UNITED STATES STEEL CORPORATION
MON VALLEY COMPLEX - CLAIRTON PLANT
CLAIRTON, PENNSYLVANIA

Relative Accuracy Test Audit
of the Continuous Emissions Monitoring System
for B-Battery Combustion Stack at
United States Steel Corporation
Mon Valley Complex - Clairton Plant – Clairton, PA
per
Pennsylvania Department of Environmental Protection
Continuous Source Monitoring Manual Requirements

August 12, 2009

SEPTEMBER 2009

APPENDIX B

Chester Reference Method Comparison Data

CHESTER ENGINEERS
"Tradition in Engineering Excellence Since 1910"

UNITED STATES STEEL CORPORATION
MON VALLEY COMPLEX - CLAIRTON PLANT
CLAIRTON, PENNSYLVANIA

ANNUAL RATA
B BATTERY COMBUSTION STACK
STRATIFICATION TEST RESULTS
AUGUST 11, 2009

TIME OF TEST (EDT)	NO_x (ppm)	O_2 (%)	TRAVERSE POINT	NO_x (ppm, avg.)	O_2 (%, avg.)	ABSOLUTE NOX DELTA	ABSOLUTE O2 DELTA
12:23	158.1	10.2	1				
12:24	157.5	10.1	1	157.8	10.15	2.32	0.10
12:25	155	10.1	2				
12:26	154.6	10	2	154.8	10.05	0.68	0.00
12:27	154.1	9.9	3				
12:28	153.6	10	3	153.85	9.95	1.63	0.10

Average of all TRAVERSE POINTS, $(NO_X)_{AVG}$ AND $(O_2)_{AVG}$ 155.48 10.05

MAXIMUM ppm DIFFERENCE OF$(NO_X)_i$ and $(NO_X)_{AVG}$ 2.32 (3 ppm)
WHERE, I IS THE TRAVERSE POINT LOCATION

MAXIMUM DIFFERENCE OF$(NO_X)_i$ and $(NO_X)_{AVG}$ AS A PERCENT 1.49 (5%)
WHERE, I IS THE TRAVERSE POINT LOCATION

MAXIMUM % DIFFERENCE OF$(O_2)_i$ and $(O_2)_{AVG}$ 0.10 (0.3 %)
WHERE, I IS THE TRAVERSE POINT LOCATION

MAXIMUM DIFFERENCE OF$(O_2)_i$ and $(O_2)_{AVG}$ AS A PERCENT 1.00 (5%)
WHERE, I IS THE TRAVERSE POINT LOCATION

RESULTS INDICATE THAT 1 SAMPLING POINT IS NEEDED.

CEM CALIBRATION GAS REQUIREMENTS

Analyte	ATS Analyzer	Calibration Gases (% of Span)				Interference Check
		Zero	Mid - Level	High - Level	Approved Mixtures	
O_2	California Analytical Instruments - Paramagnetic Oxygen Analyzer - Model 100P	< 10% or N_2	40% - 60 %	100%	O_2 in N_2	Interference Response Test - Vendor Data (M20, S5.4)
CO_2	California Analytical Instruments - CO_2 Analyzer - Model 100	purified ambient air or N_2	40% - 60 %	100%	CO_2 in N_2 CO_2 in air	Ibid.
NO_x	Advanced Pollution Instrumentation, Inc. - Chemiluminescent NO_x Analyzer Model - 200AH	purified ambient air or N_2	40% - 60 %	100%	NO in N_2	Ibid. + NO_2 to NO Converter Test (M20, S5.6)
CO	Advanced Pollution Instrumentation, Inc. - Gas Filter Correlation CO Analyzer Model - 300	N_2	40% - 60 %	100%	CO in N_2	N/A
SO_2	Advanced Pollution Instrumentation, Inc. - Fluorescent SO_2 Analyzer Model - 100AH	< 0.25% or purified ambient air or N_2	40% - 60 %	100%	SO_2 in N_2 SO_2 in air SO_2/CO_2 in N_2 SO_2/O_2 in N_2 $SO_2/CO_2/O_2$ in N_2	Comparison with M6
THC	J.U.M. Engineering Heated F.I.D. Analyzer - Model 3 - 300A	purified ambient air or N_2	40% - 60 %	100%	C_3H_8 in N_2 C_3H_8 in air	N/A

C - stack gas = (C-analyzer - Co) * Cma / (Cm - Co)

C - stack gas = Stack gas concentration
C - analyzer = Average analyzer gas concentration
Co = Average of initial and final cal. bias check response for the zero calibration gas
Cm = Average of initial and final cal. bias check response for the upscale calibration gas
Cma = Actual upscale calibration gas concentration

CEM CALIBRATION ERROR TEST DATA

CLIENT	~~Kelman Boiler, LLC~~ USS	Page 1 of	2
PLANT SITE	~~Glenshaw, PA~~ CLR, PA	ANALYZER	Advanced Pollution Instrumentation, Inc.
TEST UNIT	~~Furnace No. 2~~ CLR BBATT RATA	INSTRUMENT	Chemiluminescent NOx Analyzer-Model 200AH
TEST DATE	8/12/09 OPERATOR HT	Serial No.	258
PROJECT NO.	08-~~6120-1 NV, Task 01~~ 09-6296-CW T107	Calibrated Span	.458 (ppmv, dry)

Time (EDT)	Certified Cylinder Value (A) (ppmv, dry)	Analyzer Calibration Response (B) (ppmv, dry)	Absolute Arithmetic Difference (A - B) (ppmv, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0746	0.0	0.0	0.0	0.0	X	Zero Gas is 100% N2
0804	452 ~~451.0~~	452.8	0.8	0.18	X	
0808	224.1 ~~224.0~~	222.7	1.4	0.31	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error <= 2% of Calibrated Span =
For THC the Allowable Calibration Error <= 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 224.1 (ppmv, dry)
(Use the one closest to the actual stack gas concentration)

Time (EDT)	Calibration Gas	Analyzer Response (B) (ppmv, dry)	System Response (C) (ppmv, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = 50 sec Notes
0817	Zero	0.0	0.0	0.0		PRE
0826	Upscale	222.7	220.0	0.60		
0854	Zero	0.0	0.3	0.07	0.07	Run No. 1:
0858	Upscale	222.7	218.3	0.97	0.38	0830-0850
0930	Zero	0.0	0.3	0.07	0.0	Run No. 2: 0906
0933	Upscale	222.7	217.8	1.08	0.11	0926
1006	Zero	0.0	0.2	0.04	0.02	Run No. 3: 0941
1010	Upscale	222.7	218.0	1.04	0.04	1001
1046	Zero	0.0	0.3	0.07	0.02	Run No. 4: 1021
1050	Upscale	222.7	217.8	1.08	0.04	1041
1125	Zero	0.0	0.3	0.07	0.00	Run No. 5: 1101
1128	Upscale	222.7	217.0	1.26	0.18	1121
1207	Zero	0.0	0.3	0.07	0.0	Run No. 6: 1135
1203	Upscale	222.7	216.2	1.44	0.18	1156

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias <= 5% of the Calibrated Span
For THC the System Cal. Bias <= 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift <= 3% of the Calibrated Span

CHE time = USS time + 64 min

CEM CALIBRATION ERROR TEST DATA

CLIENT	INDSPEC Chemical Corporation	Page 2 of 2	
PLANT SITE	Petrolia, PA	ANALYZER	California Analytical Instruments, Inc.
TEST UNIT	Exhaust Stack, Boiler No.	INSTRUMENT	~~CO2 Analyzer Model~~ 100 NOx
TEST DATE	November , 2008	SPAN	452 ~~127~~ (%, dry)
PROJECT NO.	08-6302-MW-PG50, Task 03	OPERATOR	~~D. A. Nadzam~~ HT

Time (EDT)	Calibration Gas Conc. (A) (%, dry)	Analyzer Response (B) (%, dry)	Arithmetic Difference (A - B) (%, dry)	Δ as Percent of Span [100 * (A-B) / Span] (%)	Δ as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0742	0	0	0	0.0	X	Zero Gas is 100% N2
804	452 ~~10.28~~	452.8	.8	0.18	X	
808	224.1 ~~10.24~~	222.7	1.4	0.31	X	
					X	
					X	

Specifications: Δ (Percent of Span) < = 2% for O2, CO2, SO2, NOx, CO
Δ (Percent of Calibration Gas Conc.) < = 5% for THC

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 224.1 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (EDT)	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1235	Zero	0.0	0.3	0.07	0.0	Run No. ~~7~~: 1211
1239	Upscale	222.7	217.2	1.22	0.22	(23)
1317	Zero	0.0	0.3	0.07	0.0	Run No. 8: 1246
1313	Upscale	222.7	216.6	1.35	0.13	1306
1345	Zero	0.0	0.3	0.07	0.0	Run No. ~~9~~: 1321
1348	Upscale	222.7	216.6	1.35	0.0	1341
	Zero					Run No. 11:
	Upscale					
	Zero					Run No. 12:
	Upscale					
	Zero					
	Upscale					
	Zero					
	Upscale					

Specifications: System Cal. Bias < = 5% for O2, CO2, SO2, NOx, CO; < = 3% for THC
Drift < = 3% for O2, CO2, SO2, NOx, CO, THC

CEM CALIBRATION ERROR TEST DATA

CLIENT: U.S. Steel-Mon Valley Complex — Page 1 of 2

PLANT SITE: Edgar Thomson Plant-Braddock, PA — ANALYZER: O_2

TEST UNIT: ~~Exhaust Stack, Boiler No.~~ B BATT STACK — INSTRUMENT: 2ATM

TEST DATE: ~~Mo/Da~~ 8/12, 2009 — OPERATOR: ~~DANadzam~~ MT — Serial No.

