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**Report on the Carbon Reactivation Furnace
CEMS Evaluation**

**Conducted for Focus Environmental, Inc.
At the US Filter Westates Carbon Facility
Located in Parker, Arizona**

*Report No. 2282A
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Project Overview

General

Airtech Environmental Services Inc. was contracted by Focus Environmental, Inc. to evaluate the continuous emission monitoring systems (CEMS) at the US Filter – Westates Carbon facility located in Parker, Arizona. The CEMS are redundant systems used to monitor the emissions of the Carbon Reactivation Furnace exhaust. The evaluation was performed to satisfy the requirements of 40 CFR Part 63, Subpart EEE. The specific objectives of the program were as follows:

- Perform a Calibration Drift (CD) test on the CEMS.
- Perform a Calibration Error (CE) test on the CEMS.
- Determine the interference response time (RT) for each monitor included in the CEMS.
- Perform a relative accuracy test audit (RATA) on each CEMS.

The CD test was conducted from February 5 through 17, 2006. The CE test was performed February 8, 2006. The RT test was performed on February 9, 2006. The RATAs were performed February 9, 2006. Coordinating the field aspects of the test program were:

Anthony R. Eicher – Focus Environmental, Inc.
Cliff Anderson – US Filter Westates Carbon
Timothy Wojtach – Airtech Environmental Services Inc.

Methodology

CD Methodology

A CD test was performed on the CEMS by introducing a zero gas and one EPA Protocol gas to the CEMS as close to the probe tip as possible. The CEMS was challenged on each of seven consecutive days, and the CEMS response recorded. The CD test was performed by US Filter Westates Carbon personnel.

CE Methodology

A CE test was performed on the CEMS by introducing EPA Protocol gases at three different concentrations. The gases were introduced to the CEMS as close to the probe tip as possible. The CEMS was challenged three non-consecutive times at each measurement point and the CEMS response recorded. The CE test was performed during the calibration drift time period by US Filter Westates Carbon personnel.

RT Methodology

The RT test was conducted by introducing a zero gas into the CEMS. Once the system output stabilized, an upscale gas was introduced into the CEMS. The upscale response time was the time required for the CEMS output to reach 95 percent of the final stable value. The downscale response time was determined by performing the procedure in reverse.

CEMS RATA Methodology

A RATA was performed on the incinerator stack for carbon monoxide (CO) and oxygen (O₂). The relative accuracy (RA) of the CEMS was determined by comparing the results of reference method (RM) tests to the results of the installed CEMS. EPA Methods 3A and 10 were the reference methods used. Results were expressed in units of parts per million dry (ppmd) CO, corrected to seven percent oxygen. Up to twelve test runs were performed with each test run lasting 21 minutes, with nine of the runs used to calculate the results.

Discussion of Results

The results of the CE, RT, and CD tests are presented below for the CEM systems. Data for CO is presented as percent of span. Data for O₂ is presented as actual concentration difference of O₂. All supporting data can be found in the Process Data section of the Appendix. Criteria values were obtained from Performance Specification 4B.

Parameter	TECO CO Low Range	TECO CO High Range	Ametek Oxygen	Criteria
CE (%)				
Zero/Low	2.57	0.25	0.05/0.25	<5.0 (0.5 for O ₂)
Mid	0.70	1.20	0.28	<5.0 (0.5 for O ₂)
High	0.63	0.77	0.29	<5.0 (0.5 for O ₂)
RT (sec)	98.3	91.7	56.7	< 120 sec
CD (%)				
Zero Drift	All < 3.0	All < 3.0	All < 0.5	<3.0 (0.5 for O ₂)
Span Drift	All < 3.0	All < 3.0	All < 0.5	<3.0 (0.5 for O ₂)

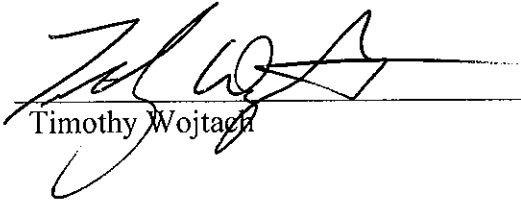
Parameter	Siemens CO Low Range	Siemens CO High Range	Thermox Oxygen	Criteria
CE (%)				
Zero/Low	3.13	0.31	0.15/0.02	<5.0 (0.5 for O ₂)
Mid	0.73	0.20	0.08	<5.0 (0.5 for O ₂)
High	0.67	1.09	0.11	<5.0 (0.5 for O ₂)
RT (sec)	63.3	63.3	46.7	< 120 sec
CD (%)				
Zero Drift	All < 3.0	All < 3.0	All < 0.5	<3.0 (0.5 for O ₂)
Span Drift	All < 3.0	All < 3.0	All < 0.5	<3.0 (0.5 for O ₂)

The results of the relative accuracy test audits are summarized in the following table. Detailed results of each RA test are presented in Tables 1 through 4 on Pages 5 through 8. The criteria values listed were obtained from Performance Specification 4B. The CO RA is absolute value of the average difference between the RM and the CEMs plus the 2.5 percent confidence coefficient. The O₂ RA is the absolute value of the average difference between the RM and the CEMs. The first twelve runs were used to calculate the RA of the oxygen analyzers. After the first twelve runs demonstrated that the oxygen analyzer passed RA, further test runs were not included in the calculations.

In order to allow for flexibility in the use of the CEMS, the RATA results were calculated for each CO analyzer in combination with each O₂ analyzer.

<i>Parameter</i>	<i>RM Concentration</i>	<i>CEM Concentration</i>	<i>RA Criteria</i>	<i>RA Result</i>
Ametek O ₂	9.73%	9.80%	< 1%	0.0690%
Thermox O ₂	9.60%	9.53%	< 1%	0.0729%
TECO CO & Ametek O ₂	7.26 ppm	9.57 ppm	< 5 ppm	2.41 ppm
TECO CO & Thermox O ₂	7.26 ppm	9.37 ppm	< 5 ppm	2.25 ppm
Siemens CO & Ametek O ₂	1.40 ppm	4.93 ppm	< 5 ppm	3.95 ppm
Siemens CO & Thermox O ₂	1.40 ppm	4.82 ppm	< 5 ppm	3.80 ppm

Prepared by:


Timothy Wojtach

Reviewed by:


Patrick Clark, P.E.

Summary of Results

Table 1 - Relative Accuracy Test Audit Results – Oxygen Analyzers

Run	Start Time	Stop Time	Ametek		Thermox	
			O ₂ - RM (%)	O ₂ - CEM (%)	O ₂ - RM (%)	O ₂ - CEM (%)
1	8:58	9:19	10.4	10.5	10.4	10.4
2	9:26	9:46	9.85	10.0	9.85	9.81
3	9:55	10:15	10.1	9.68	10.1	9.99
4	10:22	10:42	9.53	9.67	9.53	9.45
5	11:36	11:56	9.48	9.59	*	9.48
6	12:05	12:25	*	9.17	9.17	9.17
7	12:32	12:52	*	8.36	8.36	8.25
8	13:09	13:29	9.86	10.0	9.86	9.77
9	13:37	13:57	9.06	9.20	*	9.06
10	14:09	14:29	10.3	10.4	10.3	10.2
11	14:38	14:58	8.99	9.14	*	8.99
12	15:05	15:25	*	8.82	8.82	8.72
Mean			9.73	9.80	9.60	9.53

RESULTS

Runs	9	9
t _{0.975}	2.306	2.306
S _d	0.178	0.0340
CC	0.137	0.0262
d _m	0.0690	0.0729
RA	2.11	1.03

* Indicates the run was not used in the RA calculations.

Table 2 - Relative Accuracy Test Audit Results – TECO CO Analyzer

Calculated Using Ametek O ₂						Calculated Using Thermox O ₂		
Run	Start Time	Stop Time		CO- RM (ppm @ 7% O ₂)	CO- CEM (ppm @ 7% O ₂)		CO- RM (ppm @ 7% O ₂)	CO- CEM (ppm @ 7% O ₂)
1	8:58	9:19	*	13.7	16.4	*	13.7	16.2
2	9:26	9:46		10.6	13.1		10.6	12.8
3	9:55	10:15	*	8.97	11.9	*	8.97	12.2
4	10:22	10:42		10.8	13.0		10.8	12.8
5	11:36	11:56		9.69	12.1		9.69	11.9
6	12:05	12:25		10.2	12.2		10.2	11.9
7	12:32	12:52		8.46	10.7		8.46	10.5
8	13:09	13:29		9.22	11.6		9.22	11.4
9	13:37	13:57		4.77	7.14		4.77	6.98
10	14:09	14:29	*	1.66	4.42	*	1.66	4.34
11	14:38	14:58		0.754	3.16		0.754	3.08
12	15:05	15:25		0.829	3.15		0.829	3.08
Mean				7.26	9.57		7.26	9.37

RESULTS	CO (ppm @ 7% O ₂)	CO (ppm @ 7% O ₂)
Runs	9	9
t _{0.975}	2.306	2.306
S _d	0.130	0.174
CC	0.100	0.133
d _m	-2.32	-2.12
RA ¹	33.3	31.0
Applicable Standard	100	100
RA ²	2.41	2.25
RA ³	2.41	2.25

RA¹ was calculated relative to the average reference method value.

RA² was calculated relative to the applicable standard.

RA³ was calculated using the average difference plus the 2.5% confidence coefficient.

* indicates runs that are not included in the RA calculations.

Table 3 - Relative Accuracy Test Audit Results – Siemens CO Analyzer

Run	Start Time	Stop Time	Calculated Using Ametek O ₂		Calculated Using Thermox O ₂	
			CO - RM (ppm @7% O ₂)	CO - RM (ppm @7% O ₂)	CO - RM (ppm @7% O ₂)	CO - RM (ppm @7% O ₂)
1	14:38	14:58	0.557	4.06	0.75	3.97
2	15:05	15:25	0.635	4.02	0.83	3.92
3	15:33	15:53	0.906	4.03	0.91	3.95
4	16:03	16:23	0.910	4.38	0.91	4.28
5	16:29	16:49	0.777	4.13	0.78	4.03
6	16:57	17:17	0.800	4.15	0.80	4.06
7	17:24	17:44	1.46	4.55	1.46	4.45
8	17:52	18:12	2.51	6.71	2.51	6.53
9	18:22	18:42	3.68	8.37	3.68	8.16
10	18:51	19:11	*	9.14	*	8.93
Mean			1.40	4.93	1.40	4.82

RESULTS	CO (ppm @ 7% O ₂)	CO (ppm @ 7% O ₂)
Runs	9	9
t _{0.975}	2.306	2.306
S _d	0.547	0.502
CC	0.420	0.386
d _m	-3.53	-3.41
RA ¹	282	271
Applicable Standard	100	100
RA ²	3.95	3.80
RA ³	3.95	3.80

RA¹ was calculated relative to the average reference method value.

RA² was calculated relative to the applicable standard.

RA³ was calculated using the average difference plus the 2.5% confidence coefficient.

* indicates runs that are not included in the RA calculations.

Test Procedures

Method Listing

The procedures and test methods found in 40 CFR Part 60, Appendix A and B were used during the test program. The following specific methods were referenced:

Method 3A	Determination of oxygen and carbon dioxide concentrations in emissions from stationary sources (instrumental analyzer procedure)
Method 10	Determination of carbon monoxide emissions from stationary sources
PS 4B	Specifications and test procedures for carbon monoxide and oxygen continuous emission monitoring systems in stationary sources

Method Descriptions

Methods 3A and 10

The oxygen (O₂) and carbon monoxide (CO) concentrations at the test location were determined using EPA Methods 3A and 10. A sample of the gas stream was continuously withdrawn from the test location and analyzed using a continuous gas analyzing system. A diagram of the reference method (RM) sampling system is shown in Figure 1 of the Appendix.

The sample gas was withdrawn from the test location at a constant rate through a Teflon probe, a glass fiber filter and a Teflon sample line. The probe, filter and sample line were operated at a temperature of at least 250 °F to prevent the condensation of moisture. The sample gas was then directed to an VIA MAK-3 gas cooler system. The gas cooler consisted of two separate stages designed to unobtrusively lower the dewpoint of the sample gas to 35 °F, thus removing the moisture. The dry gas was then vented to the oxygen and carbon monoxide analyzers. Results from these analyzers were determined on a "dry" basis.

The analyzers that were used for this project are listed in the table below:

Parameter	Manufacturer	Model Number	Operating Principle	Units Reported	Range Used
Oxygen	Servomex	1440	Paramagnetic	(%)	(0-25)
Carbon Monoxide	Thermo Environmental	48C	Infrared, Gas Filter Correlation	(ppm)	(0-100)

Prior to sampling, a calibration error test was performed for each analyzer. The zero and high-range calibration gases for each constituent were introduced directly into each analyzer. Each analyzer was then adjusted to the appropriate values. Two intermediate

gases were then introduced to each analyzer and the measured values were recorded. The measured values for each calibration gas were then compared to the calibration gas values and the differences were less than the method requirement of two percent of the span value.

A sample system bias check was then performed by introducing the zero and mid-range calibration gases into the sampling system at the base of the probe. The gas was drawn through the entire sampling system. The measured responses were then compared to the calibration error test values to determine the bias in response due to the sampling system. The sampling system bias was less than the method requirement of five percent of the span value. In addition, the system response time was determined by measuring the time required for each analyzer to reach 95 percent of its' high-range calibration gas value.

After each test run the instrument drift for each analyzer was determined by introducing the zero and mid-range calibration gases into the sampling system at the base of the probe. The gas was drawn through the entire sampling system. The measured responses were then compared to the values from the previous test run to determine the analyzer drift. For all test runs, the analyzer drift was less than the method requirement of three percent of the span value.

Description of Installation

US Filter Westates Carbon operates a Carbon Reactivation Furnace at their facility located in Parker, Arizona. Two continuous emissions monitoring (CEM) systems are used to monitor the concentrations of carbon monoxide (CO) and oxygen (O₂) in emissions from the Carbon Reactivation Furnace exhaust. The facility uses primary and backup analyzers as part of the CEMS. The specific analyzers used in the CEM system are listed in the table below.

Analyte	Manufacturer	Model Number	Serial Numbers	Ranges
Oxygen	Ametek	FCA-Control	C107994B	(0-21)
Oxygen	Thermox	Series 2000	C141998	(0-21)
Carbon Monoxide	Thermo Environmental Instruments	48	48-45315-273	(0-100) (0-1000)
Carbon Monoxide	Siemens	Ultramat 23	7MB2333-2DK50-4da2	(0-100) (0-1000)

All RATA sampling was performed at the stack where the facility CEM Sample probe is located.

Sample Calculations, TECO Carbon Monoxide, Run 1

Carbon Monoxide Concentration, Corrected for Analyzer Drift

$$C_d = \left(C - \left(\frac{c_{0i} + c_{0f}}{2} \right) \right) \left(\frac{c_a}{\left(\frac{c_{si} + c_{sf}}{2} \right) - \left(\frac{c_{0i} + c_{0f}}{2} \right)} \right)$$
$$C_d = \left(10.7 - \left(\frac{0.3 + 0.2}{2} \right) \right) \left(\frac{30.310}{\left(\frac{31.0 + 31.0}{2} \right) - \left(\frac{0.3 + 0.2}{2} \right)} \right)$$

$$C_d = 10.3 \text{ ppmdv}$$

where:

- C_d = carbon monoxide concentration, corrected for analyzer drift (ppmv)
- C = carbon monoxide concentration (ppmv)
- C_{0i} = initial zero calibration value (ppmv)
- C_{0f} = final zero calibration value (ppmv)
- C_{si} = initial span calibration value (ppmv)
- C_{sf} = final span calibration value (ppmv)
- C_a = actual span gas value (ppmv)

Carbon Monoxide Concentration, Corrected to 7% O₂

$$C_{@7\%O_2} = C_d \times \left(\frac{20.9 - 7}{20.9 - \%O_2} \right)$$

$$C_{@7\%O_2} = 10.3 \times \left(\frac{20.9 - 7}{20.9 - 10.4} \right)$$

$$C_{@7\%O_2} = 13.7 \text{ ppmv @ } 7\%O_2$$

where:

- $C_{@7\%O_2}$ = concentration of carbon monoxide, corrected to 7% O₂ (ppm)
- C_d = carbon monoxide concentration, corrected for analyzer drift (ppmv)
- $\%O_2$ = concentration of oxygen (%)
- 20.9 = ambient concentration of oxygen (%)
- 7 = correction value (%)

Relative Accuracy Calculations (Ametek & TECO Combination)

Standard Deviation, CO ppm @ 7% O₂

$$S_d = \left(\frac{\sum_{i=1}^9 d_i^2 - \frac{\left(\sum_{i=1}^9 d_i \right)^2}{n}}{(n-1)} \right)^{1/2}$$

$$S_d = \left(\frac{48.4 - \frac{(-20.8)^2}{9}}{(9-1)} \right)^{1/2}$$

$$S_d = 0.130$$

where:

- S_d = standard deviation
- d_i = difference between the reference method result and the CEM value for a given run (ppm at 7% O₂)
- i = run number
- n = number of runs used for calculations

Confidence Coefficient, CO ppm @ 7% O₂

$$CC = \frac{(t_{0.975})(S_d)}{\sqrt{n}}$$

$$CC = \frac{(2.306)(0.130)}{\sqrt{9}}$$

$$CC = 0.100$$

where:

- CC = confidence coefficient
- $t_{0.975}$ = the inverse of the Student's t-distribution for the specified degrees of freedom
- S_d = standard deviation
- n = number of runs used for calculations

Mean of the Differences²

$$d_m = \frac{\sum_{i=1}^9 d_i}{n}$$

$$d_m = \frac{-20.8}{9}$$

$$d_m = -2.32 \text{ ppm @ } 7\% O_2$$

where:

d_m = mean of the differences

d_i = difference between the reference method result and the CEM value for a given run (ppm at 7% O₂)

n = number of runs used for calculations

Relative Accuracy, CO, ppm @ 7% O₂

$$RA^3 = |d_m| + |CC|$$

$$RA^3 = |-2.32| + |0.100|$$

$$RA^3 = 2.41 \text{ ppm @ } 7\% O_2$$

where:

RA^3 = relative accuracy (ppm at 7% O₂)

d_m = mean of the differences

CC = confidence coefficient

² The absolute value of the mean of the differences is used to determine the RA of the oxygen analyzers.

CEM RA Parameters - Thermox Oxygen

Run	Start Time	Stop Time	O ₂ - RM (%)	O ₂ - CEM (%)	O ₂ (d)	O ₂ (d)^2
1	8:58	9:19	10.4	10.4	0.0556	0.00309
2	9:26	9:46	9.85	9.81	0.0398	0.00158
3	9:55	10:15	10.1	9.99	0.0913	0.00834
4	10:22	10:42	9.53	9.45	0.0823	0.00677
5	11:36	11:56	* 9.48	9.36	0.116	0.0135
6	12:05	12:25	9.17	9.17	0.00140	0.00000196
7	12:32	12:52	8.36	8.25	0.105	0.0111
8	13:09	13:29	9.86	9.77	0.0918	0.00842
9	13:37	13:57	* 9.06	8.93	0.126	0.0159
10	14:09	14:29	10.3	10.2	0.0923	0.00852
11	14:38	14:58	* 8.99	8.86	0.134	0.0178
12	15:05	15:25	8.82	8.72	0.0962	0.00926
Mean / Sum			9.60	9.53	0.656	0.0571

RESULTS

O ₂	
Runs	9
t _{0.975}	2.306
S _d	0.0340
CC	0.0262
d _m	0.0729
RA ¹	1.03

RA¹ - Relative to the reference method results

RA² - Relative to the applicable standard

RA³ - Absolute average difference plus the 2.5% confidence coefficient

CEM RA Parameters - Ametek Oxygen

Run	Start Time	Stop Time	O ₂ - RM (%)	O ₂ - CEM (%)	O ₂ (d)	O ₂ (d) ²
1	8:58	9:19	10.4	10.5	-0.0844	0.00713
2	9:26	9:46	9.85	10.0	-0.150	0.0226
3	9:55	10:15	10.1	9.68	0.401	0.161
4	10:22	10:42	9.53	9.67	-0.138	0.0190
5	11:36	11:56	9.48	9.59	-0.114	0.0129
6	12:05	12:25	* 9.17	9.43	-0.259	0.0669
7	12:32	12:52	* 8.36	8.55	-0.195	0.0379
8	13:09	13:29	9.86	10.0	-0.138	0.0191
9	13:37	13:57	9.06	9.20	-0.144	0.0207
10	14:09	14:29	10.3	10.4	-0.108	0.0116
11	14:38	14:58	8.99	9.14	-0.146	0.0214
12	15:05	15:25	* 8.82	9.00	-0.184	0.0338
Mean / Sum			9.73	9.80	-0.621	0.296

RESULTS

O ₂	
Runs	9
t _{0.975}	2.306
S _d	0.178
CC	0.137
d _m	0.0690
RA ¹	2.11

RA¹ - Relative to the reference method results

RA² - Relative to the applicable standard

RA³ - Absolute average difference plus the 2.5% confidence coefficient

CEM RA Parameters

TECO CO with Ametek Oxygen

Run	Start Time	Stop Time		CO - RM (ppm@7%O2)	CO - CEM (ppm@7%O2)	CO (d)	CO (d)^2
1	8:58	9:19	*	13.7	16.4	-2.69	7.24
2	9:26	9:46		10.6	13.1	-2.44	5.96
3	9:55	10:15	*	8.97	11.9	-2.92	8.51
4	10:22	10:42		10.8	13.0	-2.23	4.99
5	11:36	11:56		9.69	12.1	-2.40	5.75
6	12:05	12:25		10.2	12.2	-2.02	4.09
7	12:32	12:52		8.46	10.7	-2.26	5.10
8	13:09	13:29		9.22	11.6	-2.39	5.70
9	13:37	13:57		4.77	7.14	-2.37	5.61
10	14:09	14:29	*	1.66	4.42	-2.76	7.63
11	14:38	14:58		0.75	3.16	-2.41	5.79
12	15:05	15:25		0.83	3.15	-2.32	5.38
Mean / Sum				7.26	9.57	-20.8	48.4

RESULTS**CO**

Runs	9
$t_{0.975}$	2.306
S_d	0.130
CC	0.100
d_m	-2.32
RA^1	33.3
Applicable Standard	100
RA^2	2.41
RA^3	2.41

