CleanAir.

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Wheelabrator North Broward, Inc.
2600 NW 48th Street
Pompano Beach, FL 33073

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BUREAU OF
AIR REGULATION

REPORT ON RELATIVE ACCURACY TEST AUDIT

Performed for:
WHEELABRATOR NORTH BROWARD, INC.
UNITS 1, 2 AND 3 FF OUTLETS
POMPANO BEACH, FL

CleanAir Project No: 10955-1
Revision 0: April 23, 2010

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.

Submitted by,

Scott Brown
Project Manager
sbrown@cleanair.com
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Reviewed by,

Scott Lehmann
Midwest Engineering Group Leader
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Wheelabrator North Broward Inc.
A Waste Management Company
2600 Wiles Road
Pompano Beach, FL 33073
(954) 971-8701 Tel
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April 27, 2010

UPS# 1Z26X1500394865542

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 North Broward
2010 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 16-18 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) 971-8701.

Sincerely,

Scott McIlvaine
Plant Manager

cc: USEPA, Region IV, Pesticides and Toxics Management Division, Air & EPCRA Enforcement Branch, Air Enforcement Section (with) UPS# 1Z26X1500390744304
FDEP, Tallahassee, Bureau of Air Regulation, New Source Review Section, (with) UPS# 1Z26X1500394730124
Broward County Department of Planning and Environmental Protection, Air Quality Division (with) UPS# 1Z26X1500393811511

Chuck Faller (with)
Ram Tewari – BCWRS (without)
Tim Porter (without)
Rob French – MPI (with) UPS# 1Z26X1500392976131

WASTE MANAGEMENT

REPORT ON RELATIVE ACCURACY TEST AUDIT

DRAFT REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
D0a	04/15/10	All	Draft version of original document.

FINAL REPORT REVISION HISTORY

Revision:	Date	Pages	Comments
0	04/23/10	All	Final version of original document.

CONTENTS

PROJECT OVERVIEW

INTRODUCTION

Wheelabrator North Broward, Inc. contracted Clean Air Engineering (CleanAir) to perform the relative accuracy test audit (RATA) at the municipal waste combustor (MWC) facility, located in Pompano Beach, 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 (FDEP).

Key Project Participants

Individuals responsible for coordinating and conducting the test program were:

C. Faller – Wheelabrator North Broward, Inc.
S. Brown – CleanAir
E. Dieter – CleanAir

Test Program Parameters

The testing performed at the Units 1, 2 and 3 fabric filter (FF) baghouse outlets from March 16 through 18, 2010, included the following emissions measurements:

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

TEST PROGRAM SYNOPSIS

Results Summary

Table 1-1, on page 1-2, summarizes 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 2-12 on pages 2-1 through 2-6. The oxygen (O_2) RATA results are presented for comparison purposes only.

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)	280	15.2	12.2	3.0	0.315	11.3%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	280	196.2	196.2	0.0	0.815	0.4%	20%	RM[2]
CO (ppmdv @ 7% O_2)	280	15.3	16.4	-1.2	0.255	1.4%	5%	S[3]
Unit 2 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	281	18.2	18.8	-0.6	0.592	4.1%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	281	186.9	195.5	-8.6	0.411	4.4%	10%	S[4]
CO (ppmdv @ 7% O_2)	281	14.1	16.1	-2.0	0.248	2.2%	5%	S[3]
Unit 3 FF Outlet CEMS (units of RATA)								
SO_2 (ppmdv @ 7% O_2)	271	8.9	7.7	1.2	0.269	5.2%	20%	S[1]
NO_X (ppmdv @ 7% O_2)	271	191.9	192.3	-0.4	0.367	0.4%	10%	RM[2]
CO (ppmdv @ 7% O_2)	271	12.2	12.1	0.1	0.097	0.2%	5%	S[3]

[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] Limit from 40 CFR 60 Appendix B Perfromance Specification 2.

[3] CO FF Outlet Relative Accuracy calculated as a percentage of the 100 ppm standard as per Performance Specification 4A, Section 13.2.

[4] NO_X FF Outlet Relative Accuracy calculated as a percentage of the 205 ppm standard as per Performance Specification 2, Section 13.2.

Basis of Limit: RM = Reference Method S = Standard

Discussion of Test Program

Each boiler was operated at greater than 50% (93,000 lbs/hr steam flow) during each RATA. The steam load is presented in Appendix F with the plant CEM run data. All RATA runs were 27 minutes in duration with 10 runs being performed on each unit.

A NO_X analyzer converter check was performed after the calibration error on Units 1 and 3 and after the final bias check on Unit 2. The converter efficiency data is presented along with the reference method data in Appendix E.

End of Section 1 – Project Overview

RESULTS

Table 2-1:
Relative Accuracy Unit 1 FF Outlet - Oxygen

Run No.	Start Time	Date (2010)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	7:12	Mar 18	9.71	9.70	0.01	0.12%	
2	7:46	Mar 18	9.45	9.40	0.05	0.54%	
3	8:20	Mar 18	9.29	9.30	-0.01	-0.14%	
4	8:55	Mar 18	9.33	9.30	0.03	0.36%	
5	9:29	Mar 18	9.32	9.30	0.02	0.18%	
6	10:03	Mar 18	9.50	9.50	0.00	-0.02%	
7	10:38	Mar 18	9.32	9.30	0.02	0.17%	
8	11:13	Mar 18	9.63	9.60	0.03	0.34%	
9	11:47	Mar 18	10.08	10.00	0.08	0.77%	*
10	12:21	Mar 18	9.62	9.60	0.02	0.21%	
Average			9.46	9.44	0.02	0.20%	

Standard Deviation	0.0192	
Confidence Coefficient (CC)	0.0148	
		Limit
Avg. Absolute Diff. + CC (%dv)	0.04	NA

* Indicates that the run was not included in the RATA calculations.

Table 2-2:
Relative Accuracy Unit 1 FF Outlet - Sulfur Dioxide

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:12	Mar 18	17.07	14.60	2.47	14.48%	
2	7:46	Mar 18	16.99	14.30	2.69	15.83%	
3	8:20	Mar 18	17.89	15.20	2.69	15.02%	
4	8:55	Mar 18	17.49	15.10	2.39	13.67%	
5	9:29	Mar 18	11.34	8.20	3.14	27.71%	
6	10:03	Mar 18	14.66	11.20	3.46	23.61%	
7	10:38	Mar 18	12.72	9.40	3.32	26.13%	
8	11:13	Mar 18	13.55	10.00	3.55	26.20%	*
9	11:47	Mar 18	16.11	12.80	3.31	20.53%	
10	12:21	Mar 18	12.08	8.80	3.28	27.13%	
Average			15.15	12.18	2.97	19.62%	

Standard Deviation	0.4103	
Confidence Coefficient (CC)	0.3154	
		Limits
Relative Accuracy (as % of RM)	21.7%	20.0%
Relative Accuracy (as % of Applicable Std.) Standard = 29 (ppm@7%O2)	11.3%	20.0%

* Indicates that the run was not included in the RATA calculations.

Table 2-3:
Relative Accuracy Unit 1 FF Outlet - Nitrogen Oxides

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference
1	7:12	Mar 18	196.60	198.00	-1.40	-0.71%
2	7:46	Mar 18	210.04	211.10	-1.06	-0.51%
3	8:20	Mar 18	199.91	199.60	0.31	0.15%
4	8:55	Mar 18	192.26	191.60	0.66	0.35%
5	9:29	Mar 18	188.94	190.90	-1.96	-1.03%
6	10:03	Mar 18	197.58	196.90	0.68	0.35%
7	10:38	Mar 18	198.86	197.70	1.16	0.58%
8	11:13	Mar 18	194.43	194.90	-0.47	-0.24%
9	11:47	Mar 18	185.99	184.90	1.09	0.58%
10	12:21	Mar 18	197.81	196.80	1.01	0.51%
Average			196.24	196.24	0.00	0.00%
Standard Deviation			1.1391			
Confidence Coefficient (CC)			0.8148			
				Limit		
Relative Accuracy (as % of RM)			0.4%	20.0%		

Table 2-4:
Relative Accuracy Unit 1 FF Outlet - Carbon Monoxide

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:12	Mar 18	15.75	17.40	-1.65	-10.47%	
2	7:46	Mar 18	14.53	15.90	-1.37	-9.41%	
3	8:20	Mar 18	12.43	13.30	-0.87	-7.04%	
4	8:55	Mar 18	14.29	15.20	-0.91	-6.35%	
5	9:29	Mar 18	12.36	13.70	-1.34	-10.84%	
6	10:03	Mar 18	13.48	15.00	-1.52	-11.31%	
7	10:38	Mar 18	15.51	16.20	-0.69	-4.44%	
8	11:13	Mar 18	18.70	20.80	-2.10	-11.22%	*
9	11:47	Mar 18	19.71	20.80	-1.09	-5.52%	
10	12:21	Mar 18	19.59	20.50	-0.91	-4.67%	
Average			15.29	16.44	-1.15	-7.52%	
Standard Deviation			0.3316				
Confidence Coefficient (CC)			0.2549				
				Limits			
Relative Accuracy (as % of RM)			9.2%	10.0%			
Relative Accuracy (as % of Applicable Std.)			1.4%	5.0%			

* Indicates that the run was not included in the RATA calculations.

Table 2-5:
Relative Accuracy Unit 2 FF Outlet - Oxygen

Run No.	Start Time	Date (2010)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	9:48	Mar 16	9.47	9.50	-0.03	-0.34%	
2	10:31	Mar 16	9.59	9.60	-0.01	-0.10%	
3	11:15	Mar 16	9.69	9.70	-0.01	-0.12%	
4	12:02	Mar 16	9.49	9.50	-0.01	-0.10%	
5	12:40	Mar 16	9.79	9.70	0.09	0.88%	*
6	13:15	Mar 16	9.75	9.70	0.05	0.50%	
7	13:51	Mar 16	9.66	9.60	0.06	0.58%	
8	14:26	Mar 16	9.57	9.60	-0.03	-0.27%	
9	15:02	Mar 16	9.66	9.60	0.06	0.58%	
10	15:37	Mar 16	9.50	9.50	0.00	0.04%	
Average			9.60	9.59	0.01	0.09%	

	RATA	
Standard Deviation	0.0356	
Confidence Coefficient (CC)	0.0274	
		Limit
Avg. Absolute Diff. + CC (%dv)	0.06	NA

* Indicates that the run was not included in the RATA calculations.

Table 2-6:
Relative Accuracy Unit 2 FF Outlet - Sulfur Dioxide

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	9:48	Mar 16	12.93	16.20	-3.27	-25.29%	*
2	10:31	Mar 16	17.63	19.60	-1.97	-11.17%	
3	11:15	Mar 16	18.82	19.60	-0.78	-4.14%	
4	12:02	Mar 16	17.64	18.80	-1.16	-6.57%	
5	12:40	Mar 16	17.23	17.20	0.03	0.15%	
6	13:15	Mar 16	16.99	17.30	-0.31	-1.80%	
7	13:51	Mar 16	19.26	19.30	-0.04	-0.20%	
8	14:26	Mar 16	20.66	20.00	0.66	3.17%	
9	15:02	Mar 16	18.39	19.30	-0.91	-4.94%	
10	15:37	Mar 16	17.26	18.10	-0.84	-4.86%	
Average			18.21	18.80	-0.59	-3.25%	

Standard Deviation	0.7700	
Confidence Coefficient (CC)	0.5919	
		Limits
Relative Accuracy (as % of RM)	6.5%	20.0%
Relative Accuracy (as % of Applicable Std.) Standard = 29 (ppm@7%O2)	4.1%	20.0%

* Indicates that the run was not included in the RATA calculations.

Table 2-7:
Relative Accuracy Unit 2 FF Outlet - Nitrogen Oxides

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	9:48	Mar 16	196.09	205.70	-9.61	-4.90%	
2	10:31	Mar 16	188.66	198.90	-10.24	-5.43%	*
3	11:15	Mar 16	184.62	193.90	-9.28	-5.03%	
4	12:02	Mar 16	185.49	194.50	-9.01	-4.85%	
5	12:40	Mar 16	181.00	189.20	-8.20	-4.53%	
6	13:15	Mar 16	186.64	194.90	-8.26	-4.43%	
7	13:51	Mar 16	190.21	198.40	-8.19	-4.30%	
8	14:26	Mar 16	183.11	191.50	-8.39	-4.58%	
9	15:02	Mar 16	184.02	192.60	-8.58	-4.66%	
10	15:37	Mar 16	190.59	198.80	-8.21	-4.31%	
Average			186.86	195.50	-8.64	-4.62%	

	RATA	
Standard Deviation	0.5342	
Confidence Coefficient (CC)	0.4107	
		Limits
Relative Accuracy (as % of RM)	4.8%	20.0%
Relative Accuracy (as % of Applicable Std.) Standard = 205 (ppm@7%O2)	4.4%	10.0%

* Indicates that the run was not included in the RATA calculations.

Table 2-8:
Relative Accuracy Unit 2 FF Outlet - Carbon Monoxide

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	9:48	Mar 16	15.50	17.70	-2.20	-14.19%	
2	10:31	Mar 16	15.90	17.90	-2.00	-12.58%	
3	11:15	Mar 16	15.70	18.10	-2.40	-15.28%	
4	12:02	Mar 16	11.41	13.40	-1.99	-17.44%	
5	12:40	Mar 16	13.34	15.00	-1.66	-12.43%	
6	13:15	Mar 16	11.90	14.00	-2.10	-17.64%	*
7	13:51	Mar 16	15.10	17.20	-2.10	-13.87%	
8	14:26	Mar 16	14.05	16.10	-2.05	-14.56%	
9	15:02	Mar 16	15.67	17.80	-2.13	-13.61%	
10	15:37	Mar 16	10.30	11.60	-1.30	-12.59%	
Average			14.11	16.09	-1.98	-14.03%	

	RATA	
Standard Deviation	0.3232	
Confidence Coefficient (CC)	0.2484	
		Limits
Relative Accuracy (as % of RM)	15.8%	10.0%
Relative Accuracy (as % of Applicable Std.) Standard = 100 (ppm@7%O2)	2.2%	5.0%

* Indicates that the run was not included in the RATA calculations.

Table 2-9:
Relative Accuracy Unit 3 FF Outlet - Oxygen

Run No.	Start Time	Date (2010)	RM Data (%dv)	CEMS Data (%dv)	Difference (%dv)	Percent Difference	
1	7:10	Mar 17	8.41	8.20	0.21	2.47%	
2	7:45	Mar 17	8.44	8.20	0.24	2.80%	
3	8:20	Mar 17	8.43	8.20	0.23	2.70%	
4	8:54	Mar 17	8.22	8.00	0.22	2.68%	
5	9:28	Mar 17	8.68	8.40	0.28	3.22%	*
6	10:02	Mar 17	8.57	8.30	0.27	3.17%	
7	10:37	Mar 17	8.11	7.90	0.21	2.60%	
8	11:13	Mar 17	7.96	7.70	0.26	3.29%	
9	11:48	Mar 17	8.15	7.90	0.25	3.06%	
10	12:25	Mar 17	9.09	8.90	0.19	2.09%	
Average			8.38	8.14	0.23	2.75%	

Standard Deviation	0.0268	
Confidence Coefficient (CC)	0.0206	
		Limit
Avg. Absolute Diff. + CC (%dv)	0.25	NA

* Indicates that the run was not included in the RATA calculations.

Table 2-10:
Relative Accuracy Unit 3 FF Outlet - Sulfur Dioxide

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:10	Mar 17	11.76	11.40	0.36	3.05%	
2	7:45	Mar 17	15.84	14.70	1.14	7.21%	
3	8:20	Mar 17	12.75	11.30	1.45	11.40%	
4	8:54	Mar 17	11.05	9.70	1.35	12.24%	
5	9:28	Mar 17	6.89	5.40	1.49	21.59%	
6	10:02	Mar 17	4.64	3.30	1.34	28.84%	
7	10:37	Mar 17	2.52	1.10	1.42	56.29%	
8	11:13	Mar 17	3.76	2.30	1.46	38.82%	*
9	11:48	Mar 17	5.22	3.80	1.42	27.17%	
10	12:25	Mar 17	9.48	8.30	1.18	12.41%	
Average			8.90	7.67	1.24	13.90%	

Standard Deviation	0.3505	
Confidence Coefficient (CC)	0.2694	
		Limit
Relative Accuracy (as % of RM)	16.9%	20.0%
Relative Accuracy (as % of Applicable Std.) Standard = 29 (ppm@7%O2)	5.2%	20.0%

* Indicates that the run was not included in the RATA calculations.

Table 2-11:
Relative Accuracy Unit 3 FF Outlet - Nitrogen Oxides

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:10	Mar 17	184.53	185.20	-0.67	-0.36%	
2	7:45	Mar 17	186.08	187.20	-1.12	-0.60%	*
3	8:20	Mar 17	190.07	190.90	-0.83	-0.43%	
4	8:54	Mar 17	195.01	195.20	-0.19	-0.10%	
5	9:28	Mar 17	194.81	194.50	0.31	0.16%	
6	10:02	Mar 17	198.06	198.20	-0.14	-0.07%	
7	10:37	Mar 17	188.75	189.50	-0.75	-0.40%	
8	11:13	Mar 17	185.39	185.90	-0.51	-0.27%	
9	11:48	Mar 17	198.14	199.00	-0.86	-0.43%	
10	12:25	Mar 17	192.59	192.20	0.39	0.20%	
Average			191.93	192.29	-0.36	-0.19%	

Standard Deviation	0.4780	
Confidence Coefficient (CC)	0.3675	
		Limit
Relative Accuracy (as % of RM)	0.4%	20.0%

* Indicates that the run was not included in the RATA calculations.

Table 2-12:
Relative Accuracy Unit 3 FF Outlet - Carbon Monoxide

Run No.	Start Time	Date (2010)	RM Data (ppm@7%O2)	CEMS Data (ppm@7%O2)	Difference (ppm@7%O2)	Percent Difference	
1	7:10	Mar 17	15.24	15.00	0.24	1.60%	
2	7:45	Mar 17	14.82	14.70	0.12	0.78%	
3	8:20	Mar 17	11.64	11.50	0.14	1.22%	
4	8:54	Mar 17	9.66	9.70	-0.04	-0.43%	
5	9:28	Mar 17	14.05	13.90	0.15	1.08%	
6	10:02	Mar 17	13.64	13.40	0.24	1.78%	
7	10:37	Mar 17	12.98	12.60	0.38	2.90%	*
8	11:13	Mar 17	8.45	8.40	0.05	0.58%	
9	11:48	Mar 17	9.67	9.50	0.17	1.72%	
10	12:25	Mar 17	12.66	12.80	-0.14	-1.08%	
Average			12.20	12.10	0.10	0.85%	

Standard Deviation	0.1266	
Confidence Coefficient (CC)	0.0973	
		Limit
Relative Accuracy (as % of RM)	1.6%	10.0%
Relative Accuracy (as % of Applicable Std.) Standard = 100 (ppm@7%O2)	0.2%	5.0%

* Indicates that the run was not included in the RATA calculations.

End of Section 2 – Results

DESCRIPTION OF INSTALLATION

PROCESS DESCRIPTION

The North Broward Resource Recovery facility, located in Pompano Beach, 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 oxygen (O_2), carbon dioxide (CO_2), carbon monoxide (CO), sulfur dioxide (SO_2) and nitrogen oxides (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 3-3.

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.

CEMS SCHEMATIC

Figure 3-1 is a general schematic of each of the outlet CEM systems. Figure 3-2 on page 3-4 presents the RM and CEM outlet sampling locations, as well as a general facility process flow diagram.

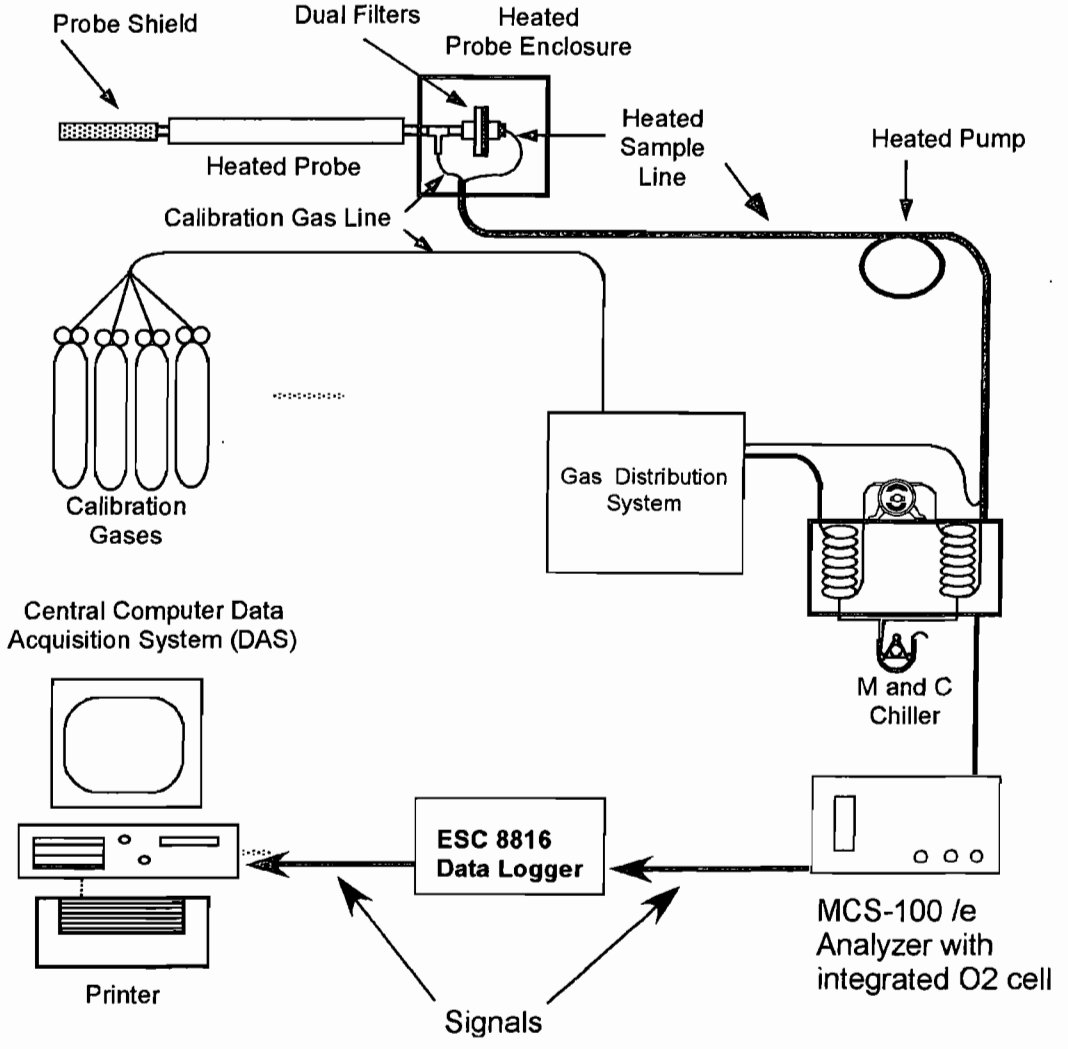


Figure 3-1: General CEMS Schematic

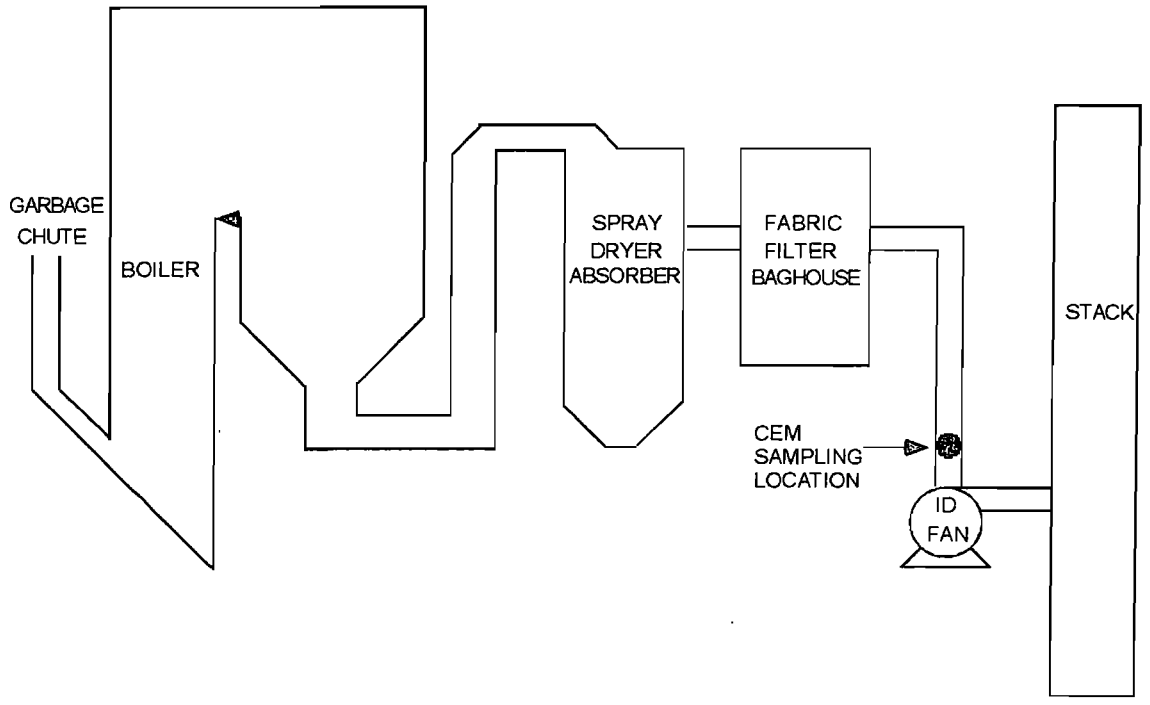


Figure 3-2: Process Flow Diagram and CEM Locations

DESCRIPTION OF SAMPLING LOCATIONS

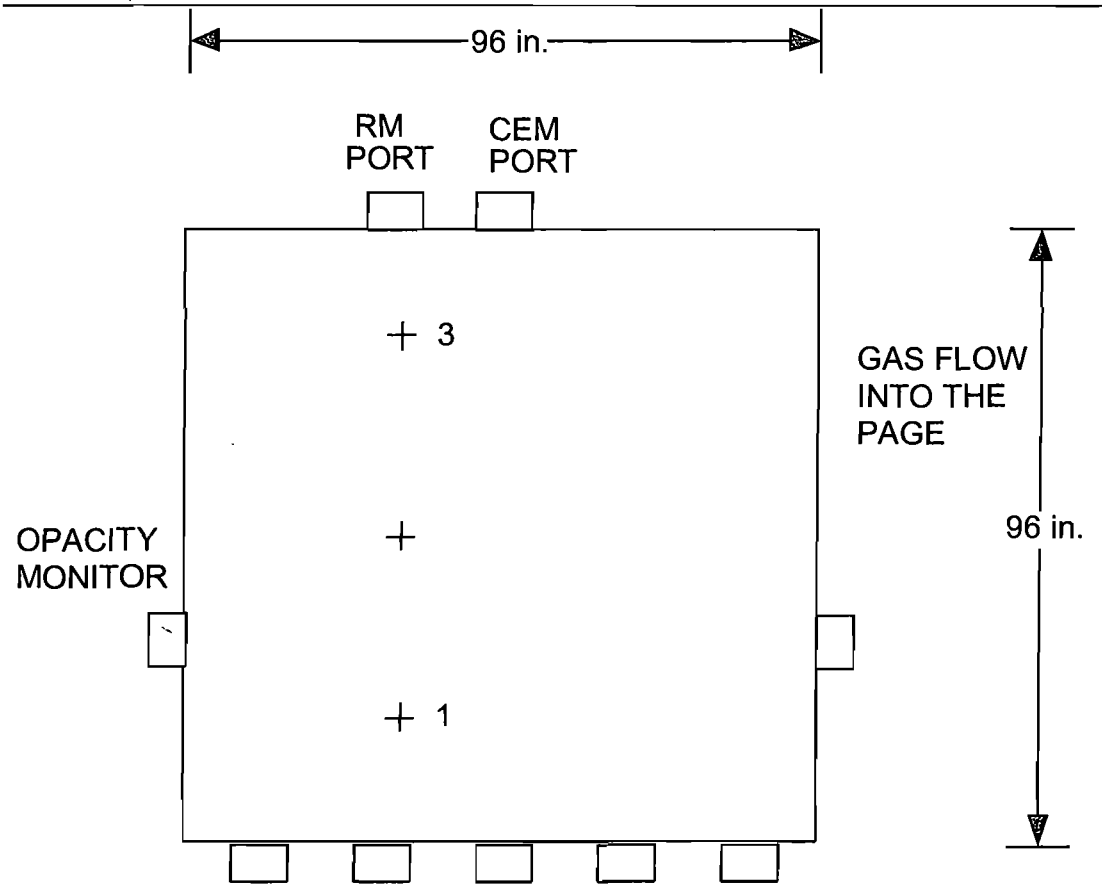
Sampling point locations were determined according to EPA Method 1.

Table 3-1 outlines the sampling point configurations. Figure 3-3 on page 3-6 illustrates the sampling points and orientation of sampling ports for each of the sources tested in the program.

Table 3-1:
Sampling Points

Location Constituent	Methods	Run No.	Ports	Points per Port	Minutes per Point	Total Minutes	Figure
Unit 1 FF Outlets							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3
Unit 2 FF Outlet							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3
Unit 3 FF Outlet							
CEM	3A, 6C, 7E, 10	1-10	1	3	9	27	3-3

DESCRIPTION OF SAMPLING LOCATION (CONTINUED)



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)

End of Section 3 – Description of Installation

METHODOLOGY

Clean Air Engineering followed procedures as detailed in EPA Methods 3A, 6C, 7E and 10, as well as Performance Specifications 2, 3 and 4A. 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 3A	"Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)"
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 (PS))	
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"

These methods appear in detail in Title 40 of the Code of Federal Regulations (CFR) and on the World Wide Web at http://www.cleanair.com.

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 in EPA "Quality Assurance Handbook for Air Pollution Measurement Systems: Volume III Stationary Source-Specific Methods", EPA/600/R-94/038C. Additional QA/QC methods, as prescribed in CleanAir's internal Quality Manual, were also followed. Results of all QA/QC activities performed by CleanAir are summarized in Appendix D.

End of Section 4 – Methodology

APPENDIX

TEST METHOD SPECIFICATIONS

A

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

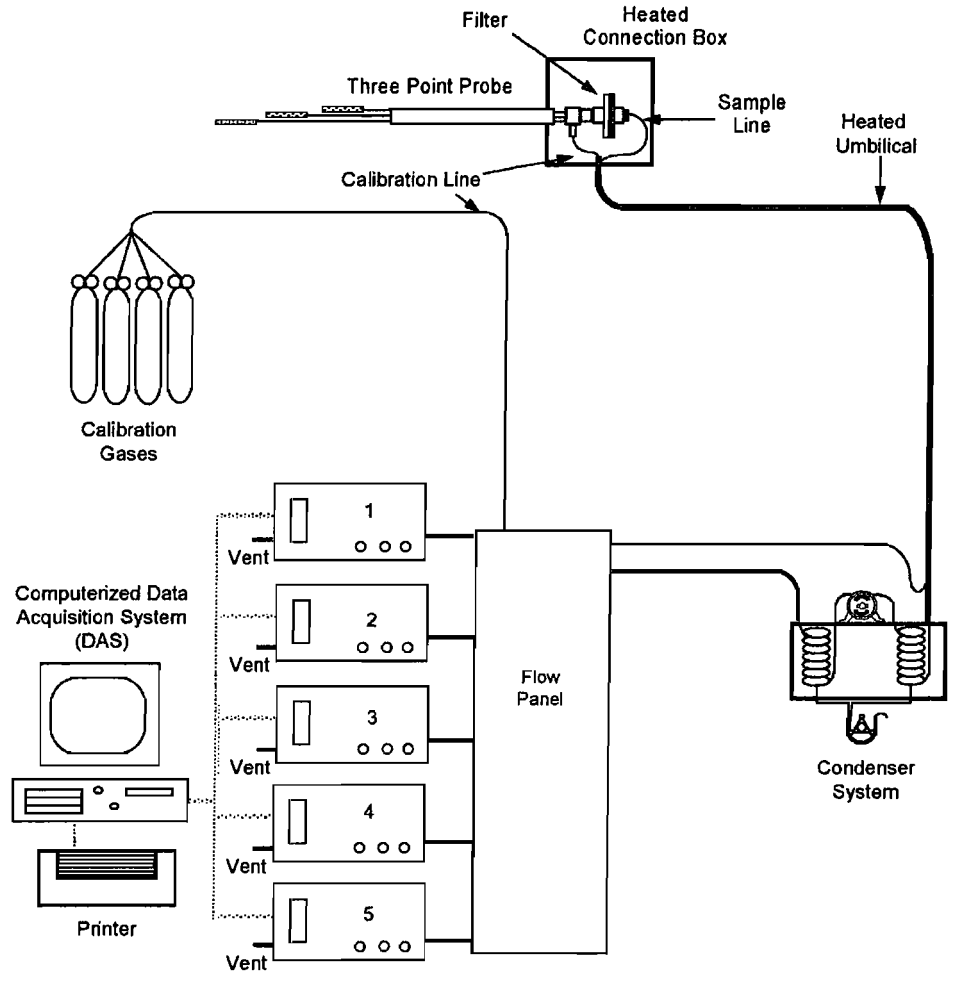
Source Location Name(s)	Units 1, 2 and 3 FF Outlets
Pollutant(s) to be Determined	Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x) and Carbon Monoxide (CO)
Other Parameters to be Determined from Train	O2 and CO2 (EPA Method 3A)

	Standard Method Specification	Actual Specification Used
Pollutant Sampling Information		
Duration of Run	N/A	27 minutes
No. of Sample Traverse Points	N/A	3
Sample Time per Point	N/A	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	3 points (16", 48" and 80")
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	No
Additional Filter Type	N/A	N/A
Additional Filter Location	Optional	N/A
Filter Material	Non-reactive to sample gases	N/A
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	Actual Specification Used
Instrument Span Range		
Oxygen (O_2)	≤ 1.33 x Expected Maximum	0-14.1
Carbon Dioxide (CO_2)	≤ 1.33 x Expected Maximum	0-13.9%
Sulfur Dioxide (SO_2)	≤ 1.33 x Expected Maximum	0-89.9 ppm
Nitrogen Oxides (NO_x)	≤ 1.33 x Expected Maximum	0-453 ppm
Carbon Monoxide (CO)	≤ 1.33 x Expected Maximum	0-98.5 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
Sampling Train Configuration



Number	Gas	Monitor	Range Used	Calibration Gas Concentrations
1	NO_X	T.E.I. 42i-HL	0-453 ppm	0, 225, 453
2	SO_2	Western Research 921L	0-89.9 ppm	0, 44.9, 89.9
3	CO	T.E.I. 48i	0-95.48 ppm	0, 48.2, 95.48
4	O_2	Servomex 1420C	0-14.1 %	0, 6.01, 14.1
5	CO_2	Servomex 1415C	0-13.9 %	0, 5.91, 13.9

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SAMPLE CALCULATIONS

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Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

CEM Field Sample Calculations for SO2 FF Outlet 1

Sample data taken from [redacted] 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.

040710 124805

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	=	43.520	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	=	43.520	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	44.900	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	=	43.520	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	44.900	ppmdv
Span	= instrument span value	=	89.900	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	1.53%	**Pass**

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

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

Where:

C_{mce}	= average concentration of a calibration series in this case the Low cal series for channel 3	=	43.520	ppmdv
C_{mf}	= calibration error response concentration for Cal01	=	41.950	ppmdv
Span	= instrument span value	=	89.900	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	1.75%	**Pass**

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

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FF Outlet 1

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

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	41.950	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	42.254	ppmdv
Span	= instrument span value	=	89.900	ppmdv
I_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.34%	**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 SO2 on channel 3	=	11.203	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average SO2 concentration for Run 1	=	12.981	ppmdv

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	=	44.900	ppmdv
C	= average SO2 concentration for Run 1	=	12.981	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	41.950	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	42.254	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.272	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.003	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	13.742	ppmdv

CEM Emissions Sample Calculations for SO2 FF Outlet 1

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.

040710 124702

1. SO2 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	=	13.742	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)	= SO2 concentration (ppmdv)	=	13.742	ppmdv

2. SO2 concentration (lb/dscf)

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

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	13.742	ppmdv
MW	= Molecular Weight of SO2 gas	=	64.0628	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)	= SO2 concentration (lb/dscf)	=	2.285E-06	lb/dscf

3. SO2 concentration (mg/dscm)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	2.285E-06	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)	= SO2 concentration (mg/dscm)	=	36.590	mg/dscm

4. SO2 concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= SO2 concentration (lb/dscf)	=	2.285E-06	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	= SO2 concentration (mg/Nm3 dry)	=	39.267	mg/Nm^3 dry

5. SO2 concentration corrected to 7% O2 (ppmdv example)

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

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	13.742	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.711	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2	= SO2 concentration corrected to 7% O2 (ppmdv example)	=	17.073	ppmdv @ 7%O2

6. SO2 concentration corrected to 12% CO2 (ppmdv example)

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

Where:

C (ppmdv)	= SO2 concentration (ppmdv)	=	13.742	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	9.715	%
C (ppmdv -CO	= SO2 concentration corrected to 12% CO2 (ppmdv example)	=	16.974	ppmdv @ 12%CO2

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Pompano Beach, FL
FF Outlet 1

CEM RATA Sample Calculations for SO2 FF Outlet 1

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.

040710 124937

1. SO2 value difference between Plant CEM Data and CleanAir RM Data (ppm@7%O2)

$$D = C_R - C_P$$

Where:

C_P	= SO2 value from Plant CEM Data	=	14.600	ppm@7%O2
C_R	= SO2 value from CleanAir RM Data	=	17.073	ppm@7%O2
D	= SO2 value difference between 2 methods	=	2.473	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= SO2 value from CleanAir RM Data	=	17.073	ppm@7%O2
D	= SO2 value difference between 2 methods	=	2.473	ppm@7%O2
$D_{\%}$	= SO2 value difference as a percentage of RM Data	=	14.5%	

3. Average SO2 Value (Plant CEM Data example) (ppm@7%O2)

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

Where:

			i=1	
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	14.600	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average SO2 value from Plant CEM Data	=	12.178	ppm@7%O2

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FF Outlet 1

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:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	17.073	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	14.600	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.410	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	=	0.410	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.315	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:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	17.073	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	14.600	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.315	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	21.701%	
		Limit =	20.000%	

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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:

$C_{R,i}$	= SO2 value from CleanAir RM Data for ith run	=	17.073	ppm@7%O2
$C_{p,i}$	= SO2 value from Plant CEM Data for ith run	=	14.600	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.315	
C_{std}	= SO2 value of applicable standard	=	29.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	11.337%	
		Limit =	20.000%	

Wheelabrator North Broward
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Pompano Beach, FL
FF Outlet 1

CEM Field Sample Calculations for NOX FF Outlet 1

Sample data taken from [redacted] and Channel 4

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.

040710 124829

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 4	=	225.573	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 4	=	225.573	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 4	=	225.573	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	225.000	ppmdv
Span	= instrument span value	=	453.000	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.13%	**Pass**

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

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

Where:

C_{mce}	= average concentration of a calibration series in this case the Low cal series for channel 4	=	225.573	ppmdv
C_{mf}	= calibration error response concentration for Cal01	=	220.681	ppmdv
Span	= instrument span value	=	453.000	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	1.08%	**Pass**

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

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

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	220.681	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	221.623	ppmdv
Span	= instrument span value	=	453.000	ppmdv
I_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.21%	**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 4	=	149.497	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average NOX concentration for Run 1	=	155.665	ppmdv

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	=	155.665	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	220.681	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	221.623	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	0.673	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	0.122	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	158.254	ppmdv

CEM Emissions Sample Calculations for NOX FF Outlet 1

Sample data taken from Run 1 and Channel 4

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.

040710 124829

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	=	158.254	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)	=	158.254	ppmdv

2. 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)	=	158.254	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)	=	1.890E-05	lb/dscf

3. NOX concentration (mg/dscm)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.890E-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)	=	302.589	mg/dscm

4. NOX concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= NOX concentration (lb/dscf)	=	1.890E-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)	=	324.730	mg/Nm^3 dry

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

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

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	158.254	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.711	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2	= NOX concentration corrected to 7% O2 (ppmdv example)	=	196.605	ppmdv @ 7%O2

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

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

Where:

C (ppmdv)	= NOX concentration (ppmdv)	=	158.254	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	9.715	%
C (ppmdv -CO	= NOX concentration corrected to 12% CO2 (ppmdv example)	=	195.469	ppmdv @ 12%CO2

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CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

CEM RATA Sample Calculations for NOX FF Outlet 1

Sample data taken from	Run 1
and	Channel 4

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.

040710 124914

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	=	198.000	ppm@7%O2
C_R	= NOX value from CleanAir RM Data	=	196.605	ppm@7%O2
D	= NOX value difference between 2 methods	=	-1.395	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= NOX value from CleanAir RM Data	=	196.605	ppm@7%O2
D	= NOX value difference between 2 methods	=	-1.395	ppm@7%O2
$D_{\%}$	= NOX value difference as a percentage of RM Data	=	-0.7%	

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	=	198.000	ppm@7%O2
N	= total number of runs included in the CEM data	=	10	
$C_{p,avg}$	= Average NOX value from Plant CEM Data	=	196.240	ppm@7%O2

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FF Outlet 1

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	=	196.605	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	198.000	ppm@7%O2
N	= total Number of RATA Runs	=	10	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	1.139	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	=	1.139	ppm@7%O2
t	= confidence factor	=	2.262	
N	= total Number of RATA Runs	=	10	
CC	= confidence coefficient	=	0.815	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	=	196.605	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	198.000	ppm@7%O2
N	= total Number of RATA Runs	=	10	
CC	= confidence coefficient	=	0.815	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	0.417%	
		Limit =	20.000%	

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FF Outlet 1

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	=	196.605	ppm@7%O2
$C_{p,i}$	= NOX value from Plant CEM Data for ith run	=	198.000	ppm@7%O2
N	= total Number of RATA Runs	=	10	
CC	= confidence coefficient	=	0.815	
C_{std}	= NOX value of applicable standard	=	205.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	0.399%	
		Limit =	10.000%	

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Pompano Beach, FL
FF Outlet 1

CEM Field Sample Calculations for CO FF Outlet 1

Sample data taken from [redacted] and Channel 5

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.

040710 124951

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 5	=	49.165	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 5	=	49.165	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	48.200	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 5	=	49.165	ppmdv
C_{ma}	= concentration of actual calibration gas value	=	48.200	ppmdv
Span	= instrument span value	=	98.500	
l_{cal}	= limit for calibration error for non-hydrocarbons	=	2.0%	
E	= calibration error check value	=	0.98%	**Pass**

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

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

Where:

C_{mce}	= average concentration of a calibration series in this case the Low cal series for channel 5	=	49.165	ppmdv
C_{mf}	= calibration error response concentration for Cal01	=	48.750	ppmdv
Span	= instrument span value	=	98.500	ppmdv
l_{bias}	= limit for system bias error	=	5.0%	
E_{bias}	= calibration bias error check value	=	0.42%	**Pass**

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

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

Where:

C_{mf}	= calibration error response concentration for Cal01 (final)	=	48.750	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	48.978	ppmdv
Span	= instrument span value	=	98.500	ppmdv
I_{drift}	= limit for system drift error	=	3.0%	
E_{drift}	= calibration drift error check value	=	0.23%	**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 CO on channel 5	=	16.102	ppmdv
N	= total number of readings in Run 1	=	27	
C	= average CO concentration for Run 1	=	12.574	ppmdv

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	=	48.200	ppmdv
C	= average CO concentration for Run 1	=	12.574	ppmdv
C_{mf}	= calibration error response concentration for Cal01 (final)	=	48.750	ppmdv
C_{mi}	= calibration error response concentration for Cal00 (initial)	=	48.978	ppmdv
C_{of}	= calibration error response concentration for Cal01 (final) for zero gas	=	-0.378	ppmdv
C_{oi}	= calibration error response concentration for Cal00 (initial) for zero gas	=	-0.380	ppmdv
C_{DC}	= drift corrected average concentration for Run 1	=	12.678	ppmdv

CEM Emissions Sample Calculations for CO FF Outlet 1

Sample data taken from Run 1 and Channel 5

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.

