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17.1

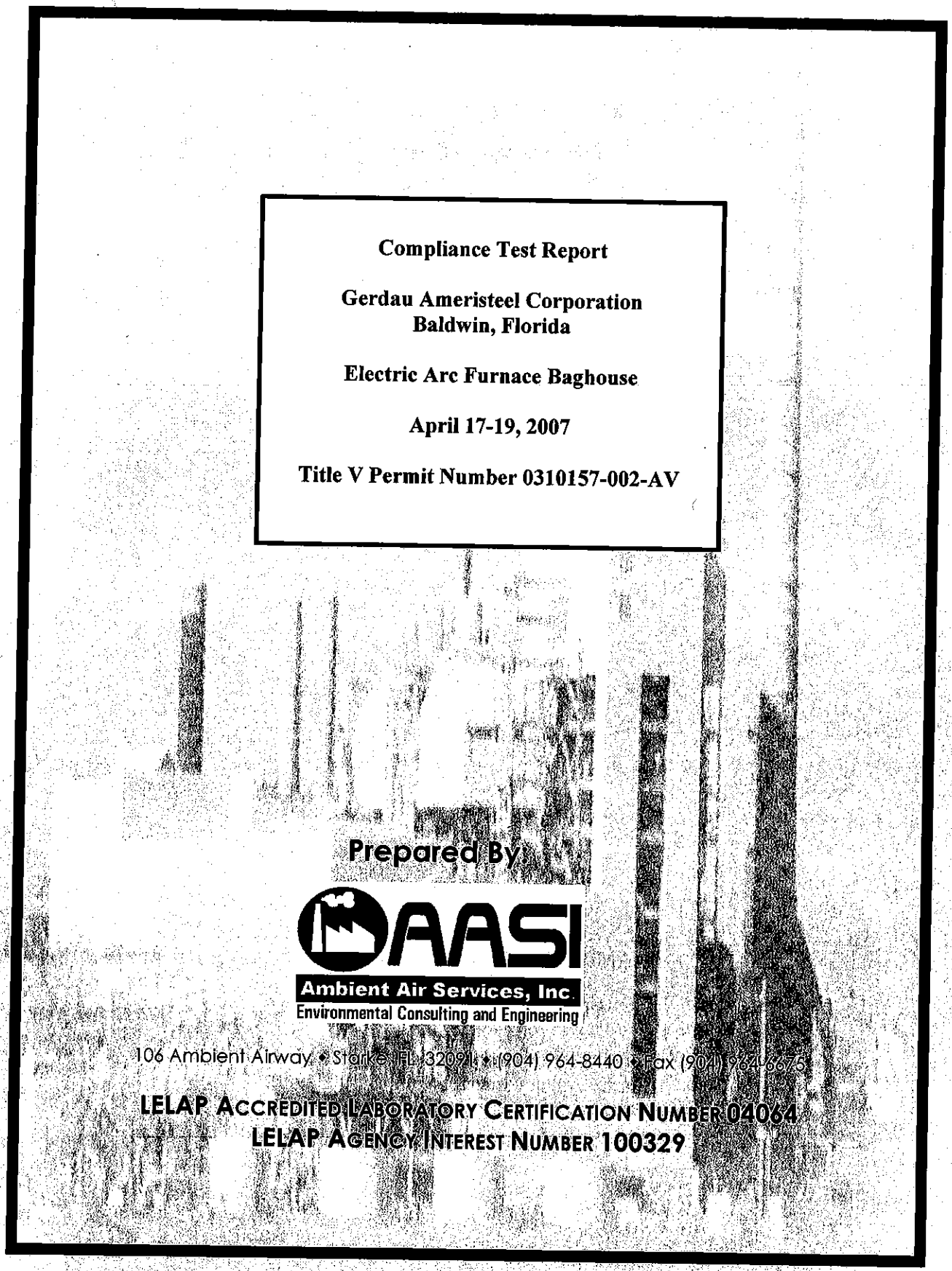
Compliance Test Report

Gerdau Ameristeel Corporation
Baldwin, Florida

Electric Arc Furnace Baghouse

April 17-19, 2007

Title V Permit Number 0310157-002-AV



Prepared By:

AASI
Ambient Air Services, Inc.
Environmental Consulting and Engineering

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LELAP ACCREDITED LABORATORY CERTIFICATION NUMBER 04064
LELAP AGENCY INTEREST NUMBER 100329

Compliance Test Report

Gerdau Ameristeel Corporation
Baldwin, Florida

Electric Arc Furnace Baghouse

April 17-19, 2007

Title V Permit Number 0310157-002-AV

AMBIENT AIR SERVICES, INC.
106 AMBIENT AIRWAY
STARKE, FLORIDA 32091
(904) 964-8440
LELAP Accredited Laboratory Certification Number 04064
LELAP Agency Interest Number 100329

CERTIFICATION

Ambient Air Services, Inc. (AASI) of Starke, Florida has completed the testing as described in this report for Gerdau Ameristeel's Baldwin, Florida facility. To the best of our knowledge and abilities, all information, facts, and test data are true and correct. Information supplied to AASI for use in this report from Gerdau Ameristeel Corporation is perceived to be accurate and is used as such where necessary.

This report contains pages 1 through 134.

This report was reviewed by:

Joseph L. Cooksey, Technical Director — Date: 6-6-07

David C. Sholtes, Quality Assurance Manager — Date: 6-6-07

Any questions concerning this report or the process information should be directed to:

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EXECUTIVE SUMMARY

Ambient Air Services, Inc. (AASI) conducted emission testing at Gerdau Ameristeel Corporation's Baldwin, Florida facility on April 17-19, 2007. The testing involved the determination of particulate matter (PM), lead (Pb), oxides of nitrogen (NO_x), carbon monoxide (CO), volatile organic compounds (VOC), and visible (VE) emissions from the Electric Arc and Ladle Refining Furnace Baghouse Stack. This test was conducted to satisfy requirements for annual testing as presented in the facility's Title V permit. In addition, the control device operating parameters were established as required by NSPS AAa. A summary of the results is listed in the Table on the following page:

Executive Summary

Gerdau Ameristeel Corporation
Baldwin, Florida

April 17-19, 2007

Sources	Parameters	Permit Limits	Test Results
Electric Arc Furnace Baghouse	Particulate Matter	0.0034 gr/dscf	0.0002 gr/dscf
	Lead	0.70 lbs/hr	0.01 lbs/hr
	Carbon Monoxide	300 lbs/hr 3.0 lbs/ton	233 lbs/hr 2.4 lbs/ton
	Oxides of Nitrogen	33.0 lbs/hr 0.33 lbs/ton	12.2 lbs/hr 0.13 lbs/ton
	Volatile Organic Compounds (as carbon)	29.5 lbs/hr 0.295 lbs/ton	5.2 lbs/hr 0.055 lbs/ton
	Visible Emissions	3% Opacity	0% Opacity
Dust Handling System	Visible Emissions	10% Opacity	0% Opacity
Meltshop Building	Visible Emissions	6% Opacity	0% Opacity
Control Device Operating Parameters Established	Total Fan Amperes [1] Operating Range	Minimum	531 Amperes
		Maximum	731 Amperes

Note: [1] A visible emission test was conducted on the meltshop building in order to establish operating parameters for the new baghouse (control device).

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Table of Contents (continued)

Revision History

Revision	Comments	Issue Date
0	Original issue to James Wold	June 1, 2007

INTRODUCTION

1.1 General

Gerdau Ameristeel Corporation (Gerdau) contracted with Ambient Air Services, Inc. (AASI) to perform emission testing on the Electric Arc Furnace Baghouse located in Baldwin, Florida. The testing was conducted to satisfy the specific requirements for annual emission testing listed in the facilities Title V permit (number 0310157-002-AV) and to establish the control device operating criteria as required in NSPS AAa. A summary of the testing performed is presented in Table 1-1-1. The testing was conducted April 17-19, 2007.

Table 1-1-1

Summary of Testing

Gerdau Ameristeel Corporation
Baldwin, Florida

April 17-19, 2007

Source	Parameters	Test Methods	Time Duration
Electric Arc Furnace Baghouse	Particulate Matter /Lead	40 CFR Part 60 Appendix A, Methods 1-5 and 12	3 runs, 4 hours minimum
	Carbon Monoxide	40 CFR Part 60 Appendix A, Method 10	3 runs, 2 heats each
	Oxides Of Nitrogen	40 CFR Part 60 Appendix A, Method 7E	3 runs, 2 heats each
	Volatile Organic Compounds	40 CFR Part 60 Appendix A, Methods 18 and 25A	3 runs, 2 heats each
	Visible Emissions	40 CFR Part 60 Appendix A, Method 9	Aggregate total 180 minutes
Dust Handling System	Visible Emissions	40 CFR Part 60 Appendix A, Method 9	Aggregate total 180 minutes
Meltshop Building	Visible Emissions	40 CFR Part 60 Appendix A, Method 9	Aggregate total 180 minutes

1.2 Project Participants

The personnel indicated in Table 1-2-1 participated in this project:

Table 1-2-1

Name	Affiliation	Project Responsibility
Randy Weston	Ambient Air Services, Inc.	Project Manager, Field Testing
Landon Hall	Ambient Air Services, Inc.	Field Testing
Susan H. Anderson	Ambient Air Services, Inc.	Report Preparation
George Hawkins	Ambient Air Services, Inc.	Visible Emissions Observer
Joseph L. Cooksey	Ambient Air Services, Inc.	Technical Director
David C. Sholtes	Ambient Air Services, Inc.	Quality Assurance Manager
James Wold	Gerdau Ameristeel Corporation	Environmental Manager
Paul Berman	Advanced Environmental Labs	Lead Analysis
Bill Kaufman	City of Jacksonville, RESD	Test Observer

2.0 SUMMARY OF RESULTS

The results of the testing demonstrate compliance with the limits established in the facilities Title V permit. The results are summarized in the following tables:

Table 2-1 presents a summary of test results.

Table 2-2 presents a summary of particulate matter (PM) emissions.

Table 2-3 presents a summary of lead (Pb) emissions.

Table 2-4 presents a summary of carbon monoxide (CO) emissions.

Table 2-5 presents a summary of oxides of nitrogen (NO_x) emissions.

Table 2-6 presents a summary of volatile organic compounds (VOC) emissions.

Table 2-7 presents a summary of visible (VE) emissions.

Table 2-8 presents a summary of the fan amperes range established for the control device.

Table 2-1

Summary of Test Results Gerdau Ameristeel Corporation Baldwin, Florida April 17-19, 2007			
Sources	**Parameters**	**Permit Limits**	**Test Results**
Electric Arc Furnace Baghouse	Particulate Matter	0.0034 gr/dscf	0.0002 gr/dscf
	Lead	0.70 lbs/hr	0.01 lbs/hr
	Carbon Monoxide	300 lbs/hr 3.0 lbs/ton	233 lbs/hr 2.4 lbs/ton
	Oxides of Nitrogen	33.0 lbs/hr 0.33 lbs/ton	12.2 lbs/hr 0.13 lbs/ton
	Volatile Organic Compounds (as carbon)	29.5 lbs/hr 0.295 lbs/ton	5.2 lbs/hr 0.055 lbs/ton
	Visible Emissions	3% Opacity	0% Opacity
Dust Handling System	Visible Emissions	10% Opacity	0% Opacity
Meltshop Building	Visible Emissions	6% Opacity	0% Opacity
Control Device Operating Parameters Established	Total Fan Amperes [1] Operating Range	Minimum	531 Amperes
		Maximum	731 Amperes

Note: [1] A visible emission test was conducted on the meltshop building in order to establish operating parameters for the baghouse (control device).

AASI

Particulate Emissions Summary

Gerdau Ameristeel Corporation
Baldwin, Florida
EAF Baghouse
April 17 - 19, 2007

AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2005

Run			Particulate Emissions		Volumetric Flow Rates		Stack		Sample Volume	Percent
Date	Number	Time	GR/SCFD	LBS/HR	ACFM	SCFMD	Temp °F	Moisture %	SCFD	Isokinetic
4/17/2007	1	9:00 13:48	0.0001	0.84	885937	786862	125	1	184.887	98
4/18/2007	2	8:35 13:36	0.0003	1.90	871388	763351	127	2	185.718	101
4/19/2007	3	8:28 13:03	0.0001	0.81	882055	767371	130	2	176.246	101
Average			**0.0002**	**1.18**	**879793**	**772528**	**127**	**2**	**182.284**	**100**

AASI

Lead Summary

Gerdau Ameristeel Corporation
Baldwin, Florida
EAF Baghouse
April 17-19, 2007
AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2005

Run			Lead	Volumetric Flow Rates		Stack		Sample Volume	Percent
Date	Number	Time	LBS/HR	ACFM	SCFMD	Temp °F	Moisture %	SCFD	Isokinetic
4/17/2007	1	9:00 13:48	0.010	885937	786862	125	1	184.887	98
4/18/2007	2	8:35 13:36	0.014	871388	763351	127	2	185.718	101
4/19/2007	3	8:28 13:03	0.014	882055	767371	130	2	176.246	101
Average			**0.013**	**879793**	**772528**	**127**	**2**	**182.284**	**100**

Laboratory Results (ug)		
Run 1	Run 2	Run 3
18.0	26.4	24.0

Table 2-4

AASI

Carbon Monoxide (CO) Emissions Summary
USEPA Method 10 (40 CFR Part 60 Appendix A)
Gerdau Ameristeel Corporation
Baldwin, Florida
EAF Baghouse
April 18-19, 2007

Run			Concentration	Volumetric Flow Rates	Production	Mass Emissions	
Date	Number	Time	ppm-v/v	SCFM-Dry	Tons per Hour	Pounds per Hour	Pounds per Ton
4/18/2007	1	8:41 10:35	64.0	763351	92.0	213.1	2.32
4/18/2007	2	10:56 12:55	76.6	763351	103.5	255.1	2.46
4/19/2007	3	8:28 10:26	68.7	767371	91.1	230.0	2.52
Average			**69.8**	**764691**	**95.5**	**232.7**	**2.44**

Table 2-5

AASI

Oxides of Nitrogen (NO_X) Emissions Summary
USEPA Method 7E (40 CFR Part 60 Appendix A)
Gerdau Ameristeel Corporation
Baldwin, Florida
EAF Baghouse
April 18-19, 2007

(Reported as Measured)

Run			Concentration			Volumetric Flow Rates	Production	Mass Emissions	
Date	Number	Time	NO ppm-v/v	NO_2 ppm-v/v	NOx ppm-v/v	SCFM-Dry	Tons per Hour	Pounds per Hour	Pounds per Ton
4/18/2007	1	8:41 10:35	2.7	0.4	3.1	763351	92.0	11.8	0.13
4/18/2007	2	10:56 12:55	2.9	0.3	3.2	763351	103.5	12.0	0.12
4/19/2007	3	8:28 10:26	3.3	0.2	3.5	767371	91.1	12.9	0.14
Average			**3.0**	**0.3**	**3.3**	**764691**	**95.5**	**12.2**	**0.13**

Table 2-6

AASI

Volatile Organic Compound (VOC) Emissions Summary
USEPA Method 18/25a (40 CFR Part 60 Appendix A)
Gerdau Ameristeel Corporation
Baldwin, Florida
EAF Baghouse
April 18-19, 2007

(Reported as Non-Methane Hydrocarbon)

Run			Concentration		Volumetric Flow Rates	Production	Mass Emissions (as Carbon)	
Date	Number	Time	ppm-v/v (as Propane)	ppm-v/v (as Carbon)	SCFM-Wet	Tons per Hour	Pounds per Hour	Pounds per Ton
4/18/2007	1	8:41 10:35	1.2	3.6	777300	92.0	5.2	0.057
4/18/2007	2	10:56 12:55	1.2	3.6	777300	103.5	5.2	0.051
4/19/2007	3	8:28 10:26	1.2	3.6	782332	91.1	5.3	0.058
Average			**1.2**	**3.6**	**778977**	**95.5**	**5.2**	**0.055**

Table 2-7

AASI

Visible Emission Observations (VE) Summary
USEPA Method 9 (40 CFR Part 60 Appendix A)

Gerdau Ameristeel Corporation
Baldwin, Florida
April 17, 2007

Date	Time		Sources	Opacity (Highest 6-Minute Average)
	Start	Stop		
4/17/2007	10:04	11:04	Meltshop Building	0.0%
	11:05	12:05		
	12:06	13:06		
4/17/2007	10:04	11:04	Baghouse Stack	0.0%
	11:05	12:05		
	12:06	13:06		
4/17/2007	13:15	14:15	Dust Handling System	0.0%
	14:16	15:16		
	15:17	16:17		

Table 2-8

Gerdau Ameristeel Corporation Baldwin, Florida EAF Baghouse April 17, 2007 (10:00 to 13:06)		
Parameter	**Minimum**	**Maximum**
Fan Number 1 Amperes	212 amperes (15 minute average) While EAF is operating	216 amperes (15 minute average) While EAF is operating
Fan Number 2 Amperes	202 amperes (15 minute average) While EAF is operating	206 amperes (15 minute average) While EAF is operating
Fan Number 3 Amperes	211 amperes (15 minute average) While EAF is operating	214 amperes (15 minute average) While EAF is operating
TOTAL	625 amperes	731 amperes
Operating Range (see notes below)	531 amperes	731 amperes

Operating range minimum was calculated by taking the sum of the lowest fan amp readings from each fan for the period of the VE test on the meltshop building multiplied by 0.85.

Operating range maximum was calculated by taking the sum of the highest fan amp readings from each fan for the period of the VE test on the meltshop building multiplied by 1.15.

All fan amperes readings were provided to AASI from Gerdau Ameristeel Corporation.

3.0 TESTING METHODOLOGY AND PROCEDURES

3.1 Sample and Velocity Traverse

USEPA Method 1, as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine the location of the traverse points for velocity measurements.

3.2 Velocity and Volumetric Flow Rate

USEPA Method 2, as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine average gas velocity. A type "S" pitot tube and inclined manometer were used for velocity determination. Gas temperature was measured with a type K thermocouple. Calibration checks were performed on the pitot tube to verify the face opening alignments, external tubing diameter, and base-to-opening plane distances. A base-line coefficient of 0.84 was assigned to the pitot tube. Verification of these measurements is detailed in Appendix A.

3.3 Oxygen and Carbon Dioxide

USEPA Method 3, as published in 40 CFR, Part 60, Appendix A, was used as the reference method for determining oxygen and carbon dioxide levels in the effluent gas stream. A Fyrite type analyzer was used. A single grab sample per run was analyzed.

3.4 Moisture Content

USEPA Method 4, as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine the moisture content of the gas stream by extracting the

gas sample at a known and regulated rate through a glass condenser train. The condenser train consisted of four glass impingers connected in series with leak free U-tube connectors. The gas sample was extracted through the impinger train (maintained at below 68° F in an ice bath) with a vacuum pump. The amount of gas sampled was measured with a calibrated dry gas meter. The amount of moisture collected during the test was gravimetrically determined and the amount of gas drawn, corrected to dry standard conditions, was determined.

3.5 Particulate Testing

USEPA Method 5 as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine the particulate matter emissions referencing EPA Methods 1-4 for traverse point selection, determination of stack gas molecular weight, stack gas moisture determination, and volumetric flow rate. The following is a synopsis of the method, a list of equipment and specifications, and a diagram illustrating the equipment used.

Particulate emissions were withdrawn isokinetically from the baghouse stack and collected on a filter and in a pre-filter wash. The collected samples were dried and then weighed.

Sampling Apparatus

1)	Probe Nozzle	Stainless steel with sharp tapered leading edge.
2)	Probe	Stainless steel sheath with a 5/8" OD stainless insert.
3)	Pitot Tube	Standard "type S", attached to the probe.

4)	Filter Holder	The filter holder was constructed of glass. The gasket used was made of silicone rubber. The filter holder is designed to provide a positive seal against leakage from the outside or around the filter.
5)	Impingers	Four (4) glass impingers connected in series with glass ball joint fittings. The first, third, and fourth were of the Greenburg-Smith design modified by replacing the tip with a 1.3 cm (1/2 inch) Id glass tube extending to about ½ inch from the bottom of the flask. The second impinger was of the Greenburg-Smith design with a standard tip. All were submerged in an ice bath during the sample runs.
6)	Meter Box	Module containing a vacuum gauge, leak free pump, dry gas meter, valves, and related equipment to maintain isokinetic sampling rate and to determine sample volume.
7)	Barometer	Aneroid type to measure atmospheric pressure on-site to ±0.05 inches of mercury.
8)	Thermocouples	Type K thermocouples were utilized to monitor temperatures for stack gas, filter, last impinger, and dry gas meter.
9)	Filters	Whatman glass fiber filter, type 934-A/H.

3.5.1. Run Duration

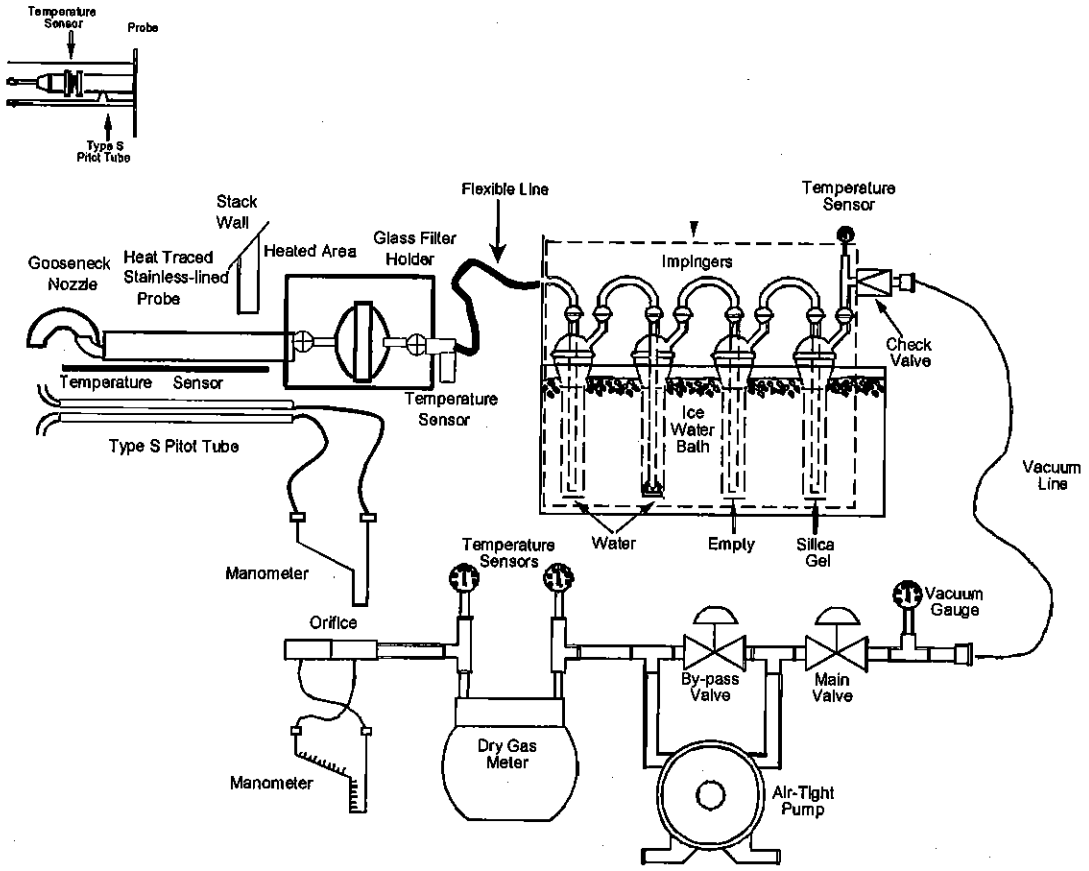
Since the facility operates a single furnace, our best efforts were made to sample an integral number of heat cycles. This is a requirement of NSPS AAa in 40 CFR 60.275a (2)(1). Since integral number of heats and 240 minutes rarely coincide with each other, the run time was extended as needed to include an integral number of heat cycles. The sampling started when an arc was struck in the furnace ("Power On"). The run continued for 240 minutes, at that point a decision was made on how long the run needed to be extended in order to test through the end of the furnace heat in progress ("tap"). The test ports were sampled in reverse order until the tap was completed. It is noted that this method potentially biased the results in favor of the last test points but the bias should be insignificant given the overall run times.

3.5.2. Calculation of Production Rates

Testing was suspended when the facility was not charging, melting, tapping or otherwise processing steel in a normal fashion. Delays of less than 10 minutes in duration were considered part of normal operation, however, delays expected to last longer than 10 minutes were considered abnormal operation. During periods of abnormal operation, the testing was suspended. Since testing was suspended during periods of abnormal operation, the process weight was adjusted to reflect only the times when both the facility operating and testing conducted.

Figure 3-5-1

Method 5 Train



3.6 Oxides of Nitrogen

NO_x emissions from the facility were determined in accordance with USEPA Method 7E as published in 40 CFR, Part 60, Appendix A. A gas sample was continuously extracted from the stack, and a portion of the sample was conveyed to an instrumental chemiluminescent analyzer for determination of NO_x concentration. A TEI Model 42H analyzer was used. NO_x emissions in this report are presented as measured.

3.7 Carbon Monoxide

CO emissions from the facility were determined in accordance with USEPA Method 10 as published in 40 CFR, Part 60, Appendix A. A gas sample was continuously extracted from the stack and a portion of the sample was conveyed to a gas filter correlation, non dispersive infared analyzer (NDIR) for determination of CO concentration. A TEI Model 48 analyzer was used.