RA^1 - Relative to the reference method results

RA^2 - Relative to the applicable standard

RA^3 - Absolute average difference plus the 2.5% confidence coefficient

CEM RA Parameters

TECO CO with Thermox Oxygen

Run	Start Time	Stop Time		CO - RM (ppm@7%O2)	CO - CEM (ppm@7%O2)	CO (d)	CO (d)^2
1	8:58	9:19	*	13.7	16.2	-2.47	6.10
2	9:26	9:46		10.6	12.8	-2.21	4.89
3	9:55	10:15	*	8.97	12.2	-3.25	10.5
4	10:22	10:42		10.8	12.8	-1.99	3.97
5	11:36	11:56		9.69	11.9	-2.16	4.66
6	12:05	12:25		10.2	11.9	-1.75	3.07
7	12:32	12:52		8.46	10.5	-2.01	4.04
8	13:09	13:29		9.22	11.4	-2.15	4.61
9	13:37	13:57		4.77	6.98	-2.21	4.88
10	14:09	14:29	*	1.66	4.34	-2.68	7.20
11	14:38	14:58		0.75	3.08	-2.33	5.41
12	15:05	15:25		0.83	3.08	-2.25	5.06
Mean / Sum				7.26	9.37	-19.1	40.6

RESULTS

CO

Runs	9
$t_{0.975}$	2.306
S_d	0.174
CC	0.133
d_m	-2.12
RA^1	31.0
Applicable Standard	100
RA^2	2.25
RA^3	2.25

RA^1 - Relative to the reference method results

RA^2 - Relative to the applicable standard

RA^3 - Absolute average difference plus the 2.5% confidence coefficient

OXYGEN

Analyzer Values	Actual	Error	Bias	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	7:41	8:58	9:26	9:55	10:22	11:36	12:05
Stop Time		7:32	7:46	9:19	9:46	10:15	10:42	11:56	12:25
Concentration, C (%)				10.3	9.73	10.0	9.40	9.32	9.01
Zero Cal Gas, C ₀ (%)	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	-0.1
Low Cal Gas (%)	6.98	6.87							
Mid Cal Gas (%)	14.04	14.0							
High Cal Gas (%)	21.02	21.0							
Span Value (%)	25.0								
Bias/Drift Check Gas, C _s (%)	13.98		13.9	13.9	13.8	13.8	13.8	13.8	13.8
	13.96								

RESULTS

Zero Error (%)	2 % of Span	-0.1							
Low Error (%)		-0.5							
Mid Error (%)		-0.3							
High Error (%)		-0.2							
Zero Bias (%)	5 % of Span		0.1	0.1	0.0	0.1	-0.2	-0.1	-0.1
Upscale Bias (%)			-0.4	-0.4	-0.6	-0.5	-0.7	-0.7	-0.8
Zero Drift (%)	3 % of Span			-0.1	-0.1	0.1	-0.3	0.1	-0.1
Upscale Drift (%)				0.0	-0.2	0.2	-0.3	0.0	-0.1
Concentration Corrected for Drift, C _d (%)				10.4	9.85	10.1	9.53	9.48	9.17

OXYGEN

Analyzer Values	Actual	Error	Run 7	Run 8	Run 9	Run 10	Run 11	Run 12
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	12:32	13:09	13:37	14:09	14:38	15:05
Stop Time		7:32	12:52	13:29	13:57	14:29	14:58	15:25
Concentration, C (%)			8.21	9.69	8.90	10.1	8.83	8.66
Zero Cal Gas, C ₀ (%)	0.0	0.0	0.0	-0.1	0.0	-0.1	0.0	0.0
Low Cal Gas (%)	6.98	6.87						
Mid Cal Gas (%)	14.04	14.0						
High Cal Gas (%)	21.02	21.0						
Span Value (%)	25.0							
Bias/Drift Check Gas, C _s (%)	13.98		13.8	13.7	13.8	13.7	13.8	13.8
	13.96							

RESULTS

Zero Error (%)	2 % of Span	-0.1						
Low Error (%)		-0.5						
Mid Error (%)		-0.3						
High Error (%)		-0.2						
Zero Bias (%)	5 % of Span		0.0	-0.1	0.1	-0.1	0.0	-0.1
Upscale Bias (%)			-0.7	-0.9	-0.7	-0.9	-0.8	-0.8
Zero Drift (%)	3 % of Span		0.1	-0.1	0.2	-0.2	0.1	-0.1
Upscale Drift (%)			0.1	-0.1	0.1	-0.1	0.0	0.0
Concentration Corrected for Drift, C _d (%)			8.36	9.86	9.06	10.3	8.99	8.82

CARBON MONOXIDE

Analyzer Values	Actual	Error	Bias	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	7:41	8:58	9:26	9:55	10:22	11:36	12:05
Stop Time		7:32	7:46	9:19	9:46	10:15	10:42	11:56	12:25
Concentration, C (ppm)				10.7	8.81	7.31	9.12	8.26	8.88
Zero Cal Gas, C ₀ (ppm)	0.0	0.1	0.3	0.2	0.3	0.2	0.2	0.2	0.2
Low Cal Gas (ppm)	30.310	31.0							
Mid Cal Gas (ppm)	61.0	60.4							
High Cal Gas (ppm)	89.8	89.4							
Span Value (ppm)	100								
Bias/Drift Check Gas, C _s (ppm)	30.310		31.0	31.0	30.9	30.9	30.9	30.8	30.8
	31.0								

RESULTS

Zero Error (%)	2 % of Span	0.1							
Low Error (%)		0.7							
Mid Error (%)		-0.6							
High Error (%)		-0.4							
Zero Bias (%)	5 % of Span		0.2	0.1	0.2	0.1	0.1	0.1	0.1
Upscale Bias (%)			0.0	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3
Zero Drift (%)	3 % of Span			-0.1	0.0	-0.1	0.0	0.0	0.0
Upscale Drift (%)				-0.1	0.0	-0.1	0.0	-0.1	0.0
Concentration Corrected for Drift, C _d (ppm)				10.3	8.44	6.98	8.81	7.96	8.60
Concentration Corrected to 7% Oxygen (ppm)				13.7	10.6	8.97	10.8	9.69	10.2

CARBON MONOXIDE

Analyzer Values	Actual	Error	Run 7	Run 8	Run 9	Run 10	Run 11	Run 12
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	12:32	13:09	13:37	14:09	14:38	15:05
Stop Time		7:32	12:52	13:29	13:57	14:29	14:58	15:25
Concentration, C (ppm)			7.89	7.58	4.31	1.51	0.89	0.95
Zero Cal Gas, C ₀ (ppm)	0.0	0.1	0.2	0.2	0.2	0.3	0.2	0.2
Low Cal Gas (ppm)	30.310	31.0						
Mid Cal Gas (ppm)	61.0	60.4						
High Cal Gas (ppm)	89.8	89.4						
Span Value (ppm)	100							
Bias/Drift Check Gas, C _s (ppm)	30.310		30.7	30.8	30.7	30.9	30.7	30.8
	31.0							

RESULTS

Zero Error (%)	2 % of Span	0.1						
Low Error (%)		0.7						
Mid Error (%)		-0.6						
High Error (%)		-0.4						
Zero Bias (%)	5 % of Span		0.1	0.1	0.1	0.2	0.1	0.2
Upscale Bias (%)			-0.3	-0.3	-0.3	-0.2	-0.3	-0.2
Zero Drift (%)	3 % of Span		0.0	0.0	0.0	0.1	-0.1	0.0
Upscale Drift (%)			-0.1	0.1	0.0	0.1	-0.2	0.1
Concentration Corrected for Drift, C _d (ppm)			7.64	7.32	4.07	1.26	0.65	0.72
Concentration Corrected to 7% Oxygen (ppm)			8.46	9.22	4.77	1.66	0.75	0.83

CEM RA Parameters

Siemens CO with Thermox Oxygen

Run	Start Time	Stop Time	CO - RM (ppm@7%O2)	CO - CEM (ppm@7%O2)	CO (d)	CO (d)^2
1	14:38	14:58	0.754	3.97	-3.22	10.3
2	15:05	15:25	0.829	3.92	-3.09	9.6
3	15:33	15:53	0.906	3.95	-3.04	9.27
4	16:03	16:23	0.910	4.28	-3.37	11.4
5	16:29	16:49	0.777	4.03	-3.25	10.6
6	16:57	17:17	0.800	4.06	-3.26	10.6
7	17:24	17:44	1.46	4.45	-2.99	8.93
8	17:52	18:12	2.51	6.53	-4.02	16.2
9	18:22	18:42	3.68	8.16	-4.48	20.1
10	18:51	19:11	*	3.34	-5.59	31.3
Mean / Sum			1.40	4.82	-30.7	106.9

RESULTS

CO

Runs	9
$t_{0.975}$	2.306
S_d	0.502
CC	0.386
d_m	-3.41
RA^1	271
Applicable Standard	100
RA^2	3.80
RA^3	3.80

RA^1 - Relative to reference method

RA^2 - Relative to standard

RA^3 - Absolute difference plus the 2.5% confidence coefficient

CEM RA Parameters

Siemens CO with Ametek Oxygen

Run	Start Time	Stop Time	CO - RM (ppm@7%O ₂)	CO - CEM (ppm@7%O ₂)	CO (d)	CO (d) ²
1	14:38	14:58	0.75	4.06	-3.31	10.9
2	15:05	15:25	0.83	4.02	-3.19	10.2
3	15:33	15:53	0.91	4.03	-3.12	9.76
4	16:03	16:23	0.91	4.38	-3.47	12.0
5	16:29	16:49	0.78	4.13	-3.35	11.2
6	16:57	17:17	0.80	4.15	-3.35	11.2
7	17:24	17:44	1.46	4.55	-3.09	9.54
8	17:52	18:12	2.51	6.71	-4.20	17.6
9	18:22	18:42	3.68	8.37	-4.69	22.0
10	18:51	19:11	*	3.34	-5.80	33.7
Mean / Sum			1.40	4.93	-31.8	115

RESULTS

CO

Runs	9
$t_{0.975}$	2.306
S_d	0.547
CC	0.420
d_m	-3.53
RA^1	282
Applicable Standard	100
RA^2	3.95
RA^3	3.95

RA^1 - Relative to the reference method results

RA^2 - Relative to the applicable standard

RA^3 - Absolute average difference plus the 2.5% confidence coefficient

OXYGEN

Analyzer Values	Actual	Error	Bias	Run 1	Run 2	Run 3	Run 4	Run 5
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	14:32	14:38	15:05	15:33	16:03	16:29
Stop Time		7:32	14:36	14:58	15:25	15:53	16:23	16:49
Concentration, C (%)				8.83	8.66	8.75	9.64	8.99
Zero Cal Gas, C ₀ (%)	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.1	0.0
Low Cal Gas (%)	6.98	6.87						
Mid Cal Gas (%)	14.04	14.0						
High Cal Gas (%)	21.02	21.0						
Span Value (%)	25.0							
Bias/Drift Check Gas, C _s (%)	13.98		13.7	13.8	13.8	13.8	13.7	13.7

RESULTS

Zero Error (%)	2 % of Span	-0.1						
Low Error (%)		-0.5						
Mid Error (%)		-0.3						
High Error (%)		-0.2						
Zero Bias (%)	5 % of Span		-0.1	0.0	-0.1	-0.1	-0.1	0.0
Upscale Bias (%)			-0.9	-0.8	-0.8	-0.8	-1.0	-0.9
Zero Drift (%)	3 % of Span			0.1	-0.1	0.0	0.0	0.2
Upscale Drift (%)				0.0	0.0	0.0	-0.2	0.1
Concentration Corrected for Drift, C _d (%)				8.99	8.82	8.91	9.84	9.18

OXYGEN

Analyzer Values	Actual	Error	Run 6	Run 7	Run 8	Run 9	Run 10
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	16:57	17:24	17:52	18:22	18:51
Stop Time		7:32	17:17	17:44	18:12	18:42	19:11
Concentration, C (%)			9.01	9.90	8.94	8.64	9.47
Zero Cal Gas, C ₀ (%)	0.0	0.0	-0.1	0.0	-0.1	-0.1	0.0
Low Cal Gas (%)	6.98	6.87					
Mid Cal Gas (%)	14.04	14.0					
High Cal Gas (%)	21.02	21.0					
Span Value (%)	25.0						
Bias/Drift Check Gas, C _s (%)	13.98		13.8	13.8	13.7	13.8	13.8

RESULTS

Zero Error (%)	2 % of Span	-0.1					
Low Error (%)		-0.5					
Mid Error (%)		-0.3					
High Error (%)		-0.2					
Zero Bias (%)	5 % of Span		-0.1	0.1	-0.1	-0.1	-0.1
Upscale Bias (%)			-0.8	-0.7	-0.9	-0.7	-0.8
Zero Drift (%)	3 % of Span		-0.1	0.2	-0.2	0.1	0.0
Upscale Drift (%)			0.1	0.1	-0.2	0.2	-0.1
Concentration Corrected for Drift, C _d (%)			9.19	10.1	9.10	8.80	9.63

CARBON MONOXIDE

Analyzer Values	Actual	Error	Bias	Run 1	Run 2	Run 3	Run 4	Run 5
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	14:32	14:38	15:05	15:33	16:03	16:29
Stop Time		7:32	14:36	14:58	15:25	15:53	16:23	16:49
Concentration, C (ppm)				0.89	0.95	1.02	0.95	0.88
Zero Cal Gas, C ₀ (ppm)	0.0	0.1	0.3	0.2	0.2	0.2	0.2	0.2
Low Cal Gas (ppm)	30.310	31.0						
Mid Cal Gas (ppm)	61.0	60.4						
High Cal Gas (ppm)	89.8	89.4						
Span Value (ppm)	100							
Bias/Drift Check Gas, C _s (ppm)	30.310		30.9	30.7	30.8	30.8	30.8	30.7

RESULTS

Zero Error (%)	2 % of Span	0.1						
Low Error (%)		0.7						
Mid Error (%)		-0.6						
High Error (%)		-0.4						
Zero Bias (%)	5 % of Span		0.2	0.1	0.2	0.1	0.1	0.1
Upscale Bias (%)			-0.2	-0.3	-0.2	-0.3	-0.2	-0.3
Zero Drift (%)	3 % of Span			-0.1	0.0	0.0	0.0	0.0
Upscale Drift (%)				-0.2	0.1	0.0	0.0	-0.1
Concentration Corrected for Drift, C _d (ppm)				0.65	0.72	0.78	0.72	0.66
Concentration Corrected to 7% Oxygen (ppm)				0.75	0.83	0.91	0.91	0.78

CARBON MONOXIDE

Analyzer Values	Actual	Error	Run 6	Run 7	Run 8	Run 9	Run 10
Date		2/9/06	2/9/06	2/9/06	2/9/06	2/9/06	2/9/06
Start Time		7:17	16:57	17:24	17:52	18:22	18:51
Stop Time		7:32	17:17	17:44	18:12	18:42	19:11
Concentration, C (ppm)			0.90	1.36	2.37	3.47	2.99
Zero Cal Gas, C ₀ (ppm)	0.0	0.1	0.2	0.2	0.2	0.2	0.3
Low Cal Gas (ppm)	30.310	31.0					
Mid Cal Gas (ppm)	61.0	60.4					
High Cal Gas (ppm)	89.8	89.4					
Span Value (ppm)	100						
Bias/Drift Check Gas, C _s (ppm)	30.310		30.8	30.8	30.8	30.9	30.8

RESULTS

Zero Error (%)	2 % of Span	0.1					
Low Error (%)		0.7					
Mid Error (%)		-0.6					
High Error (%)		-0.4					
Zero Bias (%)	5 % of Span		0.1	0.1	0.2	0.1	0.2
Upscale Bias (%)			-0.3	-0.3	-0.2	-0.2	-0.2
Zero Drift (%)	3 % of Span		0.0	0.0	0.0	0.0	0.1
Upscale Drift (%)			0.0	0.0	0.1	0.0	0.0
Concentration Corrected for Drift, C _d (ppm)			0.67	1.14	2.13	3.20	2.71
Concentration Corrected to 7% Oxygen (ppm)			0.80	1.46	2.51	3.68	3.34

AIRTECH ENVIRONMENTAL SERVICES INC.
CEM ANALYZER I.D. Data Sheet

PROJECT NO. 2282

Page 1 of 1

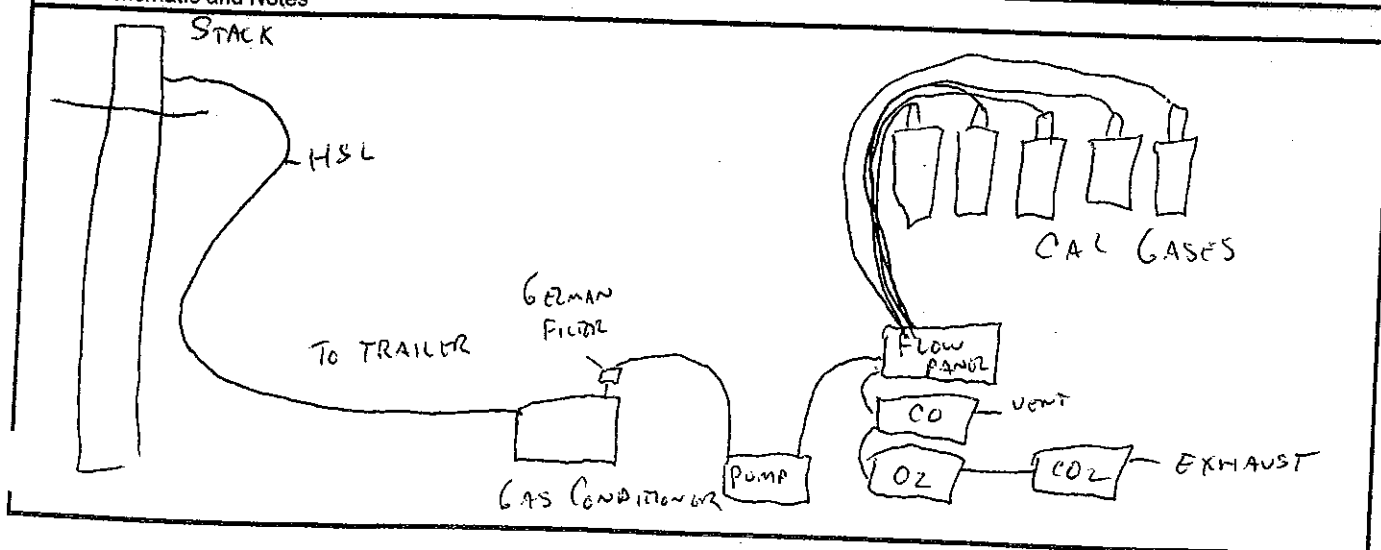
Client	FOCUS ENVIRONMENTAL, INC.		
Plant	US FILTER / WESTATES CARBON		
Location	STACK		
Date	2/7/06	Unit	
Operator/Tech	T. WELTMAN		

Analyzer Type	Model	Notes
O ₂ SERVOMEX	1440	#2
CO ₂ SERVOMEX	1440	#2
CO TECO	48C	#4

Cylinder Contents	Cylinder No.	PPM
CO	XC028122B	30.310
CO	CC139856	61.0
CO	CC66653	89.8
O ₂ / CO ₂	CC119293	1407/407
O ₂ / CO ₂	SG9152874BAL	6.98/4.23
O ₂ (ZERO AIR)	SG871803NB	21.02%

	Equipment Description Type/Lengths	USED YES / NO	
Probe	HEATED CAE		
Filter	HEATED CAE + GERMAN	X	
Hsl	100'	X	
Cold Lines	NA	X	
Gas Conditioner Type	VIA MAK-3		X
Das. Computer	ARUNDA DESKTOP	X	
Flow Panel	GREY 5 GAS	X	

CEM Schematic and Notes



RM Data
Calibration Error

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.1
High	21.0	89.4
Mid	14.0	60.4
Low	6.87	31.0

7:17:00	-0.1	89.4
7:17:15	0.0	89.4
7:17:30	0.0	89.4
7:17:45	0.0	89.4
7:18:00	-0.1	89.4
7:18:15	0.0	88.8
7:18:30	0.0	81.4
7:18:45	0.1	67.7
7:19:00	0.0	59.7
7:19:15	0.4	40.2
7:19:30	6.6	13.7
7:19:45	12.2	2.8
7:20:00	13.8	0.3
7:20:15	14.0	0.1
7:20:30	14.0	0.1
7:20:45	14.0	0.1
7:21:00	14.0	0.1
7:21:15	14.0	0.1
7:21:30	14.0	0.1
7:21:45	14.0	0.9
7:22:00	13.8	16.3
7:22:15	8.4	43.4
7:22:30	1.7	57.9
7:22:45	0.0	60.2
7:23:00	0.0	60.4
7:23:15	-0.1	60.5
7:23:30	-0.1	60.4
7:23:45	-0.1	60.3
7:24:00	-0.1	60.4
7:24:15	-0.1	59.5
7:24:30	-0.1	48.7
7:24:45	-0.1	36.1
7:25:00	-0.1	31.4
7:25:15	-0.1	31.0
7:25:30	-0.1	31.0
7:25:45	-0.1	31.1
7:26:00	-0.1	31.1
7:26:15	-0.1	31.0
7:26:30	-0.1	31.0
7:26:45	-0.1	27.7
7:27:00	1.5	13.9
7:27:15	4.6	4.4
7:27:30	6.4	0.7
7:27:45	6.8	0.0
7:28:00	6.9	-0.1
7:28:15	6.9	-0.1
7:28:30	6.9	-0.1
7:28:45	6.9	-0.1
7:29:00	6.9	-0.1
7:29:15	6.9	-0.1
7:29:30	6.9	-0.1
7:29:45	6.9	-0.1
7:30:00	6.9	0.3
7:30:15	7.4	1.2
7:30:30	13.6	1.0
7:30:45	19.7	0.6
7:31:00	20.9	0.5
7:31:15	21.0	0.5
7:31:30	20.9	0.5
7:31:45	21.0	0.5
7:32:00	21.0	0.5
7:32:15	21.0	0.5
7:32:30	21.0	0.5

