
06:24:02	0.013	0.009	0.000	79.772	-0.177	
06:24:17	-0.021	0.013	0.000	62.961	-0.182	
06:24:32	-0.006	0.005	0.000	52.705	-0.173	
06:24:47	-0.065	0.010	-0.171	49.760	-0.197	
06:25:02	-0.070	-0.012	-0.228	49.236	-0.234	
06:25:17	-0.031	0.007	-0.081	49.237	-0.234	
06:25:32	-0.137	-0.034	-0.326	49.239	-0.290	
06:25:47	-0.049	-0.030	-0.122	49.234	-0.275	
06:26:02	0.226	5.435	6.349	48.016	3.220	
06:26:17	-0.043	9.551	33.740	36.023	29.394	
06:26:32	-0.028	9.820	194.229	19.105	68.396	
06:26:47	0.000	9.843	311.347	6.896	80.697	
06:27:02	-0.002	9.842	395.775	1.577	84.490	
06:27:17	-0.002	9.842	421.180	0.039	85.859	
06:27:32	-0.002	9.842	431.046	-0.208	86.562	
06:27:47	-0.002	9.841	434.896	-0.241	86.815	
06:28:02	-0.004	9.841	436.874	-0.244	87.173	
06:28:17	-0.005	9.842	437.990	-0.244	87.411	
06:28:32	-0.006	9.844	447.920	-0.264	87.521	
06:28:47	-0.005	9.846	448.311	-0.291	87.643	
06:29:02	-0.006	9.846	448.555	-0.290	88.760	
06:29:17	-0.006	9.847	448.604	-0.259	90.890	
06:29:32	-0.006	9.846	449.304	-0.290	91.227	
06:29:47	-0.006	9.848	450.069	-0.277	91.429	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

Date: March 20, 2012
Start Time 6:11
Stop Time 6:43

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:30:02	-0.006	9.849	450.729	-0.301	91.637	
06:30:17	-0.006	9.849	450.810	-0.264	91.785	
06:30:32	-0.006	9.849	451.209	-0.290	91.967	
06:30:47	-0.006	9.849	451.485	-0.287	92.109	
06:31:02	-0.006	9.848	451.453	-0.290	91.162	
06:31:17	-0.006	9.849	443.109	-0.282	90.816	
06:31:32	-0.006	9.851	448.311	-0.291	90.911	
06:31:47	-0.006	9.849	448.360	-0.287	91.039	
06:32:02	-0.006	9.849	448.450	-0.287	91.150	
06:32:17	-0.006	9.850	448.620	-0.283	91.238	
06:32:32	-0.006	9.854	448.563	-0.282	91.350	
06:32:47	-0.006	9.851	448.637	-0.296	91.370	
06:33:02	-0.006	9.853	448.905	-0.303	91.542	
06:33:17	-0.005	9.851	448.938	-0.307	91.713	
06:33:32	-0.006	9.849	449.149	-0.275	91.884	
06:33:47	-0.006	9.851	449.108	-0.287	91.326	
06:34:02	-0.007	9.850	448.873	-0.298	90.620	
06:34:17	-0.006	9.853	448.929	-0.317	90.748	
06:34:32	-0.010	9.851	449.255	-0.304	90.771	
06:34:47	-0.008	9.851	449.182	-0.293	90.873	
06:35:02	-0.007	9.852	449.174	-0.298	90.991	
06:35:17	-0.008	9.852	449.239	-0.295	91.010	
06:35:32	-0.008	9.854	449.060	-0.298	90.961	
06:35:47	-0.011	9.854	448.889	-0.304	90.953	
06:36:02	0.196	9.694	448.881	-0.283	88.267	
06:36:17	0.194	9.478	435.181	-0.223	44.101	
06:36:32	-0.002	9.836	298.299	-0.109	37.470	
06:36:47	-0.013	9.865	234.977	-0.076	41.863	
06:37:02	-0.012	9.871	224.868	-0.086	43.313	
06:37:17	-0.014	9.871	223.134	-0.130	43.915	
06:37:32	-0.016	9.872	223.321	-0.166	44.388	
06:37:47	-0.016	9.872	223.948	-0.161	44.531	
06:38:02	-0.016	9.874	224.640	-0.163	44.710	
06:38:17	-0.018	9.878	225.177	-0.165	44.793	
06:38:32	-0.017	9.878	225.332	-0.168	44.878	
06:38:47	-0.040	9.845	225.706	-0.169	44.900	
06:39:02	0.771	8.999	216.882	-0.165	43.215	
06:39:17	1.291	1.417	184.151	-0.076	16.505	
06:39:32	1.034	0.153	114.416	-0.027	3.497	
06:39:47	1.009	0.046	71.673	-0.076	1.268	
06:40:02	1.007	0.027	53.919	-0.122	0.837	
06:40:17	1.004	0.009	51.193	-0.112	0.746	
06:40:32	1.002	0.032	50.598	-0.073	0.713	
06:40:47	1.001	0.014	50.582	-0.081	0.659	
06:41:02	0.982	0.018	50.891	-0.073	0.659	
06:41:17	1.011	0.014	50.680	-0.073	0.621	
06:41:32	0.996	0.018	50.810	-0.073	0.627	
06:41:47	0.968	0.006	51.176	-0.102	0.586	
06:42:02	1.009	0.011	51.648	-0.083	0.589	
06:42:17	1.002	0.001	51.339	-0.062	0.583	
06:42:32	1.006	0.016	51.575	-0.053	0.586	
06:42:47	0.996	-0.078	50.859	-0.189	0.490	
06:43:02	0.933	-0.030	51.584	-0.296	0.388	

NOX Conversion Efficiency
NO2 Cylinder Value = 49.200
Average Response = 51.211
Conversion Efficiency = 104.1%

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 6:46
Stop Time 6:57
CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.066	0.066	-0.119	-0.049	-0.326	
C_{uf} Upscale gas	13.856	5.944	225.077	49.004	43.423	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ms} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.4%	0.5%	0.0%	0.0%	-0.3%	
Upscale gas	-1.0%	-0.8%	0.0%	-0.2%	-1.5%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	N/A	N/A	N/A	N/A	N/A	
C_{ui} Upscale gas	N/A	N/A	N/A	N/A	N/A	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	N/A	N/A	N/A	N/A	N/A	
Upscale gas	N/A	N/A	N/A	N/A	N/A	
Drift Assessment Status						
Zero gas	N/A	N/A	N/A	N/A	N/A	
Upscale gas	N/A	N/A	N/A	N/A	N/A	

041612\11549[illegible]					
06:46:38	0.050	0.037	0.497	0.034	-0.283
06:46:53	0.061	0.027	0.391	0.056	-0.301
06:47:08	0.056	0.031	0.049	-0.008	-0.317
06:47:23	2.410	0.668	0.505	0.034	-0.317
06:47:38	12.120	4.802	0.619	-0.029	-0.400
06:47:53	13.720	5.802	1.986	0.052	-0.374
06:48:08	13.817	5.862	1.555	0.109	-0.365
06:48:23	13.835	5.908	0.456	0.120	-0.322
06:48:38	13.843	5.935	0.342	0.167	-0.293
06:48:53	13.862	5.947	0.024	0.174	-0.304
06:49:08	13.862	5.950	-0.301	0.154	-0.293
06:49:23	13.868	5.961	0.130	0.133	-0.301
06:49:38	13.871	5.970	0.130	0.117	-0.329
06:49:53	10.658	5.040	-0.098	0.212	-0.330
06:50:08	1.388	0.962	0.244	6.333	-0.523
06:50:23	0.198	0.215	-0.212	22.178	-0.477
06:50:38	0.124	0.134	-0.122	39.002	-0.360
06:50:53	0.102	0.108	0.000	46.406	-0.347
06:51:08	0.087	0.088	-0.220	48.884	-0.327
06:51:23	0.064	0.053	-0.106	49.016	-0.327
06:51:38	0.045	0.058	-0.033	49.110	-0.325
06:51:53	0.036	0.048	-0.415	49.151	-0.327
06:52:08	0.046	0.044	-0.114	49.138	-0.306
06:52:23	0.033	0.028	-0.244	49.142	-0.361
06:52:38	0.061	1.553	1.148	48.904	-0.329
06:52:53	0.023	8.306	14.587	43.426	1.450
06:53:08	0.028	9.514	88.620	25.655	16.563
06:53:23	-0.003	9.618	176.890	10.932	29.511
06:53:38	0.015	9.676	205.658	2.877	35.210
06:53:53	0.021	9.698	217.216	0.414	38.097
06:54:08	0.031	9.713	221.758	0.083	39.813
06:54:23	0.030	9.723	223.427	-0.010	40.668
06:54:38	0.008	9.732	224.192	0.024	41.283

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 6:46
Stop Time 6:57

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:54:53	0.016	9.736	224.477	-0.016	41.600	
06:55:08	0.009	9.737	224.664	0.026	41.999	
06:55:23	0.009	9.754	224.802	-0.015	42.230	
06:55:38	-0.003	9.766	224.982	0.018	42.429	
06:55:53	0.019	9.767	225.031	-0.080	42.631	
06:56:08	0.007	9.769	225.031	-0.016	42.776	
06:56:23	0.002	9.765	225.031	-0.080	42.953	
06:56:38	0.013	9.767	225.031	-0.106	43.093	
06:56:53	0.008	9.768	225.031	-0.055	43.318	
06:57:08	-0.004	9.776	225.047	-0.070	43.450	
06:57:23	0.018	9.772	225.153	-0.022	43.502	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 7:08
Stop time 7:35

REFERENCE METHOD RUN 1

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
Calibration Checks							
C_{oi}	Initial zero	0.066	0.066	-0.119	-0.049	-0.326	
C_{ui}	Initial upscale	13.856	5.944	225.077	49.004	43.423	
C_{of}	Final zero	0.035	0.113	0.483	0.000	0.003	
C_{uf}	Final upscale	13.837	6.039	225.435	49.133	43.154	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.334	9.713	147.283	15.629	1.499	
C_{Gas}	**Bias adjusted**	**9.421**	**9.767**	**147.053**	**15.496**	**1.728**	

Clock Time (at end of sample period)

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07:09	9.423	9.591	146.604	9.354	1.810	
07:10	9.133	9.801	147.806	9.760	1.819	
07:11	8.723	10.140	144.634	15.743	1.778	
07:12	8.685	10.187	143.775	23.716	1.687	
07:13	9.403	9.625	145.657	15.990	1.720	
07:14	9.127	9.747	144.601	10.621	1.610	
07:15	9.365	9.648	145.330	8.713	1.644	
07:16	8.978	9.991	141.984	36.615	1.563	
07:17	9.072	9.889	137.198	30.761	1.612	
07:18	9.213	9.719	140.942	29.718	1.607	
07:19	8.996	9.963	141.836	13.430	1.696	
07:20	9.701	9.430	145.545	10.003	1.833	
07:21	9.435	9.654	150.423	9.774	1.760	
07:22	9.523	9.588	147.531	10.105	1.725	
07:23	9.675	9.466	145.283	10.679	1.876	
07:24	9.457	9.643	145.250	11.921	1.657	
07:25	9.109	9.903	147.267	12.320	1.626	
07:26	9.058	9.911	150.600	13.498	1.747	
07:27	9.430	9.630	149.862	14.311	1.934	
07:28	9.846	9.324	149.115	16.168	1.665	
07:29	9.398	9.699	154.961	16.626	0.849	
07:30	9.630	9.526	155.433	14.804	0.418	
07:31	9.480	9.653	156.891	13.923	0.265	
07:32	9.632	9.549	153.128	12.374	0.305	
07:33	9.606	9.588	150.222	16.200	0.833	
07:34	9.396	9.750	146.278	18.406	1.471	
07:35	9.520	9.642	148.496	16.442	1.971	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 7:37
Stop Time 7:51

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.035	0.113	0.483	0.000	0.003	
C_{uf} Upscale gas	13.837	6.039	225.435	49.133	43.154	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.2%	0.8%	0.1%	0.1%	0.1%	
Upscale gas	-1.2%	-0.1%	0.1%	-0.1%	-1.8%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.066	0.066	-0.119	-0.049	-0.326	
C_{ui} Upscale gas	13.856	5.944	225.077	49.004	43.423	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.2%	0.3%	0.1%	0.1%	0.4%	
Upscale gas	-0.1%	0.7%	0.1%	0.1%	-0.3%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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07:37:43	13.458	6.213	140.472	8.610	5.413
07:37:58	13.784	6.069	64.916	3.479	5.193
07:38:13	13.818	6.057	28.083	0.939	3.476
07:38:28	13.829	6.045	12.495	0.208	2.274
07:38:43	13.834	6.042	5.812	0.198	1.545
07:38:58	13.836	6.038	3.273	0.187	1.094
07:39:13	13.840	6.038	2.401	0.130	0.739
07:39:28	13.843	6.038	1.702	0.105	0.648
07:39:43	13.844	6.035	0.846	0.135	0.513
07:39:58	13.691	6.022	1.335	0.174	0.342
07:40:13	5.105	3.016	0.936	1.172	0.119
07:40:28	0.480	0.461	1.367	12.908	0.024
07:40:43	0.138	0.199	1.783	28.915	-0.002
07:40:58	0.087	0.166	1.091	42.092	0.047
07:41:13	0.054	0.143	0.350	47.300	0.046
07:41:28	0.039	0.129	0.529	48.983	0.044
07:41:43	0.042	0.121	0.505	49.133	0.027
07:41:58	0.026	0.112	0.537	49.133	0.001
07:42:13	0.039	0.105	0.407	49.133	-0.020
07:42:28	0.118	0.170	0.171	49.133	0.000
07:42:43	0.149	0.226	0.741	49.133	-0.023
07:42:58	0.090	0.150	1.986	49.061	0.000
07:43:13	0.136	0.193	1.612	49.035	-0.044
07:43:28	2.018	0.606	1.376	49.066	-0.049
07:43:43	11.733	4.643	1.563	46.205	-0.145
07:43:58	13.637	5.810	0.928	31.301	-0.135
07:44:13	13.787	5.929	0.342	16.249	-0.075
07:44:28	13.812	5.969	0.049	5.532	-0.065
07:44:43	13.824	5.969	0.016	1.555	-0.080
07:44:58	13.832	5.983	0.016	0.419	-0.072
07:45:13	13.836	5.993	-0.269	0.267	-0.067
07:45:28	13.842	5.995	-0.106	0.226	-0.073
07:45:43	13.846	6.003	-0.448	0.176	-0.059

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 7:37
Stop Time 7:51

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
07:45:58	13.846	6.009	-0.334	0.194	-0.082	
07:46:13	13.850	6.010	0.008	0.156	-0.134	
07:46:28	13.853	6.010	-0.334	0.176	-0.131	
07:46:43	13.854	6.011	-0.448	0.156	-0.111	
07:46:58	10.685	6.537	1.294	0.199	-0.056	
07:47:13	1.475	9.166	15.580	0.374	0.752	
07:47:28	0.186	9.680	87.587	0.490	12.840	
07:47:43	0.085	9.735	173.854	0.361	27.267	
07:47:58	0.039	9.756	203.232	0.043	34.168	
07:48:13	0.026	9.760	215.621	-0.060	37.332	
07:48:28	0.023	9.762	220.602	-0.039	39.041	
07:48:43	0.024	9.779	223.093	-0.018	40.146	
07:48:58	0.017	9.784	223.452	-0.013	40.856	
07:49:13	-0.016	9.752	224.591	-0.024	41.403	
07:49:28	0.004	9.790	225.007	-0.003	41.896	
07:49:43	0.003	9.786	225.153	0.000	42.191	
07:49:58	0.018	9.791	225.251	0.000	42.447	
07:50:13	0.000	9.802	225.275	-0.052	42.675	
07:50:28	-0.011	9.800	225.283	0.000	42.883	
07:50:43	0.003	9.800	225.364	0.000	43.070	
07:50:58	-0.003	9.806	225.527	0.000	43.106	
07:51:13	-0.004	9.811	225.413	0.000	43.287	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 7:53
Stop time 8:20

REFERENCE METHOD RUN 2

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{ol}	Initial zero	0.035	0.113	0.483	0.000	0.003	
C_{ul}	Initial upscale	13.837	6.039	225.435	49.133	43.154	
C_{of}	Final zero	0.023	0.055	-0.092	0.001	0.219	
C_{uf}	Final upscale	13.835	6.046	225.131	49.283	42.498	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.432	9.689	147.237	9.311	3.776	
C_{Gas}	**Bias adjusted**	**9.534**	**9.656**	**146.984**	**9.196**	**3.878**	

Clock Time (at end of sample period)

041612_111549

07:54	9.550	9.592	148.580	10.517	3.934	
07:55	9.313	9.803	148.942	11.155	4.545	
07:56	9.606	9.567	146.697	9.770	5.136	
07:57	9.409	9.701	151.813	9.536	5.252	
07:58	8.712	10.314	158.980	10.095	5.630	
07:59	9.174	9.950	151.367	9.890	5.499	
08:00	9.929	9.326	148.470	9.468	4.930	
08:01	10.057	9.228	145.295	9.833	3.954	
08:02	9.650	9.534	140.367	10.353	3.595	
08:03	9.086	9.892	143.276	9.751	3.783	
08:04	9.154	9.923	144.507	8.494	4.475	
08:05	9.837	9.409	148.264	7.283	4.438	
08:06	9.871	9.372	147.352	8.316	3.945	
08:07	9.281	9.742	147.023	8.853	3.539	
08:08	9.076	9.967	142.558	8.311	3.727	
08:09	9.122	9.925	143.582	8.310	3.673	
08:10	9.370	9.738	147.656	8.308	3.257	
08:11	9.308	9.796	153.223	9.287	3.165	
08:12	9.517	9.563	150.649	7.672	3.207	
08:13	9.009	10.003	150.678	9.874	3.177	
08:14	9.452	9.679	146.901	8.004	3.081	
08:15	9.764	9.443	144.760	8.969	2.630	
08:16	9.482	9.609	141.984	9.558	2.309	
08:17	9.347	9.743	143.099	10.009	2.366	
08:18	9.249	9.802	142.560	9.738	2.600	
08:19	9.687	9.469	146.188	9.708	3.007	
08:20	9.640	9.516	150.617	10.345	3.099	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 8:22
Stop Time 8:37

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.023	0.055	-0.092	0.001	0.219	
C_{uf} Upscale gas	13.835	6.046	225.131	49.283	42.498	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oca} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mca} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.4%	0.0%	0.1%	0.3%	
Upscale gas	-1.2%	-0.1%	0.0%	0.0%	-2.5%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.035	0.113	0.483	0.000	0.003	
C_{ui} Upscale gas	13.837	6.039	225.435	49.133	43.154	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	-0.4%	-0.1%	0.0%	0.2%	
Upscale gas	0.0%	0.0%	-0.1%	0.2%	-0.7%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612; 111549