040710 124951

1. CO 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	=	12.678	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)	= CO concentration (ppmdv)	=	12.678	ppmdv

2. CO concentration (lb/dscf)

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

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	12.678	ppmdv
MW	= Molecular Weight of CO gas	=	28.0106	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)	= CO concentration (lb/dscf)	=	9.217E-07	lb/dscf

3. CO concentration (mg/dscm)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	9.217E-07	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)	= CO concentration (mg/dscm)	=	14.759	mg/dscm

4. CO concentration (mg/Nm3 dry)

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

Where:

C (lb/dscf)	= CO concentration (lb/dscf)	=	9.217E-07	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	= CO concentration (mg/Nm3 dry)	=	15.839	mg/Nm^3 dry

5. CO concentration corrected to 7% O2 (ppmdv example)

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

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	12.678	ppmdv
x	= oxygen content of corrected gas (%)	=	7.00	%
O_2	= proportion of oxygen in the gas stream by volume (%)	=	9.711	%
20.9	= oxygen content of ambient air (%)	=	20.9	%
C (ppmdv - O2	= CO concentration corrected to 7% O2 (ppmdv example)	=	15.750	ppmdv @ 7%O2

6. CO concentration corrected to 12% CO2 (ppmdv example)

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

Where:

C (ppmdv)	= CO concentration (ppmdv)	=	12.678	ppmdv
y	= carbon dioxide content of corrected gas (%)	=	12.00	%
CO_2	= proportion of carbon dioxide in the gas stream by volume (%)	=	9.715	%
C (ppmdv -CO	= CO concentration corrected to 12% CO2 (ppmdv example)	=	15.660	ppmdv @ 12%CO2

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

CEM RATA Sample Calculations for CO FF Outlet 1

Sample data taken from Run 1
and Channel 5

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.

040710 125020

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

$$D = C_R - C_P$$

Where:

C_P	= CO value from Plant CEM Data	=	17.400	ppm@7%O2
C_R	= CO value from CleanAir RM Data	=	15.750	ppm@7%O2
D	= CO value difference between 2 methods	=	-1.650	ppm@7%O2

2. Percent Value Difference (%)

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

Where:

C_R	= CO value from CleanAir RM Data	=	15.750	ppm@7%O2
D	= CO value difference between 2 methods	=	-1.650	ppm@7%O2
$D_{\%}$	= CO value difference as a percentage of RM Data	=	-10.5%	

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

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

Where:

			i=1	
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	17.400	ppm@7%O2
N	= total number of runs included in the CEM data	=	9	
$C_{p,avg}$	= Average CO value from Plant CEM Data	=	16.444	ppm@7%O2

Wheelabrator North Broward

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Pompano Beach, FL

FF Outlet 1

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:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	15.750	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	17.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
STDEV	= standard deviation of plant CEM data and CleanAir RM data	=	0.332	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	=	0.332	ppm@7%O2
t	= confidence factor	=	2.306	
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.255	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:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	15.750	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	17.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.255	ppm@7%O2
RA	= relative accuracy (as a percentage of the reference method)	=	9.188%	
		Limit =	10.000%	

Wheelabrator North Broward

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FF Outlet 1

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:

$C_{R,i}$	= CO value from CleanAir RM Data for ith run	=	15.750	ppm@7%O2
$C_{p,i}$	= CO value from Plant CEM Data for ith run	=	17.400	ppm@7%O2
N	= total Number of RATA Runs	=	9	
CC	= confidence coefficient	=	0.255	
C_{std}	= CO value of applicable standard	=	100.000	ppm@7%O2
RA	= relative accuracy (as percentage of the applicable standard)	=	1.405%	
		Limit =	5.000%	

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PARAMETERS

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Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2010)	Mar 18				
Start Time	7:12				
End Time	7:39				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.72	9.71	13.74	158.25	12.68
Concentration (ppmdv)			13.74	158.25	12.68
Concentration (lb/dscf)			2.285E-06	1.890E-05	9.217E-07
Concentration (%dv)	9.715	9.711	0.00137	0.0158	0.00127
Concentration (mg/dscm)			36.59	302.59	14.76
Concentration (mg/Nm3)			39.27	324.73	15.84
Concentration @7%O2 (ppm)			17.07	196.60	15.75
Concentration @12%CO2 (ppm)			16.97	195.47	15.66
Concentration @7%O2 (lb/scf)			2.839E-06	2.347E-05	1.145E-06
Concentration @12%CO2 (lb/scf)			2.822E-06	2.334E-05	1.138E-06
Concentration @7%O2 (mg/scm)			45.46	375.92	18.34
Concentration @12%CO2 (mg/scm)			45.19	373.75	18.23
Concentration @7%O2 (mg/Nm3)			48.78	403.42	19.68
Concentration @12%CO2 (mg/Nm3)			48.50	401.10	19.56

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2010)	Mar 18				
Start Time	7:46				
End Time	8:13				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.91	9.45	13.99	173.00	11.97
Concentration (ppmdv)			13.99	173.00	11.97
Concentration (lb/dscf)			2.327E-06	2.066E-05	8.702E-07
Concentration (%dv)	9.909	9.451	0.00140	0.0173	0.00120
Concentration (mg/dscm)			37.26	330.79	13.93
Concentration (mg/Nm3)			39.99	355.00	14.95
Concentration @7%O2 (ppm)			16.99	210.04	14.53
Concentration @12%CO2 (ppm)			16.95	209.52	14.50
Concentration @7%O2 (lb/scf)			2.825E-06	2.508E-05	1.056E-06
Concentration @12%CO2 (lb/scf)			2.818E-06	2.502E-05	1.054E-06
Concentration @7%O2 (mg/scm)			45.24	401.60	16.92
Concentration @12%CO2 (mg/scm)			45.13	400.61	16.88
Concentration @7%O2 (mg/Nm3)			48.55	430.98	18.16
Concentration @12%CO2 (mg/Nm3)			48.43	429.92	18.11

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2010)	Mar 18				
Start Time	8:20				
End Time	8:47				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.03	9.29	14.94	167.02	10.38
Concentration (ppmdv)			14.94	167.02	10.38
Concentration (lb/dscf)			2.485E-06	1.994E-05	7.547E-07
Concentration (%dv)	10.028	9.287	0.00149	0.0167	0.00104
Concentration (mg/dscm)			39.79	319.35	12.09
Concentration (mg/Nm3)			42.70	342.72	12.97
Concentration @7%O2 (ppm)			17.89	199.91	12.43
Concentration @12%CO2 (ppm)			17.88	199.87	12.42
Concentration @7%O2 (lb/scf)			2.974E-06	2.387E-05	9.033E-07
Concentration @12%CO2 (lb/scf)			2.973E-06	2.387E-05	9.031E-07
Concentration @7%O2 (mg/scm)			47.62	382.23	14.46
Concentration @12%CO2 (mg/scm)			47.61	382.17	14.46
Concentration @7%O2 (mg/Nm3)			51.11	410.20	15.52
Concentration @12%CO2 (mg/Nm3)			51.10	410.13	15.52

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2010)	Mar 18				
Start Time	8:55				
End Time	9:22				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.97	9.33	14.55	159.99	11.89
Concentration (ppmdv)			14.55	159.99	11.89
Concentration (lb/dscf)			2.420E-06	1.910E-05	8.646E-07
Concentration (%dv)	9.970	9.333	0.00146	0.0160	0.00119
Concentration (mg/dscm)			38.75	305.91	13.85
Concentration (mg/Nm3)			41.59	328.29	14.86
Concentration @7%O2 (ppm)			17.49	192.26	14.29
Concentration @12%CO2 (ppm)			17.52	192.56	14.31
Concentration @7%O2 (lb/scf)			2.908E-06	2.296E-05	1.039E-06
Concentration @12%CO2 (lb/scf)			2.913E-06	2.299E-05	1.041E-06
Concentration @7%O2 (mg/scm)			46.57	367.62	16.64
Concentration @12%CO2 (mg/scm)			46.64	368.19	16.66
Concentration @7%O2 (mg/Nm3)			49.98	394.52	17.86
Concentration @12%CO2 (mg/Nm3)			50.05	395.13	17.88

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2010)	Mar 18				
Start Time	9:29				
End Time	9:56				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.98	9.32	9.45	157.45	10.30
Concentration (ppmdv)			9.45	157.45	10.30
Concentration (lb/dscf)			1.572E-06	1.880E-05	7.488E-07
Concentration (%dv)	9.979	9.317	0.00095	0.0157	0.00103
Concentration (mg/dscm)			25.17	301.05	11.99
Concentration (mg/Nm3)			27.01	323.08	12.87
Concentration @7%O2 (ppm)			11.34	188.94	12.36
Concentration @12%CO2 (ppm)			11.37	189.34	12.39
Concentration @7%O2 (lb/scf)			1.886E-06	2.256E-05	8.986E-07
Concentration @12%CO2 (lb/scf)			1.890E-06	2.261E-05	9.005E-07
Concentration @7%O2 (mg/scm)			30.20	361.27	14.39
Concentration @12%CO2 (mg/scm)			30.26	362.02	14.42
Concentration @7%O2 (mg/Nm3)			32.41	387.71	15.44
Concentration @12%CO2 (mg/Nm3)			32.48	388.51	15.47

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2010)	Mar 18				
Start Time	10:03				
End Time	10:30				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.84	9.50	12.03	162.07	11.05
Concentration (ppmdv)			12.03	162.07	11.05
Concentration (lb/dscf)			2.000E-06	1.935E-05	8.036E-07
Concentration (%dv)	9.841	9.498	0.00120	0.0162	0.00111
Concentration (mg/dscm)			32.02	309.89	12.87
Concentration (mg/Nm3)			34.37	332.56	13.81
Concentration @7%O2 (ppm)			14.66	197.58	13.48
Concentration @12%CO2 (ppm)			14.67	197.62	13.48
Concentration @7%O2 (lb/scf)			2.438E-06	2.359E-05	9.797E-07
Concentration @12%CO2 (lb/scf)			2.438E-06	2.360E-05	9.799E-07
Concentration @7%O2 (mg/scm)			39.04	377.79	15.69
Concentration @12%CO2 (mg/scm)			39.05	377.86	15.69
Concentration @7%O2 (mg/Nm3)			41.90	405.43	16.84
Concentration @12%CO2 (mg/Nm3)			41.90	405.51	16.84

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2010)	Mar 18				
Start Time	10:38				
End Time	11:05				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.96	9.32	10.60	165.73	12.93
Concentration (ppmdv)			10.60	165.73	12.93
Concentration (lb/dscf)			1.763E-06	1.979E-05	9.398E-07
Concentration (%dv)	9.960	9.316	0.00106	0.0166	0.00129
Concentration (mg/dscm)			28.24	316.89	15.05
Concentration (mg/Nm3)			30.30	340.08	16.15
Concentration @7%O2 (ppm)			12.72	198.86	15.51
Concentration @12%CO2 (ppm)			12.78	199.67	15.57
Concentration @7%O2 (lb/scf)			2.116E-06	2.374E-05	1.128E-06
Concentration @12%CO2 (lb/scf)			2.124E-06	2.384E-05	1.132E-06
Concentration @7%O2 (mg/scm)			33.88	380.24	18.06
Concentration @12%CO2 (mg/scm)			34.02	381.78	18.13
Concentration @7%O2 (mg/Nm3)			36.36	408.06	19.38
Concentration @12%CO2 (mg/Nm3)			36.51	409.72	19.46

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2010)	Mar 18				
Start Time	11:13				
End Time	11:40				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.76	9.63	10.98	157.60	15.16
Concentration (ppmdv)			10.98	157.60	15.16
Concentration (lb/dscf)			1.826E-06	1.882E-05	1.102E-06
Concentration (%dv)	9.763	9.633	0.00110	0.0158	0.00152
Concentration (mg/dscm)			29.24	301.35	17.65
Concentration (mg/Nm3)			31.38	323.40	18.94
Concentration @7%O2 (ppm)			13.55	194.43	18.70
Concentration @12%CO2 (ppm)			13.50	193.72	18.63
Concentration @7%O2 (lb/scf)			2.253E-06	2.322E-05	1.360E-06
Concentration @12%CO2 (lb/scf)			2.245E-06	2.313E-05	1.355E-06
Concentration @7%O2 (mg/scm)			36.08	371.76	21.77
Concentration @12%CO2 (mg/scm)			35.95	370.41	21.69
Concentration @7%O2 (mg/Nm3)			38.72	398.97	23.37
Concentration @12%CO2 (mg/Nm3)			38.58	397.51	23.28

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2010)	Mar 18				
Start Time	11:47				
End Time	12:14				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.41	10.08	12.54	144.81	15.35
Concentration (ppmdv)			12.54	144.81	15.35
Concentration (lb/dscf)			2.085E-06	1.729E-05	1.116E-06
Concentration (%dv)	9.415	10.077	0.00125	0.0145	0.00153
Concentration (mg/dscm)			33.39	276.89	17.87
Concentration (mg/Nm3)			35.83	297.15	19.17
Concentration @7%O2 (ppm)			16.11	185.99	19.71
Concentration @12%CO2 (ppm)			15.98	184.57	19.56
Concentration @7%O2 (lb/scf)			2.678E-06	2.221E-05	1.433E-06
Concentration @12%CO2 (lb/scf)			2.658E-06	2.204E-05	1.422E-06
Concentration @7%O2 (mg/scm)			42.88	355.62	22.95
Concentration @12%CO2 (mg/scm)			42.56	352.91	22.77
Concentration @7%O2 (mg/Nm3)			46.02	381.64	24.63
Concentration @12%CO2 (mg/Nm3)			45.67	378.74	24.44

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 1

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2010)	Mar 18				
Start Time	12:21				
End Time	12:48				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1	FF Outlet 1
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.74	9.62	9.80	160.52	15.89
Concentration (ppmdv)			9.80	160.52	15.89
Concentration (lb/dscf)			1.629E-06	1.917E-05	1.155E-06
Concentration (%dv)	9.743	9.620	0.00098	0.0161	0.00159
Concentration (mg/dscm)			26.09	306.92	18.50
Concentration (mg/Nm3)			28.00	329.38	19.86
Concentration @7%O2 (ppm)			12.08	197.81	19.59
Concentration @12%CO2 (ppm)			12.07	197.70	19.58
Concentration @7%O2 (lb/scf)			2.008E-06	2.362E-05	1.424E-06
Concentration @12%CO2 (lb/scf)			2.007E-06	2.361E-05	1.423E-06
Concentration @7%O2 (mg/scm)			32.15	378.22	22.80
Concentration @12%CO2 (mg/scm)			32.13	378.01	22.79
Concentration @7%O2 (mg/Nm3)			34.50	405.90	24.47
Concentration @12%CO2 (mg/Nm3)			34.49	405.67	24.46

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2010)	Mar 16				
Start Time	9:48				
End Time	10:15				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.86	9.47	10.64	161.29	12.75
Concentration (ppmdv)			10.64	161.29	12.75
Concentration (lb/dscf)			1.769E-06	1.926E-05	9.271E-07
Concentration (%dv)	9.858	9.467	0.00106	0.0161	0.00128
Concentration (mg/dscm)			28.32	308.39	14.85
Concentration (mg/Nm3)			30.40	330.95	15.93
Concentration @7%O2 (ppm)			12.93	196.09	15.50
Concentration @12%CO2 (ppm)			12.95	196.33	15.52
Concentration @7%O2 (lb/scf)			2.151E-06	2.341E-05	1.127E-06
Concentration @12%CO2 (lb/scf)			2.153E-06	2.344E-05	1.129E-06
Concentration @7%O2 (mg/scm)			34.44	374.94	18.05
Concentration @12%CO2 (mg/scm)			34.48	375.40	18.07
Concentration @7%O2 (mg/Nm3)			36.96	402.37	19.37
Concentration @12%CO2 (mg/Nm3)			37.00	402.87	19.39

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2010)	Mar 16				
Start Time	10:31				
End Time	10:58				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.78	9.59	14.34	153.46	12.93
Concentration (ppmdv)			14.34	153.46	12.93
Concentration (lb/dscf)			2.385E-06	1.832E-05	9.402E-07
Concentration (%dv)	9.781	9.594	0.00143	0.0153	0.00129
Concentration (mg/dscm)			38.18	293.42	15.06
Concentration (mg/Nm3)			40.98	314.89	16.16
Concentration @7%O2 (ppm)			17.63	188.66	15.90
Concentration @12%CO2 (ppm)			17.59	188.27	15.87
Concentration @7%O2 (lb/scf)			2.932E-06	2.253E-05	1.156E-06
Concentration @12%CO2 (lb/scf)			2.925E-06	2.248E-05	1.153E-06
Concentration @7%O2 (mg/scm)			46.95	360.74	18.51
Concentration @12%CO2 (mg/scm)			46.85	359.97	18.47
Concentration @7%O2 (mg/Nm3)			50.38	387.13	19.86
Concentration @12%CO2 (mg/Nm3)			50.27	386.31	19.82

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2010)	Mar 16				
Start Time	11:15				
End Time	11:42				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.79	9.69	15.18	148.91	12.66
Concentration (ppmdv)			15.18	148.91	12.66
Concentration (lb/dscf)			2.524E-06	1.778E-05	9.206E-07
Concentration (%dv)	9.786	9.689	0.00152	0.0149	0.00127
Concentration (mg/dscm)			40.42	284.72	14.74
Concentration (mg/Nm3)			43.38	305.56	15.82
Concentration @7%O2 (ppm)			18.82	184.62	15.70
Concentration @12%CO2 (ppm)			18.62	182.60	15.53
Concentration @7%O2 (lb/scf)			3.129E-06	2.204E-05	1.141E-06
Concentration @12%CO2 (lb/scf)			3.095E-06	2.180E-05	1.129E-06
Concentration @7%O2 (mg/scm)			50.11	353.00	18.28
Concentration @12%CO2 (mg/scm)			49.56	349.15	18.08
Concentration @7%O2 (mg/Nm3)			53.78	378.83	19.62
Concentration @12%CO2 (mg/Nm3)			53.19	374.69	19.40

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2010)	Mar 16				
Start Time	12:02				
End Time	12:29				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.94	9.49	14.48	152.26	9.37
Concentration (ppmdv)			14.48	152.26	9.37
Concentration (lb/dscf)			2.408E-06	1.818E-05	6.809E-07
Concentration (%dv)	9.941	9.490	0.00145	0.0152	0.00094
Concentration (mg/dscm)			38.56	291.14	10.90
Concentration (mg/Nm3)			41.38	312.44	11.70
Concentration @7%O2 (ppm)			17.64	185.49	11.41
Concentration @12%CO2 (ppm)			17.48	183.80	11.31
Concentration @7%O2 (lb/scf)			2.933E-06	2.215E-05	8.295E-07
Concentration @12%CO2 (lb/scf)			2.906E-06	2.195E-05	8.219E-07
Concentration @7%O2 (mg/scm)			46.97	354.67	13.28
Concentration @12%CO2 (mg/scm)			46.54	351.43	13.16
Concentration @7%O2 (mg/Nm3)			50.41	380.63	14.25
Concentration @12%CO2 (mg/Nm3)			49.95	377.15	14.12

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2010)	Mar 16				
Start Time	12:40				
End Time	13:07				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.67	9.79	13.77	144.72	10.67
Concentration (ppmdv)			13.77	144.72	10.67
Concentration (lb/dscf)			2.290E-06	1.728E-05	7.755E-07
Concentration (%dv)	9.671	9.786	0.00138	0.0145	0.00107
Concentration (mg/dscm)			36.67	276.71	12.42
Concentration (mg/Nm3)			39.36	296.96	13.33
Concentration @7%O2 (ppm)			17.23	181.00	13.34
Concentration @12%CO2 (ppm)			17.09	179.57	13.24
Concentration @7%O2 (lb/scf)			2.864E-06	2.161E-05	9.699E-07
Concentration @12%CO2 (lb/scf)			2.842E-06	2.144E-05	9.622E-07
Concentration @7%O2 (mg/scm)			45.87	346.09	15.53
Concentration @12%CO2 (mg/scm)			45.50	343.34	15.41
Concentration @7%O2 (mg/Nm3)			49.22	371.41	16.67
Concentration @12%CO2 (mg/Nm3)			48.83	368.47	16.54

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2010)	Mar 16				
Start Time	13:15				
End Time	13:42				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.74	9.75	13.63	149.73	9.55
Concentration (ppmdv)			13.63	149.73	9.55
Concentration (lb/dscf)			2.267E-06	1.788E-05	6.941E-07
Concentration (%dv)	9.737	9.749	0.00136	0.0150	0.00095
Concentration (mg/dscm)			36.30	286.29	11.11
Concentration (mg/Nm3)			38.96	307.24	11.93
Concentration @7%O2 (ppm)			16.99	186.64	11.90
Concentration @12%CO2 (ppm)			16.80	184.53	11.77
Concentration @7%O2 (lb/scf)			2.826E-06	2.229E-05	8.652E-07
Concentration @12%CO2 (lb/scf)			2.794E-06	2.203E-05	8.554E-07
Concentration @7%O2 (mg/scm)			45.25	356.86	13.85
Concentration @12%CO2 (mg/scm)			44.74	352.83	13.70
Concentration @7%O2 (mg/Nm3)			48.56	382.98	14.87
Concentration @12%CO2 (mg/Nm3)			48.01	378.65	14.70

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2010)	Mar 16				
Start Time	13:51				
End Time	14:18				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.84	9.66	15.58	153.87	12.22
Concentration (ppmdv)			15.58	153.87	12.22
Concentration (lb/dscf)			2.591E-06	1.837E-05	8.883E-07
Concentration (%dv)	9.840	9.656	0.00156	0.0154	0.00122
Concentration (mg/dscm)			41.48	294.20	14.22
Concentration (mg/Nm3)			44.52	315.73	15.27
Concentration @7%O2 (ppm)			19.26	190.21	15.10
Concentration @12%CO2 (ppm)			19.00	187.64	14.90
Concentration @7%O2 (lb/scf)			3.202E-06	2.271E-05	1.098E-06
Concentration @12%CO2 (lb/scf)			3.159E-06	2.240E-05	1.083E-06
Concentration @7%O2 (mg/scm)			51.28	363.70	17.58
Concentration @12%CO2 (mg/scm)			50.59	358.78	17.35
Concentration @7%O2 (mg/Nm3)			55.03	390.31	18.87
Concentration @12%CO2 (mg/Nm3)			54.29	385.03	18.62

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2010)	Mar 16				
Start Time	14:26				
End Time	14:53				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.90	9.57	16.83	149.20	11.45
Concentration (ppmdv)			16.83	149.20	11.45
Concentration (lb/dscf)			2.798E-06	1.782E-05	8.325E-07
Concentration (%dv)	9.896	9.574	0.00168	0.0149	0.00115
Concentration (mg/dscm)			44.81	285.28	13.33
Concentration (mg/Nm3)			48.09	306.16	14.31
Concentration @7%O2 (ppm)			20.66	183.11	14.05
Concentration @12%CO2 (ppm)			20.41	180.93	13.89
Concentration @7%O2 (lb/scf)			3.434E-06	2.186E-05	1.022E-06
Concentration @12%CO2 (lb/scf)			3.393E-06	2.160E-05	1.009E-06
Concentration @7%O2 (mg/scm)			55.00	350.12	16.36
Concentration @12%CO2 (mg/scm)			54.34	345.94	16.17
Concentration @7%O2 (mg/Nm3)			59.02	375.73	17.56
Concentration @12%CO2 (mg/Nm3)			58.32	371.25	17.35

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2010)	Mar 16				
Start Time	15:02				
End Time	15:29				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.80	9.66	14.88	148.85	12.67
Concentration (ppmdv)			14.88	148.85	12.67
Concentration (lb/dscf)			2.474E-06	1.777E-05	9.213E-07
Concentration (%dv)	9.803	9.656	0.00149	0.0149	0.00127
Concentration (mg/dscm)			39.61	284.62	14.75
Concentration (mg/Nm3)			42.51	305.44	15.83
Concentration @7%O2 (ppm)			18.39	184.02	15.67
Concentration @12%CO2 (ppm)			18.21	182.22	15.51
Concentration @7%O2 (lb/scf)			3.058E-06	2.197E-05	1.139E-06
Concentration @12%CO2 (lb/scf)			3.028E-06	2.176E-05	1.128E-06
Concentration @7%O2 (mg/scm)			48.97	351.86	18.24
Concentration @12%CO2 (mg/scm)			48.49	348.41	18.06
Concentration @7%O2 (mg/Nm3)			52.55	377.61	19.57
Concentration @12%CO2 (mg/Nm3)			52.04	373.91	19.38

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 2

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2010)	Mar 16				
Start Time	15:37				
End Time	16:04				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2	FF Outlet 2
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	9.93	9.50	14.15	156.26	8.45
Concentration (ppmdv)			14.15	156.26	8.45
Concentration (lb/dscf)			2.353E-06	1.866E-05	6.141E-07
Concentration (%dv)	9.925	9.504	0.00142	0.0156	0.00084
Concentration (mg/dscm)			37.68	298.78	9.83
Concentration (mg/Nm3)			40.44	320.64	10.55
Concentration @7%O2 (ppm)			17.26	190.59	10.30
Concentration @12%CO2 (ppm)			17.11	188.92	10.21
Concentration @7%O2 (lb/scf)			2.870E-06	2.276E-05	7.490E-07
Concentration @12%CO2 (lb/scf)			2.845E-06	2.256E-05	7.424E-07
Concentration @7%O2 (mg/scm)			45.96	364.42	11.99
Concentration @12%CO2 (mg/scm)			45.55	361.23	11.89
Concentration @7%O2 (mg/Nm3)			49.32	391.08	12.87
Concentration @12%CO2 (mg/Nm3)			48.89	387.66	12.76

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	1				
Date (2010)	Mar 17				
Start Time	7:10				
End Time	7:37				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.88	8.41	10.57	165.85	13.70
Concentration (ppmdv)			10.57	165.85	13.70
Concentration (lb/dscf)			1.757E-06	1.980E-05	9.960E-07
Concentration (%dv)	10.884	8.407	0.0011	0.017	0.0014
Concentration (mg/dscm)			28.14	317.12	15.95
Concentration (mg/Nm3)			30.20	340.32	17.12
Concentration @7%O2 (ppm)			11.76	184.53	15.24
Concentration @12%CO2 (ppm)			11.65	182.85	15.10
Concentration @7%O2 (lb/scf)			1.955E-06	2.203E-05	1.108E-06
Concentration @12%CO2 (lb/scf)			1.937E-06	2.183E-05	1.098E-06
Concentration @7%O2 (mg/scm)			31.31	352.84	17.75
Concentration @12%CO2 (mg/scm)			31.02	349.62	17.58
Concentration @7%O2 (mg/Nm3)			33.60	378.66	19.04
Concentration @12%CO2 (mg/Nm3)			33.29	375.21	18.87

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	2				
Date (2010)	Mar 17				
Start Time	7:45				
End Time	8:12				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.89	8.44	14.21	166.86	13.29
Concentration (ppmdv)			14.21	166.86	13.29
Concentration (lb/dscf)			2.362E-06	1.992E-05	9.658E-07
Concentration (%dv)	10.887	8.436	0.0014	0.017	0.0013
Concentration (mg/dscm)			37.82	319.04	15.47
Concentration (mg/Nm3)			40.59	342.38	16.60
Concentration @7%O2 (ppm)			15.84	186.08	14.82
Concentration @12%CO2 (ppm)			15.66	183.92	14.64
Concentration @7%O2 (lb/scf)			2.634E-06	2.222E-05	1.077E-06
Concentration @12%CO2 (lb/scf)			2.603E-06	2.196E-05	1.065E-06
Concentration @7%O2 (%v)			0.0016	0.019	0.0015
Concentration @12%CO2 (%v)			0.0016	0.018	0.0015
Concentration @7%O2 (mg/scm)			42.18	355.80	17.25
Concentration @12%CO2 (mg/scm)			41.69	351.66	17.05
Concentration @7%O2 (mg/Nm3)			45.27	381.83	18.51
Concentration @12%CO2 (mg/Nm3)			44.74	377.39	18.29

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	3				
Date (2010)	Mar 17				
Start Time	8:20				
End Time	8:47				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.72	8.43	11.44	170.55	10.45
Concentration (ppmdv)			11.44	170.55	10.45
Concentration (lb/dscf)			1.903E-06	2.036E-05	7.594E-07
Concentration (%dv)	10.721	8.428	0.0011	0.017	0.0010
Concentration (mg/dscm)			30.47	326.11	12.16
Concentration (mg/Nm3)			32.70	349.97	13.05
Concentration @7%O2 (ppm)			12.75	190.07	11.64
Concentration @12%CO2 (ppm)			12.81	190.90	11.69
Concentration @7%O2 (lb/scf)			2.121E-06	2.270E-05	8.463E-07
Concentration @12%CO2 (lb/scf)			2.130E-06	2.279E-05	8.500E-07
Concentration @7%O2 (%v)			0.0013	0.019	0.0012
Concentration @12%CO2 (%v)			0.0013	0.019	0.0012
Concentration @7%O2 (mg/scm)			33.96	363.43	13.55
Concentration @12%CO2 (mg/scm)			34.11	365.02	13.61
Concentration @7%O2 (mg/Nm3)			36.44	390.03	14.54
Concentration @12%CO2 (mg/Nm3)			36.60	391.73	14.61

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	4				
Date (2010)	Mar 17				
Start Time	8:54				
End Time	9:21				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.95	8.22	10.08	177.89	8.81
Concentration (ppmdv)			10.08	177.89	8.81
Concentration (lb/dscf)			1.677E-06	2.124E-05	6.405E-07
Concentration (%dv)	10.945	8.220	0.0010	0.018	0.0009
Concentration (mg/dscm)			26.85	340.14	10.26
Concentration (mg/Nm3)			28.81	365.03	11.01
Concentration @7%O2 (ppm)			11.05	195.01	9.66
Concentration @12%CO2 (ppm)			11.06	195.04	9.66
Concentration @7%O2 (lb/scf)			1.838E-06	2.328E-05	7.021E-07
Concentration @12%CO2 (lb/scf)			1.838E-06	2.329E-05	7.023E-07
Concentration @7%O2 (%v)			0.0011	0.020	0.0010
Concentration @12%CO2 (%v)			0.0011	0.020	0.0010
Concentration @7%O2 (mg/scm)			29.43	372.87	11.24
Concentration @12%CO2 (mg/scm)			29.43	372.93	11.25
Concentration @7%O2 (mg/Nm3)			31.58	400.15	12.07
Concentration @12%CO2 (mg/Nm3)			31.59	400.21	12.07

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	5				
Date (2010)	Mar 17				
Start Time	9:28				
End Time	9:55				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.55	8.68	6.05	171.27	12.35
Concentration (ppmdv)			6.05	171.27	12.35
Concentration (lb/dscf)			1.007E-06	2.045E-05	8.981E-07
Concentration (%dv)	10.549	8.680	0.00061	0.017	0.0012
Concentration (mg/dscm)			16.12	327.47	14.38
Concentration (mg/Nm3)			17.30	351.44	15.43
Concentration @7%O2 (ppm)			6.89	194.81	14.05
Concentration @12%CO2 (ppm)			6.89	194.82	14.05
Concentration @7%O2 (lb/scf)			1.145E-06	2.326E-05	1.022E-06
Concentration @12%CO2 (lb/scf)			1.145E-06	2.326E-05	1.022E-06
Concentration @7%O2 (mg/scm)			18.34	372.49	16.36
Concentration @12%CO2 (mg/scm)			18.34	372.52	16.36
Concentration @7%O2 (mg/Nm3)			19.68	399.75	17.56
Concentration @12%CO2 (mg/Nm3)			19.68	399.77	17.56

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	6				
Date (2010)	Mar 17				
Start Time	10:02				
End Time	10:29				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.58	8.57	4.11	175.67	12.10
Concentration (ppmdv)			4.11	175.67	12.10
Concentration (lb/dscf)			6.839E-07	2.098E-05	8.796E-07
Concentration (%dv)	10.581	8.571	0.00041	0.018	0.0012
Concentration (mg/dscm)			10.95	335.89	14.09
Concentration (mg/Nm3)			11.75	360.47	15.12
Concentration @7%O2 (ppm)			4.64	198.06	13.64
Concentration @12%CO2 (ppm)			4.66	199.22	13.72
Concentration @7%O2 (lb/scf)			7.711E-07	2.365E-05	9.918E-07
Concentration @12%CO2 (lb/scf)			7.756E-07	2.379E-05	9.976E-07
Concentration @7%O2 (mg/scm)			12.35	378.70	15.88
Concentration @12%CO2 (mg/scm)			12.42	380.93	15.97
Concentration @7%O2 (mg/Nm3)			13.25	406.41	17.04
Concentration @12%CO2 (mg/Nm3)			13.33	408.80	17.14

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	7				
Date (2010)	Mar 17				
Start Time	10:37				
End Time	11:04				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.98	8.11	2.32	173.66	11.91
Concentration (ppmdv)			2.32	173.66	11.91
Concentration (lb/dscf)			3.850E-07	2.074E-05	8.659E-07
Concentration (%dv)	10.982	8.111	0.00023	0.017	0.0012
Concentration (mg/dscm)			6.16	332.05	13.87
Concentration (mg/Nm3)			6.62	356.35	14.88
Concentration @7%O2 (ppm)			2.52	188.75	12.95
Concentration @12%CO2 (ppm)			2.53	189.75	13.01
Concentration @7%O2 (lb/scf)			4.184E-07	2.254E-05	9.412E-07
Concentration @12%CO2 (lb/scf)			4.206E-07	2.266E-05	9.462E-07
Concentration @7%O2 (mg/scm)			6.70	360.89	15.07
Concentration @12%CO2 (mg/scm)			6.74	362.81	15.15
Concentration @7%O2 (mg/Nm3)			7.19	387.30	16.17
Concentration @12%CO2 (mg/Nm3)			7.23	389.36	16.26

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	8				
Date (2010)	Mar 17				
Start Time	11:13				
End Time	11:40				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	11.11	7.96	3.50	172.56	7.85
Concentration (ppmdv)			3.50	172.56	7.85
Concentration (lb/dscf)			5.817E-07	2.060E-05	5.704E-07
Concentration (%dv)	11.112	7.962	0.00035	0.017	0.0008
Concentration (mg/dscm)			9.32	329.94	9.13
Concentration (mg/Nm3)			10.00	354.08	9.80
Concentration @7%O2 (ppm)			3.76	185.39	8.43
Concentration @12%CO2 (ppm)			3.78	186.34	8.47
Concentration @7%O2 (lb/scf)			6.250E-07	2.214E-05	6.128E-07
Concentration @12%CO2 (lb/scf)			6.282E-07	2.225E-05	6.160E-07
Concentration @7%O2 (mg/scm)			10.01	354.48	9.81
Concentration @12%CO2 (mg/scm)			10.06	356.30	9.86
Concentration @7%O2 (mg/Nm3)			10.74	380.41	10.53
Concentration @12%CO2 (mg/Nm3)			10.80	382.37	10.59

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	9				
Date (2010)	Mar 17				
Start Time	11:48				
End Time	12:15				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.99	8.15	4.79	181.75	8.87
Concentration (ppmdv)			4.79	181.75	8.87
Concentration (lb/dscf)			7.958E-07	2.170E-05	6.446E-07
Concentration (%dv)	10.989	8.150	0.00048	0.018	0.0009
Concentration (mg/dscm)			12.74	347.52	10.32
Concentration (mg/Nm3)			13.68	372.95	11.08
Concentration @7%O2 (ppm)			5.22	198.14	9.67
Concentration @12%CO2 (ppm)			5.23	198.48	9.68
Concentration @7%O2 (lb/scf)			8.675E-07	2.366E-05	7.027E-07
Concentration @12%CO2 (lb/scf)			8.690E-07	2.370E-05	7.039E-07
Concentration @7%O2 (mg/scm)			13.89	378.85	11.25
Concentration @12%CO2 (mg/scm)			13.92	379.50	11.27
Concentration @7%O2 (mg/Nm3)			14.91	406.57	12.08
Concentration @12%CO2 (mg/Nm3)			14.93	407.27	12.10

QA/QC_____
Date_____

Wheelabrator North Broward
Clean Air Project No. 10955
Pompano Beach, FL
FF Outlet 3

Continuous Emissions Monitoring Parameters

Run Number	10				
Date (2010)	Mar 17				
Start Time	12:25				
End Time	12:52				
Elapsed Time (hh:mm)	00:27				
Channel	1	2	3	4	5
Parameter	CO2	O2	SO2	NOX	CO
Location	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3	FF Outlet 3
Measurement Units	%dv	%dv	ppmdv	ppmdv	ppmdv
Measured Average (drift-corrected)	10.19	9.09	8.05	163.63	10.76
Concentration (ppmdv)			8.05	163.63	10.76
Concentration (lb/dscf)			1.339E-06	1.954E-05	7.822E-07
Concentration (%dv)	10.189	9.090	0.00081	0.016	0.0011
Concentration (mg/dscm)			21.44	312.86	12.53
Concentration (mg/Nm3)			23.00	335.76	13.44
Concentration @7%O2 (ppm)			9.48	192.59	12.66
Concentration @12%CO2 (ppm)			9.48	192.71	12.67
Concentration @7%O2 (lb/scf)			1.576E-06	2.300E-05	9.206E-07
Concentration @12%CO2 (lb/scf)			1.577E-06	2.301E-05	9.212E-07
Concentration @7%O2 (mg/scm)			25.23	368.24	14.74
Concentration @12%CO2 (mg/scm)			25.25	368.47	14.75
Concentration @7%O2 (mg/Nm3)			27.08	395.18	15.82
Concentration @12%CO2 (mg/Nm3)			27.09	395.43	15.83

QA/QC_____
Date_____

QA/QC DATA

D

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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.: 24252-66WHEELABRATOR Project No.: 05-68618-001

Customer
CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

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: ALM010885 **Certification Date:** 19Sep2008 **Exp. Date:** 19Sep2010
Cylinder Pressure*:** 1914 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.2	%	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	225	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	44.9	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
NTRM 1800	01Mar2009	K005478	17.87 %	CARBON DIOXIDE
NTRM 1685	01Sep2010	KAL003525	247.1 PPM	NITRIC OXIDE
NTRM 1693	01Dec2011	KAL004073	50.20 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	04Sep2008	FTIR
FTIR//0928621	26Aug2008	FTIR
FTIR//0928621	18Sep2008	FTIR

ANALYZER READINGS

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

CARBON DIOXIDE

First Triad Analysis
Date: 12Sep2008 Response Unit: %
Z1=-0.00238 R1=17.78265 T1=10.09628
R2=17.78884 Z2=0.00216 T2=10.09698
Z3=0.00421 T3=10.10938 R3=17.79053
Avg. Concentration: 10.15 %

Calibration Curve
Concentration=A+Bx+Cx2+Dx3+Ex4
r=9.99988E-1
Constants: A=0.00000E+0
B=9.31146E-1 C=1.22400E-2
D=0.00000E+0 E=0.00000E+0

NITRIC OXIDE

First Triad Analysis
Date: 12Sep2008 Response Unit: PPM
Z1=0.01885 R1=248.7477 T1=226.2887
R2=249.0275 Z2=0.12571 T2=226.6309
Z3=0.46283 T3=226.8421 R3=249.3030
Avg. Concentration: 224.8 PPM

Second Triad Analysis
Date: 19Sep2008 Response Unit: PPM
Z1=-0.34230 R1=248.0816 T1=226.5803
R2=248.1206 Z2=0.32020 T2=226.8173
Z3=0.37723 T3=227.1357 R3=248.2152
Avg. Concentration: 225.9 PPM

Calibration Curve
Concentration=A+Bx+Cx2+Dx3+Ex4
r=9.99998E-1
Constants: A=0.00000E+0
B=9.44080E-1 C=3.80000E-5
D=0.00000E+0 E=0.00000E+0

SULFUR DIOXIDE *

First Triad Analysis
Date: 12Sep2008 Response Unit: PPM
Z1=-0.00016 R1=50.25512 T1=44.99951
R2=50.26485 Z2=0.06038 T2=45.03611
Z3=0.06619 T3=45.08546 R3=50.30269
Avg. Concentration: 44.97 PPM

Second Triad Analysis
Date: 19Sep2008 Response Unit: PPM
Z1=0.03964 R1=50.33410 T1=44.83878
R2=50.43386 Z2=0.04622 T2=44.92096
Z3=0.05640 T3=44.96287 R3=50.44218
Avg. Concentration: 44.72 PPM

Calibration Curve
Concentration=A+Bx+Cx2+Dx3+Ex4
r=9.99994E-1
Constants: A=0.00000E+0
B=1.00099E+0 C=0.00000E+0
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

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

P.O. No.: 24859-66-65000
Project No.: 05-84187-001

Customer

CLEAN AIR ENGINEERING

SCOTT BROWN
500 WEST WOOD STREET
PALATINE IL 60067

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: CC124384 **Certification Date:** 28Jan2010 **Exp. Date:** 28Jan2012
Cylinder Pressure*:** 1888 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ACCURACY**	TRACEABILITY
CARBON DIOXIDE	10.0	%	+/- 1%	Direct NIST and VSL
NITRIC OXIDE	453	PPM	+/- 1%	Direct NIST and VSL
SULFUR DIOXIDE *	89.9	PPM	+/- 1%	Direct NIST and VSL
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	453.	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 1675 B	02Oct2012	K000696	13.93 %	CARBON DIOXIDE
NTRM 1686	01Sep2010	KAL003496	490.0 PPM	NITRIC OXIDE
NTRM 1694 S	01Jun2012	KAL004124	100.4 PPM	SULFUR DIOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	31Dec2009	FTIR
FTIR//0928621	08Jan2010	FTIR
FTIR//0928621	14Jan2010	FTIR

ANALYZER READINGS

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

CARBON DIOXIDE

First Triad Analysis

Date: 19Jan2010 Response Unit: %
Z1 = 0.00116 R1 = 13.91162 T1 = 10.01153
R2 = 13.91811 Z2 = 0.00130 T2 = 10.01366
Z3 = 0.01087 T3 = 10.01880 R3 = 13.91889
Avg. Concentration: 10.02 %

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99994E-1
Constants: A = 0.00000E+0
B = 9.29116E-1 C = 1.26900E-2
D = 0.00000E+0 E = 0.00000E+0

NITRIC OXIDE

First Triad Analysis

Date: 19Jan2010 Response Unit: PPM
Z1 = -0.03529 R1 = 488.9653 T1 = 451.6460
R2 = 490.2213 Z2 = 0.37681 T2 = 454.1722
Z3 = 0.69378 T3 = 455.3191 R3 = 490.9652
Avg. Concentration: 453.6 PPM

Second Triad Analysis

Date: 28Jan2010 Response Unit: PPM
Z1 = 0.35355 R1 = 490.4896 T1 = 450.8998
R2 = 491.2955 Z2 = 0.72792 T2 = 453.3129
Z3 = 1.26294 T3 = 454.9297 R3 = 491.3667
Avg. Concentration: 452.0 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99995E-1
Constants: A = 0.00000E+0
B = 8.97507E-1 C = 3.40000E-5
D = 0.00000E+0 E = 0.00000E+0

SULFUR DIOXIDE *

First Triad Analysis

Date: 19Jan2010 Response Unit: PPM
Z1 = -0.00177 R1 = 101.3279 T1 = 91.01780
R2 = 101.5012 Z2 = 0.03768 T2 = 91.02749
Z3 = 0.15600 T3 = 91.04919 R3 = 101.6885
Avg. Concentration: 90.03 PPM