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.3
Upscale	13.9	31.0

7:41:21	0.0	31.0
7:41:36	0.0	31.0
7:41:51	0.0	31.0
7:42:06	0.0	31.0
7:42:21	0.0	31.1
7:42:36	0.0	31.0
7:42:51	0.0	31.0
7:43:06	0.0	29.0
7:43:21	1.3	17.7
7:43:36	8.1	5.2
7:43:51	12.7	1.3
7:44:06	13.7	0.3
7:44:21	13.8	0.3
7:44:36	13.8	0.3
7:44:51	13.9	0.3
7:45:06	13.9	0.3
7:45:21	13.9	0.3
7:45:36	13.9	0.3
7:45:51	13.9	0.3
7:46:06	13.9	1.2

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	10.3	10.7

8:58:03	10.4	11.6
8:59:03	10.4	11.8
9:00:03	10.4	11.6
9:01:03	10.5	12.0
9:02:03	10.4	13.1
9:03:03	10.6	12.4
9:04:03	10.4	11.5
9:05:03	10.4	11.9
9:06:03	10.4	11.2
9:07:03	10.3	9.1
9:08:02	10.3	9.5
9:09:02	10.4	9.7
9:10:03	10.4	9.9
9:11:02	10.4	9.2
9:12:02	10.4	9.6
9:13:03	10.4	10.6
9:14:03	10.2	10.5
9:15:02	10.3	10.5
9:16:03	10.1	9.7
9:17:03	9.9	9.7
9:18:02	10.0	10.6
9:19:03	10.0	10.7

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.9	31.0

9:20:21	13.9	0.3
9:20:35	13.9	0.3
9:20:51	13.9	0.2
9:21:05	13.9	0.2
9:21:21	13.9	0.2
9:21:35	13.9	0.3
9:21:51	13.9	0.2
9:22:06	13.9	0.2
9:22:20	13.9	0.2
9:22:36	13.9	0.3
9:22:50	13.9	0.2
9:23:06	13.9	1.6
9:23:20	12.9	12.2
9:23:35	6.0	25.2
9:23:51	0.9	30.1
9:24:05	0.0	30.9
9:24:21	0.0	31.0
9:24:35	0.0	31.0
9:24:51	0.0	31.0
9:25:06	0.0	30.9
9:25:20	0.0	30.5

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Time	O ₂ (%)	CO (ppm)
Average	9.73	8.81

9:26:28	9.9	12.0
9:27:29	9.9	11.9
9:28:29	9.9	11.5
9:29:28	9.8	10.0
9:30:29	9.8	10.5
9:31:29	9.8	9.5
9:32:28	9.9	8.5
9:33:29	9.8	7.9
9:34:29	9.9	8.3
9:35:28	10.0	8.1
9:36:28	9.8	7.6
9:37:29	9.9	8.0
9:38:28	9.7	7.8
9:39:28	9.7	7.6
9:40:29	9.7	8.2
9:41:28	9.5	7.6
9:42:28	9.4	7.9
9:43:29	9.5	7.9
9:44:29	9.6	8.1
9:45:28	9.5	7.7
9:46:29	9.5	8.5

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Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.3
Upscale	13.8	30.9

9:49:33	0.0	30.9
9:49:49	0.0	30.9
9:50:04	0.0	30.9
9:50:18	-0.1	31.0
9:50:34	-0.1	31.0
9:50:48	-0.1	30.9
9:51:04	-0.1	29.6
9:51:18	0.9	19.1
9:51:33	7.5	5.9
9:51:49	12.4	1.4
9:52:03	13.7	0.4
9:52:19	13.8	0.3
9:52:33	13.8	0.3
9:52:49	13.8	0.3
9:53:03	13.8	0.3
9:53:18	13.8	0.2
9:53:34	13.8	1.4

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Time	O ₂ (%)	CO (ppm)
Average	10.0	7.31

9:55:08	10.0	7.2
9:56:08	10.1	7.3
9:57:07	10.1	6.8
9:58:08	10.2	6.7
9:59:08	10.1	6.4
10:00:07	10.2	6.6
10:01:07	10.2	6.6
10:02:08	10.1	6.6
10:03:07	10.1	7.5
10:04:07	10.0	7.8
10:05:08	10.1	7.8
10:06:07	10.1	7.4
10:07:07	10.0	7.2
10:08:08	9.9	7.4
10:09:08	9.9	7.8
10:10:07	9.7	7.1
10:11:08	9.6	7.1
10:12:08	9.8	7.5
10:13:07	9.7	8.1
10:14:07	9.7	7.9
10:15:08	9.7	8.9

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Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.9

10:18:06	13.8	0.2
10:18:22	13.9	0.2
10:18:37	13.9	0.2
10:18:51	13.8	0.3
10:19:07	13.8	4.2
10:19:21	10.5	19.6
10:19:37	3.1	28.0
10:19:51	0.3	30.6
10:20:07	0.0	30.8
10:20:22	0.0	30.8
10:20:36	0.0	30.8
10:20:52	0.0	30.9
10:21:06	0.0	30.9
10:21:22	0.0	30.3

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Time	O ₂ (%)	CO (ppm)
Average	9.40	9.12

10:22:24	9.6	8.5
10:23:25	9.8	8.4
10:24:25	9.5	7.9
10:25:24	9.5	8.4
10:26:25	9.6	8.5
10:27:25	9.5	8.3
10:28:24	9.5	8.4
10:29:24	9.4	8.4
10:30:25	9.4	8.6
10:31:24	9.3	8.1
10:32:24	9.5	8.2
10:33:25	9.5	8.6
10:34:24	9.4	8.2
10:35:24	9.5	11.1
10:36:25	9.6	11.4
10:37:25	9.1	9.0
10:38:24	9.2	10.4
10:39:25	9.2	10.6
10:40:25	9.1	10.2
10:41:24	9.1	10.7
10:42:25	9.2	9.8

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Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.8	30.9

10:53:25	-0.1	30.9
10:53:41	-0.1	30.9
10:53:55	-0.1	30.9
10:54:10	-0.1	30.9
10:54:26	-0.1	30.9
10:54:40	-0.1	30.9
10:54:56	-0.1	30.9
10:55:10	-0.1	30.9
10:55:26	-0.1	30.8
10:55:41	-0.1	30.8
10:55:55	-0.1	26.6
10:56:11	3.7	11.3
10:56:25	10.5	3.5
10:56:41	13.3	0.5
10:56:55	13.7	0.3
10:57:11	13.7	0.2
10:57:26	13.8	0.2
10:57:40	13.8	0.2
10:57:56	13.8	0.2
10:58:10	13.8	0.2
10:58:26	13.8	0.2
10:58:40	13.8	0.2

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Time	O ₂ (%)	CO (ppm)
Average	9.32	8.26

11:36:19	9.2	8.2
11:37:19	9.3	8.6
11:38:19	9.5	8.2
11:39:19	9.4	8.9
11:40:19	9.5	9.4
11:41:19	9.3	9.3
11:42:19	9.2	8.4
11:43:19	9.2	8.1
11:44:19	9.3	8.4
11:45:19	9.3	8.2
11:46:19	9.2	8.2
11:47:19	9.3	7.5
11:48:19	9.3	7.6
11:49:19	9.3	8.5
11:50:19	9.4	8.5
11:51:19	9.4	8.2
11:52:19	9.4	7.9
11:53:19	9.4	7.8
11:54:19	9.3	7.8
11:55:19	9.4	7.8
11:56:19	9.5	7.9

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Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.8

11:58:42	13.8	0.2
11:58:57	13.8	0.2
11:59:12	13.8	0.2
11:59:27	13.8	0.2
11:59:42	13.8	0.2
11:59:57	13.8	0.2
12:00:12	13.8	0.2
12:00:27	13.8	0.2
12:00:42	13.8	0.2
12:00:57	13.8	0.2
12:01:12	13.8	0.2
12:01:27	13.8	0.3
12:01:42	13.8	4.4
12:01:57	10.6	18.0
12:02:12	3.3	27.6
12:02:27	0.3	30.4
12:02:42	0.0	30.7
12:02:57	0.0	30.8
12:03:12	-0.1	30.8
12:03:27	-0.1	30.8
12:03:42	-0.1	30.8

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Time	O ₂ (%)	CO (ppm)
Average	9.01	8.88

12:05:43	9.2	8.8
12:06:43	9.2	8.3
12:07:43	9.5	8.3
12:08:43	9.3	8.3
12:09:43	9.4	8.5
12:10:43	9.4	8.4
12:11:43	9.3	8.4
12:12:43	9.2	8.5
12:13:43	9.3	7.7
12:14:43	9.2	8.7
12:15:43	9.1	8.4
12:16:43	8.7	9.2
12:17:43	9.0	9.3
12:18:43	9.0	9.0
12:19:43	8.8	9.2
12:20:43	8.8	9.7
12:21:43	8.6	10.3
12:22:43	8.7	10.0
12:23:43	8.6	9.5
12:24:43	8.6	8.9
12:25:43	8.5	8.9

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Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.8	30.8

12:27:42	0.0	30.6
12:27:57	-0.1	30.7
12:28:12	-0.1	30.8
12:28:27	-0.1	30.8
12:28:42	-0.1	30.8
12:28:57	-0.1	30.8
12:29:12	-0.1	29.3
12:29:27	1.7	15.3
12:29:42	8.7	5.4
12:29:57	12.8	0.9
12:30:12	13.7	0.4
12:30:27	13.7	0.2
12:30:42	13.7	0.2
12:30:57	13.8	0.2
12:31:12	13.8	0.2
12:31:27	13.8	0.2
12:31:42	13.8	0.1
12:31:57	13.8	0.5

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Time	O ₂ (%)	CO (ppm)
Average	8.21	7.89

12:32:47	8.6	8.0
12:33:47	8.6	8.1
12:34:47	8.6	8.2
12:35:47	8.6	7.7
12:36:47	8.6	7.9
12:37:47	8.6	7.7
12:38:47	8.4	7.5
12:39:47	8.0	8.1
12:40:47	7.9	7.8
12:41:47	7.8	8.3
12:42:47	7.8	8.2
12:43:47	7.9	7.9
12:44:47	8.0	8.1
12:45:47	7.9	8.0
12:46:47	7.8	7.7
12:47:47	7.8	7.5
12:48:47	8.0	7.4
12:49:47	7.9	7.4
12:50:47	8.2	7.8
12:51:47	8.6	8.2
12:52:47	8.8	8.4

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Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.7

13:03:32	13.7	0.1
13:03:47	13.8	0.2
13:04:02	13.8	0.2
13:04:17	13.8	0.2
13:04:32	13.8	0.2
13:04:47	13.8	0.1
13:05:02	13.8	2.3
13:05:17	12.7	13.3
13:05:32	5.6	25.9
13:05:47	0.9	30.0
13:06:02	0.0	30.6
13:06:17	0.0	30.7
13:06:32	0.0	30.7
13:06:47	0.0	30.7
13:07:02	0.0	30.8
13:07:17	-0.1	28.0

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Time	O ₂ (%)	CO (ppm)
Average	9.69	7.58

13:09:09	9.6	7.6
13:10:09	9.5	7.1
13:11:09	9.6	7.5
13:12:09	9.7	7.9
13:13:09	9.6	7.6
13:14:09	9.7	8.0
13:15:09	9.8	8.1
13:16:09	9.8	8.1
13:17:09	9.8	8.3
13:18:09	9.7	7.9
13:19:09	9.9	8.1
13:20:09	9.9	7.7
13:21:09	9.8	7.8
13:22:09	9.9	7.6
13:23:09	9.9	7.7
13:24:09	9.8	7.8
13:25:09	9.7	7.4
13:26:09	9.7	7.1
13:27:09	9.7	7.1
13:28:09	9.4	6.5
13:29:09	9.4	6.4

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Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.7	30.8

13:31:38	0.0	30.6
13:31:53	0.0	30.8
13:32:08	-0.1	30.8
13:32:23	-0.1	30.8
13:32:38	-0.1	30.8
13:32:53	-0.1	30.8
13:33:08	-0.1	26.7
13:33:23	3.3	11.5
13:33:38	10.1	3.3
13:33:53	13.2	0.6
13:34:08	13.7	0.3
13:34:23	13.7	0.2
13:34:38	13.7	0.2
13:34:53	13.7	0.2
13:35:08	13.8	0.2
13:35:23	13.8	0.2
13:35:38	13.7	0.2

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Time	O ₂ (%)	CO (ppm)
Average	8.90	4.31

13:37:20	9.2	6.3
13:38:20	9.2	6.0
13:39:20	9.0	5.8
13:40:20	9.1	5.6
13:41:20	9.2	5.6
13:42:20	9.2	5.4
13:43:20	9.0	5.1
13:44:20	9.0	4.6
13:45:20	8.9	4.4
13:46:20	8.9	4.3
13:47:20	8.7	4.0
13:48:20	8.7	3.5
13:49:20	8.7	3.4
13:50:20	8.6	3.3
13:51:20	8.6	3.6
13:52:20	8.7	3.7
13:53:20	8.7	3.2
13:54:20	8.8	3.2
13:55:20	8.9	3.1
13:56:20	8.9	3.1
13:57:20	9.0	3.1

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Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.7

14:00:15	13.8	0.2
14:00:30	13.8	0.2
14:00:45	13.8	0.2
14:01:00	13.8	0.2
14:01:15	13.8	0.2
14:01:30	13.8	0.2
14:01:45	13.8	1.4
14:02:00	12.9	13.2
14:02:15	5.9	24.9
14:02:30	0.9	30.0
14:02:45	0.0	30.7
14:03:00	0.0	30.7
14:03:15	0.0	30.7
14:03:30	0.0	30.7
14:03:45	0.0	30.8
14:04:00	0.0	30.6

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Time	O ₂ (%)	CO (ppm)
Average	10.1	1.51

14:09:50	10.0	3.1
14:10:50	9.8	2.4
14:11:50	9.7	2.3
14:12:50	9.9	1.7
14:13:50	10.1	1.6
14:14:50	10.2	1.5
14:15:50	10.3	1.5
14:16:50	10.4	1.4
14:17:50	10.5	1.3
14:18:50	10.2	1.4
14:19:50	10.4	1.3
14:20:50	10.4	1.2
14:21:50	10.3	1.2
14:22:50	10.3	1.2
14:23:50	10.2	1.2
14:24:50	10.2	1.3
14:25:50	10.2	1.3
14:26:50	10.1	1.3
14:27:50	10.0	1.1
14:28:50	9.9	1.1
14:29:50	9.8	1.1

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Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.3
Upscale	13.75	30.9

14:32:06	0.0	30.9
14:32:21	-0.1	30.9
14:32:36	-0.1	30.8
14:32:51	-0.1	30.9
14:33:06	0.0	30.9
14:33:21	-0.1	30.9
14:33:36	-0.1	30.8
14:33:51	-0.1	30.8
14:34:06	-0.1	30.7
14:34:21	-0.1	26.2
14:34:36	3.3	13.1
14:34:51	10.2	3.2
14:35:06	13.2	0.7
14:35:21	13.7	0.3
14:35:36	13.7	0.3
14:35:51	13.8	0.2
14:36:06	13.7	0.3
14:36:21	13.8	0.3
14:36:36	13.8	0.3
14:36:51	13.3	0.8

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Time	O ₂ (%)	CO (ppm)
Average	8.83	0.89

14:38:25	9.5	1.0
14:39:25	9.4	1.0
14:40:25	9.1	0.9
14:41:25	9.0	0.9
14:42:25	9.0	0.8
14:43:25	8.8	0.9
14:44:25	8.9	1.0
14:45:25	9.1	0.9
14:46:25	9.0	1.0
14:47:25	8.9	0.9
14:48:25	8.7	0.8
14:49:25	8.6	0.8
14:50:25	8.6	0.8
14:51:25	8.5	0.8
14:52:25	8.7	0.8
14:53:25	8.6	0.9
14:54:25	8.6	0.9
14:55:25	8.7	0.9
14:56:25	8.7	0.9
14:57:25	8.7	0.9
14:58:25	8.7	0.9

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Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.7

15:00:21	13.7	0.2
15:00:36	13.7	0.2
15:00:51	13.8	0.2
15:01:06	13.8	0.2
15:01:21	13.8	0.2
15:01:36	13.8	0.2
15:01:51	13.8	1.6
15:02:06	13.0	12.1
15:02:21	6.2	24.9
15:02:36	1.1	29.8
15:02:51	0.0	30.7
15:03:06	0.0	30.7
15:03:21	0.0	30.7
15:03:36	0.0	30.7
15:03:51	0.0	30.7
15:04:06	-0.1	30.7
15:04:21	-0.1	28.4

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Time	O ₂ (%)	CO (ppm)
Average	8.66	0.95

15:05:30	8.5	1.0
15:06:30	8.6	0.9
15:07:30	8.6	0.9
15:08:30	8.6	0.9
15:09:30	8.6	1.0
15:10:30	8.7	1.0
15:11:30	8.6	0.9
15:12:30	8.6	0.9
15:13:30	8.6	0.9
15:14:30	8.7	1.0
15:15:30	8.9	0.9
15:16:30	8.7	0.9
15:17:30	8.7	1.0
15:18:30	8.7	1.0
15:19:30	8.7	1.0
15:20:30	8.7	0.9
15:21:30	8.7	0.8
15:22:30	8.6	1.0
15:23:30	8.7	1.0
15:24:30	8.7	1.0
15:25:30	8.8	1.0

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Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.8

15:27:46	0.4	30.6
15:28:01	0.1	30.7
15:28:16	-0.1	30.8
15:28:31	0.0	30.8
15:28:46	0.0	30.8
15:29:01	-0.1	30.8
15:29:16	-0.1	29.4
15:29:31	0.9	18.6
15:29:46	7.4	6.3
15:30:01	12.3	1.3
15:30:16	13.6	0.4
15:30:31	13.7	0.3
15:30:46	13.7	0.2
15:31:01	13.7	0.2
15:31:16	13.7	0.2
15:31:31	13.8	0.2
15:31:46	13.7	0.2
15:32:01	13.8	0.2
15:32:16	13.8	0.3

RM Data
Calibration Error

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.1
High	21.0	89.4
Mid	14.0	60.4
Low	6.87	31.0

7:17:00	-0.1	89.4
7:17:15	0.0	89.4
7:17:30	0.0	89.4
7:17:45	0.0	89.4
7:18:00	-0.1	89.4
7:18:15	0.0	88.8
7:18:30	0.0	81.4
7:18:45	0.1	67.7
7:19:00	0.0	59.7
7:19:15	0.4	40.2
7:19:30	6.6	13.7
7:19:45	12.2	2.8
7:20:00	13.8	0.3
7:20:15	14.0	0.1
7:20:30	14.0	0.1
7:20:45	14.0	0.1
7:21:00	14.0	0.1
7:21:15	14.0	0.1
7:21:30	14.0	0.1
7:21:45	14.0	0.9
7:22:00	13.8	16.3
7:22:15	8.4	43.4
7:22:30	1.7	57.9
7:22:45	0.0	60.2
7:23:00	0.0	60.4
7:23:15	-0.1	60.5
7:23:30	-0.1	60.4
7:23:45	-0.1	60.3
7:24:00	-0.1	60.4
7:24:15	-0.1	59.5
7:24:30	-0.1	48.7
7:24:45	-0.1	36.1
7:25:00	-0.1	31.4
7:25:15	-0.1	31.0
7:25:30	-0.1	31.0
7:25:45	-0.1	31.1
7:26:00	-0.1	31.1
7:26:15	-0.1	31.0
7:26:30	-0.1	31.0
7:26:45	-0.1	27.7
7:27:00	1.5	13.9
7:27:15	4.6	4.4
7:27:30	6.4	0.7
7:27:45	6.8	0.0
7:28:00	6.9	-0.1
7:28:15	6.9	-0.1
7:28:30	6.9	-0.1
7:28:45	6.9	-0.1
7:29:00	6.9	-0.1
7:29:15	6.9	-0.1
7:29:30	6.9	-0.1
7:29:45	6.9	-0.1
7:30:00	6.9	0.3
7:30:15	7.4	1.2
7:30:30	13.6	1.0
7:30:45	19.7	0.6
7:31:00	20.9	0.5
7:31:15	21.0	0.5
7:31:30	20.9	0.5
7:31:45	21.0	0.5
7:32:00	21.0	0.5
7:32:15	21.0	0.5
7:32:30	21.0	0.5

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.3
Upscale	13.7	30.9

14:32:06	0.0	30.9
14:32:21	-0.1	30.9
14:32:36	-0.1	30.8
14:32:51	-0.1	30.9
14:33:06	0.0	30.9
14:33:21	-0.1	30.9
14:33:36	-0.1	30.8
14:33:51	-0.1	30.8
14:34:06	-0.1	30.7
14:34:21	-0.1	26.2
14:34:36	3.3	13.1
14:34:51	10.2	3.2
14:35:06	13.2	0.7
14:35:21	13.7	0.3
14:35:36	13.7	0.3
14:35:51	13.8	0.2
14:36:06	13.7	0.3
14:36:21	13.8	0.3
14:36:36	13.8	0.3
14:36:51	13.3	0.8

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	8.83	0.89

14:38:25	9.5	1.0
14:39:25	9.4	1.0
14:40:25	9.1	0.9
14:41:25	9.0	0.9
14:42:25	9.0	0.8
14:43:25	8.8	0.9
14:44:25	8.9	1.0
14:45:25	9.1	0.9
14:46:25	9.0	1.0
14:47:25	8.9	0.9
14:48:25	8.7	0.8
14:49:25	8.6	0.8
14:50:25	8.6	0.8
14:51:25	8.5	0.8
14:52:25	8.7	0.8
14:53:25	8.6	0.9
14:54:25	8.6	0.9
14:55:25	8.7	0.9
14:56:25	8.7	0.9
14:57:25	8.7	0.9
14:58:25	8.7	0.9

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.7

15:00:21	13.7	0.2
15:00:36	13.7	0.2
15:00:51	13.8	0.2
15:01:06	13.8	0.2
15:01:21	13.8	0.2
15:01:36	13.8	0.2
15:01:51	13.8	1.6
15:02:06	13.0	12.1
15:02:21	6.2	24.9
15:02:36	1.1	29.8
15:02:51	0.0	30.7
15:03:06	0.0	30.7
15:03:21	0.0	30.7
15:03:36	0.0	30.7
15:03:51	0.0	30.7
15:04:06	-0.1	30.7
15:04:21	-0.1	28.4