08:22:54	13.661	6.285	97.981	7.031	2.615
08:23:09	13.818	6.076	53.301	3.758	2.085
08:23:24	13.811	6.033	20.928	1.573	1.465
08:23:39	13.844	6.057	8.995	0.472	0.970
08:23:54	13.849	6.047	4.681	0.207	0.630
08:24:09	13.852	6.043	2.654	0.154	0.475
08:24:24	13.856	6.053	1.644	0.021	0.330
08:24:39	13.121	5.936	1.034	0.102	0.293
08:24:54	3.708	2.491	1.018	1.960	0.067
08:25:09	1.068	0.972	4.770	15.350	-0.023
08:25:24	0.940	0.896	9.214	29.441	0.029
08:25:39	0.934	0.881	11.453	41.190	0.132
08:25:54	0.971	0.898	11.656	44.812	0.270
08:26:09	0.965	0.892	12.658	45.649	0.337
08:26:24	0.970	0.889	13.195	45.630	0.418
08:26:39	0.946	0.862	13.138	45.608	0.498
08:26:54	0.826	0.774	12.438	45.714	0.557
08:27:09	0.726	0.680	11.640	46.048	0.565
08:27:24	0.710	0.653	11.062	46.444	0.570
08:27:39	0.702	0.641	10.077	46.822	0.557
08:27:54	0.649	0.592	9.703	47.111	0.539
08:28:09	0.703	0.605	9.011	47.306	0.506
08:28:24	0.670	0.593	8.856	47.329	0.501
08:28:39	0.827	0.694	8.807	47.417	0.488
08:28:54	1.076	0.839	9.849	47.320	0.508
08:29:09	1.187	0.962	11.828	46.912	0.558
08:29:24	1.140	0.959	13.903	46.607	0.656
08:29:39	1.138	0.930	15.312	46.424	0.745
08:29:54	1.179	0.996	15.263	46.492	0.853
08:30:09	0.576	0.657	15.458	46.533	0.957
08:30:24	0.066	0.132	13.650	47.108	1.001
08:30:39	0.028	0.071	6.357	48.335	0.977
08:30:54	0.020	0.045	2.865	49.026	0.783

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 8:22
Stop Time 8:37

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
08:31:09	0.025	0.066	0.961	49.188	0.633	
08:31:24	0.013	0.059	0.407	49.263	0.456	
08:31:39	0.024	0.053	0.057	49.294	0.301	
08:31:54	0.027	0.058	0.016	49.258	0.231	
08:32:09	0.017	0.055	-0.350	49.298	0.125	
08:32:24	0.021	0.046	-0.106	49.251	0.046	
08:32:39	0.009	0.044	-0.334	49.208	-0.002	
08:32:54	0.016	0.036	-0.220	49.364	0.016	
08:33:09	0.016	3.574	-0.562	48.565	-0.026	
08:33:24	0.008	9.154	36.654	40.163	5.350	
08:33:39	0.006	9.652	134.961	19.850	24.422	
08:33:54	-0.011	9.715	189.157	7.844	34.613	
08:34:09	-0.008	9.734	212.576	1.592	38.448	
08:34:24	-0.063	9.715	220.228	0.223	40.046	
08:34:39	-0.020	9.758	223.223	-0.033	41.097	
08:34:54	-0.005	9.756	224.509	0.015	41.661	
08:35:09	-0.006	9.787	225.006	-0.011	42.178	
08:35:24	-0.005	9.777	225.145	0.005	42.519	
08:35:39	-0.013	9.797	225.242	0.010	42.797	
08:35:54	-0.045	9.766	225.356	-0.063	42.987	
08:36:09	-0.020	9.780	225.446	-0.075	43.194	
08:36:24	-0.020	9.786	225.470	-0.029	43.378	
08:36:39	-0.003	9.817	225.324	-0.020	43.530	
08:36:54	-0.009	9.811	225.332	-0.083	43.668	
08:37:09	-0.009	9.819	225.324	-0.021	43.684	
08:37:24	-0.009	9.824	225.421	-0.021	43.769	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 8:41
Stop time 9:05

REFERENCE METHOD RUN 3

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.023	0.055	-0.092	0.001	0.219	
C_{ui}	Initial upscale	13.835	6.046	225.131	49.283	42.498	
C_{of}	Final zero	0.023	0.064	-0.174	-0.026	-0.032	
C_{uf}	Final upscale	13.863	6.046	224.848	49.272	43.608	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.410	9.685	156.047	13.591	5.279	
C_{Gas}	**Bias adjusted**	**9.506**	**9.632**	**156.094**	**13.413**	**5.455**	

Clock Time (at end of sample period)

041612 111549

08:39	-0.011	9.829	225.157	-0.039	44.362
08:40	5.925	9.779	210.924	3.178	33.808
08:41	8.793	10.140	164.522	13.521	7.987
08:42	9.503	9.602	160.505	12.981	4.987
08:43	9.601	9.516	157.143	11.945	3.997
08:44	9.048	9.893	160.788	12.780	1.790
08:45	9.358	9.728	162.175	11.970	3.348
08:46	9.477	9.628	160.297	14.198	5.656
08:47	9.372	9.711	156.827	14.764	7.472
08:48	9.515	9.579	153.712	13.539	7.612
08:49	9.608	9.539	152.251	12.811	6.634
08:50	9.557	9.593	156.950	13.842	5.281
08:51	9.321	9.781	157.672	13.436	4.625
08:52	9.347	9.750	152.187	12.648	3.996
08:53	8.871	10.112	153.850	14.210	3.750
08:54	8.757	10.212	151.620	16.702	4.324
08:55	9.399	9.706	148.313	17.933	4.750
08:56	9.326	9.775	152.104	14.111	4.690
08:57	9.773	9.431	154.888	12.701	5.365
08:58	9.341	9.767	154.066	13.760	6.079
08:59	9.572	9.559	151.404	12.235	5.428
09:00	9.561	9.586	153.179	13.587	5.742
09:01	9.380	9.712	157.467	13.003	5.794
09:02	9.460	9.639	161.661	11.987	5.960
09:03	9.259	9.809	161.105	12.610	6.359
09:04	9.648	9.494	157.487	13.427	6.714
09:05	9.795	9.318	157.470	15.004	6.330

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 9:06
Stop Time 9:16

CALIBRATION BIAS 03

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.023	0.064	-0.174	-0.026	-0.032	
C_{uf}	Upscale gas	13.863	6.046	224.848	49.272	43.608	
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce}	Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)							
		14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.1%	0.5%	0.0%	0.0%	0.0%	
	Upscale gas	-1.0%	-0.1%	0.0%	0.0%	-1.3%	
System Bias Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	0.023	0.055	-0.092	0.001	0.219	
C_{ui}	Upscale gas	13.835	6.046	225.131	49.283	42.498	
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.0%	0.1%	0.0%	0.0%	-0.3%	
	Upscale gas	0.2%	0.0%	-0.1%	0.0%	1.2%	
Drift Assessment Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	

041612_111549

09:06:19	13.370	6.281	152.511	9.903	11.460
09:06:34	13.808	6.092	78.047	4.692	7.005
09:06:49	13.844	6.066	31.730	1.006	3.606
09:07:04	13.853	6.039	13.561	0.277	2.094
09:07:19	13.858	6.049	5.893	0.191	1.426
09:07:34	13.864	6.039	3.215	0.151	0.939
09:07:49	13.861	6.045	1.994	0.109	0.723
09:08:04	13.865	6.055	1.335	0.132	0.601
09:08:19	13.855	6.054	1.068	0.101	0.495
09:08:34	13.861	6.047	0.798	0.176	0.400
09:08:49	13.869	6.044	0.830	0.203	0.239
09:09:04	13.863	6.048	0.513	0.153	0.278
09:09:19	13.170	5.926	0.513	0.195	0.192
09:09:34	3.043	1.966	0.505	2.871	-0.005
09:09:49	0.278	0.305	0.749	18.590	-0.028
09:10:04	0.112	0.181	1.172	34.997	0.024
09:10:19	0.050	0.147	0.619	45.695	0.052
09:10:34	0.053	0.127	0.366	48.711	0.047
09:10:49	0.045	0.116	0.236	49.180	0.052
09:11:04	0.038	0.108	0.146	49.200	-0.052
09:11:19	0.042	0.102	0.252	49.250	0.008
09:11:34	0.038	0.095	-0.204	49.234	-0.012
09:11:49	0.016	0.076	0.114	49.260	-0.051
09:12:04	0.014	0.051	0.016	49.224	-0.043
09:12:19	0.030	0.080	-0.098	49.301	-0.007
09:12:34	0.025	0.062	-0.440	49.291	-0.046
09:12:49	0.012	5.277	0.863	47.840	0.130
09:13:04	0.007	9.381	46.699	37.429	12.591
09:13:19	0.001	9.690	154.457	17.192	30.579
09:13:34	-0.012	9.715	196.467	6.497	37.472
09:13:49	0.007	9.759	215.059	1.109	40.020
09:14:04	-0.030	9.754	220.928	0.171	41.159
09:14:19	0.007	9.785	223.093	-0.095	41.867

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 9:06
Stop Time 9:16

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
09:14:34	-0.009	9.785	224.095	-0.026	42.411	
09:14:49	0.006	9.786	224.542	-0.026	42.745	
09:15:04	-0.005	9.818	224.615	-0.086	42.947	
09:15:19	0.006	9.813	224.851	-0.010	43.153	
09:15:34	-0.005	9.823	224.859	-0.041	43.460	
09:15:49	0.006	9.829	224.851	-0.014	43.635	
09:16:04	0.001	9.825	224.835	-0.024	43.730	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 9:18
Stop time 9:45

REFERENCE METHOD RUN 4

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.023	0.064	-0.174	-0.026	-0.032	
C_{ui}	Initial upscale	13.863	6.046	224.848	49.272	43.608	
C_{of}	Final zero	-0.012	0.080	0.035	-0.029	-0.045	
C_{uf}	Final upscale	13.858	6.047	224.781	49.218	43.715	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.441	9.663	145.120	15.265	4.763	
C_{Gas}	**Bias adjusted**	**9.534**	**9.616**	**145.264**	**15.084**	**4.966**	

Clock Time (at end of sample period)

041612 111549						
	09:19	9.555	9.539	158.413	11.072	4.866
	09:20	9.494	9.620	163.295	11.313	3.580
	09:21	9.211	9.836	160.853	10.973	3.296
	09:22	9.339	9.758	161.321	11.294	3.623
	09:23	9.079	9.938	154.776	13.123	3.685
	09:24	9.641	9.517	149.052	12.982	3.666
	09:25	9.539	9.568	149.432	16.465	3.693
	09:26	9.759	9.424	148.612	17.604	3.822
	09:27	9.681	9.503	140.079	22.231	4.360
	09:28	9.426	9.652	137.200	19.895	4.876
	09:29	9.229	9.824	137.572	18.759	4.996
	09:30	9.309	9.778	137.473	18.714	5.400
	09:31	9.295	9.796	137.629	17.680	5.034
	09:32	9.233	9.822	140.659	15.392	5.162
	09:33	9.586	9.569	142.617	14.934	5.421
	09:34	9.412	9.679	141.449	13.873	5.272
	09:35	9.324	9.746	138.889	14.650	5.427
	09:36	9.514	9.603	139.239	14.628	5.464
	09:37	9.614	9.506	141.758	14.584	5.266
	09:38	9.480	9.641	142.442	13.613	5.597
	09:39	9.401	9.707	140.969	14.394	5.951
	09:40	9.537	9.595	140.617	16.697	5.619
	09:41	9.706	9.477	142.226	18.112	5.486
	09:42	9.091	9.915	143.879	18.364	5.125
	09:43	9.175	9.865	143.307	16.079	5.099
	09:44	9.396	9.706	142.872	12.518	4.583
	09:45	9.870	9.329	141.599	12.206	4.229

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 9:48
Stop Time 9:57

CALIBRATION BIAS 04

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	-0.012	0.080	0.035	-0.029	-0.045	
C_{uf}	Upscale gas	13.858	6.047	224.781	49.218	43.715	
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce}	Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)							
		14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	-0.2%	0.6%	0.0%	0.0%	0.0%	
	Upscale gas	-1.0%	-0.1%	-0.1%	0.0%	-1.2%	
System Bias Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	0.023	0.064	-0.174	-0.026	-0.032	
C_{ui}	Upscale gas	13.863	6.046	224.848	49.272	43.608	
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	-0.2%	0.1%	0.0%	0.0%	0.0%	
	Upscale gas	0.0%	0.0%	0.0%	-0.1%	0.1%	
Drift Assessment Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	

041612 11549

09:48:03	13.780	6.165	106.105	11.336	2.978
09:48:18	13.848	6.072	42.450	4.552	1.955
09:48:33	13.857	6.054	17.998	1.317	1.200
09:48:48	13.865	6.042	7.473	0.334	0.783
09:49:03	13.843	6.043	3.150	0.145	0.568
09:49:18	13.866	6.057	1.905	0.205	0.391
09:49:33	13.858	6.046	1.139	0.132	0.208
09:49:48	13.871	6.047	0.513	0.153	0.237
09:50:03	13.809	6.054	0.627	0.068	0.111
09:50:18	5.280	3.034	0.358	1.662	0.000
09:50:33	0.407	0.406	0.789	11.962	-0.096
09:50:48	0.113	0.183	1.156	31.954	-0.023
09:51:03	0.063	0.150	0.448	42.799	-0.021
09:51:18	0.042	0.132	0.187	48.295	-0.023
09:51:33	0.028	0.121	0.496	49.188	0.027
09:51:48	0.037	0.112	-0.065	49.204	0.059
09:52:03	0.039	0.104	0.024	49.187	-0.049
09:52:18	0.036	0.096	0.024	49.209	0.008
09:52:33	0.036	0.092	0.252	49.205	0.027
09:52:48	0.008	0.080	0.008	49.232	-0.023
09:53:03	-0.080	0.068	-0.155	49.216	-0.140
09:53:18	-0.045	0.068	-0.285	49.195	-0.070
09:53:33	-0.045	0.085	0.146	49.283	-0.060
09:53:48	0.014	0.071	0.000	49.299	-0.024
09:54:03	0.026	1.989	0.260	49.306	-0.033
09:54:18	-0.024	8.707	15.458	42.029	6.162
09:54:33	-0.014	9.629	116.011	26.519	26.968
09:54:48	-0.011	9.728	180.855	9.864	36.459
09:55:03	-0.011	9.763	210.452	3.248	39.847
09:55:18	-0.016	9.760	219.308	0.482	41.402
09:55:33	0.003	9.775	222.369	0.098	42.087
09:55:48	-0.008	9.796	223.565	0.007	42.579
09:56:03	-0.015	9.807	224.623	-0.016	43.031

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 9:48
Stop Time 9:57

CALIBRATION BIAS 04

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
09:56:18	-0.010	9.803	224.843	0.016	43.311	
09:56:33	-0.004	9.814	224.851	-0.015	43.560	
09:56:48	-0.010	9.835	224.827	-0.025	43.743	
09:57:03	-0.006	9.839	224.664	-0.049	43.842	

Wheelabrator March 20, 2012
CleanAir Project No. 11414 Start Time 10:09
South Broward Stop time 10:36
Unit 2 **REFERENCE METHOD RUN 5**

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	-0.012	0.080	0.035	-0.029	-0.045	
C_{ui}	Initial upscale	13.858	6.047	224.781	49.218	43.715	
C_{of}	Final zero	-0.023	0.066	-0.057	-0.025	0.020	
C_{uf}	Final upscale	13.858	6.057	224.499	49.142	43.674	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.384	9.626	154.489	10.420	3.019	
C_{Gas}	**Bias adjusted**	**9.486**	**9.570**	**154.740**	**10.318**	**3.135**	

Clock Time (at end of sample period)

041612:111549

10:10	9.699	9.440	150.045	10.317	3.632	
10:11	9.821	9.326	152.700	11.157	3.761	
10:12	9.621	9.485	154.013	12.545	3.529	
10:13	9.061	9.896	152.277	11.295	3.666	
10:14	9.193	9.781	160.260	7.926	3.537	
10:15	9.451	9.597	160.802	8.451	3.116	
10:16	9.467	9.574	159.682	10.498	2.909	
10:17	9.658	9.456	167.399	10.181	2.510	
10:18	9.217	9.784	162.432	12.437	2.480	
10:19	9.269	9.728	153.842	12.536	2.503	
10:20	9.049	9.904	149.347	15.408	2.507	
10:21	9.142	9.814	157.235	10.152	2.687	
10:22	9.624	9.450	155.668	7.931	2.429	
10:23	9.413	9.608	152.542	9.177	2.310	
10:24	9.212	9.767	151.406	9.536	2.287	
10:25	9.376	9.671	154.735	11.457	2.340	
10:26	9.392	9.620	151.730	9.304	2.439	
10:27	9.109	9.772	157.407	10.465	2.748	
10:28	9.725	9.381	152.664	10.124	3.090	
10:29	9.586	9.495	148.226	11.606	3.497	
10:30	9.411	9.603	147.617	11.201	3.464	
10:31	9.085	9.855	151.247	11.280	3.479	
10:32	9.237	9.706	145.562	8.404	3.249	
10:33	9.266	9.601	147.015	10.460	3.328	
10:34	9.240	9.611	152.574	10.209	3.372	
10:35	9.618	9.414	158.911	8.365	3.332	
10:36	9.437	9.575	163.852	8.908	3.302	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 10:36
Stop Time 10:45

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{ol} Zero gas	-0.023	0.066	-0.057	-0.025	0.020	
C_{ul} Upscale gas	13.858	6.057	224.499	49.142	43.674	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oca} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mca} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	-0.2%	0.5%	0.0%	0.0%	0.1%	
Upscale gas	-1.0%	0.0%	-0.1%	-0.1%	-1.2%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{ol} Zero gas	-0.012	0.080	0.035	-0.029	-0.045	
C_{ul} Upscale gas	13.858	6.047	224.781	49.218	43.715	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	-0.1%	0.0%	0.0%	0.1%	
Upscale gas	0.0%	0.1%	-0.1%	-0.1%	0.0%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

10:36:59	7.524	8.059	162.646	6.403	6.559
10:37:14	13.328	6.298	148.628	4.821	10.414
10:37:29	13.803	6.082	82.523	2.195	6.172
10:37:44	13.844	6.059	32.747	0.829	3.017
10:37:59	13.858	6.062	12.471	0.202	1.742
10:38:14	13.858	6.058	6.211	0.085	1.079
10:38:29	13.858	6.051	3.297	0.153	0.734
10:38:44	13.861	6.039	2.100	0.085	0.563
10:38:59	13.861	6.054	1.237	0.135	0.431
10:39:14	13.859	6.051	0.871	0.134	0.304
10:39:29	13.866	6.050	0.765	0.119	0.257
10:39:44	10.974	5.271	0.676	0.044	0.134
10:39:59	1.377	1.017	0.741	5.283	-0.020
10:40:14	0.176	0.235	0.358	20.059	-0.018
10:40:29	0.089	0.165	0.717	37.986	0.006
10:40:44	0.042	0.140	0.391	45.662	0.055
10:40:59	0.052	0.126	0.220	48.904	0.005
10:41:14	0.042	0.118	0.195	49.109	0.027
10:41:29	0.036	0.110	0.431	49.120	0.046
10:41:44	-0.055	0.080	0.163	49.140	0.028
10:41:59	0.032	0.088	0.342	49.101	0.056
10:42:14	-0.046	0.029	-0.676	49.185	-0.023
10:42:29	0.026	0.084	0.260	49.206	-0.028
10:42:44	-0.020	0.054	-0.765	49.141	-0.013
10:42:59	-0.038	0.105	-0.521	49.182	0.021
10:43:14	-0.002	6.044	0.041	48.210	0.638
10:43:29	-0.046	9.429	78.209	34.292	17.341
10:43:44	0.002	9.713	152.845	18.501	33.854
10:43:59	0.000	9.758	202.548	5.643	39.363
10:44:14	-0.012	9.770	215.433	1.421	41.342
10:44:29	-0.008	9.776	221.156	0.121	42.248
10:44:44	-0.011	9.799	223.272	-0.010	42.792
10:44:59	0.002	9.814	224.192	0.018	43.150

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 10:36
Stop Time 10:45

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
10:45:14	-0.021	9.819	224.420	-0.061	43.516	
10:45:29	-0.010	9.829	224.534	-0.006	43.707	
10:45:44	-0.011	9.829	224.542	-0.008	43.800	

Prepared by Clean Air Engineering Proprietary Software
SS CEM Version 08-2004g5

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 10:48
Stop time 11:15

REFERENCE METHOD RUN 6

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	-0.023	0.066	-0.057	-0.025	0.020	
C_{ui}	Initial upscale	13.858	6.057	224.499	49.142	43.674	
C_{of}	Final zero	0.005	0.060	-0.060	-0.085	0.050	
C_{uf}	Final upscale	13.865	6.056	223.894	49.255	43.793	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.452	9.621	143.490	13.741	3.563	
C_{Gas}	**Bias adjusted**	**9.549**	**9.552**	**144.025**	**13.613**	**3.649**	