PROJECT NO. 09-629 ENV, Task ~~085~~ 107 — Calibrated Span: 24.88 (%, dry)

Time (EST)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	A as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
0746	0.0	0.0	0.0	0.0	X	Zero Gas is 100% N2
0758	12.47	12.3	0.17	0.68	X	
0754	24.88	24.9	0.02	0.08	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error <= 2% of Calibrated Span

For THC the Allowable Calibration Error <= 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 12.47 (%, dry)

(Use the one closest to the actual stack gas concentration)

Time (EST)	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas 58 sec. Notes
0817	Zero	0.0	0.0	0.0		pre
0821	Upscale	12.3	12.2	0.40		
0854	Zero	0.0	0.0	0.0	0.0	Run 1: 0830
0902	Upscale	12.3	12.2	0.40	0.0	0850
0930	Zero	0.0	0.0	0.0	0.0	Run 2: 0906
0937	Upscale	12.3	12.2	0.40	0.0	0926
1006	Zero	0.0	0.0	0.0	0.0	Run 3 0941
1014	Upscale	12.3	12.3	0.0	0.40	1001
1046	Zero	0.0	0.0	0.0	0.0	Run 4: 1021
1054	Upscale	12.3	12.3	0.0	0.0	1041
1125	Zero	0.0	0.0	0.0	0.0	Run 5 1101
1131	Upscale	12.3	12.3	0.0	0.0	1121
1207	Zero	0.0	0.0	0.0	0.0	Run 6 1135
1200	Upscale	12.3	12.3	0.0	0.0	1155

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias <= 5% of the Calibrated Span

For THC the System Cal. Bias <= 3% of the Calibrated Span

For O2, CO2, SO2, NOx, CO & THC the Drift <= 3% of the Calibrated Span

ChE time = USS time + 64 min

(8:30 ChE ⟺ 7:26 USS)

CEM CALIBRATION ERROR TEST DATA

CLIENT	~~Ketman Bottles, LLC~~ USS - CLR	Page ~~1 of~~ 2 / 2	
PLANT SITE	~~Glenshaw, PA~~ CLAIRTON, PA	ANALYZER	California Analytical Instruments
TEST UNIT	~~Furnace No. 7~~ BBATT RATA	INSTRUMENT	Paramagnetic Oxygen Analyzer - Model 100P
TEST DATE 8/12/09	OPERATOR HT	Serial No.	406002
PROJECT NO. ~~08-6130-ENV, Task 07~~ 09-6296 CWO T 107		Calibrated Span	24.88 (%, dry)

Time (EDT)	Certified Cylinder Value (A) (%, dry)	Analyzer Calibration Response (B) (%, dry)	Absolute Arithmetic Difference (A - B) (%, dry)	Calibration Error [100 * (A-B) / Calibrated Span] (%)	A as Percent of Cal. Gas Conc. [100 * (A-B) / Gas Conc.] (%)	Notes
746	0.0	0	0	0.0	X	Zero Gas is 100% N2
758	24.88	24.9	.02	0.08	X	
759	12.47	12.3	.17	0.68	X	

Specifications: For O2, CO2, SO2, NOx, CO the Allowable Calibration Error <= 2% of Calibrated Span =
For THC the Allowable Calibration Error <= 5% of Calibration Gas

CEM SAMPLING SYSTEM BIAS AND DRIFT DATA

Mid-Level or High-Level Calibration Gas: 12.47 (%, dry)
(Use the one closest to the actual stack gas concentration)

Time (EDT)	Calibration Gas	Analyzer Response (B) (%, dry)	System Response (C) (%, dry)	System Cal. Bias [100 * (C-B) / Span] (%)	Drift [100 * (Final C - Initial C) / Span] (%)	Response time for upscale bias gas = Notes
1235	Zero	0.0	0.0	0.0	0.0	Run 7 1211
1242	Upscale	12.3	12.3	0.0	0.0	1231
1317	Zero	0.0	0.0	0.0	0.0	Run No 8: 1246
1309	Upscale	12.3	12.3	0.0	0.0	1306
1345	Zero	0.0	0.0	0.0	0.0	Run No. 9: 1321
1351	Upscale	12.3	12.3	0.0	0.0	1341
	Zero					Run No. 3:
	Upscale					
	Zero					Run No. 4:
	Upscale					
	Zero					Run No. 5:
	Upscale					
	Zero					Run No. 6:
	Upscale					

Specifications: For O2, CO2, SO2, NOx & CO the System Cal. Bias <= 5% of the Calibrated Span
For THC the System Cal. Bias <= 3% of the Calibrated Span
For O2, CO2, SO2, NOx, CO & THC the Drift <= 3% of the Calibrated Span

Airgas

Airgas Specialty Gases
[illegible]
Maumee OH [illegible]
(419) [illegible]
[illegible]
[illegible]

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Part Number:	E02NI99E15A0528	Reference Number:	113-124127516-4
Cylinder Number:	CC177301	Cylinder Volume:	144 Cu.Ft.
Laboratory:	ASG - Maumee - OH	Cylinder Pressure:	2015 PSIG
Analysis Date:	Feb 21, 2008	Valve Outlet:	660

Expiration Date: Feb 21, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig.i.e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainity
NITRIC OXIDE	225.0 PPM	224.1 PPM	G1	+/- 1% NIST Traceable
NITROGEN	Balance			
Total oxides of nitrogen		224.4 PPM		For Reference Only

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	061207	CC217599	476.8PPM NITRIC OXIDE/NITROGEN	Sep 01, 2010

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
063-HORIBA CLA-510SS	chemiluminescence	Feb 11, 2008

Triad Data Available Upon Request

Notes:

Roy Yoder

QA Approval

Airgas®

Certificate of Analysis

EPA Protocol
Performed According to EPA-600/r-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig

Manufactured and certified at:
Airgas
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE, OH 43537
419-893-7226

For customer:
JACKSON WELDING CO
1421 W CARSON ST
PITTSBURGH, PA 15219-1094

Material:	6599	Blend Tolerance:	5 %
EPA NO N2 50 499 PPM	A21	Blend Type:	EPA Protocol
Production #:	100141133	Cyl. Pressure:	2000 psig
Lot #:	02499H7160AE	Balance Gas:	Nitrogen
Cylinder #:	CC140885	CGA:	660
Expiration Date:	08/29/2009	Analytical Accuracy:	1.00 % Relative
Shelf Life:	24 Months	Confidence:	95 %

[redacted]

10102-43-9	Nitric Oxide	450	452 +/- 5 ppm	08/29/2007
7727-37-9	Nitrogen		Bal	08/29/2007

[redacted]

N/A	NOx		452 ppm	08/29/2007

[redacted]

10102-43-9	Nitric Oxide	CC330681	456.8 ppm	06/01/2010

[redacted]

This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Roy Yoder

Roy Yoder

Airgas

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Part Number:	E03NI78E15A01R6	Reference Number:	113-124107578-1
Cylinder Number:	CC154304	Cylinder Volume:	151 Cu.Ft.
Laboratory:	ASG - Maumee - OH	Cylinder Pressure:	2015 PSIG
Analysis Date:	Sep 13, 2007	Valve Outlet:	590

Expiration Date: Sep 13, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require corrections for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig.(e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainity
CARBON DIOXIDE	10.00 %	10.34 %	G1	+/- 1% NIST Traceable
OXYGEN	12.00 %	12.47 %	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	0327UA	CC59133	13.78% CARBON DIOXIDE/NITROGEN	Oct 02, 2008
NTRM	0614BI	CC73619	14.84% OXYGEN/NITROGEN	Oct 02, 2008

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
030-Horiba VIA-510	NDIR	Aug 14, 2007
050-Rosemount 755R O2 Analyzer	Paramagnetic	Sep 13, 2007

Triad Data Available Upon Request

Notes:

QA Approval

Airgas, Inc
6421 Monclova Road
Maumee, Ohio 43537

Phone : (419) 893-7226
Fax : (419) 893-6411
www.airgas.com

Airgas

Airgas Specialty Gases
[illegible]
Maumee, OH 43537
(419) 893-7206
Fax (419) 878-2963
www.airgas.com

CERTIFICATE OF ANALYSIS
Grade of Product: EPA Protocol

Part Number:	E03NI55E15A6572	Reference Number:	113-124123139-3
Cylinder Number:	CC239967	Cylinder Volume:	160 Cu.Ft.
Laboratory:	ASG - Maumee - OH	Cylinder Pressure:	2014 PSIG
Analysis Date:	Jan 24, 2008	Valve Outlet:	296

Expiration Date: Jan 24, 2011

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.
Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainity
CARBON DIOXIDE	20.00 %	19.78 %	G1	+/- 1% NIST Traceable
OXYGEN	25.00 %	24.88 %	G1	+/- 1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	051204	CC184689	19.66% CARBON DIOXIDE/NITROGEN	May 01, 2010
NTRM	06060826	CC207980	22.51% OXYGEN/NITROGEN	May 01, 2010

ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
030 Horiba VIA-510	NDIR	Jan 09, 2008
050-Rosemount 755R O2 Analyzer	Paramagnetic	Jan 11, 2008

Triad Data Available Upon Request

Notes:

QA Approval

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
Annual RATA - B-Battery Combustion Stack
Chester Mobile Air Quality Laboratory Data

AUGUST 12, 2009

Minute Data Averages

Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
7:40	-0.1	-1	0.1	67	-100	Pre-Test Calibrations
7:41	0	-1	0.1	66	-100	Pre-Test Calibrations
7:42	0	-1	0.1	66	-100	Pre-Test Calibrations
7:43	0	-0.6	0.1	66	-100	Pre-Test Calibrations
7:44	0	0	0.1	66	-100	Pre-Test Calibrations
7:45	0	0	0.1	66	48	Pre-Test Calibrations
7:46	**0**	**0**	**0.1**	66	120	**Zero (N2) Span Gas**
7:47	0	11.1	0.1	66	153	Pre-Test Calibrations
7:48	0	24.7	0.1	66	176	Pre-Test Calibrations
7:49	0	24.9	0.1	66	192	Pre-Test Calibrations
7:50	0	24.9	0.1	66	205	Pre-Test Calibrations
7:51	0	24.9	0.1	66	215	Pre-Test Calibrations
7:52	0	24.9	0.1	66	223	Pre-Test Calibrations
7:53	0	24.9	0.1	66	230	Pre-Test Calibrations
7:54	0	**24.9**	0.1	67	236	**High O2/CO2 Span Gas**
7:55	0	15.9	0.1	67	241	Pre-Test Calibrations
7:56	0	12.4	0.1	67	246	Pre-Test Calibrations
7:57	0	12.4	0.1	67	249	Pre-Test Calibrations
7:58	0	**12.4**	0.1	67	253	**Mid O2/CO2 Span Gas**
7:59	54.5	6.3	0.1	67	255	Pre-Test Calibrations
8:00	413.1	0	0.1	67	258	Pre-Test Calibrations
8:01	462.9	0	-0.1	66	260	Pre-Test Calibrations
8:02	456.3	0	1.6	66	262	Pre-Test Calibrations
8:03	453.2	0	1.1	66	263	Pre-Test Calibrations
8:04	**452.9**	0	0.6	66	265	**High NOx Span Gas**
8:05	430.2	0.3	-2.9	66	266	Pre-Test Calibrations
8:06	241.3	0	-0.3	67	267	Pre-Test Calibrations
8:07	222.7	0	0.5	67	267	Pre-Test Calibrations
8:08	**222.7**	0	0.3	67	268	**Mid NOx Span Gas**
8:09	218.1	0	1.2	67	268	Bias Checks
8:10	24.6	7	2	67	269	Bias Checks
8:11	0.4	20.8	0.1	67	269	Bias Checks
8:12	0.3	20.7	0.1	67	269	Bias Checks
8:13	0.1	20.7	0.1	66	269	Bias Checks
8:14	0	20.7	0.1	67	269	Bias Checks
8:15	0	6.7	0.1	67	268	Bias Checks
8:16	0	0	0.1	67	265	Bias Checks
8:17	**0**	**0**	**0.1**	67	262	**Zero Span Gas**
8:18	0	1.5	0.1	67	260	Bias Checks
8:19	19.9	12.1	0.1	67	260	Bias Checks
8:20	21.2	12.3	0.2	67	259	Bias Checks
8:21	0	**12.3**	0.1	67	258	**Mid O2/CO2 Span Gas**
8:22	0	10	0.1	67	256	Bias Checks
8:23	147.4	0	0	67	255	Bias Checks
8:24	219.9	0	0.1	67	254	Bias Checks
8:25	220.1	0	0.1	67	252	Bias Checks
8:26	**220.1**	0	0.1	67	251	**Mid NOx Span Gas**
8:27	198.5	2.6	0.1	67	250	Bias Checks
8:28	157.6	12.3	0.1	67	252	Stack Gas
8:29	192.3	12.3	0	67	254	Stack Gas
8:30	193.2	12.2	-0.1	67	255	**Run #1**
8:31	194.1	12.1	-0.3	67	256	**Run #1**
8:32	195	12.3	-0.1	67	257	**Run #1**
8:33	196.2	12.2	0.4	67	258	**Run #1**

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Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
8:34	196.5	12.2	-0.1	67	258	Run #1
8:35	196.6	12.2	-0.4	67	259	Run #1
8:36	197.2	12	-0.5	66	259	Run #1
8:37	198.2	12	-0.4	66	259	Run #1
8:38	199.5	12	-0.8	65	259	Run #1
8:39	205.1	11.9	-0.8	65	259	Run #1
8:40	208.9	11.8	-0.1	65	259	Run #1
8:41	210.3	11.9	-0.1	65	258	Run #1
8:42	211.7	11.9	-0.3	65	258	Run #1
8:43	212.7	12.1	-0.1	65	258	Run #1
8:44	213.9	12.1	0	65	257	Run #1
8:45	214.1	12	0.3	66	257	Run #1
8:46	213.7	12	0	67	257	Run #1
8:47	214.3	11.9	-0.2	67	257	Run #1
8:48	215.6	12	-0.2	67	256	Run #1
8:49	216.8	11.9	0.1	67	256	Run #1
8:50	217.1	12	0.2	68	256	Run #1
	205.7	12.0	-0.2	66.2	257.5	21 Min. Analyzer Average, Ca
	0.15	0.00				Avg. Zero Bias Check, Co
	219.20	12.30				Avg. Mid Span Bias Check, Cm
	224.1	12.47				Actual Mid Span Value, Cma
	210.3	12.2				Corrected Conc., Cstack
	0.459 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
8:51	204.6	7	4.8	67	255	Bias Checks
8:52	44.9	0	13	67	253	Bias Checks
8:53	0.4	0	0.1	67	250	Bias Checks
8:54	**0.3**	**0**	**0.1**	67	248	Zero Span Gas
8:55	14.8	0	0.1	68	246	Bias Checks
8:56	208.7	0	0.1	68	246	Bias Checks
8:57	218.3	0	0.1	68	246	Bias Checks
8:58	**218.3**	0	0.2	68	245	Mid NOx Span Gas
8:59	216.9	5.6	4.6	68	245	Bias Checks
9:00	24.4	12.3	2.5	68	244	Bias Checks
9:01	0.4	12.3	0.1	68	244	Bias Checks
9:02	0.3	**12.3**	0.1	68	244	Mid O2/CO2 Span Gas
9:03	0.3	7.7	0.1	68	244	Bias Checks
9:04	122.1	11.3	0	68	246	Stack Gas
9:05	166.6	11.4	0.1	68	248	Stack Gas
9:06	165.8	11.3	0	68	249	Run #2
9:07	165.5	11.4	-0.8	68	251	Run #2
9:08	165.4	11.3	-0.6	68	252	Run #2
9:09	165.2	11.3	-0.7	68	253	Run #2
9:10	166.2	11.4	-0.7	68	254	Run #2
9:11	167.6	11.6	-1.2	68	254	Run #2
9:12	169.5	11.7	-0.6	68	255	Run #2
9:13	172.2	11.6	-0.6	68	256	Run #2
9:14	172.8	11.5	-0.3	68	256	Run #2
9:15	170.7	12.3	-0.4	68	256	Run #2
9:16	103.5	17.7	9.5	68	256	Run #2
9:17	72.2	15.4	5.6	68	257	Run #2
9:18	173.8	12.2	0.3	68	256	Run #2

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Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
9:19	190.2	12	0	68	256	Run #2
9:20	191.4	12.4	-0.2	68	256	Run #2
9:21	192	12.5	-0.3	68	256	Run #2
9:22	195.6	12.4	-0.3	68	256	Run #2
9:23	197.2	12.4	-0.4	68	256	Run #2
9:24	200.3	12.3	-0.5	68	256	Run #2
9:25	203.2	12.2	-0.5	68	256	Run #2
9:26	205.6	12.3	-0.1	68	255	Run #2
	171.7	12.3	0.3	68.0	254.9	21 Min. Analyzer Average, Ca
	0.30	0.00				Avg. Zero Bias Check, Co
	218.10	12.30				Avg. Mid Span Bias Check, Cm
	224.1	12.47				Actual Mid Span Value, Cma
	176.4	12.5				Corrected Conc., Cstack
	0.399 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
9:27	207.4	8.3	0	68	255	Stack Gas
9:28	48.5	0	1.9	68	253	Stack Gas
9:29	0.4	0	0.1	68	251	Bias Checks
9:30	**0.3**	**0**	**0.1**	68	248	**Zero Span Gas**
9:31	28.8	0	-0.4	68	247	Bias Checks
9:32	217.7	0	0.2	68	245	Bias Checks
9:33	**217.9**	0	0	68	244	**Mid NOx Span Gas**
9:34	187.4	7.8	1.7	68	243	Bias Checks
9:35	28.6	12.3	2.2	68	242	Bias Checks
9:36	0.3	12.3	0.1	68	241	Bias Checks
9:37	0.3	**12.3**	0.1	68	241	**Mid O2/CO2 Span Gas**
9:38	13.2	8.6	0.1	68	242	Bias Checks
9:39	135.7	11.4	0	68	244	Stack Gas
9:40	163.9	11.4	0.2	68	246	Stack Gas
9:41	163.6	11.2	0.1	68	248	Run #3
9:42	162.9	11.2	-0.9	68	249	Run #3
9:43	162.9	11.1	-0.4	68	251	Run #3
9:44	162.5	11.3	-0.9	69	252	Run #3
9:45	164	11.3	-0.5	70	253	Run #3
9:46	164.2	11.5	-1.2	70	254	Run #3
9:47	166.1	11.4	-0.5	70	254	Run #3
9:48	168	11.5	-0.9	70	255	Run #3
9:49	168.7	11.4	-0.2	70	255	Run #3
9:50	167.2	11.4	-0.7	70	256	Run #3
9:51	168.1	11.4	-0.4	70	256	Run #3
9:52	167.2	11.4	-0.3	70	256	Run #3
9:53	168.8	11.3	-0.7	70	256	Run #3
9:54	168	11.3	-0.5	70	256	Run #3
9:55	168.7	12	-0.4	70	257	Run #3
9:56	101.4	17.7	6.3	70	256	Run #3
9:57	70.6	15.3	5.7	70	256	Run #3
9:58	167.2	11.9	0.5	70	256	Run #3
9:59	187.3	12.1	-0.1	70	256	Run #3
10:00	187.4	12.4	-0.2	70	256	Run #3
10:01	188.5	12.4	-0.3	70	256	Run #3
	161.6	12.0	0.2	69.7	254.5	21 Min. Analyzer Average, Ca