3.8 Volatile Organic Compounds

VOC emissions were determined in accordance with USEPA Method 25A and 18 as published in 40 CFR, Part 60, Appendix A. A gas sample was extracted from the source through a heated sample line and filter to a gas chromatograph (GC). The GC separated the methane in the gas from all other VOC components. The remaining VOC was detected by a flame ionization detector (FID). Results are reported as non-methane volume concentration equivalents of carbon (on a wet basis). A TEI Model 55 was used.

3.9 Lead

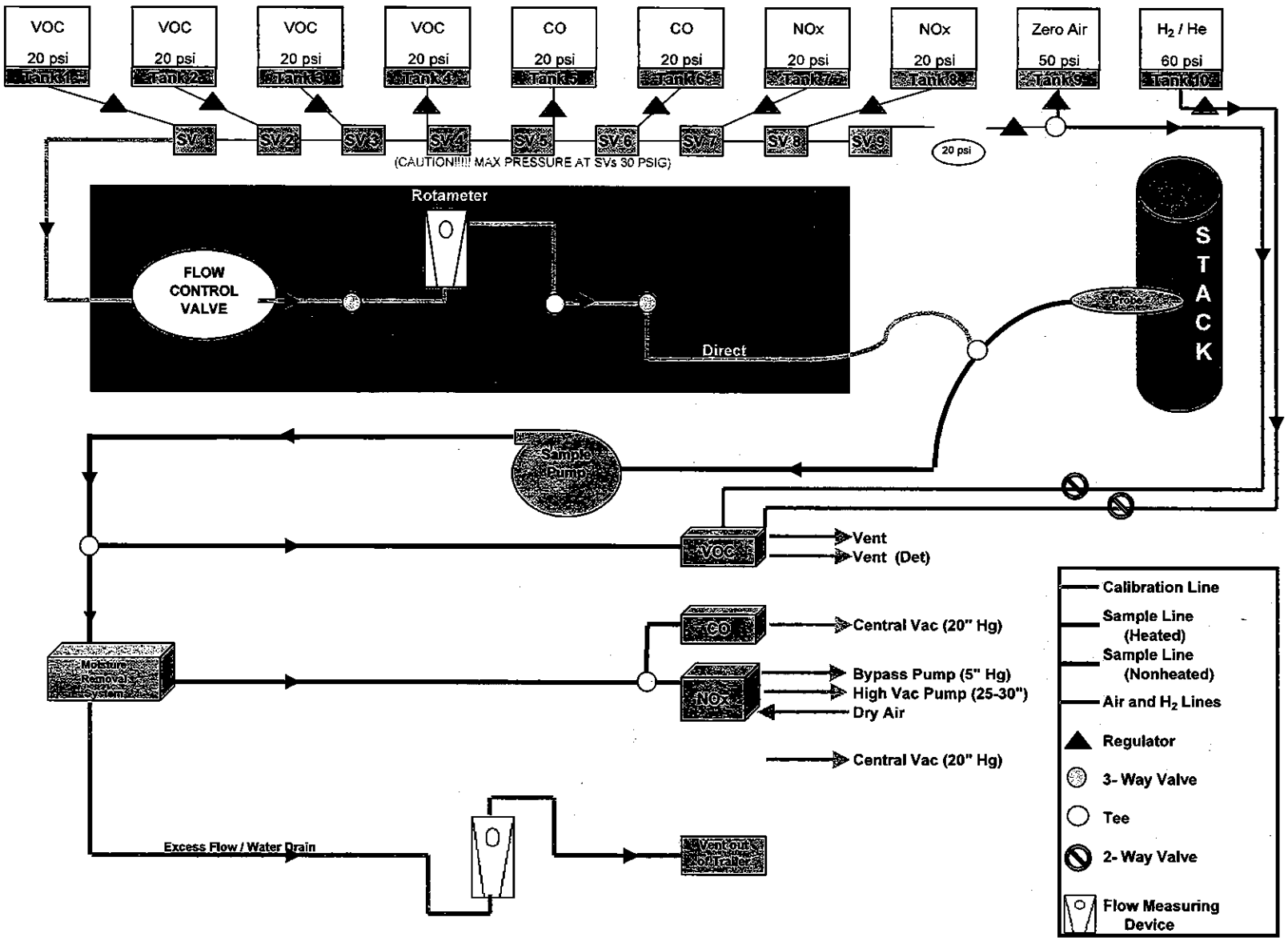
EPA Method 12 was used to collect and analyze lead concentrations in the flue gas stream. Particulate and gaseous lead emissions were withdrawn isokinetically from the source using the same procedures as Method 5 (the PM and Pb were sampled simultaneously in the same sampling system). The first and second impinger contained 100 ml of 0.1 N HNO_3, the third impinger was empty, and the fourth impinger contained 400g of silica gel. The following were collected during the sample recovery process:

Container 1: Filter
Container 2: Impinger catch and 0.1 N HNO_3 rinse of impingers 1, 2, and 3.

3.10 Sample System

A fully extractive sample system was utilized to convey the stack gas to the analytical instruments. The sample system consisted of the following components; a stainless steel probe, calibration tee, particulate filter, 250 feet of heated sample line (teflon), a sample pump, water condenser system, and a sample manifold to distribute the sample gas to the analytical instruments. The system was designed so that all calibration gases were injected at the probe and passed through the same system as the sample gas. A schematic of the sampling system is shown in Figure 3-10-1.

Figure 3-10-1
Sampling System Schematic (Not To Scale)



3.11 Facility Data Monitoring

The following was recorded in order to satisfy the NSPS AAa requirements:

Once per heat cycle tested:

(A) Charge weights and materials, and tap weight and materials.

(B) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and pressure inside an EAF when direct shell evacuation control systems are used.

(C) Control device operation log including fan amps, damper positions, and furnace static pressure.

(D) Continuous monitor/visible emission data.

During periods of visible emission observations on the meltshop building, in accordance with Method 9, item (C) will be recorded, at a minimum, every 15 minutes and the data will be used to establish control device operation ranges as required by NSPS AAa.

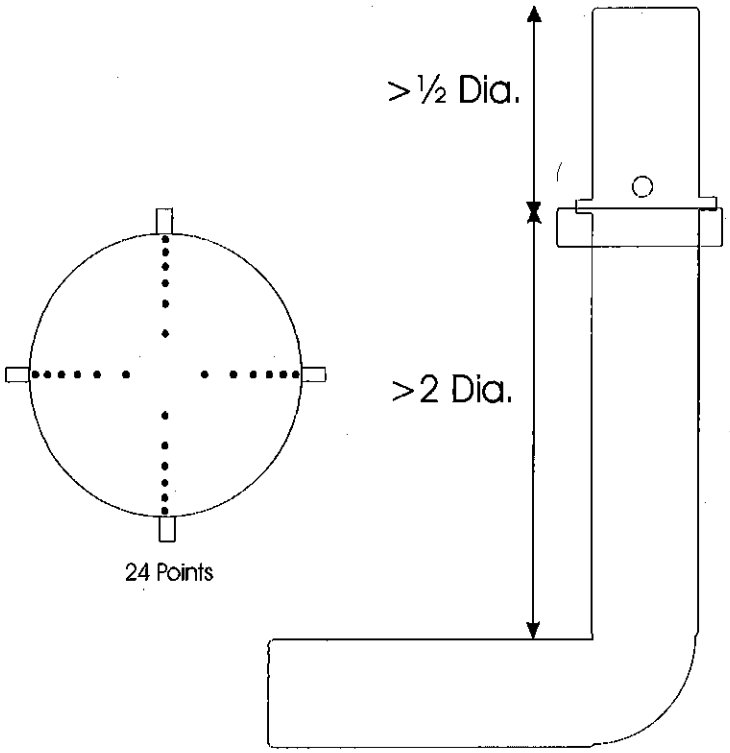
Note: With the exception of the visible emission observations, all data in this section was recorded by Gerdau.

4.0 SAMPLING POINT LOCATION

Figure 4-1

Gerdau Ameristeel Corporation
Baldwin, Florida
EAF Baghouse

Diameters Upstream:	> 1/2
Diameters Downstream	> 2
Stack diameter	218 inches
Drawing Date	4/17/07



Sampling Points (inches)	
1	4.6
2	14.6
3	25.7
4	38.6
5	54.5
6	77.6

Note: Four equal distance, ninety-degree ports. Four ports with 6 points per port, 24 total points All distances are approximate.

LIST OF APPENDICES

APPENDIX A

PARTICULATE MATTER AND LEAD DATA

-Emission Run Summaries
-Field Data Sheets
-Laboratory Report from AEL
-Lab Data Sheet
-Chain of Custody
-Sample Calculations

Ambient Air Services, Inc.
Environmental Consultants
106 Ambient Airway Starke, Florida 32091 (904) 964-8440
AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2005

Volumetric Flow Calculations Worksheet

Data Request Entry Area	PM Run 1
Facility	Gerdau Ameristeel Corporation
Location	Baldwin, Florida
Source	EAF Baghouse
Date	04/17/07
Run Number	1
Start Time	9:00
Finish Time	13:48
Weather	Clear
Total Time (minutes) (Θ)	270.0
Number of Points (n)	24
Barometric Pressure (inches Hg) (P_{bar})	29.86
Static Pressure (inches H_2O) (P_g)	-0.34
Stack Diameter (inches) (D)	218.00
Nozzle Diameter (inches) (D_n)	0.205
Meter Y Factor (Y)	1.012
Pitot Factor (C_p)	0.84
Final Meter Reading (ft^3)	416.300
Initial Meter Reading (ft^3)	224.900
Condensate (grams or ml)	35
Silica Gel Weight (grams)	19.5
Carbon Dioxide (%)	0.0
Oxygen (%)	20.9
Carbon Monoxide (%)	0.0
Nitrogen (%)	79.1
Filter Weight (grams)	0.0000
Prefilter Weight (grams)	0.0015
Isokinetic Rate Factor	1.50

Ambient Air Services, Inc.
Environmental Consultants
106 Ambient Airway Starke, Florida 32091 (904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2005

Field Data Points - PM Run 1 | **Gerdau Ameristeel Corporation** | **EAF Baghouse**

Port	Traverse Point	Velocity Head (inches H_2O)	Meter Orifice (inches H_2O)	Stack Temperature (°F)	Meter Inlet Temperature (°F)	Meter Outlet Temperature (°F)	Square Root of Velocity Head
2 - NE	1	0.8	1.2	114	66	65	0.89
	1	0.8	1.2	112	70	64	0.89
	2	0.85	1.3	115	73	62	0.92
	2	0.85	1.3	118	78	60	0.92
	3	0.9	1.4	115	84	59	0.95
	3	0.9	1.4	114	92	63	0.95
	4	0.95	1.4	119	100	65	0.97
	4	1	1.5	122	106	69	1.00
	5	1	1.5	122	110	72	1.00
	5	1.1	1.7	118	112	75	1.05
	6	1.1	1.7	115	114	77	1.05
	6	1.1	1.7	115	115	78	1.05
1 - SE	1	0.95	1.4	118	100	81	0.97
	1	0.95	1.4	122	112	80	0.97
	2	1.1	1.7	121	114	79	1.05
	2	1.1	1.7	120	116	80	1.05
	3	1.2	1.8	124	117	81	1.10
	3	1.2	1.8	123	117	84	1.10
	4	1.2	1.8	126	117	86	1.10
	4	1.2	1.8	127	118	86	1.10
	5	1.2	1.8	125	118	87	1.10
	5	1.2	1.8	123	118	87	1.10
	6	1.2	1.8	123	118	87	1.10
	6	0.95	1.4	125	118	86	0.97
3 - NW	1	0.7	1.1	127	99	83	0.84
	1	0.7	1.1	127	106	83	0.84
	2	0.7	1.1	128	107	83	0.84
	2	0.7	1.1	130	108	83	0.84
	3	0.7	1.1	133	109	82	0.84

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	3	0.7	1.1	133	109	82	0.84
	4	0.7	1.1	128	110	84	0.84
	4	0.8	1.2	128	110	84	0.89
	5	0.8	1.2	125	111	84	0.89
	5	0.8	1.2	127	111	83	0.89
	6	0.8	1.2	128	111	84	0.89
	6	0.8	1.2	128	111	83	0.89
4 - SW	1	0.8	1.2	131	102	84	0.89
	1	0.8	1.2	130	102	85	0.89
	2	0.8	1.2	131	110	85	0.89
	2	0.8	1.2	133	112	84	0.89
	3	0.8	1.2	129	111	84	0.89
	3	0.95	1.4	127	112	84	0.97
	4	0.95	1.4	127	113	84	0.97
	4	1	1.5	127	114	85	1.00
	5	1	1.5	128	114	85	1.00
	5	1	1.5	129	115	86	1.00
	6	1	1.5	130	115	87	1.00
	6	1	1.5	131	116	86	1.00
4	6	0.9	1.4	131	115	87	0.95
	6	0.9	1.4	132	114	87	0.95

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PM Summary Run 1

Facility	Gerdau Ameristeel Corporation	Run Number	1
Location	Baldwin, Florida	Start Time	9:00
Stack	EAF Baghouse	Finish Time	13:48
Run Date	4/17/2007	Weather	Clear

(Θ) Total Time (minutes)	270.0	Impinger Condensate (g or ml)	35.0
(P_{bar}) Barometric Pressure (Inches Hg)	29.86	Silica Gel Condensate (g)	19.5
(D) Stack Diameter (Inches)	218.00	(V_{lc}) Condensate Volume (ml)	54.5
(A) Stack Area (ft^2)	259.203	Carbon Dioxide (%)	0.0
(A_n) Nozzle Area (ft^2)	0.0002292	Oxygen (%)	20.9
(n) Number of Points	24	Carbon Monoxide (%)	0.0
(Δp_{avg}) Avg of SQRT of V.H.	0.9598	Nitrogen (%)	79.1
(Y) Meter Correction	1.012	(V_m) Volume Metered (ft^3)	191.400
Nozzle Diameter (inches)	0.205	(ΔH_{avg}) Delta H (inches H_2O)	1.4060
(Cp) Pitot Correction Factor	0.84	(P_g) Static Pressure (inches H_2O)	-0.34
Filter Weight (grams)	0.0000	(P_s)Stack Pressure (inches Hg)	29.84
(m_a) Prefilter Weight (grams)	0.0015	($T_{s(abs)}$) Stack Temp (°R)	584.7
(m_n) Total Particulate (grams)	0.0015	(T_m) Meter Temp (°R)	553.7

($V_{w(std)}$) Volume Water Vapor, SCF	2.565
($V_{m(std)}$) Gas Volume Sampled, STPD	184.887
Total Volume, STP	187.452
(B_{ws}) Moisture in stack gas, volume fraction	0.014
(B_{wd}) Dry Stack Gas, volume fraction	0.986
(M_d) Molecular Weight of Stack Gas (Dry Basis)	28.84
(M_s) Molecular Weight of Stack Gas (Stack conditions)	28.69
(G_s) Specific gravity of Stack Gas Relative to Air	0.990
Excess Air (%)	14864.9
(v_s) Average Stack Velocity, FPM	3417.9
(Q_s) Actual Stack Gas Flow Rate, ACFM	885937
(Q_d) Actual Stack Gas Flow Rate, ACFMD	873813
($Q_{d(std)}$) Stack Gas Flow Rate, SCFMD	786862
($Q_{s(std)}$) Stack Gas Flow Rate Wet, SCFMW	797779
(I) Percent Isokinetic	98

Stack Emissions:	(C_s) Grains per DSCF	0.0001
	(Em) Pounds per Hour	0.84

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Volumetric Flow Calculations Worksheet

Data Request Entry Area	PM Run 2
Facility	Gerdau Ameristeel Corporation
Location	Baldwin, Florida
Source	EAF Baghouse
Date	04/18/07
Run Number	2
Start Time	8:35
Finish Time	13:36
Weather	Cloudy
Total Time (minutes) (Θ)	272.0
Number of Points (n)	24
Barometric Pressure (inches Hg) (P_{bar})	29.68
Static Pressure (inches H_2O) (P_g)	-0.35
Stack Diameter (inches) (D)	218.00
Nozzle Diameter (inches) (A_n)	0.205
Meter Y Factor (Y)	1.012
Pitot Factor (C_p)	0.84
Final Meter Reading (ft^3)	609.572
Initial Meter Reading (ft^3)	416.622
Condensate (grams or ml)	44
Silica Gel Weight (grams)	28.1
Carbon Dioxide (%)	0.0
Oxygen (%)	20.9
Carbon Monoxide (%)	0.0
Nitrogen (%)	79.1
Filter Weight (grams)	0.0003
Prefilter Weight (grams)	0.0032
Isokinetic Rate Factor	1.50

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Field Data Points - PM Run 2 | **Gerdau Ameristeel Corporation** | **EAF Baghouse**

Port	Traverse Point	Velocity Head (inches H_2O)	Meter Orifice (inches H_2O)	Stack Temperature (°F)	Meter Inlet Temperature (°F)	Meter Outlet Temperature (°F)	Square Root of Velocity Head
1 - SE	1	0.95	1.4	115	64	63	0.97
	1	0.9	1.4	118	76	62	0.95
	2	0.9	1.4	117	84	63	0.95
	2	1	1.5	116	91	63	1.00
	3	1	1.5	117	95	64	1.00
	3	1.1	1.7	118	99	65	1.05
	4	1.1	1.7	121	101	68	1.05
	4	1.2	1.8	121	103	70	1.10
	5	1.2	1.8	122	106	72	1.10
	5	1.2	1.8	125	107	74	1.10
	6	1	1.5	122	108	74	1.00
	6	1	1.5	118	109	74	1.00
2 - NE	1	0.8	1.2	115	98	72	0.89
	1	0.8	1.2	116	103	74	0.89
	2	0.8	1.2	118	105	76	0.89
	2	0.8	1.2	122	107	77	0.89
	3	0.8	1.2	123	108	77	0.89
	3	0.8	1.2	123	108	78	0.89
	4	0.9	1.4	128	109	79	0.95
	4	0.9	1.4	128	110	79	0.95
	5	0.95	1.4	133	112	80	0.97
	5	0.95	1.4	135	113	81	0.97
	6	0.95	1.4	132	114	82	0.97
	6	0.95	1.4	127	115	82	0.97
3 - NW	1	0.7	1.1	114	85	83	0.84
	1	0.7	1.1	119	99	81	0.84
	2	0.7	1.1	121	102	77	0.84
	2	0.7	1.1	122	103	78	0.84
	3	0.7	1.1	123	105	79	0.84

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	3	0.7	1.1	124	106	80	0.84
	4	0.7	1.1	129	106	80	0.84
	4	0.7	1.1	128	107	81	0.84
	5	0.7	1.1	133	108	81	0.84
	5	0.7	1.1	134	108	81	0.84
	6	0.7	1.1	132	108	81	0.84
	6	0.7	1.1	129	108	82	0.84
4 - SW	1	0.85	1.3	125	101	80	0.92
	1	0.85	1.3	126	107	82	0.92
	2	0.85	1.3	131	112	83	0.92
	2	0.85	1.3	131	112	83	0.92
	3	0.8	1.2	132	113	83	0.89
	3	0.9	1.4	132	112	83	0.95
	4	0.9	1.4	134	112	83	0.95
	4	0.95	1.4	136	113	84	0.97
	5	0.95	1.4	136	113	84	0.97
	5	0.95	1.4	136	114	84	0.97
	6	0.95	1.4	135	115	84	0.97
	6	0.95	1.4	136	115	86	0.97
4 - SW	6	0.95	1.4	136	115	86	0.97
	6	0.95	1.4	134	115	86	0.97
	5	0.95	1.4	132	116	85	0.97
	5	0.95	1.4	132	116	86	0.97
	4	0.95	1.4	132	116	87	0.97
	4	0.95	1.4	138	116	86	0.97
	3	0.95	1.4	134	116	86	0.97
	3						
	2						
	2						
	1						
	1						

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PM Summary Run 2

Facility	Gerdau Ameristeel Corporati	Run Number	2
Location	Baldwin, Florida	Start Time	8:35
Stack	EAF Baghouse	Finish Time	13:36
Run Date	4/18/2007	Weather	Cloudy

(Θ) Total Time (minutes)	272.0	Impinger Condensate (g or ml)	44.0
(P_{bar}) Barometric Pressure (Inches Hg)	29.68	Silica Gel Condensate (g)	28.1
(D) Stack Diameter (Inches)	218.00	(V_{lc}) Condensate Volume (ml)	72.1
(A) Stack Area (ft^2)	259.203	Carbon Dioxide (%)	0.0
(A_n) Nozzle Area (ft^2)	0.0002292	Oxygen (%)	20.9
(n) Number of Points	24	Carbon Monoxide (%)	0.0
(Δp_{avg}) Avg of SQRT of V.H.	0.9388	Nitrogen (%)	79.1
(Y) Meter Correction	1.012	(V_m) Volume Metered (ft^3)	192.950
Nozzle Diameter (inches)	0.205	(ΔH_{avg}) Delta H (inches H_2O)	1.3418
(Cp) Pitot Correction Factor	0.84	(P_g) Static Pressure (inches H_2O)	-0.35
Filter Weight (grams)	0.0003	(P_s)Stack Pressure (inches Hg)	29.65
(m_s) Prefilter Weight (grams)	0.0032	($T_{s(abs)}$) Stack Temp (°R)	586.7
(m_n) Total Particulate (grams)	0.0035	(T_m) Meter Temp (°R)	552.3

($V_{w(std)}$) Volume Water Vapor, SCF	3.394
($V_{m(std)}$) Gas Volume Sampled, STPD	185.718
Total Volume, STP	189.112
(B_{ws}) Moisture in stack gas, volume fraction	0.018
(B_{wd}) Dry Stack Gas, volume fraction	0.982
(M_d) Molecular Weight of Stack Gas (Dry Basis)	28.836
(M_s) Molecular Weight of Stack Gas (Stack conditions)	28.64
(G_e) Specific gravity of Stack Gas Relative to Air	0.988
Excess Air (%)	14864.9
(v_s) Average Stack Velocity, FPM	3361.8
(Q_a) Actual Stack Gas Flow Rate, ACFM	871388
(Q_d) Actual Stack Gas Flow Rate, ACFMD	855750
($Q_{d(std)}$) Stack Gas Flow Rate, SCFMD	763351
($Q_{s(std)}$) Stack Gas Flow Rate Wet, SCFMW	777300
(I) Percent Isokinetic	101

Stack Emissions:	(C_s) Grains per DSCF	0.0003
	(Em) Pounds per Hour	1.90

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Volumetric Flow Calculations Worksheet

Data Request Entry Area	PM Run 3
Facility	Gerdau Ameristeel Corporation
Location	Baldwin, Florida
Source	EAF Baghouse
Date	04/19/07
Run Number	3
Start Time	8:28
Finish Time	13:03
Weather	Clear
Total Time (minutes) (Θ)	256.4
Number of Points (n)	24
Barometric Pressure (inches Hg) (P_{bar})	29.70
Static Pressure (inches H_2O) (P_g)	-0.41
Stack Diameter (inches) (D)	218.00
Nozzle Diameter (inches) (A_n)	0.205
Meter Y Factor (Y)	1.012
Pitot Factor (C_p)	0.84
Final Meter Reading (ft^3)	794.200
Initial Meter Reading (ft^3)	610.200
Condensate (grams or ml)	45
Silica Gel Weight (grams)	28.0
Carbon Dioxide (%)	0.0
Oxygen (%)	20.9
Carbon Monoxide (%)	0.0
Nitrogen (%)	79.1
Filter Weight (grams)	0.0003
Prefilter Weight (grams)	0.0011
Isokinetic Rate Factor	1.50

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Field Data Points - PM Run 3 | **Gerdau Ameristeel Corporation** | **EAF Baghouse**

Port	Traverse Point	Velocity Head (inches H_2O)	Meter Orifice (inches H_2O)	Stack Temperature (°F)	Meter Inlet Temperature (°F)	Meter Outlet Temperature (°F)	Square Root of Velocity Head
4 - SW	1	0.85	1.3	116	69	58	0.92
	1	0.85	1.3	120	82	63	0.92
	2	0.85	1.3	121	88	63	0.92
	2	0.85	1.3	119	94	64	0.92
	3	0.85	1.3	122	99	66	0.92
	3	0.85	1.3	122	103	67	0.92
	4	0.85	1.3	125	105	69	0.92
	4	0.9	1.4	127	107	70	0.95
	5	1	1.5	127	109	73	1.00
	5	1	1.5	127	111	75	1.00
	6	1.1	1.7	127	113	77	1.05
	6	1.1	1.7	120	114	79	1.05
3 - NW	1	0.7	1.1	120	102	77	0.84
	1	0.7	1.1	120	105	78	0.84
	2	0.7	1.1	124	109	79	0.84
	2	0.7	1.1	128	110	79	0.84
	3	0.7	1.1	126	110	80	0.84
	3	0.7	1.1	127	110	80	0.84
	4	0.7	1.1	130	111	80	0.84
	4	0.7	1.1	132	111	80	0.84
	5	0.7	1.1	135	112	81	0.84
	5	0.7	1.1	137	113	82	0.84
	6	0.7	1.1	136	113	82	0.84
	6	0.7	1.1	136	114	82	0.84
2 - NE	1	0.8	1.2	130	106	83	0.89
	1	0.8	1.2	132	110	85	0.89
	2	0.85	1.3	133	113	86	0.92
	2	0.85	1.3	133	113	86	0.92
	3	0.85	1.3	133	113	85	0.92