Clock Time (at end of sample period)

041612 111549

10:49	8.994	9.930	147.965	10.005	4.273
10:50	8.641	10.284	142.627	16.714	4.024
10:51	9.883	9.262	144.386	8.534	3.597
10:52	9.335	9.681	144.021	10.922	3.167
10:53	9.399	9.640	142.725	11.300	3.282
10:54	8.715	10.206	140.033	16.654	3.689
10:55	9.639	9.475	144.208	12.778	4.001
10:56	9.494	9.558	141.370	13.739	3.697
10:57	9.928	9.265	142.491	15.549	3.564
10:58	9.383	9.680	141.459	15.869	3.410
10:59	9.471	9.598	146.502	13.858	3.348
11:00	9.292	9.752	146.085	13.510	3.368
11:01	9.509	9.557	145.033	12.706	3.420
11:02	9.601	9.520	144.009	14.739	3.274
11:03	9.391	9.653	143.938	13.670	3.146
11:04	9.453	9.609	142.603	13.512	3.231
11:05	9.361	9.701	139.149	14.042	3.326
11:06	9.996	9.223	136.931	13.144	3.420
11:07	9.551	9.556	137.796	17.763	3.536
11:08	9.712	9.421	139.723	13.036	3.370
11:09	10.005	9.214	141.473	13.961	3.323
11:10	10.026	9.218	142.690	16.003	3.407
11:11	9.484	9.578	142.302	14.175	3.635
11:12	8.687	10.225	148.480	16.460	3.938
11:13	9.151	9.819	147.658	15.019	4.277
11:14	9.512	9.600	150.006	11.823	3.926
11:15	9.588	9.544	148.559	11.526	3.562

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 11:16
Stop Time 11:26

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.005	0.060	-0.060	-0.085	0.050	
C_{uf} Upscale gas	13.865	6.056	223.894	49.255	43.793	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.5%	0.0%	0.0%	0.1%	
Upscale gas	-1.0%	0.0%	-0.3%	0.0%	-1.1%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{of} Zero gas	-0.023	0.066	-0.057	-0.025	0.020	
C_{uf} Upscale gas	13.858	6.057	224.499	49.142	43.674	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.2%	0.0%	0.0%	-0.1%	0.0%	
Upscale gas	0.1%	0.0%	-0.1%	0.1%	0.1%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

0416.12 .111549

11:16:43	13.710	6.136	120.692	6.090	8.420
11:16:58	13.834	6.077	46.854	2.243	4.462
11:17:13	13.852	6.067	19.561	0.656	2.328
11:17:28	13.862	6.054	8.490	0.150	1.402
11:17:43	13.866	6.060	3.940	0.111	0.939
11:17:58	13.868	6.054	2.182	0.111	0.674
11:18:13	13.864	6.056	1.237	0.106	0.496
11:18:28	13.866	6.056	0.895	0.166	0.389
11:18:43	13.863	6.056	0.456	0.083	0.184
11:18:58	9.971	4.909	0.155	0.277	0.150
11:19:13	1.051	0.809	0.936	5.460	-0.042
11:19:28	0.154	0.221	0.895	23.005	-0.013
11:19:43	0.074	0.162	0.912	38.001	0.060
11:19:58	0.039	0.141	0.187	46.455	0.122
11:20:13	-0.098	0.017	-0.798	48.666	0.018
11:20:28	-0.005	0.080	0.171	49.112	0.125
11:20:43	0.023	0.110	0.138	49.169	0.073
11:20:58	0.037	0.104	0.138	49.210	0.127
11:21:13	0.030	0.096	-0.008	49.215	0.028
11:21:28	0.002	0.095	0.195	49.149	0.093
11:21:43	0.008	0.091	0.097	49.241	0.073
11:21:58	-0.012	0.067	-0.098	49.223	0.060
11:22:13	0.022	0.064	-0.098	49.239	0.034
11:22:28	0.005	0.051	0.016	49.302	0.056
11:22:43	0.021	0.064	0.016	49.247	0.064
11:22:58	0.021	0.041	0.130	49.317	-0.039
11:23:13	0.025	0.068	0.016	49.345	-0.015
11:23:28	0.030	2.138	-0.326	49.053	0.057
11:23:43	-0.009	8.804	31.917	43.287	5.838
11:23:58	-0.038	9.646	119.511	24.951	27.215
11:24:13	-0.010	9.735	181.327	10.390	37.193
11:24:28	-0.019	9.762	209.532	2.650	40.414
11:24:43	0.007	9.763	218.763	0.454	41.786

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 11:16
Stop Time 11:26

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
11:24:58	-0.015	9.782	221.807	0.054	42.589	
11:25:13	-0.005	9.799	223.012	-0.029	43.004	
11:25:28	-0.031	9.793	223.582	-0.026	43.347	
11:25:43	-0.042	9.803	223.956	-0.078	43.647	
11:25:58	-0.033	9.791	223.533	-0.080	43.785	
11:26:13	-0.015	9.832	224.192	-0.098	43.948	
11:26:28	-0.024	9.815	224.274	-0.005	44.168	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 11:29
Stop time 11:56

REFERENCE METHOD RUN 7

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
Calibration Checks							
C_{oi}	Initial zero	0.005	0.060	-0.060	-0.085	0.050	
C_{ui}	Initial upscale	13.865	6.056	223.894	49.255	43.793	
C_{of}	Final zero	0.018	0.075	-0.282	-0.028	0.044	
C_{uf}	Final upscale	13.847	6.041	223.527	49.314	43.868	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.467	9.633	140.176	9.275	2.755	
C_{Gas}	**Bias adjusted**	**9.562**	**9.580**	**141.048**	**9.191**	**2.796**	

Clock Time (at end of sample period)

041612 111549						
11:30	9.548	9.583	147.070	10.351	4.442	
11:31	9.441	9.650	147.236	11.694	3.380	
11:32	9.346	9.742	149.072	11.759	2.970	
11:33	9.355	9.680	148.372	9.575	2.683	
11:34	9.401	9.661	150.723	8.282	2.553	
11:35	9.187	9.880	149.094	9.611	2.442	
11:36	9.247	9.787	147.542	9.467	2.442	
11:37	9.497	9.621	150.340	8.863	2.586	
11:38	9.683	9.463	143.771	9.342	2.430	
11:39	9.788	9.399	141.968	10.092	2.334	
11:40	9.436	9.675	139.585	10.361	2.411	
11:41	9.774	9.425	140.535	9.743	2.479	
11:42	9.464	9.645	137.574	9.998	2.283	
11:43	9.342	9.741	135.655	9.437	2.224	
11:44	9.277	9.823	141.498	10.084	2.372	
11:45	9.314	9.752	140.641	6.658	2.701	
11:46	8.882	10.124	141.703	8.604	2.873	
11:47	9.921	9.295	137.633	5.763	2.835	
11:48	9.538	9.578	136.099	7.717	2.619	
11:49	9.349	9.708	132.489	7.395	2.529	
11:50	8.921	10.066	130.377	10.398	2.801	
11:51	9.820	9.343	134.489	6.880	3.066	
11:52	9.482	9.608	133.950	10.109	3.415	
11:53	9.803	9.331	132.387	9.556	3.363	
11:54	9.395	9.653	131.166	11.117	2.938	
11:55	9.673	9.429	131.146	8.292	2.575	
11:56	9.727	9.429	132.633	9.268	2.637	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 11:58
Stop Time 12:08

CALIBRATION BIAS 07

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.018	0.075	-0.282	-0.028	0.044	
C_{uf}	Upscale gas	13.847	6.041	223.527	49.314	43.868	
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce}	Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)							
		14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.1%	0.6%	-0.1%	0.0%	0.1%	
	Upscale gas	-1.1%	-0.1%	-0.3%	0.1%	-1.0%	
System Bias Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	0.005	0.060	-0.060	-0.085	0.050	
C_{ui}	Upscale gas	13.865	6.056	223.894	49.255	43.793	
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.1%	0.1%	0.0%	0.1%	0.0%	
	Upscale gas	-0.1%	-0.1%	-0.1%	0.1%	0.1%	
Drift Assessment Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	

041612 115419					
11:58:33	8.470	9.438	134.270	10.814	5.672
11:58:48	6.192	9.397	139.935	10.991	5.859
11:59:03	12.982	6.750	124.103	8.479	9.294
11:59:18	13.767	6.140	64.331	3.881	7.202
11:59:33	13.833	6.084	29.174	1.429	3.888
11:59:48	13.845	6.072	11.909	0.365	2.258
12:00:03	13.855	6.060	5.006	0.184	1.485
12:00:18	13.859	6.047	2.581	0.197	0.947
12:00:33	13.857	6.044	1.571	0.164	0.736
12:00:48	13.826	6.033	0.627	0.086	0.591
12:01:03	13.803	6.035	-0.138	0.096	0.427
12:01:18	13.117	5.932	0.521	0.174	0.382
12:01:33	2.875	1.882	0.301	2.113	0.115
12:01:48	0.242	0.308	0.073	18.123	0.163
12:02:03	0.095	0.180	0.399	34.266	0.252
12:02:18	0.085	0.152	0.276	45.686	0.236
12:02:33	0.059	0.134	0.114	48.729	0.172
12:02:48	0.040	0.122	0.146	49.184	0.080
12:03:03	0.039	0.115	0.049	49.182	0.125
12:03:18	0.014	0.099	0.268	49.228	0.116
12:03:33	0.030	0.100	0.097	49.258	0.147
12:03:48	0.020	0.092	-0.114	49.275	0.008
12:04:03	0.019	0.074	-0.399	49.267	0.067
12:04:18	0.020	0.076	-0.570	49.328	0.016
12:04:33	0.017	0.074	0.122	49.346	0.047
12:04:48	0.007	0.056	-0.212	49.387	0.033
12:05:03	0.013	0.051	0.016	49.358	-0.008
12:05:18	0.029	0.589	0.089	49.294	0.140
12:05:33	0.017	7.672	1.172	46.162	1.630
12:05:48	0.007	9.576	84.241	28.881	20.454
12:06:03	0.000	9.723	170.028	13.635	34.849
12:06:18	0.006	9.757	205.201	3.474	39.521
12:06:33	0.001	9.770	216.630	0.855	41.410

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 11:58
Stop Time 12:08

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
12:06:48	0.000	9.770	221.213	0.023	42.369	
12:07:03	0.005	9.797	222.971	0.020	42.979	
12:07:18	-0.002	9.808	223.166	-0.002	43.399	
12:07:33	-0.002	9.808	223.337	0.023	43.678	
12:07:48	-0.003	9.819	223.566	-0.039	43.847	
12:08:03	-0.010	9.816	223.680	-0.067	44.080	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 12:10
Stop time 12:37

REFERENCE METHOD RUN 8

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.018	0.075	-0.282	-0.028	0.044	
C_{ui}	Initial upscale	13.847	6.041	223.527	49.314	43.868	
C_{of}	Final zero	0.025	0.084	0.013	-0.060	0.053	
C_{uf}	Final upscale	13.867	6.055	223.622	49.306	43.693	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.682	9.485	144.340	12.577	5.200	
C_{Gas}	**Bias adjusted**	**9.776**	**9.439**	**145.308**	**12.428**	**5.325**	

Clock Time (at end of sample period)

041612..111549

12:11	9.878	9.287	139.844	6.633	4.680
12:12	9.619	9.518	139.959	7.190	4.531
12:13	9.531	9.585	139.196	6.593	4.575
12:14	9.797	9.408	138.087	7.466	4.855
12:15	9.799	9.378	133.228	7.394	4.615
12:16	9.811	9.387	134.754	8.746	4.626
12:17	9.359	9.750	132.163	11.280	5.212
12:18	9.789	9.443	132.796	11.108	5.248
12:19	9.895	9.379	136.245	14.183	5.045
12:20	9.976	9.307	139.912	12.041	5.059
12:21	9.935	9.325	138.803	11.760	5.513
12:22	9.687	9.526	137.432	14.004	6.127
12:23	9.758	9.455	134.892	16.550	7.004
12:24	9.729	9.439	135.500	16.210	7.032
12:25	10.052	9.209	137.501	15.641	6.061
12:26	9.977	9.283	144.314	16.298	5.669
12:27	10.226	9.109	143.260	17.125	5.756
12:28	10.328	8.999	140.802	16.244	5.521
12:29	10.091	9.160	140.110	17.771	5.569
12:30	9.544	9.541	145.328	18.598	5.881
12:31	9.561	9.545	151.410	16.086	5.624
12:32	9.354	9.675	149.933	14.358	4.893
12:33	9.366	9.709	153.401	15.273	4.163
12:34	9.199	9.792	162.843	12.104	3.590
12:35	8.907	10.066	169.056	10.931	3.301
12:36	8.833	10.138	172.643	9.013	4.034
12:37	9.422	9.676	173.757	8.980	6.214

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 12:38
Stop Time 12:47

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.025	0.084	0.013	-0.060	0.053	
C_{uf} Upscale gas	13.867	6.055	223.622	49.306	43.693	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.6%	0.0%	0.0%	0.1%	
Upscale gas	-1.0%	0.0%	-0.3%	0.1%	-1.2%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.018	0.075	-0.282	-0.028	0.044	
C_{ui} Upscale gas	13.847	6.041	223.527	49.314	43.868	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.0%	0.1%	0.1%	0.0%	0.0%	
Upscale gas	0.1%	0.1%	0.0%	0.0%	-0.2%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

12:38:44	13.319	6.652	153.121	9.538	4.420
12:38:59	13.802	6.108	97.672	5.953	3.603
12:39:14	13.840	6.069	45.836	2.577	2.478
12:39:29	13.848	6.051	18.242	0.591	1.521
12:39:44	13.856	6.044	8.205	0.230	1.013
12:39:59	13.859	6.056	3.630	0.181	0.695
12:40:14	13.862	6.060	2.409	0.138	0.604
12:40:29	13.864	6.054	0.985	0.146	0.459
12:40:44	13.867	6.058	1.009	0.228	0.360
12:40:59	13.868	6.053	0.969	0.145	0.342
12:41:14	13.866	6.055	0.863	0.094	0.239
12:41:29	10.035	4.915	0.440	0.296	0.138
12:41:44	1.053	0.812	0.635	6.297	-0.043
12:41:59	0.160	0.230	0.871	24.821	0.067
12:42:14	0.088	0.166	0.423	39.377	0.092
12:42:29	0.064	0.141	0.261	47.298	0.096
12:42:44	0.030	0.126	0.252	49.014	0.143
12:42:59	0.018	0.118	0.154	49.240	0.119
12:43:14	0.036	0.112	0.293	49.294	0.080
12:43:29	0.031	0.106	0.154	49.309	0.098
12:43:44	0.027	0.098	0.138	49.312	0.037
12:43:59	0.020	0.092	-0.090	49.345	0.083
12:44:14	0.029	0.062	-0.008	49.260	0.038
12:44:29	-0.009	0.058	0.130	49.353	0.095
12:44:44	-0.026	0.028	-0.391	49.294	-0.044
12:44:59	0.014	0.068	0.244	49.346	0.044
12:45:14	-0.019	2.763	0.073	49.019	0.090
12:45:29	-0.013	8.987	43.728	40.357	6.497
12:45:44	0.002	9.663	108.644	23.455	27.285
12:45:59	-0.026	9.734	189.670	8.308	37.268
12:46:14	0.012	9.759	209.768	2.322	40.444
12:46:29	-0.021	9.761	218.820	0.322	41.784
12:46:44	-0.010	9.763	221.897	0.005	42.584

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 12:38
Stop Time 12:47

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
12:46:59	0.001	9.784	223.012	-0.044	43.036	
12:47:14	0.006	9.790	223.516	-0.059	43.476	
12:47:29	-0.018	9.815	223.573	-0.047	43.696	
12:47:44	0.000	9.797	223.777	-0.075	43.909	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 12:52
Stop time 13:19

REFERENCE METHOD RUN 9

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.025	0.084	0.013	-0.060	0.053	
C_{ui}	Initial upscale	13.867	6.055	223.622	49.306	43.693	
C_{of}	Final zero	0.049	0.127	0.079	-0.035	0.083	
C_{uf}	Final upscale	13.829	6.040	223.579	48.705	44.370	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.311	9.807	163.279	13.265	4.473	
C_{Gas}	**Bias adjusted**	**9.402**	**9.780**	**164.289**	**13.190**	**4.530**	

Clock Time (at end of sample period)

041612 111549

12:53	9.080	9.942	160.199	16.542	7.067
12:54	8.995	10.040	162.552	17.751	6.331
12:55	9.409	9.706	169.554	15.630	5.897
12:56	9.644	9.533	171.246	15.780	5.433
12:57	9.420	9.690	170.698	13.311	5.011
12:58	9.044	9.994	167.615	14.038	4.640
12:59	8.923	10.098	169.076	13.032	4.359
13:00	9.355	9.760	168.838	12.959	4.703
13:01	9.668	9.504	161.506	12.265	4.624
13:02	9.554	9.621	166.622	13.552	4.888
13:03	9.114	9.957	161.272	14.812	5.350
13:04	9.232	9.830	161.121	13.240	5.710
13:05	9.533	9.669	164.898	14.278	5.433
13:06	9.930	9.353	160.794	13.192	4.789
13:07	9.598	9.596	160.682	14.771	4.445
13:08	9.087	9.984	162.707	13.994	4.427
13:09	9.347	9.825	160.413	11.160	3.999
13:10	9.478	9.708	164.247	11.983	3.740
13:11	9.083	10.020	164.976	12.393	3.521
13:12	9.005	10.054	167.296	10.974	3.743
13:13	9.045	10.004	168.547	10.498	3.678
13:14	9.223	9.879	163.789	11.793	3.396
13:15	9.184	9.921	160.138	11.994	3.575
13:16	9.185	9.919	156.095	12.721	3.426
13:17	9.617	9.576	154.416	11.433	2.955
13:18	9.335	9.808	154.914	12.268	2.839
13:19	9.320	9.802	154.328	11.795	2.806

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 13:20
Stop Time 13:31

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.049	0.127	0.079	-0.035	0.083	
C_{uf} Upscale gas	13.829	6.040	223.579	48.705	44.370	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oca} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mca} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.3%	0.9%	0.0%	0.0%	0.2%	
Upscale gas	-1.2%	-0.1%	-0.3%	-0.6%	-0.5%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.025	0.084	0.013	-0.060	0.053	
C_{ui} Upscale gas	13.867	6.055	223.622	49.306	43.693	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.2%	0.3%	0.0%	0.0%	0.0%	
Upscale gas	-0.3%	-0.1%	0.0%	-0.6%	0.7%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612 111549