Second Triad Analysis

Date: 28Jan2010 Response Unit: PPM
Z1 = -0.03477 R1 = 101.4266 T1 = 90.68078
R2 = 101.4765 Z2 = -0.02790 T2 = 90.81634
Z3 = 0.10977 T3 = 90.94830 R3 = 101.6130
Avg. Concentration: 89.82 PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 9.99999E-1
Constants: A = 0.00000E+0
B = 1.05169E+0 C = 6.00000E-6
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: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: 57858-71-65000
Project No.: 05-83307-001

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

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: EB0011451 **Certification Date:** 04Jan2010 **Exp. Date:** 03Jan2013
Cylinder Pressure*:** 1849 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	48.2	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	02Oct2010	KAL003109	101.0 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	24Dec2009	FTIR

ANALYZER READINGS

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

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON MONOXIDE

Date: 28Dec2009	Response Unit: PPM	
Z1 = 0.03183	R1 = 101.1945	T1 = 48.26642
R2 = 101.2298	Z2 = 0.03304	T2 = 48.27261
Z3 = 0.06765	T3 = 48.33387	R3 = 101.2757
Avg. Concentration:	48.16	PPM

Date: 04Jan2010	Response Unit: PPM	
Z1 = 0.01474	R1 = 101.1599	T1 = 48.20196
R2 = 101.2582	Z2 = 0.05407	T2 = 48.37728
Z3 = 0.10127	T3 = 48.45435	R3 = 101.2630
Avg. Concentration:	48.21	PPM

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 9.99990E-1	
Constants:	A = 0.00000E+0
B = 9.81711E-1	C = 6.28000E-4
D = 1.00000E-6	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: EPA Protocol Gas

Assay Laboratory

P.O. No.: 57534-71-65000
AIR LIQUIDE AMERICA SPECIALTY GASES LLC Project No.: 05-78153-002
1290 COMBERMERE STREET
TROY, MI 48083

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

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: ALM054744 **Certification Date:** 28Jul2009 **Exp. Date:** 27Jul2012
Cylinder Pressure*:** 1983 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	98.5	PPM	+/- 1%	Direct NIST and NMi
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	02Oct2010	KAL003128	101.0 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//0928621	16Jul2009	FTIR

ANALYZER READINGS

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

First Triad Analysis

CARBON MONOXIDE

Date: 21Jul2009 Response Unit:PPM
Z1=-0.02619 R1=25.05672 T1=98.05983
R2=25.09750 Z2=0.03499 T2=98.21467
Z3=0.11000 T3=98.44034 R3=25.13916
Avg. Concentration: 98.78 PPM

Second Triad Analysis

Date: 28Jul2009 Response Unit: PPM
Z1=0.04130 R1=101.1553 T1=98.43124
R2=101.2594 Z2=0.09861 T2=98.44001
Z3=0.16955 T3=98.61880 R3=101.2611
Avg. Concentration: 98.24 PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=9.99991E-1
Constants: A=0.00000E+0
B=9.93719E-1 C=8.63000E-4
D=1.00000E-6 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: EPA Protocol Gas

Assay Laboratory

P.O. No.: 57534-71-65000

AIR LIQUIDE AMERICA SPECIALTY GASES LLC Project No.: 05-78153-003

1290 COMBERMERE STREET

TROY, MI 48083

Customer

CLEAN AIR ENGINEERING

DON ALLEN

500 W. WOOD STREET

PALATINE IL 60067

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: ALM033730 **Certification Date:** 27Jul2009 **Exp. Date:** 26Jul2012

Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	5.91	%	+/- 1%	Direct NIST and NMi
OXYGEN	14.1	%	+/- 1%	Direct NIST and NMi
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 2300	01Nov2010	1D002807	23.04 %	CARBON DIOXIDE
NTRM 2350	01Dec2011	K016398	23.20 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
PIR/2000/609016	16Jul2009	NDIR
CAI/110P/V03018	01Jul2009	PARAMAGNETIC

ANALYZER READINGS

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

First Triad Analysis **Second Triad Analysis** **Calibration Curve**

CARBON DIOXIDE

Date: 27Jul2009	Response Unit:MV	
Z1=0.00000	R1=102.5000	T1=43.00000
R2=102.5000	Z2=0.00000	T2=43.00000
Z3=0.00000	T3=43.00000	R3=102.5000
Avg. Concentration:	5.909	%

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=0.999992	
Constants:	A=-0.00322681
B=0.13615338	C=-0.0005754
D=1.40219E-05	E=0

OXYGEN

Date: 28Jul2009	Response Unit:%	
Z1=0.00000	R1=23.20000	T1=14.06000
R2=23.20000	Z2=0.00000	T2=14.06000
Z3=0.00000	T3=14.06000	R3=23.20000
Avg. Concentration:	14.05	%

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=0.999992	
Constants:	A=-0.00675568
B=0.999864575	C=0
D=0	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.: 57439-71-65000
Project No.: 05-76738-005

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

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: ALM046255 **Certification Date:** 09Jun2009 **Exp. Date:** 08Jun2012
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON DIOXIDE	13.9	%	+/- 1%	Direct NIST and NMi
OXYGEN	6.01	%	+/- 1%	Direct NIST and NMi
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 1675	02Oct2012	K006545	13.93 %	CARBON DIOXIDE
NTRM 2658	01Jan2010	K001290	10.03 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
PIR/2000/609015	11May2009	NDIR
CAI/110P/V03018	01Jun2009	PARAMAGNETIC

ANALYZER READINGS

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

First Triad Analysis | **Second Triad Analysis** | **Calibration Curve**

CARBON DIOXIDE

Date: 09Jun2009	Response Unit:MV	
Z1=0.00000	R1=80.60000	T1=80.30000
R2=80.60000	Z2=0.00000	T2=80.30000
Z3=0.00000	T3=80.30000	R3=80.60000
Avg. Concentration:	13.88	%

Concentration = A+Bx+Cx2+Dx3+Ex4
r=0.999998
Constants: A=-0.00492643
B=0.111614122 C=0.00014738
D=6.75093E-06 E=0

OXYGEN

Date: 09Jun2009	Response Unit:%	
Z1=0.00000	R1=10.06000	T1=6.01000
R2=10.06000	Z2=0.00000	T2=6.01000
Z3=0.00000	T3=6.01000	R3=10.06000
Avg. Concentration:	6.005	%

Concentration = A+Bx+Cx2+Dx3+Ex4
r=0.999998
Constants: A=-0.00970246
B=0.999816092 C=0
D=0 E=0

APPROVED BY: _____
JEFF GROTEAU

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

CERTIFICATE OF ANALYSIS

CLEAN AIR ENGINEERING
SCOTT BROWN
500 WEST WOOD STREET

PALATINE IL 60067

PROJECT #: 05-76361-001
PO#: 24559-66-65000
ITEM #: 0501813 AL
DATE: 29May2009

CYLINDER #: AAL14589
FILL PRESSURE: 02000 PSIG

PURE MATERIAL: NITROGEN CAS# 7727-37-9

GRADE: ZERO GAS

PURITY: 99.998%

IMPURITY	MAXIMUM CONCENTRATIONS
THC	0.5 PPM

ANALYST: aOrie

AIR LIQUIDE Air Liquide America Specialty Gases LLC Scott

CERTIFIED MASTER CLASS

Single-Certified Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083 Phone: 248-589-2960 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information
Project No.: 05-76093-001
Item No.: 05020002680PAL
P.O. No.: 57397-71-65000

Cylinder Number: ALM000611
Cylinder Size: AL
Certification Date: 19May2009
Expiration Date: 19May2011

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE, IL 60067

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
NITROGEN DIOXIDE	49.7	PPM	2
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: Hilary Thatcher
HILARY THATCHER

DATE: 5/27/09

7E-4 Interference Response

Date of Test	8/23/2007
Analyzer Type	Thermo
Model No	48iHL
Serial Number	605114590
CleanAir Asset#	204533
Instrument Range	100.00 ppm
Span Cal Response	90 ppm
Zero Cal Response	-0.07 ppm
2.5% of Calibration Span	2.25 ppm
Tester	Art Dean

CleanAir®

Test Location: CleanAir
500 West Wood St.
Palatine, IL 60067

You may introduce the appropriate interference test gasses into the analyzer separately or as mixtures.
This test must be performed both with and without CO.
Interferences are gasses that are potentially encountered during a test.
The total interference response must not be greater than 2.5% of the calibration span for the analyzer tested.

Test Gas Type	Concentration	Expected Response	Absolute Error
NO	13.73 ppm	89.50	0.56%
NO2	15.50 ppm	90.00	0.00%
HCL	9.48 ppm	90.00	0.00%
H2	45.41 ppm	90.30	0.33%
SO2	17.50 ppm	90.00	0.00%
CH4	44.93 ppm	90.00	0.00%
NH3	8.88 ppm	90.00	0.00%
CO	45.56 ppm	NA	NA
N2O	9.06 ppm	89.70	0.33%
CO2 High	15.43 %	82.50	8.33%
CO2 Low	4.52 %	86.10	4.33%
H2O	2.00 %	87.40	0.91%

Test Gas Type	Concentration	Expected Response	Absolute Error
NO	15.15 ppm	0.00	0.00%
NO2	17.1 ppm	0.00	0.00%
HCL	10.46 ppm	0.00	0.00%
H2	50.1 ppm	0.00	0.00%
SO2	19.31 ppm	0.00	0.00%
CH4	49.57 ppm	0.00	0.00%
NH3	9.8 ppm	0.00	0.00%
CO	50.27 ppm	NA	NA
N2O	10 ppm	-0.62	0.69%
CO2 High	17.02 %	-6.35	7.06%
CO2 Low	4.99 %	-3.50	3.89%
H2O	2 %	-1.40	1.56%

Test Gas Type	Concentration	Cylinder
NO	15.15 ppm	AAL20914
NO2	17.1 ppm	1L1652
HCL	10.46 ppm	NA25733
H2	50.1 ppm	ALM52896
SO2	19.31 ppm	ALM46049
CH4	49.57 ppm	AAL21367
NH3	9.80 ppm	ALM52993
CO	50.27 ppm	ALM10054
N2O	10.00 ppm	ALM51673
CO2 High	17.02 %	ALM 36532
CO2	4.99 %	ALM37876
%H2O	2.00 %	MKS205321
N2	99.99 %	K24662
CO High Span	961 ppm	ALM47921

Tester: _____

7E-4 Interference Response

Date of Test	9/5/2007
Analyzer Type	Ametek
Model No	921CE SO2
Serial Number	AD-921-S051
CleanAir Asset#	204589
Instrument Range	100.00 ppm
Span Cal Response	90 ppm
Zero Cal Response	0.00 ppm
2.5% of Calibration Span	2.25 ppm
Tester	Art Dean

CleanAir®

Test Location: CleanAir
500 West Wood St.
Palatine, IL 60067

You may introduce the appropriate interference test gasses into the analyzer separately or as mixtures.
This test must be performed both with and without SO2.
Interferences are gasses that are potentially encountered during a test.
The total interference response must not be greater than 2.5% of the calibration span for the analyzer tested.

Gas Mixtures

Test Gas Type	Standard	Analyzer Response	Absolute Error
NO	13.71 ppm	90.00	0.00%
NO2	15.47 ppm	90.20	0.22%
HCL	9.46 ppm	90.00	0.00%
H2	45.33 ppm	90.00	0.00%
SO2	17.47 ppm	NA	NA
CH4	44.85 ppm	90.00	0.00%
NH3	8.87 ppm	90.00	0.00%
CO	45.49 ppm	90.00	0.00%
N2O	9.05 ppm	90.00	0.00%
CO2 High	15.40 %	89.90	0.11%
CO2 Low	4.52 %	90.00	0.00%
H2O	1.04 %	89.10	0.04%

Expected Reading w/H2O [illegible]
Gases [illegible]

Test Gas Type	[illegible]	Analyzer Response	Absolute Error
NO	15.15 ppm	0.00	0.00%
NO2	17.1 ppm	0.20	0.22%
HCL	10.46 ppm	0.00	0.00%
H2	50.1 ppm	0.00	0.00%
SO2	19.31 ppm	NA	NA
CH4	49.57 ppm	0.00	0.00%
NH3	9.8 ppm	0.00	0.00%
CO	50.27 ppm	0.00	0.00%
N2O	10 ppm	0.00	0.00%
CO2 High	17.02 %	0.00	0.00%
CO2 Low	4.99 %	0.00	0.00%
H2O	1.035 %	0.00	0.00%

Gas Type	[illegible]	Cylinder #
NO	15.15 ppm	AAL20914
NO2	17.1 ppm	1L1652
HCL	10.46 ppm	NA25733
H2	50.1 ppm	ALM52896
SO2	19.31 ppm	ALM46049
CH4	49.57 ppm	AAL21367
NH3	9.80 ppm	ALM52993
CO	50.27 ppm	ALM10054
N2O	10.00 ppm	ALM51673
CO2 High	17.02 %	ALM 36532
CO2	4.99 %	ALM37876
%H2O	1.04 %	MKS209040
N2	99.99 %	K24662
SO2 High Span	945.7 ppm	ALM57777

Tester: ______________________________

7E-4 Interference Response

Date of Test	8/31/2007
Analyzer Type	Thermo
Model No	48i
Serial Number	713421694
CleanAir Asset#	205209
Instrument Range	100.00 ppm
Span Cal Response	90 ppm
Zero Cal Response	0.00 ppm
2.5% of Calibration Span	2.25 ppm
Tester	Art Dean

CleanAir®

Test Location: CleanAir
500 West Wood St.
Palatine, IL 60067

You may introduce the appropriate interference test gasses into the analyzer separately or as mixtures.
This test must be performed both with and without CO.
Interferences are gasses that are potentially encountered during a test.
The total interference response must not be greater than 2.5% of the calibration span for the analyzer tested.

Test Gas Type	Span Gas	Analyzer Response	Absolute Value
NO	13.73 ppm	89.70	0.33%
NO2	15.50 ppm	89.70	0.33%
HCL	9.48 ppm	89.70	0.33%
H2	45.41 ppm	89.60	0.44%
SO2	17.50 ppm	89.70	0.33%
CH4	44.93 ppm	90.00	0.00%
NH3	8.88 ppm	89.90	0.11%
CO	45.56 ppm	NA	NA
N2O	9.06 ppm	89.70	0.33%
CO2 High	15.43 %	94.70	5.22%
CO2 Low	4.52 %	91.00	1.11%
H2O	1.40 %	90.00	1.42%

Test Gas Type	Span Gas	Analyzer Response	Absolute Value
NO	15.15 ppm	-0.38	0.42%
NO2	17.1 ppm	-0.38	0.42%
HCL	10.46 ppm	-0.38	0.42%
H2	50.1 ppm	-0.39	0.43%
SO2	19.31 ppm	-0.34	0.38%
CH4	49.57 ppm	0.00	0.00%
NH3	9.8 ppm	-0.13	0.14%
CO	50.27 ppm	NA	NA
N2O	10 ppm	-0.38	0.42%
CO2 High	17.02 %	-0.30	0.33%
CO2 Low	4.99 %	0.00	0.00%
H2O	1.4 %	0.11	0.12%

Gas Type	Span Gas	Cylinder #
NO	15.15 ppm	AAL20914
NO2	17.1 ppm	1L1652
HCL	10.46 ppm	NA25733
H2	50.1 ppm	ALM52896
SO2	19.31 ppm	ALM46049
CH4	49.57 ppm	AAL21367
NH3	9.80 ppm	ALM52993
CO	50.27 ppm	ALM10054
N2O	10.00 ppm	ALM51673
CO2 High	17.02 %	ALM 36532
CO2	4.99 %	ALM37876
%H2O	1.40 %	MKS205321
N2	99.99 %	K24662
CO Span Gas	961 ppm	ALM47921

Tester: _____

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REFERENCE METHOD FIELD DATA

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Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

Date: **March 18, 2010**
Start Time 6:18
Stop Time 6:33
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Instrument Information					
Manufacturer:	Servomex	Servomex	Rsrch	T.E.I.	T.E.I.
Model:	1415C	1420C	921NMP	42i-HL	48C
Detection:	NDIR	Paramagn.	UV Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	204217	205832	205184	205956	205194
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Response Time (seconds)					
	45	45	45	45	45
Manufacturer Certified Cylinder Value (C_V)					
Zero	0.000	0.000	0.000	0.000	0.000
Low	5.910	6.010	44.900	225.000	48.200
Mid					
High	13.900	14.100	89.900	453.000	98.500
Actual gas to be used for bias checks					
	5.910	14.100	44.900	225.000	48.200
Cylinder ID					
Zero	AAL14589	AAL14589	AAL14589	AAL14589	AAL14589
Low	ALM033730	ALM046255	ALM010885	ALM010885	EB0011451
Mid					
High	ALM046255	ALM033730	CC124384	CC124384	ALM054744
Analyzer Calibration Response (C_{Dir})					
Zero	-0.003	0.001	-0.018	0.117	-0.217
Low	6.001	6.046	43.520	225.573	49.165
Mid					
High	13.943	14.149	90.178	453.377	98.578
Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)					
Zero	0.0%	0.0%	0.0%	0.0%	-0.2%
Low	0.7%	0.3%	-1.5%	0.1%	1.0%
Mid	N/A	N/A	N/A	N/A	N/A
High	0.3%	0.3%	0.3%	0.1%	0.1%
Calibration Error Status					
Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	N/A	N/A	N/A	N/A	N/A
High	OK	OK	OK	OK	OK

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06:18:14	-0.004	0.002	-0.008	0.114	-0.210
06:18:14	-0.004	0.002	-0.008	0.114	-0.210
06:18:29	-0.002	0.000	-0.037	0.122	-0.231
06:18:44	-0.002	0.101	0.057	0.114	-0.239
06:18:59	6.267	0.315	39.013	0.122	-0.221
06:19:14	9.727	0.013	80.326	218.983	-0.182
06:19:29	9.894	-0.006	89.110	391.249	-0.252
06:19:44	9.910	-0.010	90.694	449.711	-0.353
06:19:59	9.916	-0.011	91.137	453.545	-0.454

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

Date: **March 18, 2010**
Start Time 6:18
Stop Time 6:33
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
06:20:14	9.915	-0.010	90.128	453.203	-0.488
06:20:29	9.916	-0.012	90.169	453.382	-0.513
06:20:44	9.920	-0.012	90.237	453.545	-0.513
06:20:59	9.603	0.214	70.984	453.773	-0.513
06:21:14	9.924	0.023	37.828	421.384	-0.513
06:21:29	10.040	-0.018	41.208	348.702	-0.484
06:21:44	10.043	-0.022	42.678	234.937	-0.513
06:21:59	10.042	-0.022	43.173	226.675	-0.518
06:22:14	10.042	-0.024	43.386	225.706	-0.537
06:22:29	10.041	-0.024	43.541	225.576	-0.537
06:22:44	10.041	-0.024	43.634	225.438	-0.524
06:22:59	9.379	3.718	37.592	225.430	-0.513
06:23:14	6.424	13.166	8.112	214.090	-0.510
06:23:29	6.002	14.114	1.226	146.325	-0.381
06:23:44	5.978	14.164	0.366	12.454	-0.239
06:23:59	5.974	14.169	0.168	2.051	-0.055
06:24:14	6.958	11.886	0.208	0.814	0.047
06:24:29	13.000	6.487	0.246	1.669	0.029
06:24:44	13.885	6.058	0.122	3.345	-0.096
06:24:59	13.938	6.041	0.119	1.172	-0.228
06:25:14	13.945	6.038	0.066	0.374	-0.298
06:25:29	13.947	6.037	0.085	0.293	-0.322
06:25:44	12.497	8.223	0.106	0.244	-0.339
06:25:59	6.770	13.632	0.173	0.244	-0.337
06:26:14	6.035	14.146	0.122	0.244	-0.272
06:26:29	5.986	14.172	0.078	0.244	-0.112
06:26:44	5.981	14.174	0.066	0.244	0.011
06:26:59	4.771	10.470	0.213	0.244	0.189
06:27:14	0.492	0.864	0.376	1.888	3.984
06:27:29	0.054	0.043	0.208	2.353	22.760
06:27:44	0.030	0.010	0.116	0.561	55.338
06:27:59	0.021	0.006	0.098	0.309	82.559
06:28:14	0.017	0.002	0.100	0.244	94.824
06:28:29	0.013	0.000	0.088	0.244	97.903
06:28:44	0.008	-0.002	0.050	0.244	98.317
06:28:59	0.011	-0.001	0.075	0.252	98.649
06:29:14	0.009	0.000	0.085	0.244	98.768
06:29:29	0.210	0.251	0.182	0.244	98.486
06:29:44	0.063	0.039	0.228	0.350	95.051
06:29:59	0.012	-0.002	0.147	0.782	80.812
06:30:14	0.006	-0.005	0.086	0.325	63.443
06:30:29	0.006	-0.005	0.053	0.114	52.615
06:30:44	0.003	-0.007	0.080	0.122	49.590
06:30:59	0.004	-0.005	0.098	0.122	49.167
06:31:14	0.006	-0.007	0.086	0.122	49.208
06:31:29	0.001	-0.006	0.070	0.122	49.120
06:31:44	0.051	0.305	0.080	0.122	49.066
06:31:59	0.061	1.024	0.370	0.122	47.269
06:32:14	0.002	1.002	0.832	15.849	36.624
06:32:29	0.000	1.001	0.962	31.111	18.522
06:32:44	0.000	0.998	1.003	42.011	5.672
06:32:59	-0.004	1.001	1.047	44.005	0.822

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

Date: **March 18, 2010**
Start Time 6:18
Stop Time 6:33
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
06:33:14	0.000	1.001	1.060	44.624	-0.080
06:33:29	-0.002	1.000	1.050	44.884	-0.177
06:33:44	-0.003	1.000	1.076	45.210	-0.182
06:33:59	0.000	1.000	1.096	45.210	-0.187

NOX Conversion Efficiency
NO2 = 49.7
Efficiency = 91.0%

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 6:38
Stop Time 6:44
CALIBRATION BIAS 00

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.001	0.036	0.003	0.122	-0.380
C_{uf}	Upscale gas	5.925	14.012	42.254	221.623	48.978
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce}	Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.0%	0.2%	0.0%	0.0%	-0.2%
	Upscale gas	-0.5%	-1.0%	-1.4%	-0.9%	-0.2%
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_{of}	Zero gas	N/A	N/A	N/A	N/A	N/A
C_{uf}	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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06:38:21	0.003	0.037	0.000	0.122	48.938
06:38:36	0.000	0.036	0.003	0.122	48.956
06:38:51	0.001	0.033	0.006	0.122	49.042
06:39:06	0.902	0.037	0.662	0.114	49.060
06:39:21	8.029	0.018	19.770	0.122	46.245
06:39:36	9.489	0.247	34.668	124.526	36.124
06:39:51	9.561	0.630	37.765	195.442	17.340
06:40:06	9.583	0.687	38.766	213.366	6.942
06:40:21	9.570	0.753	39.347	214.082	1.260
06:40:36	9.563	0.776	39.758	213.398	-0.013
06:40:51	9.568	0.779	40.038	212.910	-0.357
06:41:06	9.562	0.805	40.269	212.756	-0.391
06:41:21	9.653	0.537	40.562	212.454	-0.393
06:41:36	9.883	0.060	41.273	213.618	-0.396
06:41:51	9.918	0.009	41.812	216.573	-0.404
06:42:06	9.918	0.006	42.102	221.343	-0.430
06:42:21	9.922	0.006	42.274	221.669	-0.435
06:42:36	9.931	0.002	42.387	221.856	-0.453
06:42:51	9.932	0.001	42.468	221.856	-0.449
06:43:06	9.810	1.213	41.921	221.978	-0.437
06:43:21	6.949	11.665	19.823	221.897	-0.358
06:43:36	6.026	13.872	5.058	102.434	-0.192
06:43:51	5.947	13.982	2.509	29.345	0.111
06:44:06	5.933	14.003	1.747	2.426	0.195

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 6:38
Stop Time 6:44

CALIBRATION BIAS 00

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
06:44:21	5.923	14.014	1.356	1.360	0.195
06:44:36	5.920	14.019	1.104	0.936	0.193

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 7:12
Stop time 7:39
REFERENCE METHOD RUN 1

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.001	0.036	0.003	0.122	-0.380
C_{ul}	Initial upscale	5.925	14.012	42.254	221.623	48.978
C_{of}	Final zero	0.085	0.032	0.272	0.673	-0.378
C_{uf}	Final upscale	5.939	13.991	41.950	220.681	48.750
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.724	9.654	12.981	155.665	12.574
C_{Gas}	**Bias adjusted**	**9.715**	**9.711**	**13.742**	**158.254**	**12.678**

Clock Time (at end of sample period)

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07:13	9.270	10.230	11.203	149.497	16.102
07:14	10.475	8.706	11.908	171.823	17.542
07:15	10.299	9.019	10.685	183.101	14.505
07:16	8.926	10.689	7.196	165.212	10.790
07:17	9.213	10.266	6.799	153.999	12.154
07:18	10.190	9.019	10.280	167.285	13.571
07:19	9.978	9.349	13.301	169.616	12.281
07:20	10.062	9.203	14.507	160.012	11.472
07:21	9.733	9.616	14.503	161.642	10.285
07:22	9.599	9.825	12.153	160.977	11.184
07:23	9.501	9.938	11.330	149.679	12.099
07:24	10.011	9.252	12.501	151.245	14.006
07:25	10.152	9.065	14.051	156.150	11.223
07:26	9.723	9.646	13.744	142.043	11.050
07:27	9.559	9.893	14.494	139.235	10.276
07:28	9.608	9.813	15.070	132.877	10.600
07:29	9.550	9.888	15.365	136.052	10.059
07:30	9.500	9.979	16.536	134.601	10.795
07:31	9.962	9.357	17.196	143.732	13.825
07:32	10.053	9.268	17.395	151.317	12.316
07:33	9.221	10.340	15.073	141.506	12.057
07:34	9.519	9.937	13.818	141.827	13.910
07:35	9.506	9.938	12.394	148.915	13.394
07:36	10.000	9.249	12.237	165.547	13.740
07:37	9.941	9.353	12.355	180.849	13.810
07:38	9.669	9.692	11.565	171.284	13.121
07:39	9.322	10.140	12.841	172.932	13.319

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 7:41
Stop Time 7:45

CALIBRATION BIAS 01

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.085	0.032	0.272	0.673	-0.378
C_{uf} Upscale gas	5.939	13.991	41.950	220.681	48.750
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.6%	0.2%	0.3%	0.1%	-0.2%
Upscale gas	-0.4%	-1.1%	-1.7%	-1.1%	-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	0.001	0.036	0.003	0.122	-0.380
C_{ui} Upscale gas	5.925	14.012	42.254	221.623	48.978
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.6%	0.0%	0.3%	0.1%	0.0%
Upscale gas	0.1%	-0.1%	-0.3%	-0.2%	-0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 085121

07:41:10	0.085	0.045	0.485	1.392	43.995
07:41:25	0.070	0.038	0.365	0.936	47.630
07:41:40	0.063	0.033	0.308	0.822	48.586
07:41:55	0.056	0.030	0.256	0.676	48.793
07:42:10	0.136	0.035	0.252	0.521	48.871
07:42:25	6.930	0.022	14.672	14.449	47.989
07:42:40	9.702	-0.014	35.447	70.346	38.688
07:42:55	9.869	-0.001	39.909	172.666	23.492
07:43:10	9.892	-0.008	41.083	217.957	8.687
07:43:25	9.906	-0.008	41.595	220.432	2.373
07:43:40	9.921	0.002	42.024	220.724	0.088
07:43:55	9.931	0.036	42.230	220.887	-0.366
07:44:10	7.895	9.003	29.208	220.985	-0.417
07:44:25	6.089	13.737	6.836	186.837	-0.350
07:44:40	5.951	13.969	2.393	50.647	-0.161
07:44:55	5.937	13.997	1.397	6.724	0.029
07:45:10	5.929	14.008	1.087	1.546	0.177

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 7:46
Stop time 8:13
REFERENCE METHOD RUN 2

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.085	0.032	0.272	0.673	-0.378
C_{ui}	Initial upscale	5.939	13.991	41.950	220.681	48.750
C_{of}	Final zero	0.062	0.032	0.257	0.787	-0.423
C_{uf}	Final upscale	5.946	13.984	42.230	220.472	48.736
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.913	9.386	13.301	169.772	11.804
C_{Gas}	**Bias adjusted**	**9.909**	**9.451**	**13.995**	**173.004**	**11.970**

Clock Time (at end of sample period)

040710 085121

07:47	9.695	9.613	13.042	148.002	11.277
07:48	9.888	9.348	14.393	148.372	11.024
07:49	10.155	9.024	19.788	155.381	10.277
07:50	10.364	8.765	20.206	164.797	10.328
07:51	10.367	8.762	16.120	154.908	10.668
07:52	9.723	9.653	13.885	146.624	12.472
07:53	9.538	9.908	11.805	138.647	15.365
07:54	9.760	9.574	12.059	142.993	14.065
07:55	10.552	8.564	13.151	162.725	12.956
07:56	10.058	9.250	12.812	169.782	11.857
07:57	9.747	9.606	12.142	154.790	11.760
07:58	9.384	10.109	10.608	151.154	11.429
07:59	9.659	9.703	10.775	154.674	12.565
08:00	10.148	9.043	12.383	170.879	11.775
08:01	10.622	8.486	14.335	181.412	9.940
08:02	10.095	9.155	15.078	180.822	8.490
08:03	9.880	9.467	15.602	182.741	9.395
08:04	9.481	9.980	13.887	187.493	9.909
08:05	9.384	10.116	12.207	177.395	13.850
08:06	9.869	9.444	10.855	183.081	15.175
08:07	10.319	8.863	10.730	192.515	14.006
08:08	9.788	9.557	9.522	198.274	12.277
08:09	9.895	9.441	10.417	193.063	12.241
08:10	9.451	9.974	10.746	181.954	11.453
08:11	10.434	8.699	14.527	189.849	13.320
08:12	9.471	9.952	15.816	192.261	11.500
08:13	9.926	9.366	12.231	179.243	9.334

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 8:14
Stop Time 8:19

CALIBRATION BIAS 02

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.062	0.032	0.257	0.787	-0.423
C_{uf} Upscale gas	5.946	13.984	42.230	220.472	48.736
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.5%	0.2%	0.3%	0.1%	-0.2%
Upscale gas	-0.4%	-1.2%	-1.4%	-1.1%	-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	0.085	0.032	0.272	0.673	-0.378
C_{ul} Upscale gas	5.939	13.991	41.950	220.681	48.750
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.2%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	0.3%	0.0%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710_085121

08:14:56	-0.017	-8.328	0.493	2.035	38.615
08:15:11	0.002	-6.759	0.314	0.830	46.281
08:15:26	0.069	0.035	0.270	0.936	48.218
08:15:41	0.063	0.031	0.259	0.782	48.767
08:15:56	0.055	0.030	0.241	0.643	48.752
08:16:11	0.235	0.029	0.236	0.529	48.690
08:16:26	7.368	0.016	16.788	14.392	47.479
08:16:41	9.745	0.005	36.410	65.291	37.708
08:16:56	9.879	0.003	40.345	171.998	22.090
08:17:11	9.906	0.002	41.374	217.404	7.904
08:17:26	9.913	0.000	41.838	219.886	2.124
08:17:41	9.928	0.000	42.092	220.293	0.001
08:17:56	9.934	0.000	42.247	220.513	-0.370
08:18:11	9.943	0.019	42.352	220.611	-0.438
08:18:26	8.005	8.686	30.963	219.080	-0.461
08:18:41	6.107	13.720	7.233	206.545	-0.371
08:18:56	5.959	13.964	2.460	70.989	-0.195
08:19:11	5.940	13.988	1.438	6.919	0.026
08:19:26	5.938	14.000	1.110	1.620	0.122

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 8:20
Stop time 8:47
REFERENCE METHOD RUN 3

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.062	0.032	0.257	0.787	-0.423
C_{ui}	Initial upscale	5.946	13.984	42.230	220.472	48.736
C_{of}	Final zero	0.056	0.026	0.268	0.613	-0.447
C_{uf}	Final upscale	5.948	13.982	42.434	220.556	48.762
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.049	9.220	14.264	163.871	10.158
C_{Gas}	**Bias adjusted**	**10.028**	**9.287**	**14.944**	**167.021**	**10.381**

Clock Time (at end of sample period)					
040710 085121					
08:21	10.706	8.530	11.060	199.962	10.160
08:22	9.577	9.826	10.322	178.744	8.766
08:23	9.714	9.677	11.529	171.966	10.076
08:24	9.859	9.490	14.115	168.512	10.848
08:25	10.387	8.788	16.341	177.804	10.493
08:26	11.041	8.164	19.024	198.836	12.343
08:27	9.599	9.782	13.260	176.901	9.223
08:28	10.076	9.221	15.289	185.370	8.919
08:29	10.112	9.131	15.488	182.021	9.729
08:30	10.474	8.711	16.963	170.940	11.130
08:31	9.827	9.522	14.653	161.046	11.287
08:32	10.189	9.009	13.714	147.588	11.556
08:33	10.135	9.087	12.668	136.925	10.804
08:34	10.526	8.593	13.712	145.407	11.210
08:35	9.921	9.353	14.209	154.512	9.067
08:36	10.185	9.038	16.078	149.815	8.438
08:37	9.538	9.863	17.862	143.793	7.925
08:38	9.905	9.395	19.423	148.952	9.025
08:39	10.068	9.189	19.011	167.597	11.814
08:40	10.097	9.183	16.165	166.191	12.701
08:41	9.777	9.567	10.947	150.999	12.168
08:42	9.958	9.295	10.005	159.064	13.080
08:43	9.904	9.348	10.096	155.981	11.548
08:44	9.967	9.212	11.163	149.794	8.803
08:45	10.162	8.988	14.135	162.845	7.881
08:46	9.814	9.478	13.926	155.924	7.080
08:47	9.809	9.492	13.976	157.033	8.203

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 8:49
Stop Time 8:53
CALIBRATION BIAS 03

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.056	0.026	0.268	0.613	-0.447
C_{uf} Upscale gas	5.948	13.982	42.434	220.556	48.762
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.3%	0.1%	-0.2%
Upscale gas	-0.4%	-1.2%	-1.2%	-1.1%	-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	0.062	0.032	0.257	0.787	-0.423
C_{ui} Upscale gas	5.946	13.984	42.230	220.472	48.736
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	0.0%	0.2%	0.0%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 085121

08:49:16	0.079	0.040	0.459	1.001	45.392
08:49:31	0.069	0.030	0.373	0.847	48.311
08:49:46	0.062	0.023	0.283	0.749	48.754
08:50:01	0.055	0.029	0.283	0.586	48.814
08:50:16	0.051	0.027	0.238	0.504	48.798
08:50:31	2.702	0.024	3.839	0.399	48.676
08:50:46	9.268	0.009	29.350	36.361	44.936
08:51:01	9.846	0.004	39.103	157.118	30.179
08:51:16	9.898	0.001	40.858	206.951	14.867
08:51:31	9.911	0.000	41.639	219.267	4.223
08:51:46	9.925	-0.001	42.002	220.171	0.767
08:52:01	9.934	-0.001	42.227	220.472	-0.327
08:52:16	9.943	0.000	42.385	220.562	-0.449
08:52:31	9.944	0.123	42.689	220.635	-0.462
08:52:46	8.619	6.577	37.841	220.993	-0.428
08:53:01	6.202	13.528	9.776	215.205	-0.298
08:53:16	5.961	13.954	2.821	77.542	-0.090
08:53:31	5.944	13.988	1.548	10.045	0.055
08:53:46	5.940	14.005	1.122	1.750	0.116

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 8:55
Stop time 9:22
REFERENCE METHOD RUN 4

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.056	0.026	0.268	0.613	-0.447
C_{ui}	Initial upscale	5.948	13.982	42.434	220.556	48.762
C_{of}	Final zero	0.095	0.030	0.287	0.754	-0.426
C_{uf}	Final upscale	5.950	13.983	42.243	220.111	48.701
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.984	9.265	13.912	156.868	11.696
C_{Gas}	**Bias adjusted**	**9.970**	**9.333**	**14.554**	**159.988**	**11.893**

Clock Time (at end of sample period)					
040710 085121					
08:56	11.198	7.853	14.412	177.361	11.834
08:57	10.207	9.017	9.774	168.321	9.286
08:58	9.560	9.820	8.035	134.618	9.713
08:59	9.743	9.579	9.600	132.572	13.165
09:00	10.066	9.157	13.693	146.418	13.983
09:01	10.117	9.097	17.494	156.253	12.444
09:02	9.808	9.493	18.618	145.796	10.990
09:03	9.993	9.263	16.479	148.755	11.860
09:04	9.733	9.597	15.818	146.656	12.365
09:05	9.766	9.557	12.554	149.909	10.511
09:06	9.499	9.885	12.009	149.318	11.848
09:07	9.631	9.733	14.850	155.751	11.670
09:08	9.654	9.635	14.541	159.168	9.242
09:09	9.387	10.015	17.137	153.281	9.113
09:10	9.834	9.418	18.041	155.095	9.643
09:11	10.864	8.174	19.418	171.085	11.214
09:12	10.175	9.002	13.072	165.924	11.438
09:13	9.479	9.892	8.829	138.559	11.333
09:14	9.419	9.978	7.742	134.837	15.211
09:15	9.745	9.546	9.606	142.857	15.898
09:16	10.189	8.971	12.771	151.986	15.813
09:17	10.277	8.903	15.098	167.422	14.817
09:18	9.935	9.325	14.670	160.796	14.497
09:19	9.770	9.516	14.058	167.880	11.068
09:20	10.184	8.948	15.804	181.764	9.232
09:21	10.477	8.619	15.869	186.416	8.841
09:22	10.855	8.173	15.619	186.638	8.755

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 9:24
Stop Time 9:28
CALIBRATION BIAS 04

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.095	0.030	0.287	0.754	-0.426
C_{uf} Upscale gas	5.950	13.983	42.243	220.111	48.701
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Perce	3				
Zero gas	0.7%	0.2%	0.3%	0.1%	-0.2%
Upscale gas	-0.4%	-1.2%	-1.4%	-1.2%	-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_{ol} Zero gas	0.056	0.026	0.268	0.613	-0.447
C_{ui} Upscale gas	5.948	13.982	42.434	220.556	48.762
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.3%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	0.0%	-0.2%	-0.1%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 085121

09:24:24	0.082	0.035	0.371	1.091	47.744
09:24:39	0.071	0.031	0.324	0.904	48.575
09:24:54	0.067	0.029	0.271	0.749	48.697
09:25:09	0.146	0.029	0.267	0.610	48.830
09:25:24	6.984	0.017	15.694	15.026	47.735
09:25:39	9.736	0.006	36.076	87.709	37.376
09:25:54	9.884	0.003	40.233	173.936	21.444
09:26:09	9.908	0.001	41.263	217.851	7.355
09:26:24	9.928	0.000	41.779	219.723	1.765
09:26:39	9.936	0.000	42.094	220.016	-0.093
09:26:54	9.945	-0.001	42.261	220.114	-0.399
09:27:09	9.953	0.118	42.375	220.204	-0.436
09:27:24	7.704	9.718	28.101	211.404	-0.443
09:27:39	6.090	13.775	6.488	167.456	-0.332
09:27:54	5.965	13.964	2.473	64.827	-0.138
09:28:09	5.943	13.988	1.576	4.192	0.042
09:28:24	5.940	13.997	1.211	1.514	0.106

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 9:29
Stop time 9:56

REFERENCE METHOD RUN 5

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.095	0.030	0.287	0.754	-0.426
C_{ul}	Initial upscale	5.950	13.983	42.243	220.111	48.701
C_{of}	Final zero	0.059	0.028	0.200	0.687	-0.408
C_{uf}	Final upscale	5.958	13.957	42.096	219.436	48.654
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.000	9.241	9.070	154.008	10.074
C_{Gas}	**Bias adjusted**	**9.979**	**9.317**	**9.452**	**157.449**	**10.300**

Clock Time (at end of sample period)

040710 085121

09:30	10.386	8.734	13.545	172.175	9.634
09:31	10.253	8.899	13.162	158.270	9.339
09:32	9.941	9.303	12.326	153.097	8.574
09:33	10.019	9.207	11.870	156.301	9.683
09:34	10.831	8.263	12.203	164.662	11.300
09:35	9.967	9.325	10.091	168.403	9.803
09:36	9.799	9.481	8.641	147.491	9.412
09:37	10.371	8.745	9.543	158.482	10.474
09:38	10.954	8.147	11.573	171.125	11.858
09:39	9.932	9.324	9.912	166.427	9.100
09:40	10.235	8.913	8.335	162.308	10.337
09:41	9.509	9.875	7.276	155.582	10.080
09:42	9.758	9.558	7.686	153.004	10.914
09:43	9.737	9.553	8.128	149.780	10.654
09:44	9.864	9.397	8.977	157.043	10.327
09:45	9.710	9.600	9.330	145.521	9.620
09:46	9.749	9.512	8.747	146.707	9.253
09:47	9.764	9.488	8.263	147.084	9.646
09:48	9.922	9.301	7.580	154.748	10.526
09:49	9.774	9.470	6.818	150.946	8.428
09:50	10.832	8.247	6.869	162.759	9.619
09:51	9.776	9.559	6.049	151.369	8.570
09:52	9.614	9.724	5.505	126.836	9.453
09:53	9.521	9.862	6.220	136.020	11.193
09:54	9.794	9.508	7.825	141.579	11.994
09:55	9.997	9.245	8.991	150.948	11.247
09:56	9.992	9.269	9.419	149.544	10.972

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 9:58
Stop Time 10:02
CALIBRATION BIAS 05

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.059	0.028	0.200	0.687	-0.408
C_{uf} Upscale gas	5.958	13.957	42.096	219.436	48.654
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.5%	0.2%	0.2%	0.1%	-0.2%
Upscale gas	-0.3%	-1.4%	-1.6%	-1.4%	-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	0.095	0.030	0.287	0.754	-0.426
C_{ui} Upscale gas	5.950	13.983	42.243	220.111	48.701
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.3%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.1%	-0.2%	-0.2%	-0.1%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 085121

09:58:06	0.085	0.039	0.376	1.050	45.066
09:58:21	0.072	0.034	0.288	0.888	48.143
09:58:36	0.066	0.030	0.234	0.855	48.545
09:58:51	0.059	0.028	0.186	0.635	48.703
09:59:06	0.053	0.025	0.181	0.570	48.699
09:59:21	2.620	0.026	3.228	1.164	48.558
09:59:36	9.230	0.006	28.160	13.301	44.563
09:59:51	9.842	0.000	38.771	96.435	29.517
10:00:06	9.893	0.000	40.734	214.074	14.185
10:00:21	9.910	0.000	41.508	218.062	3.795
10:00:36	9.928	-0.002	41.903	219.325	0.561
10:00:51	9.938	-0.001	42.094	219.479	-0.327
10:01:06	9.943	-0.001	42.292	219.503	-0.422
10:01:21	9.337	3.570	40.060	219.731	-0.474
10:01:36	6.441	12.967	14.740	217.591	-0.435
10:01:51	5.991	13.924	3.840	134.555	-0.275
10:02:06	5.948	13.966	1.933	9.426	-0.037
10:02:21	5.936	13.982	1.346	2.938	0.152

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 10:03
Stop time 10:30
REFERENCE METHOD RUN 6

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{ol}	Initial zero	0.059	0.028	0.200	0.687	-0.408
C_{ul}	Initial upscale	5.958	13.957	42.096	219.436	48.654
C_{of}	Final zero	0.056	0.028	0.224	0.687	-0.437
C_{uf}	Final upscale	5.949	13.953	41.979	218.564	48.351
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.875	9.410	11.416	157.941	10.798
C_{Gas}	**Bias adjusted**	**9.841**	**9.498**	**12.027**	**162.071**	**11.054**

Clock Time (at end of sample period)