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	8.66	0.95

15:05:30	8.5	1.0
15:06:30	8.6	0.9
15:07:30	8.6	0.9
15:08:30	8.6	0.9
15:09:30	8.6	1.0
15:10:30	8.7	1.0
15:11:30	8.6	0.9
15:12:30	8.6	0.9
15:13:30	8.6	0.9
15:14:30	8.7	1.0
15:15:30	8.9	0.9
15:16:30	8.7	0.9
15:17:30	8.7	1.0
15:18:30	8.7	1.0
15:19:30	8.7	1.0
15:20:30	8.7	0.9
15:21:30	8.7	0.8
15:22:30	8.6	1.0
15:23:30	8.7	1.0
15:24:30	8.7	1.0
15:25:30	8.8	1.0

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.8

15:27:46	0.4	30.6
15:28:01	0.1	30.7
15:28:16	-0.1	30.8
15:28:31	0.0	30.8
15:28:46	0.0	30.8
15:29:01	-0.1	30.8
15:29:16	-0.1	29.4
15:29:31	0.9	18.6
15:29:46	7.4	6.3
15:30:01	12.3	1.3
15:30:16	13.6	0.4
15:30:31	13.7	0.3
15:30:46	13.7	0.2
15:31:01	13.7	0.2
15:31:16	13.7	0.2
15:31:31	13.8	0.2
15:31:46	13.7	0.2
15:32:01	13.8	0.2
15:32:16	13.8	0.3

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	8.75	1.02

15:33:52	8.6	1.0
15:34:52	8.7	1.0
15:35:52	8.7	1.1
15:36:52	8.7	1.0
15:37:52	8.7	1.1
15:38:52	8.8	1.0
15:39:52	8.8	1.0
15:40:52	8.6	1.0
15:41:52	8.7	1.1
15:42:52	8.8	1.1
15:43:52	8.9	1.1
15:44:52	8.9	1.0
15:45:52	8.9	0.9
15:46:52	8.8	0.9
15:47:52	8.7	0.9
15:48:52	8.7	0.9
15:49:52	8.7	0.9
15:50:52	8.7	1.0
15:51:52	8.8	1.1
15:52:52	8.8	1.1
15:53:52	8.9	1.0

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.8	30.8

15:56:54	13.7	0.2
15:57:09	13.7	0.2
15:57:24	13.7	0.2
15:57:39	13.7	0.2
15:57:54	13.8	0.2
15:58:09	13.7	0.2
15:58:24	13.8	0.2
15:58:39	13.8	0.2
15:58:54	13.7	0.7
15:59:09	13.6	7.9
15:59:24	8.7	21.4
15:59:39	2.1	29.2
15:59:54	0.1	30.6
16:00:09	0.0	30.7
16:00:24	0.0	30.8
16:00:39	-0.1	30.8
16:00:54	0.0	30.8
16:01:09	-0.1	30.8
16:01:24	-0.1	30.8
16:01:39	-0.1	30.8
16:01:54	-0.1	26.3

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	9.64	0.95

16:03:58	9.9	1.0
16:04:58	10.0	0.9
16:05:58	10.0	1.0
16:06:58	10.0	0.9
16:07:58	9.7	0.9
16:08:58	9.7	0.9
16:09:58	9.8	0.9
16:10:58	9.6	0.8
16:11:58	9.6	0.8
16:12:58	9.5	0.8
16:13:58	9.6	0.9
16:14:58	9.7	1.0
16:15:58	9.6	0.9
16:16:58	9.6	0.9
16:17:58	9.5	0.9
16:18:58	9.4	0.9
16:19:58	9.5	0.8
16:20:58	9.4	0.9
16:21:58	9.4	0.9
16:22:58	9.6	0.9
16:23:58	9.6	2.1

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.7	30.8

16:24:46	0.0	30.6
16:25:01	0.0	30.7
16:25:16	-0.1	30.8
16:25:31	-0.1	30.8
16:25:46	-0.1	30.8
16:26:01	-0.1	30.8
16:26:16	-0.1	30.7
16:26:31	0.0	24.8
16:26:46	4.1	10.2
16:27:01	10.7	2.8
16:27:16	13.3	0.5
16:27:31	13.7	0.3
16:27:46	13.7	0.2
16:28:01	13.7	0.2
16:28:16	13.7	0.2
16:28:31	13.7	0.2
16:28:46	13.7	0.3

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	8.99	0.88

16:29:32	9.4	0.8
16:30:32	9.5	0.8
16:31:32	9.4	0.8
16:32:32	9.4	0.8
16:33:32	9.4	0.9
16:34:32	9.3	0.9
16:35:32	9.3	0.8
16:36:32	9.3	0.8
16:37:32	9.2	0.9
16:38:32	9.1	0.9
16:39:32	9.0	0.9
16:40:32	8.9	0.9
16:41:32	8.9	1.0
16:42:32	8.8	1.0
16:43:32	8.7	0.9
16:44:32	8.7	0.9
16:45:32	8.7	0.9
16:46:32	8.7	0.9
16:47:32	8.5	0.8
16:48:32	8.4	0.9
16:49:32	8.4	0.8

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.7	30.7

16:51:49	13.7	0.2
16:52:04	13.7	0.2
16:52:19	13.7	0.2
16:52:34	13.7	0.2
16:52:49	13.7	0.2
16:53:04	13.7	0.3
16:53:19	13.7	3.9
16:53:34	10.9	17.9
16:53:49	3.6	27.4
16:54:04	0.4	30.5
16:54:19	0.0	30.7
16:54:34	0.0	30.7
16:54:49	-0.1	30.8
16:55:04	-0.1	30.8
16:55:19	-0.1	29.7

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	9.01	0.90

16:57:57	8.1	0.9
16:58:57	8.1	1.0
16:59:57	8.0	0.8
17:00:57	8.1	0.8
17:01:57	8.3	0.9
17:02:57	8.5	0.8
17:03:57	8.7	0.9
17:04:57	8.9	0.9
17:05:57	9.0	0.9
17:06:57	9.2	0.8
17:07:57	9.3	0.9
17:08:57	9.3	0.9
17:09:57	9.4	0.9
17:10:57	9.4	0.9
17:11:57	9.5	0.8
17:12:57	9.5	0.8
17:13:57	9.6	1.0
17:14:57	9.5	0.9
17:15:57	9.7	1.0
17:16:57	9.7	0.9
17:17:57	9.7	1.3

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.8	30.8

17:18:53	0.0	30.7
17:19:08	0.0	30.8
17:19:23	0.0	30.8
17:19:38	-0.1	30.8
17:19:53	-0.1	30.8
17:20:08	-0.1	30.8
17:20:23	-0.1	27.5
17:20:38	2.2	15.2
17:20:53	9.2	3.8
17:21:08	13.0	0.9
17:21:23	13.7	0.3
17:21:38	13.7	0.2
17:21:53	13.7	0.2
17:22:08	13.7	0.2
17:22:23	13.8	0.2
17:22:38	13.8	0.2
17:22:53	13.8	0.2

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	9.90	1.36

17:24:38	9.8	1.0
17:25:38	9.8	1.1
17:26:38	9.9	1.1
17:27:38	10.0	1.1
17:28:38	10.0	1.1
17:29:38	9.9	1.1
17:30:38	10.0	1.2
17:31:38	10.1	1.2
17:32:38	10.1	1.3
17:33:38	10.1	1.3
17:34:38	10.1	1.4
17:35:38	10.0	1.5
17:36:38	10.0	1.5
17:37:38	10.0	1.4
17:38:38	9.9	1.5
17:39:38	9.8	1.5
17:40:38	9.8	1.6
17:41:38	9.8	1.6
17:42:38	9.7	1.6
17:43:38	9.6	1.6
17:44:38	9.5	1.7

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.2
Upscale	13.8	30.8

17:46:39	13.7	0.2
17:46:54	13.8	0.2
17:47:09	13.8	0.2
17:47:24	13.8	0.2
17:47:39	13.8	0.1
17:47:54	13.8	0.2
17:48:09	13.8	2.9
17:48:24	12.1	15.1
17:48:39	4.7	26.4
17:48:54	0.6	30.3
17:49:09	0.0	30.7
17:49:24	0.0	30.8
17:49:39	0.0	30.8
17:49:54	0.0	30.8
17:50:09	0.0	30.8
17:50:24	0.0	30.4

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	8.94	2.37

17:52:09	9.4	2.1
17:53:09	9.2	2.1
17:54:09	9.1	2.1
17:55:09	9.0	2.2
17:56:09	9.0	2.5
17:57:09	9.0	2.4
17:58:09	9.0	2.4
17:59:09	9.1	2.3
18:00:09	9.0	2.4
18:01:09	9.0	2.4
18:02:09	9.1	2.3
18:03:09	8.9	2.2
18:04:09	8.9	2.5
18:05:09	8.9	2.3
18:06:09	8.7	2.4
18:07:09	8.8	2.4
18:08:09	8.9	2.4
18:09:09	8.8	2.6
18:10:09	8.8	2.5
18:11:09	8.7	2.6
18:12:09	8.7	2.5

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.7	30.8

18:16:46	-0.1	30.8
18:17:00	-0.1	30.8
18:17:16	-0.1	30.8
18:17:30	-0.1	30.9
18:17:46	-0.1	30.8
18:18:00	-0.1	30.8
18:18:15	-0.1	30.0
18:18:31	0.8	18.7
18:18:45	7.4	6.9
18:19:01	12.4	1.2
18:19:15	13.6	0.4
18:19:31	13.7	0.3
18:19:46	13.7	0.2
18:20:00	13.7	0.2
18:20:16	13.7	0.2
18:20:30	13.7	0.2
18:20:46	13.7	0.3
18:21:00	13.7	0.8
18:21:16	12.2	2.0
18:21:31	9.6	2.9
18:21:45	9.1	3.0

Date 2/9/2006

Time O₂ CO
(%) (ppm)

Average 8.64 3.47

18:22:39	9.1	2.6
18:23:40	9.0	3.0
18:24:40	9.0	3.0
18:25:39	8.9	3.2
18:26:39	8.9	3.4
18:27:40	8.9	3.6
18:28:39	8.9	3.6
18:29:39	8.8	3.8
18:30:40	8.7	3.6
18:31:39	8.5	3.8
18:32:39	8.8	3.5
18:33:40	8.4	3.7
18:34:40	8.0	4.2
18:35:39	8.2	4.3
18:36:40	8.3	3.7
18:37:40	8.3	3.4
18:38:39	8.6	3.4
18:39:40	8.5	3.2
18:40:40	8.7	3.2
18:41:39	8.4	3.2
18:42:39	8.5	3.2

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	-0.1	0.2
Upscale	13.8	30.9

18:45:28	13.7	0.2
18:45:44	13.8	0.2
18:45:58	13.8	0.2
18:46:13	13.8	0.2
18:46:29	13.8	0.2
18:46:43	13.8	0.2
18:46:58	13.8	2.9
18:47:13	12.1	14.6
18:47:29	4.8	26.7
18:47:43	0.6	30.2
18:47:58	0.0	30.7
18:48:14	0.0	30.7
18:48:28	0.0	30.8
18:48:44	0.0	30.8
18:48:58	-0.1	30.8
18:49:14	0.0	30.9
18:49:29	-0.1	30.9
18:49:43	-0.1	30.8

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Average	9.47	2.99

18:51:31	8.9	3.5
18:52:30	8.9	3.6
18:53:31	8.9	3.6
18:54:31	8.8	3.7
18:55:30	8.9	3.8
18:56:30	8.9	3.5
18:57:31	8.9	3.8
18:58:30	9.0	3.4
18:59:30	9.0	3.5
19:00:31	9.3	3.2
19:01:30	9.6	2.9
19:02:30	9.7	2.7
19:03:31	10.0	2.8
19:04:31	10.1	2.5
19:05:30	10.2	2.2
19:06:31	10.0	2.2
19:07:31	10.1	2.5
19:08:30	10.1	2.4
19:09:30	9.9	2.2
19:10:31	9.9	2.3
19:11:30	10.0	2.4

Date 2/9/2006

Time	O ₂ (%)	CO (ppm)
Zero	0.0	0.3
Upscale	13.76	30.8

19:14:15	-0.1	30.8
19:14:30	0.0	30.8
19:14:46	-0.1	30.8
19:15:00	-0.1	30.8
19:15:16	-0.1	30.9
19:15:30	-0.1	30.9
19:15:46	-0.1	30.5
19:16:01	0.1	24.1
19:16:15	5.1	9.9
19:16:31	11.2	2.4
19:16:45	13.5	0.5
19:17:01	13.7	0.3
19:17:15	13.7	0.3
19:17:31	13.7	0.3
19:17:46	13.8	0.3
19:18:00	13.8	0.3
19:18:16	13.8	0.3
19:18:30	13.8	0.3
19:18:46	13.8	0.3
19:19:00	13.8	0.3
19:19:15	14.0	0.4



Certificate of Analysis

For: Linweld - Denver

Date: 8/6/2004

Gas Description: KAL 7% O2/ 14% CO2/ N2 Certified

Linweld #: LW445Y

Type: Certified Mixture

Serial #: SG9152874

Cylinder Size: KAL

Lot #: 1SG061104

Test Cylinder: SG9152874

Test Required	Method of Test	Requested	Actual
Oxygen, UHP	NIST Weights	7%	6.98%
Carbon Dioxide	NIST Weights	14%	14.23%
Nitrogen	NIST Weights	Balance	Balance

Comments: *This cylinder was used in the batch sampling of this lot.

Analyzed By: *Dan L. Weyl*

8-6-04

NIST STATEMENT

Product composition verified by instrumentation calibrated with at least one of the following: NIST traceable weights, gas mixtures traceable to NIST weights, NIST gas standards, manufacturer NIST calibrations.

Analytical accuracies are listed in the LINWELD Specialty Gases and Equipment Catalog.

This cylinder meets or exceeds the requested standards listed above.

Linweld Specialty Gas Division
9920 Deer Park Rd.
Waverly, NE 68462-0190

CERTIFICATE OF ANALYSIS

Date: 9/17/2003 Reference Number: 18-46864800-001
Customer Name: AIRGAS INTERMOUNTAIN
LOCATION D13 CHEYENNE WY
1001 DUNN AVE
Grade Of Product: Certified Standard

<u>Cylinder Number</u>	<u>Component</u>	<u>Requested Concentration</u>	<u>Actual Concentration</u>
CC119293	Carbon Dioxide	7.000 %	7.076 %
	Oxygen	14.00 %	14.04 %
	Nitrogen	Balance	Balance

Note:

Relative Uncertainty of Analytical Value: +/- 2% of component or +/- 5% of component, if less than 50 PPM

Product composition verified by direct comparison to calibration standards traceable to NIST weights and/or NIST gas mixture reference materials



Approval Signature



Certificate of Analysis (Lot)

For: Linweld

Date: 5/21/2004

Gas Description: KAL ZERO AMBIENT AIR

Linweld #: AC716

Type: Pure Gas

Serial #: SEE COMMENTS

Cylinder Size: KAL

Lot #: 1SG052004

Test Cylinder: *CC77418

Test Required	Method of Test	Requested	Actual
Oxygen	NIST Weights	21%	21.02%
Nitrogen	NIST Weights	Balance	Balance
Hydrocarbon Test	Flame Ionization	< 0.1 PPM	< 0.1 PPM
Carbon Dioxide Test	Infrared Analyzer	< 1 PPM	< 1 PPM
Carbon Monoxide Test	Detector Tube	< 0.5 PPM	< 0.5 PPM
NOx	Detector Tube	< 0.1 PPM	< 0.1 PPM
SO2	Detector Tube	< 0.1 PPM	< 0.1 PPM

Comments: *This cylinder was used in the batch sampling of this lot. The following cylinders
were part of this lot: CC77418, SG9140398, SG9120738, SG9119649,
SG9163941, 871803.

Analyzed By: Carl P. Zitter

5-21-04

NIST STATEMENT

Product composition verified by instrumentation calibrated with at least one of the following: NIST traceable weights, gas mixtures traceable to NIST weights, NIST gas standards, manufacturer NIST calibrations. Analytical accuracies are listed in the LINWELD Specialty Gases and Equipment Catalog.

This cylinder meets or exceeds the requested standards listed above.

Linweld Specialty Gas Division
9920 Deer Park Rd.
Waverly, NE 68462-0190

Certificate of Analysis: EPA Protocol Gas Mixture

Airgas Great Lakes

2009 Bellaire Ave.

Royal Oak, MI 48067

(248) 399-8020 Fax: (248) 584-2540

www.airgas.com

Cylinder Number: XC028122B Reference Number: 32-112340276-1
Cylinder Pressure: 1998.6 PSIG Expiration Date: 8/27/2007
Certification Date: 8/27/2004 Laboratory: MIQ - Royal Oak - MI

Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
CARBON MONOXIDE	30.330 PPM	± 1%	Nondispersive Infrared (NDIR)	G1
NITROGEN	Balance			

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences.

Notes: AIRGAS NORTH CENTRAL

Do not use cylinder below 150 psig.

Approval Signature A. F. Muhammad

Reference Standard Information

Type	Component	Cyl. Number	Concentration
NTRM 8103	CARBON MONOXIDE	XC013118B	30.33 PPM

Analytical Results

1st Component CARBON MONOXIDE

1st Analysis Date: 08/20/2004

R 4.97	S 3.04	Z 0.00	Conc 30.33 PPM
S 3.04	Z 0.00	R 4.97	Conc 30.33 PPM
Z 0.00	R 4.97	S 3.04	Conc 30.33 PPM
			AVG: 30.33 PPM

2nd Analysis Date: 08/27/2004

R 4.96	S 3.03	Z 0.0	Conc 30.29 PPM
S 3.03	Z 0.0	R 4.96	Conc 30.29 PPM
Z 0.0	R 4.96	S 3.03	Conc 30.29 PPM
			AVG: 30.29 PPM



CERTIFICATE of ANALYSIS

Interference-Free Multi-Component EPA Protocol Gases

NOTE: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/121

Section 2.2

Procedure: G-1

Cyl. Number: CC139856

Customer: LINWELD
P.O. Number: SG04597
Item Number: AC463A
Notes:

Shipping Order #: 16941259
Transfer #: 16941259
LOT #: LPX122101
Valve: CGA350
Cyl. Pressure*: 1900psig

Assay Date: 6-Jul-05

Expiration Date: 5-Jul-08

*Cylinder should not be used when gas pressure is below 150 psig

Component	Requested Concentration	Assay Concentration
Carbon Monoxide	60 ppm	61.0 ±0.7 ppm
Nitrogen	Balance	Balance

Reference Standard(s) Employed For Analysis:

Std name	Std #	Conc.	Units	Std. Error	Comp.	Balance	Cyl. No.	Exp. Date	Sample No.
GMIS252	GMIS252	103.0	ppm	1.0	CO	N2	CC52885	7/20/2006	N.A.

Analysis Information:

Component 1: Carbon Monoxide		First Triad Analysis On: 6/28/2005					Second Triad Analysis On: 7/6/2005				
Analyzer Information		Trial			Units		Trial			Units	
Manufacturer:	KVB/Analect	Zero	-0.40	-0.04	-0.31		Zero	-0.09	-0.09	-0.16	
Model Number:	EN3024	Reference	97.66	97.38	98.04		Reference	98.13	98.52	98.06	
Serial Number:	3024	Candidate	57.36	57.97	57.66		Candidate	58.07	58.27	58.22	
Analytical Principle:	FTIR	Result	60.68	61.23	60.80	ppm	Result	60.94	61.14	61.09	ppm
MPC Calibrated:	06/09/05	Mean Result:			60.87	ppm	Mean Result:			61.06	ppm

Analyst Signature:

Bryan Leger

Calculated by:

M. Adnane



CERTIFICATE of ANALYSIS

Interference-Free Multi-Component EPA Protocol Gases

NOTE: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/121

Section 2.2

Procedure: G-1

Customer: LINWELD
P.O. Number: SG04597
Item Number: AC463B
Notes:

Cyl. Number: CC66653

Shipping Order #: 16941259
Transfer #: 16941259
LOT #: LPX122102
Valve: CGA350
Cyl. Pressure*: 1900psig

Assay Date: 6-Jul-05

Expiration Date: 5-Jul-08

*Cylinder should not be used when gas pressure is below 150 psig

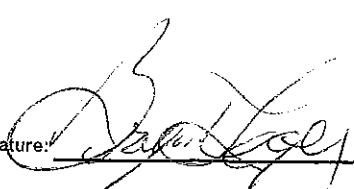
Component	Requested Concentration	Assay Concentration
Carbon Monoxide	90 ppm	89.8 ±0.9 ppm
Nitrogen	Balance	Balance

Reference Standard(s) Employed For Analysis:

Std name	Std #	Conc.	Units	Std. Error	Comp.	Balance	Cyl. No.	Exp. Date	Sample No.
GMIS252	GMIS252	103.0	ppm	1.0	CO	N2	CC52885	7/20/2006	N.A.

Analysis Information:

Component 1: Carbon Monoxide		First Triad Analysis On: 6/28/2005				Second Triad Analysis On: 7/6/2005			
Analyzer Information		Trial 1	Trial 2	Trial 3	Units	Trial 1	Trial 2	Trial 3	Units
Manufacturer:	KVB/Analect	Zero	-0.40	-0.04	-0.31	Zero	-0.09	-0.09	-0.16
Model Number:	EN3024	Reference	97.66	97.38	98.04	Reference	98.13	98.52	98.06
Serial Number:	3024	Candidate	85.02	85.20	85.44	Candidate	85.48	85.35	86.04
Analytical Principle:	FTIR	Result	89.68	89.86	90.12	Result	89.64	89.51	90.23
MPC Calibrated:	06/09/05	Mean Result:			89.89 ppm	Mean Result:			89.79 ppm

Analyst Signature:  Bryan Leger

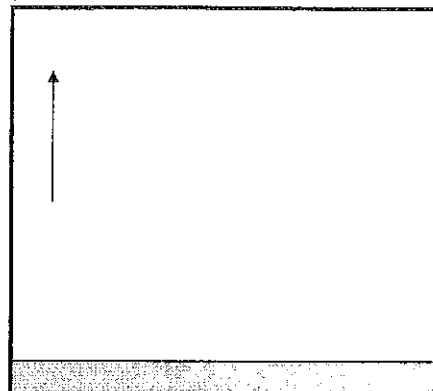
Calculated by:  M. Adnane

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Error Data Sheet

PROJECT NO. 2282

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Client	Us Filter Westates
Plant	Parker Az
Date	2-8-06
Operator	Cliff Anderson
Analyzer I.D.	
Analyzer Type	THERMOX (New)
Date of Most Recent Service	



Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

Low Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1420	2.03	2.05	0.02%
	2	2-8-06	1500	2.03	2.05	0.02%
	3	2-8-06	1540	2.03	2.05	0.02%

Mid Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1425	7.02	6.95	-0.07%
	2	2-8-06	1505	7.02	6.94	-0.08%
	3	2-8-06	1545	7.02	6.94	-0.08%

High Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1430	0.0	.15	0.15%
	2	2-8-06	1510	0.0	.15	0.15%
	3	2-8-06	1550	0.0	.15	0.15%

Notes:

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Error Data Sheet

PROJECT NO.