13:20:13	13.809	6.116	83.517	7.738	2.141
13:20:28	13.841	6.073	38.233	2.701	1.501
13:20:43	13.848	6.048	14.245	0.736	1.073
13:20:58	13.845	6.051	6.488	0.171	0.674
13:21:13	13.794	6.022	3.158	0.138	0.477
13:21:28	13.824	6.013	1.824	0.112	0.343
13:21:43	13.858	6.055	0.936	0.097	0.246
13:21:58	13.827	6.048	0.798	0.127	0.222
13:22:13	5.696	3.210	0.806	0.802	0.112
13:22:28	0.431	0.439	1.001	12.216	-0.041
13:22:43	0.115	0.186	1.164	28.856	0.028
13:22:58	0.078	0.159	0.537	42.676	0.082
13:23:13	0.058	0.140	0.228	47.701	0.065
13:23:28	0.038	0.125	0.147	49.145	0.119
13:23:43	0.050	0.117	-0.139	49.270	0.064
13:23:58	0.027	0.111	0.317	49.257	0.051
13:24:13	0.036	0.106	0.073	49.255	-0.021
13:24:28	0.030	0.104	-0.277	49.293	0.013
13:24:43	0.021	0.095	0.024	49.359	0.059
13:24:58	0.026	0.077	-0.318	49.361	0.116
13:25:13	0.031	0.074	0.366	49.325	0.067
13:25:28	0.024	0.074	0.146	49.351	0.139
13:25:43	0.026	0.079	0.195	49.340	0.043
13:25:58	0.009	0.068	0.130	49.317	0.056
13:26:13	0.002	0.062	-0.440	49.355	0.052
13:26:28	0.014	0.085	-0.098	49.358	-0.016
13:26:43	0.024	0.062	-0.212	49.374	0.013
13:26:58	2.563	1.896	0.920	49.197	0.016
13:27:13	2.742	3.447	11.363	45.509	-0.054
13:27:28	0.183	1.473	23.867	40.892	0.037
13:27:43	0.016	8.354	52.047	38.115	4.420
13:27:58	0.007	9.618	110.118	24.995	25.044
13:28:13	-0.016	9.730	175.197	11.587	36.168

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 13:20
Stop Time 13:31

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
13:28:28	-0.006	9.753	206.667	3.284	39.837	
13:28:43	-0.009	9.760	217.632	0.698	41.385	
13:28:58	0.002	9.772	221.417	0.038	42.279	
13:29:13	-0.005	9.776	222.752	0.000	42.885	
13:29:28	-0.005	9.801	223.069	-0.083	43.246	
13:29:43	-0.015	9.796	223.459	-0.046	43.588	
13:29:58	-0.005	9.800	223.663	-0.026	43.790	
13:30:13	-0.005	9.821	223.435	-0.037	43.880	
13:30:28	0.000	9.810	223.395	-0.008	44.155	
13:30:43	-0.005	9.821	223.842	-0.031	44.265	
13:30:58	-0.022	9.808	223.467	-0.073	44.379	
13:31:13	0.004	9.807	223.427	-0.002	44.465	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 13:33
Stop time 14:00

REFERENCE METHOD RUN 10

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.049	0.127	0.079	-0.035	0.083	
C_{ui}	Initial upscale	13.829	6.040	223.579	48.705	44.370	
C_{of}	Final zero	0.015	0.090	0.141	-0.024	0.059	
C_{uf}	Final upscale	13.843	6.053	223.326	49.297	44.388	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.617	9.565	152.121	11.340	3.352	
C_{Gas}	**Bias adjusted**	**9.721**	**9.539**	**153.139**	**11.270**	**3.347**	

Clock Time (at end of sample period)

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13:34	9.611	9.587	145.216	12.749	4.453
13:35	9.922	9.355	146.604	11.823	3.191
13:36	9.953	9.362	147.458	14.120	2.997
13:37	9.809	9.464	148.166	14.362	2.823
13:38	9.843	9.435	145.653	14.430	2.833
13:39	9.527	9.638	152.513	14.788	2.995
13:40	9.499	9.621	158.055	14.247	3.128
13:41	9.527	9.631	159.119	13.044	3.244
13:42	9.221	9.875	166.445	12.441	3.147
13:43	9.235	9.860	173.398	11.274	3.036
13:44	9.448	9.683	170.258	10.161	2.934
13:45	8.822	10.118	168.026	9.250	2.669
13:46	9.311	9.758	168.103	7.975	2.943
13:47	9.309	9.787	164.860	8.724	2.867
13:48	9.735	9.459	162.892	9.084	2.875
13:49	9.180	9.854	159.349	9.149	2.830
13:50	9.780	9.423	156.140	7.382	3.091
13:51	9.302	9.783	149.534	9.137	3.205
13:52	10.027	9.239	143.219	8.090	3.504
13:53	9.407	9.735	142.279	10.620	3.174
13:54	9.878	9.372	142.796	9.160	2.980
13:55	9.866	9.405	143.065	9.412	2.744
13:56	9.895	9.367	139.349	9.728	2.837
13:57	9.515	9.657	140.462	12.444	3.917
13:58	9.967	9.319	137.381	13.541	5.204
13:59	10.092	9.200	136.103	13.938	5.457
14:00	9.973	9.268	140.824	15.095	5.414

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 14:01
Stop Time 14:10

CALIBRATION BIAS 10

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.015	0.090	0.141	-0.024	0.059	
C_{uf} Upscale gas	13.843	6.053	223.326	49.297	44.388	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	0.011	-0.004	0.000	-0.049	-0.057	
C_{mce} Upscale gas	14.001	6.057	225.050	49.237	44.793	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.0%	0.7%	0.0%	0.0%	0.1%	
Upscale gas	-1.1%	0.0%	-0.4%	0.1%	-0.4%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.049	0.127	0.079	-0.035	0.083	
C_{ui} Upscale gas	13.829	6.040	223.579	48.705	44.370	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.2%	-0.3%	0.0%	0.0%	0.0%	
Upscale gas	0.1%	0.1%	-0.1%	0.6%	0.0%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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14:01:42	13.612	6.309	118.274	12.662	4.620
14:01:57	13.818	6.070	58.722	7.004	3.365
14:02:12	13.838	6.053	25.429	2.587	2.019
14:02:27	13.846	6.055	10.737	0.601	1.267
14:02:42	13.846	6.051	4.395	0.205	0.785
14:02:57	13.852	6.058	2.336	0.246	0.606
14:03:12	13.853	6.037	1.310	0.199	0.479
14:03:27	12.245	5.680	0.912	0.251	0.352
14:03:42	2.027	1.415	0.806	3.303	0.050
14:03:57	0.193	0.249	0.798	18.321	-0.008
14:04:12	0.033	0.142	0.423	35.062	0.056
14:04:27	0.018	0.130	0.660	45.197	0.018
14:04:42	-0.012	0.114	0.448	48.705	0.099
14:04:57	0.019	0.112	0.261	49.214	0.047
14:05:12	0.018	0.115	0.382	49.232	0.050
14:05:27	0.021	0.107	0.366	49.259	0.024
14:05:42	0.028	0.101	-0.090	49.304	0.106
14:05:57	0.005	0.097	0.252	49.306	0.052
14:06:12	0.015	0.095	0.032	49.299	0.064
14:06:27	0.026	0.077	0.138	49.288	0.062
14:06:42	0.001	0.085	0.195	49.307	0.062
14:06:57	0.029	0.086	0.130	49.423	0.032
14:07:12	0.014	3.095	-0.098	49.293	0.003
14:07:27	-0.002	9.071	47.383	40.731	7.982
14:07:42	0.007	9.670	123.891	23.948	29.364
14:07:57	-0.047	9.717	187.757	9.273	38.224
14:08:12	-0.030	9.753	210.533	2.512	41.063
14:08:27	-0.003	9.759	218.722	0.487	42.217
14:08:42	-0.015	9.775	221.775	0.023	42.848
14:08:57	-0.014	9.773	222.654	-0.012	43.306
14:09:12	-0.026	9.787	223.093	-0.003	43.689
14:09:27	0.000	9.795	223.012	-0.075	43.888
14:09:42	-0.005	9.797	223.402	-0.070	44.104

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 14:01
Stop Time 14:10

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
14:09:57	-0.021	9.814	223.386	-0.034	44.264	
14:10:12	-0.010	9.807	223.386	-0.003	44.407	
14:10:27	-0.010	9.812	223.207	-0.036	44.493	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 14:14
Stop time 14:38

REFERENCE METHOD RUN 11

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv
Calibration Checks			
C_{oi}	Initial zero	0.015	0.090
C_{ui}	Initial upscale	13.843	6.053
C_{of}	Final zero	0.022	0.108
C_{uf}	Final upscale	13.809	5.993
C_{ma}	Actual gas value	14.000	5.990
Analyzer Averages (concentrations)			
C_{Avg}	Average conc.	9.605	9.588
C_{Gas}	**Bias adjusted**	**9.720**	**9.595**

Clock Time (at end of sample period) 041612.111549		
14:15	9.859	9.386
14:16	9.259	9.834
14:17	9.213	9.867
14:18	9.800	9.439
14:19	9.351	9.785
14:20	9.198	9.885
14:21	9.510	9.664
14:22	10.001	9.298
14:23	10.295	9.055
14:24	9.865	9.392
14:25	9.368	9.768
14:26	9.069	9.993
14:27	9.743	9.473
14:28	9.843	9.403
14:29	8.994	10.068
14:30	9.128	9.962
14:31	9.808	9.431
14:32	9.804	9.451
14:33	9.902	9.362
14:34	9.681	9.524
14:35	9.918	9.366
14:36	9.743	9.480
14:37	9.422	9.739
14:38	9.740	9.488

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 14:38
Stop Time 14:42
CALIBRATION BIAS 11

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv			
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.022	0.108			
C_{uf}	Upscale gas	13.809	5.993			
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	0.011	-0.004			
C_{mce}	Upscale gas	14.001	6.057			
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	14.000	5.990			
Calibration Span Value (CS)						
		14.000	13.900			
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.1%	0.8%			
	Upscale gas	-1.4%	-0.5%			
System Bias Status						
	Zero gas	OK	OK			
	Upscale gas	OK	OK			
Previous System Response to Calibration Gases (C_S)						
C_{oi}	Zero gas	0.015	0.090			
C_{ui}	Upscale gas	13.843	6.053			
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	0.0%	0.1%			
	Upscale gas	-0.2%	-0.4%			
Drift Assessment Status						
	Zero gas	OK	OK			
	Upscale gas	OK	OK			

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14:38:55	0.961	1.404
14:39:10	0.111	0.291
14:39:25	0.054	0.187
14:39:40	0.030	0.147
14:39:55	0.036	0.137
14:40:10	0.032	0.129
14:40:25	0.015	0.120
14:40:40	0.019	0.112
14:40:55	0.027	0.108
14:41:10	0.020	0.104
14:41:25	1.830	0.513
14:41:40	11.920	4.776
14:41:55	13.690	5.882
14:42:10	13.803	5.981
14:42:25	13.807	5.988
14:42:40	13.815	6.009

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 14:44
Stop time 15:08

REFERENCE METHOD RUN 12

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 6
Calibration Checks				
C_{oi}	Initial zero	0.022	0.108	
C_{ui}	Initial upscale	13.809	5.993	
C_{of}	Final zero	0.018	0.116	
C_{uf}	Final upscale	13.835	6.008	
C_{ma}	Actual gas value	14.000	5.990	
Analyzer Averages (concentrations)				
C_{Avg}	Average conc.	9.381	9.800	
C_{Gas}	**Bias adjusted**	**9.496**	**9.855**	

Clock Time (at end of sample period)		
04/16/2012 14:59:59		
14:45	9.432	9.713
14:46	9.385	9.767
14:47	9.644	9.605
14:48	9.756	9.511
14:49	9.968	9.334
14:50	9.717	9.522
14:51	9.737	9.512
14:52	9.315	9.844
14:53	9.926	9.372
14:54	9.748	9.513
14:55	8.590	10.486
14:56	9.265	9.900
14:57	9.244	9.956
14:58	9.563	9.647
14:59	9.477	9.716
15:00	9.441	9.777
15:01	9.340	9.829
15:02	9.003	10.088
15:03	8.850	10.242
15:04	9.237	9.896
15:05	9.307	9.842
15:06	8.819	10.236
15:07	8.998	10.095
15:08	9.387	9.796

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 15:09
Stop Time 15:14

CALIBRATION BIAS 12

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv				
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.018	0.116				
C_{uf}	Upscale gas	13.835	6.008				
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	0.011	-0.004				
C_{mce}	Upscale gas	14.001	6.057				
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990				
Calibration Span Value (CS)							
		14.000	13.900				
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.1%	0.9%				
	Upscale gas	-1.2%	-0.3%				
System Bias Status							
	Zero gas	OK	OK				
	Upscale gas	OK	OK				
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	0.022	0.108				
C_{ui}	Upscale gas	13.809	5.993				
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.0%	0.1%				
	Upscale gas	0.2%	0.1%				
Drift Assessment Status							
	Zero gas	OK	OK				
	Upscale gas	OK	OK				

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15:09:16	9.411	9.792
15:09:31	10.233	9.108
15:09:46	3.617	2.887
15:10:01	0.260	0.403
15:10:16	0.070	0.192
15:10:31	0.042	0.164
15:10:46	0.038	0.144
15:11:01	0.038	0.130
15:11:16	0.024	0.123
15:11:31	0.010	0.116
15:11:46	0.021	0.109
15:12:01	0.025	0.102
15:12:16	0.018	0.099
15:12:31	2.008	0.552
15:12:46	12.044	4.842
15:13:01	13.705	5.882
15:13:16	13.812	5.980
15:13:31	13.829	6.000
15:13:46	13.837	6.017
15:14:01	13.838	6.007

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 15:18
Stop time 15:42

REFERENCE METHOD RUN 13

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 6
Calibration Checks				
C_{oi}	Initial zero	0.018	0.116	
C_{ui}	Initial upscale	13.835	6.008	
C_{of}	Final zero	0.016	0.102	
C_{uf}	Final upscale	13.821	5.999	
C_{ma}	Actual gas value	14.000	5.990	
Analyzer Averages (concentrations)				
C_{Avg}	Average conc.	9.332	9.780	
C_{Gas}	**Bias adjusted**	**9.443**	**9.828**	

Clock Time (at end of sample period)			
041612 1.1549			
	15:19	9.191	9.943
	15:20	9.083	9.990
	15:21	9.164	9.961
	15:22	9.206	9.894
	15:23	9.258	9.860
	15:24	9.644	9.575
	15:25	9.856	9.375
	15:26	9.405	9.719
	15:27	8.990	10.053
	15:28	9.405	9.732
	15:29	9.474	9.692
	15:30	9.104	9.956
	15:31	8.834	10.183
	15:32	8.892	10.115
	15:33	9.355	9.751
	15:34	9.292	9.791
	15:35	9.467	9.650
	15:36	9.099	9.923
	15:37	9.361	9.716
	15:38	9.149	9.886
	15:39	9.685	9.477
	15:40	9.703	9.476
	15:41	9.582	9.575
	15:42	9.772	9.433

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 15:42
Stop Time 15:47
CALIBRATION BIAS 13

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv				
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.016	0.102				
C_{uf}	Upscale gas	13.821	5.999				
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	0.011	-0.004				
C_{mce}	Upscale gas	14.001	6.057				
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990				
Calibration Span Value (CS)							
		14.000	13.900				
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.0%	0.8%				
	Upscale gas	-1.3%	-0.4%				
System Bias Status							
	Zero gas	OK	OK				
	Upscale gas	OK	OK				
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	0.018	0.116				
C_{ui}	Upscale gas	13.835	6.008				
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.0%	-0.1%				
	Upscale gas	-0.1%	-0.1%				
Drift Assessment Status							
	Zero gas	OK	OK				
	Upscale gas	OK	OK				

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15:42:56	1.575	2.297
15:43:11	0.162	0.362
15:43:26	0.060	0.197
15:43:41	0.039	0.161
15:43:56	0.043	0.141
15:44:11	0.037	0.129
15:44:26	0.019	0.121
15:44:41	0.026	0.114
15:44:56	0.014	0.109
15:45:11	0.023	0.100
15:45:26	0.010	0.096
15:45:41	0.061	0.094
15:45:56	8.368	2.965
15:46:11	13.458	5.707
15:46:26	13.781	5.947
15:46:41	13.812	5.984
15:46:56	13.822	6.001
15:47:11	13.828	6.011
15:47:26	13.828	6.020

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 15:51
Stop time 16:15

REFERENCE METHOD RUN 14

		Channel 1 **O2** **FF Outlet %dv**	*Channel 2* **CO2** **FF Outlet %dv**	*Channel 6*
Calibration Checks				
C_{ol}	Initial zero	0.016	0.102	
C_{ul}	Initial upscale	13.821	5.999	
C_{of}	Final zero	0.022	0.106	
C_{uf}	Final upscale	13.840	6.050	
C_{ma}	Actual gas value	14.000	5.990	
Analyzer Averages (concentrations)				
C_{Avg}	Average conc.	9.596	9.508	
C_{Gas}	**Bias adjusted**	**9.708**	**9.515**	

Clock Time (at end of sample period) 041612_111549		
15:52	10.177	9.074
15:53	9.765	9.380
15:54	9.268	9.767
15:55	9.211	9.819
15:56	9.470	9.574
15:57	9.115	9.822
15:58	9.216	9.798
15:59	8.988	9.942
16:00	9.315	9.716
16:01	9.671	9.444
16:02	9.265	9.728
16:03	9.351	9.698
16:04	9.610	9.509
16:05	9.803	9.337
16:06	9.562	9.394
16:07	9.450	9.648
16:08	9.507	9.588
16:09	9.776	9.393
16:10	9.668	9.481
16:11	9.975	9.261
16:12	10.374	8.942
16:13	10.058	9.178
16:14	9.871	9.342
16:15	9.841	9.357

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 16:16
Stop Time 16:20

CALIBRATION BIAS 14

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv				
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.022	0.106				
C_{uf}	Upscale gas	13.840	6.050				
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	0.011	-0.004				
C_{mce}	Upscale gas	14.001	6.057				
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990				
Calibration Span Value (CS)							
		14.000	13.900				
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.1%	0.8%				
	Upscale gas	-1.1%	0.0%				
System Bias Status							
	Zero gas	OK	OK				
	Upscale gas	OK	OK				
Previous System Response to Calibration Gases (C_S)							
C_{of}	Zero gas	0.016	0.102				
C_{uf}	Upscale gas	13.821	5.999				
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.0%	0.0%				
	Upscale gas	0.1%	0.4%				
Drift Assessment Status							
	Zero gas	OK	OK				
	Upscale gas	OK	OK				

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16:16:33	13.280	6.729
16:16:48	13.798	6.088
16:17:03	13.834	6.053
16:17:18	13.842	6.051
16:17:33	13.843	6.047
16:17:48	13.846	6.050
16:18:03	13.844	6.047
16:18:18	6.618	3.541
16:18:33	0.495	0.454
16:18:48	0.115	0.184
16:19:03	0.070	0.149
16:19:18	0.058	0.131
16:19:33	0.046	0.120
16:19:48	0.009	0.111
16:20:03	0.025	0.104
16:20:18	0.032	0.102

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 16:22
Stop time 16:46

REFERENCE METHOD RUN 15

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 6
Calibration Checks				
C_{oi}	Initial zero	0.022	0.106	
C_{ui}	Initial upscale	13.840	6.050	
C_{of}	Final zero	0.030	0.106	
C_{uf}	Final upscale	13.824	6.055	
C_{ma}	Actual gas value	14.000	5.990	
Analyzer Averages (concentrations)				
C_{Avg}	Average conc.	9.295	9.850	
C_{Gas}	**Bias adjusted**	**9.399**	**9.815**	

Clock Time (at end of sample period) 041612 111549		
16:23	9.135	9.915
16:24	9.491	9.648
16:25	9.368	9.726
16:26	9.256	9.816
16:27	9.380	9.730
16:28	9.305	9.805
16:29	9.066	10.010
16:30	9.482	9.684
16:31	9.615	9.587
16:32	9.781	9.490
16:33	9.767	9.502
16:34	9.801	9.491
16:35	9.703	9.572
16:36	9.141	10.032
16:37	8.880	10.247
16:38	9.338	9.862
16:39	9.610	9.617
16:40	8.638	10.415
16:41	8.700	10.377
16:42	9.290	9.796
16:43	9.331	9.815
16:44	8.777	10.261
16:45	8.838	10.215
16:46	9.377	9.776