040710 085121

10:04	9.990	9.216	10.695	168.370	9.128
10:05	9.803	9.511	10.773	173.791	9.618
10:06	10.503	8.589	11.436	171.013	8.768
10:07	9.743	9.594	10.934	174.194	8.013
10:08	9.882	9.357	10.411	162.601	8.132
10:09	9.831	9.441	10.958	166.339	9.352
10:10	10.396	8.761	11.999	171.937	11.330
10:11	9.972	9.285	10.818	150.141	9.556
10:12	9.889	9.421	10.951	148.154	12.264
10:13	9.623	9.761	10.410	140.556	12.160
10:14	9.644	9.711	11.466	140.635	12.287
10:15	9.586	9.831	13.320	144.758	15.803
10:16	9.951	9.318	16.311	138.551	15.355
10:17	9.558	9.841	15.188	139.579	12.685
10:18	9.642	9.741	15.356	147.062	12.033
10:19	9.652	9.691	15.483	143.103	11.317
10:20	9.978	9.242	14.577	154.243	11.771
10:21	10.141	9.060	13.013	164.009	12.685
10:22	9.653	9.721	10.843	151.109	10.733
10:23	9.657	9.688	8.988	159.390	10.950
10:24	10.197	8.969	8.950	166.520	9.933
10:25	9.821	9.470	8.640	171.516	7.613
10:26	10.336	8.780	9.788	168.783	8.831
10:27	9.697	9.665	9.228	165.283	8.306
10:28	9.926	9.319	9.217	156.750	11.257
10:29	9.617	9.744	9.129	161.713	11.214
10:30	9.940	9.338	9.347	164.310	10.457

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 10:31
Stop Time 10:36

CALIBRATION BIAS 06

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.056	0.028	0.224	0.687	-0.437
C_{uf} Upscale gas	5.949	13.953	41.979	218.564	48.351
Analyzer Calibration Error Reponses (C_{Dlr})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.3%	0.1%	-0.2%
Upscale gas	-0.4%	-1.4%	-1.7%	-1.5%	-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	0.059	0.028	0.200	0.687	-0.408
C_{ui} Upscale gas	5.958	13.957	42.096	219.436	48.654
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	-0.1%	-0.2%	-0.3%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 085121

10:31:40	0.136	0.065	1.045	21.986	24.553
10:31:55	0.100	0.048	0.571	2.613	36.507
10:32:10	0.085	0.041	0.422	1.180	45.760
10:32:25	0.069	0.036	0.304	0.936	47.893
10:32:40	0.061	0.031	0.257	0.774	48.352
10:32:55	0.057	0.028	0.218	0.684	48.352
10:33:10	0.049	0.026	0.197	0.603	48.352
10:33:25	2.735	0.024	3.925	0.635	48.350
10:33:40	9.261	0.009	29.060	0.733	43.389
10:33:55	9.836	0.005	38.697	137.721	30.297
10:34:10	9.889	0.003	40.570	210.191	12.249
10:34:25	9.909	0.000	41.315	218.112	4.062
10:34:40	9.924	0.001	41.742	218.421	0.269
10:34:55	9.935	0.000	41.999	218.592	-0.353
10:35:10	9.939	0.000	42.196	218.681	-0.469
10:35:25	9.029	4.785	37.796	218.836	-0.488
10:35:40	6.313	13.254	11.943	218.852	-0.430
10:35:55	5.976	13.929	3.453	83.549	-0.285
10:36:10	5.939	13.958	1.864	11.111	-0.065
10:36:25	5.931	13.972	1.319	1.710	0.075

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 10:38
Stop time 11:05
REFERENCE METHOD RUN 7

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.056	0.028	0.224	0.687	-0.437
C_{ui}	Initial upscale	5.949	13.953	41.979	218.564	48.351
C_{of}	Final zero	0.060	0.028	0.230	0.736	-0.467
C_{uf}	Final upscale	5.940	13.954	41.959	218.038	48.308
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.979	9.228	10.086	160.987	12.631
C_{Gas}	**Bias adjusted**	**9.960**	**9.316**	**10.605**	**165.734**	**12.927**

Clock Time (at end of sample period)					
040710 085121					
10:39	9.943	9.272	8.713	151.243	15.041
10:40	10.133	9.001	8.787	155.901	13.585
10:41	9.820	9.468	8.906	149.249	12.168
10:42	9.859	9.409	9.059	143.209	14.260
10:43	10.073	9.116	9.797	149.878	16.629
10:44	9.830	9.433	10.741	156.593	14.543
10:45	9.709	9.593	11.544	162.291	12.409
10:46	9.876	9.398	13.130	165.041	12.240
10:47	9.841	9.425	13.578	161.482	13.501
10:48	9.724	9.575	13.230	159.811	16.347
10:49	10.007	9.184	11.640	164.300	18.792
10:50	9.857	9.379	10.277	165.684	16.301
10:51	10.742	8.308	10.666	187.412	16.276
10:52	10.326	8.770	9.505	192.796	12.174
10:53	9.639	9.647	7.548	165.755	9.149
10:54	9.880	9.350	7.450	169.221	10.582
10:55	9.981	9.193	7.601	166.471	9.108
10:56	10.243	8.848	8.516	170.792	9.685
10:57	10.185	8.956	9.057	173.252	9.066
10:58	10.212	8.887	9.392	160.490	9.210
10:59	9.807	9.446	9.346	151.793	9.760
11:00	9.738	9.530	9.646	140.554	12.520
11:01	9.836	9.424	11.017	149.056	13.882
11:02	9.921	9.291	11.353	149.371	12.387
11:03	10.173	8.935	11.156	157.190	10.800
11:04	10.221	8.896	11.013	170.279	10.635
11:05	9.845	9.428	9.650	157.529	9.995

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 11:06
Stop Time 11:11

CALIBRATION BIAS 07

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.060	0.028	0.230	0.736	-0.467
C_{uf} Upscale gas	5.940	13.954	41.959	218.038	48.308
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.5%	0.2%	0.3%	0.1%	-0.3%
Upscale gas	-0.4%	-1.4%	-1.7%	-1.7%	-0.9%
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	0.056	0.028	0.224	0.687	-0.437
C_{ui} Upscale gas	5.949	13.953	41.979	218.564	48.351
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	-0.1%	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

040710_085121

11:06:32	0.139	0.063	1.061	28.262	26.867
11:06:47	0.102	0.047	0.554	2.116	37.540
11:07:02	0.081	0.037	0.347	1.229	45.472
11:07:17	0.070	0.031	0.249	0.928	47.842
11:07:32	0.059	0.030	0.226	0.766	48.313
11:07:47	0.052	0.027	0.200	0.725	48.306
11:08:02	0.161	0.027	0.264	0.717	48.306
11:08:17	7.080	0.015	16.710	0.717	47.310
11:08:32	9.726	0.005	35.876	85.747	37.871
11:08:47	9.867	0.000	39.824	199.113	21.950
11:09:02	9.896	0.001	40.891	214.709	7.541
11:09:17	9.918	0.001	41.498	217.485	1.853
11:09:32	9.934	0.000	41.820	217.876	-0.152
11:09:47	9.943	0.000	41.994	218.152	-0.445
11:10:02	9.941	0.182	42.061	218.087	-0.472
11:10:17	7.589	10.053	26.151	218.470	-0.485
11:10:32	6.073	13.768	6.597	134.432	-0.401
11:10:47	5.959	13.936	2.541	28.710	-0.226
11:11:02	5.937	13.957	1.595	5.804	0.013
11:11:17	5.925	13.967	1.197	1.604	0.096
11:11:32	5.923	13.976	0.902	1.066	0.124

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 11:13
Stop time 11:40
REFERENCE METHOD RUN 8

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{ol}	Initial zero	0.060	0.028	0.230	0.736	-0.467
C_{ul}	Initial upscale	5.940	13.954	41.959	218.038	48.308
C_{of}	Final zero	0.062	0.026	0.194	0.703	-0.527
C_{uf}	Final upscale	5.933	13.953	41.766	217.686	48.253
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.767	9.541	10.401	152.819	14.844
C_{Gas}	**Bias adjusted**	**9.763**	**9.633**	**10.984**	**157.604**	**15.160**

Clock Time (at end of sample period)

040710 085121

11:14	9.932	9.245	8.394	148.712	14.174
11:15	10.394	8.743	9.495	165.576	15.109
11:16	9.592	9.730	8.514	142.894	13.589
11:17	9.522	9.821	8.909	142.509	16.565
11:18	9.937	9.248	9.494	152.497	16.818
11:19	9.966	9.254	10.281	155.739	15.793
11:20	9.876	9.382	10.000	151.982	13.792
11:21	9.699	9.650	9.697	155.533	12.147
11:22	9.744	9.596	9.615	153.002	13.307
11:23	9.958	9.279	10.538	153.973	12.941
11:24	9.943	9.321	11.681	162.995	13.402
11:25	10.062	9.164	11.437	152.757	13.847
11:26	9.647	9.714	10.832	148.570	15.531
11:27	9.435	10.017	10.059	148.461	15.875
11:28	9.268	10.136	9.126	139.245	13.556
11:29	9.496	9.906	9.565	139.567	18.708
11:30	10.236	8.920	10.626	166.207	21.689
11:31	9.703	9.661	10.028	170.092	15.000
11:32	10.360	8.787	10.560	164.327	15.356
11:33	9.600	9.783	9.431	165.012	16.573
11:34	9.300	10.141	9.569	141.304	19.299
11:35	9.345	10.068	11.632	139.272	13.266
11:36	9.343	10.093	11.678	146.160	12.661
11:37	9.808	9.487	13.556	157.178	13.832
11:38	9.385	10.047	12.712	154.035	11.055
11:39	9.313	10.128	11.580	146.549	11.861
11:40	10.833	8.290	11.814	161.978	15.050

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 11:41
Stop Time 11:46

CALIBRATION BIAS 08

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.062	0.026	0.194	0.703	-0.527
C_{uf} Upscale gas	5.933	13.953	41.766	217.686	48.253
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.5%	0.2%	0.2%	0.1%	-0.3%
Upscale gas	-0.5%	-1.4%	-2.0%	-1.7%	-0.9%
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_{of} Zero gas	0.060	0.028	0.230	0.736	-0.467
C_{uf} Upscale gas	5.940	13.954	41.959	218.038	48.308
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%	0.0%	-0.2%	-0.1%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 085121

11:41:33	0.102	0.044	0.611	2.548	38.992
11:41:48	0.084	0.036	0.402	1.091	45.514
11:42:03	0.071	0.031	0.293	0.871	47.847
11:42:18	0.061	0.028	0.228	0.790	48.244
11:42:33	0.055	0.024	0.184	0.709	48.257
11:42:48	0.105	0.025	0.170	0.611	48.259
11:43:03	6.712	0.012	14.548	12.406	47.122
11:43:18	9.709	0.005	35.292	90.908	37.653
11:43:33	9.865	0.001	39.683	169.654	21.478
11:43:48	9.900	0.000	40.837	215.368	7.821
11:44:03	9.918	-0.001	41.392	216.996	1.700
11:44:18	9.927	-0.002	41.679	217.403	-0.152
11:44:33	9.937	-0.003	41.854	217.705	-0.490
11:44:48	9.872	0.887	41.766	217.949	-0.555
11:45:03	7.065	11.484	22.230	204.135	-0.536
11:45:18	6.033	13.834	5.327	111.616	-0.423
11:45:33	5.946	13.936	2.365	38.763	-0.238
11:45:48	5.930	13.956	1.542	2.833	-0.020
11:46:03	5.922	13.968	1.154	1.343	0.060

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 11:47
Stop time 12:14

REFERENCE METHOD RUN 9

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.062	0.026	0.194	0.703	-0.527
C_{ui}	Initial upscale	5.933	13.953	41.766	217.686	48.253
C_{of}	Final zero	0.052	0.030	0.176	0.730	-0.493
C_{uf}	Final upscale	5.934	13.938	41.740	217.460	48.208
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.418	9.975	11.795	140.287	15.010
C_{Gas}	**Bias adjusted**	**9.415**	**10.077**	**12.541**	**144.811**	**15.348**

Clock Time (at end of sample period)

040710 085121

11:48	9.973	9.237	9.535	149.939	12.688
11:49	9.412	9.979	8.532	146.982	12.403
11:50	9.808	9.420	9.514	143.606	13.673
11:51	9.660	9.641	11.101	151.225	13.962
11:52	9.666	9.617	12.442	146.467	13.144
11:53	9.409	9.988	11.909	146.856	13.599
11:54	9.535	9.837	12.111	137.664	14.996
11:55	9.951	9.243	13.255	134.485	13.564
11:56	10.679	8.389	13.948	153.394	13.842
11:57	10.291	8.838	12.761	151.213	10.790
11:58	9.044	10.444	9.944	136.960	8.794
11:59	9.129	10.313	9.580	126.756	8.806
12:00	9.718	9.567	11.405	134.760	10.403
12:01	9.734	9.583	12.853	140.547	11.316
12:02	9.830	9.458	13.378	139.377	14.490
12:03	9.128	10.389	11.749	129.125	14.623
12:04	8.974	10.577	10.667	121.463	17.408
12:05	9.412	10.027	11.803	127.340	21.524
12:06	9.025	10.510	11.800	131.019	17.766
12:07	8.686	10.919	11.686	132.933	17.888
12:08	8.968	10.555	12.710	138.968	17.827
12:09	9.340	10.111	14.600	144.750	19.045
12:10	9.054	10.449	14.281	136.642	18.442
12:11	8.579	11.029	12.344	137.979	17.167
12:12	8.683	10.879	10.622	138.020	15.990
12:13	9.246	10.207	11.639	149.475	20.964
12:14	9.363	10.116	12.299	159.796	20.158

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 12:15
Stop Time 12:19

CALIBRATION BIAS 09

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.052	0.030	0.176	0.730	-0.493
C_{uf} Upscale gas	5.934	13.938	41.740	217.460	48.208
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.2%	0.1%	-0.3%
Upscale gas	-0.5%	-1.5%	-2.0%	-1.8%	-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_{ol} Zero gas	0.062	0.026	0.194	0.703	-0.527
C_{ul} Upscale gas	5.933	13.953	41.766	217.686	48.253
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.1%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	0.0%	0.0%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 085121

12:15:43	0.079	0.043	0.487	1.587	42.974
12:15:58	0.068	0.037	0.283	0.969	46.838
12:16:13	0.057	0.032	0.225	0.831	48.121
12:16:28	0.052	0.029	0.184	0.733	48.251
12:16:43	0.046	0.028	0.119	0.627	48.254
12:16:58	2.846	0.024	4.423	0.611	48.055
12:17:13	9.280	0.006	29.320	46.976	43.935
12:17:28	9.827	0.004	38.631	121.238	30.063
12:17:43	9.874	0.004	40.384	205.796	13.296
12:17:58	9.893	0.002	41.114	216.183	4.064
12:18:13	9.912	0.000	41.521	217.151	0.371
12:18:28	9.921	-0.001	41.753	217.541	-0.388
12:18:43	9.928	-0.001	41.945	217.688	-0.536
12:18:58	9.056	4.680	37.250	217.884	-0.555
12:19:13	6.311	13.223	11.629	183.378	-0.490
12:19:28	5.958	13.911	3.416	113.919	-0.383
12:19:43	5.927	13.944	1.825	14.823	-0.142
12:19:58	5.916	13.960	1.240	2.320	0.020

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 12:21
Stop time 12:48
REFERENCE METHOD RUN 10

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.052	0.030	0.176	0.730	-0.493
C_{ui}	Initial upscale	5.934	13.938	41.740	217.460	48.208
C_{of}	*Final zero*	0.051	0.023	0.067	0.763	-0.537
C_{uf}	Final upscale	5.921	13.949	41.336	218.158	48.318
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.739	9.522	9.160	155.602	15.569
C_{Gas}	**Bias adjusted**	**9.743**	**9.620**	**9.799**	**160.518**	**15.894**

Clock Time (at end of sample period)

040710 085121					
12:22	9.630	9.695	10.224	147.450	14.059
12:23	9.215	10.262	9.298	143.608	13.502
12:24	9.270	10.180	10.131	135.037	16.683
12:25	9.681	9.660	12.505	140.767	19.074
12:26	10.075	9.131	13.552	148.433	20.216
12:27	9.797	9.522	12.247	163.818	16.699
12:28	10.196	8.989	11.303	166.813	16.288
12:29	9.513	9.867	8.532	158.944	13.674
12:30	9.420	9.967	7.494	158.175	14.976
12:31	10.005	9.161	7.866	162.660	16.323
12:32	9.552	9.818	7.951	152.452	18.297
12:33	9.467	9.896	7.254	147.340	21.505
12:34	9.478	9.850	6.752	148.689	18.664
12:35	9.544	9.799	7.012	152.936	15.896
12:36	9.754	9.493	7.500	145.049	14.394
12:37	9.596	9.696	8.224	149.353	14.271
12:38	9.782	9.446	8.872	158.250	12.759
12:39	9.719	9.498	8.826	153.917	11.388
12:40	10.227	8.842	9.641	159.768	15.552
12:41	9.653	9.599	8.808	166.880	14.676
12:42	9.971	9.138	8.484	159.223	15.457
12:43	9.951	9.165	8.698	164.359	15.058
12:44	10.260	8.799	9.010	168.052	15.244
12:45	9.590	9.677	8.142	156.634	12.779
12:46	9.883	9.300	8.780	159.540	14.444
12:47	10.035	9.085	9.449	164.611	13.994
12:48	9.695	9.557	10.774	168.492	14.506

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 1

March 18, 2010
Start Time 12:49
Stop Time 12:54
CALIBRATION BIAS 10

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 1 %dv	FF Outlet 1 %dv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv	FF Outlet 1 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.051	0.023	0.067	0.763	-0.537
C_{uf} Upscale gas	5.921	13.949	41.336	218.158	48.318
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	-0.003	0.001	-0.018	0.117	-0.217
C_{mce} Upscale gas	6.001	14.149	43.520	225.573	49.165
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.2%	0.1%	0.1%	-0.3%
Upscale gas	-0.6%	-1.4%	-2.4%	-1.6%	-0.9%
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	0.052	0.030	0.176	0.730	-0.493
C_{ui} Upscale gas	5.934	13.938	41.740	217.460	48.208
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	-0.1%	0.1%	-0.4%	0.2%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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12:49:27	0.098	0.043	0.578	3.459	36.990
12:49:42	0.080	0.036	0.321	1.481	44.695
12:49:57	0.065	0.032	0.215	0.920	47.583
12:50:12	0.053	0.019	0.126	0.831	48.322
12:50:27	0.054	0.026	0.049	0.733	48.327
12:50:42	0.046	0.024	0.027	0.725	48.327
12:50:57	1.015	0.024	1.139	0.733	48.301
12:51:12	8.518	0.009	23.489	13.952	46.014
12:51:27	9.777	0.000	37.257	71.722	35.381
12:51:42	9.863	0.001	39.691	194.025	17.210
12:51:57	9.887	-0.003	40.557	216.060	6.198
12:52:12	9.894	-0.002	41.058	217.607	0.915
12:52:27	9.899	-0.006	41.364	217.925	-0.267
12:52:42	9.908	-0.006	41.604	218.201	-0.542
12:52:57	9.768	1.386	41.040	218.348	-0.559
12:53:12	6.853	11.948	19.066	215.238	-0.511
12:53:27	5.993	13.856	4.578	164.713	-0.415
12:53:42	5.929	13.939	2.082	29.703	-0.228
12:53:57	5.922	13.948	1.268	3.736	-0.052
12:54:12	5.914	13.958	0.917	1.286	0.060

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

Date: March 16, 2010
Start Time 7:19
Stop Time 9:22

CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Instrument Information					
Manufacturer:	Servomex	Servomex	Rsrch	T.E.I.	T.E.I.
Model:	1415C	1420C	921NMP	42i-HL	48C
Detection:	NDIR	Paramagn.	UV Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	204217	205832	205184	205956	205194
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Response Time (seconds)					
	45	45	45	45	45
Manufacturer Certified Cylinder Value (C_V)					
Zero	0.000	0.000	0.000	0.000	0.000
Low	5.910	6.010	44.900	225.000	48.200
Mid					
High	13.900	14.100	89.900	453.000	98.500
Actual gas to be used for bias checks					
	5.910	14.100	44.900	225.000	48.200
Cylinder ID					
Zero	AAL14589	AAL14589	AAL14589	AAL14589	AAL14589
Low	ALM033730	ALM046255	ALM010885	ALM010885	EB0011451
Mid					
High	ALM046255	ALM033730	CC124384	CC124384	ALM054744
Analyzer Calibration Response (C_{Dir})					
Zero	0.014	0.016	-0.137	0.122	0.146
Low	6.149	6.045	43.254	221.172	49.151
Mid					
High	13.934	14.147	90.083	453.125	98.666
Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas value)					
Zero	0.1%	0.1%	-0.2%	0.0%	0.1%
Low	1.7%	0.2%	-1.8%	-0.8%	1.0%
Mid	N/A	N/A	N/A	N/A	N/A
High	0.2%	0.3%	0.2%	0.0%	0.2%
Calibration Error Status					
Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	N/A	N/A	N/A	N/A	N/A
High	OK	OK	OK	OK	OK

040710 121110

07:19:57	0.013	0.022	-0.801	0.065	-0.036
07:19:57	0.013	0.022	-0.801	0.065	-0.036
07:20:12	0.016	0.020	-0.781	0.073	-0.085
07:20:27	0.012	0.017	-0.778	0.041	-0.108
07:20:42	0.013	0.018	-0.736	0.033	-0.018
07:20:57	0.017	0.018	-0.220	0.041	0.112
07:21:12	0.012	0.017	-0.091	0.057	0.174
07:21:27	0.013	0.014	-0.101	0.033	0.151
07:21:42	0.014	0.012	-0.112	0.049	0.114

Prepared by Clean Air Engineering Proprietary Software
SS CEM Version 06-2004a

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

Date: **March 16, 2010**
Start Time 7:19
Stop Time 9:22
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
07:21:57	0.053	0.261	-0.125	0.081	0.412
07:22:12	0.023	0.040	-0.078	0.049	6.597
07:22:27	0.016	0.013	-0.049	0.098	29.555
07:22:42	0.017	0.013	-0.108	0.122	67.681
07:22:57	0.021	0.018	-0.082	0.155	90.209
07:23:12	0.019	0.017	-0.085	0.163	97.752
07:23:27	0.018	0.017	-0.072	0.163	98.561
07:23:42	0.021	0.012	-0.111	0.187	98.754
07:23:57	0.018	0.014	-0.057	0.187	98.719
07:24:12	0.018	0.013	-0.051	0.195	98.865
07:24:27	0.021	0.012	-0.098	0.146	98.888
07:24:42	0.016	0.012	-0.096	0.187	98.689
07:24:57	0.019	0.013	-0.103	0.187	98.665
07:25:12	0.020	0.012	-0.054	0.163	98.644
07:25:27	0.087	0.363	-0.021	0.163	98.548
07:25:42	0.035	0.072	-0.027	0.138	94.826
07:25:57	0.019	0.016	-0.056	0.122	82.738
07:26:12	0.017	0.012	-0.046	0.122	65.664
07:26:27	0.018	0.012	-0.049	0.122	54.818
07:26:42	0.014	0.012	-0.049	0.122	50.095
07:26:57	0.015	0.012	-0.069	0.122	49.278
07:27:12	0.018	0.012	-0.078	0.122	49.180
07:27:27	0.013	0.012	-0.098	0.122	49.174
07:27:42	0.014	0.012	-0.106	0.122	49.156
07:27:57	0.015	0.012	-0.083	0.122	49.141
07:28:12	0.012	0.041	-0.062	0.122	49.154
07:28:27	5.604	0.273	16.640	0.122	48.467
07:28:42	9.654	0.019	60.026	0.122	41.939
07:28:57	9.890	0.005	80.964	0.122	28.391
07:29:12	9.908	0.002	85.257	0.114	14.136
07:29:27	9.901	0.000	86.489	0.114	5.638
07:29:42	9.917	0.000	87.070	0.122	1.420
07:29:57	9.924	0.001	87.469	0.114	0.200
07:30:12	9.925	0.001	87.720	0.114	-0.218
07:30:27	9.928	0.001	87.943	0.114	-0.257
07:30:42	9.925	0.002	88.109	0.122	-0.261
07:30:57	9.927	-0.001	88.350	0.122	-0.266
07:31:12	9.930	0.000	89.029	0.122	-0.259
07:31:27	9.927	0.001	89.971	0.106	-0.264
07:31:42	9.927	0.001	90.092	0.122	-0.269
07:31:57	9.931	0.000	90.185	0.114	-0.269
07:32:12	9.479	0.226	77.636	0.106	-0.269
07:32:27	9.733	0.093	34.857	0.106	-0.170
07:32:42	10.014	0.000	38.629	0.114	0.082
07:32:57	10.029	-0.007	41.682	0.114	0.121
07:33:12	10.039	-0.008	42.613	0.114	-0.096
07:33:27	10.041	-0.009	42.994	0.114	-0.238
07:33:42	10.038	-0.009	43.167	0.122	-0.293
07:33:57	10.040	-0.012	43.254	0.122	-0.324
07:34:12	10.045	-0.013	43.341	0.114	-0.339
07:34:27	10.029	-0.006	43.434	0.122	-0.334
07:34:42	8.681	5.806	33.452	0.114	-0.340

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

Date: **March 16, 2010**
Start Time 7:19
Stop Time 9:22
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
07:34:57	6.187	13.509	6.764	0.122	-0.279
07:35:12	5.949	14.121	1.358	0.122	-0.095
07:35:27	5.934	14.157	0.414	0.122	0.129
07:35:42	5.928	14.163	0.148	0.122	0.171
07:35:57	5.929	13.727	0.119	0.114	0.171
07:36:12	11.050	7.501	0.186	0.122	0.171
07:36:27	13.473	6.106	0.055	0.122	0.171
07:36:42	13.588	6.047	0.073	0.122	0.150
07:36:57	13.596	6.044	0.027	0.122	-0.021
07:37:12	13.602	6.043	0.021	0.122	-0.080
07:37:27	13.621	6.041	0.005	0.122	-0.080
07:37:42	13.866	6.042	-0.019	0.122	-0.076
07:37:57	13.933	6.039	-0.014	0.122	-0.106
07:38:12	13.934	6.040	-0.006	0.114	-0.101
07:38:27	13.934	6.039	-0.010	0.122	-0.091
07:38:42	13.143	7.494	-0.023	0.122	-0.108
07:38:57	7.312	13.316	0.075	0.122	-0.075
07:39:12	6.180	14.115	0.031	0.114	-0.005
07:39:27	6.137	14.159	-0.029	0.122	0.148
07:39:42	6.130	14.163	-0.044	0.122	0.171
07:39:57	5.449	11.677	-0.042	0.122	0.171
07:40:12	0.941	1.551	-0.044	0.122	0.171
07:40:27	0.104	0.095	-0.002	0.122	0.171
07:40:42	0.044	0.026	-0.013	0.122	0.151
07:40:57	0.037	0.020	-0.027	0.114	0.086
07:41:12	0.035	0.018	-0.016	0.122	0.076
09:10:58	0.055	20.973	-0.124	-0.106	0.215
09:11:13	0.052	20.975	-0.124	-0.211	0.207
09:11:28	0.053	20.975	-0.134	-0.195	0.205
09:11:43	0.056	20.978	-0.104	-0.203	0.215
09:11:58	0.053	20.978	-0.083	0.049	0.197
09:12:13	0.054	20.981	-0.114	0.122	0.195
09:12:28	0.056	20.981	-0.116	0.122	0.200
09:12:43	0.052	20.983	-0.145	0.122	0.212
09:12:58	0.055	20.979	-0.129	0.122	0.220
09:13:13	0.055	20.977	-0.139	3.769	0.205
09:13:28	0.050	20.980	-0.148	113.960	0.195
09:13:43	0.055	20.980	-0.158	384.298	0.195
09:13:58	0.053	20.975	-0.147	429.401	0.195
09:14:13	0.050	20.977	-0.165	436.687	0.210
09:14:28	0.055	20.977	-0.160	437.623	0.203
09:14:43	0.052	20.979	-0.157	438.062	0.220
09:14:58	0.053	20.976	-0.153	438.119	0.220
09:15:13	0.055	20.976	-0.142	436.915	0.220
09:15:28	0.055	20.977	-0.144	434.831	0.218
09:15:43	0.055	20.976	-0.163	450.623	0.220
09:15:58	0.057	20.977	-0.171	453.155	0.213
09:16:13	0.051	20.975	-0.173	453.114	0.195
09:16:28	0.055	20.975	-0.155	453.106	0.195
09:16:43	0.055	20.975	-0.140	453.187	0.210
09:16:58	0.051	20.975	-0.132	452.723	0.220
09:17:13	0.055	20.975	-0.171	307.733	0.220

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

Date: **March 16, 2010**
Start Time 7:19
Stop Time 9:22
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
09:17:28	0.055	20.975	-0.155	181.425	0.220
09:17:43	0.031	20.916	-0.181	184.705	0.225
09:17:58	0.056	20.974	-0.150	203.826	0.259
09:18:13	0.051	20.974	-0.122	214.668	0.277
09:18:28	0.053	20.974	-0.112	218.771	0.293
09:18:43	0.057	20.975	-0.130	220.171	0.269
09:18:58	0.053	20.975	-0.135	220.716	0.223
09:19:13	0.053	20.975	-0.129	221.148	0.220
09:19:28	0.057	20.979	-0.125	221.653	0.220
09:19:43	0.053	20.975	-0.127	204.770	0.220
09:19:58	0.051	20.970	-0.134	88.368	0.193
09:20:13	0.057	20.975	-0.124	38.543	0.195
09:20:28	0.050	20.974	-0.093	32.006	0.195
09:20:43	0.055	20.977	-0.076	36.117	0.195
09:20:58	0.056	20.975	-0.073	38.201	0.212
09:21:13	0.051	20.975	-0.086	39.292	0.195
09:21:28	0.055	20.974	-0.098	39.707	0.195
09:21:43	0.056	20.975	-0.145	40.049	0.195
09:21:58	0.051	20.975	-0.173	40.301	0.195
09:22:13	0.055	20.973	-0.148	40.456	0.195
09:22:28	0.042	20.943	-0.186	40.651	0.195

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 9:26
Stop Time 9:43

CALIBRATION BIAS 00

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.018	0.084	1.460	0.532	-0.237
C_{uf}	Upscale gas	6.021	14.028	41.143	221.761	48.481
Analyzer Calibration Error Reponses (C_{Dir})						
C_{oce}	Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce}	Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.0%	0.5%	1.8%	0.1%	-0.4%
	Upscale gas	-0.9%	-0.8%	-2.3%	0.1%	-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	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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09:26:31	0.019	0.094	-0.130	0.366	48.462
09:26:46	0.020	0.089	-0.099	0.374	48.474
09:27:01	0.014	0.083	-0.062	0.546	48.507
09:27:16	0.021	0.079	-0.050	0.668	48.480
09:27:31	0.017	0.075	-0.037	0.757	48.474
09:27:46	0.013	0.073	-0.065	0.977	48.474
09:28:01	0.019	0.073	-0.065	0.977	48.490
09:28:16	0.017	0.069	-0.072	0.879	48.474
09:28:31	2.779	0.063	-0.086	0.733	48.248
09:28:46	9.038	0.047	-0.158	37.860	43.259
09:29:01	9.926	0.044	2.618	162.564	29.348
09:29:16	10.021	0.042	19.201	209.084	14.427
09:29:31	10.060	0.041	29.529	220.106	4.708
09:29:46	10.079	0.039	33.447	221.620	1.084
09:30:01	10.089	0.039	35.383	221.840	-0.019
09:30:16	10.097	0.037	36.575	221.823	-0.223
09:30:31	10.111	0.036	37.413	221.840	-0.244
09:30:46	10.122	0.035	38.042	221.856	-0.244
09:31:01	10.013	1.044	38.598	221.856	-0.244
09:31:16	7.427	10.651	37.558	221.734	-0.239
09:31:31	6.181	13.727	24.500	142.507	-0.138
09:31:46	6.076	13.977	12.944	19.373	0.065
09:32:01	6.030	14.014	7.748	5.405	0.182
09:32:16	6.019	14.030	5.314	1.832	0.195

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 9:26
Stop Time 9:43

CALIBRATION BIAS 00

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
09:32:31	6.014	14.041	3.984	1.319	0.195
09:32:46	5.959	14.032	3.092	0.977	0.169
09:33:01	5.948	14.001	2.432	0.888	0.150
09:33:16	6.002	14.058	2.001	0.733	0.217
09:33:31	5.998	14.060	1.680	0.578	0.195
09:33:46	5.997	14.066	1.444	0.513	0.195
09:34:01	5.998	14.069	1.255	0.504	0.207
09:39:24	9.938	0.751	7.875	139.731	15.880
09:39:39	10.145	0.120	21.219	194.961	9.060
09:39:54	10.171	0.069	31.337	218.697	3.998
09:40:09	10.180	0.055	35.375	223.134	0.694
09:40:24	10.179	0.049	37.097	222.955	-0.081
09:40:39	10.182	0.043	38.349	222.947	-0.293
09:40:54	10.180	0.037	39.038	222.581	-0.287
09:41:09	10.183	0.030	39.557	222.564	-0.317
09:41:24	10.168	0.015	39.951	222.735	-0.320
09:41:39	10.177	0.023	40.265	222.515	-0.329
09:41:54	10.179	0.024	40.534	222.646	-0.342
09:42:09	10.183	0.023	40.781	222.825	-0.342
09:42:24	10.184	0.022	40.969	222.678	-0.342
09:42:39	10.186	0.022	41.135	222.898	-0.342
09:42:54	10.183	0.088	41.327	222.776	-0.340
09:43:09	10.005	6.157	44.438	222.377	-0.181

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 9:48
Stop time 10:15
REFERENCE METHOD RUN 1

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	**FF Outlet 2 %dv**	**FF Outlet 2 ppmdv**	**FF Outlet 2 ppmdv**	**FF Outlet 2 ppmdv**
Calibration Checks						
C_{oi}	Initial zero	0.018	0.084	1.460	0.532	-0.237
C_{ul}	Initial upscale	6.021	14.028	41.143	221.761	48.481
C_{of}	Final zero	0.090	0.037	0.544	0.879	-0.255
C_{uf}	Final upscale	6.026	14.005	41.180	225.999	48.570
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.011	9.431	10.517	160.682	12.658
C_{Gas}	**Bias adjusted**	**9.858**	**9.467**	**10.638**	**161.285**	**12.753**

Clock Time (at end of sample period)

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09:49	9.855	9.621	8.267	155.946	9.754
09:50	9.737	9.721	7.240	148.586	9.158
09:51	10.072	9.372	6.525	158.629	14.147
09:52	9.734	9.776	7.439	157.837	19.106
09:53	10.010	9.447	7.808	162.837	22.772
09:54	9.682	9.854	6.285	154.046	19.797
09:55	9.735	9.766	7.128	160.041	18.740
09:56	9.794	9.691	8.632	160.789	14.442
09:57	9.805	9.708	9.936	167.296	13.370
09:58	9.912	9.555	9.899	165.722	13.841
09:59	9.830	9.630	8.131	162.485	13.385
10:00	10.269	9.044	8.462	161.817	10.447
10:01	10.395	8.898	9.201	168.197	11.045
10:02	9.847	9.654	9.283	163.889	9.693
10:03	9.618	9.907	9.832	156.223	10.383
10:04	10.295	9.106	11.346	163.718	13.631
10:05	9.754	9.787	10.618	151.703	10.429
10:06	10.157	9.286	11.918	150.012	11.935
10:07	9.982	9.527	12.492	155.961	11.195
10:08	10.315	9.103	13.698	158.435	12.503
10:09	9.930	9.580	13.720	155.641	11.745
10:10	10.656	8.609	16.131	162.346	12.065
10:11	10.452	8.775	15.282	172.182	10.305
10:12	9.903	9.582	13.987	168.281	8.575
10:13	9.955	9.488	13.956	160.623	10.151
10:14	10.311	9.092	13.742	169.504	10.376
10:15	10.302	9.066	12.997	165.671	8.770

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 10:16
Stop Time 10:24

CALIBRATION BIAS 01

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.090	0.037	0.544	0.879	-0.255
C_{uf} Upscale gas	6.026	14.005	41.180	225.999	48.570
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.5%	0.1%	0.8%	0.2%	-0.4%
Upscale gas	-0.9%	-1.0%	-2.3%	1.1%	-0.6%
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	0.018	0.084	1.460	0.532	-0.237
C_{ui} Upscale gas	6.021	14.028	41.143	221.761	48.481
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.5%	-0.3%	-1.0%	0.1%	0.0%
Upscale gas	0.0%	-0.2%	0.0%	0.9%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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10:16:26	10.129	4.937	19.337	171.893	11.777
10:16:41	3.439	0.547	19.658	172.291	11.344
10:16:56	0.436	0.087	10.543	92.324	15.059
10:17:11	0.200	0.058	4.456	35.328	25.472
10:17:26	0.150	0.049	2.351	3.834	36.778
10:17:41	0.130	0.044	1.457	2.532	44.510
10:17:56	0.116	0.043	0.987	1.929	47.733
10:18:11	0.102	0.039	0.668	1.514	48.569
10:18:26	0.098	0.037	0.498	1.205	48.571
10:18:41	0.090	0.037	0.369	1.091	48.571
10:18:56	0.083	0.037	0.273	0.814	48.586
10:19:11	5.169	0.028	0.988	0.733	48.028
10:19:26	9.703	0.017	18.356	42.393	41.459
10:19:41	10.054	0.016	32.930	181.693	26.652
10:19:56	10.102	0.015	36.842	219.732	12.479
10:20:11	10.114	0.014	38.391	224.656	3.919
10:20:26	10.130	0.012	39.240	225.145	0.850
10:20:41	10.137	0.012	39.772	225.576	-0.036
10:20:56	10.140	0.012	40.187	225.625	-0.200
10:21:11	10.148	0.012	40.524	225.747	-0.236
10:21:26	10.155	0.012	40.814	225.983	-0.274
10:21:41	10.155	0.012	41.016	225.966	-0.269
10:21:56	10.159	0.010	41.203	226.023	-0.259
10:22:11	9.984	1.571	41.321	226.007	-0.256

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 10:16
Stop Time 10:24

CALIBRATION BIAS 01

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
10:22:26	7.109	11.663	29.589	201.205	-0.251
10:22:41	6.158	13.834	9.983	116.402	-0.163
10:22:56	6.069	13.982	4.430	34.139	0.059
10:23:11	6.040	13.993	2.732	3.223	0.242
10:23:26	6.030	14.001	1.958	1.400	0.241
10:23:41	6.026	14.005	1.470	1.058	0.244
10:23:56	6.023	14.009	1.221	0.855	0.251
10:24:11	6.026	14.016	1.042	0.766	0.254
10:24:26	6.013	14.009	0.863	0.627	0.236
10:24:41	6.019	13.944	0.724	0.513	0.244

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 10:31
Stop time 10:58
REFERENCE METHOD RUN 2

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.090	0.037	0.544	0.879	-0.255
C_{ui}	Initial upscale	6.026	14.005	41.180	225.999	48.570
C_{of}	Final zero	0.069	0.035	0.102	0.371	-0.162
C_{uf}	Final upscale	6.024	14.014	40.951	226.189	48.634
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.920	9.544	13.336	154.403	12.888
C_{Gas}	**Bias adjusted**	**9.781**	**9.594**	**14.341**	**153.458**	**12.932**

Clock Time (at end of sample period)

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10:32	9.552	10.015	12.494	131.427	14.582
10:33	9.724	9.860	13.950	129.078	19.946
10:34	9.852	9.648	13.512	131.534	17.804
10:35	9.498	10.113	11.977	134.902	17.360
10:36	9.676	9.866	10.288	136.170	16.307
10:37	9.544	10.038	9.820	142.727	15.091
10:38	10.046	9.399	10.988	149.699	16.067
10:39	9.842	9.680	10.962	155.653	13.145
10:40	9.378	10.252	9.684	145.672	11.581
10:41	9.897	9.625	10.116	152.068	16.218
10:42	9.588	9.998	9.312	153.002	17.111
10:43	10.220	9.158	10.384	159.583	14.394
10:44	9.800	9.727	10.777	164.438	14.629
10:45	9.850	9.627	13.191	154.400	14.475
10:46	9.546	10.021	12.978	156.488	15.376
10:47	10.372	8.911	13.648	163.140	14.793
10:48	10.548	8.680	12.963	181.024	11.517
10:49	10.532	8.727	13.899	177.411	9.103
10:50	9.811	9.705	16.518	173.311	9.493
10:51	9.078	10.547	13.440	155.372	9.111
10:52	9.913	9.513	13.029	161.423	9.978
10:53	10.275	9.023	15.232	154.269	8.761
10:54	10.891	8.304	18.766	166.264	9.820
10:55	10.513	8.780	16.727	164.668	7.508
10:56	9.882	9.608	17.300	161.534	7.499
10:57	9.709	9.818	18.376	152.147	7.250
10:58	10.309	9.041	19.747	161.469	9.055

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 11:02
Stop Time 11:07

CALIBRATION BIAS 02

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.069	0.035	0.102	0.371	-0.162
C_{uf} Upscale gas	6.024	14.014	40.951	226.189	48.634
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	0.3%	0.1%	-0.3%
Upscale gas	-0.9%	-0.9%	-2.6%	1.1%	-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_{ol} Zero gas	0.090	0.037	0.544	0.879	-0.255
C_{ul} Upscale gas	6.026	14.005	41.180	225.999	48.570
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.2%	0.0%	-0.5%	-0.1%	0.1%
Upscale gas	0.0%	0.1%	-0.3%	0.0%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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11:02:23	0.075	0.037	0.137	0.399	48.661
11:02:38	0.069	0.035	0.116	0.374	48.597
11:02:53	0.070	0.036	0.103	0.366	48.645
11:03:08	0.067	0.034	0.086	0.374	48.597
11:03:23	0.528	0.037	0.028	0.358	48.707
11:03:38	7.770	0.023	6.616	0.244	46.655
11:03:53	9.905	0.018	28.026	107.969	37.473
11:04:08	10.061	0.014	36.060	207.904	20.956
11:04:23	10.097	0.012	38.396	223.166	9.140
11:04:38	10.112	0.012	39.445	225.486	2.523
11:04:53	10.125	0.013	40.073	225.950	0.479
11:05:08	10.139	0.012	40.519	226.064	-0.117
11:05:23	10.141	0.012	40.762	226.203	-0.179
11:05:38	10.146	0.012	40.954	226.129	-0.189
11:05:53	10.146	0.198	41.136	226.236	-0.218
11:06:08	7.923	9.446	33.664	222.345	-0.231
11:06:23	6.221	13.666	11.712	192.536	-0.170
11:06:38	6.091	13.966	4.304	57.004	0.085
11:06:53	6.056	13.988	2.423	5.446	0.220
11:07:08	6.046	14.001	1.651	1.424	0.233
11:07:23	6.024	14.007	1.232	1.050	0.266
11:07:38	6.022	14.015	0.985	0.855	0.285
11:07:53	6.027	14.019	0.835	0.741	0.259

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 11:15
Stop time 11:42
REFERENCE METHOD RUN 3

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.069	0.035	0.102	0.371	-0.162
C_{ui}	Initial upscale	6.024	14.014	40.951	226.189	48.634
C_{of}	Final zero	0.098	0.032	0.709	0.833	0.213
C_{uf}	Final upscale	5.962	14.008	41.387	226.388	48.467
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.869	9.638	14.187	149.966	12.775
C_{Gas}	**Bias adjusted**	**9.786**	**9.689**	**15.181**	**148.909**	**12.664**

Clock Time (at end of sample period)