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Client	U.S. Filter Waterworks
Plant	Parker Az.
Date	2-8-06
Operator	Cliff Andersen
Analyzer I.D.	
Analyzer Type	thermax O ₂ (new)
Date of Most Recent Service	

Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

Low Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1355	2.03	2.03	0.01
	2	2-8-06	1440	2.03	2.05	0.02
	3	2-8-06	1520	2.03	2.04	0.01

Mid Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1400	15.06	14.92	-0.14
	2	2-8-06	1445	15.06	14.97	-0.9
	3	2-8-06	1520	15.06	14.97	-0.9

High Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1405	0.0	.18	.18
	2	2-8-06	1450	0.0	.19	.19
	3	2-8-06	1530	0.0	.18	.18

NOT
USE

Notes:

Calibration Error Data Sheet

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Client	Us Filter Westates
Plant	Parker Az
Date	2-8-06
Operator	Cliff Anderson
Analyzer I.D.	
Analyzer Type	Siemens Ultra Mat CO
Date of Most Recent Service	

Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

Low Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1420	0.0	3.0	0.30%
	2	2-8-06	1500	0.0	3.1	3.1%
	3	2-8-06	1540	0.0	3.0	3.0%

	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
Mid-Level	1	2-8-06	1425	96.2	95.9	0.003
	2	2-8-06	1505	96.2	96.3	0.001
	3	2-8-06	1545	96.2	98.2	2.0%

000370
00372 (P)
0170 000170
000170

High Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1430	994	1004.6	1.06
	2	2-8-06	1510	994	1005.2	1.12
	3	2-8-06	1550	994	1004.8	1.08

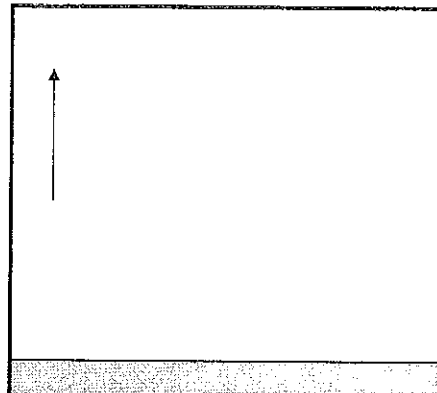
Notes:

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Error Data Sheet

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Client	US FILTER WESTATES
Plant	PARKER AZ
Date	2-08-06
Operator	Cliff Anderson
Analyzer I.D.	
Analyzer Type	Siemens CO
Date of Most Recent Service	



Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

Low Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1355	0.0 ppm	3.4	3.4
	2	2-8-06	1440	0.0	3.0	3.0
	3	2-8-06	1520	0.0	3.0	3.0

Mid Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1400	56.4	56.3	0.1
	2	2-8-06	1445	56.4	58.3	1.9
	3	2-8-06	1525	56.4	56.6	0.2

OK
100%
0.00

High Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1405	549	551	0.2
	2	2-8-06	1450	549	550	0.1
	3	2-8-06	1530	549	552	0.3

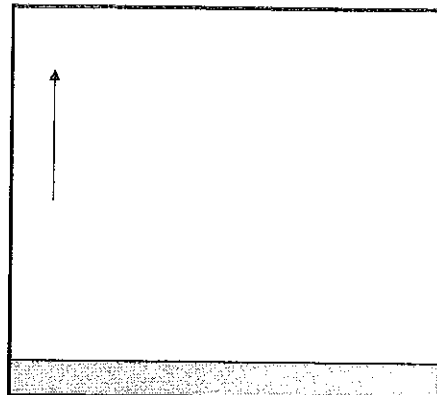
Notes:

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Error Data Sheet

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Client	US Filter Westates
Plant	Parker Az.
Date	2-8-06
Operator	Cliff Anderson
Analyzer I.D.	
Analyzer Type	TECO CO
Date of Most Recent Service	



Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

Low Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)	
	1	2-08-06	1420	0.0	2.5	0.0259	2.5%
	2	2-08-06	1500	0.0	2.6	0.0659	2.5%
	3	2-8-06	1540	0.0	2.6	0.0659	2.5%

Mid Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)	
	1	2-08-06	1425	96.2	97.0	0.0089	0.0089 0.0089% 0.9%
	2	2-08-06	1505	96.2	96.8	0.6%	
	3	2-08-06	1545	96.2	96.7	0.5%	

High Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)	
	1	2-08-06	1430	994	986	-0.8	
	2	2-08-06	1510	994	988	-0.6	
	3	2-08-06	1550	994	985	-0.9	

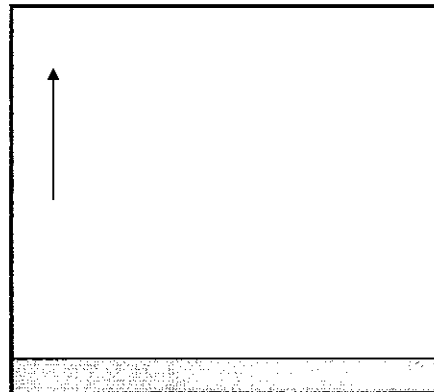
Notes:

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Error Data Sheet

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Client	Us Filter Westates
Plant	Parker A2
Date	2-8-06
Operator	Cliff Anderson
Analyzer I.D.	
Analyzer Type	Teco Co
Date of Most Recent Service	



Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

Low Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1355	0.0	2.5	2.5
	2	2-8-06	1440	0.0	2.6	2.6
	3	2-8-06	1520	0.0	2.6	2.6

Mid Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1400	56.4	57.2	0.9
	2	2-8-06	1445	56.4	57.1	0.7
	3	2-8-06	1525	56.4	57.0	0.6

High Level	Trial	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (%)
	1	2-8-06	1405	549	538	1.1
	2	2-8-06	1450	549	538	1.1
	3	2-8-06	1530	549	535	1.4

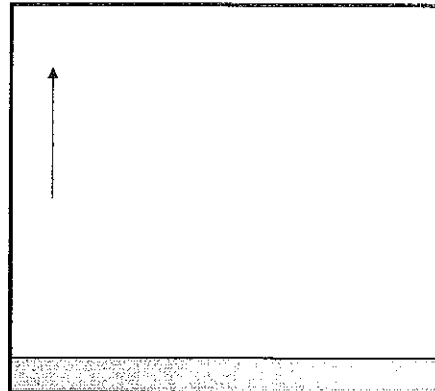
Notes:

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Error Data Sheet

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Client	Us Filter Westates
Plant	Parker Az
Date	2-8-06
Operator	Cliff Anderson
Analyzer I.D.	
Analyzer Type	Ametek O ₂ (old)
Date of Most Recent Service	



Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

Low Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1355	2.03	2.28	0.25%
	2	2-8-06	1440	2.03	2.28	0.25%
	3	2-8-06	1520	2.03	2.27	0.24%

Mid Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1400	15.06	14.71	-0.35%
	2	2-8-06	1445	15.06	14.80	-0.26%
	3	2-8-06	1525	15.06	14.80	-0.26%

High Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1405	0.0	.02	0.02%
	2	2-8-06	1450	0.0	.01	0.01%
	3	2-8-06	1530	0.0	.02	0.02%

NOT USED

Notes:

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Error Data Sheet

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Client	Uls Filter Westates
Plant	Parker Az
Date	2-8-06
Operator	Cliff Anderson
Analyzer I.D.	
Analyzer Type	AMETEK OLD
Date of Most Recent Service	

Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	



Low Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1420	2.03	2.29	0.26%
	2	2-8-06	1500	2.03	2.28	0.25%
	3	2-8-06	1540	2.03	2.28	0.25%

	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
Mid-Level	1	2-8-06	1425	7.02	7.30	0.28%
	2	2-8-06	1505	7.02	7.29	0.27%
	3	2-8-06	1545	7.02	7.29	0.27%

High Level	Trial	Date	Time	Calibration Value (%)	Monitor Response (%)	Difference (%)
	1	2-8-06	1430	0.0	.04	0.04%
	2	2-8-06	1510	0.0	.06	0.06%
	3	2-8-06	1550	0.0	.04	0.04%

Notes:

Thermox Oxygen, Series 2000***Upscale Response Time (sec)******Downscale Response Time (sec)*****Run 1**

50

45

Run 2

40

40

Run 3

50

50

Average

46.7

45.0

Analyzer Response Time (sec)

46.7

Ametek Oxygen***Upscale Response Time (sec)******Downscale Response Time (sec)*****Run 1**

50

55

Run 2

60

45

Run 3

60

40

Average

56.7

46.7

Analyzer Response Time (sec)

56.7

Siemens Carbon Monoxide***Upscale Response Time (sec)******Downscale Response Time (sec)*****Run 1**

70

65

Run 2

55

55

Run 3

65

60

Average

63.3

60.0

Analyzer Response Time (sec)

63.3

TECO Carbon Monoxide (Channel 1)***Upscale Response Time (sec)******Downscale Response Time (sec)*****Run 1**

60

115

Run 2

55

85

Run 3

55

95

Average

56.7

98.3

Analyzer Response Time (sec)

98.3

TECO Carbon Monoxide (Channel 2)***Upscale Response Time (sec)******Downscale Response Time (sec)*****Run 1**

110

100

Run 2

80

70

Run 3

85

85

Average

91.7

85.0

Analyzer Response Time (sec)

91.7

AIRTECH ENVIRONMENTAL SERVICES INC.
Response Time Data Sheet

PROJECT NO. 2282

Page	1	of	1
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Client	US FILTER WESTATES CARBON
Plant	PARICOR, AZ
Date	2/9/06
Operator	C. ANDERSON DATA COMPLETED BY TW

Analyzer I.D.		THERMOX		
Analyzer Type		O2 SERIES 2000		
Date of Most Recent Service				
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	0.07	0.17	55
Upscale	2.03	2.01	1.84	50
Downscale	2.03	2.05	2.42	45

Analyzer I.D.		THERMOX		
Analyzer Type		O2 SERIES 2000		
Date of Most Recent Service				
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	0.05	0.15	45
Upscale	2.03	1.99	1.84	40
Downscale	2.03	2.04	2.41	40

Analyzer I.D.		THERMOX		
Analyzer Type		O2 SERIES 2000		
Date of Most Recent Service				
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	0.05	0.10	50
Upscale	2.03	2.05	1.90	50
Downscale	2.03	2.05	2.47	50

AIRTECH ENVIRONMENTAL SERVICES INC.
Response Time Data Sheet

PROJECT NO. 2282

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Client	US FILTER WESTATES CARBON
Plant	PARKER, AZ
Date	2/9/06
Operator	C. ANDERSON DATA COMPLETE BY TW

Analyzer I.D.		AMETEK		
Analyzer Type		O ₂		
Date of Most Recent Service		1/18/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	0.00	0.12	65
Upscale	2.03	2.30	2.18	50
Downscale	2.03	2.35	2.71	55

Analyzer I.D.		AMETEK		
Analyzer Type		O ₂		
Date of Most Recent Service		1/18/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	0.00	0.10	45
Upscale	2.03	2.27	2.16	60
Downscale	2.03	2.34	2.70	45

Analyzer I.D.		AMETEK		
Analyzer Type		O ₂		
Date of Most Recent Service		1/18/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	0.00	0.12	60
Upscale	2.03	2.26	2.15	60
Downscale	2.03	2.32	2.73	40

AIRTECH ENVIRONMENTAL SERVICES INC.
Response Time Data Sheet

PROJECT NO. 2282

Page	1	of	1
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Client	US Filter Westates Carbon
Plant	PARKER, AZ
Date	2/4/06
Operator	E. Anderson Data Completed By TW

Analyzer I.D.		SIEMENS		
Analyzer Type		CO		
Date of Most Recent Service				
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	4.22	4.37	70
Upscale	994	980.94	928	70
Downscale	0.00	5.04	54.0	65

Analyzer I.D.		SIEMENS		
Analyzer Type		CO		
Date of Most Recent Service				
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	5.00	5.22	80
Upscale	994	985.2	931	55
Downscale	0.00	5.04	54.2	55

Analyzer I.D.		SIEMENS		
Analyzer Type		CO		
Date of Most Recent Service				
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	4.77	5.09	70
Upscale	994	984.9	933	65
Downscale	0.00	4.49	53.7	60

AIRTECH ENVIRONMENTAL SERVICES INC.
Response Time Data Sheet

PROJECT NO. 2282

Page	1	of	1
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Client	US FILTER - WESTATES CARBON		
Plant	PARKER, AZ		
Date	2/9/06		
Operator	C. ANDERSON	DATA COMPILED BY TW	

Analyzer I.D.		TECO CHANNEL 1		
Analyzer Type		CO		
Date of Most Recent Service		1/4/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	2.46	2.69	110
Upscale	96.2	100.94	93.6	60
Downscale	0.00	3.63	8.50	115

Analyzer I.D.		TECO CHANNEL 1		
Analyzer Type		CO		
Date of Most Recent Service		1/4/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	2.79	3.10	90
Upscale	96.2	75.0	66.0 69.0	855
Downscale	0.00	3.10	6.70	85

Analyzer I.D.		TECO CHANNEL 1		
Analyzer Type		CO		
Date of Most Recent Service		1/4/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	2.86	3.17	95
Upscale	96.2	99.8	92.3	55
Downscale	0.00	3.76	8.56	95

AIRTECH ENVIRONMENTAL SERVICES INC.
Response Time Data Sheet

PROJECT NO. 2292

Page	1	of	1
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Client	US FILTER WESTATES CARBON
Plant	PARKER, AZ
Date	2/9/06
Operator	C. ANDERSON DATA COMPLETED BY TW

Analyzer I.D.		TECO 48 CHANNEL 2		
Analyzer Type		CO		
Date of Most Recent Service		1/4/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	4.02	4.10	90
Upscale	994	981.52	927	110
Downscale	0.00	3.91	53.0	100

Analyzer I.D.		TECO 48 CHANNEL 2		
Analyzer Type		CO		
Date of Most Recent Service		1/4/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	2.89	3.08	90
Upscale	994	988.2	936	80
Downscale	0.00	3.95	53.4	70

Analyzer I.D.		TECO 48 CHANNEL 2		
Analyzer Type		CO		
Date of Most Recent Service		1/4/06		
Gas	Actual Gas Value	Stable Gas Value	95% of Stable Gas Value	Response Time (seconds)
Zero	0.00	2.57 3.01	3.31	85
Upscale	994	942.8	940	85
Downscale	0.00	4.84	54.2	85

USFilter Westates

Print Date: 02/05/2006

CEMS Daily Calibration Results

05-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
09:51	0.00	0.0	0.00	0.0	0
09:52	0.00	0.0	0.00	0.0	0
09:53	0.00	0.0	0.00	0.0	0
09:54	0.00	0.0	0.00	0.0	0
09:55	0.00	0.0	0.00	0.0	0
09:56	0.00	0.0	0.00	0.0	0
09:57	0.00	0.0	0.00	0.0	0
09:58	0.00	0.0	0.00	0.0	0
09:59	0.00	0.0	0.00	0.0	0
10:00	0.00	0.0	0.00	0.0	0
10:01	0.00	0.0	0.00	0.0	0
10:02	0.76	3.4	0.00	0.0	0
10:03	2.09	3.0	0.00	0.0	0
10:04	2.07	2.4	0.00	0.0	0
10:05	2.07	2.4	0.00	0.0	0
10:06	2.07	2.4	0.00	0.0	0
10:07	0.00	0.0	3.10	3.2	0
10:08	0.00	0.0	7.16	51.9	0
10:09	0.00	0.0	7.17	87.6	0
10:10	0.00	0.0	7.18	88.7	0
10:11	0.00	0.0	7.18	88.9	0
10:12	0.00	0.0	0.00	0.0	129
10:13	0.00	0.0	0.00	0.0	872
10:14	0.00	0.0	0.00	0.0	994
10:15	0.00	0.0	0.00	0.0	994
10:16	0.00	0.0	0.00	0.0	1000
10:17	0.00	0.0	0.00	0.0	0
10:18	0.00	0.0	0.00	0.0	0
10:19	0.00	0.0	0.00	0.0	n/a
10:20	n/a	n/a	n/a	n/a	n/a

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.09	2.03	0.06	Yes
Carbon Monoxide Zero	2.4	0.0	2.4	Yes
Oxygen Span	7.18	7.26	-0.08	Yes
Carbon Monoxide Low	88.9	87.6	1.3	Yes
Carbon Monoxide High	1000	1002	-2	Yes

Calibration Requirements: Oxygen = +/- 0.30 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

USFilter Westates

Print Date: 02/06/2006

CEMS Daily Calibration Results

06-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
09:52	0.00	0.0	0.00	0.0	0
09:53	0.00	0.0	0.00	0.0	0
09:54	0.00	0.0	0.00	0.0	0
09:55	0.00	0.0	0.00	0.0	0
09:56	0.00	0.0	0.00	0.0	0
09:57	0.00	0.0	0.00	0.0	0
09:58	0.00	0.0	0.00	0.0	0
09:59	0.00	0.0	0.00	0.0	0
10:00	0.00	0.0	0.00	0.0	0
10:01	0.00	0.0	0.00	0.0	0
10:02	0.88	2.1	0.00	0.0	0
10:03	2.10	2.8	0.00	0.0	0
10:04	2.09	2.4	0.00	0.0	0
10:05	2.09	2.4	0.00	0.0	0
10:06	2.08	2.4	0.00	0.0	0
10:07	0.00	0.0	2.86	2.9	0
10:08	0.00	0.0	7.16	44.2	0
10:09	0.00	0.0	7.19	86.4	0
10:10	0.00	0.0	7.20	89.8	0
10:11	0.00	0.0	7.19	89.9	0
10:12	0.00	0.0	0.00	0.0	113
10:13	0.00	0.0	0.00	0.0	732
10:14	0.00	0.0	0.00	0.0	990
10:15	0.00	0.0	0.00	0.0	990
10:16	0.00	0.0	0.00	0.0	997
10:17	0.00	0.0	0.00	0.0	0
10:18	0.00	0.0	0.00	0.0	0
10:19	0.00	0.0	0.00	0.0	0
10:20	n/a	n/a	n/a	n/a	n/a
10:21	n/a	n/a	n/a	n/a	n/a

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.10	2.03	0.07	Yes
Carbon Monoxide Zero	2.1	0.0	2.1	Yes
Oxygen Span	7.20	7.26	-0.06	Yes
Carbon Monoxide Low	89.9	87.6	2.3	Yes
Carbon Monoxide High	997	1002	-5	Yes

Calibration Requirements: Oxygen = +/- 0.50 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

USFilter Westates

Print Date: 02/07/2006

CEMS Daily Calibration Results

07-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
09:51	0.00	0.0	0.00	0.0	0
09:52	0.00	0.0	0.00	0.0	0
09:53	0.00	0.0	0.00	0.0	0
09:54	0.00	0.0	0.00	0.0	0
09:55	0.00	0.0	0.00	0.0	0
09:56	0.00	0.0	0.00	0.0	0
09:57	0.00	0.0	0.00	0.0	0
09:58	0.00	0.0	0.00	0.0	0
09:59	0.00	0.0	0.00	0.0	0
10:00	0.00	0.0	0.00	0.0	0
10:01	0.00	0.0	0.00	0.0	0
10:02	0.77	11.3	0.00	0.0	0
10:03	2.09	5.2	0.00	0.0	0
10:04	2.07	2.4	0.00	0.0	0
10:05	2.07	2.3	0.00	0.0	0
10:06	2.07	2.3	0.00	0.0	0
10:07	0.17	0.2	2.82	3.0	0
10:08	0.00	0.0	7.15	50.2	0
10:09	0.00	0.0	7.17	88.1	0
10:10	0.00	0.0	7.18	89.5	0
10:11	0.00	0.0	7.19	89.6	0
10:12	0.00	0.0	0.00	7.5	137
10:13	0.00	0.0	0.00	0.0	826
10:14	0.00	0.0	0.00	0.0	996
10:15	0.00	0.0	0.00	0.0	997
10:16	0.00	0.0	0.00	0.0	997
10:17	0.00	0.0	0.00	0.0	989
10:18	0.00	0.0	0.00	0.0	0
10:19	n/a	n/a	n/a	n/a	n/a
10:20	n/a	n/a	n/a	n/a	n/a

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.09	2.03	0.06	Yes
Carbon Monoxide Zero	0.2	0.0	0.2	Yes
Oxygen Span	7.19	7.26	-0.07	Yes
Carbon Monoxide Low	89.6	87.6	2.0	Yes
Carbon Monoxide High	997	1002	-5	Yes

Calibration Requirements: Oxygen = +/- 0.50 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

USFilter Westates

Print Date: 02/08/2006

CEMS Daily Calibration Results

08-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
06:02	0.00	0.0	0.00	0.0	0
06:03	0.00	0.0	0.00	0.0	0
06:04	0.00	0.0	0.00	0.0	0
06:05	0.00	0.0	0.00	0.0	0
06:06	0.00	0.0	0.00	0.0	0
06:07	0.00	0.3	0.00	0.0	0
06:08	0.86	3.6	0.00	0.0	0
06:09	2.08	3.2	0.00	0.0	0
06:10	2.08	2.6	0.00	0.0	0
06:11	2.08	2.6	0.00	0.0	0
06:12	1.91	2.4	0.17	0.2	0
06:13	0.00	0.0	3.38	4.6	0
06:14	0.00	0.0	7.21	50.7	0
06:15	0.00	0.0	7.24	87.4	0
06:16	0.00	0.0	7.26	89.1	0
06:17	0.00	0.0	6.96	81.6	89
06:18	0.00	0.0	0.00	0.0	229
06:19	0.00	0.0	0.00	0.0	860
06:20	0.00	0.0	0.00	0.0	984
06:21	0.00	0.0	0.00	0.0	986
06:22	0.00	0.0	0.00	0.0	987
06:23	0.00	0.0	0.00	0.0	0
06:24	0.00	0.0	0.00	0.0	0
06:25	0.00	0.0	0.00	0.0	0
06:26	0.00	0.0	0.00	0.0	0
06:27	0.00	0.0	0.00	0.0	0
06:28	0.00	0.0	0.00	0.0	0
06:29	0.00	0.0	0.00	0.0	0
06:30	n/a	n/a	n/a	n/a	n/a
06:31	n/a	n/a	n/a	n/a	n/a