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	3	0.85	1.3	133	113	85	0.92
	4	0.95	1.4	136	114	85	0.97
	4	0.95	1.4	137	114	85	0.97
	5	0.95	1.4	138	114	85	0.97
	5	1	1.5	141	115	86	1.00
	6	1.1	1.7	138	117	87	1.05
	6	1.1	1.7	132	118	88	1.05
1 - SE	1	1	1.5	128	95	83	1.00
	1	1	1.5	128	97	84	1.00
	2	1	1.5	128	99	85	1.00
	2	1	1.5	129	110	86	1.00
	3	1	1.5	138	114	87	1.00
	3	1	1.5	141	116	88	1.00
	4	1.1	1.7	142	118	88	1.05
	4	1.2	1.8	133	119	89	1.10
	5	1.2	1.8	128	120	89	1.10
	5	1.2	1.8	127	120	89	1.10
	6	1.2	1.8	126	121	90	1.10
	6	0.9	1.4	130	121	90	0.95
1	6	0.9	1.4	138	121	90	0.95
	6	0.9	1.4	141	120	90	0.95
	5	0.9	1.4	139	120	90	0.95
	5	1	1.5	141	120	90	1.00
	4						
	4						
	3						
	3						
	2						
	2						
	1						
	1						

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PM Summary Run 3

Facility	Gerdau Ameristeel Corporati	Run Number	3
Location	Baldwin, Florida	Start Time	8:28
Stack	EAF Baghouse	Finish Time	13:03
Run Date	4/19/2007	Weather	Clear

(Θ) Total Time (minutes)	256.4	Impinger Condensate (g or ml)	45.0
(P_{bar}) Barometric Pressure (Inches Hg)	29.70	Silica Gel Condensate (g)	28.0
(D) Stack Diameter (Inches)	218.00	(V_{lc}) Condensate Volume (ml)	73.0
(A) Stack Area (ft^2)	259.203	Carbon Dioxide (%)	0.0
(A_n) Nozzle Area (ft^2)	0.0002292	Oxygen (%)	20.9
(n) Number of Points	24	Carbon Monoxide (%)	0.0
(Δp_{avg}) Avg of SQRT of V.H.	0.9474	Nitrogen (%)	79.1
(Y) Meter Correction	1.012	(V_m) Volume Metered (ft^3)	184.000
Nozzle Diameter (inches)	0.205	(ΔH_{avg}) Delta H (inches H_2O)	1.3808
(Cp) Pitot Correction Factor	0.84	(P_g) Static Pressure (inches H_2O)	-0.41
Filter Weight (grams)	0.0003	(P_s)Stack Pressure (inches Hg)	29.67
(m_s) Prefilter Weight (grams)	0.0011	($T_{s(abs)}$) Stack Temp (°R)	590.3
(m_n) Total Particulate (grams)	0.0014	(T_m) Meter Temp (°R)	555.4

($V_{w(std)}$) Volume Water Vapor, SCF	3.436
($V_{m(std)}$) Gas Volume Sampled, STPD	176.246
Total Volume, STP	179.682
(B_{ws}) Moisture in stack gas, volume fraction	0.019
(B_{wd}) Dry Stack Gas, volume fraction	0.981
(M_d) Molecular Weight of Stack Gas (Dry Basis)	28.84
(M_s) Molecular Weight of Stack Gas (Stack conditions)	28.63
(G_s) Specific gravity of Stack Gas Relative to Air	0.988
Excess Air (%)	14864.9
(v_s) Average Stack Velocity, FPM	3402.9
(Q_s) Actual Stack Gas Flow Rate, ACFM	882055
(Q_d) Actual Stack Gas Flow Rate, ACFMD	865187
($Q_{d(std)}$) Stack Gas Flow Rate, SCFMD	767371
($Q_{s(std)}$) Stack Gas Flow Rate Wet, SCFMW	782332
(I) Percent Isokinetic	101

Stack Emissions:	(C_s) Grains per DSCF	0.0001
	(Em) Pounds per Hour	0.81

SOURCE SAMPLING FIELD DATA SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440	Facility	Gerdau Ameristeel					Run No.	1			
	Source	EAF Bag House					Date	4/17/07			
	Weather	Clear					Test(s)	M-5/12			
	Testers	RW, CH					Barometric Pressure	29.86			
Equipment Identification	Pitot	8F	Probe	8F	Heater Box	#1	Meter Box	3	Cold Box	1	
Thermocouple Identification	Stack	TC-8#4	Impinger	6K	Heater	F-7	Meter In	M-1-36	Meter Out	FT-2	
Sampling	Total min (Θ)	240	Total Points (n)	32 24			Min/Pt.	10			
Profile	Stack Diameter (in) (D)	218	Downstream Dia.	>2			Upstream Dia.	>1/2			
Nozzle Diameter (avg) (D_n)	0.205	Nozzle Diameter Calibration Checks		1	0.206	2	0.205	3	0.205		
Isokinetic Factor Calculation	Pre T_s	0.200	Pre T_m	0.1K	Pre Dry Stack Gas (B_{wd})	–	Meter (ΔHa)	1.513	Meter (Y)	1.012	
	$a = (D_n^2 X B_{wd})^2$	–	$b = (1.6+B_{wd})T_s$	–	$c = T_m X \Delta H_a$	–	F=1570(aXc)/b	–	Isokinetic Rate Factor	1.5	
Start Time	0900	Final Meter Reading (ft3)	416.300	ORSAT/Fyrite Analyzer	O_2 (%)	20.9	Comments:				
Finish Time	1348	Initial Meter Reading (ft3)	224.9		CO_2 (%)	0					
Pre Test Leak Check		Post Test Leak Check		Static Pressure	Pitot Leak Check		Volume H_2O Collected	12 35 ml			
0.01 cfm@15" H_g		0.006 cfm@ 6 "H_g		-0.34 "H_2O	OK at 3"		Silica Gel Weight	19.5 (weighed at AASI gr			

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	64 CH)
1-1	0	224.900	0.8	1.041	3	114	69	63	66	65	
	5	228.7	0.8	1.01	3	112	85	59	70	64	
2	10	231.0	0.85	1.42	3	115	124	61	73	62	
	15	233.6	0.85	1.42	3	118	160	60	78	60	
3	20	238.3	0.9	1.23	3.5	115	176	60	84	59	
	25	240.2	0.9	1.3	4	114	200	60	92	63	
4	30	243.4	0.95	1.4	4	119	210	60	100	65	
	35	247.0	1.0	1.5	4	122	185	60	106	69	
5	40	250.7	1.0	1.5	4.5	122	185	61	110	72	
	45	254.7	1.1	1.6	4.5	118	235	57	112	75	
6	50	258.5	1.1	1.6	4.5	115	236	56	114	77	
	55	263.1	1.1	1.6	4.5	115					
	60										

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440	Facility	Gerdau	Run No.	1
	Source	EAF Baghouse	Date	4/19/07
	Weather	Clear	Test(s)	1-3
	Testers	RW	Factor	1.46

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
2-1	60	268.48	0.95	1.4	4.5	118	251	54	100	81	
	65	270.0	0.95	1.4	4.5	122	244	54	112	80	
2	70	273.6	1.1	1.6	5	121	232	54	114	79	
	75	277.2	1.1	1.6	5	120	232	53	116	80	
3	80	281.3	1.2	1.8	5	124	232	53	117	81	
	85	285.3	1.2	1.8	5	123	239	52	117	84	
4	90	289.8	1.2	1.8	5	126	229	52	117	86	
	95	293.3	1.2	1.8	5	127	227	53	118	86	
5	100	297.5	1.2	1.8	5	125	231	53	119	87	
	105	301.8	1.2	1.8	5	123	229	53	118	87	
6	110	305.8	1.2	1.8	5	123	232	54	118	87	
	115	309.8	0.95	1.4	5	125	234	51	118	86	
3-1	120	313.39	0.7	1.1	3.5	127	225	53	59	83	
	125	316.5	0.7	1.1	3.5	127	238	51	106	83	
2	130	327	0.7	1.1	3.5	126	232	51	107	83	
	135	322.9	0.7	1.1	3.5	130	224	51	108	83	
3	140	326.6	0.7	1.1	3.5	133	228	51	108	82	
	145	329.5	0.7	1.1	3.5	133	229	51	109	82	
4	150	333.3	0.7	1.1	3.5	128	231	51	110	84	
	155	335.6	0.8	1.2	4	128	231	51	110	84	
5	160	339.5	0.8	1.2	4	125	232	52	111	84	
	165	342.2	0.8	1.2	4	127	233	52	111	83	
6	170	345.8	0.8	1.2	4	128	233	53	111	84	
	175	350.0	0.8	1.2	4	128	227	53	111	83	
	180	352.600									

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC.
106 Ambient Airway,
Starke, Florida
(904) 964-8440

Facility	Gerdau	Run No.	1
Source	EAF Baghouse	Date	4/17/07
Weather	Clear	Test(s)	M-5/12
Testers	RW, L	Factor	1.5

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
4-1	180	352.600	0.8	1.2	5	131	257	52	102	84	
1	185	355.1	0.8	1.2	5	130	251	52	102	85	
2	190	358.5	0.8	1.2	5	131	234	54	110	85	
	195	362.9	0.8	1.2	5	133	234	56	112	84	
3	200	365.9	0.8	1.2	5	129	238	56	111	84	
	205	369.0	0.95	1.4	5	127	238	56	112	84	
4	210	374.1	0.95	1.4	5	127	238	57	113	84	
	215	276.3	1.0	1.5	5	127	239	58	114	85	
5	220	280.0	1.0	1.5	5	128	232	58	114	85	
	225	284.0	1.0	1.5	5	129	234	58	115	86	
6	230	387.5	1.0	1.5	5	130	237	58	115	87	
	235	391.0	1.0	1.5	5	131	239	58	116	86	
6	240	394.7	0.9	1.4	4.5	131	243	58	115	87	
	245	399.0	0.9	1.4	4.5	132	243	57	114	87	
5	250	401.5	1.0	1.5	4.5	133	242	57	114	87	
	255	405.5	1.0	1.5	4.5	134	240	57	114	87	
4	260	409.4	1.0	1.5	4.5	136	225	57	114	88	
	265	412.4	1.0	1.5	4.5	134	230	57	114	88	
3	270	416.300	—	—	—	—	—	—	—	—	
2											
1											

SOURCE SAMPLING FIELD DATA SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440	Facility	Gerdau Baldwin	Run No.	2
	Source	EAF Baghouse	Date	4/18/07
	Weather	Cloudy	Test(s)	MS/17
	Testers	RW, LH	Barometric Pressure	29.68

Equipment Identification	Pitot	~	Probe	~	Heater Box	~	Meter Box	~	Cold Box		~
Thermocouple Identification	Stack	~	Impinger	~	Heater	~	Meter In	~	Meter Out		~
Sampling	Total min (Θ)		240	Total Points (n)		24	Min/Pt			10	
Profile	Stack Diameter (in) (D)		218	Downstream Dia.		>2	Upstream Dia.			>1/2	
Nozzle Diameter (avg) (D_n)	.0.205	Nozzle Diameter Calibration Checks		1	~	2	~	3		~	
Isokinetic Factor Calculation	Pre T_s	~	Pre T_m	~	Pre Dry Stack Gas (B_{wd})	~	Meter (ΔHa)	1.513	Meter (Y)	1.012	
	$a = (D_n^2 X B_{wd})^2$		$b = (1.6+B_{wd})T_s$		$c = T_m X \Delta H_a$		$F = 1570(aXc)/b$		Isokinetic Rate Factor		
	~		~		~		~		1.5		

Start Time	0834	Final Meter Reading (ft3)	609.572	ORSAT/Fyrite/ Analyzer	O_2 (%)	20.9	Comments:
Finish Time	1336	Initial Meter Reading (ft3)	416.622		CO_2 (%)	0.0	

Pre Test Leak Check	Post Test Leak Check	Static Pressure	Pitot Leak Check	Volume H_2O Collected	44 ml
0.0 cfm@15" H_g	0.0 cfm@ 8 "H_g	-0.35 "H_2O	O/K at 3"	Silica Gel Weight	28.1 (Weighed at gr

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	AASI 64 CH)
1	0	416.622	0.95	1.4	4	115	62	35	64	63	
	5	420.1	6.9	1.4	4	118	128	35	76	62	
2	10	423.5	0.9	1.4	4	117	163	36	84	65	
	15	427.0	1.0	1.5	4.5	116	201	37	91	65	
3	20	431.0	1.0	1.5	4.5	117	226	37	95	64	
	25	434.6	1.1	1.7	5	118	241	38	99	65	
4	30	438.1	1.1	1.7	5	121	236	38	101	68	
	35	442.5	1.2	1.8	5	121	236	38	103	70	
5	40	447.0	1.2	1.8	5	122	236	39	106	72	
	45		1.2	1.8	5	125	234	39	107	74	
6	50	454.0	~~0.91.0~~	~~1.41.5~~	5	122	233	39	108	74	
	55	457.9	1.0	1.5	5	118	233	40	109	74	
	60										

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440												
	Facility	Gerdau							Run No.	2		
	Source	EAF Baghouse							Date	4/18/07		
	Weather	Cloudy							Test(s)	M-5		
	Testers	RW, L							Factor	1.5		
Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)		
2-1	60	461.615	0.8	1.2	4	115	225	41	98	72		
	65	465.4	0.8	1.2	4	116	252	39	103	74		
2	70	468.3	0.8	1.2	4	118	244	38	105	76		
	75	472.1	0.8	1.2	4	122	239	38	107	77		
3	80	475.1	0.8	1.2	4	123	240	38	108	77		
	85	479.0	0.8	1.2	4	123	243	39	108	78		
4	90	481.9	0.9	1.4	4.5	128	242	39	109	79		
	95	485.5	0.9	1.4	4.5	128	240	39	110	79		
5	100	489.0	0.95	1.5	5	133	241	40	112	80		
	105	492.7	0.95	1.5	5	135	242	40	113	81		
6	110	496.5	0.95	1.5	5	132	241	41	114	82		
	115	500.4	0.95	1.5	5	127	239	42	115	82		
3-1	120	504.0	0.7	1.1	4	114	173	043	85	83		
	125	507.5	0.7	1.1	4	119	220	40	99	81		
2	130	510.4	0.7	1.1	4	121	233	41	102	77		
	135	513.2	0.7	1.1	4	122	235	40	103	78		
3	140	516.8	0.7	1.1	4	123	236	40	105	79		
	145	520.3	0.7	1.1	4	124	238	39	106	80		
4	150	523.8	0.7	1.1	4	129	241	40	106	80		
	155	527.0	0.7	1.1	4	128	243	40	107	81		
5	160	529.6	0.7	1.1	4	133	239	40	108	81		
	165	531.4	0.7	1.1	4	134	240	40	108	81		
6	170	536.0	0.7	1.1	4	132	241	40	108	81		
	175	539.9	0.7	1.1	4	129	240	40	108	82		
	180											

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440			
	Facility	Gerdau	Run No. 2
	Source	EAF Baghouse	Date 4/18/07
	Weather	Cloudy	Test(s) 7-5/12
	Testers	RW, LH	Factor 1.5

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
4-1	180	542.800	0.85	1.3	4.5	125	237	44	101	80	
	185	546.7	0.85	1.3	4.5	126	250	44	107	82	
2	190	549.8	0.85	1.3	4.5	131	239	43	112	83	
	195	553.3	0.85	1.3	4.5	131	240	43	112	83	
3	200	556.7	0.8	1.2	4.5	132	240	44	113	83	
	205	560.5	0.9	1.4	5	132	235	43	112	83	
4	210	564.5	0.9	1.4	5	134	235	43	112	83	
	215	568.1	0.95	1.54	5	136	235	43	113	84	
5	220	571.0	0.95	1.54	5	136	235	43	113	84	
	225	574.4	0.95	1.54	5	136	236	43	114	84	
6	230	578.2	0.95	1.54	5	135	238	44	115	84	
	235	583.1	0.95	1.54	5	135	237	44	115	86	
6	240	586.1	0.95	1.54	5	136	235	44	115	86	
	245	589.0	0.95	1.54	5	134	235	44	115	86	
5	250	593.3	0.95	1.54	5	132	236	44	116	85	
	255	598.2	0.95	1.4	5	132	236	44	116	86	
4	260	601.5	0.95	1.4	5	132	237	45	116	87	
	265	604.9	0.95	1.4	5	138	237	45	116	86	
3	270	608.2	0.95	1.4	5	134	238	45	116	86	
	272	609.572	—	—	—	—	—	—	—	—	
2											
1											

SOURCE SAMPLING FIELD DATA SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440	Facility	Gerdau, Baldwin	Run No. 3
	Source	EAF Baghouse	Date 4/19/07
	Weather	Clear	Test(s) M-5/12
	Testers	RW, LH	Barometric Pressure 29.70

Equipment Identification	Pitot	–	Probe	–	Heater Box	–	Meter Box	–	Cold Box	–	
Thermocouple Identification	Stack	–	Impinger	–	Heater	–	Meter In	–	Meter Out	–	
Sampling	Total min (Θ)	240	Total Points (n)	24					Min/Pt	10	
Profile	Stack Diameter (in) (D)	218	Downstream Dia.	72					Upstream Dia.	7 1/2	
Nozzle Diameter (avg) (D_n)	0.205	Nozzle Diameter Calibration Checks		1	0.~~3~~0	2	–	3	–		

Isokinetic Factor Calculation	Pre T_s –	Pre T_m –	Pre Dry Stack Gas (B_{wd}) –	Meter (ΔHa) 1.012	Meter (Y) 1.513
	$a = (D_n^2 X B_{wd})^2$	$b = (1.6+B_{wd})T_s$	$c = T_m X \Delta H_a$	$F = 1570(aXc)/b$	Isokinetic Rate Factor
	–	–	–	–	1.5

Start Time	0828	Final Meter Reading (ft3)	794.200	ORSAT/(Fyrite) Analyzer	O_2 (%)	20.9	Comments:
Finish Time	1303	Initial Meter Reading (ft3)	610.200		CO_2 (%)	0	

Pre Test Leak Check	Post Test Leak Check	Static Pressure	Pitot Leak Check	Volume H_2O Collected	
0.012 cfm@15" H_g	0.008 cfm@ 8 "H_g	– 0.41 "H_2O	O/C at 3"	Silica Gel Weight	28.0 (Weighed at AASI Gy (H) gr

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
4-1	0	610.200	0.85	1.3	5	116	126	44	69	58	
	5	614.0	0.85	1.3	5	120	225	41	82	63	
2	10	616.9	0.85	1.3	5.5	121	233	41	88	63	
	15	620.3	0.85	1.3	5.5	119	232	41	94	64	
3	20	623.7	0.85	1.3	5.5	122	231	42	99	66	
	25	627.1	0.85	1.3	5.5	122	231	42	103	67	
4	30	630.5	0.85	1.3	5.5	125	236	42	105	69	
	35	634.0	0.9	1.4	6	127	236	42	107	70	
5	40	637.7	1.0	1.5	6	127	237	42	109	73	
	45	641.1	1.0	1.5	6	127	237	42	111	75	
6	50	644.8	1.1	1.6	7	127	238	42	113	77	
	55	649.6	1.1	1.7	7	120	237	42	114	79	
	60										

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440			
	Facility	Gerdau Baldwin	Run No. 3
	Source	EAF Baghouse	Date 4/19/07
	Weather	clear	Test(s) 1-5/12
	Testers	RW, C	Factor 1.5

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
3-1	60	652.66	0.7	1.1	5	120	226	44	102	77	
	65	656.0	0.7	1.1	5	120	235	41	105	78	
2	70	658.9	0.7	1.1	5	124	239	41	109	79	
	75	663.0	0.7	1.1	5	128	237	42	110	79	
3	80	667.0	0.7	1.1	5	126	239	42	110	80	
	85	669.0	0.7	1.1	5	127	235	42	110	80	
4	90	671.8	0.7	1.1	5	130	233	42	111	80	
	95	675.3	0.7	1.1	5	132	238	42	111	80	
5	100	677.1	0.7	1.1	5	135	240	43	112	81	
	105	683.0	0.7	1.1	5	137	242	43	113	82	
6	110	~~692.60~~	0.7	1.1	5	136	240	43	113	82	
	115		0.7	1.1	5	136	240	43	114	82	
2-1	120	692.60	0.8	1.2	5	130	230	48	106	83	
	125	695.9	0.8	1.2	5	132	252	45	110	85	
2	130	699.6	0.85	1.3	5	133	247	45	113	86	
	135	702.7	0.85	1.3	5	133	240	44	113	86	
3	140	707.1	0.85	1.3	5	133	239	44	113	85	
	145	7	0.85	1.3	5	133	239	44	113	85	
4	150	713.1	0.95	1.4	5	136	237	45	114	85	
	155	717.0	0.95	1.4	5	137	237	44	114	85	
5	160	720.9	0.95	1.4	5	138	238	44	114	85	
	165	723.7	1.0	1.5	5	141	238	44	115	86	
6	170	727.3	1.1	1.7	6	139	241	45	117	87	
	175	731.7	1.1	1.7	6	132	240	46	118	88	
	180										

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440			
	Facility	Gerdau Baldwin	Run No. 3
	Source	EAF Baghouse	Date 4/17/97
	Weather	clear	Test(s) 1-3/12
	Testers		Factor 1.5

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
1-1	180	735.47	1.0	1.5	6	128	255	49	95	83	
	185	738.0	1.0	1.5	6	128	250	47	97	84	
2	190	742.4	1.0	1.5	6	128	232	47	99	85	
	195		1.0	1.5	6	129	238	46	110	86	
3	200		1.0	1.5	6	138	240	46	114	87	
	205		1.0	1.5	6	141	~~240~~	46	116	88	
4	210	757.7	1.1	1.7	6	142	242	46	118	88	
	215	762.1	1.2	1.8	7	133	243	47	119	89	
5	220	766.7	1.2	1.8	7	128	244	47	120	89	
	225	770.3	1.2	1.8	7	127	244	47	120	89	
6	230	774.7	1.2	1.8	7	126	243	48	121	90	
	235	778.6	~~1.2~~	~~1.8~~	~~7~~ 6	130	244	47	121	90	
1-6	240	782.1	0.9	1.4	6	138	243	47	121	90	
	245	785.8	0.9	1.4	6	141	243	48	120	90	
5	250	789.8	0.9	1.4	6	139	245	47	120	90	
	255	793.2	~~1.0~~	1.5	6	141	245	47	120	90	
4	256.4	794.200	—	—	—	—	—	—	—	—	
3											
2											
1											

Advanced
Environmental Laboratories, Inc.

6815 SW Archer Road
Gainesville, Florida 32608
(352) 377-2349
FAX (352) 395-6639

May 4, 2007

Mr. Randy Weston
Ambient Air Services
106 Ambient Air Way
Starke, FL 32091

Dear Mr. Weston:

Enclosed are the hard copy analytical results for Ameristeel samples received April 24, 2007.

All samples were prepared and analyzed in accordance with Method 12 for lead. Our laboratory is certified by the Florida Department of Health (FDH No. E82001).

If you have any questions concerning this report, please contact me.

Sincerely,

Paul Berman
Project Manager

Enclosures

Advanced
Environmental Laboratories, Inc.

6815 SW Archer Road
Gainesville, Florida 32608
(352) 377-2349
FAX (352) 395-6639

REPORT OF ANALYSES
(SN-07054104626)

Mr. Randy Weston
Ambient Air Services
106 Ambient Air Way
Starke, FL 32091

Date: May 4, 2007
FDH No.: E82001

Table 1: Ameristeel Samples received 2/24/06: Method 12 Lead analysis

Sample ID	Lab ID	Volume (mL)	Lead, total ug
New Baghouse Run 1	0704306-01	380	18.0
New Baghouse Run 2	0704306-02	380	26.4
New Baghouse Run 3	0704306-03	380	24.0
New Baghouse Blank	0704306-04	380	9.2

AAS-Ameristeel-042407 JKuhn p2 2/26/01

AMBIENT AIR SERVICES, INC.
LABORATORY DATA SHEET

PARTICULATE WEIGHT DETERMINATION

PLANT & LOCATION: Gerdau Baldwin, FL

STACK: New Baghouse DATE R-4-17,18,19-2007 P4-26-07

	RUN 1	RUN 2	RUN 3	RUN 4	INITIALS
FILTERS:					
Filter No.	3368	3455	3353		4-24-07 CH
Filter Final Wt. (g)	0.3718	0.3456	0.3493		4-24-07 CH
Filter Tare Wt. (g)	0.3718	0.3453	0.3490		4-24-07 CH
Net Gain (gm)	0.0000	0.0003	0.0003		4-24-07 CH
PREFILTER:					
Sample No.	D 291	D 294	D 297		4-25-07 CH
Sample Volume	27 ml	100 ml	75 ml		4-25-07 CH
Aliquot					
Factor					
Final Wt.	112.8770	100.9706	96.9378		4-24-07 CH
Tare Wt.	112.8755	100.9674	96.9367		4-24-07 CH
Net Gain	0.0015	0.0032	0.0011		4-24-07 CH
Net Gain x Factor = Total (gm)					
Blank Correction Factor					
Particulate Wt. (grams)					
SOLVENT BLANK:	D 314				4-24-07 CH
Solvent	Acetone				4-23-07 CH
Solvent Volume, ml	100 ml				4-23-07 CH
Beaker Final Wt., grams	98.3259				4-24-07 CH
Beaker Tare Wt., grams	98.3259				4-24-07 CH
Net Gain, grams	0.0000				4-24-07 CH
Net Gain/100 ml solvent (gram)					
SILCA GEL:					
Sample No.	1	2	3		4-23-07 CH
Final Wt., grams	370.0	420.0	430.1		4-23-07 CH
Tare Wt., grams	350.5	391.9	402.1		4-23-07 CH
Net Gain, grams	19.5	28.1	28.0		4-23-07 CH
EXTRACTABLE MATTER:					
Sample No.					
Final Wt., grams					
Tare Wt., grams					
Net Gain, grams					

AASI.02

Balance Checks
0.500 gm 0.5000 6.000 gm 6.0000 50.000 gm N/A 2.000 gm 2.0000 10.000 gm 10.0000 100.000 gm 100.000

I certify that the information contained herin is correct, weights are correct and balances used are in current calibration.