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11:16	10.497	8.814	11.019	172.310	9.458
11:17	9.810	9.713	10.108	166.016	8.113
11:18	9.469	10.127	12.029	149.746	8.158
11:19	9.454	10.146	14.299	150.944	11.656
11:20	10.046	9.385	14.188	150.720	13.700
11:21	10.084	9.361	11.277	162.995	15.815
11:22	10.035	9.444	10.732	157.336	13.259
11:23	9.730	9.810	14.105	158.242	13.046
11:24	10.389	8.966	23.486	159.005	13.110
11:25	10.096	9.398	20.942	159.054	14.661
11:26	9.745	9.791	16.136	142.507	12.067
11:27	10.186	9.242	13.860	158.347	14.276
11:28	9.975	9.523	10.931	152.931	14.739
11:29	10.146	9.289	13.157	151.095	10.536
11:30	9.808	9.729	13.595	143.749	10.617
11:31	10.127	9.302	16.902	145.501	10.747
11:32	10.033	9.429	18.596	161.658	9.052
11:33	9.864	9.630	16.046	149.784	7.634
11:34	10.073	9.381	10.274	149.420	9.351
11:35	9.694	9.889	9.296	148.958	10.765
11:36	9.990	9.481	9.682	147.361	14.682
11:37	9.839	9.687	13.140	147.857	14.576
11:38	9.551	10.022	14.918	134.377	13.071
11:39	9.489	10.111	14.838	134.591	15.596
11:40	9.853	9.695	15.682	142.761	19.900
11:41	9.105	10.603	17.062	128.397	19.053
11:42	9.385	10.253	16.758	123.417	17.287

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 11:53
Stop Time 11:59

CALIBRATION BIAS 03

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.098	0.032	0.709	0.833	0.213
C_{uf} Upscale gas	5.962	14.008	41.387	226.388	48.467
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.6%	0.1%	0.9%	0.2%	0.1%
Upscale gas	-1.3%	-1.0%	-2.1%	1.2%	-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	0.069	0.035	0.102	0.371	-0.162
C_{ui} Upscale gas	6.024	14.014	40.951	226.189	48.634
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.2%	0.0%	0.7%	0.1%	0.4%
Upscale gas	-0.4%	0.0%	0.5%	0.0%	-0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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11:53:29	10.150	0.028	38.492	220.407	6.932
11:53:44	10.148	0.021	39.583	225.852	2.953
11:53:59	10.157	0.011	40.391	226.129	0.412
11:54:14	10.153	0.012	40.860	226.276	-0.112
11:54:29	10.157	0.023	41.213	226.309	-0.236
11:54:44	10.156	0.022	41.486	226.285	-0.272
11:54:59	9.486	0.020	41.460	226.569	-0.251
11:55:14	2.157	0.032	26.028	223.590	1.163
11:55:29	0.353	0.036	8.228	158.600	10.463
11:55:44	0.190	0.036	3.632	17.583	24.711
11:55:59	0.157	0.036	2.230	3.859	40.015
11:56:14	0.132	0.033	1.517	1.473	46.058
11:56:29	0.117	0.033	1.156	1.026	48.392
11:56:44	0.108	0.032	0.902	0.944	48.500
11:56:59	0.097	0.032	0.676	0.814	48.510
11:57:14	0.089	0.032	0.550	0.741	48.599
11:57:29	0.764	2.990	0.470	0.619	48.659
11:57:44	4.972	12.508	0.410	0.537	46.535
11:57:59	5.835	13.891	0.365	0.521	33.444
11:58:14	5.925	13.972	0.330	0.472	18.898
11:58:29	5.949	13.995	0.235	0.366	6.462
11:58:44	5.958	14.004	0.223	0.366	2.157
11:58:59	5.962	14.009	0.213	0.366	0.534
11:59:14	5.967	14.011	0.220	0.333	0.350

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 12:02
Stop time 12:29
REFERENCE METHOD RUN 4

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.098	0.032	0.709	0.833	0.213
C_{ui}	Initial upscale	5.962	14.008	41.387	226.388	48.467
C_{of}	Final zero	0.087	0.042	0.152	0.524	-0.218
C_{uf}	Final upscale	6.018	13.953	41.257	226.067	48.525
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.013	9.422	13.618	153.313	9.421
C_{Gas}	**Bias adjusted**	**9.941**	**9.490**	**14.481**	**152.263**	**9.366**

Clock Time (at end of sample period)

040710 092956					
12:03	9.920	9.575	14.477	150.102	9.887
12:04	10.402	8.878	14.000	147.951	11.374
12:05	10.389	8.997	12.199	165.224	12.639
12:06	9.518	10.086	10.747	145.840	10.364
12:07	10.132	9.269	12.676	140.773	12.155
12:08	9.906	9.592	15.279	142.232	11.398
12:09	10.120	9.324	16.064	137.336	12.377
12:10	9.940	9.554	15.902	135.969	12.998
12:11	10.130	9.273	15.479	145.745	11.474
12:12	10.566	8.754	16.144	155.490	10.794
12:13	9.658	9.899	14.377	148.686	7.698
12:14	9.899	9.524	13.031	147.668	9.033
12:15	10.434	8.888	14.433	162.578	10.690
12:16	10.120	9.296	11.319	160.281	8.115
12:17	9.728	9.761	10.859	147.601	8.899
12:18	10.605	8.642	13.849	153.510	13.171
12:19	10.179	9.254	12.541	160.047	10.750
12:20	9.466	10.132	10.873	149.359	7.288
12:21	10.047	9.350	11.943	152.688	8.737
12:22	10.019	9.397	11.874	160.399	7.737
12:23	10.246	9.092	11.887	164.383	5.858
12:24	9.880	9.595	13.636	164.261	6.202
12:25	9.279	10.326	13.604	157.680	6.569
12:26	9.628	9.843	14.735	157.228	8.061
12:27	10.214	9.143	15.736	167.322	7.708
12:28	10.146	9.246	14.704	164.723	6.474
12:29	9.786	9.694	15.331	154.379	5.933

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 12:31
Stop Time 12:36

CALIBRATION BIAS 04

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.087	0.042	0.152	0.524	-0.218
C_{uf} Upscale gas	6.018	13.953	41.257	226.067	48.525
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Perce	3				
Zero gas	0.5%	0.2%	0.3%	0.1%	-0.4%
Upscale gas	-0.9%	-1.4%	-2.2%	1.1%	-0.6%
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_{ol} Zero gas	0.098	0.032	0.709	0.833	0.213
C_{ul} Upscale gas	5.962	14.008	41.387	226.388	48.467
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.1%	0.1%	-0.6%	-0.1%	-0.4%
Upscale gas	0.4%	-0.4%	-0.1%	-0.1%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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12:31:18	0.137	0.061	1.075	1.905	38.704
12:31:33	0.117	0.056	0.682	1.058	45.361
12:31:48	0.107	0.051	0.459	0.871	48.143
12:32:03	0.099	0.045	0.335	0.741	48.523
12:32:18	0.090	0.043	0.215	0.602	48.525
12:32:33	0.089	0.041	0.138	0.537	48.526
12:32:48	0.083	0.041	0.103	0.431	48.520
12:33:03	4.965	0.034	2.994	7.269	48.254
12:33:18	9.680	0.020	24.513	41.791	41.416
12:33:33	10.022	0.018	36.122	152.706	27.531
12:33:48	10.067	0.018	39.121	221.318	11.702
12:34:03	10.086	0.018	40.143	224.925	3.956
12:34:18	10.091	0.016	40.702	225.576	0.704
12:34:33	10.098	0.018	41.050	225.836	-0.015
12:34:48	10.102	0.017	41.271	226.080	-0.199
12:35:03	10.105	0.014	41.451	226.284	-0.236
12:35:18	10.108	0.075	41.617	226.390	-0.218
12:35:33	8.075	8.777	33.727	226.529	-0.177
12:35:48	6.202	13.612	11.302	167.318	-0.112
12:36:03	6.048	13.935	3.985	32.047	0.104
12:36:18	6.007	13.959	2.136	7.831	0.216
12:36:33	6.000	13.965	1.431	1.595	0.262
12:36:48	5.995	13.968	1.050	1.026	0.254

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 12:40
Stop time 13:07
REFERENCE METHOD RUN 5

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.087	0.042	0.152	0.524	-0.218
C_{ui}	Initial upscale	6.018	13.953	41.257	226.067	48.525
C_{of}	Final zero	0.131	0.044	0.153	0.619	-0.136
C_{uf}	Final upscale	6.009	13.958	41.274	226.444	48.649
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.772	9.699	12.764	145.730	10.615
C_{Gas}	**Bias adjusted**	**9.671**	**9.786**	**13.773**	**144.718**	**10.667**

Clock Time (at end of sample period)						
040710 092956						
	12:41	9.943	9.532	13.752	147.206	13.059
	12:42	9.522	10.057	12.954	133.252	11.485
	12:43	9.741	9.818	15.386	139.320	13.081
	12:44	9.408	10.181	13.519	134.037	11.771
	12:45	9.998	9.472	12.207	143.864	14.431
	12:46	9.797	9.732	10.437	140.218	9.496
	12:47	9.339	10.264	8.875	131.616	9.263
	12:48	9.436	10.168	9.704	133.168	11.760
	12:49	9.852	9.606	10.461	136.968	10.703
	12:50	9.887	9.614	14.022	148.527	10.324
	12:51	9.451	10.090	12.894	138.828	8.314
	12:52	9.893	9.531	13.672	151.561	12.111
	12:53	9.303	10.261	13.885	142.721	8.284
	12:54	9.859	9.555	11.719	143.598	7.501
	12:55	9.983	9.412	11.605	153.781	7.536
	12:56	9.689	9.807	10.895	150.584	7.084
	12:57	9.447	10.058	14.719	141.174	8.156
	12:58	10.108	9.248	10.415	150.195	11.735
	12:59	9.562	9.969	6.897	150.855	9.958
	13:00	9.445	10.069	15.340	146.078	10.418
	13:01	9.607	9.897	13.963	147.306	14.688
	13:02	9.934	9.413	7.881	145.983	10.869
	13:03	10.494	8.751	7.669	166.846	11.082
	13:04	9.793	9.686	15.471	155.741	9.817
	13:05	9.611	9.855	14.034	142.692	9.488
	13:06	10.009	9.419	18.923	158.112	13.123
	13:07	10.724	8.411	23.338	160.468	11.072

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 13:08
Stop Time 13:13

CALIBRATION BIAS 05

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)						
C_{of}	Zero gas	0.131	0.044	0.153	0.619	-0.136
C_{uf}	Upscale gas	6.009	13.958	41.274	226.444	48.649
Analyzer Calibration Error Reponses (C_{DIr})						
C_{oce}	Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce}	Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})						
C_{ma}	Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)						
		13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)						
	Zero gas	0.8%	0.2%	0.3%	0.1%	-0.3%
	Upscale gas	-1.0%	-1.3%	-2.2%	1.2%	-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	0.087	0.042	0.152	0.524	-0.218
C_{ui}	Upscale gas	6.018	13.953	41.257	226.067	48.525
Drift Assessment as Percent of Calibration Span Value (D) (3%)						
	Zero gas	0.3%	0.0%	0.0%	0.0%	0.1%
	Upscale gas	-0.1%	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

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13:08:40	0.167	0.054	1.595	13.390	32.545
13:08:55	0.136	0.053	0.850	1.832	41.758
13:09:10	0.122	0.049	0.497	1.091	47.095
13:09:25	0.110	0.045	0.348	0.839	48.438
13:09:40	0.099	0.044	0.218	0.725	48.757
13:09:55	0.096	0.043	0.145	0.578	48.752
13:10:10	0.198	0.044	0.096	0.554	48.723
13:10:25	6.902	0.031	7.644	16.833	47.731
13:10:40	9.825	0.021	30.064	73.357	38.992
13:10:55	10.015	0.020	37.815	180.041	23.933
13:11:10	10.050	0.019	39.858	223.468	9.245
13:11:25	10.067	0.017	40.625	225.909	2.953
13:11:40	10.079	0.015	41.039	226.317	0.402
13:11:55	10.090	0.015	41.298	226.374	-0.070
13:12:10	10.099	0.014	41.486	226.642	-0.165
13:12:25	10.091	0.292	41.622	226.813	-0.173
13:12:40	7.707	9.933	31.007	221.653	-0.173
13:12:55	6.163	13.695	9.426	120.236	-0.083
13:13:10	6.029	13.943	3.363	46.349	0.161
13:13:25	6.011	13.960	1.779	3.345	0.225
13:13:40	5.988	13.970	1.179	1.604	0.293
13:13:55	5.988	13.973	0.856	1.099	0.293

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 13:15
Stop time 13:42
REFERENCE METHOD RUN 6

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.131	0.044	0.153	0.619	-0.136
C_{ui}	Initial upscale	6.009	13.958	41.274	226.444	48.649
C_{of}	Final zero	0.095	0.041	0.067	0.567	-0.155
C_{uf}	Final upscale	5.981	13.960	41.285	226.555	48.771
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.805	9.664	12.611	150.927	9.532
C_{Gas}	**Bias adjusted**	**9.737**	**9.749**	**13.633**	**149.731**	**9.547**

Clock Time (at end of sample period) 040710 092956					
13:16	9.763	9.711	12.180	161.125	7.086
13:17	9.535	9.982	11.219	156.927	5.931
13:18	10.327	8.986	12.333	158.403	7.810
13:19	10.052	9.361	12.733	147.247	6.899
13:20	9.944	9.460	13.030	134.395	6.617
13:21	10.554	8.723	15.178	148.020	9.427
13:22	9.726	9.813	14.831	147.352	8.943
13:23	9.388	10.178	16.459	137.363	9.174
13:24	9.463	10.101	16.319	138.000	9.813
13:25	9.801	9.715	18.484	141.612	10.605
13:26	9.227	10.427	15.109	138.531	12.675
13:27	9.591	9.996	13.124	135.395	15.521
13:28	9.406	10.200	11.539	138.266	13.707
13:29	9.467	10.150	11.913	145.143	13.864
13:30	9.574	9.961	11.060	146.600	9.989
13:31	9.358	10.233	11.061	151.313	10.812
13:32	9.453	10.102	8.611	154.439	12.180
13:33	9.869	9.585	13.445	155.090	11.632
13:34	10.052	9.342	12.958	155.218	10.007
13:35	10.151	9.255	10.020	162.226	10.761
13:36	9.597	9.919	8.525	158.740	8.238
13:37	9.804	9.661	11.362	164.809	8.057
13:38	10.234	9.042	11.980	163.901	7.531
13:39	10.368	8.904	11.355	164.933	7.866
13:40	9.812	9.642	11.554	156.461	6.624
13:41	10.078	9.251	13.363	152.171	7.829
13:42	10.128	9.238	10.745	161.363	7.759

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 13:44
Stop Time 13:49

CALIBRATION BIAS 06

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.095	0.041	0.067	0.567	-0.155
C_{uf} Upscale gas	5.981	13.960	41.285	226.555	48.771
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.6%	0.2%	0.2%	0.1%	-0.3%
Upscale gas	-1.2%	-1.3%	-2.2%	1.2%	-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	0.131	0.044	0.153	0.619	-0.136
C_{ui} Upscale gas	6.009	13.958	41.274	226.444	48.649
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-0.3%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	-0.2%	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

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13:44:12	0.177	0.075	1.649	22.605	24.093
13:44:27	0.145	0.061	0.821	2.075	37.550
13:44:42	0.124	0.053	0.453	1.058	44.905
13:44:57	0.110	0.047	0.249	0.953	48.065
13:45:12	0.105	0.043	0.132	0.717	48.654
13:45:27	0.094	0.042	0.067	0.504	48.819
13:45:42	0.086	0.039	0.003	0.480	48.840
13:45:57	0.860	0.039	0.218	0.366	48.716
13:46:12	8.228	0.026	15.228	8.970	46.935
13:46:27	9.888	0.022	34.141	70.208	34.704
13:46:42	10.029	0.016	38.618	205.080	19.359
13:46:57	10.045	0.016	40.070	223.728	6.968
13:47:12	10.056	0.014	40.708	225.958	1.919
13:47:27	10.055	0.014	41.101	226.268	0.192
13:47:42	10.067	0.014	41.348	226.675	-0.126
13:47:57	10.045	0.582	41.407	226.724	-0.168
13:48:12	7.446	10.593	26.621	226.732	-0.173
13:48:27	6.115	13.727	7.546	170.818	-0.113
13:48:42	5.997	13.944	2.767	29.434	0.140
13:48:57	5.979	13.965	1.514	5.454	0.224
13:49:12	5.968	13.971	1.058	1.441	0.293

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 13:51
Stop time 14:18
REFERENCE METHOD RUN 7

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.095	0.041	0.067	0.567	-0.155
C_{ui}	Initial upscale	5.981	13.960	41.285	226.555	48.771
C_{of}	Final zero	0.093	0.043	0.032	0.526	-0.143
C_{uf}	Final upscale	5.984	13.951	41.350	225.552	48.472
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.899	9.570	14.370	154.761	12.214
C_{Gas}	**Bias adjusted**	**9.840**	**9.656**	**15.580**	**153.868**	**12.219**

Clock Time (at end of sample period)

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13:52	9.738	9.722	12.035	150.608	11.912
13:53	9.757	9.706	10.097	151.720	12.561
13:54	10.023	9.383	12.584	151.704	13.015
13:55	9.935	9.497	13.938	153.582	14.133
13:56	9.990	9.448	13.572	154.050	16.582
13:57	9.754	9.734	13.330	139.035	15.214
13:58	9.559	9.990	12.751	141.799	16.049
13:59	9.894	9.567	16.563	142.886	15.407
14:00	9.724	9.782	15.130	142.967	15.192
14:01	9.906	9.585	13.819	147.853	15.540
14:02	9.954	9.477	13.588	147.977	13.928
14:03	10.167	9.269	14.684	158.451	12.916
14:04	9.733	9.784	15.362	149.833	9.882
14:05	9.851	9.652	14.056	155.665	11.423
14:06	10.112	9.295	13.542	162.383	9.893
14:07	10.308	9.084	13.367	173.285	10.812
14:08	9.855	9.673	13.598	166.111	8.686
14:09	9.922	9.543	15.619	154.156	9.103
14:10	9.646	9.931	14.750	163.832	10.116
14:11	9.820	9.679	14.680	160.466	9.017
14:12	9.710	9.797	15.381	166.644	9.221
14:13	10.162	9.253	16.073	167.234	9.543
14:14	9.936	9.543	13.978	163.752	8.145
14:15	9.763	9.785	17.757	158.264	11.503
14:16	9.566	10.001	18.146	147.554	14.963
14:17	9.917	9.514	14.658	148.744	13.850
14:18	10.574	8.696	14.931	158.004	11.180

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 14:19
Stop Time 14:24

CALIBRATION BIAS 07

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.093	0.043	0.032	0.526	-0.143
C_{uf} Upscale gas	5.984	13.951	41.350	225.552	48.472
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.6%	0.2%	0.2%	0.1%	-0.3%
Upscale gas	-1.2%	-1.4%	-2.1%	1.0%	-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_{ol} Zero gas	0.095	0.041	0.067	0.567	-0.155
C_{ul} Upscale gas	5.981	13.960	41.285	226.555	48.771
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	0.0%	-0.1%	0.1%	-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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14:19:08	0.175	0.075	1.324	11.673	28.046
14:19:23	0.140	0.058	0.658	2.426	39.346
14:19:38	0.124	0.053	0.342	1.075	46.274
14:19:53	0.110	0.049	0.168	0.920	48.277
14:20:08	0.098	0.044	0.073	0.602	48.534
14:20:23	0.094	0.043	0.042	0.529	48.606
14:20:38	0.085	0.041	-0.018	0.448	48.715
14:20:53	2.475	0.038	1.788	0.366	48.643
14:21:08	9.191	0.023	24.055	42.816	43.920
14:21:23	9.955	0.018	36.851	155.580	30.872
14:21:38	10.013	0.018	39.497	208.384	13.483
14:21:53	10.037	0.016	40.428	224.347	4.472
14:22:08	10.058	0.016	41.047	225.364	0.694
14:22:23	10.067	0.014	41.385	225.495	-0.060
14:22:38	10.072	0.016	41.617	225.796	-0.184
14:22:53	9.574	3.096	39.813	225.974	-0.185
14:23:08	6.617	12.649	16.684	193.659	-0.171
14:23:23	6.061	13.867	4.677	103.012	-0.021
14:23:38	5.995	13.940	2.046	27.864	0.180
14:23:53	5.981	13.953	1.162	2.686	0.239
14:24:08	5.977	13.958	0.764	1.156	0.291

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 14:26
Stop time 14:53
REFERENCE METHOD RUN 8

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.093	0.043	0.032	0.526	-0.143
C_{ui}	Initial upscale	5.984	13.951	41.350	225.552	48.472
C_{of}	Final zero	0.092	0.040	-0.078	0.439	-0.169
C_{uf}	Final upscale	5.992	13.976	41.527	226.819	48.679
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.964	9.494	15.519	150.151	11.421
C_{Gas}	**Bias adjusted**	**9.896**	**9.574**	**16.831**	**149.202**	**11.451**

Clock Time (at end of sample period)

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14:27	9.757	9.738	10.064	146.142	11.592
14:28	9.911	9.541	11.907	149.760	11.495
14:29	10.529	8.769	11.677	156.455	9.974
14:30	9.968	9.512	10.217	160.834	8.136
14:31	9.627	9.909	11.955	153.323	6.951
14:32	9.928	9.556	15.525	160.838	10.497
14:33	10.119	9.306	20.752	162.627	9.519
14:34	9.678	9.847	17.507	159.613	9.211
14:35	10.119	9.296	15.743	162.051	10.733
14:36	9.666	9.871	14.032	159.100	9.154
14:37	10.144	9.262	16.764	151.400	12.293
14:38	10.039	9.410	19.571	146.589	10.933
14:39	9.890	9.561	17.851	136.406	8.767
14:40	10.206	9.206	17.377	147.307	11.075
14:41	9.506	10.107	13.336	141.455	9.141
14:42	9.439	10.154	10.547	138.445	10.079
14:43	9.774	9.774	9.563	149.182	12.455
14:44	10.100	9.289	13.169	145.505	12.359
14:45	10.542	8.765	19.847	151.563	13.510
14:46	9.832	9.682	21.119	142.403	10.780
14:47	9.528	10.014	23.580	139.864	12.907
14:48	9.514	10.078	17.237	142.499	14.629
14:49	10.039	9.378	17.148	141.394	14.288
14:50	9.991	9.486	13.664	145.342	14.434
14:51	9.930	9.503	11.694	139.557	12.569
14:52	11.014	8.172	16.836	160.289	17.807
14:53	10.251	9.160	20.327	164.127	13.088

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 14:54
Stop Time 14:59

CALIBRATION BIAS 08

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.092	0.040	-0.078	0.439	-0.169
C_{uf} Upscale gas	5.992	13.976	41.527	226.819	48.679
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.6%	0.2%	0.1%	0.1%	-0.3%
Upscale gas	-1.1%	-1.2%	-1.9%	1.2%	-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	0.093	0.043	0.032	0.526	-0.143
C_{ui} Upscale gas	5.984	13.951	41.350	225.552	48.472
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.1%	0.2%	0.2%	0.3%	0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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14:54:38	0.157	0.061	0.855	8.865	35.593
14:54:53	0.129	0.053	0.396	1.376	44.119
14:55:08	0.118	0.048	0.150	0.961	47.953
14:55:23	0.108	0.044	0.021	0.692	48.616
14:55:38	0.096	0.041	-0.010	0.496	48.669
14:55:53	0.093	0.040	-0.076	0.455	48.751
14:56:08	0.088	0.037	-0.147	0.366	48.812
14:56:23	2.281	0.038	1.493	0.529	48.829
14:56:38	9.155	0.019	23.842	1.262	44.396
14:56:53	9.967	0.018	37.133	128.718	31.551
14:57:08	10.029	0.018	39.827	217.330	14.050
14:57:23	10.055	0.017	40.801	225.739	4.729
14:57:38	10.067	0.017	41.276	226.407	0.768
14:57:53	10.073	0.016	41.574	226.903	-0.042
14:58:08	10.080	0.014	41.729	227.147	-0.226
14:58:23	9.738	2.285	40.804	227.236	-0.239
14:58:38	6.756	12.323	18.628	227.326	-0.181
14:58:53	6.079	13.880	4.821	104.754	0.091
14:59:08	6.003	13.964	1.976	16.841	0.231
14:59:23	5.988	13.976	1.003	2.646	0.283
14:59:38	5.985	13.987	0.563	1.294	0.271

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 15:02
Stop time 15:29
REFERENCE METHOD RUN 9

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.092	0.040	-0.078	0.439	-0.169
C_{ui}	Initial upscale	5.992	13.976	41.527	226.819	48.679
C_{of}	Final zero	0.092	0.044	-0.092	0.651	-0.185
C_{uf}	Final upscale	5.976	13.971	41.355	226.675	48.678
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.865	9.583	13.674	150.194	12.669
C_{Gas}	**Bias adjusted**	**9.803**	**9.656**	**14.877**	**148.853**	**12.673**

Clock Time (at end of sample period)

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15:03	10.096	9.269	10.420	147.568	14.168
15:04	9.713	9.799	13.208	150.263	13.419
15:05	10.036	9.355	18.339	142.066	13.394
15:06	9.793	9.704	17.438	152.155	13.723
15:07	10.025	9.366	17.483	147.798	12.761
15:08	9.836	9.653	17.129	151.361	14.227
15:09	9.809	9.648	18.116	141.459	11.763
15:10	9.316	10.269	16.643	143.688	13.837
15:11	9.876	9.552	13.201	147.002	13.335
15:12	9.709	9.762	11.894	150.653	12.633
15:13	10.153	9.220	12.045	152.161	12.679
15:14	9.793	9.695	10.891	149.804	10.663
15:15	9.930	9.505	13.050	141.571	12.733
15:16	9.425	10.151	13.332	138.510	14.232
15:17	9.635	9.863	12.269	137.051	14.017
15:18	9.779	9.679	10.534	143.443	14.599
15:19	10.168	9.221	12.858	149.927	14.543
15:20	9.719	9.778	11.851	150.468	11.713
15:21	10.110	9.247	11.116	151.801	12.015
15:22	9.918	9.521	10.639	154.628	12.760
15:23	9.949	9.445	14.095	154.174	10.598
15:24	10.111	9.283	15.821	159.992	11.162
15:25	9.933	9.459	15.670	154.168	10.627
15:26	10.474	8.817	15.226	169.178	13.255
15:27	9.597	9.945	11.628	160.649	10.669
15:28	9.824	9.629	12.033	156.553	11.240
15:29	9.618	9.903	12.269	157.135	11.290

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 15:30
Stop Time 15:35

CALIBRATION BIAS 09

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.092	0.044	-0.092	0.651	-0.185
C_{uf} Upscale gas	5.976	13.971	41.355	226.675	48.678
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.6%	0.2%	0.1%	0.1%	-0.3%
Upscale gas	-1.2%	-1.2%	-2.1%	1.2%	-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_{ol} Zero gas	0.092	0.040	-0.078	0.439	-0.169
C_{ul} Upscale gas	5.992	13.976	41.527	226.819	48.679
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	0.0%
Upscale gas	-0.1%	0.0%	-0.2%	0.0%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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15:30:36	0.205	0.090	2.178	48.352	27.119
15:30:51	0.147	0.064	0.897	5.633	37.529
15:31:06	0.126	0.057	0.306	1.294	45.299
15:31:21	0.110	0.027	0.047	1.001	48.029
15:31:36	0.099	0.047	-0.034	0.855	48.516
15:31:51	0.093	0.043	-0.089	0.562	48.706
15:32:06	0.085	0.042	-0.152	0.537	48.744
15:32:21	2.427	0.038	1.931	1.042	48.585
15:32:36	9.196	0.020	24.269	7.407	44.085
15:32:51	9.951	0.018	37.027	106.992	29.989
15:33:06	10.013	0.016	39.762	219.658	13.369
15:33:21	10.036	0.017	40.663	225.039	4.081
15:33:36	10.048	0.014	41.133	226.537	0.687
15:33:51	10.062	0.014	41.355	226.716	-0.085
15:34:06	10.069	0.013	41.578	226.773	-0.210
15:34:21	9.753	2.222	40.581	226.919	-0.259
15:34:36	6.767	12.309	18.854	226.862	-0.207
15:34:51	6.065	13.876	4.887	129.450	-0.047
15:35:06	5.989	13.961	1.900	14.440	0.177
15:35:21	5.976	13.970	0.988	3.460	0.212
15:35:36	5.962	13.981	0.576	1.294	0.254

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 15:37
Stop time 16:04
REFERENCE METHOD RUN 10

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.092	0.044	-0.092	0.651	-0.185
C_{ui}	Initial upscale	5.976	13.971	41.355	226.675	48.678
C_{of}	Final zero	0.098	0.041	-0.172	0.526	-0.173
C_{uf}	Final upscale	5.991	13.957	41.144	226.805	48.840
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	9.984	9.426	12.911	157.651	8.398
C_{Gas}	**Bias adjusted**	**9.925**	**9.504**	**14.151**	**156.262**	**8.447**

Clock Time (at end of sample period) 040710 092956					
15:38	10.436	8.851	20.165	159.119	12.006
15:39	9.614	9.879	16.420	154.933	9.021
15:40	10.225	9.083	15.280	158.962	10.793
15:41	10.179	9.184	13.634	161.583	9.854
15:42	9.745	9.690	11.721	154.147	7.676
15:43	10.290	9.041	13.959	159.691	8.530
15:44	9.515	10.020	13.711	154.084	6.923
15:45	10.061	9.290	13.404	154.723	7.101
15:46	9.943	9.499	9.855	165.700	8.437
15:47	9.842	9.579	8.282	158.453	6.235
15:48	10.212	9.138	9.149	164.174	8.556
15:49	9.782	9.695	10.617	157.656	7.012
15:50	9.997	9.385	11.517	154.837	7.740
15:51	10.190	9.180	13.438	162.837	10.041
15:52	9.709	9.787	10.744	164.302	7.295
15:53	10.098	9.248	12.951	162.814	6.808
15:54	10.415	8.901	11.298	169.670	8.775
15:55	9.791	9.713	11.315	162.139	6.669
15:56	9.602	9.910	20.028	154.064	9.221
15:57	10.654	8.562	21.306	152.908	10.736
15:58	10.368	8.969	16.870	162.019	9.207
15:59	9.397	10.198	9.753	164.123	8.284
16:00	8.919	10.722	6.212	153.496	6.667
16:01	9.767	9.681	7.940	149.729	7.869
16:02	10.528	8.758	12.624	150.559	9.225
16:03	10.205	9.184	12.733	145.963	7.633
16:04	10.082	9.346	13.657	143.883	8.422

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 16:06
Stop Time 16:13

CALIBRATION BIAS 10

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.098	0.041	-0.172	0.526	-0.173
C_{uf} Upscale gas	5.991	13.957	41.144	226.805	48.840
Analyzer Calibration Error Reponses (C_{DIr})					
C_{oce} Zero gas	0.014	0.016	-0.137	0.122	0.146
C_{mce} Upscale gas	6.149	14.147	43.254	221.172	49.151
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.6%	0.2%	0.0%	0.1%	-0.3%
Upscale gas	-1.1%	-1.3%	-2.3%	1.2%	-0.3%
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_{ol} Zero gas	0.092	0.044	-0.092	0.651	-0.185
C_{ul} Upscale gas	5.976	13.971	41.355	226.675	48.678
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.0%
Upscale gas	0.1%	-0.1%	-0.2%	0.0%	0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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16:06:02	0.297	0.167	3.246	70.306	14.268
16:06:17	0.171	0.073	1.133	19.886	28.094
16:06:32	0.136	0.060	0.425	1.978	40.233
16:06:47	0.118	0.052	0.083	0.977	46.670
16:07:02	0.109	0.046	-0.045	0.790	48.645
16:07:17	0.098	0.043	-0.130	0.619	48.946
16:07:32	0.090	0.041	-0.176	0.521	48.930
16:07:47	0.106	0.039	-0.210	0.439	48.898
16:08:02	6.063	0.031	9.146	8.099	48.067
16:08:17	9.762	0.022	31.878	85.258	39.332
16:08:32	10.000	0.019	38.462	166.040	22.901
16:08:47	10.043	0.017	40.179	224.160	8.723
16:09:02	10.048	0.013	40.855	226.390	2.219
16:09:17	10.051	0.015	41.182	226.870	0.268
16:09:32	10.055	0.017	41.395	227.155	-0.117
16:09:47	9.579	3.014	39.837	227.538	-0.205
16:10:02	6.613	12.665	17.138	214.554	-0.197
16:10:17	6.028	13.911	4.479	86.431	-0.026
16:10:32	5.982	13.976	1.771	20.033	0.171
16:10:47	5.962	13.983	0.965	2.116	0.210
16:11:02	5.957	13.993	0.568	1.205	0.269
16:11:17	5.951	13.827	0.373	0.920	0.269
16:11:32	2.120	4.642	0.220	3.598	0.282
16:11:47	0.188	1.202	0.228	11.535	0.288

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 2

March 16, 2010
Start Time 16:06
Stop Time 16:13

CALIBRATION BIAS 10

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 2 %dv	FF Outlet 2 %dv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv	FF Outlet 2 ppmdv
16:12:02	0.058	1.032	0.340	26.064	0.235
16:12:17	0.043	1.021	0.449	37.257	0.179
16:12:32	0.039	1.019	0.495	42.141	0.077
16:12:47	0.038	1.013	0.501	43.867	0.036
16:13:02	0.036	1.013	0.531	44.648	0.047
16:13:17	0.037	1.012	0.521	45.088	0.041
16:13:32	0.037	1.012	0.560	45.413	0.033
16:13:47	0.031	1.013	0.549	45.600	0.032

NOX Conversion Efficiency
NO2 = 49.7 ppm
Efficiency = 91.3%

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

Date: **March 17, 2010**
Start Time 6:19
Stop Time 6:45
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Instrument Information					
Manufacturer:	Servomex	Servomex	Rsrch	T.E.I.	T.E.I.
Model:	1415C	1420C	921NMP	42i-HL	48C
Detection:	NDIR	Paramagn.	UV Photo.	Chemilumi.	GFC/NDIR
Asset or Serial No:	204217	205832	205184	205956	205194
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Response Time (seconds)					
	45	45	45	45	45
Manufacturer Certified Cylinder Value (C_V)					
Zero	0.000	0.000	0.000	0.000	0.000
Low	5.910	6.010	44.900	225.000	48.200
Mid					
High	13.900	14.100	89.900	453.000	98.500
Actual gas to be used for bias checks					
	5.910	14.100	44.900	225.000	48.200
Cylinder ID					
Zero	AAL14589	AAL14589	AAL14589	AAL14589	AAL14589
Low	ALM033730	ALM046255	ALM010885	ALM010885	EB0011451
Mid					
High	ALM046255	ALM033730	CC124384	CC124384	ALM054744
Analyzer Calibration Response (C_{Dir})					
Zero	0.011	0.012	-0.008	0.114	0.002
Low	6.036	6.059	43.404	225.690	49.146
Mid					
High	13.957	14.165	90.011	453.643	98.890
Analyzer Calibration Error (ACE) (Limit = 2%, Method 25A limit = 5% of gas val					
Zero	0.1%	0.1%	0.0%	0.0%	0.0%
Low	0.9%	0.3%	-1.7%	0.2%	1.0%
Mid	N/A	N/A	N/A	N/A	N/A
High	0.4%	0.5%	0.1%	0.1%	0.4%
Calibration Error Status					
Zero	OK	OK	OK	OK	OK
Low	OK	OK	OK	OK	OK
Mid	N/A	N/A	N/A	N/A	N/A
High	OK	OK	OK	OK	OK

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06:19:56	-0.079	0.788	-0.368	0.521	0.174
06:19:56	-0.079	0.788	-0.368	0.521	0.174
06:20:11	-0.081	0.077	-0.358	0.130	0.181
06:20:26	-0.078	0.019	-0.369	0.114	0.185
06:20:41	-0.078	0.012	-0.366	0.089	0.098
06:20:56	-0.081	0.012	-0.361	0.122	0.007
06:21:11	-0.080	0.013	-0.114	0.114	0.015
06:21:26	-0.079	0.012	-0.029	0.114	0.006
06:21:41	-0.081	0.012	-0.005	0.114	-0.010

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

Date: **March 17, 2010**
Start Time 6:19
Stop Time 6:45
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
06:21:56	-0.074	0.012	0.010	0.114	0.008
06:22:11	-0.077	0.723	0.031	0.114	-0.002
06:22:26	0.228	11.400	0.021	0.122	-0.003
06:22:41	0.499	14.005	-0.005	0.195	-0.008
06:22:56	0.510	14.153	-0.003	0.122	0.065
06:23:11	0.507	14.168	0.000	0.114	0.150
06:23:26	0.505	14.173	-0.014	0.122	0.174
06:23:41	0.586	12.054	0.002	0.130	0.171
06:23:56	1.780	6.675	-0.070	0.244	0.171
06:24:11	1.810	6.082	-0.023	0.244	0.176
06:24:26	1.767	6.049	0.008	0.195	0.090
06:24:41	1.764	6.046	0.013	0.122	-0.057
06:24:56	1.757	6.043	0.016	0.098	-0.114
06:25:11	1.245	2.945	18.396	0.122	-0.140
06:25:26	0.960	0.203	69.481	82.214	-0.163
06:25:41	0.927	0.018	85.351	357.940	-0.226
06:25:56	0.910	0.008	88.221	447.880	-0.280
06:26:11	0.908	0.005	88.894	464.599	-0.329
06:26:26	0.916	0.002	89.140	466.137	-0.360
06:26:41	1.005	0.001	89.815	462.914	-0.366
06:26:56	0.956	0.000	90.053	453.423	-0.405
06:27:11	0.969	-0.001	90.165	453.618	-0.415
06:27:26	0.973	-0.002	90.256	453.887	-0.415
06:27:41	0.908	0.210	71.694	453.447	-0.392
06:27:56	0.956	0.021	35.795	441.026	-0.343
06:28:11	0.983	-0.009	40.461	351.551	-0.342
06:28:26	0.985	-0.012	42.292	225.828	-0.365
06:28:41	0.996	-0.012	42.997	225.649	-0.391
06:28:56	0.985	-0.012	43.257	225.592	-0.415
06:29:11	0.951	-0.014	43.359	225.454	-0.420
06:29:26	0.960	-0.013	43.392	225.283	-0.415
06:29:41	0.969	-0.014	43.460	225.275	-0.415
06:29:56	0.934	0.024	43.476	225.226	-0.420
06:30:11	0.273	0.206	23.573	225.267	0.814
06:30:26	-0.056	0.020	3.963	183.549	10.761
06:30:41	-0.071	0.007	0.835	42.947	36.392
06:30:56	-0.063	0.008	0.405	5.568	65.747
06:31:11	-0.065	0.008	0.241	1.180	86.981
06:31:26	-0.070	0.008	0.189	0.855	95.142
06:31:41	-0.063	0.007	0.177	0.855	97.537
06:31:56	-0.066	0.006	0.142	0.831	98.221
06:32:11	-0.070	0.008	0.151	0.839	98.763
06:32:26	-0.062	0.008	0.117	0.676	98.917
06:32:41	-0.067	0.007	0.122	0.529	98.989
06:32:56	-0.069	0.113	0.164	0.537	98.883
06:33:11	-0.062	0.078	0.202	0.790	96.902
06:33:26	-0.071	0.012	0.182	0.928	87.160
06:33:41	-0.069	0.009	0.171	0.529	70.794
06:33:56	-0.066	0.008	0.121	0.244	58.141
06:34:11	-0.072	0.007	0.124	0.244	51.282
06:34:26	-0.067	0.005	0.101	0.244	49.394
06:34:41	-0.068	0.007	0.085	0.244	49.125

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

Date: **March 17, 2010**
Start Time 6:19
Stop Time 6:45
CALIBRATION ERROR

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
06:34:56	-0.072	0.007	0.103	0.187	49.166
06:35:11	-0.062	0.006	0.122	0.122	49.148
06:35:26	-0.020	0.800	0.117	0.122	49.042
06:35:41	1.483	5.300	0.101	0.122	47.217
06:35:56	2.013	5.869	0.090	0.122	37.407
06:36:11	3.814	1.553	0.208	0.106	22.014
06:36:26	0.468	0.074	0.225	0.057	10.537
06:36:41	0.139	-0.003	0.140	0.171	3.888
06:36:56	0.021	-0.001	0.111	0.065	1.128
06:37:11	0.015	-0.002	0.098	0.049	0.138
06:37:26	0.013	-0.003	0.096	0.081	-0.016
06:37:41	0.004	-0.009	0.109	0.033	-0.091
06:37:56	0.033	0.148	0.120	0.089	-0.050
06:38:11	10.213	4.630	0.114	0.089	-0.055
06:38:26	15.209	5.947	0.083	0.081	-0.163
06:38:41	15.290	5.998	0.050	0.049	-0.270
06:38:56	14.255	6.013	0.104	0.089	-0.231
06:39:11	13.952	6.030	0.103	0.081	-0.215
06:39:26	13.957	6.032	0.100	0.122	-0.194
06:39:41	13.962	6.032	0.106	0.106	-0.202
06:39:56	12.729	7.865	0.135	0.114	-0.213
06:40:11	6.936	13.464	0.233	0.220	-0.107
06:40:26	6.085	14.132	0.205	0.317	0.116
06:40:41	6.021	14.164	0.157	0.146	0.182
06:40:56	6.002	14.156	0.148	0.065	0.187
06:41:11	5.492	12.079	0.132	0.114	0.171
06:41:26	0.978	2.567	0.280	0.887	0.169
06:41:41	0.101	1.103	0.661	4.412	0.142
06:41:56	0.031	1.024	0.913	24.623	0.026
06:42:11	0.020	1.004	0.983	36.874	-0.028
06:42:26	0.016	1.011	1.011	42.165	-0.075
06:42:41	0.006	0.983	1.056	43.460	-0.091
06:42:56	0.013	1.004	1.063	44.054	-0.072
06:43:11	0.004	0.996	1.089	44.306	-0.057
06:43:26	0.006	1.000	1.105	44.542	-0.046
06:43:41	0.000	0.994	1.153	44.738	-0.026
06:43:56	0.004	1.005	1.167	44.844	-0.036
06:44:11	0.003	0.999	1.164	45.031	-0.034
06:44:26	0.006	1.003	1.145	45.185	-0.031
06:44:41	0.004	1.005	1.137	45.307	-0.041
06:44:56	0.006	1.003	1.175	45.356	-0.044
06:45:11	0.006	1.003	1.174	45.478	-0.050
06:45:26	0.002	1.005	1.184	45.519	-0.072
06:45:41	0.006	1.004	1.199	45.616	-0.052

NOX Conversion Efficienc
NO2 = 49.7 ppm
Efficiency = 91.6%

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 6:50
Stop Time 6:55
CALIBRATION BIAS 00

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.005	0.045	0.023	0.244	-0.270
C_{uf} Upscale gas	5.932	13.995	41.765	221.848	49.055
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.0%	0.2%	0.0%	0.0%	-0.3%
Upscale gas	-0.7%	-1.2%	-1.8%	-0.8%	-0.1%
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	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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06:50:23	0.007	0.054	0.013	0.244	49.060
06:50:38	0.005	0.047	0.014	0.244	49.063
06:50:53	0.004	0.046	0.031	0.244	49.042
06:51:08	0.006	0.042	0.024	0.244	49.066
06:51:23	0.006	0.042	0.008	0.244	49.055
06:51:38	2.919	0.039	3.007	0.244	48.708
06:51:53	9.195	0.020	25.249	54.343	44.402
06:52:08	9.809	0.018	36.861	129.752	30.326
06:52:23	9.872	0.017	39.531	209.711	15.496
06:52:38	9.891	0.013	40.560	220.513	5.147
06:52:53	9.901	0.007	41.187	221.563	1.229
06:53:08	9.901	0.005	41.530	221.775	-0.023
06:53:23	9.917	0.008	41.783	221.758	-0.252
06:53:38	9.915	0.001	41.981	222.011	-0.280
06:53:53	9.653	2.090	40.993	221.986	-0.279
06:54:08	6.770	12.135	18.728	195.857	-0.259
06:54:23	6.016	13.871	5.083	127.977	-0.116
06:54:38	5.936	13.972	2.343	36.215	0.150
06:54:53	5.932	14.000	1.535	3.166	0.181
06:55:08	5.928	14.012	1.060	1.164	0.218
06:55:23	5.928	14.018	0.816	0.871	0.249