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Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
	0.25	0.00				Avg. Zero Bias Check, Co
	218.00	12.30				Avg. Mid Span Bias Check, Cm
	224.1	12.47				Actual Mid Span Value, Cma
	166.0	12.2				Corrected Conc., Cstack
	0.362 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
10:02	179.1	5.5	-0.1	70	255	Stack Gas
10:03	9.1	0	0.5	71	253	Bias Checks
10:04	0.3	0	0.1	71	250	Bias Checks
10:05	0.3	0	0.1	71	248	Bias Checks
10:06	**0.2**	**0**	**0.1**	71	246	**Zero Span Gas**
10:07	74.2	0	0.1	71	245	Bias Checks
10:08	217.3	0	0.2	70	244	Bias Checks
10:09	218.1	0	0.2	71	243	Bias Checks
10:10	**218.1**	0	0.3	71	242	**Mid NOx Span Gas**
10:11	175.2	9.4	13	71	242	Bias Checks
10:12	9	12.3	5.7	71	241	Bias Checks
10:13	0.3	12.3	0.1	71	241	Bias Checks
10:14	0.3	**12.3**	0.1	71	241	**Mid O2/CO2 Span Gas**
10:15	0.2	12	0.1	71	241	Bias Checks
10:16	0	0.2	0.1	71	241	Bias Checks
10:17	0	3.1	0.1	71	241	Bias Checks
10:18	122.2	12	0	71	244	Stack Gas
10:19	160.1	11.5	0.1	71	246	Stack Gas
10:20	170.2	11.7	0.1	71	249	Stack Gas
10:21	169.8	11.6	0.2	71	250	**Run #4**
10:22	169	11.7	-0.6	71	252	**Run #4**
10:23	167.8	11.5	-0.3	71	253	**Run #4**
10:24	164.3	11.3	-0.3	71	254	**Run #4**
10:25	162.5	11.3	-0.9	71	255	**Run #4**
10:26	164.8	11.4	-1	71	256	**Run #4**
10:27	166.1	11.5	-0.7	71	257	**Run #4**
10:28	167.9	11.4	-0.7	71	257	**Run #4**
10:29	167.3	11.3	-0.6	71	258	**Run #4**
10:30	165.8	11.2	-0.5	71	258	**Run #4**
10:31	165.8	11.3	-1.3	71	258	**Run #4**
10:32	168.9	11.3	-0.6	71	258	**Run #4**
10:33	167.6	11.4	-0.9	71	258	**Run #4**
10:34	169	11.6	-0.8	71	258	**Run #4**
10:35	169.9	12.2	-0.6	71	258	**Run #4**
10:36	103.4	17.7	14.1	71	258	**Run #4**
10:37	71.7	15.4	6.7	71	258	**Run #4**
10:38	170.6	12.2	0.2	71	258	**Run #4**
10:39	183.9	12.1	-0.3	71	257	**Run #4**
10:40	187.4	12.2	-1	71	257	**Run #4**
10:41	191.6	12.1	-1	71	257	**Run #4**
	162.6	12.1	0.4	71.0	256.4	21 Min. Analyzer Average, Ca
	0.25	0.00				Avg. Zero Bias Check, Co
	217.95	12.30				Avg. Mid Span Bias Check, Cm
	224.1	12.47				Actual Mid Span Value, Cma
	167.1	12.2				Corrected Conc., Cstack

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Minute Data Averages

Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
	0.366 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
10:42	179.1	6.6	2.7	71	256	Stack Gas
10:43	31.4	0	6.7	71	254	Stack Gas
10:44	0.3	0	0.1	71	251	Bias Checks
10:45	0.3	0	0.1	71	249	Bias Checks
10:46	**0.3**	**0**	**0.1**	71	247	**Zero Span Gas**
10:47	66.6	0	0.1	71	246	Bias Checks
10:48	217.3	0	0.2	71	245	Bias Checks
10:49	217.6	0	0.2	71	244	Bias Checks
10:50	**217.8**	0	0.2	71	243	**Mid NOx Span Gas**
10:51	212.8	5.3	0.5	71	242	Bias Checks
10:52	20	12.3	1.1	71	242	Bias Checks
10:53	0.4	12.3	0.1	71	241	Bias Checks
10:54	0.3	**12.3**	0.1	71	241	**Mid O2/CO2 Span Gas**
10:55	0.3	12.9	0.1	71	241	Bias Checks
10:56	19.3	17.6	-0.4	71	244	Bias Checks
10:57	85.7	15.6	7	71	246	Stack Gas
10:58	140.8	11.5	1.3	71	248	Stack Gas
10:59	152.7	11.3	-0.1	71	250	Stack Gas
11:00	166.7	11.6	0.1	71	251	Stack Gas
11:01	167	11.4	0.5	71	252	**Run #5**
11:02	165.2	11.4	-0.4	71	253	**Run #5**
11:03	164	11.4	-0.3	71	254	**Run #5**
11:04	165.9	11.3	-0.6	71	255	**Run #5**
11:05	163.4	11.2	-0.1	71	256	**Run #5**
11:06	160.9	11.2	-0.3	71	256	**Run #5**
11:07	160.6	10.9	-0.7	71	257	**Run #5**
11:08	159.8	11.1	-1.1	71	257	**Run #5**
11:09	161.7	11	-0.7	71	257	**Run #5**
11:10	161.4	11.1	-0.8	71	257	**Run #5**
11:11	163.8	11	-0.5	71	257	**Run #5**
11:12	161.6	10.9	-0.2	71	257	**Run #5**
11:13	161.8	10.8	-0.5	71	257	**Run #5**
11:14	160	11	-0.9	71	257	**Run #5**
11:15	163.9	11.7	-0.6	71	257	**Run #5**
11:16	99	17.6	8.9	71	257	**Run #5**
11:17	69.3	15.3	6.5	71	257	**Run #5**
11:18	165.7	12	0.4	71	256	**Run #5**
11:19	186.5	11.9	-0.1	71	256	**Run #5**
11:20	189.7	12.1	-0.5	71	256	**Run #5**
11:21	191.8	12.3	-0.5	71	256	**Run #5**
	159.2	11.8	0.4	71.0	256.0	**21 Min. Analyzer Average, Ca**
	0.30	0.00				**Avg. Zero Bias Check, Co**
	217.40	12.30				**Avg. Mid Span Bias Check, Cm**
	224.1	12.47				**Actual Mid Span Value, Cma**
	164.0	12.0				**Corrected Conc., Cstack**
	0.350 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
11:22	140.1	1	1.9	72	254	Stack Gas
11:23	0.5	0	0.1	72	252	Bias Checks
11:24	0.3	0	0.1	72	250	Bias Checks