Signature Colin S. Hinton Date 5-3-07

Quality Assurance Signature David J. Pate Date 5-8-07

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Ambient Air Services, Inc
106 Ambient Air Way Starke, FL 32091 (904) 964-8440 FAX: (904) 964-6675

Analysis Request & Chain-of-Custody Record

Project Name: Gerdau Location: Baldwin

Laboratory Name: Advanced Enviromental Lab
Address:
Laboratory Contact: 352-377-2349
Project #:

Samplers

Page of

RUSH!
Standard X
Date Report Desired:

Sample ID	Sample Date	Source	Run	Method	Medium	Matrix	Number of Containers	Chromium	Lead Method 12	Remarks
3368	4-17-07	New Baghouse	1	12	Glass	Filter	1		X	
3455	4-18-07		2		↓	↓	1		X	
3453	4-19-07		3				1		X	
3366	Blank		B				1		X	
D291	4-17-07		1		Acetone	Prefilter	1		X	
D294	4-18-07		2				1		X	
D297	4-19-07		3				1		X	
D314	Blank		B				1		X	
3-1	4-17-07		1		.1N HNO3	Impinger	1		X	
3-2	4-18-07		2				1		X	
3-3	4-19-07		3				1		X	
Blank	Blank	↓	B		↓	↓	1		X	

F-1
F-2
F-3
F-4
B-1
B-2
B-3
B-4
1-1
2-1
3-1

Relenquished by: (Sampler) Colin S Hunter AMSI	Time 1200 Date 4-24-07	Received by: (Signature and affiliation) David Shelton	Date 4/24/07 Time 1600
Relenquished by: David Shelton	Time 1636 Date 4/24/07	Received by: (Signature and affiliation)	Date 4/24/07 Time 1700
Relenquished by:	Time Date	Received by: (Signature and affiliation)	Date Time

For Lab Use Only

Sample Integrity: (Note here any damage or loss during transport)	Lab results issued to: By: When: Disposition of samples to others: Where stored:	Remarks:

Revision 2 Apr 5, 2005

Ambient Air Services, Inc.
Environmental Consultants
106 Ambient Airway Starke, Florida 32091 (904) 964-8440
AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2005

Example Calculations, PM Test Run 1

Facility	**Gerdau Ameristeel Corporation**	**Source**	**EAF Baghouse**
Location	**Baldwin, Florida**	**Date**	**April 17, 2007**

1. **Stack Pressure (P_s)**

$$P_s = P_{bar} + (P_g / 13.6)$$

Example.	P_{bar}	=	29.86	P_s	=	**29.84**	in. Hg.
	P_g	=	-0.34				

2. **Volume Water Vapor, ($V_{w(std)}$).**

$$V_{lc} \times 0.04706$$

Example.	V_{lc}	=	54.5	$V_{w(std)}$	=	**2.565**	SCF

3. **Meter Volume, corrected to Standard Conditions, ($V_{m(std)}$)**

$$V_m \times Y \times 17.64 \, (P_{bar} + (\Delta H/13.6))/T_m$$

Example.	V_m	=	191.400	$V_{m(std)}$	=	**184.887**	SCF
	P_{bar}	=	29.86				
	T_m	=	553.7				
	Y	=	1.012				
	K_1	=	17.64				
	ΔH_{avg}	=	1.406				

4. **Total Volume Of Sample, (V_t).**

$$V_{w(std)} + V_{m(std)}$$

Example.	$V_{m(std)}$	=	184.887	V_t	=	**187.452**	SCF
	$V_{w(std)}$	=	2.565				

5. **Moisture in stack gas, volume fraction (B_{ws})**

$$V_{w(std)} / V_{w(std)} + V_{m(std)}$$

Example.	$V_{m(std)}$	=	184.887	B_{ws}	=	**0.014**	
	$V_{w(std)}$	=	2.565				

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AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2006

Example Calculations, PM Test Run 1

Facility	**Gerdau Ameristeel Corporation**	**Source**	**EAF Baghouse**
Location	**Baldwin, Florida**	**Date**	**April 17, 2007**

6. **Dry Stack Gas, volume fraction (B_{wd})**

$$= 1 - B_{ws}$$

Example.	B_{ws}	=	0.014	B_{wd}	=	**0.986**

7. **Molecular Weight of Stack Gas, Dry, (M_d).**

$$= (0.44 \times \%CO2) + (0.32 \times \%O2) + (0.28 \times \%N2) + (0.28 \times \%CO)$$

Example.	CO2	=	0.0	M_d	=	**28.84**
	O2	=	20.9			
	N2	=	79.1			
	CO	=	0.0			

8. **Molecular Weight of Stack Gas, Stack Conditions, (M_s).**

$$= M_d \times B_{wd} + 18.0 \times B_{ws}$$

Example.	M_d	=	28.84	M_s	=	**28.69**
	B_{wd}	=	0.986			
	B_{ws}	=	0.014			

9. **Specific Gravity of Gas, Relative to Air, (G_s)**

$$= M_S / 28.99$$

Example.	M_s	=	28.69	G_s	=	**0.990**

10. **Velocity of Stack Gas, as feet per minute, (v_s).**

$$= (K_p \times C_p \times (\Delta p_{avg})^{0.5} \times (T_{s(abs)} / P_s \times M_s)^{0.5}) \times 60$$

Example.	C_p	=	0.84	v_s	=	**3417.9**	**FPM**
	Δp_{avg}	=	0.9598				
	$T_{s(abs)}$	=	584.68				
	P_s	=	29.84				
	M_s	=	28.69				
	K_p	=	85.490				

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Example Calculations, PM Test Run 1

Facility	**Gerdau Ameristeel Corporation**	**Source**	**EAF Baghouse**
Location	**Baldwin, Florida**	**Date**	**April 17, 2007**

11. **Actual Stack Gas Flow Rate (Q_s).**

$$= A \times v_s$$

Example.	v_s	=	3417.9	Q_s	=	**885937**	**ACFM**
	A	=	259.20321				

12. **Actual Stack Gas Flow Rate, Dry (Q_d)**

$$= Q_s \times B_{wd}$$

Example.	Q_s	=	885937	Q_d	=	**873813**	**ACFMD**
	B_{wd}	=	0.986				

13. **Stack Gas Flow Rate, Standard Temperature and Pressure, Dry, ($Q_{d(std)}$)**

$$= Q_d \times ((T_{std} \times P_s) / (P_{std} \times T_{s(abs)}))$$

Example	Q_d	=	873813	$Q_{d(std)}$	=	**786862**	**SCFMD**
	P_s	=	29.84				
	$T_{s(abs)}$	=	584.68				
	P_{std}	=	29.92				
	T_{std}	=	528				

14. **Stack Gas Flow Rate, Standard Temperature and Pressure ($Q_{s(std)}$)**

$$= Q_{d(std)} / B_{wd}$$

	$Q_{d(std)}$	=	786862	$Q_{s(std)}$	=	**797779**	**SCFMW**
	B_{wd}	=	0.986				

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AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2006

Example Calculations, PM Test Run 1

Facility	**Gerdau Ameristeel Corporation**	**Source**	**EAF Baghouse**
Location	**Baldwin, Florida**	**Date**	**April 17, 2007**

15. **Percent Isokinetic Sampled, (I)**

$$= (100 \times V_{m(std)} \times 29.92 \times T_{s(abs)}) / (528 \times v_s \times \Theta \times A_n \times P_s \times B_{wd})$$

Example.	A_n	=	0.000229	**I**	=	**98**	**%**
	Θ	=	270	P_{std}	=	29.92	
	$V_{m(std)}$	=	184.89	T_{std}	=	528	
	$T_{s(abs)}$	=	584.68	P_s	=	29.84	
	v_s	=	3417.9	B_{wd}	=	0.986	

16. **Particulate Concentration, grains per Standard Cubic Foot, (C_s).**

$$(0.01543 \times Mg.) / V_{m(std)}$$

Example.	Mg	=	1.5	**C_s**	=	**0.0001**	**Grs/ SCF.**
	$V_{m(std)}$	=	184.887				

17. **Mass Emission Rate, Lbs / Hr, (Em).**

$$C_s \times Q_{d(std)} \times 60 / 7000$$

Example.	$Q_{d(std)}$	=	786862	**Em**	=	**0.84**	**Lbs/ Hr**

18. **Lead Mass Emission Rate, Lbs / Hr, (E_{Pb}).**

$$E_{Pb} = P_{b(ug)} \times 2.205 \times 10^{-9} / V_{m(std)} \times Q_{d(std)}) \times 60$$

	$Q_{d(std)}$	=	786862	E_{Pb}	=	**0.010**	**Lbs/Hr**

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Example Calculations, PM Test Run 1

Facility		Gerdau Ameristeel Corporation	Source		EAF Baghouse
Location		Baldwin, Florida	Date		April 17, 2007

Constants

K	=	0.005 English	K_p	=	85.49 Velocity equation constant
K_1	=	17.64 °R/In. Hg	T_{std}	=	528 °R
K_2	=	0.04706 ft^3/ml	P_{std}	=	29.92 Inches Hg
K_3	=	0.0154 gr/mg	p_w	=	0.9982 g/ml

Variables

A	=	Stack Area (ft^2)	Q_s	=	Actual Stack Gas Flow Rate, ACFM
A_n	=	Nozzle Area (ft^2)	Q_d	=	Actual Stack Gas Flow Rate, ACFMD
B_{ws}	=	Moisture in stack gas, volume fraction	$Q_{s(std)}$	=	Stack Gas Flow Rate Wet, SCFMW
B_{wd}	=	Dry Stack Gas, volume fraction	$Q_{d(std)}$	=	Stack Gas Flow Rate, SCFMD
C_p	=	Pitot Correction Factor	$T_{s(abs)}$	=	Stack Temp (degrees R)
C_s	=	Grains per DSCF	T_m	=	Meter Temp (degrees R)
D_e	=	Equivilent Diameter (Inches)	v_s	=	Average Stack Velocity, FPM
E_m	=	Mass Emission Rate, Lb/hr	V_{lc}	=	Condensate Volume (ml)
I	=	Percent Isokinetic	V_m	=	Volume Metered (ft^3)
m_s	=	Prefilter Weight (grams)	$V_{m(std)}$	=	Gas Volume Sampled, STPD
m_n	=	Total Particulate (grams)	$V_{w(std)}$	=	Volume Water Vapor, SCF
M_d	=	Molecular Weight of Stack Gas (Dry Basis)	V_t	=	Total Volume Collected, SCF
M_s	=	Molecular Weight of Stack Gas (Stack conditions)	Y	=	Meter Correction
n	=	Number of Points	ΔH_{avg}	=	Delta H (Inches H_2O)
P_{bar}	=	Barometric Pressure (Inches Hg)	Δp_{avg}	=	Avg of SQRT of V.H.
P_g	=	Static Pressure	Θ	=	Total Time (minutes)
P_s	=	Stack Pressure (Inches Hg)			

APPENDIX B

GASEOUS & INSTRUMENT DATA

-Instrument Calibration Data
-Data Printout and Test Log
-Example Calculations (NO_x/CO/VOC)
-Gas Certificates

CO	288.8	ppm
	463.1	ppm
NO_x	24.9	ppm
	64	ppm
VOC	18.0	ppm methane/16.6 ppm propane
	7.61	ppm methane/10.35 ppm propane
	26.7	ppm methane/25.5 ppm propane

-Pre Test Meter Calibration
-Post Test Meter Calibration
-Pitot Tube Calibrations
-Thermocouple Calibrations

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Gerdau Ameristeel Corporation - Baldwin, Florida - EAF Baghouse - Gas Calibration Data - April 17-19, 2007

Nitric Oxide

Instrument Information	Manuf.	Thermo Environmental		Model	42H			Serial #	42H-48047-279		
CALIBRATION GAS VALUE	INITIAL CALIBRATION 4/18/07	CALIBRATION ERROR, % SPAN	POST RUN 1	POST RUN 2	PRE RUN 3	POST RUN 3					
0.00	0.24	0.38	-0.27	0.05	-0.36	-0.14					
24.90	24.52	-0.59	24.15	24.83	24.15	24.60					
64.00	63.14	-1.34	N/A	N/A	N/A	N/A					
RANGE	64										
Co	N/A		-0.02	-0.11	-0.16	-0.25					
Cm			24.34	24.49	24.49	24.38					
Cma			24.90	24.90	24.90	24.90					
Cdo			-0.80	-0.30	-0.94	-0.59					
Cdma			-0.58	0.48	-0.58	0.13					

Oxides of Nitrogen

Instrument Information	Manuf.	Thermo Environmental		Model	42H			Serial #	42H-48047-279		
CALIBRATION GAS VALUE	INITIAL CALIBRATION 4/18/07	CALIBRATION ERROR, % SPAN	POST RUN 1	POST RUN 2	PRE RUN 3	POST RUN 3					
0.00	-0.05	-0.08	0.00	0.00	-0.05	0.00					
24.90	24.92	0.03	25.36	25.55	25.07	25.70					
64.00	63.48	-0.81	N/A	N/A	N/A	N/A					
RANGE	64										
Co	N/A		-0.03	0.00	-0.03	-0.03					
Cm			25.14	25.46	25.31	25.39					
Cma			24.90	24.90	24.90	24.90					
Cdo			0.08	0.08	0.00	0.08					
Cdma			0.69	0.98	0.23	1.22					

Carbon Monoxide

Instrument Information	Manuf.	Thermo Environmental		Model	48			Serial #	48-25828-222		
CALIBRATION GAS VALUE	INITIAL CALIBRATION 4/17/07	CALIBRATION ERROR, % SPAN	PRE RUN 1	POST RUN 1	POST RUN 2	PRE RUN 3	POST RUN 3				
0.00	0.12	0.03	-0.75	1.26	0.40	0.12	-0.17				
288.80	296.81	1.73	298.82	298.53	297.95	295.08	297.95				
463.10	463.28	0.04		N/A	N/A	N/A	N/A				
RANGE	463.10										
Co	N/A		-0.32	0.26	0.83	0.26	-0.03				
Cm			297.82	298.68	298.24	296.52	296.52				
Cma			288.80	288.80	288.80	288.80	288.80				
Cdo			-0.19	0.25	0.06	0.00	-0.06				
Cdma			0.43	0.37	0.25	-0.37	0.25				

Gerdau Ameristeel Corporation - Baldwin, Florida - EAF Baghouse - Gas Calibration Data - April 17-19, 2007

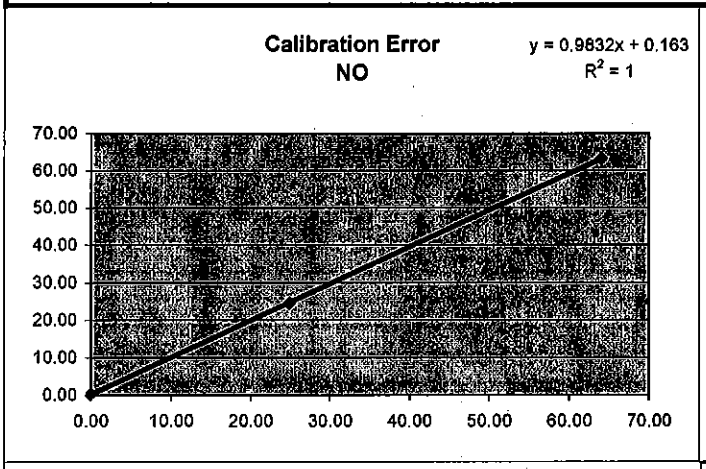
Methane

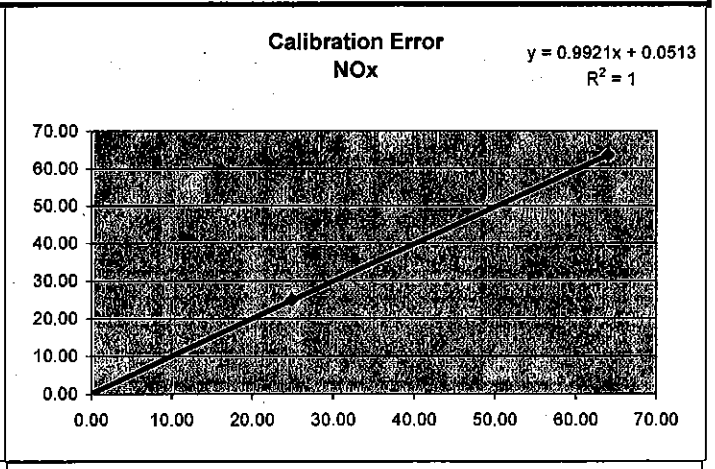
Instrument Information	Manuf.	Thermo Environmental		Model	55C			Serial #	335703966		
CALIBRATION GAS VALUE	INITIAL CALIBRATION 4/17/07	CALIBRATION ERROR, % VALUE	PRE RUN 1	POST RUN 1	POST RUN 2	PRE RUN 3	POST RUN 3				
0.00	0.06	0.20	-0.02	0.14	0.33	0.15	0.18				
18.00	18.19	1.06	17.37	18.42	18.42	18.52	18.52				
7.61	7.77	2.10	N/A	N/A	N/A	N/A	N/A				
26.70	26.83	0.49	N/A	N/A	N/A	N/A	N/A				
RANGE	30										
Co	N/A		0.02	0.06	0.24	0.24	0.17				
Cm			17.78	17.90	18.42	18.47	18.52				
Cma			18.00	18.00	18.00	18.00	18.00				
Cdo			-0.27	0.27	0.90	0.30	0.40				
Cdma			-2.73	0.77	0.77	1.10	1.10				

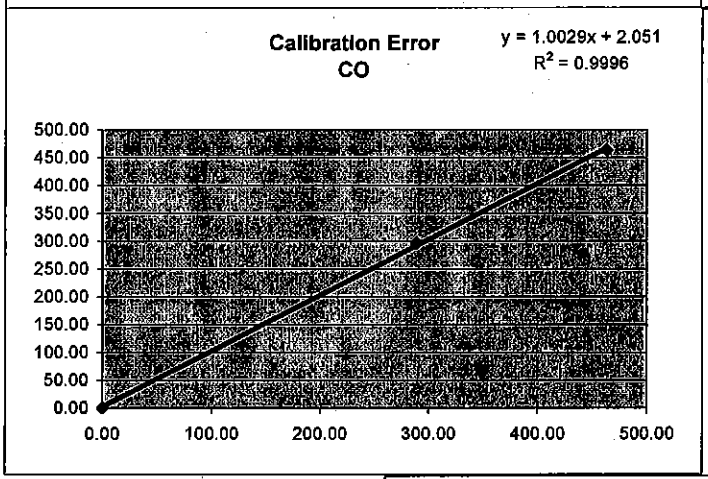
NonMethane Volatile Organic Compounds

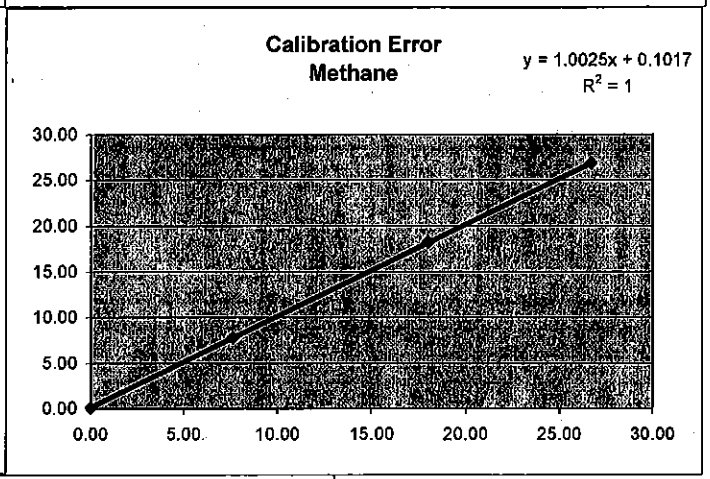
Instrument Information	Manuf.	Thermo Environmental		Model	55C			Serial #	335703966		
CALIBRATION GAS VALUE	INITIAL CALIBRATION 4/17/07	CALIBRATION ERROR, % VALUE	PRE RUN 1	POST RUN 1	POST RUN 2	PRE RUN 3	POST RUN 3				
0.00	0.08	0.27	-0.03	0.12	0.30	0.14	0.18				
16.60	16.81	1.27	16.19	16.07	15.96	15.53	16.27				
10.35	10.28	-0.68	N/A	N/A	N/A	N/A	N/A				
25.50	25.50	0.00	N/A	N/A	N/A	N/A	N/A				
RANGE	30										
Co	N/A		0.03	0.05	0.21	0.22	0.16				
Cm			16.50	16.13	16.02	15.75	15.90				
Cma			16.60	16.60	16.60	16.60	16.60				
Cdo			-0.37	0.13	0.73	0.20	0.33				
Cdma			-2.07	-2.47	-2.83	-4.27	-1.80				

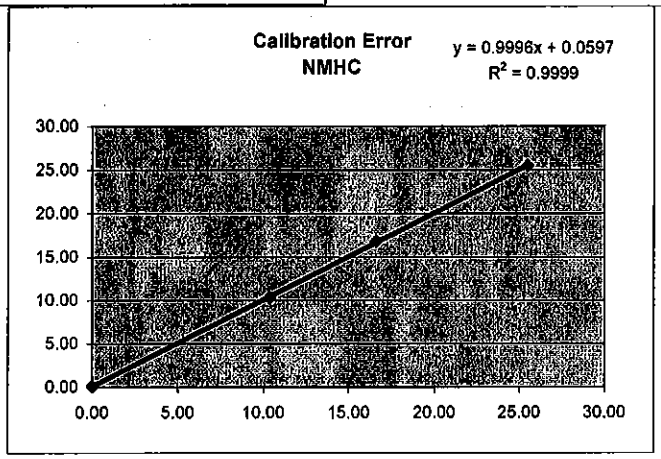
Gerdau Ameristeel Corporation - Baldwin, Florida - EAF Baghouse - Gas Calibration Data - April 17-19, 2007











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Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - April 17-19, 2007