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 2

March 20, 2012
Start Time 16:47
Stop Time 16:51

CALIBRATION BIAS 15

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv				
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.030	0.106				
C_{uf} Upscale gas	13.824	6.055				
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oca} Zero gas	0.011	-0.004				
C_{mca} Upscale gas	14.001	6.057				
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990				
Calibration Span Value (CS)						
	14.000	13.900				
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.8%				
Upscale gas	-1.3%	0.0%				
System Bias Status						
Zero gas	OK	OK				
Upscale gas	OK	OK				
Previous System Response to Calibration Gases (C_S)						
C_{of} Zero gas	0.022	0.106				
C_{uf} Upscale gas	13.840	6.050				
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.1%	0.0%				
Upscale gas	-0.1%	0.0%				
Drift Assessment Status						
Zero gas	OK	OK				
Upscale gas	OK	OK				

0/11612+111519

16:47:09	9.849	9.396
16:47:24	11.516	8.325
16:47:39	13.631	6.298
16:47:54	13.811	6.075
16:48:09	13.828	6.043
16:48:24	13.832	6.047
16:48:39	13.836	6.047
16:48:54	13.840	6.043
16:49:09	13.844	6.045
16:49:24	11.695	5.483
16:49:39	1.647	1.158
16:49:54	0.183	0.244
16:50:09	0.087	0.164
16:50:24	0.061	0.142
16:50:39	0.046	0.129
16:50:54	0.039	0.119
16:51:09	0.028	0.111
16:51:24	0.031	0.105
16:51:39	0.033	0.103

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

Date: March 21, 2012
Start Time 6:04
Stop Time 6:31

CALIBRATION ERROR

	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
	O2	CO2	NOX	CO	SO2	
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Instrument Information						
Manufacturer:	Servomex	Servomex	Thermo	Thermo	Wstrn Rsrch	
Model:	1440C	1440B	42i-LS	48i	921L UV	
Detection:	Paramagn.	NDIR	Chemilumi.	GFC/NDIR	Photo.	
Asset or Serial No:	207361	207364	205174	204433	204654	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Response Time (seconds)						
	90	90	90	90	90	
Manufacturer Certified Cylinder Value (C_V)						
Zero	0.000	0.000	0.000	0.000	0.000	
Low	6.000	5.990	225.000	23.500	45.200	
Mid				48.600		
High	14.000	13.900	448.000	96.300	90.800	
Actual gas to be used for bias checks						
	14.000	5.990	225.000	48.600	45.200	
Cylinder ID						
Zero	alm028189	alm028189	alm028189	alm028189	alm028189	
Low	alm036149	almx067937	alm048873	alm042811	alm048873	
Mid				alm023610		
High	almx067937	alm036149	alm012619	cc181272	alm012619	
Analyzer Calibration Response (C_{Dir})						
Zero	-0.007	-0.012	0.000	-0.020	-0.080	
Low	6.005	6.045	226.504		45.573	
Mid				49.246		
High	14.008	13.886	448.547	96.304	90.864	
Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)						
Zero	-0.1%	-0.1%	0.0%	0.0%	-0.1%	
Low	0.0%	0.4%	0.3%	N/A	0.4%	
Mid	N/A	N/A	N/A	0.7%	N/A	
High	0.1%	-0.1%	0.1%	0.0%	0.1%	
Calibration Error Status						
Zero	OK	OK	OK	OK	OK	
Low	OK	OK	OK	N/A	OK	
Mid	N/A	N/A	N/A	OK	N/A	
High	OK	OK	OK	OK	OK	

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06:06:32	-0.010	0.007	0.000	-0.008	-0.444
06:06:47	0.001	-0.006	0.000	-0.061	-0.200
06:07:02	0.006	-0.006	0.000	-0.007	-0.117
06:07:17	-0.005	-0.011	0.000	0.039	-0.111
06:07:32	-0.006	-0.004	0.000	-0.039	-0.073
06:07:47	-0.011	-0.021	0.000	-0.061	-0.057
06:08:02	4.014	1.011	0.000	-0.061	-0.060
06:08:17	13.108	5.330	0.000	0.003	-0.099
06:08:32	13.948	5.951	0.000	-0.013	-0.076
06:08:47	14.003	5.999	0.000	-0.023	-0.059
06:09:02	14.008	6.005	0.000	0.054	-0.049
06:09:17	14.013	6.008	0.000	-0.025	-0.051
06:09:32	12.586	6.443	0.000	0.011	-0.026
06:09:47	6.869	12.266	-0.456	-0.023	-0.031
06:10:02	6.068	13.724	-0.041	0.039	-0.034
06:10:17	6.011	13.854	-0.692	-0.036	-0.052

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

Date: March 21, 2012
Start Time 6:04
Stop Time 6:31

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:10:32	6.004	13.896	0.000	0.011	-0.073	
06:10:47	6.001	13.907	0.000	-0.043	-0.078	
06:11:02	5.611	12.742	0.000	-0.061	-0.108	
06:11:17	1.164	2.303	0.033	5.929	-0.467	
06:11:32	0.059	0.189	-0.033	32.863	-0.322	
06:11:47	0.009	0.043	0.138	67.184	-0.156	
06:12:02	-0.005	0.014	-0.106	87.183	-0.109	
06:12:17	-0.009	0.007	-0.090	94.724	-0.095	
06:12:32	0.006	-0.002	0.000	96.330	-0.119	
06:12:47	-0.011	-0.005	0.000	96.417	-0.111	
06:13:02	-0.019	-0.005	0.000	96.339	-0.098	
06:13:17	-0.008	-0.009	0.000	96.236	-0.109	
06:13:32	-0.013	-0.011	0.000	96.339	-0.127	
06:13:47	0.033	-0.011	0.000	96.226	-0.093	
06:14:02	0.013	0.005	0.000	92.072	-0.090	
06:14:17	-0.011	-0.005	0.000	76.329	-0.096	
06:14:32	-0.006	-0.007	0.000	60.298	-0.117	
06:14:47	-0.001	-0.009	0.000	51.682	-0.156	
06:15:02	-0.007	-0.021	0.000	49.584	-0.171	
06:15:17	-0.004	-0.004	0.000	49.224	-0.160	
06:15:32	-0.002	-0.015	0.000	49.245	-0.158	
06:15:47	-0.032	-0.010	0.000	49.270	-0.121	
06:16:02	-0.011	-0.026	0.000	49.273	-0.132	
06:16:17	0.221	2.418	4.086	48.295	2.235	
06:16:32	0.003	3.990	45.030	44.514	2.709	
06:16:47	0.000	9.448	127.147	34.740	37.555	
06:17:02	-0.001	9.801	244.412	19.002	75.453	
06:17:17	0.000	9.831	368.286	6.759	84.760	
06:17:32	-0.010	9.846	416.370	1.475	86.926	
06:17:47	0.000	9.848	433.919	0.010	87.875	
06:18:02	-0.027	9.831	440.904	-0.220	88.343	
06:18:17	-0.020	9.825	443.256	-0.370	88.684	
06:18:32	-0.008	9.849	444.143	-0.222	89.675	
06:18:47	-0.002	9.860	446.667	-0.225	90.926	
06:19:02	-0.004	9.860	448.197	-0.244	91.124	
06:19:17	-0.004	9.860	447.733	-0.244	91.399	
06:19:32	-0.020	9.860	447.757	-0.296	92.026	
06:19:47	-0.004	9.864	446.732	-0.236	91.963	
06:20:02	-0.002	9.865	447.945	-0.233	90.883	
06:20:17	-0.002	9.866	448.344	-0.244	91.041	
06:20:32	-0.006	9.864	448.450	-0.244	90.844	
06:20:47	-0.004	9.866	448.531	-0.244	90.764	
06:21:02	-0.004	9.864	448.661	-0.244	90.982	
06:21:17	0.169	9.639	447.375	-0.244	84.234	
06:21:32	0.046	9.720	433.171	-0.166	43.077	
06:21:47	-0.008	9.872	351.299	-0.042	41.989	
06:22:02	-0.012	9.884	257.493	-0.002	43.821	
06:22:17	-0.011	9.882	238.136	-0.089	44.536	
06:22:32	-0.012	9.884	230.541	-0.129	44.713	
06:22:47	-0.012	9.886	227.595	-0.127	45.014	
06:23:02	-0.012	9.884	226.504	-0.124	45.280	
06:23:17	-0.012	9.887	226.520	-0.124	45.464	
06:23:32	-0.012	9.886	226.496	-0.122	45.587	
06:23:47	-0.012	9.886	226.496	-0.158	45.667	
06:24:02	0.348	9.058	226.463	-0.163	43.251	
06:24:17	1.086	1.533	217.623	-0.054	14.607	
06:24:32	1.035	0.127	130.232	-0.127	2.782	
06:24:47	1.019	0.027	78.290	-0.046	1.346	
06:25:02	1.011	0.012	57.037	-0.102	0.949	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

Date: March 21, 2012
Start Time 6:04
Stop Time 6:31

CALIBRATION ERROR

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:25:17	1.000	0.004	53.472	-0.099	0.850	
06:25:32	0.979	-0.008	51.819	-0.141	0.824	
06:25:47	1.017	-0.005	52.007	-0.021	0.807	
06:26:02	1.005	0.001	51.347	-0.024	0.859	
06:26:17	1.015	-0.018	51.673	-0.026	0.811	
06:26:32	1.021	-0.010	51.787	-0.024	0.747	
06:26:47	1.019	-0.011	51.901	-0.026	0.765	
06:27:02	1.021	-0.011	51.901	-0.026	0.726	
06:27:17	1.026	0.000	51.445	-0.024	0.806	
06:27:32	1.015	-0.005	51.901	-0.024	0.767	
06:27:47	1.010	0.000	51.999	-0.024	0.832	
06:28:02	10.026	0.016	51.413	-0.026	0.806	
06:30:40	14.029	6.044	0.342	-0.008	-0.010	
06:30:55	14.029	6.044	0.203	0.073	-0.049	
06:31:10	14.031	6.048	0.097	0.031	-0.091	

NOX Conversion Efficiency
NO2 Cylinder Value = 49.200
Average Response = 51.771
Conversion Efficiency = 105.2%

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 6:35
Stop Time 6:46

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.001	-0.009	-0.117	-0.007	0.196	
C_{uf} Upscale gas	13.869	5.942	225.310	49.310	44.226	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.0%	0.0%	0.0%	0.3%	
Upscale gas	-1.0%	-0.7%	-0.3%	0.1%	-1.5%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	N/A	N/A	N/A	N/A	N/A	
C_{ui} Upscale gas	N/A	N/A	N/A	N/A	N/A	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	N/A	N/A	N/A	N/A	N/A	
Upscale gas	N/A	N/A	N/A	N/A	N/A	
Drift Assessment Status						
Zero gas	N/A	N/A	N/A	N/A	N/A	
Upscale gas	N/A	N/A	N/A	N/A	N/A	

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06:35:17	0.089	-0.002	0.130	0.059	0.168
06:35:32	0.069	-0.017	0.130	0.036	0.174
06:35:47	0.055	-0.027	0.130	0.034	0.133
06:36:02	0.042	-0.008	-0.098	0.034	0.150
06:36:17	0.026	-0.021	-0.212	0.034	0.158
06:36:32	1.148	0.204	0.130	0.034	0.128
06:36:47	11.421	4.373	0.423	0.000	0.047
06:37:02	13.708	5.773	0.440	0.057	0.007
06:37:17	13.842	5.874	0.073	0.087	0.123
06:37:33	13.860	5.901	-0.314	0.033	0.204
06:37:47	13.869	5.918	0.244	0.173	0.207
06:38:02	13.865	5.932	-0.505	0.145	0.286
06:38:17	13.873	5.944	0.122	0.106	0.168
06:38:32	13.870	5.951	0.008	0.217	0.260
06:38:47	13.445	5.853	-0.497	0.140	0.186
06:39:02	3.582	2.132	-0.073	1.647	-0.052
06:39:17	0.293	0.254	1.832	15.793	-0.112
06:39:32	0.107	0.090	0.619	32.762	0.169
06:39:47	0.073	0.036	0.309	44.708	0.197
06:40:02	0.055	0.036	-0.098	48.606	0.294
06:40:17	0.048	0.027	-0.090	49.218	0.317
06:40:32	0.044	0.001	-0.448	49.309	0.251
06:40:47	0.050	0.001	-0.220	49.262	0.273
06:41:02	0.036	-0.004	0.122	49.291	0.250
06:41:17	0.020	0.003	-0.220	49.420	0.254
06:41:32	0.009	0.001	-0.130	49.400	0.192
06:41:47	-0.030	-0.016	-0.106	49.105	0.146
06:42:02	0.023	-0.010	-0.114	49.425	0.249
06:42:17	0.010	-0.019	-0.106	49.467	0.272
06:42:32	0.015	-0.005	-0.220	49.462	0.289
06:42:47	0.020	-0.013	-0.106	49.423	0.249
06:43:02	0.012	0.006	-0.562	49.382	0.226
06:43:17	0.020	4.069	6.015	48.446	0.400

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 6:35
Stop Time 6:46

CALIBRATION BIAS 00

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
06:43:32	0.001	9.224	46.309	39.370	12.127	
06:43:47	0.012	9.638	128.913	19.995	31.066	
06:44:02	-0.004	9.691	196.459	7.629	38.219	
06:44:17	-0.015	9.713	214.693	1.708	40.731	
06:44:32	0.002	9.730	221.001	0.218	42.030	
06:44:47	0.001	9.736	223.410	0.070	42.795	
06:45:02	0.001	9.750	224.664	-0.036	43.318	
06:45:17	0.001	9.753	224.998	-0.028	43.702	
06:45:32	0.001	9.758	225.104	-0.016	44.003	
06:45:47	-0.006	9.759	225.381	0.010	44.256	
06:46:02	0.001	9.763	225.446	-0.013	44.418	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 6:53
Stop time 7:20

REFERENCE METHOD RUN 1

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.001	-0.009	-0.117	-0.007	0.196	
C_{ui}	Initial upscale	13.869	5.942	225.310	49.310	44.226	
C_{of}	Final zero	0.020	0.018	-0.052	-0.043	0.604	
C_{uf}	Final upscale	13.865	6.015	225.321	49.488	43.735	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.464	9.590	148.788	20.453	9.868	
C_{Gas}	**Bias adjusted**	**9.551**	**9.611**	**148.609**	**20.137**	**9.820**	

Clock Time (at end of sample period)						
041612_111549						
	06:54	10.381	8.883	141.874	22.409	2.598
	06:55	10.499	8.819	137.181	23.840	4.043
	06:56	10.222	9.041	128.877	25.394	6.281
	06:57	9.572	9.554	133.250	24.252	9.997
	06:58	9.092	9.902	152.110	24.543	10.073
	06:59	9.130	9.874	164.418	22.192	8.333
	07:00	9.606	9.479	167.529	20.433	6.278
	07:01	9.904	9.241	165.110	18.768	4.613
	07:02	9.850	9.230	156.083	17.412	4.013
	07:03	9.727	9.387	152.389	18.709	5.764
	07:04	10.021	9.148	134.526	19.035	8.706
	07:05	9.827	9.329	129.581	21.575	9.555
	07:06	9.320	9.709	128.864	23.111	9.882
	07:07	8.818	10.100	139.161	24.642	11.768
	07:08	8.844	10.083	152.094	24.256	11.469
	07:09	8.955	9.961	161.929	21.298	11.875
	07:10	9.002	9.918	168.919	18.816	10.919
	07:11	9.296	9.712	162.456	17.959	10.081
	07:12	9.299	9.700	151.673	18.526	10.969
	07:13	9.184	9.777	149.461	18.195	12.099
	07:14	9.202	9.752	149.180	18.448	13.001
	07:15	8.973	9.952	152.534	19.419	14.162
	07:16	9.181	9.815	150.759	18.325	14.719
	07:17	9.286	9.723	147.216	18.421	13.260
	07:18	9.202	9.792	151.085	17.816	13.848
	07:19	9.191	9.808	148.995	16.989	14.181
	07:20	9.944	9.250	140.033	17.458	13.941

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 7:21
Stop Time 7:32

CALIBRATION BIAS 01

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.020	0.018	-0.052	-0.043	0.604	
C_{uf} Upscale gas	13.865	6.015	225.321	49.488	43.735	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.2%	0.2%	0.0%	0.0%	0.8%	
Upscale gas	-1.0%	-0.2%	-0.3%	0.3%	-2.0%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.001	-0.009	-0.117	-0.007	0.196	
C_{ui} Upscale gas	13.869	5.942	225.310	49.310	44.226	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.1%	0.2%	0.0%	0.0%	0.4%	
Upscale gas	0.0%	0.5%	0.0%	0.2%	-0.5%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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07:21:46	13.591	6.225	107.505	16.675	10.349
07:22:01	13.832	6.051	56.972	9.368	6.142
07:22:16	13.856	6.033	24.982	3.301	3.525
07:22:31	13.856	6.024	10.485	0.671	2.279
07:22:46	13.860	6.019	5.014	0.312	1.631
07:23:01	13.857	6.016	2.686	0.114	1.341
07:23:16	13.871	6.015	1.636	0.192	1.136
07:23:31	13.868	6.014	1.375	0.271	0.921
07:23:46	12.380	5.679	1.205	0.243	0.946
07:24:01	2.162	1.447	1.091	3.541	0.716
07:24:16	0.212	0.241	1.913	17.952	0.690
07:24:31	0.094	0.141	1.148	35.554	0.752
07:24:46	0.064	0.115	0.952	45.175	0.757
07:25:01	0.053	0.098	0.358	48.729	0.775
07:25:16	0.051	0.071	0.399	49.223	0.755
07:25:31	0.033	0.078	0.464	49.285	0.726
07:25:46	0.045	0.062	0.497	49.377	0.682
07:26:01	0.020	0.073	0.375	49.377	0.677
07:26:16	0.035	0.061	0.505	49.361	0.679
07:26:31	0.028	0.070	0.423	49.291	0.624
07:26:46	0.021	0.039	0.203	49.257	0.627
07:27:01	0.019	0.046	0.220	49.289	0.637
07:27:16	0.008	0.039	0.504	49.433	0.614
07:27:31	0.036	0.014	0.504	49.376	0.614
07:27:46	0.006	0.022	0.065	49.420	0.609
07:28:01	0.029	0.025	0.138	49.384	0.599
07:28:16	0.019	0.034	0.138	49.397	0.603
07:28:31	0.018	0.034	0.024	49.491	0.608
07:28:46	0.018	0.016	-0.090	49.498	0.603
07:29:01	0.023	0.003	-0.090	49.477	0.601
07:29:16	0.010	0.017	-0.090	49.501	0.613
07:29:31	0.021	0.009	0.089	49.514	0.609
07:29:46	0.015	0.016	0.016	49.480	0.613

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 7:21
Stop Time 7:32

CALIBRATION BIAS 01

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
07:30:01	0.014	0.021	-0.326	49.446	0.611	
07:30:16	0.021	0.037	0.016	49.477	0.611	
07:30:31	0.016	5.143	-0.326	48.187	0.894	
07:30:46	-0.219	9.293	55.433	36.733	14.650	
07:31:01	-0.017	9.653	152.552	18.413	32.583	
07:31:16	-0.024	9.710	197.184	6.647	38.978	
07:31:31	-0.081	9.727	215.727	1.519	41.089	
07:31:46	-0.053	9.734	221.620	0.230	42.193	
07:32:01	-0.091	9.737	224.241	0.007	42.921	
07:32:16	-0.017	9.765	225.210	-0.032	43.466	
07:32:31	-0.049	9.758	225.332	-0.083	43.772	
07:32:46	-0.073	9.771	225.421	-0.013	43.967	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 7:34
Stop time 8:01

REFERENCE METHOD RUN 2

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.020	0.018	-0.052	-0.043	0.604	
C_{ui}	Initial upscale	13.865	6.015	225.321	49.488	43.735	
C_{of}	Final zero	0.032	0.058	0.290	0.000	0.732	
C_{uf}	Final upscale	13.860	6.026	225.760	49.335	45.201	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.413	9.679	143.155	13.446	12.673	
C_{Gas}	**Bias adjusted**	**9.498**	**9.653**	**142.768**	**13.241**	**12.388**	