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Minute Data Averages

Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
11:25	**0.3**	**0**	**0.1**	71	248	**Zero Span Gas**
11:26	99	0	0.1	71	246	Bias Checks
11:27	216.8	0	0.1	71	245	Bias Checks
11:28	**217**	0	0.3	71	244	**Mid NOx Span Gas**
11:29	208.6	5.9	1.2	71	244	Bias Checks
11:30	41.8	12.3	3.4	71	243	Bias Checks
11:31	0.3	**12.3**	0.1	72	243	**Mid O2/CO2 Span Gas**
11:32	1.8	12.3	0.1	72	243	Bias Checks
11:33	170.7	12.3	0.1	72	245	Bias Checks
11:34	207.1	12.3	0.1	72	247	Stack Gas
11:35	208.3	13.1	0.4	72	248	**Run #6**
11:36	134.4	17.7	0.5	72	250	**Run #6**
11:37	82.3	15.6	5.8	72	251	**Run #6**
11:38	142.8	11.6	1.2	72	252	**Run #6**
11:39	151.9	11.2	-0.2	72	253	**Run #6**
11:40	156.8	11.3	-1.1	72	253	**Run #6**
11:41	161.2	11.2	0	72	254	**Run #6**
11:42	161.2	11.3	-1	71	254	**Run #6**
11:43	162.7	11.4	-0.9	71	255	**Run #6**
11:44	163.3	11.2	-0.2	71	255	**Run #6**
11:45	161.3	11.1	-0.2	71	255	**Run #6**
11:46	159.7	11.2	-0.9	72	256	**Run #6**
11:47	163.3	11.2	-1	72	256	**Run #6**
11:48	162.4	11.2	-0.3	72	256	**Run #6**
11:49	163.1	11.3	-0.8	72	256	**Run #6**
11:50	163.1	11.1	-0.3	72	256	**Run #6**
11:51	162	11.1	-1.1	72	256	**Run #6**
11:52	163.9	10.9	-0.5	72	256	**Run #6**
11:53	162.3	11.2	-1	72	255	**Run #6**
11:54	166.6	11.3	-1.1	72	255	**Run #6**
11:55	167.1	12.1	-0.4	72	255	**Run #6**
	158.1	11.9	-0.1	71.8	254.1	**21 Min. Analyzer Average, Ca**
	0.30	0.00				**Avg. Zero Bias Check, Co**
	216.60	12.30				**Avg. Mid Span Bias Check, Cm**
	224.1	12.47				**Actual Mid Span Value, Cma**
	163.5	12.0				**Corrected Conc., Cstack**
	0.350 (lb/MMBtu)		Fd	7601.5		**NOx Emission Factor**
11:56	107.3	17.7	19.6	72	255	Bias Checks
11:57	72.4	15.4	7.5	72	255	Bias Checks
11:58	101.9	12.4	4.2	72	254	Bias Checks
11:59	1.9	12.3	1.4	72	252	Bias Checks
12:00	0.3	**12.3**	0.1	72	250	**Mid O2/CO2 Span Gas**
12:01	44.9	3.3	0.1	72	249	Bias Checks
12:02	216	0	0.1	72	247	Bias Checks
12:03	**216.2**	0	0	73	246	**Mid NOx Span Gas**
12:04	199.2	0	0.4	73	245	Bias Checks
12:05	8.5	0	0.6	73	243	Bias Checks
12:06	0.3	0	0.1	73	242	Bias Checks
12:07	**0.3**	**0**	**0.1**	73	241	**Zero Span Gas**
12:08	23.2	6.3	0	73	241	Stack Gas
12:09	180.5	12	0.4	73	244	Stack Gas

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Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
12:10	200.7	12.1	0.4	73	246	Stack Gas
12:11	199.6	12.3	0.3	73	248	Run #7
12:12	200.3	12.3	-0.1	73	249	Run #7
12:13	201.8	12.3	-0.2	73	250	Run #7
12:14	204.7	12.2	0	73	251	Run #7
12:15	205.6	13.2	0.4	73	252	Run #7
12:16	122.4	17.6	3.6	73	253	Run #7
12:17	88.9	15.5	8.2	73	254	Run #7
12:18	141.9	11.6	1.3	73	254	Run #7
12:19	151.5	11.4	-0.3	73	255	Run #7
12:20	155.9	11.3	-0.7	73	255	Run #7
12:21	157.7	11.3	-0.8	73	255	Run #7
12:22	161.5	11.3	-0.6	73	256	Run #7
12:23	159.8	11.3	-0.3	73	256	Run #7
12:24	161.1	11.3	-1	73	256	Run #7
12:25	161.4	11.3	-0.5	73	256	Run #7
12:26	161.5	11.3	-0.8	73	256	Run #7
12:27	161.3	11.1	-0.5	73	256	Run #7
12:28	161.7	11.3	-0.8	74	256	Run #7
12:29	162.1	11.2	-0.2	74	256	Run #7
12:30	163.8	11.3	-1	74	255	Run #7
12:31	165.2	11.2	-0.3	74	255	Run #7
	164.3	12.1	0.3	73.2	254.0	21 Min. Analyzer Average, Ca
	0.30	0.00				Avg. Zero Bias Check, Co
	216.70	12.30				Avg. Mid Span Bias Check, Cm
	224.1	12.47				Actual Mid Span Value, Cma
	169.8	12.2				Corrected Conc., Cstack
	0.372 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
12:32	124.2	2.5	7.5	74	254	Bias Checks
12:33	3	0	2.1	74	252	Bias Checks
12:34	0.3	0	0.1	74	249	Bias Checks
12:35	**0.3**	**0**	**0.1**	74	248	Zero Span Gas
12:36	29.2	2.7	0	74	246	Bias Checks
12:37	202.7	0	0.2	74	245	Bias Checks
12:38	216.9	0	0.2	74	244	Bias Checks
12:39	**217.2**	0	0.1	74	243	Mid NOx Span Gas
12:40	166.6	9.8	3.3	74	242	Bias Checks
12:41	1.9	12.3	1.2	74	242	Bias Checks
12:42	0.3	**12.3**	0.1	74	242	Mid O2/CO2 Span Gas
12:43	9.7	12.3	0.1	74	243	Bias Checks
12:44	181.9	12.2	0.1	74	245	Stack Gas
12:45	196.4	12.2	0.1	74	247	Stack Gas
12:46	196.9	12.2	0	74	248	Run #8
12:47	198.1	12.3	-0.3	74	250	Run #8
12:48	199	12.3	-0.2	74	251	Run #8
12:49	200.9	12.2	-0.4	74	252	Run #8
12:50	202.7	12.1	-0.3	75	253	Run #8
12:51	204	12.2	-0.2	76	254	Run #8
12:52	205.4	12.1	-0.1	76	254	Run #8
12:53	206	12.2	0.1	76	255	Run #8
12:54	204.9	12.5	0.1	76	256	Run #8

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
Annual RATA - B-Battery Combustion Stack
Chester Mobile Air Quality Laboratory Data

AUGUST 12, 2009

Minute Data Averages

Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
12:55	204.7	13.4	0	76	256	Run #8
12:56	126.4	17.7	0	76	256	Run #8
12:57	83.6	15.7	7	76	256	Run #8
12:58	145	11.8	0.8	76	256	Run #8
12:59	156.5	11.5	0	76	256	Run #8
13:00	157.8	11.4	-0.7	76	256	Run #8
13:01	158.9	11.2	-0.6	76	256	Run #8
13:02	159.3	11.5	-1	76	256	Run #8
13:03	161.2	11.3	-0.5	75	256	Run #8
13:04	157.9	11.3	-0.7	74	256	Run #8
13:05	158.3	11.2	-0.4	74	255	Run #8
13:06	158.3	11.3	-0.8	73	255	Run #8
	173.6	12.4	0.1	75.2	254.4	21 Min. Analyzer Average, Ca
	0.30	0.00				Avg. Zero Bias Check, Co
	216.90	12.30				Avg. Mid Span Bias Check, Cm
	224.1	12.47				Actual Mid Span Value, Cma
	179.3	12.5				Corrected Conc., Cstack
	0.406 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
13:07	133.2	12.1	-1	73	254	Bias Checks
13:08	0.6	12.3	0.2	73	252	Bias Checks
13:09	0.3	**12.3**	0.1	73	250	**Mid O2/CO2 Span Gas**
13:10	72.1	2.5	0.1	74	249	Bias Checks
13:11	215.6	0	0.1	75	246	Bias Checks
13:12	216.5	0	-0.1	76	245	Bias Checks
13:13	**216.6**	0	0	76	243	**Mid NOx Span Gas**
13:14	193.4	0	0.2	76	242	Bias Checks
13:15	0.8	0	0.2	76	241	Bias Checks
13:16	0.3	0	0.1	76	241	Bias Checks
13:17	**0.3**	**0**	**0.1**	76	241	**Zero Span Gas**
13:18	15.3	6.6	-0.2	77	241	Bias Checks
13:19	156.4	11.5	0	77	244	Bias Checks
13:20	169.5	11.7	-0.5	76	246	Stack Gas
13:21	171	11.5	-0.1	77	248	Run #9
13:22	170.7	11.6	-0.7	77	249	Run #9
13:23	171.8	11.6	-0.3	77	251	Run #9
13:24	173.4	11.6	-0.5	77	252	Run #9
13:25	172.7	11.6	0.1	77	253	Run #9
13:26	170	11.4	-0.3	77	254	Run #9
13:27	168.9	11.4	-0.9	77	255	Run #9
13:28	168.8	11.4	-0.2	77	255	Run #9
13:29	168.7	11.1	-0.5	77	256	Run #9
13:30	165.4	11.1	-0.1	77	256	Run #9
13:31	166.9	11.1	-0.5	77	256	Run #9
13:32	165.8	11.1	0.4	77	257	Run #9
13:33	167.1	11.1	-0.1	77	257	Run #9
13:34	165.5	11.2	-0.2	77	257	Run #9
13:35	168	13.3	-0.6	77	257	Run #9
13:36	88.6	17.1	17.6	77	257	Run #9
13:37	96.4	12.7	0.1	77	256	Run #9
13:38	160.7	11.6	0.1	77	256	Run #9
13:39	168.3	11.8	-0.4	77	256	Run #9

U.S. Steel Corporation - Mon Valley Works
Clairton Plant - Clairton, PA
Annual RATA - B-Battery Combustion Stack
Chester Mobile Air Quality Laboratory Data