	Uncorrected, PPM						BIAS CHECK RESULTS, AVERAGE RESPONSE, PPM														Corrected Concentration, PPM				
TimeStamp	NO, ppm	NOx, ppm	CO, ppm	Methane, ppm	NMHC, ppm	COMMENTS	Co, NO	Cm, NO	Cma, NO	Co, NOx	Cm, NOx	Cma, NOx	Co, CO	Cm, CO	Cma, CO	Co, M	Cm, M	Cma, M	Co, NMHC	Cm, NMHC	Cma, NMHC	CORR PPM NO	CORR PPM NOx	CORR PPM CO	CORR PPM M	CORR PPM NMHC
4/17/2007 8:00	0.25	2.17	8.16	3.87	1.22																				
4/17/2007 8:01	0.79	2.84	9.50	3.98	1.22																				
4/17/2007 8:02	3.88	5.93	16.50	5.02	1.22																				
4/17/2007 8:03	2.78	4.71	19.07	6.13	1.22																				
4/17/2007 8:04	1.50	3.73	75.85	9.12	1.22																				
4/17/2007 8:05	1.31	3.16	100.64	12.09	7.58																				
4/17/2007 8:06	1.42	3.29	76.23	10.04	8.14																				
4/17/2007 8:07	2.85	4.51	42.34	8.15	7.86																				
4/17/2007 8:08	4.36	6.32	17.64	7.49	3.77																				
4/17/2007 8:09	5.14	7.10	20.91	8.56	1.46																				
4/17/2007 8:10	4.85	6.80	17.35	7.84	1.22																				
4/17/2007 8:11	4.34	6.25	21.08	8.12	1.22																				
4/17/2007 8:12	4.14	6.08	17.06	7.33	1.22																				
4/17/2007 8:13	3.87	5.80	18.50	7.52	1.22																				
4/17/2007 8:14	4.00	5.93	24.82	6.90	1.22																				
4/17/2007 8:15	3.91	5.85	34.29	8.16	1.22																				
4/17/2007 8:16	3.64	5.50	63.66	8.08	1.22																				
4/17/2007 8:17	3.11	5.03	75.38	5.67	1.23																				
4/17/2007 8:18	2.20	3.14	92.31	5.55	0.42																				
4/17/2007 8:19	30.21	30.05	52.10	0.20	0.17																				
4/17/2007 8:20	63.22	63.72	-0.17	0.14	0.11																				
4/17/2007 8:21	63.22	63.97	-0.17	0.12	0.09																				
4/17/2007 8:22	63.22	63.85	-0.46	0.08	0.06																				
4/17/2007 8:23	39.73	40.59	9.86	0.14	0.11																				
4/17/2007 8:24	24.52	25.27	26.63	0.08	0.06																				
4/17/2007 8:25	23.52	23.80	26.54	-0.11	-0.12																				
4/17/2007 8:26	21.50	22.61	102.84	0.14	0.11																				
4/17/2007 8:27	3.27	3.83	437.54	0.14	0.09																				
	0.02	0.92	463.28	0.11	0.12	483.1 CO Average																			
	-0.07	0.27	371.48	0.06	0.06	Zero M, NM Average																			
	-0.09	0.30	298.61	0.15	0.14	285.8 CO Average																			
4/17/2007 8:31	-0.04	0.17	281.53	0.05	0.03																				
4/17/2007 8:32	0.56	0.80	119.66	2.73	0.05																				
4/17/2007 8:33	0.25	0.52	20.09	15.69	0.03																				
4/17/2007 8:34	-0.09	0.15	0.40	25.27	20.08																				
4/17/2007 8:35	-0.08	0.17	0.98	25.00	25.04																				
	-0.09	0.10	1.55	26.83	25.50	26.7 M, 25.8 NM Average																			
4/17/2007 8:37	-0.11	0.07	0.12	22.38	23.46																				
4/17/2007 8:38	-0.13	0.05	0.12	16.17	17.47																				
	-0.13	0.05	0.40	16.19	16.61	16 M, 16.6 NM Average																			
	-0.16	-0.07	0.12	16.11	16.59	Zero CO Average																			
4/17/2007 8:41	-0.09	0.00	2.99	15.56	14.61																				
	-0.09	0.27	10.17	7.77	10.29	7.81 M, 10.35 NM Average																			
4/17/2007 8:43	0.22	2.14	70.48	8.34	7.92																				
4/17/2007 8:44	0.80	2.47	143.43	5.80	4.71																				
4/17/2007 8:45	0.73	2.81	119.31	5.51	1.20																				
4/18/2007 8:20	0.12	0.92	8.15	0.35	0.03																				
4/18/2007 8:21	2.85	3.05	-0.75	0.14	0.06																				
4/18/2007 8:22	-0.02	-0.04	-1.03	0.08	0.06																				
4/18/2007 8:23	0.47	0.77	-1.03	0.00	0.06																				
4/18/2007 8:24	0.24	0.94	-0.75	0.11	0.08																				
4/18/2007 8:25	0.28	0.92	-0.75	0.11	0.09																				
4/18/2007 8:26	40.22	44.62	-0.75	0.12	0.11																				
4/18/2007 8:27	49.53	50.92	-0.75	0.15	0.11																				
	63.14	63.48	-0.75	0.06	0.03	64 NOx/ Zero CO Average																			
4/18/2007 8:29	48.57	50.92	11.32	-0.03	-0.06																				
4/18/2007 8:30	24.52	24.92	26.83	0.08	0.06																				
	24.52	24.92	26.83	0.08	0.06	24.9 NOx Average																			
4/18/2007 8:32	25.92	24.92	26.83	0.11	0.09																				
	0.24	-0.05	298.62	-0.02	-0.03	Zero NO, NOx, M, NM Average																			
	0.62	0.09	298.62	0.11	0.09	298.6 CO Average																			
4/18/2007 8:37	0.67	0.05	253.15	4.02	0.09																				
	-0.33	0.39	9.68	17.37	9.47	16 M Average																			
	5.41	4.57	15.81	15.90	16.19	16.6 NM Average																			
4/18/2007 8:40	4.65	5.39	16.21	6.09	6.34																				
	2.84	3.12	66.38	6.08	1.21	Run 1 Average																2.7	3.1	64.0	6.1	1.2
4/18/2007 10:36	45.39	44.61	8.72	5.87	1.20																				
4/18/2007 10:37	49.43	48.78	11.32	6.25	1.20																				
4/18/2007 10:38	48.70	48.07	11.03	6.61	1.20																				
4/18/2007 10:39	48.07	45.33	10.17	6.85	1.22																				
4/18/2007 10:40	35.16	36.36	11.32	6.74	0.27																				
4/18/2007 10:41	23.92	25.22	27.40	3.55	0.09																				
4/18/2007 10:42	24.10	26.31	28.83	0.14	0.12																				
	24.15	25.36	28.83	0.14	0.12	24.8 NOx/ Zero M, NM Average																			
4/18/2007 10:44	2.66	2.79	172.16	0.20	0.17																				
	0.14	0.10	298.53	0.21	0.20	298.6 CO Average																			
4/18/2007 10:46	-0.23	0.10	241.95	5.90	0.06																				
	-0.37	0.00	5.86	17.58	9.38	Zero NO, NOx Average																			
	1.83	0.34	1.28	16.42	15.43	16 M Zero CO Average																			
	1.40	1.83	0.43	15.84	16.07	16.6 NM Average																			
4/18/2007 10:50	0.80	1.30	7.87	4.35	0.04																				
4/18/2007 10:51	0.63	0.96	8.16	4.28	1.22																				
4/18/2007 10:52	0.54	0.81	7.87	4.04	1.22																				
4/18/2007 10:53	0.45	0.82	8.16	3.93	1.22																				
4/18/2007 10:54	0.40	0.82	8.16	3.78	1.19																				
4/18/2007 10:55	0.45	0.82	8.16	3.78	1.22																				
	2.80	3.30	79.71	7.24	1.32	Run 2 Average																2.9	3.2	76.6	6.9	1.3
4/18/2007 12:56	4.85	5.49	14.46	7.10	1.20																				
4/18/2007 12:57	4.94	5.53	23.38	7.45	1.20																				
4/18/2007 12:58	4.63	5.28	32.00	8.56	1.16																				
4/18/2007 12:59	16.39	16.98	37.17	8.86	0.24																				
4/18/2007 13:00	24.80	25.55	27.40	0.28	0.24																				
4/18/2007 13:01	24.65	25.55	27.11	0.27	0.24																				
4/18/2007 13:02	24.74	25.55	27.11	0.30	0.29																				
4/18/2007 13:03	24.69	25.55	27.40	0.30	0.28																				
4/18/2007 13:04	24.76	25.55	27.11	0.33	0.29																				
	24.83	25.55	27.40	0.32	0.32	24.9 NO, NOx Average																			
	24.76	25.55	27.11	0.33	0.30	Zero M, NM Average																			
4/18/2007 13:07	11.71	12.13	77.96	0.26	0.24																				
4/18/2007 13:08	0.27	0.05	292.50	0.28	0.27																				
4/18/2007 13:09	0.32	0.05	297.38	0.32	0.29																				

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Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - April 17-19, 2007

	Uncorrected, PPM						BIAS CHECK RESULTS, AVERAGE RESPONSE, PPM														Corrected Concentration, PPM				
TimeStamp	NO, ppm	NOx, ppm	CO, ppm	Methane, ppm	NMHC, ppm	COMMENTS	Co, NO	Cm, NO	Cma, NO	Co, NOx	Cm, NOx	Cma, NOx	Co, CO	Cm, CO	Cma, CO	Co, M	Cm, M	Cma, M	Co, NMHC	Cm, NMHC	Cma, NMHC	CORR PPM NO	CORR PPM NOx	CORR PPM CO	CORR PPM M	CORR PPM NMHC
	0.27	0.05	297.95	0.30	0.29	288.9 CO Average																			
4/18/2007 13:11	-0.05	0.10	221.27	0.15	0.12																				
	0.05	0.00	2.99	18.38	3.10	Zero NO, NOx Average																			
4/18/2007 13:13	0.09	0.00	0.69	18.25	15.88																				
	0.14	0.05	0.40	18.43	15.98	18.0 M, 18.6 NMF Zero CO Average																			
4/19/2007 7:30	6.63	4.19	30.65	6.01	1.20																				
4/19/2007 7:31	5.81	3.32	33.72	5.78	1.20																				
4/19/2007 7:32	7.13	4.87	22.52	8.03	1.20																				
4/19/2007 7:33	8.40	5.97	23.35	8.92	1.22																				
4/19/2007 7:34	8.99	6.84	31.42	9.80	1.20																				
4/19/2007 7:35	7.90	5.58	42.82	9.51	1.20																				
4/19/2007 7:36	7.81	5.34	29.41	9.45	1.20																				
4/19/2007 7:37	7.08	4.87	34.29	9.04	1.20																				
4/19/2007 7:38	6.61	4.33	39.46	8.57	1.20																				
4/19/2007 7:39	6.63	4.14	80.53	8.57	1.20																				
4/19/2007 7:40	5.58	3.08	90.30	7.15	1.20																				
4/19/2007 7:41	4.45	1.89	109.83	7.24	1.20																				
4/19/2007 7:42	3.86	1.25	125.63	6.14	1.20																				
4/19/2007 7:43	3.81	1.25	108.11	6.15	1.20																				
4/19/2007 7:44	3.63	1.01	61.68	4.48	1.20																				
4/19/2007 7:45	5.81	3.32	40.80	4.44	1.20																				
4/19/2007 7:46	4.81	2.28	29.12	5.88	1.20																				
4/19/2007 7:47	7.17	4.72	19.36	8.31	1.19																				
4/19/2007 7:48	13.97	14.15	31.42	7.83	0.21																				
4/19/2007 7:49	23.78	24.93	30.85	2.00	0.15																				
4/19/2007 7:50	24.06	25.07	28.63	0.21	0.17																				
	24.15	25.07	28.63	0.26	0.23	24.9 NO, NOx Average																			
4/19/2007 7:52	24.15	25.02	27.11	0.27	0.24																				
4/19/2007 7:53	8.17	8.57	104.09	0.16	0.17																				
	0.18	0.05	285.06	0.28	0.26	288.9 CO Average																			
	-0.09	0.05	293.07	0.15	0.14	Zero M, NM Average																			
	-0.36	-0.05	57.27	9.78	0.06	Zero NO, NOx Average																			
	-0.16	0.00	0.12	16.13	12.45	Zero CO Average																			
4/19/2007 7:56	0.05	0.00	0.12	16.37	14.82																				
	0.14	0.00	0.12	16.52	15.53	16 M, 16.6 NM Average																			
4/19/2007 8:00	2.72	3.47	2.88	19.34	16.03																				
4/19/2007 8:01	6.08	6.76	7.87	13.96	16.32																				
4/19/2007 8:02	7.39	8.08	9.88	4.29	6.13																				
4/19/2007 8:03	2.40	2.84	34.58	4.66	1.20																				
4/19/2007 8:04	4.04	4.52	40.33	6.43	1.20																				
4/19/2007 8:05	4.28	4.81	25.68	9.15	1.22																				
4/19/2007 8:06	2.40	2.69	46.07	5.77	1.20																				
4/19/2007 8:07	1.04	1.44	65.13	6.20	1.20																				
4/19/2007 8:08	0.50	0.91	125.91	6.05	1.22																				
4/19/2007 8:09	0.68	1.11	138.84	6.30	1.20																				
4/19/2007 8:10	0.66	1.11	140.56	5.98	1.22																				
4/19/2007 8:11	1.18	1.64	148.32	6.11	1.20																				
4/19/2007 8:12	0.59	1.01	142.09	5.92	1.22																				
4/19/2007 8:13	0.40	0.87	110.66	5.63	1.19																				
4/19/2007 8:14	0.77	1.16	103.80	5.32	1.20																				
4/19/2007 8:15	1.13	1.54	108.98	5.72	1.22																				
4/19/2007 8:16	7.71	8.37	63.12	5.84	1.20																				
4/19/2007 8:17	17.74	18.82	22.23	4.46	1.23																				
4/19/2007 8:18	15.75	16.70	15.34	4.29	1.22																				
4/19/2007 8:19	2.87	3.16	65.80	4.75	1.20																				
4/19/2007 8:20	15.70	16.70	42.34	4.98	1.20																				
4/19/2007 8:21	4.83	5.20	41.47	4.61	1.22																				
4/19/2007 8:22	3.84	4.46	50.09	5.75	1.20																				
4/19/2007 8:23	2.08	2.55	65.80	5.55	1.20																				
4/19/2007 8:24	8.53	9.29	31.71	4.66	1.20																				
4/19/2007 8:25	5.87	6.26	16.49	3.88	1.20																				
4/19/2007 8:26	6.40	7.03	14.76	3.56	1.20																				
4/19/2007 8:27	1.81	2.28	18.77	3.53	1.20																				
	3.02	3.52	70.47	6.61	1.27	Run 3 Average																3.3	3.5	68.7	6.3	1.2
4/19/2007 10:27	6.94	5.15	8.44	7.02	0.98																				
4/19/2007 10:28	21.47	22.38	16.83	5.92	0.16																				
	24.50	25.70	26.83	1.02	0.15	24.8 NO, NOx Average																			
	4.58	4.81	148.31	0.18	0.18	Zero M, NM Average																			
4/19/2007 10:31	0.05	0.00	297.09	0.21	0.20																				
	0.18	0.05	297.95	0.24	0.21	288.6 CO Average																			
4/19/2007 10:33	0.23	0.05	297.67	0.26	0.24																				
4/19/2007 10:34	0.23	0.05	298.81	0.27	0.26																				
4/19/2007 10:35	0.23	0.05	297.09	0.26	0.26																				
4/19/2007 10:36	0.50	0.34	294.51	0.27	0.26																				
4/19/2007 10:37	1.77	1.84	247.12	1.67	0.27																				
4/19/2007 10:38	2.91	2.79	194.27	4.04	0.28																				
4/19/2007 10:39	3.27	3.16	180.09	5.78	0.20																				
4/19/2007 10:40	1.54	1.78	132.61	8.27	0.12																				
4/19/2007 10:41	-0.33	0.00	10.74	11.61	0.09																				
	-0.14	0.00	-0.17	16.52	11.77	16 M Zero NO, NOx, CO Average																			
	4.63	2.07	41.47	15.40	16.27	16.6 NM Average																			
4/19/2007 10:44	5.45	2.84	157.78	6.98	5.85																				
4/19/2007 10:45	4.81	2.28	159.52	6.33	1.22																				

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculations for Run 1 of the NOx Test

Correction of NO Concentrations for Instrument Drift

EPA Method 7E provides an equation for correcting the measured gaseous concentrations over a valid test run for instrument drift during the test run.

The EPA equation presented in Section 12 of EPA Method 7E is:

$$C_{gas} = (C_{avg} - C_o)(C_{ma} / (C_m - C_o))$$

Where:

C_{gas}	=	Effluent gas concentration, dry basis, ppm.
C_{avg}	=	Average gas concentration indicated by the gas analyzer, ppm.
C_o	=	Average of initial and final system calibration bias check responses for the zero gas, ppm.
C_m	=	Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm.
C_{ma}	=	Actual concentration of the upscale calibration gas, ppm.

Using the average for Run 1 of the NO test:

C_{avg} = 2.64

From the Pre test / post test calibration
Pre test + Post Test / 2

C_o =	0.24	-0.27	2.00	-0.02 ppm
C_m =	24.52	24.15	2.00	24.34 ppm
C_{ma} =	24.90	ppm		

	Cavg	Co	Cma	Cm	Co
C_{gas} =	2.6	-0.02	24.90	24.34	-0.02

C_{gas} = 2.7

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculation of the Mass of NO Emissions During the Test Run

The stack gas flow rate for each sampling run was measured using EPA Methods 1 through 4. Flow data in Appendix A presents the measured stack gas parameters. The average mass emission rate of a pollutant over a sampling run was calculated by using the following equation:

$$M = \frac{C_{gas(avg)} \times MW \times Q \times 60}{385.1 \times 10^6}$$

Where:

M	=	Average mass emission rate of the pollutant over the sampling run in lbs/hr.
$C_{gas(avg)}$	=	Average concentration of the stack gas during the sampling run in ppm. The concentration is expressed on a dry stack basis.
MW	=	Molecular weight of the pollutant in lbs/lb-mole.
Q	=	Stack gas flow rate during the sampling run in dry standard cubic feet per minute (dscfm).
385.1	=	Number of cubic feet occupied by one pound of gas at standard conditions (68° F and 29.92 in. Hg), assuming ideal gas behavior.
10^6	=	Conversion constant for parts per million to cubic feet of pollutant (1 ppm = 10^{-6} ft^3 pollutant / ft^3 stack gas)
60	=	Conversion constant for minutes to hours (1hr = 60 minutes)

Example Calculation

$C_{gas(avg)}$	=	2.7	ppm			
MW	=	30	=	14 + 16		
Q	=	763351	SCFMD			
		Cgas(avg)	MW	Qd(std)		
M	=	2.7	30	763351	60	
			3.8510E+08			
M	=	9.7	lbs/hr			

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculation of the Mass of NOx Emissions During the Test Run

The Concentration of NO2 in the stack gas can be determined by the following equation:

$$C_{NO2} = C_{NOx} - C_{NO}$$

Where: C_{NO2} = Average NO2 concentration of the stack gas during the sampling run. (ppm)

C_{NOx} = Average NOx concentration of the stack gas during the sampling run (ppm).

C_{NO} = Average NO concentration of the stack gas during the sampling run (ppm)

For the NO2 Test:

C_{NO2} = C_{NOx} - C_{NO}

3.1 2.7

C_{NO2} = 0.4 =

Mass Emissions of NO2 are calculated in the same way as for NO. The Molecular weight of NO2 is 46.

For the NO2 test:

$C_{gas(avg)}$ = 0.4 ppm

MW = 46 = 14 + 16 +16

Q = 763351 SCFMD

CNO2	MW	Qd(std)	
0.4	46	763351	60

3.851E+08

M_{NO2} = 2.2 lbs/hr

M_{NOx} (as measured) = M_{NO} + M_{NO2}

M_{NOx} (as measured) = 11.9 Lbs/hr

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

NO_x emissions in pounds of NO_x per ton of steel produced (lbs/ton)

Steel Production =	92	cast tons per hour
NOx emissions =	11.9	Lbs/hr
lbs/ton =	0.13	

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculations for Run 1 of the CO Test

Correction of CO Concentrations for Instrument Drift

EPA Method 7E provides an equation for correcting the measured gaseous concentrations over a valid test run for instrument drift during the test run.

The EPA equation presented in Section 12 of EPA Method 7E is:

$$C_{gas} = (C_{avg} - C_o)(C_{ma} / (C_m - C_o))$$

Where:

C_{gas}	=	Effluent gas concentration, dry basis, ppm.
C_{avg}	=	Average gas concentration indicated by the gas analyzer, ppm.
C_o	=	Average of initial and final system calibration bias check responses for the zero gas, ppm.
C_m	=	Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm.
C_{ma}	=	Actual concentration of the upscale calibration gas, ppm.

Using the average for Run 1 of the CO test:

C_{avg} = 66.36

From the Pre test / post test calibration

		Pre test +	Post Test	/ 2		
C_o	=	-0.75	1.26	2	0.255	ppm
C_m	=	298.82	298.53	2	298.68	ppm
C_{ma}	=	288.8	ppm			

C_{gas} = $C_{gas} = (C_{avg} - C_o)(C_{ma} / (C_m - C_o))$

		Cavg	Co	Cma	Cm	Co
C_{gas}	=	66.36	0.255	288.8	298.68	0.255

C_{gas} = 64.0 ppm

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculation of the Mass of CO Emissions During the Test Run

The stack gas flow rate for each sampling run was measured using EPA Methods 1 through 4. Flow data in Appendix A presents the measured stack gas parameters The average mass emission rate of a pollutant over a sampling run was calculated by using the following equation

$$M = \frac{C_{gas(avg)} \times MW \times Q \times 60}{385.1 \times 10^6}$$

Where:

M	=	Average mass emission rate of the pollutant over the sampling run in lbs/hr.
$C_{gas(avg)}$	=	Average concentration of the stack gas during the sampling run in ppm. This concentration is expressed on a dry stack basis.
MW	=	Molecular weight of the pollutant in lbs/lb-mole.
Q	=	Stack gas flow rate during the sampling run in dry standard cubic feet per minute (dscfm).
385.1	=	Number of cubic feet occupied by one pound of gas at standard conditions (68° F and 29.92 in. Hg), assuming ideal gas behavior.
10^6	=	Conversion constant for parts per million to cubic feet of pollutant (1 ppm = 10^{-6} ft^3 pollutant / ft^3 stack gas)
60	=	Conversion constant for minutes to hours (1 hr = 60 Minutes)

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Example Calculation:

For the CO test:

$C_{gas(avg)}$	=	63.9	ppm
MW	=	28	
Q	=	763351	SCFMD

$$\frac{C_{gas(avg)} \times MW \times Q \times 60}{385.1 \times 10^6}$$

$C_{gas(avg)}$	MW	Q	
63.9	28	763351	60

3.851E+08

M = 212.8 lbs/hr

CO emissions in pounds of CO per ton of steel produced (lbs/ton)

Steel Production	92	cast tons per hour
CO emissions	212.8	lbs/hr
lbs/ton	2.31	

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculations for Run 1 of the VOC Test

Correction of VOC (as Propane) Concentrations for Instrument Drift

EPA Method 7E provides an equation for correcting the measured gaseous concentrations over a valid test run for instrument drift during the test run.

The EPA equation presented in Section 12 of EPA Method 7E is:

$$C_{gas} = (C_{avg} - C_o)(C_{ma} / (C_m - C_o))$$

Where:

C_{gas}	=	Effluent gas concentration, wet basis, ppm.
C_{avg}	=	Average gas concentration indicated by the gas analyzer, ppm.
C_o	=	Average of initial and final system calibration bias check responses for the zero gas, ppm.
C_m	=	Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm.
C_{ma}	=	Actual concentration of the upscale calibration gas, ppm.

Using the average for Run 1 of the VOC (as Propane) test:

C_{avg} = 1.21

From the Pre test / post test calibration

		Pre test +	Post Test	/ 2		
C_o	=	-0.03	0.12	2	0.05	ppm
C_m	=	16.19	16.07	2	16.13	ppm
C_{ma}	=	16.60 ppm				

C_{gas} = $C_{gas} = (C_{avg} - C_o)(C_{ma} / (C_m - C_o))$

		Cavg	Co	Cma	Cm	Co
C_{gas}	=	1.21	0.05	16.60	16.13	0.05

C_{gas} = 1.2

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EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculation of the Mass of VOC (as Carbon) Emissions During the Test Run

The stack gas flow rate for each sampling run was measured using EPA Methods 1 through 4. Flow data in Appendix A presents the measured stack gas parameters The average mass emission rate of a pollutant over a sampling run was calculated by using the following equation:

$$M = \frac{C_{gas(avg)} \times MW \times Q \times 60}{385.1 \times 10^6}$$

Where:

M	=	Average mass emission rate of the pollutant over the sampling run in lbs/hr.
$C_{gas(avg)}$	=	Average concentration of the stack gas during the sampling run in ppm. This concentration is expressed on a wet stack basis.
MW	=	Molecular weight of the pollutant in lbs/lb-mole.
Q	=	Stack gas flow rate during the sampling run in wet standard cubic feet per minute (wscfm).
385.1	=	Number of cubic feet occupied by one pound of gas at standard conditions (68° F and 29.92 in. Hg), assuming ideal gas behavior.
10^6	=	Conversion constant for parts per million to cubic feet of pollutant (1 ppm = 10^{-6} ft^3 pollutant / ft^3 stack gas)
60	=	Conversion constant for minutes to hours (1 hr = 60 Minutes)

AASI
Ambient Air Services, Inc.
Environmental Consultants
106 Ambient Airway Starke, Florida (904) 964-8440

EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Example Calculation:

For the VOC test:

$C_{gas(avg)}$ = 1.1 ppm (as propane)

$C_{gas(avg)}$ = 3.3 ppm (as carbon)

propane to carbon = propane concentration X 3

MW = 12

Q = 777300 SCFMW

$$\frac{C_{gas(avg)} \times MW \times Q \times 60}{385.1 \times 10^{6}}$$

$C_{gas(avg)}$	MW	Q	
3.3	12	777300	60

3.85E+08

M = 4.8 lbs/hr

VOC emissions in pounds of VOC per ton of steel produced (lbs/ton)

Steel Production	92	cast tons per hour
VOC emissions	4.8	lbs/hr
lbs/ton	0.052	

Airgas

Certificate of Analysis: EPA Protocol Gas Mixture

Airgas Specialty Gases
5480 Hamilton Blvd.
Theodore, AL 36582

P.O. Box 190969
Mobile, AL 36619
(251) 653-2500 Fax: (251) 653-2530
http://www.airgas.com

Cylinder Number: CC84126
Cylinder Pressure: 1999.6 PSIG
Certification Date: 11/29/2004
Reference Number: 47-124026080-13
Expiration Date: 11/29/2007
Laboratory: ASG - Mobile - AL

Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
CARBON MONOXIDE	288.8 PPM	+/- 1%	NDIR	G1
Air	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 PO 110756957

Do not use cylinder below 150 psig.