Clock Time (at end of sample period)

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07:35	9.964	9.201	139.286	11.679	21.802
07:36	10.049	9.187	132.741	12.874	20.370
07:37	10.233	9.005	124.373	12.424	14.722
07:38	9.096	9.894	134.302	13.095	11.726
07:39	9.081	9.960	142.129	13.583	10.662
07:40	10.126	9.107	136.465	11.858	8.369
07:41	10.048	9.165	142.867	12.492	7.255
07:42	9.560	9.567	147.322	13.828	8.810
07:43	9.685	9.490	142.703	13.779	11.271
07:44	9.865	9.350	135.462	14.242	17.495
07:45	10.318	9.005	129.957	14.658	21.127
07:46	10.214	9.091	128.677	14.731	21.273
07:47	9.269	9.796	132.412	14.895	19.233
07:48	8.502	10.474	149.518	15.254	17.691
07:49	9.047	9.908	151.290	14.393	13.240
07:50	9.587	9.428	149.591	12.740	9.019
07:51	9.568	9.432	151.376	11.754	6.583
07:52	9.476	9.610	152.126	12.283	5.148
07:53	8.688	10.277	155.525	12.788	4.932
07:54	9.211	9.859	151.249	13.111	6.178
07:55	8.953	10.042	149.770	12.300	8.595
07:56	8.596	10.362	149.412	12.334	12.678
07:57	9.029	10.013	148.960	13.168	12.583
07:58	9.192	9.864	144.691	14.212	11.446
07:59	8.645	10.362	150.100	16.234	12.275
08:00	8.735	10.179	145.354	14.359	13.636
08:01	9.422	9.694	147.521	13.984	14.042

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 8:03
Stop Time 8:13

CALIBRATION BIAS 02

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.032	0.058	0.290	0.000	0.732	
C_{uf}	Upscale gas	13.860	6.026	225.760	49.335	45.201	
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce}	Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)							
		14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.3%	0.5%	0.1%	0.0%	0.9%	
	Upscale gas	-1.1%	-0.1%	-0.2%	0.1%	-0.4%	
System Bias Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	0.020	0.018	-0.052	-0.043	0.604	
C_{ui}	Upscale gas	13.865	6.015	225.321	49.488	43.735	
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.1%	0.3%	0.1%	0.0%	0.1%	
	Upscale gas	0.0%	0.1%	0.1%	-0.2%	1.6%	
Drift Assessment Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	

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08:03:20	13.556	6.357	130.314	9.659	11.582
08:03:35	13.837	6.065	68.889	5.574	6.878
08:03:50	13.860	6.050	29.678	2.042	3.954
08:04:05	13.865	6.044	12.723	0.568	2.577
08:04:20	13.868	6.031	5.193	0.251	1.882
08:04:35	13.862	6.026	3.199	0.243	1.494
08:04:50	13.858	6.026	1.848	0.243	1.330
08:05:05	13.861	6.025	0.920	0.272	1.214
08:05:20	13.881	6.021	1.091	0.212	1.050
08:05:35	11.751	5.469	0.610	0.277	1.001
08:05:50	1.716	1.192	0.920	4.462	0.804
08:06:05	0.190	0.234	1.115	19.943	0.706
08:06:20	0.096	0.145	0.415	37.078	0.858
08:06:35	0.058	0.118	0.896	45.822	0.809
08:06:50	0.045	0.101	0.513	48.819	0.798
08:07:05	0.055	0.083	0.399	49.180	0.769
08:07:20	0.022	0.057	0.464	49.276	0.763
08:07:35	0.022	0.047	0.285	49.332	0.798
08:07:50	-0.017	0.019	0.253	49.234	0.749
08:08:05	0.018	0.067	0.033	49.417	0.713
08:08:20	0.039	0.056	0.595	49.293	0.758
08:08:35	0.026	0.062	0.073	49.319	0.679
08:08:50	0.031	0.056	0.203	49.395	0.760
08:09:05	0.032	0.327	0.285	49.353	0.759
08:09:20	0.006	7.133	18.087	46.239	2.289
08:09:35	-0.014	9.522	80.993	32.088	20.851
08:09:50	-0.004	9.702	163.932	14.448	35.214
08:10:05	-0.004	9.743	204.363	4.822	40.000
08:10:20	0.007	9.759	218.754	1.000	41.862
08:10:35	0.007	9.773	222.361	0.216	42.880
08:10:50	-0.004	9.772	224.143	0.076	43.536
08:11:05	-0.004	9.792	225.128	-0.012	43.852
08:11:20	-0.022	9.809	225.568	-0.056	44.161

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 8:03
Stop Time 8:13

CALIBRATION BIAS 02

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
08:11:35	0.000	9.784	225.641	-0.020	44.443	
08:11:50	-0.005	9.800	225.641	0.032	44.736	
08:12:05	0.000	9.801	225.730	-0.078	44.827	
08:12:20	-0.013	9.815	225.722	-0.059	44.948	
08:12:35	0.006	9.807	225.543	-0.013	45.071	
08:12:50	-0.003	9.823	225.698	-0.028	45.148	
08:13:05	-0.003	9.824	225.779	0.000	45.130	
08:13:20	0.006	9.830	225.804	0.028	45.327	
08:13:35	-0.015	9.834	225.763	-0.028	45.538	
08:13:50	-0.009	9.838	225.779	0.002	45.643	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 8:19
Stop time 8:46

REFERENCE METHOD RUN 3

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.032	0.058	0.290	0.000	0.732	
C_{ui}	Initial upscale	13.860	6.026	225.760	49.335	45.201	
C_{of}	Final zero	0.021	0.043	0.141	0.011	0.731	
C_{uf}	Final upscale	13.866	6.044	225.232	49.309	44.843	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.514	9.665	155.032	18.280	7.941	
C_{Gas}	**Bias adjusted**	**9.599**	**9.624**	**154.623**	**18.008**	**7.357**	

Clock Time (at end of sample period)

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08:20	9.692	9.513	150.692	17.536	13.354	
08:21	9.656	9.553	150.627	16.259	11.523	
08:22	9.864	9.389	148.085	16.278	9.600	
08:23	9.955	9.298	146.475	17.921	8.081	
08:24	9.255	9.842	157.774	19.074	8.145	
08:25	9.284	9.839	163.584	19.132	9.166	
08:26	9.543	9.631	161.795	18.419	7.438	
08:27	9.998	9.302	159.198	18.683	6.048	
08:28	9.796	9.431	152.509	18.136	5.094	
08:29	9.633	9.575	154.156	18.200	4.868	
08:30	9.948	9.347	150.380	18.199	4.829	
08:31	9.972	9.323	150.291	18.835	4.588	
08:32	9.709	9.522	151.628	20.192	4.786	
08:33	9.398	9.758	154.678	21.767	5.860	
08:34	9.295	9.831	157.436	21.361	7.018	
08:35	9.181	9.908	160.747	20.920	7.735	
08:36	9.263	9.847	158.820	19.323	7.879	
08:37	9.955	9.327	152.878	17.453	7.174	
08:38	9.144	9.919	153.126	17.431	5.776	
08:39	8.686	10.378	162.159	19.208	5.599	
08:40	9.638	9.591	149.656	18.039	5.280	
08:41	9.527	9.656	145.094	17.170	5.316	
08:42	9.347	9.819	152.379	16.803	5.895	
08:43	8.874	10.166	162.365	17.203	5.988	
08:44	9.255	9.880	165.737	17.256	8.260	
08:45	9.691	9.513	156.933	16.202	15.181	
08:46	9.305	9.802	156.656	16.545	23.925	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 8:47
Stop Time 8:58

CALIBRATION BIAS 03

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.021	0.043	0.141	0.011	0.731	
C_{uf} Upscale gas	13.866	6.044	225.232	49.309	44.843	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.2%	0.4%	0.0%	0.0%	0.9%	
Upscale gas	-1.0%	0.0%	-0.3%	0.1%	-0.8%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.032	0.058	0.290	0.000	0.732	
C_{ui} Upscale gas	13.860	6.026	225.760	49.335	45.201	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	-0.1%	0.0%	0.0%	0.0%	
Upscale gas	0.0%	0.1%	-0.1%	0.0%	-0.4%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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08:47:24	12.053	7.974	156.109	16.934	28.790
08:47:39	13.734	6.224	133.374	12.011	17.283
08:47:54	13.851	6.061	64.151	6.176	7.933
08:48:09	13.862	6.049	24.705	1.711	4.173
08:48:24	13.867	6.044	10.720	0.518	2.729
08:48:39	13.870	6.044	4.469	0.293	2.064
08:48:54	13.861	6.043	2.890	0.265	1.628
08:49:09	13.872	6.039	1.693	0.153	1.415
08:49:24	13.874	6.036	1.302	0.234	1.268
08:49:39	10.014	4.879	1.164	0.462	1.133
08:49:54	1.056	0.794	0.741	6.408	0.873
08:50:09	0.154	0.201	1.017	24.589	0.942
08:50:24	0.074	0.137	0.936	38.914	0.970
08:50:39	0.040	0.103	0.708	46.950	0.889
08:50:54	0.041	0.098	0.741	48.859	0.858
08:51:09	0.022	0.089	0.472	49.166	0.906
08:51:24	0.048	0.077	0.741	49.236	0.868
08:51:39	0.016	0.064	0.586	49.252	0.858
08:51:54	0.036	0.073	0.733	49.228	0.832
08:52:09	0.022	0.056	0.391	49.265	0.767
08:52:24	0.000	0.056	0.163	49.291	0.787
08:52:39	0.021	0.062	0.334	49.306	0.800
08:52:54	0.037	0.071	0.195	49.381	0.840
08:53:09	0.026	0.050	0.513	49.263	0.788
08:53:24	0.002	0.048	0.317	49.291	0.777
08:53:39	0.021	0.046	-0.025	49.394	0.762
08:53:54	0.010	0.048	0.122	49.294	0.822
08:54:09	0.021	0.041	0.146	49.252	0.711
08:54:24	0.010	0.049	0.366	49.319	0.739
08:54:39	0.032	0.039	-0.090	49.358	0.742
08:54:54	0.027	0.028	0.138	49.369	0.760
08:55:09	0.022	1.275	0.366	49.273	0.780
08:55:24	0.001	8.371	28.620	44.068	6.338

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 8:47
Stop Time 8:58

CALIBRATION BIAS 03

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
08:55:39	0.007	9.603	104.070	26.085	27.627	
08:55:54	0.006	9.713	176.581	11.319	37.818	
08:56:09	0.000	9.744	208.791	2.815	41.171	
08:56:24	-0.011	9.766	218.600	0.633	42.582	
08:56:39	-0.007	9.771	222.776	0.088	43.318	
08:56:54	0.002	9.763	223.931	0.072	43.775	
08:57:09	-0.003	9.780	224.908	-0.021	44.200	
08:57:24	-0.004	9.794	224.966	-0.038	44.444	
08:57:39	0.004	9.803	225.153	0.000	44.645	
08:57:54	-0.006	9.827	225.161	0.028	44.828	
08:58:09	-0.002	9.823	225.381	0.007	45.057	
08:58:24	-0.007	9.810	225.389	-0.015	45.177	
08:58:39	-0.002	9.831	225.194	0.007	45.351	
08:58:54	-0.001	9.841	225.446	0.007	45.574	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 9:04
Stop time 9:31

REFERENCE METHOD RUN 4

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.021	0.043	0.141	0.011	0.731	
C_{ui}	Initial upscale	13.866	6.044	225.232	49.309	44.843	
C_{of}	Final zero	0.019	0.045	0.032	-0.005	0.757	
C_{uf}	Final upscale	13.888	6.037	224.566	49.373	44.595	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.223	9.801	150.875	12.364	10.603	
C_{Gas}	**Bias adjusted**	**9.298**	**9.746**	**150.914**	**12.176**	**10.134**	

Clock Time (at end of sample period) 041612 111549					
09:05	9.375	9.641	151.614	15.489	6.188
09:06	9.418	9.625	153.274	15.910	6.866
09:07	9.731	9.383	142.241	15.269	7.938
09:08	9.891	9.242	134.795	14.125	8.134
09:09	9.606	9.477	133.557	14.795	8.375
09:10	9.831	9.278	133.478	14.430	7.453
09:11	9.705	9.411	138.195	15.314	8.341
09:12	9.352	9.664	143.077	14.789	10.775
09:13	9.866	9.266	146.634	15.195	13.228
09:14	9.704	9.424	149.410	16.319	13.495
09:15	9.430	9.602	147.263	16.143	14.722
09:16	8.881	10.039	151.198	16.465	17.359
09:17	8.978	9.962	155.903	17.337	15.635
09:18	9.292	9.758	143.124	19.659	13.981
09:19	8.974	10.006	139.964	14.042	12.545
09:20	9.011	9.969	148.844	9.959	12.469
09:21	8.623	10.351	156.357	11.170	13.462
09:22	9.398	9.683	154.096	7.269	13.013
09:23	8.895	10.075	157.373	8.604	12.959
09:24	9.008	10.031	159.174	9.161	12.580
09:25	8.606	10.341	161.665	8.634	11.200
09:26	8.975	10.007	163.716	7.834	10.076
09:27	9.014	9.969	161.306	7.742	8.225
09:28	8.716	10.212	161.736	7.488	6.933
09:29	8.946	10.021	163.704	6.706	6.801
09:30	8.999	9.992	160.490	6.825	6.735
09:31	8.788	10.185	161.435	7.148	6.792

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 9:32
Stop Time 9:43

CALIBRATION BIAS 04

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.019	0.045	0.032	-0.005	0.757	
C_{uf}	Upscale gas	13.888	6.037	224.566	49.373	44.595	
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce}	Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)							
		14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.2%	0.4%	0.0%	0.0%	0.9%	
	Upscale gas	-0.9%	-0.1%	-0.4%	0.1%	-1.1%	
System Bias Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)							
C_{ol}	Zero gas	0.021	0.043	0.141	0.011	0.731	
C_{ul}	Upscale gas	13.866	6.044	225.232	49.309	44.843	
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%	
	Upscale gas	0.2%	-0.1%	-0.1%	0.1%	-0.3%	
Drift Assessment Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	

041612 111549

09:32:05	9.153	9.903	158.226	6.480	7.155
09:32:20	10.748	8.973	154.661	6.478	7.041
09:32:35	13.573	6.436	144.672	5.547	6.020
09:32:50	13.844	6.081	75.914	3.186	4.413
09:33:05	13.869	6.048	33.049	1.170	2.903
09:33:20	13.858	6.050	12.796	0.361	2.071
09:33:35	13.867	6.042	6.178	0.246	1.551
09:33:50	13.885	6.042	3.500	0.199	1.289
09:34:05	13.881	6.041	2.328	0.164	1.195
09:34:20	13.880	6.042	1.546	0.216	1.024
09:34:35	13.882	6.039	1.262	0.174	0.953
09:34:50	13.895	6.039	1.172	0.128	0.936
09:35:05	13.888	6.037	0.895	0.220	0.845
09:35:20	13.880	6.033	0.961	0.197	0.876
09:35:35	13.885	6.032	0.749	0.195	0.842
09:35:50	13.896	6.032	0.594	0.218	0.822
09:36:05	8.033	4.123	0.399	0.720	0.718
09:36:20	0.665	0.555	0.896	9.130	0.666
09:36:35	0.140	0.180	0.863	27.040	0.765
09:36:50	0.091	0.132	0.814	41.678	0.700
09:37:05	0.068	0.111	0.538	47.592	0.718
09:37:20	0.042	0.099	0.611	49.117	0.684
09:37:35	0.035	0.088	-0.081	49.218	0.729
09:37:50	0.036	0.068	0.285	49.257	0.830
09:38:05	0.026	0.050	0.448	49.257	0.750
09:38:20	0.027	0.056	0.171	49.314	0.753
09:38:35	0.026	0.050	-0.122	49.328	0.760
09:38:50	0.030	0.067	0.106	49.348	0.762
09:39:05	0.036	0.039	0.171	49.296	0.739
09:39:20	0.036	0.059	0.252	49.294	0.757
09:39:35	0.015	0.030	-0.196	49.363	0.757
09:39:50	0.031	0.040	0.024	49.403	0.741
09:40:05	0.024	0.038	-0.196	49.394	0.685

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 9:32
Stop Time 9:43

CALIBRATION BIAS 04

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
09:40:20	0.017	0.051	0.154	49.377	0.757	
09:40:35	0.023	0.044	0.032	49.395	0.757	
09:40:50	0.018	0.038	-0.090	49.346	0.757	
09:41:05	0.023	2.249	0.366	48.964	0.767	
09:41:20	0.007	8.816	28.018	41.721	8.993	
09:41:35	0.002	9.641	122.629	24.290	29.765	
09:41:50	0.007	9.723	185.088	9.104	38.326	
09:42:05	-0.003	9.752	210.436	2.605	41.141	
09:42:20	-0.010	9.774	219.821	0.405	42.453	
09:42:35	0.001	9.765	222.426	0.134	43.119	
09:42:50	0.001	9.774	223.687	0.054	43.857	
09:43:05	-0.011	9.805	224.355	0.031	44.361	
09:43:20	-0.015	9.802	224.615	-0.036	44.620	
09:43:35	-0.003	9.801	224.729	-0.010	44.802	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 9:46
Stop time 10:13

REFERENCE METHOD RUN 5

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.019	0.045	0.032	-0.005	0.757	
C_{ui}	Initial upscale	13.888	6.037	224.566	49.373	44.595	
C_{of}	Final zero	0.028	0.056	0.328	-0.070	0.755	
C_{uf}	Final upscale	13.887	6.033	224.602	49.274	44.608	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.744	9.402	145.141	7.558	13.457	
C_{Gas}	**Bias adjusted**	**9.816**	**9.360**	**145.346**	**7.478**	**13.094**	

Clock Time (at end of sample period) 0:11612 111549						
09:47	10.004	9.215	138.745	4.137	7.068	
09:48	9.678	9.451	135.773	5.381	7.406	
09:49	9.723	9.423	139.278	6.088	8.934	
09:50	9.452	9.632	142.623	6.032	11.040	
09:51	9.704	9.436	142.428	5.442	12.149	
09:52	9.730	9.387	143.329	5.755	12.452	
09:53	9.432	9.628	145.210	6.221	13.530	
09:54	9.996	9.180	142.045	5.839	16.822	
09:55	10.399	8.889	133.618	5.668	20.171	
09:56	9.904	9.287	135.081	6.821	26.561	
09:57	10.147	9.101	140.767	6.414	35.845	
09:58	10.194	9.057	132.727	6.173	41.501	
09:59	9.709	9.443	140.816	8.761	42.193	
10:00	9.662	9.445	146.620	11.374	24.794	
10:01	9.803	9.316	147.517	9.714	15.229	
10:02	9.728	9.376	147.283	9.460	8.473	
10:03	9.611	9.498	146.376	9.579	5.409	
10:04	9.674	9.467	154.961	9.268	4.049	
10:05	10.080	9.141	155.226	7.116	3.751	
10:06	9.170	9.833	157.519	7.763	4.157	
10:07	9.249	9.802	160.909	7.656	4.812	
10:08	9.967	9.258	147.247	6.561	5.818	
10:09	10.173	9.067	132.765	6.935	5.212	
10:10	9.784	9.394	141.166	9.189	5.264	
10:11	9.317	9.752	152.147	10.772	6.126	
10:12	9.250	9.809	157.723	10.853	6.674	
10:13	9.548	9.568	158.899	9.102	7.909	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 10:14
Stop Time 10:25