AUGUST 12, 2009

Minute Data Averages

Hour (EDT)	NOx (ppm dry)	O2 (ppm dry)	NO2 (ppm dry)	Trailer (F)	Line #1 (248+/-25F)	Notes
13:40	173.4	11.9	-0.7	77	256	Run #9
13:41	177.3	12	-0.4	77	256	Run #9
	161.9	11.9	0.6	77.0	254.8	21 Min. Analyzer Average, Ca
	0.30	0.00				Avg. Zero Bias Check, Co
	216.60	12.30				Avg. Mid Span Bias Check, Cm
	224.1	12.47				Actual Mid Span Value, Cma
	167.4	12.0				Corrected Conc., Cstack
	0.358 (lb/MMBtu)		Fd	7601.5		NOx Emission Factor
13:42	134.6	3.3	1	77	255	Bias Checks
13:43	0.8	0	0.4	77	253	Bias Checks
13:44	0.3	0	0.1	77	251	Bias Checks
13:45	**0.3**	**0**	**0.1**	77	249	**Zero Span Gas**
13:46	133	0	0.1	77	247	Bias Checks
13:47	216.6	0	0.2	77	245	Bias Checks
13:48	**216.6**	0	0.3	77	244	**Mid NOx Span Gas**
13:49	175.7	9.1	2.1	77	243	Bias Checks
13:50	0.7	12.3	0.2	77	243	Bias Checks
13:51	0.3	**12.3**	0.1	77	243	**Mid O2/CO2 Span Gas**
13:52	14.1	12.5	0.1	77	243	Bias Checks
13:53	182.8	12.4	0.1	77	246	Stack Gas
13:54	194.9	12.4	0.1	77	247	Stack Gas

UNITED STATES STEEL CORPORATION
MON VALLEY COMPLEX - CLAIRTON PLANT
CLAIRTON, PENNSYLVANIA

TABLE A

B-BATTERY COMBUSTION STACK
O_2 CEM ANNUAL RATA RESULTS
AUGUST 12, 2009

All Test Runs

Test Run No.	Test Date	Start Time (EDT)	Stop Time (EDT)	RM Test Run Avg. O2 (%)	USS CEM Test Run Avg. O2 (%)	Arithmetic Difference (%)
1	8/12/2009	8:30	8:50	12.2	12.5	-0.3
2	8/12/2009	9:06	9:26	12.5	12.8	-0.3
3	8/12/2009	9:41	10:01	12.2	12.4	-0.3
4	8/12/2009	10:21	10:41	12.2	12.5	-0.3
5	8/12/2009	11:01	11:21	12.0	12.3	-0.3
6	8/12/2009	11:35	11:55	12.0	12.3	-0.3
7	8/12/2009	12:11	12:31	12.2	12.5	-0.3
8	8/12/2009	12:46	13:06	12.5	12.8	-0.3
9	8/12/2009	13:21	13:41	12.0	12.3	-0.2

Results:

	Data Points (n)		9
	Arithmetic Mean Difference (d)		-0.267
	Standard Deviation (Sd)		0.019
	Confidence Coefficient (CC)		0.014
	Average RM Value (ARM)		12.2
	Relative Accuracy (RA - 1)	passed	2.3% <= 20%
or	Relative Accuracy (RA - 3)	passed	0.267 <= 1

Notes:

RM = Reference Method
USS CEM = U.S. Steel Clairton Plant's Continuous Emission Monitor
CC = (t value) x (Sd / n^0.5) where t value = 2.306 for n = 9
RA - 1 = (Abs(d) + Abs(CC)) / ARM
RA - 3 = Average Absolute Arithmetic Difference
Chester Clock= USS Clock + 64 minutes

Calculations according to U.S. EPA Performance Specification 2 and
PA DEP Continuous Source Monitoring Manual (Revision No. 8), Table III

MON VALLEY COMPLEX - CLAIRTON PLANT
CLAIRTON, PENNSYLVANIA

TABLE A1

B-BATTERY F-FACTOR CALCULATION
USING COKE OVEN GAS ANALYSIS
BAG #1

Gaseous Compound		Conc (%)	Btu Constant (Btu/scf/%)	Btu Contrib. (Btu/scf)
Hydrogen	H2	56.58	3.25	183.89
Methane	CH4	20.67	10.12	209.18
Nitrogen	N2	13.85	0	0.00
Carbon Monoxide	CO	4.901	3.21	15.73
Ethylene	C2H4	0.0596	16.04	0.96
Ethane	C2H6	0.0196	17.73	0.35
Carbon Dioxide	CO2	0.0413	0	0.00
Oxygen	O2	2.137	0	0.00
Propane	C3H8	0	25.24	0.00
Propylene	C3H6	0.00981	23.4	0.23
Total		98.27		410.33

Gaseous Compound		Conc. (%)	N2 Constant (scf/%)	N2 Contrib. (scf)	CO2 Constant (scf/%)	CO2 Contrib. (scf)	Total Contrib. (scf)
Hydrogen	H2	56.58	1.88	106.4	0	0.0	
Methane	CH4	20.67	7.53	155.6	1	20.7	
Nitrogen	N2	13.85	1	13.9	0	0.0	
Carbon Monoxide	CO	4.901	1.88	9.2	1	4.9	
Ethylene	C2H4	0.0596	11.3	0.7	2	0.1	
Ethane	C2H6	0.0196	13.2	0.3	2	0.0	
Carbon Dioxide	CO2	0.0413	0	0.0	0	0.0	
Oxygen	O2	2.137	0	0.0	0	0.0	
Propane	C3H8	0	18.8	0.0	3	0.0	
Propylene	C3H6	0.00981	16.9	0.2	3	0.0	
Total		98.27		286.2		25.8	311.9

$$Fd = \frac{311.9 \text{ scf flue gas products *}}{100 \text{ scf fuel gas *}} \cdot \frac{1 \text{ scf fuel gas *}}{410.33 \text{ Btu *}} \cdot \frac{1.00E+06 \text{ Btu}}{1 \text{ MMBtu}}$$

Fd = 7602 dscf / MMBtu

Analysis performed on August 12, 2009 at 09:38 (USS time).

MON VALLEY COMPLEX - CLAIRTON PLANT
CLAIRTON, PENNSYLVANIA

TABLE A2

B-BATTERY F-FACTOR CALCULATION
USING COKE OVEN GAS ANALYSIS
BAG #2

Gaseous Compound		Conc. (%)	Btu Constant (Btu/scf/%)	Btu Contrib. (Btu/scf)
Hydrogen	H2	56.66	3.25	184.15
Methane	CH4	21.55	10.12	218.09
Nitrogen	N2	13.01	0	0.00
Carbon Monoxide	CO	5.132	3.21	16.47
Ethylene	C2H4	0.0572	16.04	0.92
Ethane	C2H6	0.0205	17.73	0.36
Carbon Dioxide	CO2	0.0389	0	0.00
Oxygen	O2	1.842	0	0.00
Propane	C3H8	0.00275	25.24	0.07
Propylene	C3H6	0.00865	23.4	0.20
Total		98.32		420.26

Gaseous Compound		Conc. (%)	N2 Constant (scf/%)	N2 Contrib. (scf)	CO2 Constant (scf/%)	CO2 Contrib. (scf)	Total Contrib. (scf)
Hydrogen	H2	56.66	1.88	106.5	0	0.0	
Methane	CH4	21.55	7.53	162.3	1	21.6	
Nitrogen	N2	13.01	1	13.0	0	0.0	
Carbon Monoxide	CO	5.132	1.88	9.6	1	5.1	
Ethylene	C2H4	0.0572	11.3	0.6	2	0.1	
Ethane	C2H6	0.0205	13.2	0.3	2	0.0	
Carbon Dioxide	CO2	0.0389	0	0.0	0	0.0	
Oxygen	O2	1.842	0	0.0	0	0.0	
Propane	C3H8	0.00275	18.8	0.1	3	0.0	
Propylene	C3H6	0.00865	16.9	0.1	3	0.0	
Total		98.32		292.6		26.9	319.4

$$Fd = \frac{319.4 \text{ scf flue gas products *}}{100 \text{ scf fuel gas *}} \cdot \frac{1 \text{ scf fuel gas *}}{420.26 \text{ Btu *}} \cdot \frac{1.00E+06 \text{ Btu}}{1 \text{ MMBtu}}$$

Fd = 7601 dscf / MMBtu

Analysis performed on August 12, 2009 at 13:08 (USS time).