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.08	2.03	0.05	Yes
Carbon Monoxide Zero	0.3	0.0	0.3	Yes
Oxygen Span	7.26	7.26	-0.00	Yes
Carbon Monoxide Low	89.1	87.6	1.5	Yes
Carbon Monoxide High	987	1002	-15	Yes

Calibration Requirements: Oxygen = +/- 0.50 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

USFilter Westates

Print Date: 02/09/2006

CEMS Daily Calibration Results

09-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
04:54	0.00	0.0	0.00	0.0	0
04:55	0.00	0.0	0.00	0.0	0
04:56	0.00	0.0	0.00	0.0	0
04:57	0.00	0.0	0.00	0.0	0
04:58	0.00	0.0	0.00	0.0	0
04:59	0.00	0.0	0.00	0.0	0
05:00	0.00	0.0	0.00	0.0	0
05:01	0.00	0.0	0.00	0.0	0
05:02	0.78	4.5	0.00	0.0	0
05:03	2.08	4.0	0.00	0.0	0
05:04	2.07	2.5	0.00	0.0	0
05:05	2.07	2.5	0.00	0.0	0
05:06	2.07	2.5	0.00	3.4	0
05:07	0.00	0.0	3.13	54.9	0
05:08	0.00	0.0	6.93	93.6	0
05:09	0.00	0.0	6.95	95.5	0
05:10	0.00	0.0	6.96	95.5	0
05:11	0.00	0.0	6.96	0.0	173
05:12	0.00	0.0	0.00	0.0	893
05:13	0.00	0.0	0.00	0.0	983
05:14	0.00	0.0	0.00	0.0	983
05:15	0.00	0.0	0.00	0.0	982
05:16	0.00	0.0	0.00	0.0	0
05:17	0.00	0.0	0.00	0.0	0
05:18	0.00	0.0	0.00	0.0	0
05:19	0.00	0.0	0.00	0.0	0
05:20	0.00	0.0	0.00	0.0	0
05:21	0.00	0.0	0.00	0.0	0
05:22	0.00	0.0	0.00	0.0	0
05:23	0.00	0.0	0.00	0.0	0

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.08	2.03	0.05	Yes
Carbon Monoxide Zero	2.5	0.0	2.5	Yes
Oxygen Span	6.96	7.26	-0.30	Yes
Carbon Monoxide Low	95.5	96.4	-0.9	Yes
Carbon Monoxide High	983	994	-11	Yes

Calibration Requirements: Oxygen = +/- 0.50 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

USFilter Westates

Print Date: 02/10/2006

CEMS Daily Calibration Results

10-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
09:51	0.00	0.0	0.00	0.0	0
09:52	0.00	0.0	0.00	0.0	0
09:53	0.00	0.0	0.00	0.0	0
09:54	0.00	0.0	0.00	0.0	0
09:55	0.00	0.0	0.00	0.0	0
09:56	0.00	0.0	0.00	0.0	0
09:57	0.00	0.0	0.00	0.0	0
09:58	0.00	0.0	0.00	0.0	0
09:59	0.00	0.0	0.00	0.0	0
10:00	0.00	0.0	0.00	0.0	0
10:01	0.00	0.0	0.00	0.0	0
10:02	1.22	3.3	0.00	0.0	0
10:03	2.06	2.7	0.00	0.0	0
10:04	2.06	2.5	0.00	0.0	0
10:05	2.06	2.5	0.00	0.0	0
10:06	2.06	2.5	0.00	0.0	0
10:07	0.00	0.0	3.79	4.1	0
10:08	0.00	0.0	14.87	57.9	0
10:09	0.00	0.0	14.92	57.8	0
10:10	0.00	0.0	14.94	57.8	0
10:11	0.00	0.0	14.95	57.8	0
10:12	0.00	0.0	0.00	0.0	58
10:13	0.00	0.0	0.00	0.0	413
10:14	0.00	0.0	0.00	0.0	545
10:15	0.00	0.0	0.00	0.0	545
10:16	0.00	0.0	0.00	0.0	545
10:17	0.00	0.0	0.00	0.0	0
10:18	0.00	0.0	0.00	0.0	0
10:19	0.00	0.0	0.00	0.0	n/a
10:20	n/a	n/a	n/a	n/a	n/a

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.06	2.03	0.03	Yes
Carbon Monoxide Zero	2.5	0.0	2.5	Yes
Oxygen Span	14.95	15.10	-0.15	Yes
Carbon Monoxide Low	57.9	56.4	1.5	Yes
Carbon Monoxide High	545	549	-4	Yes

Calibration Requirements: Oxygen = +/- 0.50 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

USFilter Westates

Print Date: 02/11/2006

CEMS Daily Calibration Results

11-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
09:51	0.00	0.0	0.00	0.0	0
09:52	0.00	0.0	0.00	0.0	0
09:53	0.00	0.0	0.00	0.0	0
09:54	0.00	0.0	0.00	0.0	0
09:55	0.00	0.0	0.00	0.0	0
09:56	0.00	0.0	0.00	0.0	0
09:57	0.00	0.0	0.00	0.0	0
09:58	0.00	0.0	0.00	0.0	0
09:59	0.00	0.0	0.00	0.0	0
10:00	0.00	0.0	0.00	0.0	0
10:01	0.00	0.0	0.00	0.0	0
10:02	1.71	33.9	0.00	0.0	0
10:03	2.31	4.1	0.00	0.0	0
10:04	2.31	1.9	0.00	0.0	0
10:05	2.31	1.7	0.00	0.0	0
10:06	2.31	1.7	0.00	0.0	0
10:07	0.00	0.0	3.81	13.8	0
10:08	0.00	0.0	7.25	92.7	0
10:09	0.00	0.0	7.30	94.5	0
10:10	0.00	0.0	7.32	96.9	0
10:11	0.00	0.0	7.32	96.9	0
10:12	0.00	0.0	0.00	0.0	997
10:13	0.00	0.0	0.00	0.0	1000
10:14	0.00	0.0	0.00	0.0	1000
10:15	0.00	0.0	0.00	0.0	1000
10:16	0.00	0.0	0.00	0.0	1000
10:17	0.00	0.0	0.00	0.0	0
10:18	0.00	0.0	0.00	0.0	0
10:19	n/a	n/a	n/a	n/a	n/a
10:20	n/a	n/a	n/a	n/a	n/a

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.31	2.03	0.28	Yes
Carbon Monoxide Zero	1.7	0.0	1.7	Yes
Oxygen Span	7.32	7.00	0.32	Yes
Carbon Monoxide Low	96.9	96.2	0.7	Yes
Carbon Monoxide High	1000	994	6	Yes

Calibration Requirements: Oxygen = +/- 0.50 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

USFilter Westates

Print Date: 02/12/2005

CEMS Daily Calibration Results

12-Feb-2006

Time	Oxygen Zero	CO Zero	Oxygen Cal	CO Low Cal	CO High Cal
09:51	0.00	0.0	0.00	0.0	0
09:52	0.00	0.0	0.00	0.0	0
09:53	0.00	0.0	0.00	0.0	0
09:54	0.00	0.0	0.00	0.0	0
09:55	0.00	0.0	0.00	0.0	0
09:56	0.00	0.0	0.00	0.0	0
09:57	0.00	0.0	0.00	0.0	0
09:58	0.00	0.0	0.00	0.0	0
09:59	0.00	0.0	0.00	0.0	0
10:00	0.00	0.0	0.00	0.0	0
10:01	0.00	0.0	0.00	0.0	0
10:02	1.51	31.3	0.00	0.0	0
10:03	2.28	3.0	0.00	0.0	0
10:04	2.28	2.4	0.00	0.0	0
10:05	2.28	2.4	0.00	0.0	0
10:06	2.29	2.4	0.00	0.0	0
10:07	0.00	0.0	3.74	13.1	0
10:08	0.00	0.0	7.22	92.6	0
10:09	0.00	0.0	7.23	96.3	0
10:10	0.00	0.0	7.23	96.3	0
10:11	0.00	0.0	7.30	96.3	0
10:12	0.00	0.0	0.00	0.0	916
10:13	0.00	0.0	0.00	0.0	999
10:14	0.00	0.0	0.00	0.0	1000
10:15	0.00	0.0	0.00	0.0	1000
10:16	0.00	0.0	0.00	0.0	1000
10:17	0.00	0.0	0.00	0.0	0
10:18	0.00	0.0	0.00	0.0	0
10:19	n/a	n/a	n/a	n/a	n/a
10:20	n/a	n/a	n/a	n/a	n/a

	Actual	Expected	Cal Error	Passed?
Oxygen Zero	2.29	2.03	0.26	Yes
Carbon Monoxide Zero	2.4	0.0	2.4	Yes
Oxygen Span	7.30	7.00	0.30	Yes
Carbon Monoxide Low	96.3	96.2	0.0	Yes
Carbon Monoxide High	1000	994	6	Yes

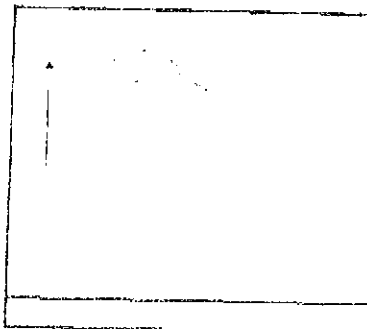
Calibration Requirements: Oxygen = +/- 0.50 % CO Low = +/- 5.0 ppm CO High = +/- 50.0 ppm

AIRTECH ENVIRONMENTAL SERVICES INC.
Calibration Data Sheet

PROJECT NO. _____

Page 1 of 1

Client	US Filter - Westates Carbon
Plant	RF-2 Parker AZ
Date	2-22-06
Operator	C. ANDERSON
Analyzer I.D.	SER# 7MB2332-20K5B-40A1
Analyzer Type	SIMONUS ULTRAMAT 23 CR
Date of Most Recent Service	2-9-06 (CALIBRATION)



Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

ZERO GAS CAL	Day	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (ppm)	Percent of Span (%)
	0						
	1	2-11-06	0930	0.0	1.6	1.6	
	2	2-12-06	0930	0.0	1.7	1.7	
	3	2-13-06	0930	0.0	2.7	2.7	
	4	2-14-06	0930	0.0	1.6	1.6	
	5	2-15-06	0930	0.0	2.4	2.4	
	6	2-16-06	0930	0.0	1.3	1.3	
	7	2-17-06	0930	0.0	1.7	1.7	

High-Level Calibration	Day	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (ppm)	Percent of Span (%)
	0						
	1						
	2						
	3						
	4						
	5						
	6						
	7						

Notes:

AIREC, ENVIRONMENTAL SERVICES INC
Calibration Data Sheet

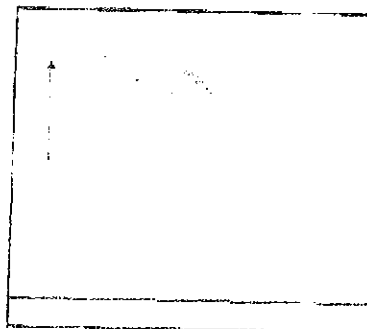
PROJECT NO _____

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Client	US Filter - Westates Carbon
Plant	RF-2 Parker, A2
Date	2-22-06
Operator	C. ANDERSON
Analyzer ID	SER# 7MB2333-2DK60-410-4
Analyzer type	SIEMENS ULTRAMAT-23 CO
Date of Most Recent Service	2-9-06 (CALIBRATION)

Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	



Low-Level Calibration	Day	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (ppm)	Percent of Span (%)
	0						
	1	2-11-06	1002	96.2	96.9	.7	
	2	2-12-06	1002	96.2	96.3	.1	
	3	2-13-06	1002	96.2	96.1	-.1	
	4	2-14-06	1002	96.2	96.3	.1	
	5	2-15-06	1002	96.2	94.9	-1.3	
	6	2-16-06	1002	96.2	94.6	-1.6	
	7	2-17-06	1002	96.2	94.5	-1.7	

High-Level Calibration	Day	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (ppm)	Percent of Span (%)
	0						
	1	2-11-06	1007	994	1000	6	
	2	2-12-06	1007	994	1000	6	
	3	2-13-06	1007	994	1000	6	
	4	2-14-06	1007	994	1000	6	
	5	2-15-06	1007	994	1000	6	
	6	2-16-06	1007	994	1000	6	
	7	2-17-06	1007	994	1000	6	

Notes:

AIRTECH ENVIRONMENTAL SERVICES INC
Calibration Drift Data Sheet

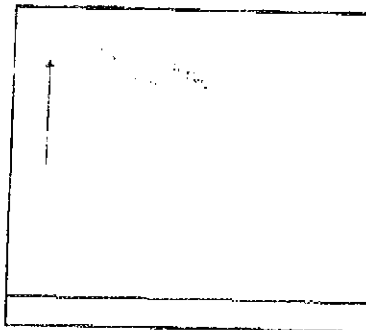
PROJECT NO. _____

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Client	US Filter - Westates Carbon
Plant	RF-2 Parker, AZ
Date	2-22-06
Operator	C. ANDERSON
Analyzer I.D.	SER. # 7MB3333-2PK50-4044
Analyzer Type	SIEMENS ULTRAMAT 23 CO
Date of Most Recent Service	2-9-06 (CALIBRATION)

Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	



Low-Level Calibration	Day	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (ppm)	Percent of Span (%)
	0						
	1	2-11-06	0935	56.4	55.1	1.3	
	2	2-12-06	0935	56.4	54.8	1.6	
	3	2-13-06	0935	56.4	56.0	0.4	
	4	2-14-06	0935	56.4	55.2	1.2	
	5	2-15-06	0935	56.4	55.6	0.8	
	6	2-16-06	0935	56.4	55.2	1.2	
	7	2-17-06	0935	56.4	54.6	1.8	

High-Level Calibration	Day	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (ppm)	Percent of Span (%)
	0						
	1	2-11-06	0940	549	552	3	
	2	2-12-06	0940	549	551	2	
	3	2-13-06	0940	549	552	3	
	4	2-14-06	0940	549	550	1	
	5	2-15-06	0940	549	551	2	
	6	2-16-06	0940	549	551	2	
	7	2-17-06	0940	549	549	0	

Notes:

Notes:

AIRTECH ENVIRONMENTAL SERVICES INC
Calibration Data Sheet

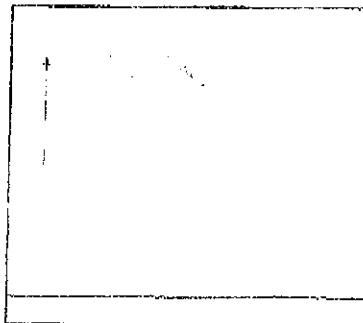
PROJECT NO _____

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Client	US Filter - Westates Carbon
Plant	RF-2 Parker, AZ
Date	2-22-06
Operator	C. ANDERSON
Analyzer I.D.	SEA #C1079941B
Analyzer Type	ANALYTICAL THERMOX OXYGEN
Date of Most Recent Service	01-18-06 CALIBRATION

Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	



	Day	Date	Time	Calibration Value PERCENT	Monitor Response PERCENT	Difference PERCENT	Percent of Span (%)
Low-Level Calibration	0						
	1	2-11-06	1002	7.00	7.32	.32	
	2	2-12-06	1002	7.00	7.30	.30	
	3	2-13-06	1002	7.00	7.24	.24	
	4	2-14-06	1002	7.00	7.23	.23	
	5	2-15-06	1002	7.00	7.29	.29	
	6	2-16-06	1002	7.00	7.23	.23	
	7	2-17-06	1002	7.00	7.23	.23	

	Day	Date	Time	Calibration Value PERCENT	Monitor Response PERCENT	Difference PERCENT	Percent of Span (%)
High-Level Calibration	0						
	1	2-11-06	0935	15.10	14.81	.29	
	2	2-12-06	0935	15.10	14.73	.37	
	3	2-13-06	0935	15.10	15.26	.16	
	4	2-14-06	0935	15.10	14.66	.44	
	5	2-15-06	0935	15.10	14.72	.38	
	6	2-16-06	0935	15.10	14.68	.42	
	7	2-17-06	0935	15.10	14.66	.44	

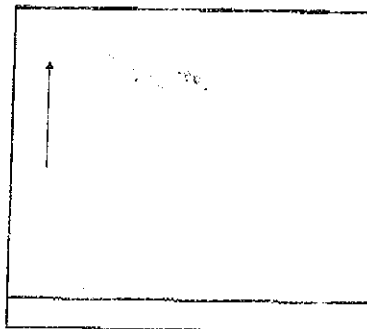
Notes:

AIRTECH ENVIRONMENTAL SERVICES INC
Calibration Drift Data Sheet

PROJECT NO. _____

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Client:	US Filter - Westates Carbon
Plant:	RF-2 Parker, AZ
Date:	2-22-06
Operator:	C. ANDERSON
Analyzer I.D.:	SERRA C107994B
Analyzer Type:	AIRTEK-THERMOX O2
Date of Most Recent Service:	1-18-06 (CALIBRATION)



Initial Settings	
Zero	
Span	

Final Settings	
Zero	
Span	

ZERO GAS CAL.	Day	Date	Time	Calibration Value PERCENT	Monitor Response PERCENT	Difference PERCENT	Percent of Span (%)
	0						
	1	2-11-06	0930	2.03	2.31	.28	
	2	2-12-06	0930	2.03	2.28	.25	
	3	2-13-06	0930	2.03	2.16	.13	
	4	2-14-06	0930	2.03	2.23	.20	
	5	2-15-06	0930	2.03	2.27	.24	
	6	2-16-06	0930	2.03	2.23	.20	
	7	2-17-06	0930	2.03	2.22	.19	

High-Level Calibration	Day	Date	Time	Calibration Value (ppm)	Monitor Response (ppm)	Difference (ppm)	Percent of Span (%)
	0						
	1						
	2						
	3						
	4						
	5						
	6						
	7						

Notes:

USFilter Westates

Print Date: 02/09/2006

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09-Feb-2006

CEMS RATA TEST

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
08:58	10.48	13.59	10.61	13.09	18.14	18.37	17.47	17.69
08:59	10.44	13.59	10.59	13.29	18.07	18.32	17.66	17.91
09:00	10.52	13.59	10.67	13.29	18.21	18.46	17.80	18.05
09:01	10.38	15.55	10.52	14.01	20.55	20.82	18.52	18.76
09:02	10.59	15.94	10.70	14.64	21.50	21.72	19.75	19.96
09:03	10.45	15.94	10.61	13.77	21.19	21.53	18.32	18.61
09:04	10.45	15.94	10.56	12.85	21.19	21.43	17.09	17.28
09:05	10.49	15.94	10.60	12.88	21.28	21.50	17.19	17.37
09:06	10.39	13.98	10.53	12.16	18.50	18.74	16.09	16.29
09:07	10.38	13.59	10.50	10.92	17.96	18.17	14.42	14.59
09:08	10.48	13.59	10.59	11.08	18.14	18.34	14.79	14.95
09:09	10.44	13.59	10.56	11.44	18.07	18.28	15.20	15.38
09:10	10.33	13.59	10.49	11.36	17.88	18.15	14.95	15.17
09:11	10.37	13.59	10.51	10.80	17.94	18.18	14.25	14.44
09:12	10.40	13.59	10.54	10.99	18.00	18.24	14.56	14.75
09:13	10.30	13.59	10.46	11.52	17.82	18.09	15.11	15.34
09:14	10.33	13.59	10.47	11.83	17.88	18.12	15.55	15.76
09:15	10.19	13.59	10.36	11.93	17.64	17.92	15.48	15.73
09:16	10.08	13.59	10.26	11.27	17.46	17.76	14.47	14.72
09:17	10.07	13.59	10.23	11.72	17.44	17.71	15.03	15.27
09:18	10.02	13.59	10.21	12.29	17.37	17.67	15.70	15.97
AVERAGE	10.36	14.15	10.50	12.24	18.68	18.93	16.16	16.38

USFilter Westates

Print Date: 02/09/2006

CEMS RATA TEST RUN # 2

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
09:26	9.99	15.63	10.14	13.67	19.90	20.19	17.41	17.67
09:27	10.02	15.63	10.17	13.17	19.97	20.23	16.83	17.05
09:28	9.90	14.95	10.12	12.84	18.88	19.27	16.21	16.54
09:29	9.93	13.59	10.11	11.56	17.23	17.51	14.65	14.89
09:30	9.97	13.59	10.13	11.36	17.28	17.55	14.44	14.66
09:31	9.98	13.59	10.16	11.17	17.31	17.59	14.23	14.46
09:32	9.90	13.59	10.11	10.18	17.18	17.51	12.87	13.11
09:33	9.96	11.19	10.13	9.57	14.22	14.45	12.16	12.35
09:34	10.04	10.98	10.22	9.76	14.04	14.28	12.48	12.70
09:35	9.95	10.98	10.15	9.69	13.93	14.20	12.29	12.53
09:36	9.89	10.98	10.08	9.25	13.86	14.10	11.67	11.88
09:37	9.86	10.98	10.06	9.11	13.83	14.08	11.47	11.68
09:38	9.73	10.98	9.92	9.18	13.66	13.90	11.42	11.62
09:39	9.66	10.98	9.85	9.03	13.57	13.81	11.16	11.36
09:40	9.73	10.98	9.94	9.24	13.66	13.92	11.50	11.72
09:41	9.51	10.98	9.75	9.22	13.39	13.68	11.24	11.49
09:42	9.52	10.98	9.72	9.00	13.40	13.65	10.98	11.19
09:43	9.64	10.98	9.83	9.32	13.56	13.78	11.51	11.70
09:44	9.58	10.98	9.80	9.45	13.48	13.75	11.60	11.84
09:45	9.48	10.98	9.71	9.34	13.36	13.63	11.37	11.60
09:46	9.74	10.98	9.91	9.59	13.68	13.88	11.95	12.13
AVERAGE	9.81	12.12	10.00	10.22	15.21	15.47	12.83	13.06