Approval Signature Leticia R. Odom

Reference Standard Information

Type	Balance Gas	Component	Cyl.Number	Concentration
NTRM 52409	NITROGEN	CARBON MONOXIDE	SG9159516	973.6 PPM

Analytical Results

1st Component CARBON MONOXIDE

1st Analysis Date: 11/22/2004

R 973.6	S 288.8	Z 0.000	Conc 288.8 PPM
S 288.8	Z 0.000	R 973.6	Conc 288.8 PPM
Z 0.000	R 973.6	S 288.8	Conc 288.8 PPM
			AVG: 288.8 PPM

2nd Analysis Date: 11/29/2004

R 973.6	S 288.8	Z 0.000	Conc 288.8 PPM
S 288.8	Z 0.000	R 973.6	Conc 288.8 PPM
Z 0.000	R 973.6	S 288.8	Conc 288.8 PPM
			AVG: 288.8 PPM

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	March 19, 2007
Delivery Receipt	DR-18911
Gas Standard	400.0 - 500.0 ppm Carbon Monoxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	March 19, 2007
Expiration Date	March 19, 2010
Component	Carbon Monoxide
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**
EPA Protocol, Section No. 2.2, Procedure G-1

Replicate Concentrations

Carbon Monoxide: 463.1 ppm +/- 4.6 ppm
Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-115900	CC-166528
Concentration:	258.8 ppm CO/Nitrogen	496.3 ppm CO/Nitrogen
Expiration Date	August 11, 2009	April 06, 2009

Certification Instrumentation

Component:	Carbon Monoxide
Make/Model:	Nicolet - NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	March 01, 2007

Cylinder Data

Cylinder Serial Number:	CC-159027	Cylinder Outlet:	CGA 350
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:
Date: March 19, 2007

Unmatched Excellence

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~ www.liquidtechcorp.com ~

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Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	October 11, 2006
Delivery Receipt	DR-18015
Gas Standard	25.0 ppm NO, 25.0 ppm CO, 2.50% CO2/N2-EPA PROTOCOL
Final Analysis Date	October 11, 2006
Expiration Date	October 11, 2008

DO NOT USE BELOW 150 psig

Analytical Data:
EPA Protocol, Section No. 2.2, Procedure G-1.

Replicate Concentrations
Nitric Oxide: 24.9 ppm +/- 0.24 ppm
Carbon Monoxide: 25.1 ppm +/- 0.25 ppm
Carbon Dioxide: 2.58% +/- 0.02%
Nitrogen: Balance
Total Oxides of Nitrogen: 24.9 ppm
**** NOx for Reference Use Only ****

Reference Standards

SRM/GMIS:	GMIS	GMIS	GMIS/GMIS
Cylinder Number:	CC-92955	CC-125604	CC-55961/CC-115946
Concentration:	24.65 ppm NO/N2	25.9 ppm CO/N2	1.00% CO2/6.01% CO2
Expiration Date:	04/07/10	07/24/08	03/29/08 - 07/23/10

Certification Instrumentation

Component:	Nitric Oxide	Carbon Monoxide	Carbon Dioxide
Make/Model:	NEXUS-470	NEXUS-470	HP5890-II
Serial Number:	AEP99000154	AEP99000154	3336A59393
Principal of Measurement:	FTIR	FTIR	GC-TCD
Last Calibration:	October 04, 2006	October 04, 2006	October 04, 2006

Cylinder Data

Cylinder Number:	CC-185370	Cylinder Volume:	140 Cubic Feet
Cylinder Outlet:	CGA 660	Cylinder Pressure:	2000 psig, 70 F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Jeremy Braun
Date: October 11, 2006

Unmatched Excellence

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Fax (407)-292-3313

AIR LIQUIDE

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

Cylinder Number: CC68588

Customer:	AMBIENT AIR SERVICES INC	**Shipping Order #:**	21675560
P.O. Number:	1437	**Transfer #:**	21675560
Item Number:	PT-CO2/NO/SO2	**LOT #:**	LPX200544
Notes:	AI# 100329 7303-30AL	**Valve:**	CGA660
	MID RANGE	**Cyl. Pressure*:**	1900psig
Assay Date:	21-Aug-06 **Expiration Date:** 20-Aug-08		*Cylinder should not be used when gas pressure is below 150 psig

Component	Requested Concentration	Assay Concentration
Nitric Oxide	**63 ppm**	**63.9 ±0.5 ppm**
Sulfur Dioxide	**47 ppm**	**47.4 ±0.3 ppm**
Carbon Dioxide	**13 %**	**13.0 ±0.1 %**
Total NOX		**64.0 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.
GMIS321	GMIS321	103.0	ppm	0.63	NO	N2	CC111105	3/1/2008	N.A.
GMIS313	GMIS313	101.0	ppm	0.6	SO2	N2	CC155689	11/11/2007	N.A.
GMIS302	GMIS302	14.0	%	0.1	CO2	N2	CC177833	8/24/2007	N.A.

Analysis Information:

Component 1:	Nitric Oxide		First Trial Analysis On: 8/14/2006				Second Trial Analysis On: 8/21/2006			
Analyzer Information			Trial 1	Trial 2	Trial 3	Units	Trial 1	Trial 2	Trial 3	Units
Manufacturer:	KVB/Analect	Zero	-0.71	0.25	-0.03		-0.47	0.12	0.13	
Model Number:	EN3024	Reference	99.40	99.12	99.28		99.25	98.83	99.01	
Serial Number:	3024	Candidate	61.03	61.38	61.80		61.70	61.55	61.32	
Analytical Principle:	FTIR	Result	63.39	63.75	64.18	ppm	64.20	64.05	63.81	ppm
MPC Calibrated:	07/27/06			Mean Result:	63.78	ppm		Mean Result:	64.02	ppm

Component 2:	Sulfur Dioxide		First Trial Analysis On: 8/14/2006				Second Trial Analysis On: 8/21/2006			
Analyzer Information			Trial 1	Trial 2	Trial 3	Units	Trial 1	Trial 2	Trial 3	Units
Manufacturer:	KVB/Analect	Zero	-0.07	-0.02	-0.05		0.15	-0.01	0.05	
Model Number:	EN3024	Reference	97.44	97.59	97.61		97.57	97.53	97.37	
Serial Number:	3024	Candidate	46.03	45.43	46.03		45.85	45.74	45.41	
Analytical Principle:	FTIR	Result	47.69	47.06	47.69	ppm	47.46	47.35	47.01	ppm
MPC Calibrated:	08/10/06			Mean Result:	47.48	ppm		Mean Result:	47.27	ppm

Component 3:	Carbon Dioxide		First Trial Analysis On: 8/14/2006				Second Trial Analysis On:			
Analyzer Information			Trial 1	Trial 2	Trial 3	Units	Trial 4	Trial 5	Trial 6	Units
Manufacturer:	KVB/Analect	Zero	0.30	0.31	0.20					
Model Number:	EN3024	Reference	13.76	13.77	13.67					
Serial Number:	3024	Candidate	12.82	12.65	12.71					
Analytical Principle:	FTIR	Result	13.05	12.87	12.94	%				
MPC Calibrated:	07/20/06			Mean Result:	12.96	%		Mean Result:		

Analyst Signature: Bryan Leger Bryan Leger Calculated by: M. Adnane

Mix Assayed At: Air Liquide America 11426 Fairmont Pkwy, La Porte, TX, 77571 Phone:(281)474-8400 Fax:(281)474-8419

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	June 07, 2005
Delivery Receipt	DR-15236
Gas Standard	16.0 ppm Methane, 16.0 ppm Propane/N2 - EPA PROTOCOL
Final Analysis Date	June 01, 2005
Expiration Date	June 01, 2008
Component	Methane, Propane
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Methane: 18.0 ppm +/- 0.2 ppm

Propane: 16.6 ppm +/- 0.2 ppm

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	1659a/GMIS	1666b/1667b
Cylinder Number:	FF-28598/CC-125488	XF-003868B/XF003853B
Concentration:	9.863 ppm CH4/49.5 ppm CH4/N2	9.83 ppm C3H8/49.54 ppm C3H8/Air
Expiration Date:	04/01/09 - 03/04/08	12/01/09 - 091/9/06

Certification Instrumentation

Component:	Methane	Propane
Make/Model:	HP5890-II	HP-5890II
Serial Number:	3336A59393	3336A59393
Principal of Measurement:	GC-FID	GC-FID
Last Calibration:	May 10, 2005	May 09, 2005

Cylinder Data

Cylinder Serial Number:	CC-100822	Cylinder Outlet:	CGA 350
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Jeremy Braun

Date: June 01, 2005

Unmatched Excellence

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Fax (407)-292-3313

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer:	Ambient Air Services (Starke, Florida)
Date:	March 23, 2007
Delivery Receipt:	DR-18911
Product:	9.00 ppm CH4, 9.00 ppm C3H8/Nitrogen - EPA PROTOCOL
Final Analysis Date:	March 23, 2007
Expiration Date:	March 23, 2010 DO NOT USE BELOW 150 PSIG

Component	Methane, Propane
Balance Gas	Nitrogen

Analytical Data

EPA PROTOCOL, Section No. 2.2, Procedure G-1

Reported Concentrations

Methane: 7.61 ppm +/- 0.07 ppm
Propane: 10.35 ppm +/- 0.10 ppm
Nitrogen: Balance

Reference Standard(s):

SRM/GMIS:	1659a	1666b
Cylinder Number:	FF-28598	XF-003868B
Concentration:	9.863 ppm CH4/Air	9.83 ppm Propane/Air
Expiration Date:	April 01, 2009	December 01, 2009

Certification Instrumentation

Component:	Methane	Propane
Make/Model:	HP5890-II	HP5890-II
Serial Number:	3336A59393	3336A59393
Principal of Measurement:	GC-FID	GC-FID
Last Calibration:	March 02, 2007	March 02, 2007

Cylinder Data

Cylinder Serial Number:	CC-231426	Cylinder Outlet:	CGA 350
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70'F

Analytical uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Mike Dunn

Date: March 23, 2007

Unmatched Excellence

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Liquid Technology Corporation

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Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	March 31, 2006
Delivery Receipt	DR-16913
Gas Standard	25.5 ppm Methane, 25.5 ppm Propane/N2 - EPA PROTOCOL
Final Analysis Date	March 31, 2006
Expiration Date	March 31, 2009
Component	Methane, Propane
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Methane: 26.7 ppm +/- 0.26 ppm

Propane: 25.5 ppm +/- 0.25 ppm

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	1659a/GMIS	1666b/1667b
Cylinder Number:	FF-28598/CC-125488	XF-003868B/XF003853B
Concentration:	9.863 ppm CH4/49.5 ppm CH4/N2	9.83 ppm C3H8/49.54 ppm C3H8/Air
Expiration Date:	04/01/09 - 03/04/08	12/01/09 - 09/19/06

Certification Instrumentation

Component:	Methane	Propane
Make/Model:	HP5890-II	HP-5890II
Serial Number:	3336A59393	3336A59393
Principal of Measurement:	GC-FID	GC-FID
Last Calibration:	March 14, 2006	March 14, 2006

Cylinder Data

Cylinder Serial Number:	CC-165407	Cylinder Outlet:	CGA 350
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:

Date: March 31, 2006

Unmatched Excellence

2564 Pemberton Drive Apopka Florida 32703 Phone (407) 292 2990
Fax (407) 292 3313

APEX INSTRUMENTS METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	AASI
Console Serial Number	3
DGM Model Number	D77S
DGM Serial Number	713855

Calibration Conditions			
Date	Time	22-Dec-04	1130
Barometric Pressure		30.00	in Hg
Theoretical Critical Vacuum[1]		14.2	in Hg
Calibration Technician		DWL	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3 \cdot {}^oR^{1/2})/(in.Hg \cdot min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
14.0	3.9	163.100	178.450	65	70	73	0.8486	51	52	16
19.0	1.9	178.900	194.474	70	71	63	0.6213	52	54	17
28.0	1.1	195.000	212.560	71	69	55	0.4793	54	57	18
32.0	0.6	214.000	229.300	69	67	48	0.3740	57	59	19
35.0	0.3	229.900	241.260	67	65	40	0.2511	59	62	20

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)corr}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
15.553	1.111	15.759	1.126	1.013	0.001	1.126	1.772	0.259
15.614	0.822	15.636	0.823	1.001	-0.011	0.823	1.591	0.078
17.588	0.628	17.733	0.633	1.008	-0.004	0.633	1.551	0.037
15.363	0.480	15.775	0.493	1.027	0.015	0.493	1.351	-0.162
11.441	0.327	11.556	0.330	1.010	-0.002	0.330	1.301	-0.212
				1.012	Y Average		1.513	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature [signature] Date 22 Dec 04 Q.A. Signature: [signature] Date: 12/23/04

APEX INSTRUMENTS METHOD 5 POST-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
3-POINT ENGLISH UNITS

Meter Console Information	
Console Number	3
Pre-test "Y" value	1.012
DGM Model Number	D 77 S
DGM Serial Number	713855

Calibration Conditions			
Date	Time	7-May-07	0930
Barometric Pressure		30.01	in Hg
Theoretical Critical Vacuum[1]		14.2	in Hg
Calibration Technician		Elliott	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3*R^{1/2})/(in.Hg*min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
32	1.9	299.660	325.427	68	73	63	0.6213	66	65	22
17	1.9	325.427	339.282	73	78	63	0.6213	65	66	22
13	1.9	339.282	349.701	78	83	63	0.6213	66	67	22

Results

Standardized Data				Dry Gas Meter				
Dry Gas Meter		Critical Orifice		Calibration Factor		Flowrate	ΔH @	
				Value	Variation	Std & Corr	0.75 SCFM	Variation
(V_{mstd})	(Q_{mstd})	(Vcr_{std})	(Q_{cstd})	(Y)	(ΔY)	($Q_{m(std,corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
25.842	0.808	26.027	0.813	1.007	-0.007	0.813	1.629	0.014
13.766	0.810	13.827	0.813	1.004	-0.009	0.813	1.614	-0.001
10.256	0.789	10.564	0.813	1.030	0.016	0.813	1.602	-0.013
				1.014	Y Average		1.615	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Technician Sign: _____ Date: 5-7-07 Q A Signature: _____ Date: 5-7-07

AAS Inc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

PITOT TUBE CALIBRATION MEASUREMENTS

DATE CALIBRATED 5/2/07 PITOT TUBE 8F

Technician name: DP

Pitot tube assembly level ? X Yes ____ No

Pitot tube openings damaged? ____ Yes (explain below) X NO

a1 = 0 degrees (< 10 deg) a2 = 2 degrees (< 10 deg)

b2 = 2 degrees (<5 deg) b1 = 1 degrees (<5 deg)

Y = 0 degrees 0 = 0 degrees A = 1.175 inches = (Pa + Pb)

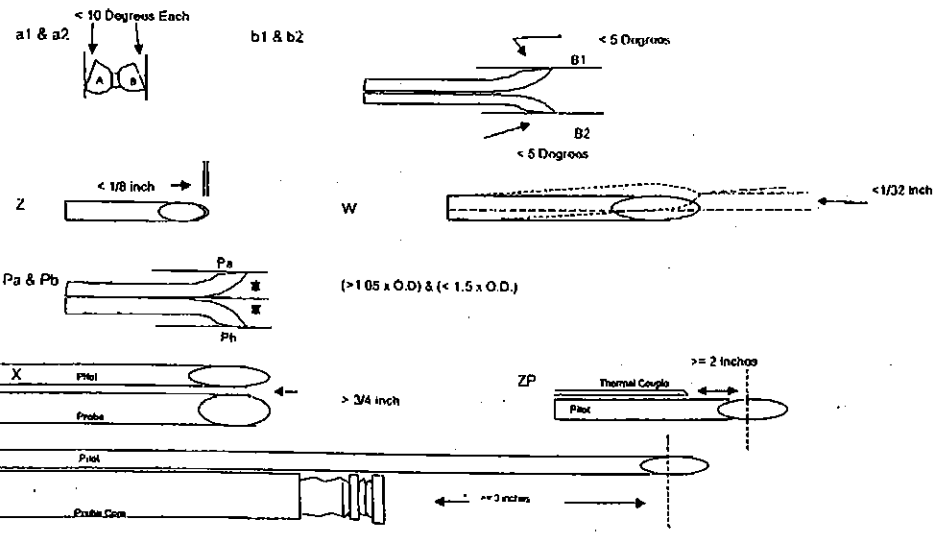
Pa = 0.587 Pb = 0.588 Dt = 0.375

z = A sin Y = 0 inches ; / < 1/8 inches

w = A sin 0 = 0 inches ; / < 1/32 inches

Calibration required ? ____ Yes X No Technician signature David J Patt

Quality Assurance Review by: David Shutter 5/03/07
QA date



Gerdau Ameristeel Baldwin - Baghouse

AMBIENT AIR SERVICES, INC.
106 Ambient Airway
Starke, Flroida 32091

THERMOCOUPLE CALIBRATION FORM

Date 5-7-07 Time 1100
Ambient Temperature 68° Source 3rd thermo
Barometric Pressure 30.01 Source HB-1
Technician's Name

Standard Thermometer Type Merc in glass
Manufacturer HB-434
Serial Number 120041
Pyrometer Manufacturer JENCO Model 768
Serial Number 23593 Meter Box 5

TEMPERATURE SOURCE (A)		Ice H2O			Ambient H2O			Boiling H2O					
REFERENCE THERMOMETER	Actual Reading	32°			68°			212°					
	Corrected Temperature												
CALIBRATED THERMOCOUPLE		Indicated Temp.	Difference (B)	Percent Diff. (C)	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.
Serial Number	Location	32°			68°	0		212°					
TC-8-4	Stack	〃	0		〃	0		〃	0				
TC-F-7	Filter	33°	+1		69°	+1		211°	-1				
TC-6K	Impinger	33°	+1		69°	+1		212°	0				
M-1-36	Meter In	32°	0		68°	0		211°	-1				
TT-2	Meter Out	32°	0		68°	0		211°	-1				

COMMENTS:

Technician Signature
Quality Assurance Signature David J. Foote Date 5/8/07

Calibration Tolerances Stack = 1.5% of value, Filter Box = ±5.4°F, Impinger = ±2°F, Meter = ±5.4°F (40 CFR Pt, App. A Method 5, and QA Handbook Section 3.4, Method 5, page 13, Rev. 0)

(A) Type of calibration system used (B) Reference - Indicated = Difference

$$(C)\left[\frac{(\text{ref. temp. oF} + 460) - (\text{indicatedtemp. oF} + 460)}{(\text{referencetemp. oF} + 460)}\right] \times 100$$

AASI 68A

APPENDIX C

VISIBLE EMISSIONS

-Field Data Sheets
-Observer Certificate

A A S I

Ambient Air Services, Inc. during stack test
106 Ambient Air Way
Starke, Florida 32091
OFFICE 904-964-8440 FAX 904-964-6675

PAGE 1 OF 3

START TIME 1004 END TIME 1104

OBSERVATION DATE 04/17/07 TIME ZONE EASTERN

FACILITY Ameristeel

SOURCE Smelt Building

ADDRESS Yellow Water Rd

CITY Baldwin STATE FL

PHONE

PROCESS electric arc furnace OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: Std.

DESCRIBE EMISSION POINT A large gray bldg. - North to South - hidden by various bldg.

HEIGHT OF EMISSION POINT
START ~100'-110' END same

HEIGHT RELATIVE TO OBSERVER
START ~ 100' END 100'

DISTANCE TO EMISSIONS POINT
START 150'-300' END same

DIRECTION TO EM. PT. center
START 35° END 350°

VERTICAL ANGLE TO OBS. PT.
START 0-8° END same

DESCRIBE EMISSIONS
START fugative END same

EMISSION COLOR
START - END -

WATER DROPLET PLUME YES (NO)
ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND
START bldg. - sky END same

BACKGROUND COLOR
START gray-blue END same

SKY CONDITION
START clear END clear

WIND SPEED
START ~2 END 2

WIND DIRECTION
START NE END NE

AMBIENT TEMPERATURE
START 66° END 66°

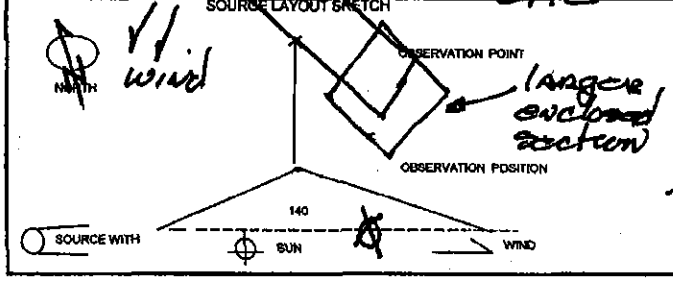
WET BULB TEMP 56°

%RH 52%

COMMENTS observation points - Roof vents, doors - open ground level sides construction on site

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/29/06

A A S I

Ambient Air Services, Inc. drawing
106 Ambient Air Way stack
Starke, Florida 32091 test
OFFICE 904 - 964-8440 FAX 904 -964-6675

PAGE 2 OF 3

START TIME 1105 END TIME 1305

OBSERVATION DATE 04/12/07 TIME ZONE EASTERN DAL

FACILITY Ameristeel

SOURCE Torch Bldg

ADDRESS Yellow Water Rd

CITY Baldwin STATE FL

PHONE

PROCESS Electric Arc furnace OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: std

DESCRIBE EMISSION POINT see 1 of 3

HEIGHT OF EMISSION POINT
START ~100-110' END 100-110'

HEIGHT RELATIVE TO OBSERVER
START ~100' END 100'

DISTANCE TO EMISSIONS POINT
START 150-300' END SAME

DIRECTION TO EM. PT.
START 350° END 350°

VERTICAL ANGLE TO OBS. PT.
START 0-80 END 0-80°

DESCRIBE EMISSIONS
START fugative END SAME

EMISSION COLOR
START — END —

WATER DROPLET PLUME YES (NO)
ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND
START bldg - sky END same

BACKGROUND COLOR
START gray - blue END same

SKY CONDITION
START haze END haze

WIND SPEED
START ~2 END 2

WIND DIRECTION
START NE END NE

AMBIENT TEMPERATURE
START 74° END 74°

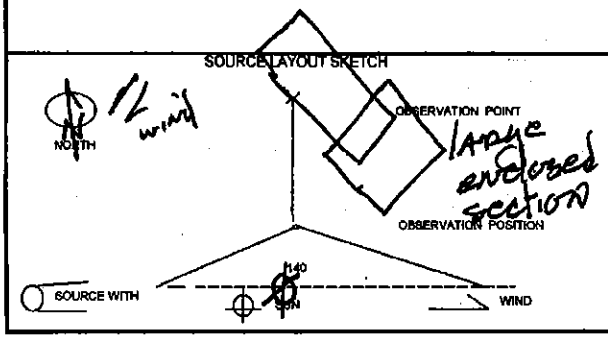
WET BULB TEMP 66°

%RH 50

COMMENTS..... see 1 of 3

BEG/MIN	0	15	30	45	BEG/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/29/06

A A S I

Ambient Air Services, Inc.
106 Ambient Air Way
Starke, Florida 32091
OFFICE 904 - 964-8440 FAX 904 -964-6675

during stack test

PAGE 3 OF 3

START TIME 1206 END TIME 1306

OBSERVATION DATE 04/17/07 TIME ZONE Eastern

FACILITY Ameristeel

SOURCE Shelf Bldg.

ADDRESS Yellow Water Rd

CITY Baldwin STATE FL

PHONE

PROCESS Electric Arc Furnace OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: std.

DESCRIBE EMISSION POINT see 1 of 3

HEIGHT OF EMISSION POINT
START 100'-110' END same

HEIGHT RELATIVE TO OBSERVER
START ~100' END 100'

DISTANCE TO EMISSIONS POINT
START ~130-300' END 150'-300'

DIRECTION TO EM. PT.
START 35° END 35°

VERTICAL ANGLE TO OBS. PT.
START 0 - 80° END 0 - 80°

DESCRIBE EMISSIONS
START fugative END same

EMISSION COLOR
START - END -

WATER DROPLET PLUME YES (NO)
ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND
START bldg - sky END same

BACKGROUND COLOR
START gray - blue END same

SKY CONDITION
START p.cloudy END same

WIND SPEED
START 2-4 END 2-4

WIND DIRECTION
START NW END NW

AMBIENT TEMPERATURE
START 81° END 81°

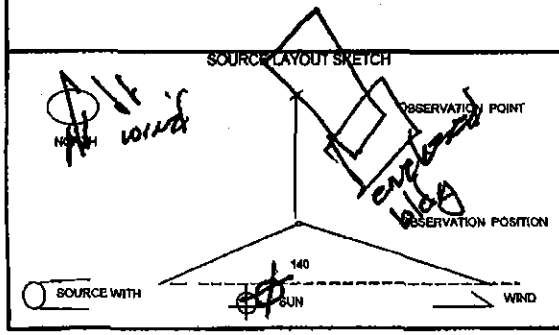
WET BULB TEMP 64°

%RH 44

COMMENTS..... see 1 of 3

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/29/06

A A S I	Ambient Air Services, Inc. 106 Ambient Air Way Starke, Florida 32091 OFFICE 904 - 964-8440 FAX 904 -964-6675	PAGE 1 OF 3 START TIME 1315 END TIME 1415 OBSERVATION DATE 04/17/07 TIME ZONE Eastern

FACILITY Ameristeel

SOURCE Dust Handling System

ADDRESS Yellow Water Rd

CITY Baldwin STATE FL

PHONE

PROCESS Dust Collection/Transfers OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: SD

DESCRIBE EMISSION POINT System: silo on top of transfer house

HEIGHT OF EMISSION POINT START ~90' END 90'

HEIGHT RELATIVE TO OBSERVER START ~85' END 85'

DISTANCE TO EMISSIONS POINT START ~120' END 120'

DIRECTION TO EM. PT. START ~35° END 35°

VERTICAL ANGLE TO OBS. PT. START 0 - 11° END 0 - 11°

DESCRIBE EMISSIONS START fugative END fugative

EMISSION COLOR START — END —

WATER DROPLET PLUME YES (NO)

ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND START building END same

BACKGROUND COLOR START gray END gray

SKY CONDITION START p. cloudy END same

WIND SPEED START 2-4 END 2-4

WIND DIRECTION START NW END NW

AMBIENT TEMPERATURE START 84° END 84°

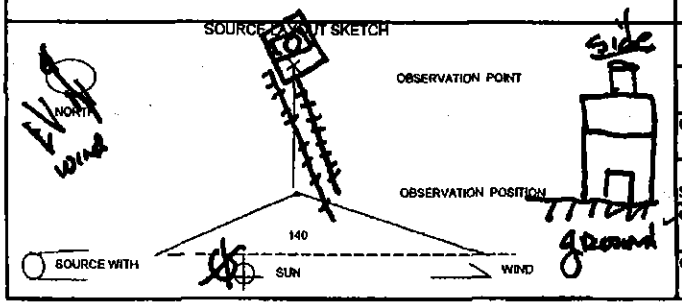
WET BULB TEMP 65°

%RH 34

COMMENTS..... bldg. has RR through open door dust from RR operations.