CHESTER MOBILE AIR QUALITY LABORATORY
NOX Analyzer Converter Efficiency Test Results
Test Performed on August 10, 2009
Test Performed by Hudson Tiffany using the Tedlar bag technique

Date	Hour	500 ppm NO_x	500 ppm NO_2	Trailer Temp (F)	<<<RANGE <<<UNITS
8/10/2009	11:00	114.9	6.9	81	Cal
8/10/2009	11:01	60.3	3.9	82	Ambient Air
8/10/2009	11:02	108.8	1	82	Ambient Air
8/10/2009	11:03	124.8	2.1	83	Bag On
8/10/2009	11:04	124.8	3.5	84	**Test**
8/10/2009	11:05	124.6	5.3	84	**Test**
8/10/2009	11:06	124.5	7	84	**Test**
8/10/2009	11:07	124.7	8.8	84	**Test**
8/10/2009	11:08	124.5	10.4	84	**Test**
8/10/2009	11:09	124.5	11.9	84	**Test**
8/10/2009	11:10	124.5	13.8	84	**Test**
8/10/2009	11:11	124.5	15.2	84	**Test**
8/10/2009	11:12	124.5	16.9	84	**Test**
8/10/2009	11:13	124.5	18.2	83	**Test**
8/10/2009	11:14	124.3	19.5	83	**Test**
8/10/2009	11:15	124.2	20.8	83	**Test**
8/10/2009	11:16	124.2	22	83	**Test**
8/10/2009	11:17	124.2	23.4	83	**Test**
8/10/2009	11:18	124.2	24.6	83	**Test**
8/10/2009	11:19	124.1	25.9	82	**Test**
8/10/2009	11:20	124	27.2	81	**Test**
8/10/2009	11:21	124	28.1	81	**Test**
8/10/2009	11:22	123.9	29.2	83	**Test**
8/10/2009	11:23	123.9	30.3	83	**Test**
8/10/2009	11:24	123.7	31.2	84	**Test**
8/10/2009	11:25	123.7	32.2	84	**Test**
8/10/2009	11:26	123.7	33.3	84	**Test**
8/10/2009	11:27	123.5	34.1	84	**Test**
8/10/2009	11:28	123.4	35.2	84	**Test**
8/10/2009	11:29	123.4	36.1	85	**Test**
8/10/2009	11:30	123.2	37	85	**Test**
8/10/2009	11:31	123.2	37.9	85	**Test**
8/10/2009	11:32	122.9	38.5	86	**Test**
8/10/2009	11:33	122.8	39.5	86	**Test**
8/10/2009	11:34	122.8	40.3	86	post
8/10/2009	11:35	122.8	41.2	87	post
		124.8			**Maximum**
		122.8			**Minimum**
		122.3			**Allowable Minimum**

Converter Efficiency Test is ACCEPTABLE

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Test Notes
API Chemiluminescent NOx Analyzer Model 200AH S/N 258
API Fluorescent SO2 Analyzer Model 100AH S/N 064
API Gas Filter Correlation CO Analyzer Model 300 S/N 905
California Analytical Instruments O2 Analyzer Model 100-P S/N 4J06002
California Analytical Instruments CO2 Analyzer Model 100 S/N 5J06007
Test Performed on January 23, 2009 by Dan Nadzam & Hudson Tiffany

These interference tests demonstrate that the Chester Engineers CEMS are within the U.S. EPA specifications allowed for analyzer interference. Each analyzer was operated at the lowest typical range. Protocol 1 calibration Gases were used.

The following CALIBRATION worksheet demonstrates that the analyzers were in calibration (+/- 2.0% of the calibrated span) prior to the interference testing. The data is the response of each analyzer to the CALIBRATION SPAN gas. All gases were introduced through a common manifold.

The following INTERFERENCE worksheet demonstrates two things. One is that the analyzers have a linear response as verified by the acceptable response (+/- 2.0% of the calibrated span) to a mid level calibration gas. The second is the response of each analyzer to the interferent test gas.

The SO2 analyzer response test was performed by blending a mixture of interferent test gases. The purpose of mixing the gases was to determine the least amount of oxygen necessary to reduce the NO interference (note the unacceptable SO2 response to the Protocol 1 NO gases, which are balance nitrogen) to acceptable levels. The analyzer manufacturer suggested at least 3% would be necessary, yet it was found that 1.9% oxygen would be acceptable.

Each analyzer's Interference Response is summarized on the RESULTS worksheet.

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Tests
API Chemiluminescent NOx Analyzer Model 200AH S/N 258
API Fluorescent SO2 Analyzer Model 100AH S/N 064
API Gas Filter Correlation CO Analyzer Model 300 S/N 905
California Analytical Instruments O2 Analyzer Model 100-P S/N 4J06002
California Analytical Instruments CO2 Analyzer Model 100 S/N 5J06007
Test Performed on January 23, 2009 by Dan Nadzam & Hudson Tiffany

Hour	60.5 ppm CO	119.5 ppm SO_2	88.8 ppm NO_x	24.88 % O_2	19.78 % CO_2	88.8 ppm NO	deg F Trailer	<<<CALIBRATION SPAN <<<UNITS
14:44	-0.3	-0.1	0	20.6	0.1	0.1	83	Ambient Air
14:45	-0.3	-0.1	0	20.6	0.1	0.1	83	Ambient Air
14:46	-0.3	-0.1	0	19.2	0.1	0.1	83	Zero Gas
14:47	-0.3	-0.1	0	0	0	0.1	83	Zero Gas
14:48	-0.2	-0.1	0	0	0	0.1	83	Zero Gas
14:49	**-0.1**	**-0.1**	**0**	**0**	**0**	0.1	83	**Zero Gas**
14:50	-0.1	-0.2	0	0.1	0	0.1	83	Low CO
14:51	18.1	-0.1	0	0	0	0.1	83	Low CO
14:52	28.8	-0.2	0	0	0	0.1	83	Low CO
14:53	29.3	-0.1	0	0	0	0.1	83	Low CO (30.5)
14:54	**29.3**	**-0.2**	**0**	**0**	**0**	0.1	83	**Low CO Interference**
14:55	26.2	13.8	0	0.2	0	0.1	84	Low SO2
14:56	3.8	50	0.1	0	0	0.1	84	Low SO2
14:57	-0.1	50.6	0.3	0	0	0.1	84	Low SO2
14:58	-0.3	50.8	0.3	0	0	0.1	84	Low SO2 (50.94)
14:59	**-0.3**	**50.8**	**0.3**	**0**	**0**	0.1	84	**Low SO2 Interference**
15:00	-0.4	50.8	0.3	0	0	0.1	84	Low SO2
15:01	-0.4	38.6	0.7	0	0	-0.3	84	Low NOx
15:02	-0.4	17.3	44.9	0	0	0	84	Low NOx
15:03	-0.4	17.2	50.4	0	0	0.7	84	Low NOx
15:04	-0.4	17.2	50.7	0	0	0.4	84	Low NOx
15:05	**-0.4**	**17.3**	**50.7**	**0**	**0**	0.6	84	**Low NOx Interference**
15:06	-0.4	9.4	44.4	0	0	0.4	83	Low NOx
15:07	-0.4	-0.1	0.1	0	0	0.2	83	Ambient Air
15:08	-0.3	-0.1	0	3.2	2.3	0.1	83	Ambient Air
15:09	-0.4	-0.1	0	12.4	9.9	0.1	84	Ambient Air
15:10	-0.5	-0.1	0	12.4	10	0.1	84	Ambient Air
15:11	-0.8	-0.1	0	12.4	10	0.1	83	Ambient Air
15:12	-1.1	-0.1	0	12.4	10	0.1	84	Ambient Air
15:13	-0.7	-0.1	0	3.8	3.2	0.1	84	Ambient Air
15:14	-0.3	-0.1	0	0	0	0.1	84	Check Zero
15:15	-0.1	-0.1	0	0	0	0.1	84	Check Zero
15:16	-0.1	-0.1	0	0.1	0	0.1	84	Low O2/CO2
15:17	-0.2	-0.1	0	12.2	9.4	0.1	84	Low O2/CO2
15:18	-0.4	-0.1	0	12.5	10.3	0.1	84	Low O2/CO2 (12.47/10.34)
15:19	**-0.7**	**-0.1**	**0**	**12.4**	**10.3**	0.1	84	**Low O2/CO2 Interference**
15:20	-0.9	-0.1	0	18.3	3.3	0.1	84	Ambient Air
15:21	-0.9	0.1	0	20.7	0.2	0.1	84	Ambient Air
15:22	-0.6	0	0	20.6	0.2	0.1	84	Ambient Air
15:23	-0.4	-0.1	0	20.6	0.2	0.1	84	Ambient Air
15:24	-0.3	-0.1	0	20.7	0.2	0.1	84	Ambient Air
15:25	-0.3	-0.1	0	20.7	0.2	0.1	84	Ambient Air
15:26	-0.3	-0.1	0	20.6	0.2	0.1	84	Ambient Air
15:27	**-0.3**	**-0.1**	**0**	**20.6**	**0.2**	0.1	84	**Ambient Air Interference**
15:28	-0.3	-0.1	0	15.6	0.2	0.1	84	Mixed Gas
15:29	-0.3	1.9	30.6	1.5	1.3	0.4	84	Mixed Gas
15:30	-0.4	3	43.8	1.3	1.2	0.1	84	Mixed Gas
15:31	-0.5	3.3	44	1.3	1.2	0.1	84	Mixed Gas
15:32	-0.7	3.5	44.5	1.2	1.1	0.2	84	Mixed Gas
15:33	**-0.8**	**3.6**	**44.8**	**1.2**	**1.1**	0.3	84	Mixed Gas (@ 1.2 % O2)
15:34	-0.8	3.8	45.1	1.1	1.1	0.3	84	Mixed Gas
15:35	-0.8	3.8	45.2	1.4	1.2	0.4	84	Mixed Gas
15:36	-0.8	2.5	43.4	1.9	1.6	0.7	84	Mixed Gas
15:37	-0.8	2.4	42.1	1.9	1.6	0.4	83	Mixed Gas
15:38	-0.8	2.4	42.1	1.8	1.6	0.3	83	Mixed Gas
15:39	-0.8	2.4	42.1	1.9	1.6	0.3	83	Mixed Gas
15:40	**-0.8**	**2.4**	**42.1**	**1.9**	**1.6**	0.4	83	Mixed Gas (@ 1.9 % O2)
15:41	-0.8	2.4	42.1	1.9	1.6	0.4	83	Mixed Gas
15:42	-0.8	2.3	42	2	1.7	0.4	83	Mixed Gas
15:43	-0.8	1.9	41.1	2.5	2.1	0.6	83	Mixed Gas
15:44	-0.8	1.6	39.3	2.6	2.2	0.6	83	Mixed Gas
15:45	-0.8	1.5	38.8	2.7	2.3	0.4	83	Mixed Gas
15:46	**-0.8**	**1.5**	**38.3**	**2.7**	**2.3**	0.4	83	Mixed Gas (@ 2.7 % O2)
15:47	-0.8	1.5	38.6	2.7	2.3	0.2	83	Mixed Gas
15:48	-0.8	1.5	38.5	3	2.5	0.3	83	Mixed Gas
15:49	-0.8	1.1	36.5	3.6	3	0.5	83	Mixed Gas
15:50	-0.9	1	34.6	3.6	3.1	0.2	83	Mixed Gas
15:51	**-0.9**	**1**	**34.7**	**3.6**	**3.1**	0.4	83	Mixed Gas (@ 3.6 % O2)
15:52	-0.9	1	34.3	4.2	3.5	0.6	83	Mixed Gas
15:53	-0.9	0.6	29	5.1	4.3	0.7	83	Mixed Gas
15:54	-0.9	0.5	28	5.2	4.4	0.3	83	Mixed Gas
15:55	**-0.9**	**0.5**	**27.7**	**5.3**	**4.5**	0.1	83	Mixed Gas (@ 5.3 % O2)
15:56	-0.9	0.3	21	5.4	3.9	0.4	83	Mixed Gas