CALIBRATION BIAS 05

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.028	0.056	0.328	-0.070	0.755	
C_{uf} Upscale gas	13.887	6.033	224.602	49.274	44.608	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.3%	0.5%	0.1%	-0.1%	0.9%	
Upscale gas	-0.9%	-0.1%	-0.4%	0.0%	-1.1%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.019	0.045	0.032	-0.005	0.757	
C_{ui} Upscale gas	13.888	6.037	224.566	49.373	44.595	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	0.1%	0.1%	0.1%	-0.1%	0.0%	
Upscale gas	0.0%	0.0%	0.0%	-0.1%	0.0%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612-111549

10:14:46	8.847	10.086	162.125	10.465	10.136
10:15:01	8.840	10.134	160.741	11.258	10.618
10:15:16	9.084	9.886	160.903	11.297	11.272
10:15:31	11.932	7.527	160.179	10.434	11.352
10:15:46	13.737	6.177	116.451	7.183	9.288
10:16:01	13.859	6.054	55.507	3.376	5.491
10:16:16	13.869	6.050	23.752	0.907	3.206
10:16:31	13.879	6.046	10.631	0.350	2.199
10:16:46	13.873	6.042	4.974	0.270	1.667
10:17:01	13.891	6.041	2.963	0.291	1.358
10:17:16	13.886	6.040	2.035	0.192	1.224
10:17:31	13.886	6.039	1.367	0.215	1.096
10:17:46	13.882	6.038	0.879	0.176	1.025
10:18:01	13.891	6.040	1.115	0.174	0.921
10:18:16	13.885	6.036	0.749	0.233	0.891
10:18:31	13.891	6.033	0.863	0.224	0.857
10:18:46	13.886	6.031	0.961	0.254	0.840
10:19:01	13.892	6.030	0.627	0.200	0.832
10:19:16	13.889	6.033	0.513	0.137	0.813
10:19:31	13.897	6.031	0.456	0.174	0.768
10:19:46	10.984	5.220	0.733	0.238	0.643
10:20:01	1.349	0.962	0.326	4.987	0.661
10:20:16	0.151	0.189	0.887	22.056	0.710
10:20:31	0.096	0.139	0.285	38.353	0.768
10:20:46	0.056	0.115	0.505	46.680	0.767
10:21:01	0.069	0.100	0.407	48.970	0.760
10:21:16	0.050	0.076	0.106	49.208	0.744
10:21:31	0.021	0.060	0.488	49.193	0.759
10:21:46	0.027	0.062	0.285	49.239	0.757
10:22:01	0.030	0.050	0.415	49.307	0.751
10:22:16	0.026	0.056	0.285	49.275	0.757
10:22:31	0.033	0.306	0.146	49.270	0.702
10:22:46	0.003	7.054	12.039	46.419	2.207

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 10:14
Stop Time 10:25

CALIBRATION BIAS 05

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
10:23:01	0.006	9.533	60.782	32.266	21.187	
10:23:16	0.008	9.715	163.972	14.498	36.044	
10:23:31	0.007	9.753	203.069	4.594	40.715	
10:23:46	0.012	9.774	216.614	0.935	42.385	
10:24:01	0.005	9.783	221.652	0.132	43.230	
10:24:16	0.006	9.788	223.280	0.057	43.785	
10:24:31	0.006	9.815	224.013	0.052	44.215	
10:24:46	-0.001	9.812	224.428	-0.051	44.479	
10:25:01	-0.003	9.812	224.672	-0.101	44.617	
10:25:16	0.001	9.829	224.705	-0.057	44.729	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 10:29
Stop time 10:56

REFERENCE METHOD RUN 6

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.028	0.056	0.328	-0.070	0.755	
C_{ui}	Initial upscale	13.887	6.033	224.602	49.274	44.608	
C_{of}	Final zero	0.019	0.023	-0.136	0.000	0.824	
C_{uf}	Final upscale	13.886	6.031	224.450	49.448	44.867	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.193	9.810	148.974	7.786	11.940	
C_{Gas}	**Bias adjusted**	**9.260**	**9.767**	**149.257**	**7.695**	11.468	

Clock Time (at end of sample period)

041612 111549

10:30	9.355	9.666	167.129	6.552	12.599
10:31	9.788	9.338	151.955	5.829	12.571
10:32	9.529	9.531	150.234	6.084	10.554
10:33	9.645	9.457	152.464	6.966	9.640
10:34	9.757	9.369	146.634	6.715	9.243
10:35	9.081	9.882	147.155	6.753	9.440
10:36	9.885	9.288	144.453	5.316	9.417
10:37	10.365	8.889	129.272	4.654	7.973
10:38	9.698	9.421	136.429	6.162	7.465
10:39	9.183	9.827	153.675	8.022	8.801
10:40	9.395	9.676	154.996	8.479	10.437
10:41	9.169	9.836	160.173	7.956	10.853
10:42	8.941	10.003	159.162	7.604	10.438
10:43	8.579	10.306	159.300	7.722	9.755
10:44	8.934	10.006	151.996	9.309	10.034
10:45	9.040	9.914	144.648	11.071	11.526
10:46	9.028	9.948	144.186	13.887	18.288
10:47	9.019	9.953	141.921	13.889	25.557
10:48	8.716	10.196	146.321	11.542	31.777
10:49	8.997	9.975	153.529	8.909	33.802
10:50	9.098	9.881	148.205	8.318	18.818
10:51	9.049	9.911	146.414	7.722	9.643
10:52	9.052	9.916	148.392	6.816	6.910
10:53	9.017	9.946	146.032	6.612	5.574
10:54	8.624	10.211	146.176	5.385	4.604
10:55	8.601	10.276	145.389	5.577	3.645
10:56	8.673	10.254	146.066	6.380	3.016

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 11:00
Stop Time 11:09

CALIBRATION BIAS 06

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.019	0.023	-0.136	0.000	0.824	
C_{uf} Upscale gas	13.886	6.031	224.450	49.448	44.867	
Analyzer Calibration Error Reponses (C_{DIr})						
C_{oco} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.2%	0.3%	0.0%	0.0%	1.0%	
Upscale gas	-0.9%	-0.1%	-0.5%	0.2%	-0.8%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.028	0.056	0.328	-0.070	0.755	
C_{ui} Upscale gas	13.887	6.033	224.602	49.274	44.608	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	-0.2%	-0.1%	0.1%	0.1%	
Upscale gas	0.0%	0.0%	0.0%	0.2%	0.3%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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11:00:04	13.874	6.032	0.521	0.114	0.910
11:00:19	13.891	6.030	0.399	0.178	0.938
11:00:34	13.888	6.032	0.627	0.178	0.868
11:00:49	13.880	6.032	0.391	0.220	0.934
11:01:04	13.893	6.032	0.505	0.135	0.907
11:01:19	13.889	6.031	0.391	0.114	0.877
11:01:34	13.897	6.029	0.024	0.210	0.892
11:01:49	13.886	6.028	0.504	0.223	0.814
11:02:04	13.879	6.030	0.268	0.135	0.871
11:02:19	9.674	4.766	0.155	0.365	0.876
11:02:34	0.960	0.735	0.236	6.126	0.742
11:02:49	0.151	0.195	0.554	24.666	0.789
11:03:04	0.096	0.131	0.472	39.425	0.809
11:03:19	0.060	0.112	-0.025	47.393	0.838
11:03:34	0.050	0.099	-0.139	48.987	0.850
11:03:49	0.044	0.070	0.024	49.259	0.855
11:04:04	0.044	0.075	0.252	49.294	0.876
11:04:19	0.034	0.062	-0.204	49.420	0.790
11:04:34	0.025	0.073	-0.090	49.327	0.847
11:04:49	0.043	0.073	-0.204	49.363	0.895
11:05:04	0.043	0.067	0.024	49.441	0.808
11:05:19	0.025	0.068	-0.130	49.417	0.848
11:05:34	0.020	0.059	0.130	49.413	0.838
11:05:49	0.014	0.023	-0.440	49.444	0.773
11:06:04	0.029	0.016	0.130	49.446	0.863
11:06:19	0.016	0.031	-0.098	49.454	0.837
11:06:34	0.025	0.040	0.130	49.456	0.861
11:06:49	0.021	0.034	-0.252	49.415	0.822
11:07:04	0.030	0.028	-0.440	49.447	0.843
11:07:19	0.017	2.840	2.662	49.216	0.783
11:07:34	-0.005	9.022	13.154	41.778	11.256
11:07:49	0.001	9.662	119.886	22.878	31.738
11:08:04	-0.009	9.735	185.380	9.254	39.274

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 11:00
Stop Time 11:09

CALIBRATION BIAS 06

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
11:08:19	-0.005	9.758	212.788	2.144	41.854	
11:08:34	-0.006	9.770	219.259	0.340	43.105	
11:08:49	-0.011	9.793	222.491	0.064	43.736	
11:09:04	-0.005	9.791	223.565	0.075	44.259	
11:09:19	0.001	9.803	224.339	0.008	44.579	
11:09:34	-0.026	9.815	224.420	-0.016	44.892	
11:09:49	0.005	9.826	224.591	0.008	45.128	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 11:12
Stop time 11:39

REFERENCE METHOD RUN 7

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.019	0.023	-0.136	0.000	0.824	
C_{ui}	Initial upscale	13.886	6.031	224.450	49.448	44.867	
C_{of}	Final zero	0.042	0.073	0.252	0.019	0.936	
C_{uf}	Final upscale	13.889	6.035	224.518	49.408	44.960	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.773	9.357	144.693	5.230	7.813	
C_{Gas}	**Bias adjusted**	**9.843**	**9.317**	**145.005**	**5.134**	7.117	

Clock Time (at end of sample period) 041612_111549						
	11:13	9.966	9.187	133.270	4.013	5.619
	11:14	10.114	9.083	138.805	4.239	5.462
	11:15	9.838	9.272	145.442	3.717	6.002
	11:16	9.686	9.378	151.188	3.317	5.937
	11:17	10.031	9.115	145.989	3.676	5.318
	11:18	9.709	9.343	140.696	3.400	5.164
	11:19	9.797	9.280	140.322	3.658	5.511
	11:20	9.929	9.220	137.898	4.733	5.632
	11:21	10.521	8.727	130.230	4.120	5.437
	11:22	10.394	8.836	132.548	5.277	5.369
	11:23	9.596	9.480	135.248	6.296	6.586
	11:24	9.175	9.855	142.135	5.862	8.760
	11:25	9.496	9.596	149.296	4.660	8.398
	11:26	9.664	9.461	153.561	5.091	8.569
	11:27	9.684	9.453	155.260	5.292	9.276
	11:28	9.273	9.746	153.057	5.927	9.333
	11:29	9.353	9.699	148.285	5.431	8.737
	11:30	9.468	9.604	144.355	5.035	8.985
	11:31	9.792	9.356	140.790	6.029	11.722
	11:32	9.776	9.390	142.540	6.105	11.161
	11:33	9.885	9.312	146.522	6.418	8.695
	11:34	9.822	9.354	149.216	6.920	9.519
	11:35	9.597	9.524	154.917	6.686	9.741
	11:36	9.554	9.566	154.569	6.564	9.539
	11:37	10.364	8.934	149.261	5.641	8.931
	11:38	10.037	9.153	143.173	6.000	8.083
	11:39	9.358	9.714	148.134	7.106	9.466

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 11:39
Stop Time 11:50

CALIBRATION BIAS 07

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
System Response to Calibration Gasses (C_S)							
C_{of}	Zero gas	0.042	0.073	0.252	0.019	0.936	
C_{uf}	Upscale gas	13.889	6.035	224.518	49.408	44.960	
Analyzer Calibration Error Reponses (C_{Dir})							
C_{oce}	Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mca}	Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})							
C_{ma}	Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)							
		14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)							
	Zero gas	0.3%	0.6%	0.1%	0.0%	1.1%	
	Upscale gas	-0.9%	-0.1%	-0.4%	0.2%	-0.7%	
System Bias Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)							
C_{oi}	Zero gas	0.019	0.023	-0.136	0.000	0.824	
C_{ui}	Upscale gas	13.886	6.031	224.450	49.448	44.867	
Drift Assessment as Percent of Calibration Span Value (D) (3%)							
	Zero gas	0.2%	0.4%	0.1%	0.0%	0.1%	
	Upscale gas	0.0%	0.0%	0.0%	0.0%	0.1%	
Drift Assessment Status							
	Zero gas	OK	OK	OK	OK	OK	
	Upscale gas	OK	OK	OK	OK	OK	

041612_111549

11:39:51	10.154	8.516	150.362	7.739	11.580
11:40:06	13.461	6.335	122.629	6.432	10.888
11:40:21	13.837	6.080	75.743	3.692	7.736
11:40:36	13.863	6.054	32.072	1.337	4.581
11:40:51	13.867	6.046	13.732	0.392	2.971
11:41:06	13.876	6.037	6.520	0.194	2.243
11:41:21	13.856	6.050	3.313	0.195	1.810
11:41:36	13.801	6.009	1.612	0.091	1.563
11:41:51	13.857	6.036	1.612	0.145	1.460
11:42:06	13.876	6.037	0.928	0.165	1.372
11:42:21	13.823	5.998	0.358	0.181	1.197
11:42:36	13.875	6.033	0.936	0.202	1.175
11:42:51	13.887	6.035	0.749	0.222	1.195
11:43:06	13.886	6.036	0.961	0.267	1.200
11:43:21	13.893	6.034	0.399	0.246	1.087
11:43:36	13.881	6.032	0.513	0.202	1.044
11:43:51	13.889	6.032	0.570	0.179	1.107
11:44:06	13.883	6.032	0.391	0.192	1.047
11:44:21	13.886	6.033	0.505	0.198	1.011
11:44:36	13.889	6.034	0.163	0.197	1.004
11:44:51	13.882	6.032	0.260	0.202	1.016
11:45:06	6.356	3.423	0.423	1.071	0.879
11:45:21	0.490	0.435	0.505	10.637	0.812
11:45:36	0.130	0.171	0.358	29.641	0.848
11:45:51	0.092	0.134	0.065	42.899	0.933
11:46:06	0.053	0.115	0.382	48.190	0.918
11:46:21	0.050	0.102	0.171	49.229	1.013
11:46:36	0.034	0.086	0.366	49.374	0.928
11:46:51	0.039	0.070	0.252	49.395	0.952
11:47:06	0.052	0.063	0.138	49.456	0.928
11:47:21	0.026	0.066	0.032	49.489	1.003
11:48:16	0.027	0.282	0.187	49.488	0.962
11:48:31	0.015	6.936	0.676	47.038	2.243

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 11:39
Stop Time 11:50

CALIBRATION BIAS 07

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
11:48:46	0.018	9.539	71.086	32.350	20.534	
11:49:01	-0.001	9.715	164.152	14.982	35.977	
11:49:16	-0.004	9.760	202.304	4.707	40.868	
11:49:31	0.006	9.765	216.247	1.001	42.750	
11:49:46	0.001	9.740	221.400	0.161	43.590	
11:50:01	0.002	9.805	223.353	0.060	44.278	
11:50:16	0.000	9.809	224.208	0.023	44.622	
11:50:31	-0.003	9.813	224.591	0.010	44.998	
11:50:46	0.006	9.814	224.753	0.026	45.260	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 11:57
Stop time 12:24

REFERENCE METHOD RUN 8

		Channel 1	Channel 2	Channel 3	Channel 4	Channel 5	Channel 6
		O2	CO2	NOX	CO	SO2	
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.042	0.073	0.252	0.019	0.936	
C_{ui}	Initial upscale	13.889	6.035	224.518	49.408	44.960	
C_{of}	Final zero	0.034	0.068	-0.174	0.001	0.880	
C_{uf}	Final upscale	13.879	6.029	224.678	49.502	45.216	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	10.375	8.972	138.875	11.887	2.728	
C_{Gas}	**Bias adjusted**	**10.452**	**8.944**	**139.108**	**11.674**	**1.862**	

Clock Time (at end of sample period)

041612@1:11549

Clock Time	O2	CO2	NOX	CO	SO2
11:58	10.316	9.001	136.693	10.760	3.969
11:59	10.979	8.509	127.011	9.579	4.067
12:00	11.421	8.099	122.906	10.919	3.734
12:01	10.903	8.524	131.805	11.191	3.315
12:02	9.734	9.440	140.134	9.098	3.269
12:03	9.154	9.855	149.953	7.758	3.313
12:04	9.699	9.450	157.031	5.755	3.224
12:05	10.206	9.033	140.350	4.413	2.868
12:06	10.066	9.152	140.395	5.338	2.518
12:07	10.201	9.046	135.853	5.978	2.459
12:08	10.092	9.178	131.705	8.164	2.534
12:09	10.017	9.261	135.786	10.407	2.683
12:10	9.763	9.469	137.403	11.127	2.874
12:11	9.982	9.333	143.154	12.560	3.091
12:12	10.312	9.067	149.072	12.415	3.141
12:13	10.545	8.892	152.786	12.262	3.032
12:14	10.529	8.882	149.786	13.934	2.679
12:15	9.230	9.898	156.260	18.818	2.560
12:16	9.400	9.766	159.375	16.316	2.578
12:17	10.347	9.055	148.297	14.043	2.340
12:18	10.486	8.936	142.357	13.471	2.275
12:19	10.663	8.810	141.992	16.343	2.250
12:20	11.075	8.489	138.219	17.231	2.071
12:21	11.718	7.908	121.653	15.280	1.817
12:22	11.887	7.747	111.583	16.092	1.676
12:23	11.235	8.302	117.116	16.657	1.646
12:24	10.157	9.143	130.936	15.048	1.667

Prepared by Clean Air Engineering Proprietary Software
SS CEM Version 08-2004g5

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 12:28
Stop Time 12:38

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.034	0.068	-0.174	0.001	0.880	
C_{uf} Upscale gas	13.879	6.029	224.678	49.502	45.216	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.3%	0.6%	0.0%	0.0%	1.1%	
Upscale gas	-0.9%	-0.1%	-0.4%	0.3%	-0.4%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{ol} Zero gas	0.042	0.073	0.252	0.019	0.936	
C_{ul} Upscale gas	13.889	6.035	224.518	49.408	44.960	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	0.0%	-0.1%	0.0%	-0.1%	
Upscale gas	-0.1%	0.0%	0.0%	0.1%	0.3%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

041612. 111549

12:29:08	13.881	6.028	0.505	0.135	0.995
12:29:23	13.876	6.027	0.505	0.223	0.972
12:29:38	13.885	6.028	0.220	0.202	0.889
12:29:53	13.884	6.028	0.504	0.202	0.982
12:30:08	13.876	6.030	0.317	0.244	1.002
12:30:23	13.876	6.028	0.106	0.221	0.974
12:30:38	13.881	6.027	0.179	0.225	0.972
12:30:53	13.888	6.027	-0.122	0.223	0.961
12:31:08	13.885	6.027	0.366	0.138	0.977
12:31:23	13.875	6.028	0.114	0.174	0.948
12:31:38	13.854	6.025	-0.065	0.211	0.887
12:31:53	13.875	6.028	0.040	0.203	0.838
12:32:08	9.520	4.663	0.032	0.506	0.943
12:32:23	0.935	0.716	0.163	6.432	0.674
12:32:38	0.157	0.191	0.114	25.858	0.816
12:32:53	0.096	0.137	0.334	39.694	0.881
12:33:08	0.067	0.116	0.032	47.784	0.886
12:33:23	0.046	0.105	0.040	49.185	0.980
12:33:38	0.056	0.076	0.024	49.386	0.927
12:33:53	0.038	0.073	-0.212	49.456	0.930
12:34:08	0.045	0.068	-0.212	49.480	0.853
12:34:23	0.030	0.057	-0.212	49.507	0.879
12:34:38	0.027	0.079	-0.098	49.519	0.907
12:34:53	0.032	0.076	-0.212	49.542	0.952
12:35:08	0.018	0.065	-0.098	49.548	0.907
12:35:23	0.027	1.619	-0.326	49.524	0.887
12:35:38	0.025	8.560	18.315	42.919	6.002
12:35:53	-0.003	9.623	112.446	27.163	27.069
12:36:08	-0.003	9.726	179.333	9.919	38.206
12:36:23	0.001	9.756	209.166	3.243	41.718
12:36:38	0.007	9.771	219.072	0.500	43.054
12:36:53	-0.006	9.776	222.116	0.119	43.793
12:37:08	0.005	9.786	223.288	0.054	44.303