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 7:10
Stop time 7:37
REFERENCE METHOD RUN 1

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.005	0.045	0.023	0.244	-0.270
C_{ui}	Initial upscale	5.932	13.995	41.765	221.848	49.055
C_{of}	Final zero	0.369	0.037	0.369	0.529	-0.167
C_{uf}	Final upscale	5.958	13.995	41.744	220.838	48.919
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.791	8.361	9.978	163.258	13.767
C_{Gas}	**Bias adjusted**	**10.884**	**8.407**	**10.568**	**165.852**	**13.700**

Clock Time (at end of sample period)

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07:11	10.383	8.803	5.862	172.127	20.904
07:12	11.005	8.133	5.620	170.275	20.826
07:13	10.502	8.683	5.363	176.459	16.651
07:14	11.272	7.812	6.777	172.218	14.731
07:15	10.766	8.374	7.039	171.583	13.492
07:16	10.727	8.401	6.676	161.249	12.198
07:17	11.169	7.949	8.304	169.369	14.465
07:18	10.767	8.395	8.530	164.318	13.800
07:19	11.088	7.983	8.859	157.033	16.328
07:20	10.886	8.296	8.359	168.390	15.080
07:21	10.728	8.384	8.702	159.801	10.785
07:22	11.211	7.901	15.474	172.542	13.390
07:23	10.924	8.198	8.288	173.663	9.350
07:24	10.975	8.102	9.358	163.028	9.309
07:25	10.863	8.278	13.352	168.360	9.176
07:26	10.728	8.410	12.705	167.302	8.735
07:27	10.663	8.476	11.284	167.363	11.310
07:28	10.774	8.369	12.630	163.858	10.410
07:29	10.770	8.391	13.566	164.626	10.374
07:30	10.643	8.510	11.563	155.664	11.268
07:31	10.615	8.570	11.044	151.551	14.505
07:32	10.647	8.548	10.944	150.501	18.674
07:33	10.559	8.625	10.347	154.512	15.823
07:34	10.579	8.674	14.118	155.617	15.821
07:35	10.720	8.471	11.870	149.434	12.735
07:36	10.680	8.543	11.754	153.443	15.853
07:37	10.719	8.468	11.009	153.685	15.722

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 7:38
Stop Time 7:43
CALIBRATION BIAS 01

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.369	0.037	0.369	0.529	-0.167
C_{uf} Upscale gas	5.958	13.995	41.744	220.838	48.919
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	2.6%	0.2%	0.4%	0.1%	-0.2%
Upscale gas	-0.6%	-1.2%	-1.8%	-1.1%	-0.2%
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	0.005	0.045	0.023	0.244	-0.270
C_{ui} Upscale gas	5.932	13.995	41.765	221.848	49.055
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	2.6%	-0.1%	0.4%	0.1%	0.1%
Upscale gas	0.2%	0.0%	0.0%	-0.2%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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07:38:37	0.569	0.388	3.495	86.748	16.376
07:38:52	0.175	0.080	1.520	34.481	24.892
07:39:07	0.123	0.055	0.816	3.712	37.302
07:39:22	0.099	0.046	0.490	1.400	45.054
07:39:37	0.086	0.040	0.358	0.847	48.098
07:39:52	0.078	0.037	0.283	0.806	48.869
07:40:07	0.066	0.033	0.238	0.545	48.925
07:40:22	0.062	0.031	0.198	0.570	48.962
07:40:37	0.980	0.045	0.672	0.472	48.987
07:40:52	8.505	0.020	20.220	9.793	46.862
07:41:07	9.821	0.011	36.931	65.625	34.608
07:41:22	9.908	0.010	40.357	195.157	17.353
07:41:37	9.936	0.007	41.346	218.820	5.903
07:41:52	9.955	0.007	41.742	220.627	1.221
07:42:07	9.965	0.007	42.142	220.887	-0.028
07:42:22	9.273	3.947	39.235	221.001	-0.254
07:42:37	6.423	13.074	13.639	220.033	-0.220
07:42:52	6.014	13.936	3.691	123.452	-0.034
07:43:07	5.971	13.985	1.701	10.696	0.145
07:43:22	5.958	13.997	1.076	2.816	0.181
07:43:37	5.945	14.003	0.777	1.107	0.223

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 7:45
Stop time 8:12
REFERENCE METHOD RUN 2

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.369	0.037	0.369	0.529	-0.167
C_{ui}	Initial upscale	5.958	13.995	41.744	220.838	48.919
C_{of}	Final zero	0.070	0.030	0.210	0.714	-0.268
C_{uf}	Final upscale	5.977	13.974	42.363	220.285	48.841
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.808	8.380	13.503	163.727	13.315
C_{Gas}	**Bias adjusted**	**10.887**	**8.436**	**14.205**	**166.858**	**13.286**

Clock Time (at end of sample period)

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07:46	10.599	8.617	10.551	168.616	12.818
07:47	10.805	8.386	10.713	159.327	15.742
07:48	10.513	8.741	11.496	162.646	17.557
07:49	10.739	8.463	13.712	164.422	19.680
07:50	10.557	8.653	15.243	165.584	17.796
07:51	10.762	8.474	14.130	169.807	17.781
07:52	10.451	8.779	11.239	171.251	17.174
07:53	10.690	8.509	9.320	165.745	17.293
07:54	10.810	8.415	10.661	168.091	15.784
07:55	10.771	8.399	14.954	164.780	13.080
07:56	10.229	9.012	11.455	163.030	12.046
07:57	10.613	8.543	8.956	160.820	12.097
07:58	10.846	8.276	7.958	164.778	10.163
07:59	11.032	8.134	11.308	166.695	10.125
08:00	10.821	8.285	10.087	157.770	10.214
08:01	11.233	7.944	10.039	160.553	11.956
08:02	10.574	8.551	10.775	162.135	9.610
08:03	11.362	7.765	17.631	161.791	14.710
08:04	10.867	8.341	19.118	155.590	12.713
08:05	11.266	7.881	24.144	149.585	12.541
08:06	11.028	8.185	23.217	157.491	12.539
08:07	10.864	8.328	18.392	160.110	10.864
08:08	10.892	8.337	15.005	167.452	12.255
08:09	11.172	7.998	13.271	167.572	10.861
08:10	10.772	8.411	13.521	171.355	9.934
08:11	10.862	8.348	13.306	166.475	11.753
08:12	10.678	8.494	14.368	167.153	10.420

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 8:13
Stop Time 8:18

CALIBRATION BIAS 02

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.070	0.030	0.210	0.714	-0.268
C_{uf} Upscale gas	5.977	13.974	42.363	220.285	48.841
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	0.2%	0.1%	-0.3%
Upscale gas	-0.4%	-1.4%	-1.2%	-1.2%	-0.3%
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	0.369	0.037	0.369	0.529	-0.167
C_{ui} Upscale gas	5.958	13.995	41.744	220.838	48.919
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	-2.2%	0.0%	-0.2%	0.0%	-0.1%
Upscale gas	0.1%	-0.1%	0.7%	-0.1%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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08:13:11	0.372	0.221	3.261	100.211	17.135
08:13:26	0.161	0.067	1.267	13.464	27.593
08:13:41	0.118	0.051	0.679	3.215	39.189
08:13:56	0.102	0.044	0.445	1.237	45.701
08:14:11	0.089	0.038	0.311	0.863	48.388
08:14:26	0.077	0.036	0.239	0.733	48.884
08:14:41	0.071	0.033	0.200	0.733	48.861
08:14:56	0.062	0.022	0.190	0.676	48.850
08:15:11	1.759	0.030	1.836	0.717	48.812
08:15:26	8.859	0.006	24.822	38.796	45.110
08:15:41	9.828	0.007	38.227	146.715	32.129
08:15:56	9.905	0.005	40.908	203.622	15.976
08:16:11	9.943	0.003	41.799	218.950	5.128
08:16:26	9.951	0.004	42.180	219.967	1.109
08:16:41	9.965	0.002	42.379	220.163	-0.075
08:16:56	9.967	0.018	42.530	220.285	-0.294
08:17:11	8.170	8.212	31.994	220.407	-0.303
08:17:26	6.181	13.604	8.055	174.400	-0.208
08:17:41	5.998	13.947	2.558	43.118	0.013
08:17:56	5.971	13.980	1.359	7.725	0.140
08:18:11	5.961	13.995	0.938	1.644	0.153

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 8:20
Stop time 8:47

REFERENCE METHOD RUN 3

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.070	0.030	0.210	0.714	-0.268
C_{ui}	Initial upscale	5.977	13.974	42.363	220.285	48.841
C_{of}	Final zero	0.070	0.031	0.186	0.690	-0.338
C_{uf}	Final upscale	5.997	13.970	42.419	219.506	48.629
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.803	8.363	10.952	166.855	10.325
C_{Gas}	**Bias adjusted**	**10.721**	**8.428**	**11.444**	**170.554**	**10.446**

Clock Time (at end of sample period)

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08:21	10.254	8.932	13.790	158.812	11.066
08:22	9.965	9.294	13.497	145.194	12.293
08:23	10.697	8.394	13.722	147.352	12.175
08:24	11.000	8.126	13.524	154.219	11.108
08:25	10.752	8.353	11.326	159.127	9.691
08:26	10.411	8.758	9.281	167.137	10.465
08:27	10.567	8.540	9.655	162.583	10.734
08:28	10.930	8.226	10.639	166.455	11.031
08:29	11.284	7.812	10.334	169.214	9.917
08:30	10.543	8.606	9.710	170.067	7.569
08:31	10.660	8.545	10.540	163.702	9.456
08:32	10.615	8.539	9.038	162.202	10.882
08:33	10.968	8.167	8.718	170.220	10.837
08:34	10.860	8.281	8.411	173.040	8.900
08:35	10.820	8.345	8.831	169.766	7.791
08:36	10.612	8.526	8.576	173.016	7.392
08:37	11.462	7.674	8.674	176.601	9.442
08:38	10.766	8.410	7.446	171.260	7.662
08:39	11.047	8.157	13.607	167.782	10.419
08:40	10.725	8.453	8.033	171.184	9.463
08:41	10.976	8.222	6.407	176.762	9.813
08:42	10.645	8.549	9.596	177.485	10.493
08:43	10.625	8.593	11.976	174.027	11.242
08:44	10.912	8.278	13.871	170.480	13.431
08:45	11.403	7.765	14.724	166.260	13.483
08:46	11.101	8.127	15.146	170.598	11.210
08:47	11.075	8.139	16.637	170.533	10.801

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 8:48
Stop Time 8:53

CALIBRATION BIAS 03

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.070	0.031	0.186	0.690	-0.338
C_{uf} Upscale gas	5.997	13.970	42.419	219.506	48.629
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	0.2%	0.1%	-0.3%
Upscale gas	-0.3%	-1.4%	-1.1%	-1.4%	-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_{ol} Zero gas	0.070	0.030	0.210	0.714	-0.268
C_{ul} Upscale gas	5.977	13.974	42.363	220.285	48.841
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%	0.0%	0.1%	-0.2%	-0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 090741

08:48:31	0.122	0.047	0.645	2.792	39.320
08:48:46	0.102	0.041	0.384	1.050	45.682
08:49:01	0.085	0.035	0.264	0.879	48.210
08:49:16	0.078	0.031	0.194	0.733	48.648
08:49:31	0.071	0.032	0.203	0.717	48.617
08:49:46	0.061	0.029	0.160	0.619	48.713
08:50:01	2.591	0.027	3.432	1.238	48.557
08:50:16	9.156	0.007	28.365	13.854	44.355
08:50:31	9.852	0.006	39.044	106.097	29.885
08:50:46	9.930	0.005	41.049	213.513	14.168
08:51:01	9.953	0.004	41.675	218.039	4.223
08:51:16	9.959	-0.021	42.046	219.007	0.721
08:51:31	9.965	0.000	42.305	219.292	-0.186
08:51:46	9.967	0.000	42.426	219.617	-0.327
08:52:01	9.969	-0.003	42.525	219.609	-0.344
08:52:16	8.932	5.358	36.985	219.829	-0.342
08:52:31	6.337	13.261	11.046	165.600	-0.311
08:52:46	6.032	13.934	3.028	79.276	-0.135
08:53:01	5.985	13.979	1.480	14.099	0.081
08:53:16	5.973	13.998	1.022	2.336	0.142

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 8:54
Stop time 9:21
REFERENCE METHOD RUN 4

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.070	0.031	0.186	0.690	-0.338
C_{ui}	Initial upscale	5.997	13.970	42.419	219.506	48.629
C_{of}	Final zero	0.070	0.031	0.000	0.728	-0.228
C_{uf}	Final upscale	5.983	13.960	41.854	219.153	48.790
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	11.033	8.154	9.535	173.560	8.673
C_{Gas}	**Bias adjusted**	**10.945**	**8.220**	**10.083**	**177.895**	**8.811**

Clock Time (at end of sample period)

040710 090741					
08:55	10.930	8.251	13.042	169.955	8.300
08:56	11.530	7.620	13.031	169.988	8.902
08:57	10.581	8.631	10.516	172.471	7.508
08:58	10.545	8.702	14.353	169.849	8.894
08:59	11.088	8.113	14.815	166.148	8.768
09:00	10.669	8.532	11.468	165.733	8.965
09:01	10.856	8.367	12.567	171.475	10.428
09:02	10.499	8.704	10.729	174.229	9.930
09:03	10.628	8.571	9.002	174.446	10.278
09:04	11.072	8.103	9.282	172.971	10.982
09:05	10.613	8.586	10.142	173.291	10.339
09:06	10.552	8.665	9.558	170.429	9.723
09:07	10.761	8.438	10.119	174.552	9.410
09:08	11.121	8.083	14.538	180.635	8.514
09:09	10.706	8.535	10.004	178.043	8.466
09:10	10.964	8.253	7.902	176.447	8.287
09:11	11.514	7.591	7.713	186.434	8.715
09:12	12.026	7.071	7.269	190.425	8.067
09:13	11.212	7.952	5.203	178.758	6.252
09:14	11.198	7.933	4.554	171.701	6.428
09:15	11.375	7.808	4.347	176.097	7.505
09:16	10.976	8.222	4.056	166.945	7.357
09:17	11.751	7.393	8.709	172.782	9.586
09:18	11.094	8.127	10.373	174.782	6.978
09:19	11.765	7.355	9.325	169.011	8.320
09:20	10.793	8.436	7.649	170.814	8.540
09:21	11.084	8.120	7.169	167.709	8.724

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 9:22
Stop Time 9:27

CALIBRATION BIAS 04

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.070	0.031	0.000	0.728	-0.228
C_{uf} Upscale gas	5.983	13.960	41.854	219.153	48.790
Analyzer Callbration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Perce	3				
Zero gas	0.4%	0.1%	0.0%	0.1%	-0.2%
Upscale gas	-0.4%	-1.5%	-1.7%	-1.4%	-0.4%
System Bias Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK
Previous System Response to Callbration Gases (C_S)					
C_{ol} Zero gas	0.070	0.031	0.186	0.690	-0.338
C_{ul} Upscale gas	5.997	13.970	42.419	219.506	48.629
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.2%	0.0%	0.1%
Upscale gas	-0.1%	-0.1%	-0.6%	-0.1%	0.2%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 090741

09:22:54	0.146	0.054	0.596	11.380	31.271
09:23:09	0.116	0.043	0.282	1.831	42.302
09:23:24	0.098	0.037	0.109	1.018	47.053
09:23:39	0.089	0.033	0.055	0.904	48.586
09:23:54	0.071	0.022	0.029	0.741	48.824
09:24:09	0.067	0.018	0.006	0.709	48.830
09:24:24	0.072	0.054	-0.036	0.733	48.840
09:24:39	2.294	0.209	1.968	0.733	48.698
09:24:54	9.050	0.019	26.190	21.343	45.338
09:25:09	9.852	0.006	38.357	88.547	31.062
09:25:24	9.923	0.003	40.681	207.945	15.342
09:25:39	9.940	-0.004	41.539	218.014	4.483
09:25:54	9.963	0.002	41.910	219.593	0.826
09:26:09	9.968	0.000	42.115	219.853	-0.194
09:26:24	9.282	3.922	39.363	219.935	-0.301
09:26:39	6.442	13.025	13.931	220.032	-0.280
09:26:54	6.020	13.926	3.350	99.227	-0.103
09:27:09	5.973	13.969	1.469	13.585	0.136
09:27:24	5.957	13.985	0.941	2.410	0.155

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 9:28
Stop time 9:55
REFERENCE METHOD RUN 5

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.070	0.031	0.000	0.728	-0.228
C_{ui}	Initial upscale	5.983	13.960	41.854	219.153	48.790
C_{of}	Final zero	0.072	0.032	0.011	0.768	-0.315
C_{uf}	Final upscale	5.989	13.958	41.890	219.213	48.660
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.629	8.605	5.651	167.019	12.286
C_{Gas}	**Bias adjusted**	**10.549**	**8.680**	**6.055**	**171.268**	**12.354**

Clock Time (at end of sample period)

040710 090741

09:29	10.736	8.508	7.429	174.477	11.169
09:30	10.622	8.619	8.221	169.701	12.269
09:31	10.740	8.519	8.490	172.882	14.572
09:32	10.323	8.985	7.555	178.638	14.230
09:33	10.647	8.609	7.389	169.921	14.156
09:34	10.803	8.456	7.250	179.937	14.488
09:35	10.764	8.492	6.431	171.085	11.946
09:36	10.404	8.841	5.937	161.042	11.549
09:37	10.530	8.715	6.989	164.072	14.485
09:38	10.538	8.686	7.793	166.854	15.416
09:39	10.309	8.960	6.576	164.949	14.221
09:40	10.317	8.958	5.615	167.249	15.268
09:41	10.727	8.498	5.432	169.992	13.559
09:42	10.879	8.344	5.410	169.701	12.519
09:43	11.218	7.969	5.110	168.350	11.032
09:44	10.383	8.824	4.206	167.381	10.979
09:45	10.779	8.466	4.257	169.241	11.159
09:46	10.567	8.626	4.483	165.865	11.107
09:47	10.683	8.540	4.754	162.959	11.434
09:48	10.810	8.393	4.549	169.113	10.385
09:49	10.664	8.542	4.327	167.611	10.564
09:50	10.622	8.565	4.100	160.759	10.007
09:51	10.407	8.846	4.001	163.492	10.568
09:52	10.845	8.364	4.052	162.932	11.077
09:53	10.810	8.414	4.225	165.562	10.205
09:54	10.461	8.768	3.978	153.604	10.852
09:55	10.403	8.834	4.018	152.151	12.513

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 9:56
Stop Time 10:01
CALIBRATION BIAS 05

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.072	0.032	0.011	0.768	-0.315
C_{uf} Upscale gas	5.989	13.958	41.890	219.213	48.660
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	0.0%	0.1%	-0.3%
Upscale gas	-0.3%	-1.5%	-1.7%	-1.4%	-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	0.070	0.031	0.000	0.728	-0.228
C_{ui} Upscale gas	5.983	13.960	41.854	219.153	48.790
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	-0.1%
Upscale gas	0.0%	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

040710 090741

09:56:53	0.160	0.065	0.655	24.314	27.600
09:57:08	0.118	0.049	0.262	2.475	39.337
09:57:23	0.095	0.043	0.104	1.205	45.587
09:57:38	0.082	0.035	0.016	0.912	48.168
09:57:53	0.071	0.031	0.005	0.733	48.567
09:58:08	0.062	0.030	0.011	0.660	48.690
09:58:23	0.369	0.031	0.148	0.611	48.725
09:58:38	7.586	0.014	17.604	0.611	46.813
09:58:53	9.761	0.006	36.383	101.929	37.400
09:59:08	9.904	0.006	40.029	197.818	19.380
09:59:23	9.937	0.003	40.951	216.231	7.509
09:59:38	9.953	0.003	41.556	218.844	1.563
09:59:53	9.962	0.001	41.952	219.300	0.002
10:00:08	9.963	0.000	42.162	219.495	-0.311
10:00:23	9.498	3.021	40.205	219.723	-0.342
10:00:38	6.583	12.674	15.241	219.902	-0.293
10:00:53	6.029	13.906	3.731	112.829	-0.187
10:01:08	5.975	13.975	1.742	14.547	0.044
10:01:23	5.962	13.992	1.120	3.069	0.147

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 10:02
Stop time 10:29

REFERENCE METHOD RUN 6

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{ci}	Initial zero	0.072	0.032	0.011	0.768	-0.315
C_{ul}	Initial upscale	5.989	13.958	41.890	219.213	48.660
C_{of}	Final zero	0.066	0.017	0.279	0.782	0.056
C_{uf}	Final upscale	6.002	14.023	41.750	219.018	48.558
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.680	8.514	3.963	171.247	12.106
C_{Gas}	**Bias adjusted**	**10.581**	**8.571**	**4.113**	**175.671**	**12.100**

Clock Time (at end of sample period)

040710 090741

10:03	11.411	7.729	7.697	177.949	15.040
10:04	10.657	8.554	5.267	176.911	11.849
10:05	10.765	8.471	4.441	171.799	12.819
10:06	10.531	8.668	4.141	167.875	11.815
10:07	10.929	8.271	4.932	174.518	12.727
10:08	10.856	8.362	5.213	176.261	12.208
10:09	10.606	8.587	4.380	167.703	11.934
10:10	10.447	8.737	4.029	168.002	12.800
10:11	10.968	8.213	4.377	173.917	13.274
10:12	10.765	8.396	5.559	165.181	10.679
10:13	10.752	8.404	4.612	167.359	11.168
10:14	10.704	8.472	3.856	159.805	11.077
10:15	10.607	8.605	3.651	158.763	11.235
10:16	10.201	9.061	3.567	154.784	11.066
10:17	10.518	8.697	4.011	158.494	12.963
10:18	10.782	8.429	4.023	162.379	15.040
10:19	10.437	8.808	4.162	171.048	14.862
10:20	10.939	8.210	3.994	173.126	14.068
10:21	10.699	8.446	3.416	177.458	12.836
10:22	10.417	8.746	2.886	163.307	11.225
10:23	10.293	8.917	2.542	165.716	10.871
10:24	10.361	8.822	2.459	165.232	10.863
10:25	11.042	8.150	2.917	180.342	11.382
10:26	10.784	8.437	3.032	188.710	10.218
10:27	10.330	8.880	2.691	183.694	10.174
10:28	10.714	8.458	2.618	184.764	11.856
10:29	10.845	8.357	2.521	188.561	10.802

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 10:30
Stop Time 10:35

CALIBRATION BIAS 06

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.066	0.017	0.279	0.782	0.056
C_{uf} Upscale gas	6.002	14.023	41.750	219.018	48.558
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.0%	0.3%	0.1%	0.1%
Upscale gas	-0.2%	-1.0%	-1.8%	-1.5%	-0.6%
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_{ol} Zero gas	0.072	0.032	0.011	0.768	-0.315
C_{ul} Upscale gas	5.989	13.958	41.890	219.213	48.660
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	-0.1%	0.3%	0.0%	0.4%
Upscale gas	0.1%	0.5%	-0.2%	0.0%	-0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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10:30:35	6.027	14.015	0.482	44.843	5.004
10:30:50	5.995	14.025	0.139	4.493	2.059
10:31:05	5.985	14.029	-0.005	1.188	0.684
10:31:20	5.983	14.029	-0.047	1.001	0.204
10:31:35	6.206	12.491	0.040	0.806	0.169
10:31:50	9.225	1.930	17.174	10.273	0.147
10:32:05	9.934	0.133	36.036	61.978	0.127
10:32:20	9.964	0.042	39.710	180.643	-0.107
10:32:35	9.972	0.027	40.931	216.443	-0.270
10:32:50	9.983	0.024	41.473	218.592	-0.353
10:33:05	9.980	0.018	41.783	219.081	-0.366
10:33:20	9.985	0.014	41.993	219.381	-0.366
10:33:35	8.545	0.020	40.300	219.585	-0.317
10:33:50	1.250	0.030	15.842	190.061	1.965
10:34:05	0.230	0.025	3.795	117.843	10.874
10:34:20	0.142	0.023	1.693	23.777	28.554
10:34:35	0.114	0.022	1.005	2.572	40.777
10:34:50	0.099	0.021	0.680	1.294	47.085
10:35:05	0.083	0.020	0.495	0.977	48.379
10:35:20	0.075	0.018	0.353	0.879	48.655
10:35:35	0.067	0.016	0.264	0.733	48.642
10:35:50	0.057	0.016	0.220	0.733	48.653

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 10:37
Stop time 11:04
REFERENCE METHOD RUN 7

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{ol}	Initial zero	0.066	0.017	0.279	0.782	0.056
C_{ul}	Initial upscale	6.002	14.023	41.750	219.018	48.558
C_{of}	Final zero	0.063	0.018	-0.040	0.700	-0.362
C_{uf}	Final upscale	5.969	14.005	42.116	218.991	48.609
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	11.067	8.069	2.276	169.202	11.891
C_{Gas}	**Bias adjusted**	**10.982**	**8.111**	**2.315**	**173.661**	**11.911**

Clock Time (at end of sample period)

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10:38	10.730	8.369	1.909	165.708	16.955
10:39	11.049	8.066	1.994	171.223	14.617
10:40	11.114	8.064	2.055	174.593	13.652
10:41	10.927	8.193	1.945	167.680	12.678
10:42	11.011	8.155	2.069	173.974	12.062
10:43	11.123	7.995	1.959	171.595	11.282
10:44	11.007	8.190	1.889	162.829	10.189
10:45	10.980	8.164	1.892	157.829	10.463
10:46	11.088	7.999	1.959	160.464	11.254
10:47	10.889	8.260	2.012	162.688	11.268
10:48	11.548	7.515	2.013	168.598	13.046
10:49	11.492	7.574	1.882	179.186	12.735
10:50	10.898	8.215	1.580	172.751	11.302
10:51	11.221	7.885	1.569	166.762	13.065
10:52	11.105	8.022	1.719	159.076	12.216
10:53	11.051	8.130	1.885	162.947	12.433
10:54	11.061	8.079	1.935	158.779	13.286
10:55	11.170	7.965	1.982	163.795	13.374
10:56	11.394	7.739	2.190	173.801	11.837
10:57	10.809	8.363	2.479	171.023	11.038
10:58	10.944	8.227	2.812	173.044	12.537
10:59	11.099	8.016	2.906	172.574	9.863
11:00	11.506	7.608	3.367	186.011	9.673
11:01	11.174	7.996	3.413	181.783	8.993
11:02	10.976	8.244	3.202	173.714	10.483
11:03	10.527	8.639	3.228	170.285	10.074
11:04	10.922	8.190	3.601	165.751	10.673

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 11:05
Stop Time 11:11
CALIBRATION BIAS 07

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.063	0.018	-0.040	0.700	-0.362
C_{uf} Upscale gas	5.969	14.005	42.116	218.991	48.609
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.0%	0.0%	0.1%	-0.4%
Upscale gas	-0.5%	-1.1%	-1.4%	-1.5%	-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_{ol} Zero gas	0.066	0.017	0.279	0.782	0.056
C_{ul} Upscale gas	6.002	14.023	41.750	219.018	48.558
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.4%	0.0%	-0.4%
Upscale gas	-0.2%	-0.1%	0.4%	0.0%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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11:05:23	0.157	0.045	0.716	31.095	27.064
11:05:38	0.106	0.028	0.308	6.537	39.065
11:05:53	0.090	0.024	0.103	1.302	45.327
11:06:08	0.078	0.021	0.005	0.912	48.114
11:06:23	0.067	0.018	-0.029	0.749	48.547
11:06:38	0.063	0.018	-0.046	0.733	48.629
11:06:53	0.058	0.018	-0.044	0.619	48.651
11:07:08	5.288	0.015	8.057	0.904	47.868
11:07:23	9.639	-0.002	32.363	27.017	41.320
11:07:38	9.895	-0.005	39.038	165.934	24.420
11:07:53	9.941	-0.005	40.679	214.025	10.564
11:08:08	9.957	-0.006	41.436	218.315	2.628
11:08:23	9.961	-0.006	41.786	218.770	0.331
11:08:38	9.964	-0.007	41.980	218.819	-0.251
11:08:53	9.971	-0.006	42.133	219.015	-0.332
11:09:08	9.973	-0.006	42.235	219.137	-0.371
11:09:23	8.654	6.400	36.044	217.534	-0.384
11:10:17	5.985	13.988	1.164	3.638	0.119
11:10:32	5.975	14.000	0.840	1.367	0.122
11:10:47	5.967	14.006	0.602	1.034	0.122
11:11:02	5.964	14.011	0.472	0.871	0.122

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 11:13
Stop time 11:40

REFERENCE METHOD RUN 8

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.063	0.018	-0.040	0.700	-0.362
C_{ui}	Initial upscale	5.969	14.005	42.116	218.991	48.609
C_{of}	Final zero	0.066	0.020	-0.111	0.673	-0.051
C_{uf}	Final upscale	5.987	13.975	41.827	219.756	48.671
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	11.183	7.908	3.201	168.401	7.745
C_{Gas}	**Bias adjusted**	**11.112**	**7.962**	**3.499**	**172.556**	**7.846**

Clock Time (at end of sample period)

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11:14	11.215	7.883	3.127	172.717	10.499
11:15	11.168	7.918	2.832	173.374	9.216
11:16	11.142	7.956	2.635	171.251	8.352
11:17	10.926	8.150	2.382	168.276	6.881
11:18	11.694	7.331	2.442	181.838	6.058
11:19	11.273	7.803	2.462	177.466	5.676
11:20	11.188	7.854	2.495	164.786	6.502
11:21	11.163	7.937	2.722	162.135	6.985
11:22	11.227	7.829	3.127	160.881	6.776
11:23	11.370	7.705	2.764	173.154	7.615
11:24	11.001	8.084	2.031	174.542	6.305
11:25	11.972	7.023	2.760	171.158	14.951
11:26	11.296	7.782	2.863	176.184	7.989
11:27	10.896	8.152	2.580	169.467	5.475
11:28	11.619	7.405	2.881	173.539	6.591
11:29	11.105	8.027	2.920	169.287	5.869
11:30	10.983	8.089	2.840	161.144	5.919
11:31	11.715	7.347	3.588	167.916	7.567
11:32	11.097	8.020	3.272	161.174	6.028
11:33	10.828	8.262	3.112	152.243	7.116
11:34	11.549	7.546	3.838	162.442	9.358
11:35	10.750	8.415	3.822	164.416	8.574
11:36	11.701	7.347	4.497	166.264	10.118
11:37	11.088	8.072	4.559	175.336	9.040
11:38	10.242	8.952	4.113	164.654	6.857
11:39	10.987	8.181	4.873	164.515	8.585
11:40	10.747	8.454	4.899	166.673	8.207

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 11:41
Stop Time 11:46

CALIBRATION BIAS 08

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.066	0.020	-0.111	0.673	-0.051
C_{uf} Upscale gas	5.987	13.975	41.827	219.756	48.671
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)					
	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	-0.1%	0.1%	-0.1%
Upscale gas	-0.4%	-1.3%	-1.8%	-1.3%	-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	0.063	0.018	-0.040	0.700	-0.362
C_{ui} Upscale gas	5.969	14.005	42.116	218.991	48.609
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	-0.1%	0.0%	0.3%
Upscale gas	0.1%	-0.2%	-0.3%	0.2%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710_090741

11:41:43	0.113	0.041	0.101	1.595	39.280
11:41:58	0.100	0.037	-0.013	1.026	46.302
11:42:13	0.084	0.034	-0.080	0.831	48.228
11:42:28	0.072	0.022	-0.095	0.733	48.584
11:42:43	0.068	0.019	-0.112	0.668	48.677
11:42:58	0.059	0.018	-0.125	0.619	48.799
11:43:13	4.866	0.019	6.437	0.709	48.536
11:43:28	9.602	0.006	31.057	57.013	41.621
11:43:43	9.897	0.002	38.890	185.926	27.000
11:43:58	9.944	0.001	40.511	212.202	10.944
11:44:13	9.961	0.000	41.226	218.893	3.378
11:44:28	9.968	0.000	41.591	219.487	0.366
11:44:43	9.976	0.000	41.851	219.878	-0.217
11:44:58	9.981	0.001	42.040	219.902	-0.303
11:45:13	8.265	7.959	33.854	220.057	-0.309
11:45:28	6.186	13.648	9.348	165.373	-0.272
11:45:43	6.009	13.954	2.966	38.950	-0.125
11:45:58	5.979	13.979	1.605	9.499	0.095
11:46:13	5.973	13.991	1.083	1.726	0.158

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 11:48
Stop time 12:15

REFERENCE METHOD RUN 9

		Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
		FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
Calibration Checks						
C_{oi}	Initial zero	0.066	0.020	-0.111	0.673	-0.051
C_{ui}	Initial upscale	5.987	13.975	41.827	219.756	48.671
C_{of}	Final zero	0.061	0.018	-0.152	0.649	-0.325
C_{uf}	Final upscale	6.005	13.957	41.573	218.969	48.622
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	11.094	8.080	4.327	177.326	8.795
C_{Gas}	**Bias adjusted**	**10.989**	**8.150**	**4.786**	**181.753**	**8.867**

Clock Time (at end of sample period)

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11:49	10.762	8.383	4.142	169.359	11.278
11:50	10.480	8.661	3.978	172.479	9.365
11:51	11.187	7.940	4.127	180.128	10.303
11:52	10.873	8.309	3.890	185.293	8.586
11:53	11.300	7.793	3.743	182.338	8.611
11:54	11.453	7.657	3.858	192.253	7.291
11:55	10.896	8.281	3.413	188.675	6.440
11:56	11.077	8.042	3.397	179.184	8.937
11:57	10.668	8.542	3.884	175.411	10.691
11:58	10.876	8.294	4.170	172.104	11.028
11:59	10.831	8.398	5.079	181.189	10.985
12:00	11.165	7.997	5.231	178.315	10.543
12:01	11.072	8.165	4.894	173.258	10.819
12:02	11.174	7.991	4.390	170.179	9.103
12:03	11.301	7.893	4.821	177.932	10.536
12:04	11.255	7.942	4.549	171.762	10.108
12:05	10.588	8.647	4.674	169.316	9.565
12:06	10.988	8.279	5.781	172.601	11.218
12:07	11.491	7.650	5.576	168.486	9.796
12:08	11.613	7.558	5.171	175.146	9.996
12:09	10.969	8.230	4.089	170.210	7.245
12:10	11.772	7.339	4.259	175.883	7.459
12:11	11.377	7.781	4.179	186.638	6.364
12:12	10.947	8.261	3.782	179.898	5.637
12:13	11.434	7.730	4.034	182.092	5.851
12:14	11.146	8.052	3.950	182.509	4.825
12:15	10.854	8.348	3.780	175.157	4.901

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 12:18
Stop Time 12:23
CALIBRATION BIAS 09

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.061	0.018	-0.152	0.649	-0.325
C_{uf} Upscale gas	6.005	13.957	41.573	218.969	48.622
Analyzer Calibration Error Reponses (C_{Dlr})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.0%	-0.2%	0.1%	-0.3%
Upscale gas	-0.2%	-1.5%	-2.0%	-1.5%	-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	0.066	0.020	-0.111	0.673	-0.051
C_{ui} Upscale gas	5.987	13.975	41.827	219.756	48.671
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.0%	0.0%	0.0%	0.0%	-0.3%
Upscale gas	0.1%	-0.1%	-0.3%	-0.2%	0.0%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

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12:18:56	0.091	0.021	0.034	1.123	46.292
12:19:11	0.079	0.022	-0.077	0.879	48.296
12:19:26	0.070	0.020	-0.139	0.725	48.576
12:19:41	0.069	0.019	-0.144	0.725	48.601
12:19:56	0.058	0.018	-0.149	0.611	48.635
12:20:11	0.055	0.018	-0.165	0.611	48.597
12:20:26	0.697	0.018	0.140	0.586	48.633
12:20:41	8.219	0.003	18.878	6.642	46.764
12:20:56	9.812	0.000	36.428	127.798	35.357
12:21:11	9.926	-0.002	39.834	196.199	18.250
12:21:26	9.948	-0.002	40.791	217.704	6.633
12:21:41	9.956	-0.004	41.350	218.526	1.307
12:21:56	9.963	-0.003	41.636	218.828	-0.026
12:22:11	9.967	-0.006	41.830	218.934	-0.305
12:22:26	9.716	1.991	41.252	219.146	-0.339
12:22:41	6.741	12.340	19.380	213.155	-0.330
12:22:56	6.055	13.900	4.552	92.845	-0.234
12:23:11	5.992	13.977	1.874	24.241	0.013
12:23:26	5.969	13.995	1.135	2.198	0.119

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 12:25
Stop time 12:52
REFERENCE METHOD RUN 10

		Channel 1 **CO2**	*Channel 2* **O2**	*Channel 3* **SO2**	*Channel 4* **NOX**	*Channel 5* **CO**
		FF Outlet 3 %dv	**FF Outlet 3 %dv**	**FF Outlet 3 ppmdv**	**FF Outlet 3 ppmdv**	**FF Outlet 3 ppmdv**
Calibration Checks						
C_{ol}	Initial zero	0.061	0.018	-0.152	0.649	-0.325
C_{ul}	Initial upscale	6.005	13.957	41.573	218.969	48.622
C_{of}	Final zero	0.070	0.028	-0.103	0.722	-0.292
C_{uf}	Final upscale	5.965	14.002	41.840	219.278	48.732
C_{ma}	Actual gas value	5.910	14.100	44.900	225.000	48.200
Analyzer Averages (concentrations)						
C_{Avg}	Average conc.	10.271	9.021	7.374	159.541	10.626
C_{Gas}	**Bias adjusted**	**10.189**	**9.090**	**8.051**	**163.627**	**10.759**

Clock Time (at end of sample period)

040710 090741

12:26	11.282	7.928	5.464	175.126	9.985
12:27	10.632	8.628	5.046	177.545	7.737
12:28	10.620	8.598	4.335	159.457	7.707
12:29	10.867	8.395	4.701	157.735	8.370
12:30	10.105	9.235	4.930	152.326	6.541
12:31	10.237	9.092	5.330	146.133	9.268
12:32	10.132	9.201	5.565	146.545	9.606
12:33	10.480	8.810	6.501	152.428	12.037
12:34	10.594	8.654	6.952	151.128	10.610
12:35	10.176	9.152	6.816	151.463	10.856
12:36	10.872	8.384	7.619	151.838	12.670
12:37	10.097	9.232	6.808	155.110	10.831
12:38	10.542	8.691	7.295	161.154	10.692
12:39	10.124	9.203	8.410	160.556	9.278
12:40	10.101	9.221	9.205	160.020	9.797
12:41	9.887	9.520	8.551	157.098	9.472
12:42	10.074	9.253	8.621	160.366	9.851
12:43	10.143	9.163	10.000	167.674	10.154
12:44	10.116	9.175	11.762	166.292	10.254
12:45	10.078	9.217	10.323	169.111	11.031
12:46	9.902	9.435	9.182	169.593	13.116
12:47	9.980	9.317	7.746	166.488	11.155
12:48	10.099	9.143	6.366	158.750	11.946
12:49	10.044	9.207	6.330	162.880	12.680
12:50	10.034	9.266	7.178	161.416	13.622
12:51	10.057	9.212	9.296	155.653	13.650
12:52	10.055	9.229	8.755	153.720	13.990

QA/QC_____
Date_____

Wheelabrator North Broward
CleanAir Project No. 10955
Pompano Beach, FL
FF Outlet 3

March 17, 2010
Start Time 12:53
Stop Time 12:58
CALIBRATION BIAS 10

	Channel 1 CO2	Channel 2 O2	Channel 3 SO2	Channel 4 NOX	Channel 5 CO
	FF Outlet 3 %dv	FF Outlet 3 %dv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv	FF Outlet 3 ppmdv
System Response to Calibration Gasses (C_S)					
C_{of} Zero gas	0.070	0.028	-0.103	0.722	-0.292
C_{uf} Upscale gas	5.965	14.002	41.840	219.278	48.732
Analyzer Calibration Error Reponses (C_{Dir})					
C_{oce} Zero gas	0.011	0.012	-0.008	0.114	0.002
C_{mce} Upscale gas	6.036	14.165	43.404	225.690	49.146
Actual Upscale Gas Value (C_{MA})					
C_{ma} Upscale gas	5.910	14.100	44.900	225.000	48.200
Calibration Span Value (CS)	13.900	14.100	89.900	453.000	98.500
System Bias as Percent of Calibration Span Value (SB) (5%)					
Zero gas	0.4%	0.1%	-0.1%	0.1%	-0.3%
Upscale gas	-0.5%	-1.2%	-1.7%	-1.4%	-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	0.061	0.018	-0.152	0.649	-0.325
C_{ul} Upscale gas	6.005	13.957	41.573	218.969	48.622
Drift Assessment as Percent of Calibration Span Value (D) (3%)					
Zero gas	0.1%	0.1%	0.1%	0.0%	0.0%
Upscale gas	-0.3%	0.3%	0.3%	0.1%	0.1%
Drift Assessment Status					
Zero gas	OK	OK	OK	OK	OK
Upscale gas	OK	OK	OK	OK	OK

040710 090741

12:53:20	0.117	0.045	0.353	3.484	38.957
12:53:35	0.097	0.039	0.093	1.180	45.304
12:53:50	0.085	0.034	-0.026	0.879	48.156
12:54:05	0.077	0.031	-0.069	0.733	48.702
12:54:20	0.067	0.027	-0.112	0.725	48.804
12:54:35	0.065	0.024	-0.129	0.709	48.791
12:54:50	2.784	0.021	2.046	0.733	48.601
12:55:05	9.289	0.003	25.836	37.518	44.777
12:55:20	9.871	0.000	37.924	161.131	30.015
12:55:35	9.934	0.000	40.176	207.920	14.771
12:55:50	9.956	0.000	41.167	218.299	4.238
12:56:05	9.965	0.000	41.656	219.072	0.830
12:56:20	9.968	-0.002	41.885	219.268	-0.179
12:56:35	9.893	0.980	41.978	219.495	-0.303
12:56:50	7.089	11.558	24.931	216.362	-0.327
12:57:05	6.075	13.861	5.893	171.315	-0.247
12:57:20	5.989	13.973	2.214	36.736	0.011
12:57:35	5.977	13.995	1.231	4.086	0.144
12:57:50	5.961	14.003	0.863	1.310	0.171
12:58:05	5.956	14.008	0.619	0.977	0.171

QA/QC_____
Date_____

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CEM MONITOR AND PROCESS DATA

F

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Run 1 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/18/10 07:48

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	07:13	15.1	211.9	25.2	10.6	11.2	157.0	18.7	186.6
	07:14	15.2	217.6	21.7	9.6	12.4	177.4	17.7	188.3
	07:15	13.8	209.5	19.6	8.8	12.1	183.0	17.2	180.7
	07:16	11.0	218.4	15.9	10.0	8.6	171.0	12.5	179.2
	07:17	8.2	219.2	15.4	10.6	6.1	163.1	11.5	183.6
	07:18	8.7	211.4	18.1	9.6	7.0	171.2	14.7	184.6
	07:19	12.9	206.8	17.6	9.3	10.8	172.9	14.7	185.2
	07:20	15.5	204.4	18.5	9.5	12.8	168.3	15.2	185.0
	07:21	16.7	202.9	18.2	9.5	13.7	166.8	15.0	183.9
	07:22	15.3	205.4	16.2	9.6	12.5	167.1	13.2	182.1
	07:23	12.9	201.1	17.7	10.0	10.1	158.4	13.9	184.5
	07:24	13.0	187.8	16.9	9.7	10.5	151.5	13.6	186.1
	07:25	13.0	182.2	13.4	9.3	10.9	152.7	11.2	184.3
	07:26	14.3	182.0	13.8	9.5	11.7	149.4	11.3	184.2
	07:27	14.9	177.3	14.3	9.7	12.0	142.8	11.5	183.2
	07:28	16.0	176.3	12.1	9.9	12.7	139.9	9.6	182.6
	07:29	17.8	175.1	14.4	9.9	14.0	138.3	11.4	181.0
	07:30	18.6	172.2	15.3	10.0	14.6	135.0	12.0	183.3
	07:31	19.7	177.8	15.0	9.7	15.8	142.6	12.0	184.6
	07:32	20.6	178.8	13.7	9.4	17.0	148.1	11.4	182.4
	07:33	19.4	178.5	17.1	9.8	15.5	142.5	13.7	182.6
	07:34	17.5	188.9	23.7	10.2	13.5	145.7	18.3	182.6
	07:35	13.9	195.5	20.8	10.0	10.9	153.5	16.4	185.2
	07:36	12.6	214.0	17.0	9.7	10.2	172.7	13.7	186.3
	07:37	12.9	217.8	18.5	9.3	10.8	182.1	15.4	184.8
	07:38	11.6	218.5	19.0	9.6	9.5	178.0	15.5	182.8
	07:39	11.9	214.1	19.6	9.9	9.4	169.8	15.6	184.3
Average =		14.6	198.0	17.4	9.7	11.7	159.3	14.0	183.9
Geometric Avg. =		14.2	197.3	17.1	9.7	11.4	158.6	13.8	183.8
Maximum =		20.6	219.2	25.2	10.6	17.0	183.0	18.7	188.3
Minimum =		8.2	172.2	12.1	8.8	6.1	135.0	9.6	179.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		393.0	5345.4	468.8	262.3	316.4	4300.8	376.7	4964.0