USFilter Westates

Print Date: 02/09/2006

CEMS RATA TEST RUN # 3

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
09:55	10.18	11.68	9.62	9.43	15.14	14.40	12.22	11.62
09:56	10.17	11.68	9.65	9.43	15.14	14.43	12.22	11.65
09:57	10.16	11.68	9.75	9.45	15.11	14.56	12.22	11.78
09:58	10.17	11.68	9.63	9.68	15.13	14.41	12.53	11.94
09:59	10.22	11.68	9.67	9.15	15.21	14.45	11.91	11.32
10:00	10.23	11.68	9.55	8.85	15.22	14.31	11.54	10.85
10:01	10.13	11.68	9.72	9.45	15.08	14.52	12.20	11.74
10:02	10.18	13.67	9.75	11.39	17.72	17.03	14.77	14.20
10:03	10.14	12.16	9.24	10.33	15.72	14.50	13.36	12.32
10:04	10.14	11.99	9.76	9.45	15.49	14.97	12.21	11.80
10:05	10.16	11.99	9.75	9.25	15.52	14.96	11.98	11.54
10:06	10.03	11.99	9.82	9.85	15.33	15.04	12.59	12.35
10:07	9.84	11.99	9.67	10.02	15.07	14.84	12.59	12.40
10:08	9.88	11.99	9.64	9.47	15.13	14.80	11.94	11.68
10:09	9.77	11.99	9.90	9.32	14.97	15.15	11.64	11.78
10:10	9.65	11.99	9.73	9.36	14.81	14.92	11.56	11.64
10:11	9.79	11.99	9.83	9.54	15.00	15.05	11.94	11.98
10:12	9.74	11.99	9.79	9.54	14.93	15.00	11.88	11.93
10:13	9.74	11.99	9.63	9.54	14.94	14.79	11.88	11.77
10:14	9.76	11.99	9.61	9.54	14.96	14.77	11.90	11.75
10:15	9.68	11.99	9.66	9.36	14.85	14.82	11.59	11.57
AVERAGE	9.99	11.98	9.68	9.59	15.26	14.84	12.22	11.89

USFilter Westates

Print Date: 02/09/2006

CEMS RATA TEST RUN # 4

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
10:22	9.78	10.98	9.96	9.74	13.72	13.95	12.17	12.38
10:23	9.67	10.98	9.90	9.99	13.59	13.87	12.37	12.63
10:24	9.46	10.98	9.67	9.54	13.34	13.59	11.60	11.81
10:25	9.58	10.98	9.77	9.58	13.48	13.71	11.76	11.96
10:26	9.61	10.98	9.81	9.81	13.51	13.76	12.07	12.29
10:27	9.60	10.98	9.82	9.81	13.51	13.77	12.07	12.30
10:28	9.57	10.98	9.81	9.81	13.46	13.75	12.03	12.29
10:29	9.49	10.98	9.68	9.81	13.37	13.60	11.94	12.15
10:30	9.49	10.98	9.71	9.96	13.37	13.64	12.14	12.38
10:31	9.41	10.98	9.62	9.75	13.27	13.53	11.79	12.02
10:32	9.55	10.98	9.76	9.74	13.44	13.70	11.92	12.15
10:33	9.47	10.98	9.71	10.09	13.35	13.63	12.27	12.53
10:34	9.33	10.98	9.53	9.88	13.19	13.42	11.88	12.09
10:35	9.79	14.78	9.98	11.71	18.49	18.81	14.65	14.90
10:36	9.28	14.98	9.54	13.01	17.91	18.33	15.56	15.93
10:37	9.17	13.63	9.41	10.67	16.15	16.49	12.64	12.91
10:38	9.36	13.63	9.58	11.17	16.42	16.75	13.46	13.72
10:39	9.20	13.63	9.44	11.80	16.20	16.53	14.02	14.31
10:40	9.16	13.63	9.41	11.60	16.14	16.49	13.74	14.03
10:41	9.26	13.63	9.50	11.75	16.28	16.62	14.03	14.32
10:42	9.25	13.63	9.46	11.54	16.26	16.57	13.76	14.02
AVERAGE	9.45	12.11	9.67	10.51	14.69	14.98	12.76	13.00

USFilter Westates

Print Date: 02/09/2006

CEMS RATA TEST RUN # 5

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
11:36	9.26	11.68	9.47	9.82	13.95	14.20	11.73	11.94
11:37	9.44	11.68	9.67	10.17	14.17	14.45	12.33	12.58
11:38	9.28	11.68	9.53	10.07	13.98	14.27	12.05	12.31
11:39	9.41	11.68	9.64	10.15	14.13	14.41	12.28	12.52
11:40	9.33	11.68	9.56	10.74	14.03	14.31	12.90	13.16
11:41	9.27	11.68	9.49	10.71	13.96	14.23	12.80	13.05
11:42	9.27	11.68	9.52	10.01	13.96	14.26	11.97	12.22
11:43	9.34	11.68	9.56	9.72	14.04	14.32	11.68	11.91
11:44	9.38	11.68	9.62	9.94	14.10	14.39	11.99	12.24
11:45	9.26	11.68	9.49	9.94	13.95	14.23	11.87	12.10
11:46	9.34	11.68	9.54	9.87	14.04	14.29	11.86	12.07
11:47	9.37	11.68	9.61	9.28	14.08	14.38	11.19	11.42
11:48	9.33	11.68	9.55	9.22	14.03	14.30	11.08	11.30
11:49	9.38	11.68	9.62	9.84	14.10	14.39	11.87	12.12
11:50	9.40	11.68	9.65	9.91	14.12	14.43	11.98	12.24
11:51	9.42	11.68	9.66	9.77	14.14	14.44	11.82	12.07
11:52	9.38	11.68	9.59	9.43	14.10	14.36	11.38	11.59
11:53	9.41	11.68	9.62	9.43	14.13	14.40	11.41	11.62
11:54	9.41	11.68	9.65	9.43	14.13	14.43	11.41	11.65
11:55	9.52	11.68	9.75	9.45	14.27	14.56	11.55	11.78
11:56	9.39	11.68	9.63	9.68	14.10	14.41	11.68	11.94
AVERAGE	9.36	11.68	9.59	9.84	14.07	14.36	11.85	12.09

USFilter Westates

Print Date: 02/09/2006

CEMS RATA TEST RUN #6

09-Feb-2006

Time	OXYGEN		CO RAW		OXYGEN		CO RAW		CO @ 7%		CO @ 7%		CO @ 7%		CO @ 7%	
	THERMOX	SIEMENS	TECO	AMETEK	TECO	AMETEK	SIE & THRM	SIE & AMTK	TECO & THRM	TECO & AMTK	TECO & THRM	TECO & AMTK	TECO & THRM	TECO & AMTK	TECO & AMTK	
12:05	9.42	11.99	10.02	9.67	10.02	14.52	14.84	12.13	12.13	14.84	12.13	12.13	14.84	12.13	12.40	
12:06	9.40	11.99	9.47	9.64	9.47	14.49	14.80	11.44	11.44	14.80	11.44	11.44	14.80	11.44	11.68	
12:07	9.67	11.99	9.32	9.90	9.32	14.84	15.15	11.53	11.53	15.15	11.53	11.53	15.15	11.53	11.78	
12:08	9.49	11.99	9.36	9.73	9.36	14.61	14.92	11.40	11.40	14.92	11.40	11.40	14.92	11.40	11.64	
12:09	9.60	11.99	9.54	9.83	9.54	14.75	15.05	11.74	11.74	15.05	11.74	11.74	15.05	11.74	11.98	
12:10	9.56	11.99	9.54	9.79	9.54	14.70	15.00	11.70	11.70	15.00	11.70	11.70	15.00	11.70	11.93	
12:11	9.37	11.99	9.54	9.63	9.54	14.46	14.79	11.51	11.51	14.79	11.51	11.51	14.79	11.51	11.77	
12:12	9.36	11.99	9.54	9.61	9.54	14.44	14.77	11.49	11.49	14.77	11.49	11.49	14.77	11.49	11.75	
12:13	9.39	11.99	9.36	9.66	9.36	14.48	14.82	11.30	11.30	14.82	11.30	11.30	14.82	11.30	11.57	
12:14	9.34	11.99	9.43	9.59	9.43	14.41	14.74	11.34	11.34	14.74	11.34	11.34	14.74	11.34	11.60	
12:15	9.11	11.99	9.93	9.41	9.93	14.14	14.50	11.71	11.71	14.50	11.71	11.71	14.50	11.71	12.01	
12:16	8.96	11.99	10.18	9.22	10.18	13.96	14.27	11.86	11.86	14.27	11.86	11.86	14.27	11.86	12.12	
12:17	9.12	11.99	10.60	9.38	10.60	14.15	14.47	12.50	12.50	14.47	12.50	12.50	14.47	12.50	12.79	
12:18	8.98	11.99	10.38	9.26	10.38	13.98	14.32	12.10	12.10	14.32	12.10	12.10	14.32	12.10	12.39	
12:19	8.95	11.99	10.59	9.21	10.59	13.95	14.27	12.32	12.32	14.27	12.32	12.32	14.27	12.32	12.59	
12:20	8.87	11.99	10.64	9.13	10.64	13.86	14.17	12.29	12.29	14.17	12.29	12.29	14.17	12.29	12.57	
12:21	8.84	11.99	11.20	9.12	11.20	13.82	14.15	12.91	12.91	14.15	12.91	12.91	14.15	12.91	13.21	
12:22	8.93	11.99	11.29	9.20	11.29	13.93	14.24	13.11	13.11	14.24	13.11	13.11	14.24	13.11	13.41	
12:23	8.82	11.99	10.88	9.08	10.88	13.80	14.11	12.52	12.52	14.11	12.52	12.52	14.11	12.52	12.80	
12:24	8.77	11.99	10.60	9.03	10.60	13.74	14.05	12.14	12.14	14.05	12.14	12.14	14.05	12.14	12.41	
12:25	8.71	11.99	10.25	8.99	10.25	13.67	14.00	11.69	11.69	14.00	11.69	11.69	14.00	11.69	11.97	
AVERAGE	9.17	11.99	10.08	9.43	10.08	14.22	14.54	11.94	11.94	14.54	11.94	11.94	14.54	11.94	12.21	

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CEMS RATA TEST # 7

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Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
12:32	8.62	11.99	8.90	9.89	13.57	13.89	11.19	11.45
12:33	8.65	11.99	8.94	9.46	13.61	13.93	10.74	10.99
12:34	8.67	11.99	8.95	9.86	13.63	13.95	11.21	11.47
12:35	8.73	11.99	9.00	9.73	13.70	14.01	11.12	11.37
12:36	8.71	11.99	8.99	9.73	13.67	13.99	11.09	11.35
12:37	8.50	11.99	8.83	9.47	13.45	13.81	10.62	10.91
12:38	8.27	11.99	8.60	9.46	13.20	13.56	10.41	10.69
12:39	7.96	11.99	8.28	9.46	12.88	13.21	10.17	10.43
12:40	7.87	11.99	8.18	9.54	12.79	13.11	10.17	10.42
12:41	7.79	11.99	8.10	9.54	12.71	13.02	10.11	10.35
12:42	7.95	11.99	8.21	9.54	12.87	13.14	10.24	10.45
12:43	8.00	11.99	8.29	9.37	12.92	13.22	10.10	10.34
12:44	8.06	11.99	8.35	9.41	12.99	13.28	10.19	10.42
12:45	7.99	11.99	8.31	9.54	12.91	13.24	10.27	10.54
12:46	7.96	11.99	8.27	9.54	12.88	13.20	10.25	10.50
12:47	8.00	11.99	8.31	9.45	12.93	13.24	10.18	10.43
12:48	7.93	11.99	8.23	9.24	12.86	13.16	9.91	10.14
12:49	7.99	11.99	8.30	9.18	12.91	13.23	9.88	10.13
12:50	8.21	11.99	8.50	9.23	13.13	13.45	10.11	10.35
12:51	8.52	11.99	8.80	9.31	13.46	13.78	10.45	10.70
12:52	8.89	11.99	9.11	9.82	13.88	14.14	11.36	11.58
AVERAGE	8.25	11.99	8.55	9.51	13.19	13.50	10.47	10.72

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CEMS RATA TEST # 8

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
13:09	9.51	12.30	9.76	8.88	15.02	15.35	10.84	11.09
13:10	9.55	12.30	9.79	8.70	15.07	15.39	10.66	10.88
13:11	9.75	12.30	9.99	8.76	15.34	15.68	10.92	11.16
13:12	9.71	12.30	9.93	9.14	15.28	15.59	11.35	11.58
13:13	9.76	12.30	9.99	9.14	15.35	15.68	11.41	11.65
13:14	9.86	12.30	10.08	9.17	15.49	15.81	11.53	11.78
13:15	9.91	12.30	10.13	9.55	15.57	15.89	12.08	12.33
13:16	9.91	12.30	10.13	9.68	15.56	15.88	12.24	12.49
13:17	9.87	12.30	10.10	9.68	15.51	15.84	12.20	12.46
13:18	9.94	12.30	10.17	9.43	15.61	15.94	11.96	12.21
13:19	9.89	12.30	10.12	9.43	15.54	15.86	11.91	12.15
13:20	9.83	12.30	10.07	9.43	15.45	15.80	11.83	12.10
13:21	9.93	12.30	10.11	9.43	15.59	15.85	11.94	12.14
13:22	9.89	12.30	10.14	9.43	15.53	15.90	11.90	12.18
13:23	9.86	12.30	10.10	9.43	15.50	15.84	11.87	12.13
13:24	9.82	12.30	10.05	9.20	15.43	15.76	11.54	11.78
13:25	9.75	12.30	10.00	9.09	15.34	15.69	11.33	11.58
13:26	9.79	12.30	10.01	8.74	15.39	15.71	10.93	11.15
13:27	9.61	12.30	9.84	8.58	15.15	15.46	10.57	10.78
13:28	9.53	12.30	9.77	8.16	15.04	15.37	9.98	10.20
13:29	9.47	12.30	9.71	8.11	14.96	15.29	9.86	10.08
AVERAGE	9.77	12.30	10.00	9.10	15.37	15.69	11.37	11.61

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CEMS RATA TEST # 9

09-Feb-2006

Time	OXYGEN		CO RAW	OXYGEN		CO RAW	CO @ 7%		CO @ 7%		CO @ 7%	
	THERMOX	SIEMENS		AMETEK	TECO		SIE & THRM	SIE & AMTK	TECO & THRM	TECO & AMTK		
13:37	9.26	10.04	7.65	9.50	7.65	11.99	12.24	9.13	9.32	9.32		
13:38	9.12	10.04	7.77	9.38	7.77	11.85	12.11	9.17	9.38	9.38		
13:39	9.16	10.04	7.52	9.40	7.52	11.88	12.13	8.91	9.09	9.09		
13:40	9.20	10.04	7.26	9.46	7.26	11.93	12.20	8.62	8.82	8.82		
13:41	9.25	10.04	7.10	9.48	7.10	11.98	12.22	8.47	8.64	8.64		
13:42	9.03	10.04	6.98	9.30	6.98	11.75	12.03	8.17	8.36	8.36		
13:43	9.04	10.04	6.89	9.32	6.89	11.77	12.05	8.08	8.27	8.27		
13:44	8.88	10.04	6.37	9.15	6.37	11.61	11.88	7.37	7.53	7.53		
13:45	8.97	10.04	6.07	9.28	6.07	11.70	12.01	7.08	7.27	7.27		
13:46	8.82	10.04	6.00	9.10	6.00	11.55	11.83	6.90	7.07	7.07		
13:47	8.81	8.18	5.71	9.09	5.71	9.41	9.63	6.57	6.72	6.72		
13:48	8.74	7.81	5.32	9.05	5.32	8.93	9.16	6.08	6.24	6.24		
13:49	8.67	7.81	5.27	8.98	5.27	8.88	9.11	5.99	6.14	6.14		
13:50	8.63	7.81	5.27	8.92	5.27	8.85	9.06	5.97	6.11	6.11		
13:51	8.72	7.81	5.27	8.98	5.27	8.91	9.11	6.01	6.14	6.14		
13:52	8.74	7.81	5.27	9.03	5.27	8.93	9.15	6.02	6.16	6.16		
13:53	8.76	7.81	5.05	9.02	5.05	8.95	9.14	5.79	5.91	5.91		
13:54	8.83	7.81	4.98	9.10	4.98	9.00	9.20	5.74	5.87	5.87		
13:55	8.82	7.81	4.77	9.08	4.77	8.99	9.19	5.49	5.61	5.61		
13:56	8.97	7.81	4.69	9.25	4.69	9.11	9.32	5.47	5.60	5.60		
13:57	9.10	7.81	4.69	9.39	4.69	9.20	9.43	5.53	5.67	5.67		
AVERAGE	8.93	8.89	6.00	9.20	6.00	10.34	10.58	6.98	7.14	7.14		

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CEMS RATA TEST #10

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
14:09	10.07	2.38	10.26	4.89	3.06	3.11	6.27	6.38
14:10	9.89	4.90	10.12	4.34	6.19	6.32	5.48	5.60
14:11	9.85	189.55	10.03	3.89	238.43	242.39	4.89	4.97
14:12	10.03	199.22	10.23	3.75	254.75	259.59	4.80	4.89
14:13	10.15	334.00	10.35	3.38	431.83	440.18	4.37	4.45
14:14	10.32	1022.46	10.49	3.38	1343.83	1365.35	4.44	4.51
14:15	10.41	242.94	10.60	3.38	321.88	327.85	4.47	4.56
14:16	10.49	300.11	10.67	3.38	400.66	407.74	4.51	4.59
14:17	10.41	993.31	10.59	3.17	1315.95	1339.45	4.19	4.27
14:18	10.34	995.20	10.54	3.10	1309.75	1334.73	4.07	4.15
14:19	10.40	902.93	10.57	3.10	1195.73	1215.23	4.10	4.17
14:20	10.40	102.07	10.58	3.10	135.12	137.52	4.10	4.17
14:21	10.47	91.45	10.62	3.10	121.82	123.69	4.12	4.19
14:22	10.36	7.05	10.54	3.10	9.30	9.46	4.08	4.15
14:23	10.27	3.44	10.47	3.10	4.49	4.58	4.05	4.13
14:24	10.28	3.44	10.49	3.10	4.50	4.59	4.05	4.13
14:25	10.23	3.44	10.45	3.10	4.48	4.57	4.03	4.12
14:26	10.22	3.44	10.44	3.10	4.47	4.57	4.03	4.11
14:27	10.01	3.44	10.26	2.96	4.39	4.49	3.78	3.86
14:28	9.93	3.44	10.16	2.86	4.35	4.45	3.62	3.70
14:29	9.87	3.44	10.11	2.86	4.33	4.43	3.60	3.68
AVERAGE	10.21	257.70	10.41	3.34	339.02	344.97	4.34	4.42

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CEMS RATA TEST #11

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
14:38	9.40	3.44	9.66	2.86	4.15	4.25	3.45	3.53
14:39	9.25	3.44	9.53	2.86	4.10	4.20	3.41	3.50
14:40	9.14	3.44	9.45	2.86	4.06	4.17	3.38	3.47
14:41	9.06	3.44	9.34	2.86	4.04	4.13	3.36	3.44
14:42	9.06	3.44	9.34	2.83	4.04	4.13	3.33	3.41
14:43	8.96	3.44	9.19	2.56	4.00	4.08	2.98	3.04
14:44	9.06	3.44	9.30	2.68	4.04	4.12	3.15	3.21
14:45	9.04	3.44	9.32	2.77	4.03	4.12	3.24	3.32
14:46	8.86	3.44	9.15	2.77	3.97	4.07	3.20	3.27
14:47	8.77	3.44	9.06	2.77	3.94	4.03	3.17	3.25
14:48	8.65	3.44	8.96	2.63	3.90	4.00	2.98	3.06
14:49	8.66	3.44	8.97	2.56	3.90	4.00	2.90	2.98
14:50	8.65	3.44	8.94	2.56	3.90	3.99	2.90	2.97
14:51	8.74	3.44	9.02	2.56	3.93	4.02	2.92	2.99
14:52	8.62	3.44	8.93	2.56	3.89	3.99	2.90	2.97
14:53	8.69	3.44	8.98	2.56	3.91	4.01	2.91	2.98
14:54	8.63	3.44	8.91	2.56	3.89	3.99	2.90	2.97
14:55	8.71	3.44	8.98	2.56	3.92	4.01	2.92	2.98
14:56	8.74	3.44	9.04	2.56	3.93	4.03	2.92	3.00
14:57	8.65	3.44	8.95	2.56	3.90	4.00	2.90	2.97
14:58	8.64	3.44	8.93	2.56	3.90	3.99	2.90	2.97
AVERAGE	8.86	3.44	9.14	2.67	3.97	4.06	3.08	3.16

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CEMS RATA TEST #12

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
15:05	8.58	3.44	8.88	2.77	3.88	3.97	3.12	3.20
15:06	8.58	3.44	8.88	2.77	3.88	3.97	3.12	3.20
15:07	8.61	3.44	8.91	2.59	3.89	3.99	2.93	3.01
15:08	8.64	3.44	8.93	2.56	3.90	3.99	2.90	2.97
15:09	8.71	3.44	8.99	2.73	3.92	4.01	3.11	3.18
15:10	8.84	3.44	9.12	2.76	3.96	4.05	3.18	3.26
15:11	8.69	3.44	8.97	2.69	3.91	4.00	3.07	3.14
15:12	8.71	3.44	9.00	2.56	3.92	4.01	2.92	2.99
15:13	8.72	3.44	8.98	2.56	3.92	4.01	2.92	2.98
15:14	8.86	3.44	9.10	2.69	3.97	4.05	3.11	3.18
15:15	8.83	3.44	9.12	2.76	3.96	4.06	3.18	3.26
15:16	8.69	3.44	8.96	2.56	3.91	4.00	2.91	2.98
15:17	8.72	3.44	9.00	2.56	3.92	4.02	2.92	2.99
15:18	8.71	3.44	8.99	2.76	3.92	4.01	3.15	3.23
15:19	8.76	3.44	9.02	2.76	3.94	4.02	3.16	3.23
15:20	8.82	3.44	9.10	2.76	3.95	4.05	3.18	3.25
15:21	8.58	3.44	8.87	2.76	3.88	3.97	3.12	3.19
15:22	8.76	3.44	9.04	2.76	3.94	4.03	3.16	3.24
15:23	8.75	3.44	9.03	2.76	3.93	4.02	3.16	3.24
15:24	8.79	3.44	9.07	2.76	3.95	4.04	3.17	3.25
15:25	8.75	3.44	9.03	2.76	3.93	4.03	3.16	3.24
AVERAGE	8.72	3.44	9.00	2.70	3.92	4.02	3.08	3.15