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/31/06

A A S I	Ambient Air Services, Inc. 106 Ambient Air Way Starke, Florida 32091 OFFICE 904 - 964-8440 FAX 904 -964-6675

PAGE 2 OF 3

START TIME 1416 END TIME 1516

OBSERVATION DATE 04/17/07 TIME ZONE Eastern

FACILITY Ameristeel

SOURCE Dust Handling system

ADDRESS Yellow Water Rd

CITY Baldwin STATE FL

PHONE

PROCESS dust collection system OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: ok

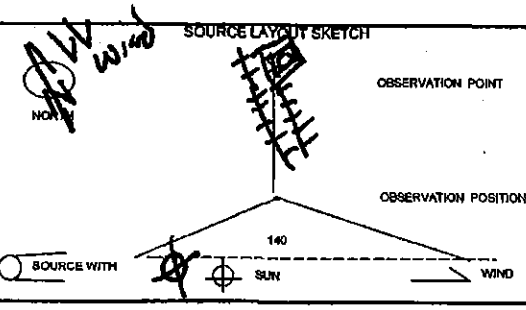
DESCRIBE EMISSION POINT see 1 of 3

HEIGHT OF EMISSION POINT START ~90' END 90'	HEIGHT RELATIVE TO OBSERVER START ~85' END 85'
DISTANCE TO EMISSIONS POINT START ~120' END 120'	DIRECTION TO EM. PT. START ~35° END 35°
VERTICAL ANGLE TO OBS. PT. START 0 - 11° END 0 - 11	
DESCRIBE EMISSIONS START fugative END fugative	
EMISSION COLOR START — END —	WATER DROPLET PLUME YES (NO) ATTACHED DETACHED
DESCRIBE PLUME BACKGROUND START building END same	
BACKGROUND COLOR START gray END gray	SKY CONDITION START p. cloud END same
WIND SPEED START ~2 END 2-4	WIND DIRECTION START NW END NW
AMBIENT TEMPERATURE START 83° END 83°	WET BULB TEMP 69° / %RH 46

COMMENTS.....

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/31/06

A A S I	Ambient Air Services, Inc. 106 Ambient Air Way Starke, Florida 32091 OFFICE 904 - 964-8440 FAX 904 -964-6675

PAGE 3 OF 3

START TIME 1517 END TIME 1617

OBSERVATION DATE 04/17/07 TIME ZONE Eastern

FACILITY Ameristeel

SOURCE Dust Handling system

ADDRESS Yellow Water Rd

CITY Baldwin STATE FL

PHONE

PROCESS dust collection system OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: ok

DESCRIBE EMISSION POINT see 1 of 3

HEIGHT OF EMISSION POINT
START ~90' END 90'

HEIGHT RELATIVE TO OBSERVER
START ~85' END 85'

DISTANCE TO EMISSIONS POINT
START ~120' END 120'

DIRECTION TO EM. PT.
START ~35° END 35°

VERTICAL ANGLE TO OBS. PT.
START 0-11° END 0-11°

DESCRIBE EMISSIONS
START fugative END fugative

EMISSION COLOR
START — END —

WATER DROPLET PLUME YES (NO)
ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND
START building END same

BACKGROUND COLOR
START gry END gray

SKY CONDITION
START P.cloudy END same

WIND SPEED
START 4-5 END 4-5

WIND DIRECTION
START NW END NW

AMBIENT TEMPERATURE
START 86° END 86°

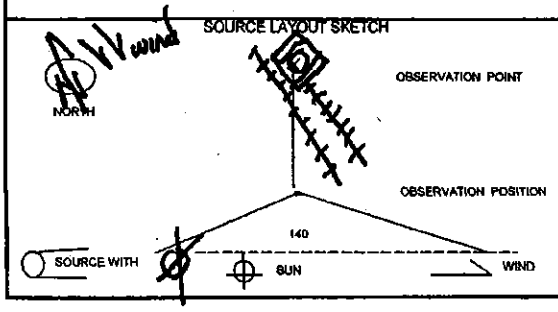
WET BULB TEMP 66°

%RH 38

COMMENTS..... see 1 of 3

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/31/08

A A S I

Ambient Air Services, Inc. drawing stack test
106 Ambient Air Way
Starke, Florida 32091
OFFICE 904 - 964-8440 FAX 904 -964-6675

PAGE 1 OF 3

START TIME 1004 END TIME 1104

OBSERVATION DATE 04/17/07 TIME ZONE Eastern

FACILITY Ameristeel

SOURCE Baghouse stack

ADDRESS Yellow Water Rd.

CITY Baldwin STATE FL

PHONE

PROCESS electric Arc furnace OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: std

DESCRIBE EMISSION POINT A large, free standing gang stack

HEIGHT OF EMISSION POINT START ~110' END 110'

HEIGHT RELATIVE TO OBSERVER START ~105' END 105'

DISTANCE TO EMISSIONS POINT START ~180' END 180'

DIRECTION TO EM. PT. START 325° END 325°

VERTICAL ANGLE TO OBS. PT. START 150 END 150

DESCRIBE EMISSIONS START exhaust END exhaust

EMISSION COLOR START - END -

WATER DROPLET PLUME YES / NO

ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND START sky END sky

BACKGROUND COLOR START blue END blue

SKY CONDITION START clear END clear

WIND SPEED START ~2 END 2

WIND DIRECTION START NE END NE

AMBIENT TEMPERATURE START 66° END 66°

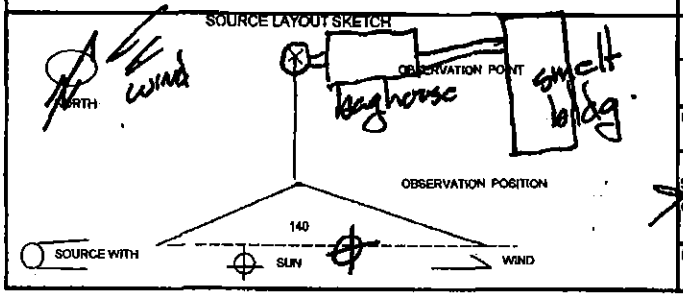
WET BULB TEMP 56°

%RH 52%

COMMENTS.....

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE

DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 05/31/06

A A S I

Ambient Air Services, Inc. during stack test
106 Ambient Air Way
Starke, Florida 32091
OFFICE 904 - 964-8440 FAX 904 - 964-6675

PAGE 2 OF 3

START TIME 1105 END TIME 1205

OBSERVATION DATE 04/17/04 TIME ZONE Eastern

FACILITY Ameristeel

SOURCE Baghouse stack

ADDRESS Yellow Water Rd

CITY Baldwin STATE Fl

PHONE

PROCESS electric Arc furnace OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: std.

DESCRIBE EMISSION POINT see 1 of 3

HEIGHT OF EMISSION POINT
START ~110' END 110'

HEIGHT RELATIVE TO OBSERVER
START ~105' END 105'

DISTANCE TO EMISSIONS POINT
START ~180' END 180'

DIRECTION TO EM. PT.
START 325° END 325°

VERTICAL ANGLE TO OBS. PT.
START 150° END 150°

DESCRIBE EMISSIONS
START exhaust END exhaust

EMISSION COLOR
START - END -

WATER DROPLET PLUME YES (NO)
ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND
START sky END sky

BACKGROUND COLOR
START blue END blue/white

SKY CONDITION
START haze END haze

WIND SPEED
START 2 END 2

WIND DIRECTION
START NE END NE

AMBIENT TEMPERATURE
START 74° END 74°

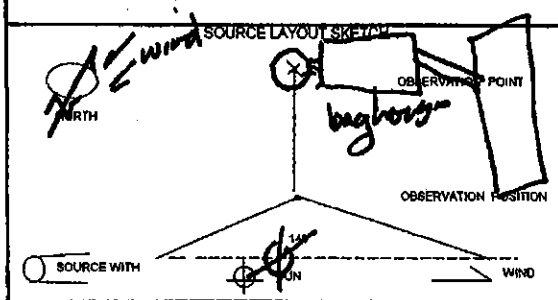
WET BULB TEMP 66°

%RH 50

COMMENTS..... see 1 of 3

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/31/06

A A S I

Ambient Air Services, Inc.
106 Ambient Air Way
Starke, Florida 32091
OFFICE 904 - 964-8440 FAX 904 -964-6675

duwing stack test

PAGE 3 OF 3

START TIME 1306 END TIME 1306

OBSERVATION DATE 04/17/07 TIME ZONE EASTERN

FACILITY Ameristeel

SOURCE Baghouse Stack

ADDRESS Yellow Water Rd

CITY Baldwin STATE FL

PHONE

PROCESS electric arc furnace OPERATING MODE: see chart

CONTROL EQUIP. baghouse OPERATING MODE: Std.

DESCRIBE EMISSION POINT see 1 of 3

HEIGHT OF EMISSION POINT
START ~110' END 110'

HEIGHT RELATIVE TO OBSERVER
START ~105' END 105'

DISTANCE TO EMISSIONS POINT
START ~180' END 180'

DIRECTION TO EM. PT.
START 325° END 325°

VERTICAL ANGLE TO OBS. PT.
START 150 END 150°

DESCRIBE EMISSIONS
START exhaust END exhaust

EMISSION COLOR
START — END —

WATER DROPLET PLUME YES (NO)
ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND
START sky END sky

BACKGROUND COLOR
START white END blue

SKY CONDITION
START F. cloud END same

WIND SPEED
START 2-4 END 2-4

WIND DIRECTION
START NW END NW

AMBIENT TEMPERATURE
START 81° END 81°

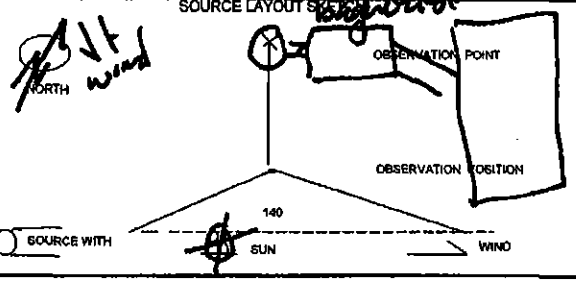
WET BULB TEMP 64°

%RH 44

COMMENTS..... see 1 of 3

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/17/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/31/06

VISIBLE EMISSIONS EVALUATOR

This is to certify that

George H. Hawkins

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

346910	*Jacksonville, Florida*	*November 29, 2006*
Certificate Number	Location	Date of Issue

Thomas Hoel
President

Michael W. Sunsford
Director of Training

APPENDIX D

PRODUCTION DATA/FUEL CONSUMPTION

Electric Arc Furnace Stack Test Data
4/17/2007 - 4/18/07

Run #1 4/17/2007

Start Time	9:01		**Heat #1 1884**	94.49
Finish Time	13:48		**Heat #2 1885**	91.97
Minutes	287		**Heat #3 1886**	89.45
Hr	4.783333		**Heat #4 1887**	90.34
			Heat #5 1888	89.19
			Total Tons	455.44
			Tons per Hour	95.21394

Run #2 4/18/2007

Start Time	8:36		**Heat #1 1906**	82.93
Finish Time	12:46		**Heat #2 1907**	104.14
Minutes	264		**Heat #3 1908**	89.17
Hr	4.4		**Heat #4 1909**	91.97
			Heat #5 1910	85.67
			Total Tons	453.88
			Tons per Hour	103.1545

Run #3 4/19/2007

Start Time	8:31		**Heat # 1930**	95.01
Finish Time	12:53		**Heat #2 1931**	90.14
Minutes	243		**Heat #3 1932**	94.84
Hr	4.053333		**Heat #4 1933**	82.83
			Total Tons	362.82
			Tons per Hour	89.51151

										Gas	PM
19-Apr											
Heat	Time Start	Time End	Total	Delay	Cast Weight	Production Rate					
1930	8:23	9:17	0:54	0:00	95.01	105.5666667	0.90	Gas 3	PM 3	91.06	80.63
1931	9:17	10:25	1:08	0:00	90.14	79.53529412	1.133333	Gas 3	PM 3		
1932	10:25	11:21	0:56	0:00	94.84	101.6142857	0.933333		PM 3		
1933	11:21	12:53	1:32	0:00	82.83	54.01956522	1.533333		PM 3		
18-Apr											
1906	8:27	9:25	0:58	0:00	82.93	85.78965517	0.966667	Gas 1	PM 2	92.00	
1907	9:25	10:29	1:04	0:00	104.14	97.63125	1.066667	Gas 1	PM 2		
1908	10:29	11:50	1:21	0:00	89.17	66.05185185	1.35		PM 2	103.48	88.99608
1909	11:50	12:46	0:56	0:00	91.97	98.53928571	0.933333	Gas 2	PM 2		
1910	12:46	13:33	0:47	0:00	85.67	109.3659574	0.783333	Gas 2	PM 2		
17-Apr											
1884	8:53	9:48	0:55	0:00	94.49	103.08	0.916667		PM 1		92.53
1885	9:48	10:47	0:59	0:00	91.97	93.52881356	0.983333		PM 1		
1886	10:47	11:45	0:58	0:00	89.45	92.53448276	0.966667		PM 1		
1887	11:45	12:49	1:04	0:00	90.34	84.69375	1.066667		PM 1		
1888	12:49	13:48	0:59	0:00	89.19	90.70169492	0.983333		PM 1		

4/17

Tons Lost	Charge Weight Tons	Charge Weight Lbs	Length	# Billets	Length	# Billets	Length
	48.10	96200	362	76			
	84.92	169840	362	71			
	102.70	205400	362	75			
	99.95	199900	362	73			
	100.05	200100	362	71			
	51.48	102960	362	55			
	100.15	200300	362	70			
	100.75	201500	362	81			
	83.25	166500	362	63			
		0					
		0					
		0					
		0					
		0					
	771.35	**1542700**		**635**		**0**	

Tons Lost	Charge Weight Tons	Charge Weight Lbs	Length	# Billets	Length	# Billets	Length
	52.40	104800	362	73			
	97.85	195700	362	83			
	100.00	200000	362	75			
	100.40	200800	362	73			
	101.50	203000	362	75			
	99.80	199600	362	75			
	101.70	203400	362	70			
	101.05	202100	362	76			
	100.50	201000	362	70			
	100.30	200600	362	77			
	101.25	202500	362	72			
	101.65	203300	362	74			
	99.65	199300	362	72			
		0					
	1258.05	**2516100**		**965**		**0**	

Down time Rebar	Down time Wire	Outage	Min. Ran	# Heats	Prod. Tons	Tons Pourback	# Pourbacks
0	0	0	720	9	803.19	20	1
0	0	0	720	13	1215.84	0	0
0.0	0.0	0.0	1440	22	2019.04	20	1

Day	# EAF Heats	# CASTER Heats	Crew	Grade	Tons Produced	Tons Pourback	# Pourbacks
	1882	1880	D	60	96.80		0
	1883	1881	D	60	89.46		0
	1884	1882	D	60	94.50		0
	1885	1883	D	60	91.98		0
	1886	1884	D	60	89.46		0
	1887	1885	D	60	70.34	20	1
	1888	1886	D	V60	88.20		0
	1889	1887	D	V60	103.10		0
	1890	1888	D	60	79.38		0
		1889	D		0.00		0
			D		0.00		0
			D		0.00		0
			D		0.00		0
			D		0.00		0
Totals	**9**	**10**	D		**803.19**	**20**	**1**

Night	# EAF Heats	# CASTER Heats	Crew	Grade	Tons Produced	Tons Pourback	# Pourbacks
	1891	1890	B	40	91.98		0
	1892	1891	B	40	104.58		0
	1893	1892	B	40	94.50		0
	1894	1893	B	40	91.98		0
	1895	1894	B	40	94.50		0
	1896	1895	B	40	94.50		0
	1897	1896	B	40	88.20		0
	1898	1897	B	40	95.76		0
	1899	1898	B	40	88.20		0
	1900	1899	B	40	97.02		0
	1901	1900	B	40	90.72		0
	1902	1901	B	40	93.24		0
	1903		B	40	90.72		0
			B		0.00		0
Totals	**13**	**12**	B		**1215.84**	**0**	**0**

Summary	Crew	Tot Sch Mins	Rebar Min	Wire Min	Down time
	D	720	720	0	0
	B	720	720	0	0
ELEC 2143	Daily	1440	1440.0	0.0	0.0

GERDAU AMERISTEEL

Heat Sheet

1884 [redacted] Performance Report Print Close

General Information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4216	4/17/2007 8:53:28 AM	4/17/2007 9:48:34 AM	55.1	0	A	1

Times

Description	Duration (min)
Tap to Tap Time	55.1
Power On Time	39.9
Delay Time	15.2
Turnaround Time	8
Melting Time	39.9
Refining Time	7.2

Description	Units	Value
Charged Weight	Tons	102.7
Pourback Weight	Tons	0
Billets Weight	Tons	94.49
KWH	KWH	31100
KWH Average	KWH	46727.88
KWH/Prod. Ton	KWH/Tons	329.14
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	19100
O2 Total	SCF	103300
Carbon Total	SCF	2461

Alloys

Description	Weight
Carbon	450
SiMn	3000

Fluxes

Description	Weight
Charge Carbon	1000
MgO	1300

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	10800	7500	12800	31100
Scrap Weight	Tons	110250	61950	33200	205400
Burner 1 Oxygen	SCF	11200	6600	13200	31000
Burner 2 Oxygen	SCF	5400	6900	7300	19600
Burner 3 Oxygen	SCF	5700	4300	4400	14400
Burner 4 Oxygen	SCF	11800	7800	14800	34400
Burner Oxygen Total	SCF	34100	25600	39700	99400
Burner 1 Gas	SCF	2200	1300	1400	4900
Burner 2 Gas	SCF	2100	1300	1100	4500
Burner 3 Gas	SCF	1900	1400	1800	5100
Burner 4 Gas	SCF	2000	1400	1200	4600
Burner Gas Total	SCF	8200	5400	5500	19100
Lance More Oxygen	SCF	2900	0	1000	3900
Lance More Oxygen Total	SCF	2900	0	1000	3900
Injection Point 1 Carbon	SCF	207	154	390	751
Injection Point 2 Carbon	SCF	0	104	364	468
Injection Point 3 Carbon	SCF	71	35	136	242
Injection Point Carbon Total	SCF	278	293	890	1461

Events

Start Time	Description	Time in Heat (min)	Kwh
4/17/2007 8:53:28 AM	Start of Heat	0	0
4/17/2007 8:53:58 AM	Charge	0	0
4/17/2007 8:58:58 AM	Power ON	5.5	0
4/17/2007 9:01:04 AM	Power OFF	7.6	1300
4/17/2007 9:03:58 AM	Power ON	10.5	1300
4/17/2007 9:16:28 AM	Power OFF	23	10800
4/17/2007 9:17:58 AM	Charge	24.5	10800
4/17/2007 9:18:10 AM	Power ON	24.7	10800
4/17/2007 9:28:22 AM	Power OFF	34.9	18300
4/17/2007 9:29:58 AM	Charge	36.5	18300
4/17/2007 9:30:04 AM	Power ON	36.6	18300
4/17/2007 9:38:52 AM	Furnace Refinning	45.4	25100
4/17/2007 9:42:29 AM	New Temperature	49	28100
4/17/2007 9:44:51 AM	New Temperature	51.35	30100

4/17/2007 9:45:38 AM	New Chemical Analysis	52.15	30800
4/17/2007 9:46:04 AM	Power OFF	52.6	31100
4/17/2007 9:46:19 AM	New Temperature	52.85	31100
4/17/2007 9:48:18 AM	New Chemical Analysis	54.8	31100
4/17/2007 9:48:34 AM	End of Heat	55.1	31100

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/17/2007 9:42:29 AM	2864	0	0
4/17/2007 9:44:51 AM	2996	0	0
4/17/2007 9:46:19 AM	3050	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/6/2006 11:21:38 PM	1P	0.001	0.07	0.045	0.192	0.0236	0.055	104	8.67	0.019	0.0006	0.0516	0.00053	0.011	0.002	0.011	0.035	0.005
4/6/2006 11:36:27 PM	1L	0.105	0.071	0.103	0.192	0.0262	0.4	110	25.37	0.016	0.0011	0.0038	0.00049	0.011	0.002	0.011	0.038	0.007
4/6/2006 11:50:57 PM	2L	0.112	0.07	0.13	0.19	0.0261	0.489	102	30.29	0.016	0.0015	0.0037	0.00045	0.011	0.002	0.011	0.04	0.007
4/7/2006 12:59:10 AM	1F	0.131	0.071	0.144	0.191	0.0234	0.502	118	32.58	0.015	0.0009	0.0034	0.00042	0.011	0.002	0.011	0.042	0.007
4/7/2006 1:01:20 AM	2F	0.131	0.071	0.135	0.19	0.0231	0.5	111	31.38	0.014	0.0003	0.0042	0.00038	0.01	0.002	0.01	0.04	0.007
4/7/2006 1:34:44 AM	3F	0.132	0.071	0.143	0.191	0.0235	0.507	104	32.58	0.015	0.0006	0.0041	0.00037	0.011	0.002	0.011	0.04	0.007
4/17/2007 9:45:38 AM	F1	0.025	0.086	0.252	0.326	0.0451	0.152	10	35.47	0.022	0	0	0.0006	0.011	0.002	0.008	0.117	0.014
4/17/2007 9:48:18 AM	F2	0.008	0.085	0.177	0.322	0.0477	0.163	9	27.77	0.022	0	0	0.0006	0.011	0.002	0.008	0.126	0.014
4/17/2007 9:58:14 AM	L1	0.28	0.085	0.332	0.323	0.0548	1.259	11	76.09	0.014	0	0.003	0.0011	0.012	0.001	0.01	0.13	0.017
4/17/2007 10:01:22 AM	L2	0.278	0.087	0.342	0.332	0.0541	1.241	11	76.65	0.014	0	0.002	0.0012	0.012	0.001	0.009	0.131	0.018
4/17/2007 10:32:55 AM	C1	0.281	0.085	0.405	0.321	0.049	1.284	11	84.34	0.015	0.002	0.002	0.0011	0.012	0.002	0.011	0.134	0.018
4/17/2007 11:04:19 AM	C2	0.265	0.086	0.4	0.327	0.0496	1.25	10	82.26	0.014	0	0.001	0.0012	0.012	0.001	0.01	0.131	0.017
4/17/2007 11:25:51 AM	C3	0.27	0.087	0.415	0.333	0.0505	1.239	11	83.85	0.015	0	0.002	0.0012	0.012	0.002	0.009	0.131	0.018

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/17/2007 8:53:28 AM	5.5	0	Production	Furnace T/A	
4/17/2007 9:01:04 AM	2.9	7.65	Production	Electrode - change	
4/17/2007 9:16:28 AM	1.7	23.05	Production	Charge furnace	
4/17/2007 9:28:22 AM	1.7	34.95	Production	Charge furnace	
4/17/2007 9:46:04 AM	2.5	52.65	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

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General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4216	4/17/2007 9:48:34 AM	4/17/2007 10:47:10 AM	58.6	0	A	1

Times

Description	Duration (min)
Tap to Tap Time	58.6
Power On Time	40.4
Delay Time	18.2
Turnaround Time	11.5
Melting Time	39.4
Refining Time	7.7

Description	Units	Value
Charged Weight	Tons	99.95
Pourback Weight	Tons	0
Billets Weight	Tons	91.97
KWH	KWH	31700
KWH Average	KWH	47118.08
KWH/Prod. Ton	KWH/Tons	344.68
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	19400
O2 Total	SCF	105600
Carbon Total	SCF	

Alloys

Description	Weight
Carbon	350
SiMn	3000

Fluxes

Description	Weight
Lime	5300
MgO	3500

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	10900	7800	13000	31700
Scrap Weight	Tons	103000	62500	34400	199900
Burner 1 Oxygen	SCF	11300	7400	13200	31900
Burner 2 Oxygen	SCF	5100	7600	7200	19900
Burner 3 Oxygen	SCF	6600	5000	4000	15600
Burner 4 Oxygen	SCF	10900	9100	14500	34500
Burner Oxygen Total	SCF	33900	29100	38900	101900
Burner 1 Gas	SCF	2200	1500	1300	5000
Burner 2 Gas	SCF	1900	1600	1000	4500
Burner 3 Gas	SCF	1800	1700	1600	5100
Burner 4 Gas	SCF	1900	1600	1300	4800
Burner Gas Total	SCF	7800	6400	5200	19400
Lance More Oxygen	SCF	3900	0	-200	3700
Lance More Oxygen Total	SCF	3900	0	-200	3700
Injection Point 1 Carbon	SCF	198	160	391	749
Injection Point 2 Carbon	SCF	0	102	354	456
Injection Point 3 Carbon	SCF	14	34	201	249
Injection Point Carbon Total	SCF	212	296	946	1454