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 12:28
Stop Time 12:38

CALIBRATION BIAS 08

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
12:37:23	-0.006	9.805	223.973	0.046	44.674	
12:37:38	0.005	9.782	224.583	0.000	44.972	
12:37:53	-0.014	9.795	224.680	-0.007	45.200	
12:38:08	0.001	9.812	224.770	0.010	45.475	

Wheelabrator March 21, 2012
CleanAir Project No. 11414 Start Time 12:41
South Broward Stop time 13:08
Unit 3 **REFERENCE METHOD RUN 9**

		Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
		FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
Calibration Checks							
C_{oi}	Initial zero	0.034	0.068	-0.174	0.001	0.880	
C_{ui}	Initial upscale	13.879	6.029	224.678	49.502	45.216	
C_{of}	Final zero	0.024	0.167	0.054	0.022	0.832	
C_{uf}	Final upscale	13.868	6.041	223.864	49.490	44.511	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	10.135	9.117	138.088	9.951	1.517	
C_{Gas}	**Bias adjusted**	**10.220**	**9.110**	**138.560**	**9.762**	**0.680**	

Clock Time (at end of sample period)

041612 111549

12:42	10.044	9.146	160.867	6.697	1.920
12:43	10.121	9.023	137.483	5.637	1.652
12:44	9.921	9.212	139.068	5.649	1.539
12:45	9.777	9.345	138.751	6.471	1.440
12:46	9.944	9.236	138.030	7.227	1.398
12:47	10.284	8.973	135.523	7.252	1.420
12:48	10.032	9.196	136.158	6.615	1.412
12:49	11.039	8.418	133.863	6.978	1.397
12:50	11.034	8.373	122.733	8.846	1.401
12:51	10.259	9.033	129.149	12.337	1.391
12:52	10.428	8.883	136.620	17.350	1.447
12:53	10.539	8.820	139.831	14.243	1.522
12:54	10.172	9.092	145.975	15.196	1.671
12:55	9.777	9.413	156.791	10.505	2.048
12:56	10.568	8.764	150.796	7.608	2.025
12:57	11.098	8.350	133.885	7.461	1.630
12:58	10.648	8.727	124.569	9.735	1.400
12:59	10.030	9.252	126.522	13.568	1.276
13:00	9.948	9.300	128.797	13.857	1.239
13:01	9.843	9.367	131.445	13.327	1.289
13:02	9.967	9.291	135.320	10.416	1.453
13:03	10.199	9.101	136.117	8.917	1.524
13:04	10.208	9.080	131.976	9.459	1.515
13:05	9.599	9.557	142.025	11.030	1.509
13:06	9.657	9.544	146.215	11.461	1.488
13:07	9.651	9.522	142.033	10.517	1.484
13:08	8.858	10.132	147.835	10.308	1.482

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 13:09
Stop Time 13:18

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.024	0.167	0.054	0.022	0.832	
C_{uf} Upscale gas	13.868	6.041	223.864	49.490	44.511	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mca} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
***Calibration Span* Value (CS)**						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.2%	1.3%	0.0%	0.0%	1.0%	
Upscale gas	-1.0%	0.0%	-0.6%	0.3%	-1.2%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.034	0.068	-0.174	0.001	0.880	
C_{ui} Upscale gas	13.879	6.029	224.678	49.502	45.216	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	0.7%	0.1%	0.0%	-0.1%	
Upscale gas	-0.1%	0.1%	-0.2%	0.0%	-0.8%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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13:09:54	12.743	6.846	166.911	8.134	1.620
13:10:09	13.776	6.109	97.819	4.770	2.699
13:10:24	13.848	6.049	48.466	1.998	2.755
13:10:39	13.861	6.049	16.858	0.562	2.185
13:10:54	13.869	6.041	8.628	0.174	1.690
13:11:09	13.873	6.032	3.915	0.209	1.439
13:11:24	13.868	6.032	2.523	0.166	1.273
13:11:39	13.879	6.031	1.172	0.205	1.113
13:11:54	11.722	5.478	1.017	0.306	1.032
13:12:09	1.683	1.178	1.123	4.505	0.788
13:12:24	0.188	0.240	1.042	19.468	0.868
13:12:39	0.089	0.150	1.140	37.465	0.876
13:12:54	0.057	0.125	0.790	45.931	0.846
13:13:09	0.047	0.111	0.594	48.944	0.860
13:13:24	0.046	0.099	0.399	49.252	0.915
13:13:39	0.040	0.083	0.358	49.304	0.900
13:13:54	0.042	0.063	0.277	49.351	0.894
13:14:09	0.021	0.039	0.619	49.397	0.907
13:14:24	0.038	0.068	0.277	49.377	0.877
13:14:39	0.034	0.056	0.081	49.470	0.902
13:14:54	0.034	0.073	0.309	49.491	0.796
13:15:09	0.032	0.064	0.309	49.465	0.856
13:15:24	0.009	0.045	-0.139	49.475	0.816
13:15:39	0.037	0.052	0.448	49.530	0.851
13:15:54	0.026	0.404	-0.147	49.464	0.829
13:16:09	0.012	7.317	5.511	46.326	2.331
13:16:24	-0.002	9.534	60.618	32.404	20.939
13:16:39	0.002	9.701	173.081	13.861	36.059
13:16:54	-0.036	9.715	202.011	4.864	40.843
13:17:09	-0.068	9.728	216.288	0.742	42.434
13:17:24	-0.031	9.744	220.847	0.130	43.293
13:17:39	-0.011	9.771	222.939	0.031	43.826
13:17:54	-0.012	9.780	223.549	0.052	44.264

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 13:09
Stop Time 13:18

CALIBRATION BIAS 09

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
13:18:09	-0.014	9.788	223.867	0.052	44.514	
13:18:24	-0.003	9.800	224.176	-0.039	44.755	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 13:20
Stop time 13:47

REFERENCE METHOD RUN 10

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv	Channel 3 NOX FF Outlet ppmdv	Channel 4 CO FF Outlet ppmdv	Channel 5 SO2 FF Outlet ppmdv	Channel 6
Calibration Checks							
C_{oi}	Initial zero	0.024	0.167	0.054	0.022	0.832	
C_{ui}	Initial upscale	13.868	6.041	223.864	49.490	44.511	
C_{of}	Final zero	0.008	0.032	0.141	-0.029	0.847	
C_{uf}	Final upscale	13.824	6.056	223.696	49.544	44.938	
C_{ma}	Actual gas value	14.000	5.990	225.000	48.600	45.200	
Analyzer Averages (concentrations)							
C_{Avg}	Average conc.	9.319	9.823	155.436	7.898	2.308	
C_{Gas}	**Bias adjusted**	**9.417**	**9.790**	**156.253**	**7.755**	**1.512**	

Clock Time (at end of sample period)

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13:21	9.487	9.465	140.932	5.170	2.504
13:22	9.633	9.589	143.380	6.469	1.742
13:23	9.073	9.986	146.595	5.758	1.583
13:24	9.056	9.982	151.585	4.686	1.548
13:25	9.139	9.920	157.982	5.784	1.480
13:26	9.913	9.356	153.382	4.853	1.509
13:27	9.677	9.491	146.984	5.292	1.464
13:28	9.360	9.772	148.630	5.701	1.489
13:29	9.345	9.817	148.801	5.723	1.503
13:30	9.926	9.364	140.883	6.222	1.701
13:31	9.753	9.489	141.596	6.779	1.711
13:32	9.304	9.863	152.432	7.030	1.866
13:33	9.198	9.946	155.930	7.369	2.153
13:34	9.417	9.754	156.614	7.117	2.297
13:35	9.173	9.953	160.256	7.082	2.612
13:36	9.317	9.846	162.021	7.528	3.510
13:37	9.488	9.722	159.658	8.856	4.046
13:38	9.633	9.614	157.963	9.654	3.729
13:39	9.689	9.559	152.460	9.667	3.326
13:40	9.239	9.905	159.292	11.215	3.164
13:41	9.272	9.883	169.670	12.414	2.887
13:42	9.136	9.980	160.352	12.138	2.862
13:43	8.359	10.668	170.289	12.554	2.568
13:44	9.133	10.001	170.734	10.773	2.349
13:45	9.054	10.011	163.085	10.117	2.322
13:46	9.272	9.826	158.362	8.459	2.288
13:47	8.569	10.453	166.898	8.846	2.089

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 13:48
Stop Time 13:58

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
System Response to Calibration Gasses (C_S)						
C_{of} Zero gas	0.008	0.032	0.141	-0.029	0.847	
C_{uf} Upscale gas	13.824	6.056	223.696	49.544	44.938	
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce} Zero gas	-0.007	-0.012	0.000	-0.020	-0.080	
C_{mce} Upscale gas	14.008	6.045	226.504	49.246	45.573	
Actual Upscale Gas Value (C_{MA})						
C_{ma} Upscale gas	14.000	5.990	225.000	48.600	45.200	
Calibration Span Value (CS)						
	14.000	13.900	448.000	96.300	90.800	
System Bias as Percent of Calibration Span Value (SB) (5%)						
Zero gas	0.1%	0.3%	0.0%	0.0%	1.0%	
Upscale gas	-1.3%	0.1%	-0.6%	0.3%	-0.7%	
System Bias Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	
Previous System Response to Calibration Gases (C_S)						
C_{oi} Zero gas	0.024	0.167	0.054	0.022	0.832	
C_{ui} Upscale gas	13.868	6.041	223.864	49.490	44.511	
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
Zero gas	-0.1%	-1.0%	0.0%	-0.1%	0.0%	
Upscale gas	-0.3%	0.1%	0.0%	0.1%	0.5%	
Drift Assessment Status						
Zero gas	OK	OK	OK	OK	OK	
Upscale gas	OK	OK	OK	OK	OK	

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13:48:15	10.136	9.401	159.618	6.869	2.058
13:48:30	13.282	6.728	149.329	6.196	1.693
13:48:45	13.817	6.089	104.338	4.000	1.614
13:49:00	13.849	6.047	37.591	1.614	1.498
13:49:15	13.807	6.033	17.135	0.449	1.296
13:49:30	13.853	6.038	7.106	0.228	1.169
13:49:45	13.859	6.037	3.891	0.154	0.977
13:50:00	6.429	3.479	2.271	0.807	0.830
13:50:15	0.468	0.420	2.052	10.919	0.732
13:50:30	0.112	0.172	1.611	29.887	0.833
13:50:45	0.063	0.130	1.237	43.090	0.747
13:51:00	-0.031	0.114	0.594	48.431	0.776
13:51:15	0.035	0.102	0.977	49.348	0.838
13:51:30	0.042	0.084	0.586	49.363	0.868
13:51:45	0.016	0.073	0.513	49.436	0.885
13:52:00	0.023	0.066	0.578	49.467	0.905
13:52:15	0.028	0.068	0.619	49.507	0.802
13:52:30	0.026	0.072	0.619	49.519	0.830
13:52:45	0.030	0.073	0.383	49.524	0.780
13:53:00	0.006	0.057	0.187	49.501	0.793
13:53:15	0.011	0.037	0.276	49.498	0.790
13:53:30	0.026	0.040	0.301	49.529	0.830
13:53:45	-0.012	0.056	0.244	49.582	0.796
13:54:00	0.015	0.056	0.309	49.570	0.778
13:54:15	0.020	0.048	0.504	49.542	0.816
13:54:30	0.013	0.034	0.138	49.548	0.793
13:54:45	0.006	0.028	0.032	49.517	0.873
13:55:00	0.004	0.034	0.252	49.566	0.876
13:55:15	-0.001	0.038	0.252	49.550	0.856
13:55:30	0.005	0.053	0.032	49.602	0.816
13:55:45	0.002	5.491	3.842	48.231	2.447
13:56:00	-0.013	9.420	41.677	35.471	22.195
13:56:15	-0.009	9.693	148.783	17.491	36.602

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 13:48
Stop Time 13:58

CALIBRATION BIAS 10

	Channel 1 O2	Channel 2 CO2	Channel 3 NOX	Channel 4 CO	Channel 5 SO2	Channel 6
	FF Outlet %dv	FF Outlet %dv	FF Outlet ppmdv	FF Outlet ppmdv	FF Outlet ppmdv	
13:56:30	-0.015	9.735	197.794	5.491	40.946	
13:56:45	-0.021	9.758	214.139	1.205	42.628	
13:57:00	-0.026	9.753	220.855	0.177	43.513	
13:57:15	-0.005	9.770	222.686	0.054	43.964	
13:57:30	-0.007	9.776	223.378	0.008	44.394	
13:57:45	-0.012	9.791	223.696	-0.052	44.651	
13:58:00	-0.005	9.793	223.712	-0.036	44.962	
13:58:15	-0.016	9.797	223.680	0.002	45.200	

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 14:02
Stop time 14:29
REFERENCE METHOD RUN 11

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv
Calibration Checks			
C_{oi}	Initial zero	0.008	0.032
C_{ui}	Initial upscale	13.824	6.056
C_{of}	Final zero	0.015	0.063
C_{uf}	Final upscale	13.788	6.010
C_{ma}	Actual gas value	14.000	5.990
Analyzer Averages (concentrations)			
C_{Avg}	Average conc.	9.173	9.926
C_{Gas}	**Bias adjusted**	**9.298**	**9.886**

Clock Time (at end of sample period) 041612 111549		
14:03	8.971	9.999
14:04	9.442	9.709
14:05	9.304	9.789
14:06	9.686	9.543
14:07	9.180	9.893
14:08	9.550	9.655
14:09	9.078	9.974
14:10	9.453	9.726
14:11	9.567	9.634
14:12	9.470	9.654
14:13	9.165	9.965
14:14	9.274	9.883
14:15	9.068	10.038
14:16	8.895	10.209
14:17	9.276	9.848
14:18	8.919	10.168
14:19	8.901	10.153
14:20	8.865	10.186
14:21	8.994	10.086
14:22	9.447	9.729
14:23	8.721	10.284
14:24	9.168	9.933
14:25	9.218	9.864
14:26	9.414	9.716
14:27	9.326	9.770
14:28	8.622	10.324
14:29	8.705	10.277

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 14:33
Stop Time 14:38
CALIBRATION BIAS 11

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv			
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.015	0.063			
C_{uf}	Upscale gas	13.788	6.010			
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	-0.007	-0.012			
C_{mce}	Upscale gas	14.008	6.045			
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	14.000	5.990			
Calibration Span Value (CS)						
		14.000	13.900			
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.2%	0.5%			
	Upscale gas	-1.6%	-0.3%			
System Bias Status						
	Zero gas	OK	OK			
	Upscale gas	OK	OK			
Previous System Response to Calibration Gases (C_S)						
C_{oi}	Zero gas	0.008	0.032			
C_{ui}	Upscale gas	13.824	6.056			
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	0.1%	0.2%			
	Upscale gas	-0.3%	-0.3%			
Drift Assessment Status						
	Zero gas	OK	OK			
	Upscale gas	OK	OK			

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14:33:22	13.809	6.005
14:33:37	13.799	6.005
14:33:52	13.755	6.019
14:34:07	13.863	6.020
14:34:22	13.849	6.020
14:34:37	11.511	7.705
14:34:52	10.059	9.157
14:35:07	9.841	9.357
14:35:22	9.574	9.563
14:35:37	9.482	9.644
14:35:52	9.332	9.783
14:36:07	9.833	9.204
14:36:22	2.869	2.528
14:36:37	0.230	0.337
14:36:52	0.072	0.166
14:37:07	-0.012	0.112
14:37:22	0.032	0.102
14:37:37	0.043	0.101
14:37:52	0.032	0.091
14:38:07	0.020	0.064
14:38:22	0.039	0.075
14:38:37	-0.013	0.049

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 14:43
Stop time 15:10

REFERENCE METHOD RUN 12

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv
Calibration Checks			
C_{oi}	Initial zero	0.015	0.063
C_{ui}	Initial upscale	13.788	6.010
C_{of}	FInal zero	0.029	0.094
C_{uf}	Final upscale	13.774	6.008
C_{ma}	Actual gas value	14.000	5.990
Analyzer Averages (concentrations)			
C_{Avg}	Average conc.	9.252	9.859
C_{Gas}	**Bias adjusted**	**9.391**	**9.879**

Clock Time (at end of sample period) 041612 111549		
14:44	9.978	9.276
14:45	9.601	9.557
14:46	9.386	9.732
14:47	9.900	9.361
14:48	9.728	9.470
14:49	8.925	10.096
14:50	9.064	10.009
14:51	9.587	9.596
14:52	9.261	9.820
14:53	9.307	9.810
14:54	9.594	9.584
14:55	9.658	9.524
14:56	9.187	9.867
14:57	8.925	10.105
14:58	9.101	9.960
14:59	9.117	9.949
15:00	8.592	10.405
15:01	8.916	10.135
15:02	9.171	9.925
15:03	8.666	10.361
15:04	8.967	10.081
15:05	9.412	9.747
15:06	9.727	9.499
15:07	9.089	9.956
15:08	8.508	10.533
15:09	9.178	9.947
15:10	9.248	9.883

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 15:14
Stop Time 15:26
CALIBRATION BIAS 12

		Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv			
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.029	0.094			
C_{uf}	Upscale gas	13.774	6.008			
Analyzer Calibration Error Reponses (C_{DIr})						
C_{oce}	Zero gas	-0.007	-0.012			
C_{mce}	Upscale gas	14.008	6.045			
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	14.000	5.990			
Calibration Span Value (CS)						
		14.000	13.900			
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.3%	0.8%			
	Upscale gas	-1.7%	-0.3%			
System Bias Status						
	Zero gas	OK	OK			
	Upscale gas	OK	OK			
Previous System Response to Calibration Gases (C_S)						
C_{of}	Zero gas	0.015	0.063			
C_{uf}	Upscale gas	13.788	6.010			
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	0.1%	0.2%			
	Upscale gas	-0.1%	0.0%			
Drift Assessment Status						
	Zero gas	OK	OK			
	Upscale gas	OK	OK			

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15:14:13	8.546	10.396
15:14:28	8.211	10.742
15:14:43	8.158	10.800
15:14:58	8.286	10.708
15:15:13	8.602	10.429
15:15:28	8.967	10.081
15:15:43	9.216	9.885
15:15:58	9.511	9.679
15:16:13	9.735	9.497
15:16:28	9.487	9.630
15:16:43	8.935	10.064
15:16:58	8.796	10.210
15:17:13	8.894	10.131
15:17:28	8.956	10.076
15:17:43	8.986	10.028
15:17:58	8.085	9.555
15:18:13	0.933	1.507
15:18:28	5.635	1.913
15:18:43	13.452	5.690
15:18:58	12.018	7.257
15:19:13	9.479	9.610
15:23:17	0.072	0.200
15:23:32	0.048	0.149
15:23:47	0.028	0.125
15:24:02	0.036	0.107
15:24:17	0.033	0.098
15:24:32	0.020	0.077
15:24:47	0.236	0.145
15:25:02	4.343	4.300
15:25:17	4.814	3.761
15:25:32	12.494	5.192
15:25:47	13.736	5.878
15:26:02	13.819	5.963

Wheelabrator
CleanAir Project No. 11414
South Broward
Unit 3

March 21, 2012
Start Time 15:14
Stop Time 15:26

CALIBRATION BIAS 12

	Channel 1 O2 FF Outlet %dv	Channel 2 CO2 FF Outlet %dv
15:26:17	13.832	5.977
15:26:32	13.672	6.083