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CEMS RATA TEST #1

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
14:38	9.40	3.44	9.66	2.86	4.15	4.25	3.45	3.53
14:39	9.25	3.44	9.53	2.86	4.10	4.20	3.41	3.50
14:40	9.14	3.44	9.45	2.86	4.06	4.17	3.38	3.47
14:41	9.06	3.44	9.34	2.86	4.04	4.13	3.36	3.44
14:42	9.06	3.44	9.34	2.83	4.04	4.13	3.33	3.41
14:43	8.96	3.44	9.19	2.56	4.00	4.08	2.98	3.04
14:44	9.06	3.44	9.30	2.68	4.04	4.12	3.15	3.21
14:45	9.04	3.44	9.32	2.77	4.03	4.12	3.24	3.32
14:46	8.86	3.44	9.15	2.77	3.97	4.07	3.20	3.27
14:47	8.77	3.44	9.06	2.77	3.94	4.03	3.17	3.25
14:48	8.65	3.44	8.96	2.63	3.90	4.00	2.98	3.06
14:49	8.66	3.44	8.97	2.56	3.90	4.00	2.90	2.98
14:50	8.65	3.44	8.94	2.56	3.90	3.99	2.90	2.97
14:51	8.74	3.44	9.02	2.56	3.93	4.02	2.92	2.99
14:52	8.62	3.44	8.93	2.56	3.89	3.99	2.90	2.97
14:53	8.69	3.44	8.98	2.56	3.91	4.01	2.91	2.98
14:54	8.63	3.44	8.91	2.56	3.89	3.99	2.90	2.97
14:55	8.71	3.44	8.98	2.56	3.92	4.01	2.92	2.98
14:56	8.74	3.44	9.04	2.56	3.93	4.03	2.92	3.00
14:57	8.65	3.44	8.95	2.56	3.90	4.00	2.90	2.97
14:58	8.64	3.44	8.93	2.56	3.90	3.99	2.90	2.97
AVERAGE	8.86	3.44	9.14	2.67	3.97	4.06	3.08	3.16

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CEMS RATA TEST #2

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
15:05	8.58	3.44	8.88	2.77	3.88	3.97	3.12	3.20
15:06	8.58	3.44	8.88	2.77	3.88	3.97	3.12	3.20
15:07	8.61	3.44	8.91	2.59	3.89	3.99	2.93	3.01
15:08	8.64	3.44	8.93	2.56	3.90	3.99	2.90	2.97
15:09	8.71	3.44	8.99	2.73	3.92	4.01	3.11	3.18
15:10	8.84	3.44	9.12	2.76	3.96	4.05	3.18	3.26
15:11	8.69	3.44	8.97	2.69	3.91	4.00	3.07	3.14
15:12	8.71	3.44	9.00	2.56	3.92	4.01	2.92	2.99
15:13	8.72	3.44	8.98	2.56	3.92	4.01	2.92	2.98
15:14	8.86	3.44	9.10	2.69	3.97	4.05	3.11	3.18
15:15	8.83	3.44	9.12	2.76	3.96	4.06	3.18	3.26
15:16	8.69	3.44	8.96	2.56	3.91	4.00	2.91	2.98
15:17	8.72	3.44	9.00	2.56	3.92	4.02	2.92	2.99
15:18	8.71	3.44	8.99	2.76	3.92	4.01	3.15	3.23
15:19	8.76	3.44	9.02	2.76	3.94	4.02	3.16	3.23
15:20	8.82	3.44	9.10	2.76	3.95	4.05	3.18	3.25
15:21	8.58	3.44	8.87	2.76	3.88	3.97	3.12	3.19
15:22	8.76	3.44	9.04	2.76	3.94	4.03	3.16	3.24
15:23	8.75	3.44	9.03	2.76	3.93	4.02	3.16	3.24
15:24	8.79	3.44	9.07	2.76	3.95	4.04	3.17	3.25
15:25	8.75	3.44	9.03	2.76	3.93	4.03	3.16	3.24
AVERAGE	8.72	3.44	9.00	2.70	3.92	4.02	3.08	3.15

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CEMS RATA TEST #3

09-Feb-2006

Time	OXYGEN	CO RAW	OXYGEN	CO RAW	CO @ 7%		CO @ 7%		CO @ 7%	
	THERMOX	SIEMENS	AMETEK	TECO	SIE & THRM	SIE & AMTK	TECO & THRM	TECO & AMTK	TECO & THRM	TECO & AMTK
15:33	8.67	3.44	8.96	2.76	3.91	4.00	3.14			3.22
15:34	8.74	3.44	8.90	2.76	3.93	3.98	3.16			3.20
15:35	8.74	3.44	8.97	2.76	3.93	4.00	3.16			3.22
15:36	8.76	3.44	9.05	2.76	3.94	4.03	3.16			3.24
15:37	8.86	3.44	8.95	2.76	3.97	4.00	3.19			3.22
15:38	8.85	3.44	8.99	2.76	3.97	4.01	3.19			3.23
15:39	8.77	3.44	8.99	2.76	3.94	4.01	3.17			3.22
15:40	8.63	3.44	8.95	2.76	3.90	4.00	3.13			3.21
15:41	8.69	3.44	9.02	2.76	3.91	4.02	3.15			3.23
15:42	8.83	3.44	9.03	2.76	3.96	4.03	3.18			3.24
15:43	9.01	3.44	9.03	2.76	4.02	4.03	3.23			3.24
15:44	8.90	3.44	9.11	2.76	3.98	4.05	3.20			3.26
15:45	8.93	3.44	9.13	2.76	3.99	4.06	3.21			3.26
15:46	8.85	3.44	9.06	2.76	3.97	4.03	3.19			3.24
15:47	8.68	3.44	8.94	2.76	3.91	3.99	3.14			3.21
15:48	8.72	3.44	8.97	2.76	3.92	4.00	3.15			3.22
15:49	8.79	3.44	9.08	2.76	3.95	4.04	3.17			3.25
15:50	8.82	3.44	9.27	2.76	3.95	4.11	3.18			3.30
15:51	8.83	3.44	9.21	2.76	3.96	4.09	3.18			3.28
15:52	8.81	3.44	9.20	2.76	3.95	4.08	3.18			3.28
15:53	8.99	3.44	9.14	2.76	4.01	4.06	3.23			3.27
AVERAGE	8.80	3.44	9.04	2.76	3.95	4.03	3.18			3.24

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CEMS RATA TEST #4

09-Feb-2006

Time	OXYGEN		CO RAW		OXYGEN		CO RAW		CO @ 7%		CO @ 7%		CO @ 7%	
	THERMOX		SIEMENS		AMETEK		TECO		SIE & THRM		SIE & AMTK		TECO & THRM	TECO & AMTK
16:03	9.97		3.44		10.17		2.76		4.37		4.45		3.52	3.58
16:04	10.04		3.44		10.25		2.76		4.40		4.49		3.54	3.61
16:05	10.05		3.44		10.25		2.76		4.40		4.49		3.54	3.61
16:06	10.03		3.44		10.25		2.76		4.40		4.49		3.53	3.61
16:07	9.84		3.44		10.07		2.66		4.32		4.41		3.34	3.41
16:08	9.88		3.44		10.11		2.56		4.33		4.43		3.23	3.30
16:09	9.86		3.44		10.10		2.56		4.33		4.42		3.22	3.29
16:10	9.72		3.44		9.96		2.56		4.27		4.37		3.18	3.25
16:11	9.68		3.44		9.91		2.56		4.26		4.35		3.17	3.24
16:12	9.61		3.44		9.83		2.56		4.23		4.32		3.15	3.21
16:13	9.67		3.44		9.91		2.56		4.26		4.35		3.17	3.24
16:14	9.74		3.44		10.00		2.56		4.28		4.38		3.19	3.26
16:15	9.71		3.44		9.95		2.56		4.27		4.36		3.18	3.25
16:16	9.67		3.44		9.92		2.56		4.25		4.35		3.16	3.24
16:17	9.59		3.44		9.86		2.56		4.23		4.33		3.14	3.22
16:18	9.54		3.44		9.81		2.56		4.21		4.31		3.13	3.21
16:19	9.62		3.44		9.90		2.56		4.24		4.34		3.15	3.23
16:20	9.46		3.44		9.74		2.56		4.18		4.28		3.11	3.19
16:21	9.48		3.44		9.75		2.56		4.18		4.29		3.11	3.19
16:22	9.62		3.44		9.88		2.56		4.23		4.34		3.15	3.23
16:23	9.65		3.44		9.92		2.56		4.25		4.35		3.16	3.24
AVERAGE	9.73		3.44		9.98		2.60		4.28		4.38		3.24	3.31

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CEMS RATA TEST #5

09-Feb-2006

Time	OXYGEN		CO RAW		OXYGEN		CO RAW		CO @ 7%		CO @ 7%		CO @ 7%	
	THERMOX	SIEMENS	AMETEK	TECO	SIE & THRM	SIE & AMTK	TECO & THRM	TECO & AMTK	TECO & THRM	TECO & AMTK	TECO & THRM	TECO & AMTK	TECO & THRM	TECO & AMTK
16:29	9.42	3.44	9.69	2.56	4.16	4.26	3.10	3.17						
16:30	9.58	3.44	9.85	2.56	4.22	4.33	3.14	3.22						
16:31	9.50	3.44	9.76	2.56	4.19	4.29	3.12	3.19						
16:32	9.50	3.44	9.77	2.56	4.19	4.29	3.12	3.19						
16:33	9.44	3.44	9.75	2.56	4.17	4.28	3.10	3.19						
16:34	9.35	3.44	9.64	2.56	4.14	4.24	3.08	3.16						
16:35	9.39	3.44	9.67	2.56	4.15	4.26	3.09	3.17						
16:36	9.28	3.44	9.54	2.56	4.11	4.21	3.06	3.13						
16:37	9.21	3.44	9.48	2.56	4.09	4.18	3.04	3.11						
16:38	9.10	3.44	9.39	2.56	4.05	4.15	3.01	3.09						
16:39	9.10	3.44	9.39	2.75	4.05	4.15	3.24	3.32						
16:40	8.89	3.44	9.17	2.76	3.98	4.07	3.20	3.28						
16:41	8.94	3.44	9.23	2.76	3.99	4.09	3.21	3.29						
16:42	8.79	3.44	9.09	2.76	3.95	4.05	3.17	3.25						
16:43	8.67	3.44	8.98	2.76	3.91	4.01	3.14	3.22						
16:44	8.69	3.44	8.98	2.76	3.91	4.01	3.15	3.22						
16:45	8.76	3.44	9.04	2.76	3.94	4.03	3.16	3.24						
16:46	8.64	3.44	8.94	2.76	3.90	4.00	3.13	3.21						
16:47	8.55	3.44	8.86	2.76	3.87	3.97	3.11	3.19						
16:48	8.54	3.44	8.84	2.59	3.86	3.96	2.91	2.99						
16:49	8.49	3.44	8.79	2.56	3.85	3.95	2.86	2.94						
AVERAGE	9.04	3.44	9.33	2.65	4.03	4.13	3.10	3.18						

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CEMS RATA TEST #6

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
16:57	8.20	3.44	8.52	2.76	3.76	3.86	3.02	3.10
16:58	8.13	3.44	8.46	2.76	3.74	3.84	3.01	3.09
16:59	8.08	3.44	8.39	2.73	3.73	3.82	2.96	3.03
17:00	8.17	3.44	8.48	2.56	3.75	3.85	2.79	2.86
17:01	8.40	3.44	8.69	2.56	3.82	3.91	2.84	2.91
17:02	8.54	3.44	8.84	2.56	3.86	3.96	2.88	2.95
17:03	8.79	3.44	9.07	2.56	3.95	4.04	2.94	3.01
17:04	9.00	3.44	9.28	2.56	4.01	4.11	2.99	3.06
17:05	9.17	3.44	9.42	2.56	4.07	4.16	3.03	3.10
17:06	9.30	3.44	9.53	2.56	4.12	4.20	3.07	3.13
17:07	9.35	3.44	9.59	2.56	4.14	4.23	3.08	3.14
17:08	9.40	3.44	9.66	2.56	4.15	4.25	3.09	3.16
17:09	9.43	3.44	9.71	2.56	4.17	4.27	3.10	3.18
17:10	9.44	3.44	9.70	2.56	4.17	4.27	3.10	3.17
17:11	9.54	3.44	9.79	2.56	4.21	4.30	3.13	3.20
17:12	9.63	3.44	9.90	2.56	4.24	4.35	3.15	3.23
17:13	9.67	3.44	9.93	2.56	4.26	4.36	3.17	3.24
17:14	9.60	3.44	9.88	2.56	4.23	4.33	3.15	3.22
17:15	9.73	3.44	10.00	2.56	4.28	4.38	3.18	3.26
17:16	9.76	3.44	10.00	2.56	4.29	4.38	3.19	3.26
17:17	9.74	3.44	9.98	2.59	4.28	4.37	3.23	3.30
AVERAGE	9.10	3.44	9.37	2.59	4.06	4.15	3.05	3.12

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CEMS RATA TEST #7

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
17:24	9.96	3.44	10.20	2.76	4.37	4.47	3.51	3.59
17:25	9.98	3.44	10.21	2.76	4.38	4.47	3.52	3.59
17:26	10.02	3.44	10.27	2.76	4.39	4.49	3.53	3.61
17:27	10.05	3.44	10.28	2.76	4.40	4.50	3.54	3.62
17:28	10.02	3.44	10.23	2.76	4.39	4.48	3.53	3.60
17:29	10.00	3.44	10.24	2.76	4.38	4.48	3.52	3.60
17:30	10.09	3.44	10.34	2.76	4.42	4.52	3.55	3.64
17:31	10.13	3.44	10.36	2.76	4.44	4.54	3.57	3.65
17:32	10.16	3.44	10.40	2.89	4.45	4.55	3.74	3.82
17:33	10.23	3.44	10.46	3.06	4.48	4.58	3.99	4.08
17:34	10.22	3.44	10.45	3.06	4.47	4.57	3.99	4.07
17:35	10.14	3.44	10.38	3.06	4.44	4.54	3.96	4.05
17:36	10.09	3.44	10.34	3.06	4.42	4.53	3.94	4.03
17:37	10.03	3.44	10.28	3.06	4.40	4.50	3.92	4.01
17:38	9.97	3.44	10.23	3.06	4.37	4.48	3.90	3.99
17:39	9.86	3.44	10.12	3.06	4.33	4.43	3.86	3.95
17:40	9.86	3.44	10.10	3.34	4.33	4.42	4.20	4.30
17:41	9.89	3.44	10.15	3.36	4.34	4.44	4.25	4.35
17:42	9.78	3.44	10.03	3.36	4.30	4.40	4.20	4.30
17:43	9.68	3.44	9.95	3.36	4.26	4.37	4.17	4.27
17:44	9.54	4.69	9.83	3.36	5.74	5.89	4.12	4.22
AVERAGE	9.99	3.50	10.23	3.01	4.45	4.55	3.83	3.92

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CEMS RATA TEST #8

09-Feb-2006

Time	OXYGEN		CO RAW		OXYGEN		CO RAW		CO @ 7%		CO @ 7%		CO @ 7%	
	THERMOX	SIEMENS	AMETEK	TECO	SIE & THRM	SIE & AMTK	TECO & THRM	TECO & AMTK						
17:52	9.30	5.59	9.62	3.57	6.69	6.88	4.28	4.40						
17:53	9.26	5.59	9.57	3.57	6.67	6.85	4.27	4.38						
17:54	9.20	5.59	9.51	3.60	6.64	6.82	4.27	4.39						
17:55	9.15	5.59	9.47	3.85	6.61	6.80	4.55	4.68						
17:56	9.15	5.59	9.45	3.85	6.61	6.78	4.55	4.67						
17:57	9.13	5.59	9.43	3.85	6.60	6.77	4.54	4.66						
17:58	9.11	5.59	9.42	3.85	6.58	6.76	4.53	4.66						
17:59	9.04	5.59	9.36	3.85	6.55	6.73	4.51	4.63						
18:00	9.10	5.59	9.39	3.85	6.58	6.75	4.53	4.65						
18:01	9.16	5.59	9.44	3.85	6.61	6.78	4.55	4.67						
18:02	9.04	5.59	9.36	3.85	6.55	6.73	4.51	4.63						
18:03	8.95	5.59	9.23	3.85	6.50	6.65	4.47	4.58						
18:04	9.00	5.59	9.34	4.04	6.52	6.72	4.71	4.85						
18:05	8.77	5.59	9.11	3.94	6.40	6.59	4.52	4.65						
18:06	8.81	5.59	9.14	3.79	6.42	6.60	4.36	4.48						
18:07	8.90	5.59	9.20	3.79	6.47	6.63	4.39	4.50						
18:08	8.80	5.59	9.11	3.86	6.42	6.58	4.43	4.54						
18:09	8.83	5.59	9.14	4.05	6.43	6.60	4.66	4.79						
18:10	8.79	5.59	9.11	4.05	6.41	6.58	4.65	4.77						
18:11	8.82	5.59	9.14	4.05	6.43	6.60	4.66	4.78						
18:12	8.92	5.59	9.22	4.05	6.48	6.65	4.70	4.82						
AVERAGE	9.01	5.59	9.32	3.86	6.53	6.71	4.51	4.63						

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CEMS RATA TEST #9

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
18:22	9.18	5.59	9.46	4.25	6.63	6.79	5.05	5.17
18:23	9.08	5.59	9.36	4.42	6.57	6.73	5.20	5.32
18:24	9.07	5.59	9.37	4.53	6.56	6.73	5.33	5.47
18:25	9.09	5.59	9.38	4.66	6.57	6.74	5.48	5.62
18:26	8.97	6.43	9.28	4.84	7.50	7.69	5.64	5.78
18:27	9.00	7.62	9.33	5.13	8.90	9.15	6.00	6.17
18:28	8.84	7.62	9.14	5.17	8.78	9.00	5.95	6.11
18:29	8.82	7.62	9.12	5.31	8.77	8.99	6.11	6.27
18:30	8.59	7.62	8.91	5.18	8.60	8.83	5.85	6.01
18:31	8.62	7.62	8.93	5.18	8.63	8.85	5.87	6.02
18:32	8.61	7.62	8.95	5.18	8.62	8.86	5.86	6.03
18:33	8.45	7.62	8.79	5.18	8.50	8.74	5.79	5.95
18:34	8.19	7.62	8.53	5.51	8.33	8.56	6.02	6.19
18:35	8.32	7.62	8.65	5.67	8.42	8.64	6.27	6.44
18:36	8.41	7.62	8.75	5.60	8.48	8.72	6.24	6.41
18:37	8.40	7.62	8.74	5.09	8.47	8.71	5.66	5.82
18:38	8.54	7.62	8.87	4.97	8.57	8.80	5.58	5.74
18:39	8.58	7.62	8.88	4.90	8.59	8.80	5.52	5.66
18:40	8.63	7.62	8.96	4.69	8.63	8.87	5.32	5.47
18:41	8.52	7.62	8.85	4.69	8.55	8.78	5.27	5.41
18:42	8.67	7.62	8.97	4.69	8.66	8.87	5.33	5.47
AVERAGE	8.69	7.17	9.01	4.99	8.16	8.37	5.68	5.83

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CEMS RATA TEST #10

09-Feb-2006

Time	OXYGEN THERMOX	CO RAW SIEMENS	OXYGEN AMETEK	CO RAW TECO	CO @ 7% SIE & THRM	CO @ 7% SIE & AMTK	CO @ 7% TECO & THRM	CO @ 7% TECO & AMTK
18:51	8.98	7.62	9.28	4.74	8.89	9.11	5.53	5.68
18:52	9.00	7.62	9.28	4.97	8.90	9.11	5.80	5.94
18:53	8.95	7.62	9.28	4.97	8.86	9.11	5.78	5.94
18:54	8.95	7.62	9.25	5.05	8.86	9.09	5.88	6.03
18:55	8.93	7.62	9.23	5.18	8.85	9.07	6.01	6.16
18:56	8.93	7.62	9.25	5.18	8.84	9.09	6.01	6.18
18:57	9.02	7.62	9.31	5.18	8.91	9.13	6.06	6.21
18:58	9.01	7.62	9.32	5.02	8.90	9.14	5.87	6.02
18:59	9.18	7.62	9.45	4.97	9.03	9.25	5.89	6.03
19:00	9.46	7.62	9.73	4.89	9.26	9.48	5.95	6.09
19:01	9.70	7.62	9.95	4.60	9.45	9.67	5.71	5.84
19:02	9.89	7.62	10.12	4.45	9.62	9.82	5.62	5.73
19:03	10.16	7.62	10.37	4.45	9.86	10.06	5.76	5.87
19:04	10.27	7.62	10.48	4.15	9.96	10.17	5.43	5.54
19:05	10.23	7.62	10.48	3.91	9.93	10.16	5.09	5.21
19:06	10.11	7.62	10.34	3.71	9.81	10.02	4.78	4.89
19:07	10.11	7.62	10.38	3.87	9.81	10.06	4.99	5.11
19:08	10.10	7.62	10.34	3.98	9.80	10.02	5.12	5.24
19:09	9.99	5.33	10.23	3.84	6.78	6.94	4.89	5.01
19:10	9.99	5.12	10.24	3.77	6.52	6.67	4.80	4.92
19:11	10.08	5.12	10.32	4.00	6.57	6.72	5.13	5.25
AVERAGE	9.57	7.27	9.84	4.52	8.93	9.14	5.53	5.66