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Test Calibrations
API Chemiluminescent NOx Analyzer Model 200AH S/N 258
API Fluorescent SO2 Analyzer Model 100AH S/N 064
API Gas Filter Correlation CO Analyzer Model 300 S/N 905
California Analytical Instruments O2 Analyzer Model 100-P S/N 4J06002
California Analytical Instruments CO2 Analyzer Model 100 S/N 5J06007
Test Performed on January 23, 2009 by Dan Nadzam & Hudson Tiffany

Hour	60.5 ppm CO	119.5 ppm SO_2	88.8 ppm NO_x	24.88 % O_2	19.78 % CO_2	88.8 ppm NO_2	deg F Trailer	<<<CALIBRATION SPAN <<<UNITS
13:42	0.1	0	0	0	0	0.1	83	Zero Gas (Nitrogen)
13:43	-0.1	0	0	0	0	0.1	83	Zero Gas (Nitrogen)
13:44	-0.1	0	0	0	0	0.1	84	Zero Gas (Nitrogen)
13:45	-0.1	0	0	0	0	0.1	84	Zero Gas (Nitrogen)
13:46	**-0.1**	**0**	**0**	**0**	**0**	0.1	84	**Zero Gas (Nitrogen)**
13:47	5.7	0	0	0.1	0	0.1	84	CO Span Gas (60.5)
13:48	53.8	0	0	0	0	0.1	84	CO Span Gas (60.5)
13:49	60.7	0	0	0	0	0.1	84	CO Span Gas (60.5)
13:50	61	0	0	0	0	0.1	84	CO Span Gas (60.5)
13:51	60.7	0	0	0	0	0.1	84	CO Span Gas (60.5)
13:52	**60.6**	0	0	0	0	0.1	84	**CO Span Gas (60.5)**
13:53	48.8	47.6	0	0.1	0	0.1	84	SO_2 Span Gas (119.5)
13:54	4.6	115.5	0	0	0	0.1	84	SO_2 Span Gas (119.5)
13:55	0.1	116.7	0	0	0	0.1	84	SO_2 Span Gas (119.5)
13:56	-0.1	117	0	0	0	0.1	84	SO_2 Span Gas (119.5)
13:57	-0.3	118.1	0	0	0	0.1	84	SO_2 Span Gas (119.5)
13:58	-0.3	119.2	0	0	0	0.1	83	SO_2 Span Gas (119.5)
13:59	-0.4	**119.4**	0	0	0	0.1	83	**SO_2 Span Gas (119.5)**
14:00	-0.4	119.3	0	0	0	0.1	83	NO_x Span Gas (88.8)
14:01	-0.4	69.7	18.3	0	0	0.1	84	NO_x Span Gas (88.8)
14:02	-0.4	31.1	88.2	0	0.1	0.2	84	NO_x Span Gas (88.8)
14:03	-0.4	30.6	88.4	0	0.1	0.3	84	NO_x Span Gas (88.8)
14:04	-0.4	30.7	**88.3**	0	0.1	-0.1	84	**NO_x Span Gas (88.8)**
14:05	-0.4	15.9	77.6	13.5	9.2	1.6	84	24.88 % O_2, 19.78 % CO2
14:06	-0.7	0.2	13.8	24.9	18.9	2.6	84	24.88 % O_2, 19.78 % CO2
14:07	-0.9	0.2	0	25	19.8	0.1	84	24.88 % O_2, 19.78 % CO2
14:08	-1.2	0.1	0	25	19.8	0.1	84	24.88 % O_2, 19.78 % CO2
14:09	-1.3	0.1	0	25	19.8	0.1	84	24.88 % O_2, 19.78 % CO2
14:10	-1.3	0.1	0	**25**	**19.8**	0.1	84	**24.88 % O_2, 19.78 % CO2**
14:11	-1.3	0.1	0	25	19.8	0.1	84	24.88 % O_2, 19.78 % CO2
14:12	-0.5	0.3	0	18.8	6.5	0.1	84	Ambient Air
14:13	-0.4	0.9	0	20.6	0.3	0.1	85	Ambient Air
14:14	-0.3	0.5	0	20.5	0.3	0.1	85	Ambient Air

CHESTER ENGINEERS MOBILE AIR QUALITY LABORATORY
CEMS Interference Test Results
Test Performed on January 23, 2009 by Dan Nadzam & Hudson Tiffany

API Gas Filter Correlation CO Analyzer Model 300 S/N 905		
Calibration Span (C.S.) (ppmv, dry) = 60.5		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (ppm)
N_2	100%	-0.1
$O_2/CO_2/N_2$	12.47% / 10.34% / balance	-0.4
SO_2/N_2	50.94 ppm / balance	-0.3
NO/N_2	50.37 ppm / balance	-0.4
Ambient Air	20.9%O_2 / 79.1%N_2	-0.3
	Sum of absolute Response	1.5
	Sum as a percent of Calibration Span	2.48%
	Meets criteria of <= 2.5% of C.S.	YES

API Fluorescent SO_2 Analyzer Model 100AH S/N 064		
Calibration Span (C.S.) (ppmv, dry) = 119.5		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (ppm)
N_2	100%	-0.1
$O_2/CO_2/N_2$	12.47% / 10.34% / balance	-0.1
CO/N_2	30.5 ppm / balance	-0.2
$NO_x/O_2/CO_2/N_2$	42.1ppm / 1.9% / 1.6% / balance	2.4
Ambient Air	20.9%O_2 / 79.1%N_2	-0.1
	Sum of absolute Response	2.9
	Sum as a percent of Calibration Span	2.4%
	Meets criteria of <= 2.5% of C.S.	YES

API Chemiluminescent NO_x Analyzer Model 200AH S/N 258		
Calibration Span (C.S.) (ppmv, dry) = 88.8		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (ppm)
N_2	100%	0
$O_2/CO_2/N_2$	12.47% / 10.34% / balance	0
SO_2/N_2	50.94 ppm / balance	0.3
CO/N_2	30.5 ppm / balance	0
Ambient Air	20.9%O_2 / 79.1%N_2	0
	Sum of absolute Response	0.3
	Sum as a percent of Calibration Span	0.3%
	Meets criteria of <= 2.5% of C.S.	YES

California Analytical Instruments O_2 Analyzer Model 100-P S/N 4J06002		
Calibration Span (C.S.) (%, dry) = 24.9		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (%)
N_2	100%	0
SO_2/N_2	50.94 ppm / balance	0
NO/N_2	50.37 ppm / balance	0
CO/N_2	30.5 ppm / balance	0
	Sum of absolute Response	0
	Sum as a percent of Calibration Span	0.0%
	Meets criteria of <= 2.5% of C.S.	YES

California Analytical Instruments CO_2 Analyzer Model 100 S/N 5J06007		
Calibration Span (C.S.) (%, dry) = 19.8		
Test Gas Type	Concentration (ppm or %)	Analyzer Response (%)
N_2	100%	0
SO_2/N_2	50.94 ppm / balance	0
NO/N_2	50.37 ppm / balance	0
CO/N_2	30.5 ppm / balance	0
Ambient Air	20.9%O_2 / 79.1%N_2	0.2
	Sum of absolute Response	0.2
	Sum as a percent of Calibration Span	1.0%
	Meets criteria of <= 2.5% of C.S.	YES