* - 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

Run 2 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Time of Report: 03/18/10 08:22

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	07:47	16.4	197.9	19.2	9.6	13.3	160.8	15.6	183.3
	07:48	16.4	188.0	17.4	9.5	13.4	153.6	14.2	183.2
	07:49	20.7	193.2	12.6	9.3	17.3	161.4	10.5	184.9
	07:50	23.4	200.7	12.3	8.9	20.1	173.0	10.6	185.3
	07:51	20.0	190.8	13.0	8.9	17.3	164.8	11.3	183.6
	07:52	16.6	180.6	14.9	9.3	13.8	150.8	12.4	181.7
	07:53	14.1	179.8	19.3	9.8	11.3	144.0	15.5	181.9
	07:54	12.1	185.8	20.4	9.8	9.7	148.6	16.3	185.3
	07:55	11.6	189.5	19.0	9.1	9.8	160.5	16.1	185.3
	07:56	12.1	191.8	17.4	8.9	10.5	165.8	15.0	185.0
	07:57	12.9	201.9	14.8	9.6	10.5	164.1	12.0	182.8
	07:58	11.9	207.3	13.1	9.9	9.4	163.9	10.3	182.8
	07:59	10.7	204.3	14.8	9.9	8.5	161.2	11.7	183.8
	08:00	11.6	201.5	15.5	9.4	9.6	166.9	12.9	185.9
	08:01	13.7	204.7	15.3	8.8	11.9	177.5	13.3	184.8
	08:02	15.4	214.4	11.4	8.9	13.2	184.5	9.8	185.0
	08:03	17.3	226.8	10.0	9.5	14.1	185.7	8.2	183.7
	08:04	17.1	232.8	13.6	9.9	13.5	184.0	10.8	182.3
	08:05	14.7	233.7	19.6	10.1	11.4	181.7	15.2	183.6
	08:06	12.2	236.8	22.3	9.7	9.8	190.0	17.9	186.5
	08:07	10.3	233.5	20.8	9.1	8.8	198.4	17.7	184.8
	08:08	9.3	237.3	19.2	9.3	7.8	198.1	16.0	184.0
	08:09	9.5	233.3	15.3	9.5	7.8	192.0	12.6	181.8
	08:10	11.2	233.6	14.5	9.9	8.9	185.1	11.5	185.9
	08:11	13.2	226.3	16.5	9.1	11.2	191.5	13.9	185.0
	08:12	16.2	233.5	13.8	9.3	13.6	195.2	11.5	184.1
	08:13	14.9	240.5	12.0	9.7	11.9	193.1	9.6	186.7
Average =		14.3	211.1	15.9	9.4	11.8	173.9	13.1	184.2
Geometric Avg. =		13.9	210.2	15.5	9.4	11.5	173.2	12.8	184.2
Maximum =		23.4	240.5	22.3	10.1	20.1	198.4	17.9	186.7
Minimum =		9.3	179.8	10.0	8.8	7.8	144.0	8.2	181.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		385.7	5700.4	428.0	254.9	318.6	4696.1	352.5	4973.3

* - 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

Run 3 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/18/10 08:57

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	08:21	10.6	223.6	16.8	8.2	9.7	205.1	15.4	185.4
	08:22	11.1	233.7	17.1	9.4	9.2	192.8	14.1	183.3
	08:23	11.3	218.2	13.4	9.7	9.1	175.5	10.8	184.5
	08:24	13.1	214.7	11.6	9.7	10.5	172.5	9.3	187.0
	08:25	16.2	213.0	11.5	9.2	13.6	179.8	9.7	188.8
	08:26	18.0	215.9	11.8	8.3	16.4	196.0	10.7	183.4
	08:27	17.5	234.7	13.6	9.3	14.6	196.3	11.4	184.9
	08:28	14.8	216.9	11.0	9.2	12.4	182.0	9.2	184.9
	08:29	16.2	219.4	9.6	9.3	13.6	183.5	8.0	186.6
	08:30	17.9	212.2	13.8	9.0	15.3	181.4	11.8	183.8
	08:31	17.4	202.0	17.0	9.3	14.6	169.0	14.2	185.1
	08:32	15.8	187.5	15.6	9.4	13.1	155.2	12.9	185.4
	08:33	14.1	168.3	14.3	9.2	11.9	142.1	12.1	186.2
	08:34	13.7	168.2	13.2	9.0	11.8	144.5	11.4	184.8
	08:35	16.1	178.4	11.1	9.1	13.7	151.7	9.4	184.4
	08:36	18.5	185.3	7.4	9.2	15.5	155.7	6.2	181.5
	08:37	20.3	192.5	9.4	9.7	16.4	155.4	7.6	181.5
	08:38	22.6	191.7	12.7	9.6	18.4	155.8	10.3	182.4
	08:39	22.9	198.2	15.0	9.3	19.0	164.8	12.4	183.7
	08:40	19.9	196.0	15.8	9.2	16.8	165.6	13.4	182.6
	08:41	14.3	191.7	15.6	9.5	11.7	156.7	12.8	183.6
	08:42	9.5	191.3	15.8	9.5	7.8	157.3	13.0	183.8
	08:43	8.7	192.7	16.0	9.4	7.2	159.3	13.2	184.3
	08:44	10.2	186.9	15.0	9.4	8.4	154.3	12.3	186.2
	08:45	12.7	177.5	12.3	9.1	10.8	151.0	10.4	185.5
	08:46	14.3	184.9	11.5	9.3	11.9	154.0	9.6	184.1
	08:47	13.7	193.1	11.2	9.5	11.2	158.0	9.2	182.5
Average =		15.2	199.6	13.3	9.3	12.8	167.2	11.1	184.5
Geometric Avg. =		14.8	198.8	13.0	9.2	12.4	166.4	10.9	184.5
Maximum =		22.9	234.7	17.1	9.7	19.0	205.1	15.4	188.8
Minimum =		8.7	168.2	7.4	8.2	7.2	142.1	6.2	181.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		411.5	5388.5	359.1	249.9	344.7	4515.3	301.0	4980.4

* - 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

Run 4 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1 Time of Report: 03/18/10 09:31

Data Averaging Type: 1m Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	08:56	14.1	192.6	15.6	8.2	12.9	176.2	14.3	184.6
	08:57	9.9	187.4	12.0	8.9	8.6	161.7	10.4	182.2
	08:58	8.5	167.9	15.6	9.7	6.9	135.1	12.6	182.8
	08:59	9.5	159.2	20.8	9.6	7.7	128.9	16.9	183.4
	09:00	13.8	182.3	19.9	9.3	11.5	152.0	16.6	182.7
	09:01	18.4	188.1	13.7	9.3	15.4	157.1	11.5	184.3
	09:02	20.6	187.0	10.7	9.5	16.9	153.4	8.8	184.8
	09:03	19.4	188.7	13.0	9.5	15.9	155.3	10.7	183.6
	09:04	18.4	195.1	15.9	9.7	14.9	157.8	12.9	182.9
	09:05	15.9	193.1	16.2	9.7	12.9	155.9	13.0	183.7
	09:06	14.9	190.0	17.3	9.8	11.9	151.2	13.8	184.1
	09:07	16.0	191.7	14.8	9.8	12.7	153.0	11.8	183.1
	09:08	17.9	202.2	12.9	9.8	14.3	161.6	10.3	182.3
	09:09	20.1	203.6	15.3	9.9	15.9	160.9	12.1	185.0
	09:10	21.7	196.3	15.2	9.5	17.9	161.6	12.5	189.3
	09:11	19.9	188.9	15.0	8.5	17.7	168.6	13.4	186.0
	09:12	15.1	188.7	16.0	9.0	12.9	161.1	13.7	183.5
	09:13	9.9	180.2	18.3	9.8	7.9	144.0	14.6	182.1
	09:14	8.9	174.8	18.2	9.9	7.1	138.9	14.5	183.0
	09:15	10.3	182.3	19.3	9.6	8.4	148.3	15.7	186.1
	09:16	12.2	186.2	18.6	9.1	10.4	158.8	15.8	184.9
	09:17	13.4	185.0	15.1	9.0	11.5	158.8	13.0	182.9
	09:18	15.4	198.5	12.5	9.4	12.7	164.5	10.4	183.3
	09:19	16.7	216.0	11.4	9.5	13.8	177.7	9.4	185.2
	09:20	16.4	219.4	10.8	9.0	14.0	187.6	9.3	186.2
	09:21	15.8	216.4	11.4	8.7	13.9	190.4	10.1	188.7
	09:22	14.5	211.0	13.4	8.3	13.2	191.4	12.2	184.4
Average =		15.1	191.6	15.2	9.3	12.6	159.7	12.6	184.3
Geometric Avg. =		14.6	191.1	14.9	9.3	12.1	159.0	12.4	184.3
Maximum =		21.7	219.4	20.8	9.9	17.9	191.4	16.9	189.3
Minimum =		8.5	159.2	10.7	8.2	6.9	128.9	8.8	182.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		407.6	5172.3	409.3	251.7	339.6	4311.8	340.1	4975.0

* - 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

Run 5 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/18/10 10:05

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	09:30	13.5	206.2	15.8	8.8	11.8	179.9	13.8	184.0
	09:31	13.1	200.8	15.8	9.0	11.2	172.1	13.5	183.2
	09:32	12.9	194.5	12.0	9.3	10.7	161.9	9.9	183.6
	09:33	11.5	187.0	10.8	9.4	9.5	154.3	8.9	187.5
	09:34	11.5	189.7	12.4	8.9	9.9	164.0	10.7	183.9
	09:35	10.1	191.1	13.5	8.9	8.7	164.6	11.7	182.6
	09:36	8.6	194.2	15.2	9.6	7.0	158.0	12.4	185.8
	09:37	8.8	194.1	15.6	9.2	7.4	162.7	13.1	188.6
	09:38	10.1	193.3	14.0	8.5	9.0	172.4	12.5	186.1
	09:39	10.2	198.9	11.1	9.0	8.8	170.9	9.6	186.4
	09:40	8.6	200.6	10.1	9.3	7.2	168.1	8.4	183.3
	09:41	7.1	198.2	13.3	9.5	5.8	162.2	10.8	183.0
	09:42	6.1	199.5	14.7	9.7	4.9	161.1	11.8	183.1
	09:43	6.5	204.6	13.6	9.6	5.2	165.7	11.0	183.4
	09:44	7.6	193.5	13.1	9.5	6.2	158.3	10.7	183.2
	09:45	7.1	184.1	11.7	9.6	5.8	149.9	9.5	183.5
	09:46	7.9	190.9	10.8	9.6	6.4	155.0	8.7	184.5
	09:47	7.9	190.9	11.8	9.6	6.4	155.8	9.6	185.7
	09:48	7.3	191.4	12.2	9.5	6.0	157.3	10.1	186.6
	09:49	5.8	191.1	12.0	9.5	4.8	156.7	9.9	190.5
	09:50	4.9	183.0	11.4	8.7	4.3	160.6	10.0	186.1
	09:51	4.6	182.4	14.3	9.0	4.0	156.3	12.2	185.2
	09:52	4.2	174.0	15.0	9.7	3.4	139.8	12.0	183.8
	09:53	4.6	170.7	14.9	9.7	3.7	137.6	12.0	184.6
	09:54	5.8	179.5	17.2	9.6	4.7	145.5	13.9	184.6
	09:55	6.5	183.9	19.5	9.5	5.3	151.5	16.1	183.5
	09:56	7.5	186.0	17.8	9.4	6.2	154.3	14.7	182.7
Average =		8.2	190.9	13.7	9.3	6.8	159.1	11.4	184.8
Geometric Avg. =		7.7	190.7	13.5	9.3	6.5	158.8	11.2	184.8
Maximum =		13.5	206.2	19.5	9.7	11.8	179.9	16.1	190.5
Minimum =		4.2	170.7	10.1	8.5	3.4	137.6	8.4	182.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		220.4	5154.0	369.4	251.6	184.5	4296.4	307.7	4989.0

* - 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

Run 6 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1 Time of Report: 03/18/10 10:40

Data Averaging Type: 1m Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	10:04	9.3	207.0	13.8	9.5	7.6	169.5	11.3	184.5
	10:05	9.6	214.7	18.8	9.5	7.9	176.4	15.5	186.8
	10:06	9.6	207.7	14.6	9.2	8.1	174.9	12.3	183.4
	10:07	10.8	207.0	10.9	9.2	9.0	173.6	9.1	183.3
	10:08	11.3	210.9	13.4	9.7	9.1	170.2	10.8	183.4
	10:09	11.0	203.6	14.6	9.5	9.0	166.5	11.9	185.2
	10:10	10.8	195.0	12.5	9.1	9.2	165.3	10.6	184.6
	10:11	10.9	189.5	13.8	9.3	9.1	158.1	11.5	184.1
	10:12	10.0	176.6	16.9	9.4	8.2	145.7	14.0	182.5
	10:13	10.2	174.4	17.4	9.7	8.3	140.8	14.0	182.2
	10:14	11.5	181.0	17.0	9.9	9.1	143.4	13.5	182.2
	10:15	13.0	181.6	16.4	9.7	10.5	146.3	13.2	184.0
	10:16	15.0	175.4	15.0	9.6	12.2	142.1	12.2	182.7
	10:17	17.5	180.3	15.6	9.7	14.2	145.7	12.6	181.3
	10:18	17.9	189.9	16.1	9.7	14.4	152.7	13.0	180.8
	10:19	18.1	191.8	16.5	9.8	14.5	153.4	13.2	182.1
	10:20	15.8	188.0	17.9	9.5	12.9	153.8	14.7	183.8
	10:21	13.0	186.9	15.7	9.2	10.9	157.6	13.2	182.5
	10:22	11.2	196.2	15.6	9.5	9.2	161.2	12.8	182.0
	10:23	8.8	205.2	15.8	9.6	7.1	166.5	12.8	184.2
	10:24	7.2	213.6	12.2	9.3	6.0	177.7	10.1	183.6
	10:25	7.6	213.4	9.9	9.3	6.3	177.5	8.3	186.4
	10:26	8.9	208.1	10.8	9.1	7.5	176.7	9.2	184.0
	10:27	8.9	201.8	14.3	9.2	7.4	169.2	11.9	184.9
	10:28	8.3	202.3	17.2	9.6	6.8	164.8	14.0	183.0
	10:29	7.9	203.5	18.0	9.5	6.5	166.1	14.7	183.7
	10:30	8.7	210.3	13.5	9.6	7.1	171.5	11.0	183.5
Average =		11.2	196.9	15.0	9.5	9.2	161.7	12.3	183.5
Geometric Avg. =		10.8	196.5	14.8	9.5	8.9	161.3	12.1	183.5
Maximum =		18.1	214.7	18.8	9.9	14.5	177.7	15.5	186.8
Minimum =		7.2	174.4	9.9	9.1	6.0	140.8	8.3	180.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		302.8	5315.6	404.2	256.1	248.1	4367.2	331.4	4954.6

* - 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

Run 7 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/18/10 11:20

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	10:39	8.5	183.0	14.6	9.5	6.9	149.5	12.0	184.5
	10:40	8.3	184.4	15.0	9.4	6.9	153.1	12.4	183.0
	10:41	7.0	179.4	17.5	9.4	5.8	148.9	14.6	182.8
	10:42	7.8	182.7	18.8	9.6	6.3	149.0	15.3	183.4
	10:43	8.3	190.8	19.1	9.4	6.8	158.0	15.8	182.8
	10:44	9.4	196.4	15.2	9.5	7.7	161.1	12.5	180.9
	10:45	10.0	194.7	8.8	9.6	8.2	158.5	7.2	181.6
	10:46	11.3	197.7	12.9	9.6	9.2	161.2	10.5	182.2
	10:47	13.0	201.4	22.7	9.6	10.6	164.1	18.5	182.1
	10:48	13.0	200.1	23.7	9.6	10.6	163.1	19.3	182.8
	10:49	11.3	204.0	23.6	9.5	9.3	167.8	19.4	182.6
	10:50	10.9	221.4	22.0	9.4	8.9	182.4	18.2	186.5
	10:51	10.3	223.6	19.1	8.8	9.0	194.8	16.7	186.1
	10:52	9.9	218.8	15.1	8.6	8.7	192.9	13.3	183.1
	10:53	7.9	211.1	13.4	9.4	6.5	174.0	11.1	182.5
	10:54	6.9	201.5	13.4	9.5	5.6	165.4	11.0	182.8
	10:55	6.6	199.3	12.4	9.4	5.5	164.2	10.2	183.6
	10:56	7.3	198.5	9.2	9.1	6.2	168.7	7.8	184.1
	10:57	7.7	200.1	10.5	9.0	6.6	171.9	9.0	185.8
	10:58	8.4	197.1	14.6	9.1	7.2	167.7	12.4	183.1
	10:59	9.1	187.3	16.7	9.3	7.6	156.5	14.0	181.9
	11:00	9.1	186.6	16.1	9.6	7.4	152.1	13.1	181.7
	11:01	9.9	184.8	17.9	9.5	8.1	152.2	14.8	181.6
	11:02	10.8	191.6	17.6	9.5	8.9	157.1	14.4	183.5
	11:03	10.7	198.9	14.0	9.3	8.9	166.2	11.7	184.0
	11:04	10.5	199.9	15.0	8.9	9.0	172.5	13.0	183.4
	11:05	9.6	203.3	17.5	9.4	8.0	168.7	14.5	182.9
Average =		9.4	197.7	16.2	9.3	7.8	164.5	13.4	183.2
Geometric Avg. =		9.2	197.4	15.7	9.3	7.7	164.1	13.0	183.2
Maximum =		13.0	223.6	23.7	9.6	10.6	194.8	19.4	186.5
Minimum =		6.6	179.4	8.8	8.6	5.5	148.9	7.2	180.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		253.2	5338.4	436.7	252.2	210.4	4441.9	362.7	4945.3

* - 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

Run 8 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Time of Report: 03/18/10 11:51

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	11:14	8.2	193.5	25.1	9.4	6.8	159.5	20.7	184.4
	11:15	8.1	187.0	21.8	8.9	6.9	161.4	18.8	181.8
	11:16	8.3	188.9	23.0	9.6	6.8	153.2	18.7	181.0
	11:17	7.7	184.7	21.2	9.8	6.1	147.5	17.0	182.7
	11:18	8.9	190.3	17.6	9.5	7.3	155.6	14.4	183.1
	11:19	9.9	191.0	17.8	9.4	8.2	157.7	14.7	182.8
	11:20	9.6	186.9	17.8	9.6	7.8	152.6	14.6	181.7
	11:21	9.0	184.0	18.6	9.6	7.3	149.5	15.1	180.2
	11:22	9.3	195.3	17.6	9.7	7.5	158.0	14.2	181.9
	11:23	9.8	202.7	18.8	9.5	8.1	166.4	15.4	182.6
	11:24	10.8	204.3	19.7	9.4	9.0	168.9	16.3	183.4
	11:25	10.5	195.4	21.8	9.4	8.7	161.6	18.0	183.3
	11:26	10.7	190.6	24.3	9.6	8.7	154.8	19.7	181.1
	11:27	10.0	191.4	21.8	10.0	7.8	150.6	17.1	180.8
	11:28	9.0	194.8	22.8	10.2	6.9	149.8	17.5	182.6
	11:29	8.4	196.3	25.7	9.9	6.6	154.7	20.3	185.0
	11:30	9.0	202.8	22.0	9.2	7.5	170.1	18.5	183.9
	11:31	9.8	215.5	22.2	9.5	8.0	177.0	18.3	186.0
	11:32	9.1	198.6	24.2	9.1	7.7	167.9	20.4	182.0
	11:33	9.8	195.1	25.9	9.6	8.0	158.0	21.0	181.2
	11:34	10.3	187.3	25.1	10.2	8.0	144.8	19.4	181.8
	11:35	11.7	187.7	19.0	10.2	9.0	145.1	14.7	181.7
	11:36	12.8	197.9	18.8	10.0	10.0	154.9	14.7	182.9
	11:37	13.7	201.2	17.1	9.7	11.0	161.9	13.7	181.5
	11:38	14.3	205.1	16.3	10.0	11.2	161.2	12.8	182.9
	11:39	11.8	204.1	20.8	10.0	9.2	159.8	16.3	189.5
	11:40	10.3	190.3	16.0	8.7	9.0	166.8	14.0	184.7
Average =		10.0	194.9	20.8	9.6	8.1	158.1	16.9	182.8
Geometric Avg. =		9.9	194.8	20.6	9.6	8.0	157.9	16.7	182.8
Maximum =		14.3	215.5	25.9	10.2	11.2	177.0	21.0	189.5
Minimum =		7.7	184.0	16.0	8.7	6.1	144.8	12.8	180.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		270.8	5262.5	562.8	259.8	219.3	4269.2	456.3	4936.5

* - 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

Run 9 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Data Averaging Type: 1m

Time of Report: 03/18/10 12:23

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	11:48	8.2	185.4	21.2	9.5	6.7	151.7	17.3	182.6
	11:49	8.2	186.1	19.2	9.8	6.6	148.7	15.4	184.7
	11:50	9.3	187.7	14.9	9.7	7.4	150.7	11.9	183.1
	11:51	11.2	190.0	15.6	9.7	9.0	153.5	12.6	183.8
	11:52	12.3	193.0	16.6	9.7	9.8	155.1	13.3	181.8
	11:53	13.4	198.2	19.7	9.9	10.6	157.1	15.6	182.2
	11:54	12.2	178.9	22.0	9.9	9.7	141.3	17.4	185.6
	11:55	13.3	170.1	20.3	9.5	10.9	140.1	16.7	189.3
	11:56	13.9	170.8	17.5	8.6	12.3	151.2	15.5	186.9
	11:57	13.3	175.9	15.5	8.9	11.5	151.9	13.4	180.6
	11:58	12.3	184.2	12.3	10.1	9.6	143.3	9.6	180.2
	11:59	11.8	181.2	12.8	10.4	8.9	136.9	9.7	181.6
	12:00	12.3	177.9	13.9	9.8	9.8	141.9	11.1	183.2
	12:01	13.7	180.8	16.7	9.6	11.2	147.2	13.6	183.4
	12:02	13.5	173.1	17.6	9.6	10.9	140.5	14.3	180.6
	12:03	12.7	168.2	18.5	10.2	9.8	129.3	14.2	180.3
	12:04	11.7	164.9	25.5	10.6	8.7	122.5	19.0	182.6
	12:05	12.6	174.3	29.2	10.3	9.6	133.2	22.3	180.9
	12:06	14.1	184.9	28.7	10.5	10.6	139.0	21.6	178.7
	12:07	15.4	193.8	26.2	10.9	11.1	139.4	18.9	180.2
	12:08	15.4	189.0	28.0	10.7	11.2	138.2	20.5	182.4
	12:09	16.4	185.8	27.8	10.3	12.6	142.1	21.3	181.6
	12:10	15.7	193.5	25.1	10.4	11.9	146.2	19.0	179.0
	12:11	14.3	197.9	24.6	10.9	10.3	141.9	17.7	178.6
	12:12	13.0	203.2	23.1	11.1	9.2	143.9	16.4	181.9
	12:13	12.8	206.3	23.4	10.4	9.6	155.3	17.6	182.9
	12:14	12.3	198.3	25.4	10.1	9.6	153.9	19.7	179.9
Average =		12.8	184.9	20.8	10.0	10.0	144.3	16.1	182.2
Geometric Avg. =		12.6	184.6	20.1	10.0	9.8	144.1	15.7	182.2
Maximum =		16.4	206.3	29.2	11.1	12.6	157.1	22.3	189.3
Minimum =		8.2	164.9	12.3	8.6	6.6	122.5	9.6	178.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		345.1	4993.4	561.1	271.0	269.0	3896.3	435.2	4918.8

* - 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

Run 10 Unit 1 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/18/2010 to 03/18/2010

Site Name: UNIT1

Time of Report: 03/18/10 12:56

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT1 (PPMDC)	NOXRPT_1 (PPMDC)	CORPT_1 (PPMDC)	O2OUT_1 (PERCENTD)	SO2OUT_1 (PPMD)	NOXPPM_1 (PPMD)	COPPM_1 (PPMD)	STMRPT_1 (KLB/HR)
03/18/10	12:22	9.5	183.8	15.5	9.8	7.6	146.4	12.4	179.6
	12:23	9.8	188.7	21.7	10.3	7.5	144.5	16.6	179.9
	12:24	10.9	187.0	26.6	10.2	8.4	143.8	20.5	181.8
	12:25	13.0	183.4	26.0	9.7	10.5	148.4	21.1	184.0
	12:26	14.4	193.4	22.2	9.4	12.0	160.3	18.4	184.3
	12:27	12.3	200.8	22.6	9.4	10.1	165.5	18.6	183.4
	12:28	10.1	195.5	19.1	9.3	8.5	163.6	16.0	181.1
	12:29	9.2	205.4	17.4	9.8	7.4	164.6	13.9	181.3
	12:30	7.7	208.2	19.7	9.9	6.1	165.3	15.7	184.6
	12:31	7.4	197.9	24.1	9.4	6.1	163.4	19.9	183.4
	12:32	7.1	195.7	28.5	9.7	5.7	157.5	22.9	183.1
	12:33	6.7	198.6	26.2	9.9	5.3	156.5	20.6	183.8
	12:34	6.4	193.6	22.3	9.9	5.1	153.7	17.7	183.2
	12:35	7.1	189.5	20.1	9.8	5.7	151.8	16.1	184.3
	12:36	7.6	193.1	16.1	9.7	6.1	155.9	13.0	184.0
	12:37	8.1	199.3	15.2	9.7	6.6	161.0	12.3	184.1
	12:38	8.2	194.4	15.2	9.6	6.6	158.2	12.4	184.6
	12:39	7.7	193.6	17.6	9.5	6.3	158.8	14.5	185.9
	12:40	7.7	200.4	20.3	9.2	6.5	169.2	17.1	184.1
	12:41	8.2	212.5	21.7	9.5	6.7	174.3	17.8	185.1
	12:42	7.5	201.6	21.5	9.4	6.2	167.5	17.8	186.3
	12:43	7.4	200.3	21.0	9.2	6.2	168.4	17.7	185.2
	12:44	7.5	198.5	22.5	9.1	6.4	169.1	19.2	184.2
	12:45	8.1	201.4	19.7	9.6	6.6	164.3	16.1	183.5
	12:46	8.3	201.0	15.8	9.5	6.8	164.7	12.9	185.2
	12:47	9.1	200.2	16.7	9.3	7.6	166.7	13.9	183.9
	12:48	9.8	196.0	19.4	9.5	8.1	160.9	15.9	184.3
Average =		8.8	196.8	20.5	9.6	7.1	160.2	16.7	183.6
Geometric Avg. =		8.6	196.7	20.2	9.6	7.0	160.0	16.4	183.6
Maximum =		14.4	212.5	28.5	10.3	12.0	174.3	22.9	186.3
Minimum =		6.4	183.4	15.2	9.1	5.1	143.8	12.3	179.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		237.0	5313.6	554.7	259.0	192.8	4324.3	450.9	4958.2

* - 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

Run 1 Unit 2 North

Plant Name: NBWD
General Average Report
Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2
Data Averaging Type: 1m

Time of Report: 03/16/10 10:29
Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	09:49	13.2	201.2	13.9	9.8	10.5	160.2	11.1	183.3
	09:50	11.8	197.0	17.8	9.5	9.7	161.0	14.5	182.8
	09:51	11.3	202.4	25.1	9.6	9.2	164.3	20.3	183.9
	09:52	12.2	206.7	29.5	9.7	9.9	167.2	23.9	182.7
	09:53	11.8	206.2	28.2	9.7	9.5	166.5	22.8	182.3
	09:54	11.1	208.3	26.0	9.9	8.8	165.1	20.6	181.1
	09:55	12.4	212.3	22.3	9.9	9.8	168.2	17.7	181.8
	09:56	14.3	214.9	19.1	9.6	11.6	174.1	15.5	181.3
	09:57	15.4	217.7	20.3	9.8	12.3	174.6	16.3	182.5
	09:58	14.7	212.8	18.9	9.5	12.0	174.9	15.6	182.8
	09:59	14.1	215.3	15.6	9.6	11.4	174.8	12.6	185.3
	10:00	13.3	203.7	13.3	9.0	11.4	174.8	11.4	186.0
	10:01	13.7	208.4	13.0	9.2	11.6	176.0	10.9	183.4
	10:02	15.1	217.9	14.1	9.9	11.9	171.9	11.1	184.6
	10:03	15.9	206.4	16.3	9.5	13.0	168.6	13.3	182.8
	10:04	16.3	202.5	16.4	9.4	13.4	166.9	13.5	182.0
	10:05	16.7	199.3	16.7	9.7	13.5	161.2	13.5	182.6
	10:06	17.7	193.2	17.2	9.4	14.6	160.0	14.3	183.2
	10:07	18.8	197.8	17.3	9.4	15.5	163.8	14.3	183.2
	10:08	19.7	197.2	17.4	9.3	16.5	165.2	14.6	183.6
	10:09	21.7	198.7	16.5	9.3	18.2	166.1	13.8	186.3
	10:10	22.1	197.1	13.8	8.7	19.4	172.9	12.1	184.8
	10:11	22.1	208.4	12.4	9.1	18.7	176.6	10.5	182.8
	10:12	21.7	214.5	13.6	9.7	17.4	172.5	10.9	183.0
	10:13	20.7	207.8	14.5	9.3	17.3	173.5	12.1	182.1
	10:14	19.9	208.0	14.8	9.2	16.7	174.9	12.4	185.4
	10:15	20.9	199.2	14.7	8.8	18.3	173.8	12.9	186.9
Average =		16.2	205.7	17.7	9.5	13.4	169.2	14.5	183.4
Geometric Avg. =		15.8	205.6	17.2	9.5	13.0	169.2	14.2	183.4
Maximum =		22.1	217.9	29.5	9.9	19.4	176.6	23.9	186.9
Minimum =		11.1	193.2	12.4	8.7	8.8	160.0	10.5	181.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		438.6	5554.6	478.6	255.4	362.3	4569.4	392.5	4952.9

* - 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

Run 2 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Time of Report: 03/16/10 11:00

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	10:32	20.7	176.0	24.8	10.0	16.3	138.6	19.5	181.3
	10:33	21.0	174.1	26.0	10.0	16.5	136.6	20.4	182.7
	10:34	19.8	176.7	22.8	9.7	15.9	142.0	18.3	181.8
	10:35	18.2	185.9	22.1	10.1	14.1	143.8	17.1	181.9
	10:36	15.4	185.3	21.3	10.0	12.1	145.6	16.7	183.4
	10:37	15.5	191.4	21.8	9.9	12.3	151.9	17.3	185.0
	10:38	15.9	192.4	20.1	9.5	13.0	157.6	16.5	183.9
	10:39	15.8	200.5	18.1	9.9	12.5	158.0	14.2	183.2
	10:40	15.1	201.6	20.7	10.1	11.7	156.8	16.1	182.9
	10:41	14.6	199.5	23.4	9.8	11.7	159.7	18.7	182.8
	10:42	14.6	202.7	21.6	9.8	11.7	162.3	17.3	183.2
	10:43	15.0	200.4	18.9	9.3	12.5	167.3	15.8	182.5
	10:44	17.8	211.6	21.1	9.9	14.1	167.8	16.7	182.8
	10:45	19.5	203.9	22.9	9.7	15.7	164.1	18.4	182.0
	10:46	20.1	206.7	22.4	9.8	16.1	165.2	17.9	185.7
	10:47	18.6	202.8	16.3	8.8	16.1	176.1	14.1	187.6
	10:48	18.9	213.8	13.5	8.8	16.5	186.6	11.8	189.1
	10:49	21.3	215.0	14.1	9.0	18.3	184.5	12.1	184.3
	10:50	23.8	226.6	14.9	10.2	18.4	175.1	11.5	181.8
	10:51	21.6	218.1	14.2	10.2	16.5	167.2	10.9	181.4
	10:52	19.9	201.7	12.8	9.5	16.2	164.9	10.5	184.6
	10:53	21.6	190.9	11.4	8.7	18.9	167.1	10.0	187.2
	10:54	22.9	191.3	10.3	8.5	20.5	170.6	9.2	186.0
	10:55	23.4	199.7	10.3	9.1	19.8	169.7	8.8	184.2
	10:56	25.6	205.5	11.9	9.8	20.5	164.2	9.5	183.5
	10:57	26.6	200.3	12.7	9.6	21.6	162.2	10.3	184.7
	10:58	26.4	196.8	13.2	9.1	22.4	166.8	11.2	184.2
Average =		19.6	198.9	17.9	9.6	16.0	161.9	14.5	183.8
Geometric Avg. =		19.3	198.5	17.2	9.6	15.7	161.5	14.0	183.8
Maximum =		26.6	226.6	26.0	10.2	22.4	186.6	20.4	189.1
Minimum =		14.6	174.1	10.3	8.5	11.7	136.6	8.8	181.3
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		529.4	5370.9	483.7	258.8	431.7	4372.3	391.0	4963.7

* - 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

Run 3 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/16/10 11:46

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	11:16	15.5	203.7	13.0	8.9	13.5	176.6	11.3	184.2
	11:17	14.1	211.4	11.2	9.6	11.4	171.2	9.0	181.7
	11:18	16.2	207.8	13.1	10.1	12.5	161.0	10.2	179.9
	11:19	19.0	201.5	17.8	10.1	14.7	156.0	13.8	181.6
	11:20	18.4	195.6	20.8	9.6	15.0	159.4	17.0	182.2
	11:21	16.0	198.6	21.2	9.4	13.2	164.2	17.5	183.4
	11:22	14.5	200.4	19.0	9.5	11.9	164.4	15.6	182.8
	11:23	18.9	203.8	18.5	9.8	15.1	162.5	14.8	184.7
	11:24	25.1	194.5	18.2	9.2	21.2	164.1	15.3	183.7
	11:25	28.4	196.7	18.6	9.4	23.5	162.7	15.4	181.4
	11:26	25.2	197.2	19.2	9.8	20.1	157.1	15.3	183.3
	11:27	19.7	193.4	20.3	9.4	16.3	160.3	16.8	183.0
	11:28	17.0	197.6	19.0	9.5	13.9	161.7	15.5	184.2
	11:29	17.2	191.4	15.0	9.4	14.2	158.2	12.4	183.0
	11:30	20.2	190.3	14.4	9.7	16.2	152.9	11.6	184.0
	11:31	22.0	187.0	12.8	9.5	18.1	154.0	10.6	183.1
	11:32	25.2	197.7	10.5	9.5	20.7	162.5	8.7	182.3
	11:33	23.5	197.5	10.9	9.7	19.0	159.8	8.9	182.6
	11:34	17.0	189.1	13.1	9.5	14.0	155.2	10.8	182.0
	11:35	13.7	194.1	17.0	9.9	10.8	153.7	13.5	182.5
	11:36	13.9	190.0	20.1	9.6	11.3	154.0	16.3	183.4
	11:37	17.0	187.4	20.0	9.7	13.7	151.3	16.1	183.4
	11:38	20.2	185.3	20.3	10.0	15.8	144.7	15.8	183.1
	11:39	21.0	183.2	24.2	10.1	16.3	142.1	18.8	184.2
	11:40	21.2	183.0	27.5	9.8	16.9	145.8	21.9	180.8
	11:41	24.0	185.1	28.5	10.5	18.0	138.3	21.3	179.9
	11:42	24.9	171.4	25.0	10.4	18.9	130.0	19.0	180.9
Average =		19.6	193.9	18.1	9.7	15.8	156.4	14.6	182.6
Geometric Avg. =		19.2	193.7	17.5	9.7	15.5	156.1	14.1	182.6
Maximum =		28.4	211.4	28.5	10.5	23.5	176.6	21.9	184.7
Minimum =		13.7	171.4	10.5	8.9	10.8	130.0	8.7	179.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		529.0	5234.7	489.4	261.6	426.1	4223.7	393.1	4931.5

* - 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

Run 4 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Time of Report: 03/16/10 12:33

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	12:03	21.3	191.8	15.8	9.6	17.3	155.7	12.8	185.6
	12:04	17.9	183.9	15.6	8.8	15.6	159.7	13.5	184.4
	12:05	16.7	193.9	16.0	9.3	14.0	162.2	13.4	182.1
	12:06	16.5	193.3	17.4	10.0	12.9	151.3	13.6	182.4
	12:07	17.7	177.1	16.9	9.3	14.7	147.3	14.0	182.4
	12:08	21.0	180.9	18.3	9.6	17.0	146.8	14.8	182.4
	12:09	21.8	176.2	18.7	9.5	17.9	144.8	15.4	182.6
	12:10	21.7	181.8	17.5	9.6	17.7	148.3	14.3	184.3
	12:11	20.7	181.6	14.3	9.1	17.6	154.0	12.2	184.5
	12:12	20.5	185.4	11.3	9.1	17.4	157.3	9.6	182.2
	12:13	20.5	198.3	12.0	10.0	16.0	155.0	9.4	184.0
	12:14	18.9	191.8	13.9	9.3	15.7	160.1	11.6	184.7
	12:15	18.1	194.1	12.9	9.0	15.5	166.5	11.1	183.7
	12:16	16.5	198.8	12.1	9.5	13.6	163.3	9.9	184.1
	12:17	16.4	192.3	16.6	9.6	13.4	157.0	13.5	186.7
	12:18	16.9	183.8	16.5	8.8	14.8	160.7	14.4	184.5
	12:19	17.3	197.2	12.2	9.4	14.2	162.6	10.0	182.4
	12:20	16.5	202.1	11.5	10.1	12.9	157.5	8.9	183.5
	12:21	15.8	196.7	11.4	9.4	13.1	162.4	9.4	185.6
	12:22	16.1	204.4	9.9	9.4	13.3	169.4	8.2	186.7
	12:23	16.3	201.2	9.2	9.2	13.7	169.5	7.7	184.9
	12:24	18.7	209.4	10.5	9.8	15.0	167.4	8.4	183.3
	12:25	20.5	217.5	11.6	10.4	15.5	164.8	8.8	184.3
	12:26	20.7	206.7	10.3	9.6	16.7	167.4	8.4	184.7
	12:27	20.6	203.9	9.1	9.2	17.4	171.8	7.7	185.2
	12:28	20.3	204.9	9.3	9.4	16.8	169.6	7.7	184.6
	12:29	21.5	202.7	9.9	9.8	17.2	161.9	7.9	183.3
Average =		18.8	194.5	13.4	9.5	15.4	159.8	11.0	184.0
Geometric Avg. =		18.7	194.2	13.0	9.5	15.3	159.6	10.7	184.0
Maximum =		21.8	217.5	18.7	10.4	17.9	171.8	15.4	186.7
Minimum =		15.8	176.2	9.1	8.8	12.9	144.8	7.7	182.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		507.3	5251.8	360.6	255.7	416.8	4314.3	296.7	4969.2

* - 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

Run 5 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/16/10 13:18

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	12:41	18.7	185.0	16.2	9.9	14.8	146.2	12.8	182.2
	12:42	19.4	179.5	18.4	9.9	15.3	141.6	14.5	180.8
	12:43	20.6	184.2	20.4	10.2	15.8	141.2	15.6	183.1
	12:44	18.1	180.1	18.2	9.8	14.5	144.0	14.5	184.1
	12:45	15.9	181.4	15.3	9.6	12.9	147.0	12.4	182.4
	12:46	14.0	184.9	14.2	10.1	10.9	143.4	11.0	181.6
	12:47	13.3	180.4	14.8	10.2	10.2	139.2	11.4	181.2
	12:48	13.8	183.1	15.3	10.1	10.7	141.8	11.8	183.4
	12:49	15.3	181.1	13.6	9.5	12.6	148.8	11.1	182.7
	12:50	18.6	191.6	12.7	10.0	14.6	150.0	9.9	184.1
	12:51	18.1	186.7	13.5	9.7	14.6	150.7	10.9	183.1
	12:52	19.1	194.7	13.8	10.0	15.0	152.6	10.8	182.5
	12:53	18.7	193.1	12.2	10.0	14.6	151.0	9.6	184.5
	12:54	15.9	190.4	10.8	9.5	13.1	156.1	8.8	185.2
	12:55	15.2	192.8	10.6	9.5	12.4	157.4	8.6	183.4
	12:56	17.6	195.5	13.4	10.1	13.7	151.7	10.4	185.6
	12:57	17.1	186.6	15.1	9.6	13.9	151.6	12.3	184.8
	12:58	12.4	191.3	14.8	9.6	10.1	155.6	12.0	182.5
	12:59	14.2	202.7	16.1	10.3	10.9	155.0	12.3	183.3
	13:00	18.8	192.4	18.9	9.9	14.9	152.5	15.0	181.8
	13:01	16.3	193.9	17.6	9.9	12.9	153.5	13.9	185.7
	13:02	10.3	187.5	14.0	8.9	8.9	161.5	12.1	184.7
	13:03	13.4	197.5	13.7	9.3	11.2	165.2	11.5	181.7
	13:04	19.5	199.4	14.9	10.1	15.2	154.9	11.5	181.4
	13:05	21.0	188.9	15.6	9.4	17.3	155.7	12.8	183.9
	13:06	25.3	194.2	16.5	9.1	21.4	164.3	13.9	188.4
	13:07	23.7	189.0	13.6	8.3	21.5	171.9	12.4	187.6
Average =		17.2	189.2	15.0	9.7	13.8	152.0	12.0	183.5
Geometric Avg. =		16.9	189.1	14.8	9.7	13.5	151.8	11.9	183.5
Maximum =		25.3	202.7	20.4	10.3	21.5	171.9	15.6	188.4
Minimum =		10.3	179.5	10.6	8.3	8.9	139.2	8.6	180.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		464.3	5108.0	404.1	262.7	373.6	4104.5	324.2	4955.8

* - 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

Run 6 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Time of Report: 03/16/10 13:52

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	13:16	17.9	196.1	9.4	9.0	15.3	167.4	8.0	183.2
	13:17	18.1	209.8	10.9	9.9	14.3	165.7	8.6	184.7
	13:18	16.4	199.2	11.2	9.8	13.1	159.4	9.0	183.2
	13:19	15.6	185.1	10.4	9.6	12.8	151.0	8.5	183.4
	13:20	16.9	178.4	11.4	9.6	13.7	144.6	9.2	186.0
	13:21	17.3	170.5	13.2	8.9	15.0	147.6	11.4	183.4
	13:22	19.8	189.2	14.0	9.7	15.9	151.8	11.2	180.4
	13:23	22.2	193.1	14.4	10.3	17.0	147.6	11.0	179.6
	13:24	23.4	187.6	13.9	10.1	18.2	145.5	10.8	182.0
	13:25	24.0	183.3	15.7	9.8	19.2	146.4	12.5	181.3
	13:26	23.8	188.8	21.6	10.4	18.1	143.1	16.4	181.6
	13:27	19.9	182.4	21.4	10.1	15.4	141.9	16.6	180.8
	13:28	17.9	189.9	21.6	10.2	13.7	145.5	16.5	180.7
	13:29	16.6	193.5	19.3	10.1	12.8	149.7	14.9	180.4
	13:30	16.1	197.7	17.1	10.1	12.5	153.8	13.3	179.8
	13:31	15.7	204.6	16.3	10.2	12.1	157.6	12.6	179.8
	13:32	13.9	205.0	15.8	10.1	10.8	158.9	12.2	180.9
	13:33	15.6	199.5	15.6	9.7	12.5	160.5	12.6	183.0
	13:34	17.0	197.9	15.4	9.5	14.0	162.9	12.7	184.0
	13:35	14.5	198.4	13.5	9.2	12.2	166.4	11.3	181.8
	13:36	13.0	211.6	12.3	9.9	10.3	167.5	9.7	181.4
	13:37	14.1	209.5	11.6	9.7	11.3	168.4	9.3	183.4
	13:38	15.4	203.8	11.7	9.3	12.9	170.2	9.8	185.5
	13:39	14.7	196.8	10.4	8.9	12.7	169.7	8.9	183.1
	13:40	15.6	202.2	9.0	9.6	12.7	164.7	7.3	184.0
	13:41	16.7	194.4	10.2	9.5	13.7	160.0	8.4	183.5
	13:42	15.4	193.7	10.3	9.2	12.9	162.5	8.6	182.3
Average =		17.3	194.9	14.0	9.7	13.9	156.7	11.2	182.3
Geometric Avg. =		17.1	194.6	13.5	9.7	13.7	156.4	10.9	182.3
Maximum =		24.0	211.6	21.6	10.4	19.2	170.2	16.6	186.0
Minimum =		13.0	170.5	9.0	8.9	10.3	141.9	7.3	179.6
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		467.5	5261.9	377.4	262.5	375.0	4230.3	301.4	4923.2

* - 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

Run 7 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Data Averaging Type: 1m

Time of Report: 03/16/10 14:27

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	13:52	15.2	195.3	18.5	9.7	12.3	157.4	14.9	182.2
	13:53	15.2	192.4	19.0	9.5	12.5	157.3	15.5	182.1
	13:54	17.7	195.0	21.3	9.6	14.4	158.9	17.3	183.3
	13:55	18.3	192.7	21.0	9.4	15.1	158.8	17.3	181.4
	13:56	18.4	190.3	22.6	9.8	14.6	151.8	18.0	181.4
	13:57	18.1	184.9	22.5	9.9	14.3	146.7	17.8	180.9
	13:58	19.8	186.2	21.5	9.8	15.8	148.8	17.2	182.1
	13:59	21.0	186.9	21.3	9.8	16.8	149.4	17.0	182.5
	14:00	19.7	186.3	19.8	9.7	15.9	150.7	16.1	182.3
	14:01	18.5	190.6	19.9	9.7	15.0	153.9	16.1	183.6
	14:02	18.4	190.1	16.8	9.2	15.5	159.8	14.1	182.7
	14:03	20.8	198.5	15.5	9.8	16.7	159.1	12.4	182.6
	14:04	20.3	194.3	14.9	9.6	16.5	157.7	12.1	183.0
	14:05	18.7	204.3	15.2	9.6	15.2	166.0	12.3	185.0
	14:06	17.1	205.0	14.3	9.1	14.5	173.8	12.1	184.4
	14:07	17.8	210.8	13.3	9.5	14.6	172.6	10.9	183.9
	14:08	19.5	207.0	13.6	9.8	15.6	165.7	10.9	182.7
	14:09	20.9	207.5	13.8	9.7	16.8	166.8	11.1	181.9
	14:10	20.7	216.5	13.8	10.0	16.3	170.5	10.9	181.2
	14:11	20.5	216.0	13.4	9.9	16.3	171.5	10.7	184.2
	14:12	20.7	209.6	12.6	9.4	17.1	173.1	10.4	183.6
	14:13	20.4	211.5	12.7	9.6	16.7	172.7	10.4	183.8
	14:14	21.2	207.1	15.5	9.7	17.1	167.0	12.5	183.1
	14:15	23.9	204.3	21.1	10.1	18.5	158.1	16.3	182.4
	14:16	22.5	195.0	20.4	9.9	17.9	154.6	16.2	185.7
	14:17	18.7	186.8	16.3	9.0	16.0	159.8	13.9	185.4
	14:18	17.4	190.7	13.7	9.2	14.7	160.9	11.6	183.4
Average =		19.3	198.4	17.2	9.6	15.7	160.9	13.9	183.0
Geometric Avg. =		19.2	198.1	16.9	9.6	15.6	160.7	13.7	183.0
Maximum =		23.9	216.5	22.6	10.1	18.5	173.8	18.0	185.7
Minimum =		15.2	184.9	12.6	9.0	12.3	146.7	10.4	180.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		521.6	5355.7	464.3	259.9	422.6	4343.3	376.0	4940.8

* - 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

Run 8 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Time of Report: 03/16/10 15:04

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	14:27	14.1	191.4	16.1	9.7	11.4	154.3	13.0	185.1
	14:28	14.3	188.1	13.8	9.2	12.1	159.0	11.6	185.7
	14:29	13.7	195.3	12.7	9.2	11.5	164.4	10.7	183.8
	14:30	14.3	208.3	12.3	10.0	11.2	163.4	9.6	184.2
	14:31	16.2	201.0	12.3	9.7	13.0	162.0	9.9	184.7
	14:32	20.8	201.1	13.1	9.5	17.0	164.7	10.7	183.9
	14:33	23.0	202.3	13.3	9.7	18.6	163.4	10.7	184.4
	14:34	20.9	202.1	13.9	9.6	17.0	164.4	11.3	183.6
	14:35	18.7	205.5	14.8	9.7	15.1	165.8	12.0	183.3
	14:36	19.2	197.8	15.5	9.6	15.6	160.2	12.5	184.1
	14:37	22.4	185.1	13.9	9.4	18.6	153.7	11.6	183.8
	14:38	24.8	182.9	13.6	9.7	20.1	148.0	11.0	186.4
	14:39	22.9	177.0	14.3	9.2	19.2	148.3	12.0	185.5
	14:40	21.2	188.7	14.1	9.8	16.9	150.2	11.2	183.3
	14:41	17.4	194.0	15.7	10.3	13.2	147.5	11.9	182.6
	14:42	13.8	189.5	16.9	9.9	10.9	150.4	13.4	183.0
	14:43	14.5	191.4	19.4	9.8	11.6	152.8	15.5	187.4
	14:44	18.8	178.4	18.2	8.9	16.3	154.1	15.8	186.7
	14:45	25.1	182.3	15.8	9.3	20.9	151.8	13.1	183.0
	14:46	30.6	189.5	18.3	10.1	23.8	147.3	14.2	182.0
	14:47	28.8	187.3	20.3	10.0	22.7	147.2	16.0	182.0
	14:48	24.7	187.2	21.8	9.9	19.5	147.6	17.2	183.8
	14:49	20.3	181.6	20.3	9.4	16.8	150.4	16.8	183.1
	14:50	17.8	189.4	20.5	9.8	14.2	151.3	16.4	188.0
	14:51	17.0	177.5	20.3	8.7	14.9	156.0	17.8	189.0
	14:52	21.0	187.0	18.3	8.6	18.5	165.2	16.1	185.3
	14:53	23.4	209.5	14.4	9.8	18.6	166.6	11.5	181.8
Average =		20.0	191.5	16.1	9.6	16.3	155.9	13.1	184.4
Geometric Avg. =		19.5	191.3	15.8	9.6	15.9	155.8	12.9	184.4
Maximum =		30.6	209.5	21.8	10.3	23.8	166.6	17.8	189.0
Minimum =		13.7	177.0	12.3	8.6	10.9	147.2	9.6	181.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		539.7	5171.1	433.8	258.5	439.2	4210.1	353.5	4979.6

* - 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

Run 9 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Time of Report: 03/16/10 15:39

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	15:03	16.3	187.8	19.7	9.4	13.5	155.7	16.4	181.8
	15:04	17.6	192.8	19.7	9.9	14.0	153.2	15.6	183.2
	15:05	21.3	185.2	18.4	9.4	17.6	153.0	15.2	182.1
	15:06	22.8	195.1	19.6	9.8	18.2	155.3	15.6	183.0
	15:07	21.8	188.8	17.7	9.4	18.0	156.0	14.7	182.0
	15:08	23.5	190.2	18.1	9.7	18.9	152.9	14.5	182.5
	15:09	25.2	183.8	18.9	9.7	20.4	148.7	15.3	181.5
	15:10	25.1	191.4	20.8	10.2	19.4	147.7	16.1	182.3
	15:11	20.3	189.5	19.0	9.7	16.4	153.0	15.4	183.3
	15:12	18.1	194.2	18.2	9.7	14.7	156.8	14.7	184.5
	15:13	16.8	188.8	15.9	9.3	14.0	157.1	13.2	183.1
	15:14	17.2	190.8	16.5	9.7	13.9	153.6	13.3	184.4
	15:15	18.7	182.1	17.9	9.6	15.1	147.5	14.5	181.1
	15:16	20.6	185.5	19.3	10.2	15.8	142.8	14.9	181.0
	15:17	17.9	183.0	19.2	9.9	14.2	144.9	15.2	181.5
	15:18	16.5	186.4	19.6	9.6	13.4	151.4	15.9	183.8
	15:19	16.9	187.7	18.1	9.4	14.0	155.5	15.0	182.9
	15:20	17.0	196.6	17.8	9.8	13.6	156.9	14.2	185.1
	15:21	15.4	189.5	17.5	9.3	12.8	157.8	14.6	182.9
	15:22	16.3	196.7	16.4	9.6	13.2	159.5	13.3	184.9
	15:23	18.9	196.5	14.5	9.4	15.7	162.7	12.0	183.4
	15:24	21.2	199.0	15.2	9.5	17.4	163.9	12.5	185.2
	15:25	21.4	199.3	16.9	9.3	17.8	166.3	14.1	185.8
	15:26	19.7	199.3	16.2	9.0	16.8	170.0	13.8	182.4
	15:27	18.0	211.5	15.9	10.0	14.1	166.5	12.5	182.2
	15:28	16.6	203.0	15.8	9.7	13.4	164.1	12.8	180.7
	15:29	18.9	205.6	18.5	9.8	15.1	163.9	14.7	181.3
Average =		19.3	192.6	17.8	9.6	15.6	156.2	14.4	182.9
Geometric Avg. =		19.1	192.5	17.8	9.6	15.5	156.0	14.4	182.9
Maximum =		25.2	211.5	20.8	10.2	20.4	170.0	16.4	185.8
Minimum =		15.4	182.1	14.5	9.0	12.8	142.8	12.0	180.7
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		520.1	5199.7	481.3	260.0	421.4	4216.4	389.9	4937.7

* - 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

Run 10 Unit 2 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/16/2010 to 03/16/2010

Site Name: UNIT2

Time of Report: 03/16/10 16:17

Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT2 (PPMDC)	NOXRPT_2 (PPMDC)	CORPT_2 (PPMDC)	O2OUT_2 (PERCENTD)	SO2OUT_2 (PPMD)	NOXPPM_2 (PPMD)	COPPM_2 (PPMD)	STMRPT_2 (KLB/HR)
03/16/10	15:38	24.8	187.0	14.6	8.9	21.3	160.8	12.5	182.8
	15:39	26.7	200.0	13.2	9.6	21.6	162.0	10.7	184.3
	15:40	23.1	197.3	12.7	9.4	19.1	163.4	10.5	184.2
	15:41	20.2	197.4	12.0	9.2	17.0	166.8	10.2	183.4
	15:42	18.8	202.8	11.3	9.7	15.1	163.1	9.1	185.6
	15:43	18.1	190.5	10.7	9.1	15.3	161.5	9.1	183.2
	15:44	20.4	200.3	11.2	9.8	16.3	159.9	8.9	184.5
	15:45	19.3	197.1	11.0	9.6	15.7	160.0	8.9	184.7
	15:46	16.1	198.5	10.2	9.4	13.4	164.8	8.5	183.4
	15:47	13.7	208.8	10.7	9.8	11.0	167.0	8.6	185.1
	15:48	12.5	197.6	10.6	9.2	10.5	166.4	8.9	183.6
	15:49	14.3	203.1	10.2	9.6	11.7	165.8	8.3	184.0
	15:50	16.4	202.7	12.2	9.7	13.2	163.6	9.8	185.2
	15:51	17.3	195.4	12.8	9.2	14.6	165.0	10.8	184.2
	15:52	17.1	206.4	11.3	9.6	13.9	167.5	9.2	184.5
	15:53	17.0	208.7	11.8	9.6	13.7	169.1	9.6	185.9
	15:54	16.2	198.5	11.7	8.9	14.0	171.8	10.1	185.0
	15:55	16.2	209.4	10.1	9.6	13.2	170.9	8.2	184.3
	15:56	22.2	207.7	11.5	10.0	17.3	162.4	9.0	189.3
	15:57	25.8	185.7	12.9	8.9	22.3	159.9	11.1	191.0
	15:58	24.1	189.2	11.7	8.8	21.0	164.6	10.2	186.7
	15:59	18.4	211.2	10.6	9.8	14.7	168.4	8.4	180.4
	16:00	12.6	225.6	10.8	10.8	9.2	163.7	7.8	180.0
	16:01	10.6	202.1	11.9	10.1	8.2	156.7	9.2	184.3
	16:02	13.6	181.5	12.0	9.0	11.7	155.6	10.3	184.8
	16:03	16.5	180.9	10.9	9.1	14.0	153.8	9.2	185.6
	16:04	17.7	182.3	11.2	9.3	14.7	151.7	9.4	183.3
Average =		18.1	198.8	11.6	9.5	15.0	163.2	9.5	184.6
Geometric Avg. =		17.7	198.5	11.5	9.5	14.5	163.1	9.5	184.6
Maximum =		26.7	225.6	14.6	10.8	22.3	171.8	12.5	191.0
Minimum =		10.6	180.9	10.1	8.8	8.2	151.7	7.8	180.0
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		489.8	5367.4	311.9	255.7	403.9	4406.0	256.7	4983.4

* - 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

Run 1 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Averaging Type: 1m

Time of Report: 03/17/10 07:46

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	07:11	8.9	197.7	23.6	8.5	7.9	175.9	21.0	185.6
	07:12	8.2	200.7	20.5	8.3	7.4	182.1	18.6	184.8
	07:13	7.9	198.1	16.2	8.2	7.2	180.8	14.8	187.0
	07:14	9.2	194.4	16.3	8.0	8.6	180.4	15.1	185.7
	07:15	9.4	185.5	13.0	7.9	8.8	173.9	12.2	185.4
	07:16	8.9	188.7	16.3	8.3	8.1	170.9	14.8	186.7
	07:17	9.9	187.3	15.1	7.9	9.2	175.8	14.2	185.6
	07:18	10.0	180.5	16.9	8.0	9.3	166.9	15.6	187.0
	07:19	10.0	183.1	17.8	8.1	9.2	169.2	16.5	185.2
	07:20	9.2	181.7	12.5	7.8	8.7	171.6	11.8	184.5
	07:21	10.4	187.8	14.6	8.3	9.4	170.3	13.2	185.9
	07:22	15.6	192.0	11.5	7.8	14.7	181.1	10.8	185.2
	07:23	10.5	187.8	10.3	7.9	9.8	175.7	9.6	186.9
	07:24	10.3	184.8	10.9	8.0	9.6	171.2	10.1	185.6
	07:25	13.9	186.7	9.0	7.9	12.9	174.0	8.4	185.0
	07:26	14.1	191.3	12.5	8.3	12.8	173.9	11.4	184.4
	07:27	12.8	188.5	11.7	8.2	11.7	171.9	10.7	185.0
	07:28	13.7	187.4	10.9	8.2	12.4	170.7	10.0	184.9
	07:29	14.3	183.1	12.1	8.1	13.1	167.9	11.1	183.3
	07:30	13.0	177.2	15.0	8.3	11.8	160.7	13.6	183.2
	07:31	12.2	172.9	18.4	8.4	11.0	156.0	16.6	184.1
	07:32	11.9	176.9	18.2	8.3	10.7	160.0	16.5	183.8
	07:33	12.0	179.8	17.4	8.4	10.8	161.4	15.6	182.9
	07:34	14.6	177.0	14.9	8.4	13.2	159.6	13.5	183.7
	07:35	13.5	175.3	16.7	8.5	12.0	156.4	14.9	183.8
	07:36	12.6	176.3	17.3	8.3	11.4	160.3	15.7	183.6
	07:37	12.1	178.0	16.2	8.3	10.9	160.9	14.6	184.4
Average =		11.4	185.2	15.0	8.2	10.5	169.6	13.7	184.9
Geometric Avg. =		11.2	185.1	14.7	8.2	10.3	169.4	13.4	184.9
Maximum =		15.6	200.7	23.6	8.5	14.7	182.1	21.0	187.0
Minimum =		7.9	172.9	9.0	7.8	7.2	156.0	8.4	182.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		308.9	5000.3	405.7	220.6	282.8	4579.8	370.7	4993.3

* - 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

Run 2 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 08:21

Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	07:46	11.7	188.5	17.4	8.4	10.5	170.1	15.7	184.8
	07:47	12.3	185.2	19.6	8.3	11.2	167.9	17.8	183.1
	07:48	13.0	190.5	21.5	8.5	11.6	170.6	19.3	183.5
	07:49	15.6	190.7	20.1	8.4	14.1	171.6	18.1	183.4
	07:50	16.4	195.8	19.6	8.4	14.7	175.7	17.6	183.4
	07:51	15.0	197.8	19.0	8.4	13.5	178.3	17.1	181.9
	07:52	12.0	196.9	19.7	8.6	10.6	174.2	17.5	184.1
	07:53	10.6	192.5	17.5	8.4	9.5	173.4	15.8	184.3
	07:54	12.8	189.5	14.4	8.2	11.7	172.7	13.2	185.3
	07:55	15.4	189.0	13.4	8.3	14.0	171.3	12.1	183.2
	07:56	12.3	192.4	14.1	8.7	10.8	168.8	12.3	183.5
	07:57	9.9	191.1	12.0	8.5	8.9	170.8	10.7	185.2
	07:58	9.6	187.5	11.2	8.1	8.9	172.5	10.3	184.8
	07:59	11.6	181.7	11.1	8.0	10.7	168.9	10.3	185.8
	08:00	10.8	179.9	12.8	8.1	10.0	166.2	11.8	184.4
	08:01	10.6	179.9	10.5	7.8	9.9	168.9	9.9	184.4
	08:02	13.5	184.6	16.1	8.2	12.3	168.6	14.7	185.5
	08:03	18.7	174.0	13.6	7.7	17.7	164.7	12.9	184.1
	08:04	22.1	171.3	13.5	8.1	20.4	158.4	12.5	186.7
	08:05	25.9	172.6	13.5	7.8	24.5	162.9	12.7	183.8
	08:06	23.9	178.0	11.9	8.0	22.3	165.7	11.1	184.4
	08:07	19.4	187.9	13.1	8.1	17.8	172.3	12.0	184.0
	08:08	15.7	188.4	12.0	8.1	14.5	174.0	11.1	184.1
	08:09	14.3	192.4	11.0	7.9	13.4	179.5	10.3	184.2
	08:10	14.3	189.6	12.8	8.1	13.2	174.2	11.8	182.9
	08:11	14.4	190.8	12.0	8.2	13.2	174.1	10.9	182.5
	08:12	16.2	196.9	12.7	8.3	14.7	178.3	11.5	182.4
Average =		14.7	187.2	14.7	8.2	13.5	170.9	13.4	184.1
Geometric Avg. =		14.2	187.1	14.3	8.2	13.0	170.9	13.1	184.1
Maximum =		25.9	197.8	21.5	8.7	24.5	179.5	19.3	186.7
Minimum =		9.6	171.3	10.5	7.7	8.9	158.4	9.9	181.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		397.9	5055.5	396.2	221.5	364.3	4614.9	360.9	4970.0

* - 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

Run 3 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 08:56

Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	08:21	15.9	177.2	14.2	8.8	13.8	154.3	12.4	181.2
	08:22	15.2	179.6	14.7	9.0	13.0	154.0	12.6	184.0
	08:23	14.4	175.9	11.8	8.2	13.1	160.3	10.7	183.2
	08:24	12.7	180.0	10.7	8.1	11.7	166.0	9.9	183.2
	08:25	10.6	188.1	11.4	8.2	9.7	172.0	10.4	181.1
	08:26	9.7	191.3	12.2	8.5	8.6	170.5	10.9	181.9
	08:27	10.0	191.5	12.2	8.3	9.0	173.0	11.0	184.2
	08:28	10.0	190.7	10.1	8.0	9.3	177.3	9.4	183.4
	08:29	9.4	188.6	8.3	7.8	8.8	177.7	7.9	182.8
	08:30	9.7	190.5	10.8	8.3	8.8	172.8	9.8	181.6
	08:31	10.0	190.3	12.6	8.4	9.0	170.6	11.3	182.6
	08:32	9.3	195.1	11.9	8.3	8.4	176.5	10.7	184.0
	08:33	8.8	193.4	9.4	8.0	8.2	179.9	8.7	183.7
	08:34	8.6	192.9	8.6	8.1	8.0	178.1	7.9	182.6
	08:35	8.9	198.5	8.9	8.3	8.1	180.0	8.1	184.8
	08:36	8.7	199.2	9.9	8.1	8.0	183.7	9.1	184.3
	08:37	7.7	189.9	8.5	7.7	7.3	180.5	8.1	184.3
	08:38	9.3	190.3	11.5	8.1	8.6	175.8	10.6	184.1
	08:39	11.0	193.4	10.5	8.1	10.2	178.7	9.7	183.6
	08:40	7.2	201.5	11.0	8.2	6.6	183.9	10.0	183.8
	08:41	7.6	201.9	11.6	8.1	7.0	185.8	10.7	182.1
	08:42	11.5	203.6	13.5	8.4	10.3	183.1	12.2	181.9
	08:43	13.5	198.4	15.5	8.4	12.2	178.6	13.9	183.1
	08:44	14.8	187.3	14.4	7.9	13.8	174.5	13.4	184.3
	08:45	15.2	185.9	11.4	7.6	14.5	177.5	10.9	183.9
	08:46	16.0	191.7	12.2	8.0	14.9	178.5	11.4	183.3
	08:47	18.4	188.3	14.0	8.1	17.0	173.4	12.8	182.6
Average =		11.3	190.9	11.5	8.2	10.3	174.7	10.5	183.2
Geometric Avg. =		10.9	190.8	11.4	8.2	10.0	174.5	10.4	183.2
Maximum =		18.4	203.6	15.5	9.0	17.0	185.8	13.9	184.8
Minimum =		7.2	175.9	8.3	7.6	6.6	154.0	7.9	181.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		304.1	5155.0	311.8	220.9	277.9	4717.0	284.7	4945.5

* - 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

Run 4 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 09:30

Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	08:55	13.2	187.9	9.3	7.8	12.5	176.9	8.7	184.9
	08:56	13.0	189.3	9.2	7.7	12.4	180.3	8.7	182.1
	08:57	11.5	194.9	9.3	8.1	10.6	179.7	8.6	181.7
	08:58	14.0	196.7	9.8	8.4	12.5	176.7	8.8	183.8
	08:59	15.4	191.9	10.3	8.3	14.0	174.2	9.3	183.6
	09:00	12.9	190.8	10.6	8.2	11.8	174.5	9.7	183.2
	09:01	12.5	198.4	11.5	8.2	11.4	181.4	10.5	181.5
	09:02	11.6	204.0	11.5	8.5	10.4	182.4	10.3	182.2
	09:03	9.7	202.4	12.2	8.4	8.7	181.7	11.0	184.0
	09:04	9.2	200.2	12.2	8.2	8.4	182.7	11.1	183.0
	09:05	10.2	196.4	10.7	8.1	9.3	180.2	9.8	183.3
	09:06	10.5	198.1	11.0	8.4	9.5	178.1	9.9	183.6
	09:07	11.1	206.9	10.4	8.5	9.9	185.2	9.3	184.1
	09:08	14.7	204.9	9.6	8.1	13.6	189.2	8.9	183.6
	09:09	12.2	198.8	9.2	8.0	11.3	184.4	8.5	182.8
	09:10	9.1	204.7	10.1	8.3	8.2	186.0	9.2	185.4
	09:11	8.1	208.2	9.4	7.8	7.6	196.0	8.9	189.1
	09:12	7.0	194.4	7.2	7.0	7.0	194.8	7.2	185.9
	09:13	5.3	188.3	6.1	7.3	5.2	184.7	6.0	185.2
	09:14	4.4	192.2	8.6	7.9	4.1	180.2	8.0	185.9
	09:15	3.9	189.7	7.7	7.6	3.7	182.0	7.4	184.2
	09:16	3.6	188.0	9.7	7.9	3.4	175.5	9.1	187.0
	09:17	6.4	188.4	9.0	7.5	6.1	181.4	8.7	184.3
	09:18	9.4	188.0	7.4	7.6	9.0	180.0	7.1	185.9
	09:19	8.8	185.3	9.6	7.6	8.5	177.7	9.2	183.6
	09:20	7.7	185.7	8.9	7.7	7.3	176.7	8.4	183.0
	09:21	7.0	194.9	11.6	8.2	6.4	178.1	10.6	183.5
Average =		9.7	195.2	9.7	8.0	9.0	181.5	9.0	184.1
Geometric Avg. =		9.1	195.0	9.6	8.0	8.4	181.4	8.9	184.1
Maximum =		15.4	208.2	12.2	8.5	14.0	196.0	11.1	189.1
Minimum =		3.6	185.3	6.1	7.0	3.4	174.2	6.0	181.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		262.2	5269.3	261.8	215.0	242.8	4900.6	242.7	4970.3

* - 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

Run 5 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 10:04

Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	09:29	7.7	199.5	12.9	8.3	7.0	180.4	11.7	181.7
	09:30	8.6	197.7	15.3	8.4	7.7	177.2	13.8	182.9
	09:31	8.7	204.2	16.5	8.4	7.9	183.5	14.9	181.2
	09:32	8.0	207.0	15.3	8.6	7.1	182.7	13.5	182.2
	09:33	7.5	205.8	17.4	8.6	6.6	181.5	15.3	183.7
	09:34	7.2	204.9	13.3	8.3	6.5	186.0	12.1	183.4
	09:35	6.5	193.5	12.9	8.3	5.9	175.2	11.7	182.4
	09:36	6.0	190.8	15.0	8.6	5.4	168.8	13.2	182.0
	09:37	6.9	193.7	17.7	8.6	6.1	171.9	15.7	182.5
	09:38	7.5	195.0	16.7	8.5	6.7	173.6	14.9	181.9
	09:39	6.8	194.8	17.0	8.6	6.0	171.7	15.0	181.2
	09:40	5.8	203.0	16.3	8.8	5.0	176.6	14.2	182.6
	09:41	5.5	201.4	15.0	8.6	4.9	178.5	13.3	183.9
	09:42	5.2	191.8	11.9	8.1	4.8	176.1	11.0	185.0
	09:43	4.7	190.4	12.3	7.9	4.3	177.5	11.4	183.0
	09:44	3.9	192.4	12.1	8.3	3.5	174.3	11.0	183.1
	09:45	3.8	196.5	12.5	8.4	3.4	177.2	11.3	182.3
	09:46	4.0	191.7	12.8	8.4	3.6	172.0	11.5	182.3
	09:47	4.0	192.5	11.6	8.4	3.6	173.4	10.5	183.0
	09:48	3.8	198.0	12.2	8.4	3.5	178.1	11.0	183.5
	09:49	3.6	189.4	11.7	8.3	3.3	172.0	10.6	183.8
	09:50	3.4	188.6	11.7	8.4	3.0	169.6	10.6	182.6
	09:51	3.3	190.0	12.6	8.5	2.9	169.4	11.2	183.6
	09:52	3.3	194.3	12.2	8.5	3.0	173.2	10.8	184.1
	09:53	3.4	184.2	11.6	8.2	3.1	168.8	10.6	182.4
	09:54	3.3	180.3	13.9	8.5	2.9	160.9	12.4	182.4
	09:55	3.4	180.2	14.6	8.6	3.0	159.0	12.9	184.0
Average =		5.4	194.5	13.9	8.4	4.8	174.4	12.4	182.8
Geometric Avg. =		5.1	194.4	13.8	8.4	4.6	174.3	12.3	182.8
Maximum =		8.7	207.0	17.7	8.8	7.9	186.0	15.7	185.0
Minimum =		3.3	180.2	11.6	7.9	2.9	159.0	10.5	181.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		145.9	5251.4	375.3	227.7	130.7	4709.0	336.1	4936.6

* - 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

Run 6 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 10:38

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	10:03	6.6	200.4	14.2	7.9	6.1	187.5	13.2	184.3
	10:04	5.2	195.6	12.9	8.0	4.8	180.9	12.0	184.4
	10:05	3.9	197.7	13.9	8.3	3.6	179.1	12.6	182.6
	10:06	3.6	200.6	14.1	8.6	3.2	178.1	12.5	183.8
	10:07	4.1	199.1	13.6	8.1	3.7	182.6	12.4	184.4
	10:08	4.3	196.3	13.3	8.1	3.9	180.6	12.2	183.6
	10:09	3.8	196.8	14.6	8.4	3.4	176.4	13.1	183.1
	10:10	3.5	197.1	14.8	8.5	3.2	175.8	13.2	184.1
	10:11	3.8	194.0	12.9	8.1	3.5	178.4	11.9	184.6
	10:12	4.8	190.4	12.5	8.2	4.3	173.3	11.4	183.9
	10:13	4.1	188.2	11.9	8.2	3.8	172.1	10.9	183.3
	10:14	3.4	181.6	12.5	8.2	3.1	165.7	11.4	182.3
	10:15	3.2	183.8	12.2	8.3	2.9	165.9	11.1	180.1
	10:16	3.1	185.9	14.5	8.8	2.8	162.3	12.6	180.2
	10:17	3.4	189.5	16.6	8.7	3.0	166.6	14.6	181.9
	10:18	3.5	193.4	16.9	8.4	3.2	173.9	15.2	182.7
	10:19	3.6	198.0	15.5	8.4	3.2	177.8	13.9	185.0
	10:20	3.4	204.1	15.1	8.3	3.1	184.4	13.6	184.8
	10:21	2.9	196.8	12.5	8.2	2.6	180.4	11.5	183.1
	10:22	2.3	190.9	12.3	8.4	2.0	171.3	11.1	181.5
	10:23	1.9	197.0	12.5	8.7	1.6	173.2	11.0	181.0
	10:24	1.6	202.5	13.2	8.8	1.4	176.7	11.5	183.8
	10:25	1.9	210.8	11.7	8.2	1.8	192.6	10.7	184.0
	10:26	2.0	212.7	11.2	8.2	1.8	194.7	10.2	182.7
	10:27	1.7	216.4	12.9	8.6	1.5	192.2	11.5	183.7
	10:28	1.6	217.2	12.7	8.4	1.4	195.0	11.4	184.4
	10:29	1.4	214.2	11.3	8.2	1.3	195.6	10.3	183.2
Average =		3.3	198.2	13.4	8.3	3.0	179.0	12.1	183.2
Geometric Avg. =		3.1	198.0	13.3	8.3	2.8	178.8	12.1	183.2
Maximum =		6.6	217.2	16.9	8.8	6.1	195.6	15.2	185.0
Minimum =		1.4	181.6	11.2	7.9	1.3	162.3	10.2	180.1
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		88.7	5351.0	362.4	225.3	80.4	4833.1	327.0	4946.2

* - 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

Run 7 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 11:15

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	10:38	0.8	194.3	16.3	8.2	0.8	177.8	14.9	185.5
	10:39	1.0	195.1	14.7	7.9	0.9	182.1	13.7	184.9
	10:40	1.0	189.1	13.5	7.8	0.9	177.5	12.7	185.1
	10:41	0.9	194.2	13.2	8.0	0.8	180.1	12.2	185.1
	10:42	0.9	193.0	12.4	7.9	0.8	180.0	11.6	185.1
	10:43	0.8	187.1	11.0	7.9	0.7	175.4	10.3	184.8
	10:44	0.8	176.0	11.2	7.9	0.8	164.2	10.5	183.7
	10:45	0.8	180.4	12.4	8.0	0.8	167.8	11.5	184.5
	10:46	0.8	181.9	12.2	7.9	0.8	170.2	11.4	184.9
	10:47	0.8	184.3	14.0	7.9	0.8	172.2	13.1	186.8
	10:48	0.8	192.3	13.4	7.5	0.8	185.9	12.9	186.4
	10:49	0.6	188.9	11.7	7.4	0.6	183.9	11.4	184.8
	10:50	0.4	188.7	13.8	7.8	0.4	177.1	13.0	183.7
	10:51	0.4	181.5	13.5	7.8	0.4	170.8	12.7	185.0
	10:52	0.6	179.9	13.3	7.8	0.5	169.2	12.6	185.0
	10:53	0.7	178.0	14.2	7.9	0.6	166.7	13.3	184.5
	10:54	0.7	183.9	14.5	8.0	0.6	170.9	13.5	184.9
	10:55	0.8	186.6	12.7	7.8	0.8	176.6	12.0	184.9
	10:56	0.9	189.6	11.7	7.6	0.8	181.6	11.2	184.3
	10:57	1.3	194.9	13.5	8.1	1.2	179.8	12.5	183.5
	10:58	1.5	197.5	11.3	8.1	1.4	181.7	10.4	184.1
	10:59	1.7	202.0	10.6	7.9	1.6	189.0	9.9	185.6
	11:00	2.1	199.5	9.4	7.5	2.0	192.8	9.1	184.8
	11:01	2.1	195.1	10.8	7.7	2.0	184.9	10.2	183.4
	11:02	2.0	196.5	11.4	8.1	1.9	181.0	10.5	181.8
	11:03	2.2	194.0	12.1	8.4	2.0	174.3	10.9	184.2
	11:04	2.7	191.3	10.8	8.1	2.5	176.6	10.0	185.0
Average =		1.1	189.5	12.6	7.9	1.0	177.4	11.8	184.7
Geometric Avg. =		1.0	189.3	12.5	7.9	0.9	177.3	11.7	184.7
Maximum =		2.7	202.0	16.3	8.4	2.5	192.8	14.9	186.8
Minimum =		0.4	176.0	9.4	7.4	0.4	164.2	9.1	181.8
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		30.0	5115.5	339.7	212.9	28.0	4790.0	317.9	4986.1

* - 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

Run 8 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 11:49

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	11:14	2.2	191.1	9.6	7.7	2.1	181.7	9.1	185.5
	11:15	1.9	190.3	9.0	7.7	1.8	180.2	8.6	184.5
	11:16	1.5	189.3	7.9	7.8	1.5	178.4	7.4	184.8
	11:17	1.4	195.3	6.8	7.9	1.3	183.3	6.3	185.7
	11:18	1.3	193.8	6.3	7.3	1.3	190.1	6.1	185.1
	11:19	1.4	185.6	7.2	7.5	1.3	178.3	6.9	186.0
	11:20	1.5	180.2	7.6	7.7	1.4	171.5	7.2	184.6
	11:21	1.6	179.1	7.2	7.7	1.5	169.8	6.8	186.2
	11:22	1.9	184.8	8.2	7.7	1.8	175.9	7.8	185.1
	11:23	1.4	190.5	7.3	7.5	1.3	183.2	7.0	186.3
	11:24	1.1	190.4	14.3	7.8	1.1	179.6	13.5	187.4
	11:25	1.7	183.8	9.6	7.1	1.7	183.2	9.6	184.9
	11:26	1.9	187.5	6.3	7.5	1.8	180.6	6.1	185.4
	11:27	1.8	191.9	7.2	7.9	1.6	179.6	6.8	186.8
	11:28	1.9	184.9	6.5	7.4	1.8	180.1	6.3	185.0
	11:29	2.0	182.1	6.6	7.8	1.9	171.8	6.2	187.4
	11:30	2.1	183.8	8.5	7.9	2.0	172.3	8.0	188.1
	11:31	2.4	175.7	6.8	7.3	2.3	172.1	6.6	185.1
	11:32	2.3	172.3	7.5	7.7	2.2	163.1	7.1	185.6
	11:33	2.4	175.3	10.2	8.0	2.2	162.9	9.4	185.0
	11:34	2.9	179.9	9.1	7.5	2.7	173.1	8.7	184.6
	11:35	3.2	185.2	10.8	8.0	2.9	171.2	10.0	187.6
	11:36	3.6	185.7	9.6	7.4	3.5	180.5	9.3	183.5
	11:37	3.6	187.0	7.4	7.8	3.4	176.7	7.0	181.0
	11:38	3.7	192.5	9.4	8.6	3.2	170.4	8.4	180.5
	11:39	4.1	191.7	9.4	8.2	3.7	174.6	8.6	181.3
	11:40	4.3	188.7	11.1	8.2	4.0	171.8	10.1	181.8
Average =		2.3	185.9	8.4	7.7	2.1	176.2	8.0	185.0
Geometric Avg. =		2.1	185.8	8.2	7.7	2.0	176.0	7.8	185.0
Maximum =		4.3	195.3	14.3	8.6	4.0	190.1	13.5	188.1
Minimum =		1.1	172.3	6.3	7.1	1.1	162.9	6.1	180.5
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		61.2	5018.4	227.3	208.6	57.7	4756.1	215.0	4994.8

* - 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

Run 9 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 12:26

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	11:49	3.8	201.1	11.1	8.3	3.4	181.6	10.1	181.2
	11:50	3.7	205.5	11.4	8.3	3.3	185.8	10.3	182.4
	11:51	3.5	205.4	9.4	7.8	3.3	193.0	8.8	182.1
	11:52	3.3	207.5	9.9	8.1	3.0	191.7	9.1	184.5
	11:53	3.0	206.6	7.8	7.6	2.9	197.9	7.5	183.5
	11:54	3.0	207.2	7.3	7.5	2.8	199.0	7.0	181.8
	11:55	2.7	206.5	10.5	8.1	2.5	190.3	9.7	181.7
	11:56	2.8	196.5	11.0	7.9	2.6	183.8	10.3	179.9
	11:57	3.3	198.7	12.6	8.3	3.0	180.0	11.4	181.2
	11:58	3.9	204.8	12.0	8.2	3.5	187.9	11.0	181.0
	11:59	4.8	205.6	12.1	8.2	4.4	187.8	11.1	182.6
	12:00	4.7	194.2	11.3	7.8	4.4	182.7	10.6	180.9
	12:01	4.3	192.6	10.4	8.0	4.0	178.8	9.7	181.8
	12:02	4.3	197.1	11.2	7.8	4.0	185.5	10.5	182.2
	12:03	4.4	190.4	10.9	7.7	4.2	181.1	10.4	180.4
	12:04	4.3	192.8	10.9	8.0	4.0	179.2	10.2	181.1
	12:05	5.0	197.8	12.0	8.3	4.5	179.1	10.9	181.1
	12:06	5.3	192.8	11.1	8.1	4.9	177.8	10.3	184.2
	12:07	5.1	189.3	10.2	7.5	4.9	182.7	9.8	181.9
	12:08	4.3	187.0	7.7	7.5	4.1	180.6	7.4	183.4
	12:09	3.8	193.1	8.1	7.9	3.5	181.2	7.6	184.8
	12:10	3.6	198.1	6.6	7.3	3.6	194.1	6.5	182.4
	12:11	3.5	198.6	6.4	7.6	3.3	189.7	6.1	183.1
	12:12	3.3	203.6	6.4	8.0	3.1	189.6	6.0	183.7
	12:13	3.3	200.6	5.2	7.6	3.2	191.4	5.0	182.7
	12:14	3.2	198.2	6.0	7.9	3.0	185.4	5.6	182.3
	12:15	3.2	202.3	7.0	8.1	2.9	186.0	6.4	183.0
Average =		3.8	199.0	9.5	7.9	3.6	186.1	8.9	182.3
Geometric Avg. =		3.8	198.9	9.2	7.9	3.5	186.0	8.6	182.2
Maximum =		5.3	207.5	12.6	8.3	4.9	199.0	11.4	184.8
Minimum =		2.7	187.0	5.2	7.3	2.5	177.8	5.0	179.9
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		103.1	5373.9	256.6	213.4	96.4	5023.6	239.2	4920.8

* - 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

Run 10 Unit 3 North

Plant Name: NBWD

General Average Report

Reporting Period: 03/17/2010 to 03/17/2010

Site Name: UNIT3

Time of Report: 03/17/10 13:00

Data Averaging Type: 1m

Rolling Average Interval: 1

Date	Time	SO2ORPT3 (PPMDC)	NOXRPT_3 (PPMDC)	CORPT_3 (PPMDC)	O2OUT_3 (PERCENTD)	SO2OUT_3 (PPMD)	NOXPPM_3 (PPMD)	COPPM_3 (PPMD)	STMRPT_3 (KLB/HR)
03/17/10	12:26	4.9	197.0	8.2	8.0	4.5	183.0	7.7	183.6
	12:27	4.5	188.3	10.1	8.6	4.0	167.2	9.0	184.6
	12:28	4.4	180.4	8.3	8.2	4.0	164.8	7.6	182.9
	12:29	4.7	179.7	8.9	8.6	4.1	158.9	7.8	182.8
	12:30	5.2	179.0	11.7	9.0	4.5	153.4	10.0	181.7
	12:31	5.8	183.3	13.5	9.1	4.9	155.3	11.4	183.1
	12:32	6.5	182.5	13.0	8.8	5.6	159.4	11.3	183.8
	12:33	6.9	180.8	12.6	8.7	6.1	159.0	11.0	183.2
	12:34	7.4	179.6	12.4	8.7	6.5	157.9	10.9	185.5
	12:35	7.7	180.8	15.1	8.7	6.8	159.2	13.3	182.9
	12:36	7.9	183.0	11.9	8.6	7.0	162.4	10.6	183.2
	12:37	7.9	193.7	12.2	8.8	6.9	168.2	10.6	181.9
	12:38	9.4	193.6	10.5	8.8	8.2	168.5	9.2	180.9
	12:39	10.4	196.6	11.8	9.1	8.8	167.2	10.0	180.3
	12:40	10.4	196.3	11.3	9.2	8.8	164.9	9.5	180.2
	12:41	10.2	202.2	12.6	9.3	8.5	168.8	10.5	181.7
	12:42	10.6	203.6	11.5	9.0	9.1	174.0	9.8	181.3
	12:43	12.7	205.0	12.7	9.1	10.8	174.3	10.8	181.9
	12:44	12.7	208.1	14.0	9.1	10.8	176.9	11.9	182.4
	12:45	11.8	209.6	15.3	9.2	9.9	176.7	12.9	182.5
	12:46	9.7	203.3	13.1	9.2	8.2	171.6	11.1	182.6
	12:47	7.9	198.2	15.0	9.1	6.7	167.8	12.7	182.1
	12:48	7.1	200.7	15.2	9.1	6.0	170.4	12.9	182.3
	12:49	7.6	195.5	15.3	8.9	6.5	168.2	13.2	181.5
	12:50	9.5	193.6	17.2	9.2	8.0	163.5	14.5	181.8
	12:51	10.4	188.7	15.6	9.0	8.9	160.9	13.3	182.5
	12:52	9.4	187.4	17.0	9.0	8.1	160.8	14.6	181.9
Average =		8.3	192.2	12.8	8.9	7.1	166.0	11.0	182.4
Geometric Avg. =		7.9	192.0	12.6	8.9	6.8	165.9	10.9	182.4
Maximum =		12.7	209.6	17.2	9.3	10.8	183.0	14.6	185.5
Minimum =		4.4	179.0	8.2	8.0	4.0	153.4	7.6	180.2
Possible Values =		27	27	27	27	27	27	27	27
Included Values =		27	27	27	27	27	27	27	27
Total =		223.3	5190.3	345.8	239.9	192.0	4483.1	298.0	4925.2

* - 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