Events

Start Time	Description	Time in Heat (min)	Kwh
4/17/2007 9:48:34 AM	Start of Heat	0	0
4/17/2007 9:49:04 AM	Charge	0	0
4/17/2007 9:58:46 AM	Power ON	10.2	0
4/17/2007 10:13:10 AM	Power OFF	24.6	10900
4/17/2007 10:14:52 AM	Charge	26.3	10900
4/17/2007 10:17:40 AM	Power ON	29.1	10900
4/17/2007 10:28:10 AM	Power OFF	39.6	18700
4/17/2007 10:29:40 AM	Charge	41.1	18700
4/17/2007 10:29:46 AM	Power ON	41.2	18700
4/17/2007 10:38:10 AM	Furnace Refinning	49.6	25100
4/17/2007 10:41:37 AM	New Temperature	53.05	28000
4/17/2007 10:43:26 AM	New Temperature	54.85	29500
4/17/2007 10:44:31 AM	New Chemical Analysis	55.95	30400
4/17/2007 10:44:46 AM	New Temperature	56.2	30700

4/17/2007 10:45:52 AM	Power OFF	57.3	31700
4/17/2007 10:45:53 AM	New Temperature	57.3	31700
4/17/2007 10:47:05 AM	New Chemical Analysis	58.5	31700
4/17/2007 10:47:10 AM	End of Heat	58.6	31700

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/17/2007 10:41:37 AM	2820	0	0
4/17/2007 10:43:26 AM	2888	0	0
4/17/2007 10:44:46 AM	2986	0	0
4/17/2007 10:45:53 AM	3035	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/7/2006 12:50:22 AM	1P	0.001	0.058	0.043	0.188	0.0259	0.044	103	7.73	0.016	0.0003	0.0516	0.00046	0.014	0.002	0.01	0.038	0.005
4/7/2006 1:13:30 AM	1L	0.159	0.059	0.105	0.19	0.0307	0.452	113	28.09	0.013	0.0003	0.013	0.00061	0.015	0.002	0.011	0.038	0.006
4/7/2006 2:01:05 AM	1F	0.131	0.059	0.125	0.187	0.0189	0.518	103	30.29	0.012	0.0003	0.0067	0.00029	0.014	0.001	0.01	0.038	0.006
4/7/2006 2:31:07 AM	2F	0.125	0.06	0.125	0.191	0.0185	0.51	99	29.85	0.012	0.0003	0.0055	0.00034	0.014	0.001	0.009	0.037	0.006
4/7/2006 2:51:48 AM	3F	0.13	0.059	0.124	0.19	0.0198	0.514	102	30.1	0.012	0.0003	0.0046	0.00036	0.014	0.001	0.01	0.038	0.006
4/17/2007 10:44:31 AM	F1	0.044	0.084	0.339	0.301	0.0418	0.246	9	47.1	0.023	0	0	0.0006	0.011	0.003	0.009	0.126	0.016
4/17/2007 10:47:05 AM	F2	0.026	0.087	0.341	0.312	0.0439	0.252	11	46.99	0.023	0	0	0.0008	0.012	0.003	0.008	0.132	0.018
4/17/2007 10:57:23 AM	L1	0.271	0.084	0.287	0.304	0.0437	1.293	10	71.86	0.013	0	0.002	0.0009	0.011	0.001	0.009	0.141	0.019
4/17/2007 11:36:09 AM	C1	0.265	0.085	0.42	0.31	0.048	1.264	10	84.71	0.015	0	0.002	0.0011	0.011	0.002	0.009	0.142	0.02
4/17/2007 11:52:35 AM	C2	0.258	0.084	0.415	0.303	0.047	1.251	11	83.51	0.014	0	0.002	0.001	0.011	0.002	0.009	0.142	0.019
4/17/2007 12:33:46 PM	C3	0.262	0.084	0.424	0.304	0.0486	1.278	11	85.05	0.013	0	0.002	0.001	0.011	0.002	0.009	0.142	0.02

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/17/2007 9:48:34 AM	5	0	Production	Furnace T/A	
4/17/2007 9:53:34 AM	5.2	5	Production	Clean bezel ring/swing track	
4/17/2007 10:13:10 AM	4.5	24.62	Production	Pile up	
4/17/2007 10:28:10 AM	1.6	39.62	Production	Charge furnace	
4/17/2007 10:45:52 AM	1.3	57.32	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

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Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4216	4/17/2007 10:47:10 AM	4/17/2007 11:45:28 AM	58.3	0	A	1

Times

Description	Duration (min)
Tap to Tap Time	58.3
Power On Time	41.8
Delay Time	16.5
Turnaround Time	7.3
Melting Time	40.6
Refining Time	10.4

Description	Units	Value
Charged Weight	Tons	100.05
Pourback Weight	Tons	0
Billets Weight	Tons	89.45
KWH	KWH	32200
KWH Average	KWH	46201.67
KWH/Prod. Ton	KWH/Tons	359.98
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	19600
O2 Total	SCF	106300
Carbon Total	SCF	

Alloys

Description	Weight
Carbon	50
SiMn	2850

Fluxes

Description	Weight
Lime	5300
MgO	3300

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	11000	7500	13700	32200
Scrap Weight	Tons	106500	56700	36900	200100
Burner 1 Oxygen	SCF	11300	7100	14700	33100
Burner 2 Oxygen	SCF	5100	7400	7500	20000
Burner 3 Oxygen	SCF	5000	4900	4400	14300
Burner 4 Oxygen	SCF	11200	8500	16300	36000
Burner Oxygen Total	SCF	32600	27900	42900	103400
Burner 1 Gas	SCF	2200	1500	1400	5100
Burner 2 Gas	SCF	1900	1500	1100	4500
Burner 3 Gas	SCF	1600	1600	1900	5100
Burner 4 Gas	SCF	1900	1500	1500	4900
Burner Gas Total	SCF	7600	6100	5900	19600
Lance More Oxygen	SCF	3700	0	-800	2900
Lance More Oxygen Total	SCF	3700	0	-800	2900
Injection Point 1 Carbon	SCF	218	167	460	845
Injection Point 2 Carbon	SCF	0	74	397	471
Injection Point 3 Carbon	SCF	90	12	184	286
Injection Point Carbon Total	SCF	308	253	1041	1602

Events

Start Time	Description	Time in Heat (min)	Kwh
4/17/2007 10:47:10 AM	Start of Heat	0	0
4/17/2007 10:47:40 AM	Charge	0	0
4/17/2007 10:52:58 AM	Power ON	5.8	0
4/17/2007 10:53:40 AM	Power OFF	6.5	100
4/17/2007 10:54:04 AM	Power ON	6.9	100
4/17/2007 11:08:16 AM	Power OFF	21.1	11000
4/17/2007 11:10:58 AM	Charge	23.8	11000
4/17/2007 11:12:58 AM	Power ON	25.8	11000
4/17/2007 11:23:16 AM	Power OFF	36.1	18500
4/17/2007 11:24:52 AM	Charge	37.7	18500
4/17/2007 11:24:58 AM	Power ON	37.8	18500
4/17/2007 11:33:34 AM	Furnace Refinning	46.4	25100
4/17/2007 11:39:09 AM	New Temperature	51.95	29600
4/17/2007 11:41:03 AM	New Temperature	53.85	31200

4/17/2007 11:41:46 AM	Power OFF	54.6	31800
4/17/2007 11:42:18 AM	New Chemical Analysis	55.1	31800
4/17/2007 11:43:16 AM	Power ON	56.1	31800
4/17/2007 11:43:17 AM	New Temperature	56.1	31800
4/17/2007 11:43:58 AM	Power OFF	56.8	32200
4/17/2007 11:44:22 AM	New Chemical Analysis	57.2	32200
4/17/2007 11:44:25 AM	New Temperature	57.2	32200
4/17/2007 11:45:28 AM	End of Heat	58.3	32200

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/17/2007 11:39:09 AM	2929	0	0
4/17/2007 11:41:03 AM	3016	0	0
4/17/2007 11:43:17 AM	3021	0	0
4/17/2007 11:44:25 AM	3033	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/7/2006 2:02:15 AM	1P	0.001	0.055	0.034	0.186	0.0249	0.058	99	7.13	0.017	0.0003	0.0516	0.00049	0.016	0.002	0.01	0.035	0.004
4/7/2006 2:16:52 AM	1L	0.097	0.055	0.106	0.19	0.0269	0.409	108	25.07	0.013	0.0003	0.0033	0.0005	0.015	0.002	0.01	0.04	0.007
4/7/2006 2:29:04 AM	2L	0.085	0.055	0.131	0.19	0.0263	0.536	103	29.95	0.012	0.0003	0.0046	0.00042	0.015	0.002	0.01	0.043	0.008
4/7/2006 2:58:02 AM	1F	0.092	0.055	0.137	0.188	0.0258	0.542	106	30.82	0.012	0.0003	0.0038	0.00031	0.015	0.002	0.009	0.044	0.008
4/7/2006 3:45:20 AM	2F	0.092	0.054	0.133	0.186	0.0239	0.548	100	30.6	0.012	0.0003	0.004	0.00027	0.015	0.002	0.01	0.043	0.007
4/7/2006 3:47:05 AM	3F	0.09	0.053	0.129	0.183	0.0233	0.543	110	29.98	0.012	0.0003	0.0039	0.0002	0.014	0.002	0.01	0.043	0.007
4/17/2007 11:42:18 AM	F1	0.02	0.087	0.292	0.355	0.047	0.197	10	41.18	0.025	0	0	0.0008	0.015	0.002	0.009	0.126	0.019
4/17/2007 11:44:22 AM	F2	0.018	0.089	0.276	0.36	0.05	0.219	10	40.09	0.025	0	0	0.0009	0.016	0.002	0.008	0.132	0.02
4/17/2007 11:56:28 AM	L1	0.272	0.086	0.367	0.351	0.0478	1.221	11	78.98	0.016	0	0.002	0.0009	0.015	0.002	0.009	0.131	0.019
4/17/2007 12:07:04 PM	L2	0.28	0.087	0.458	0.351	0.0536	1.243	11	89.19	0.018	0.001	0.002	0.0012	0.015	0.002	0.01	0.133	0.02
4/17/2007 12:11:19 PM	L3	0.276	0.087	0.457	0.352	0.0531	1.235	11	88.67	0.017	0.001	0.002	0.0011	0.016	0.002	0.01	0.132	0.02
4/17/2007 12:53:15 PM	C1	0.269	0.086	0.442	0.347	0.0519	1.221	10	86.38	0.016	0	0.002	0.0011	0.015	0.002	0.009	0.133	0.02
4/17/2007 1:13:26 PM	C2	0.272	0.09	0.461	0.364	0.0529	1.188	11	87.94	0.017	0	0.002	0.0013	0.016	0.002	0.009	0.132	0.021
4/17/2007 1:32:50 PM	C3	0.265	0.087	0.451	0.354	0.0532	1.209	10	87.05	0.017	0	0.002	0.0012	0.015	0.002	0.009	0.132	0.02

Delays

Start Time	Duration (min)	Time In Heat (min)	Category	Delay Description	Comments
4/17/2007 10:47:10 AM	5.8	0	Production	Furnace T/A	
4/17/2007 11:08:16 AM	2.7	21.12	Production	Charge furnace	
4/17/2007 11:10:58 AM	2	23.82	Production	Clean bezel ring/swing track	
4/17/2007 11:23:16 AM	1.7	36.12	Production	Charge furnace	
4/17/2007 11:41:46 AM	1.5	54.62	Production	Other	
4/17/2007 11:43:58 AM	1.5	56.82	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

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Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4216	4/17/2007 11:45:28 AM	4/17/2007 12:49:40 PM	64.2	0	A	1

Times

Description	Duration (min)
Tap to Tap Time	64.2
Power On Time	43.1
Delay Time	21.1
Turnaround Time	9.2
Melting Time	38.3
Refining Time	16.7

Description	Units	Value
Charged Weight	Tons	51.48
Pourback Weight	Tons	0
Billets Weight	Tons	70.34
KWH	KWH	32900
KWH Average	KWH	45835.91
KWH/Prod. Ton	KWH/Tons	467.73
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	18800
O2 Total	SCF	111600
Carbon Total	SCF	2715

Alloys

Description	Weight
Carbon	50
SiMn	2850

Fluxes

Description	Weight
Charge Carbon	1000
MgO	1300

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	11100	7600	14200	32900
Scrap Weight	Tons	8800	59050	35100	102950
Burner 1 Oxygen	SCF	10800	6800	16500	34100
Burner 2 Oxygen	SCF	4300	7200	8700	20200
Burner 3 Oxygen	SCF	4500	4500	5300	14300
Burner 4 Oxygen	SCF	10400	8100	19400	37900
Burner Oxygen Total	SCF	30000	26600	49900	106500
Burner 1 Gas	SCF	1800	1400	1600	4800
Burner 2 Gas	SCF	1600	1300	1400	4300
Burner 3 Gas	SCF	1300	1500	2300	5100
Burner 4 Gas	SCF	1500	1400	1700	4600
Burner Gas Total	SCF	6200	5600	7000	18800
Lance More Oxygen	SCF	2900	0	2200	5100
Lance More Oxygen Total	SCF	2900	0	2200	5100
Injection Point 1 Carbon	SCF	240	147	457	844
Injection Point 2 Carbon	SCF	0	119	368	487
Injection Point 3 Carbon	SCF	85	50	249	384
Injection Point Carbon Total	SCF	325	316	1074	1715

Events

Start Time	Description	Time in Heat (min)	Kwh
4/17/2007 11:45:28 AM	Start of Heat	0	0
4/17/2007 11:45:52 AM	Charge	0	0
4/17/2007 11:51:04 AM	Power ON	5.6	0
4/17/2007 12:06:16 PM	Power OFF	20.8	11100
4/17/2007 12:08:10 PM	Charge	22.7	11100
4/17/2007 12:08:22 PM	Power ON	22.9	11100
4/17/2007 12:18:46 PM	Power OFF	33.3	18700
4/17/2007 12:20:34 PM	Charge	35.1	18700
4/17/2007 12:20:46 PM	Power ON	35.3	18700
4/17/2007 12:29:22 PM	Furnace Refinning	43.9	25100
4/17/2007 12:34:53 PM	New Temperature	49.4	29600
4/17/2007 12:35:34 PM	Power OFF	50.1	30200
4/17/2007 12:36:19 PM	New Temperature	50.8	30200
4/17/2007 12:37:54 PM	New Chemical Analysis	52.4	30200

4/17/2007 12:39:36 PM	New Chemical Analysis	54.1	30200
4/17/2007 12:42:40 PM	Power ON	57.2	30200
4/17/2007 12:44:24 PM	New Temperature	58.9	31500
4/17/2007 12:45:23 PM	New Temperature	59.9	32300
4/17/2007 12:46:04 PM	Power OFF	60.6	32900
4/17/2007 12:46:36 PM	New Temperature	61.1	32900
4/17/2007 12:47:34 PM	New Chemical Analysis	62.1	32900
4/17/2007 12:48:20 PM	New Temperature	62.85	32900
4/17/2007 12:49:40 PM	End of Heat	64.2	32900

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/17/2007 12:34:53 PM	2911	0	0
4/17/2007 12:36:19 PM	2947	0	0
4/17/2007 12:44:24 PM	2952	0	0
4/17/2007 12:45:23 PM	3006	0	0
4/17/2007 12:46:36 PM	3107	0	0
4/17/2007 12:48:20 PM	3069	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/7/2006 3:06:25 AM	1P	0.197	0.084	0.394	0.273	0.0746	1.101	100	81.1	0.043	0.0012	0.0131	0.00097	0.012	0.019	0.009	0.18	0.026
4/7/2006 3:27:09 AM	1L	0.116	0.055	0.106	0.193	0.0199	0.455	106	26.47	0.012	0.0003	0.0025	0.00022	0.015	0.001	0.01	0.036	0.006
4/7/2006 4:16:37 AM	1S	0.189	0.084	0.387	0.272	0.0676	1.025	108	78.17	0.042	0.0007	0.0163	0.00075	0.012	0.018	0.009	0.177	0.024
4/7/2006 4:18:41 AM	1F	0.144	0.055	0.124	0.192	0.0246	0.497	100	30.15	0.012	0.0003	0.0032	0.00029	0.015	0.001	0.01	0.037	0.007
4/17/2007 12:37:54 PM	F1	0.017	0.079	0.339	0.327	0.0492	0.197	9	45.38	0.022	0	0	0.0006	0.011	0.003	0.008	0.139	0.021
4/17/2007 12:39:36 PM	F2	0.014	0.081	0.343	0.338	0.0519	0.213	10	46.13	0.021	0	0	0.0008	0.013	0.003	0.008	0.142	0.022
4/17/2007 12:47:34 PM	F3	0.008	0.082	0.322	0.347	0.0525	0.208	11	43.73	0.022	0	0	0.0008	0.013	0.002	0.008	0.138	0.02
4/17/2007 1:00:05 PM	L1	0.249	0.081	0.249	0.339	0.0523	1.196	10	65.69	0.014	0	0.001	0.0012	0.012	0.001	0.009	0.146	0.022
4/17/2007 1:10:58 PM	L2	0.246	0.083	0.415	0.349	0.0552	1.183	11	82.24	0.015	0	0.001	0.0013	0.013	0.002	0.009	0.147	0.024
4/17/2007 1:50:58 PM	C1	0.237	0.082	0.412	0.344	0.0461	1.202	11	81.93	0.014	0	0.001	0.001	0.012	0.002	0.009	0.148	0.023
4/17/2007 2:17:39 PM	C2	0.233	0.081	0.405	0.34	0.0484	1.182	10	80.58	0.014	0	0.001	0.001	0.012	0.002	0.009	0.147	0.023
4/17/2007 2:20:36 PM	C3	0.239	0.081	0.408	0.342	0.0477	1.212	11	81.9	0.014	0	0.002	0.001	0.012	0.002	0.01	0.149	0.023

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/17/2007 11:45:28 AM	5.6	0	Production	Furnace T/A	
4/17/2007 12:06:16 PM	2.1	20.9	Production	Charge furnace	
4/17/2007 12:18:46 PM	2	33.4	Production	Charge furnace	
4/17/2007 12:35:34 PM	7.1	50.2	Production	Caster - Slow casting	
4/17/2007 12:46:04 PM	3.6	60.7	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

1888 [redacted] Performance Report Print Close

General Information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4216	4/17/2007 12:49:40 PM	4/17/2007 1:48:52 PM	59.2	0	A	1

Times

Description	Duration (min)
Tap to Tap Time	59.2
Power On Time	41.7
Delay Time	17.5
Turnaround Time	11.2
Melting Time	36.9
Refining Time	11.1

Description	Units	Value
Charged Weight	Tons	100.15
Pourback Weight	Tons	0
Billets Weight	Tons	89.19
KWH	KWH	32300
KWH Average	KWH	46456.25
KWH/Prod. Ton	KWH/Tons	362.15
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	18600
O2 Total	SCF	104000
Carbon Total	SCF	

Alloys

Description	Weight
Carbon	200
SiMn	2850

Fluxes

Description	Weight
Lime	5300
MgO	2400

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	11400	6900	14000	32300
Scrap Weight	Tons	104000	61100	35200	200300
Burner 1 Oxygen	SCF	11000	5900	15500	32400
Burner 2 Oxygen	SCF	4600	6200	8100	18900
Burner 3 Oxygen	SCF	4700	4200	5100	14000
Burner 4 Oxygen	SCF	10900	7000	17800	35700
Burner Oxygen Total	SCF	31200	23300	46500	101000
Burner 1 Gas	SCF	2000	1300	1500	4800
Burner 2 Gas	SCF	1700	1300	1200	4200
Burner 3 Gas	SCF	1400	1500	2100	5000
Burner 4 Gas	SCF	1800	1300	1500	4600
Burner Gas Total	SCF	6900	5400	6300	18600
Lance More Oxygen	SCF	5100	0	-2100	3000
Lance More Oxygen Total	SCF	5100	0	-2100	3000
Injection Point 1 Carbon	SCF	204	111	441	756
Injection Point 2 Carbon	SCF	0	67	305	372
Injection Point 3 Carbon	SCF	150	36	250	436
Injection Point Carbon Total	SCF	354	214	996	1564

Events

Start Time	Description	Time In Heat (min)	Kwh
4/17/2007 12:49:40 PM	Start of Heat	0	0
4/17/2007 12:50:04 PM	Charge	0	0
4/17/2007 12:52:32 PM	New Temperature	2.85	0
4/17/2007 12:52:52 PM	New Temperature	3.2	0
4/17/2007 12:56:46 PM	Power ON	7.1	0
4/17/2007 1:01:53 PM	New Temperature	12.2	3700
4/17/2007 1:11:46 PM	Power OFF	22.1	11400
4/17/2007 1:13:28 PM	Charge	23.8	11400
4/17/2007 1:17:42 PM	New Temperature	28	14200
4/17/2007 1:23:04 PM	Power OFF	33.4	18300
4/17/2007 1:24:28 PM	Charge	34.8	18300
4/17/2007 1:24:34 PM	Power ON	34.9	18300
4/17/2007 1:26:16 PM	New Temperature	36.6	19300
4/17/2007 1:33:40 PM	Furnace Refinning	44	25100

4/17/2007 1:38:25 PM	New Temperature	48.75	29000
4/17/2007 1:39:46 PM	New Temperature	50.1	30200
4/17/2007 1:41:28 PM	Power OFF	51.8	31600
4/17/2007 1:41:35 PM	New Chemical Analysis	51.9	31600
4/17/2007 1:43:08 PM	New Chemical Analysis	53.45	31600
4/17/2007 1:43:46 PM	Power ON	54.1	31600
4/17/2007 1:44:46 PM	Power OFF	55.1	32300
4/17/2007 1:47:29 PM	New Temperature	57.8	32300
4/17/2007 1:48:52 PM	End of Heat	59.2	32300

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/17/2007 12:52:32 PM	97	0	0
4/17/2007 12:52:52 PM	91	0	0
4/17/2007 1:01:53 PM	177	0	0
4/17/2007 1:17:42 PM	98	0	0
4/17/2007 1:26:16 PM	99	0	0
4/17/2007 1:38:25 PM	2912	0	0
4/17/2007 1:39:46 PM	2963	0	0
4/17/2007 1:41:28 PM	3055	0	0
4/17/2007 1:47:29 PM	3064	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/7/2006 4:06:44 AM	1P	0.003	0.051	0.076	0.177	0.0247	0.063	104	11.15	0.015	0.0003	0.0516	0.00038	0.017	0.002	0.01	0.034	0.004
4/7/2006 4:30:06 AM	1L	0.12	0.053	0.116	0.182	0.0319	0.399	114	26.61	0.013	0.0018	0.0036	0.00046	0.017	0.002	0.011	0.04	0.007
4/7/2006 4:46:31 AM	2L	0.144	0.053	0.135	0.182	0.03	0.513	103	31.59	0.011	0.0006	0.003	0.00034	0.017	0.002	0.01	0.042	0.007
4/7/2006 5:09:56 AM	1F	0.14	0.054	0.146	0.183	0.0307	0.53	105	33.09	0.012	0.0003	0.0073	0.00031	0.017	0.002	0.01	0.044	0.007
4/7/2006 6:01:08 AM	2F	0.131	0.053	0.152	0.181	0.0277	0.524	103	32.97	0.011	0.0003	0.0026	0.00025	0.016	0.002	0.009	0.041	0.007
4/7/2006 6:02:51 AM	3F	0.126	0.053	0.141	0.183	0.0273	0.532	104	31.8	0.01	0.0003	0.0028	0.00027	0.017	0.002	0.009	0.041	0.007
4/17/2007 1:43:08 PM	F1	0.027	0.083	0.346	0.34	0.0411	0.205	10	46.4	0.022	0	0	0.0006	0.012	0.003	0.008	0.121	0.021
4/17/2007 1:59:35 PM	L1	0.291	0.085	0.197	0.35	0.044	1.409	12	70.42	0.014	0.001	0.002	0.001	0.012	0.038	0.011	0.133	0.024
4/17/2007 2:08:18 PM	L2	0.292	0.083	0.237	0.347	0.0418	1.353	10	72.68	0.013	0	0.003	0.0011	0.012	0.036	0.01	0.129	0.023
4/17/2007 2:46:57 PM	C1	0.317	0.085	0.282	0.353	0.0442	1.413	11	79.28	0.012	0	0.002	0.0011	0.012	0.035	0.01	0.132	0.025
4/17/2007 3:01:27 PM	C2	0.314	0.086	0.28	0.359	0.0443	1.404	11	79.05	0.013	0	0.002	0.0011	0.012	0.037	0.009	0.132	0.025
4/17/2007 3:31:00 PM	C3	0.326	0.086	0.277	0.36	0.0444	1.388	11	78.79	0.012	0	0.002	0.0012	0.012	0.037	0.01	0.131	0.025

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/17/2007 12:49:40 PM	5	0	Production	Furnace T/A	
4/17/2007 12:54:40 PM	2.1	5	Production	Gun furnace	
4/17/2007 1:11:46 PM	1.7	22.18	Production	Charge furnace	
4/17/2007 1:23:04 PM	1.5	33.48	Production	Charge furnace	
4/17/2007 1:41:28 PM	2.3	51.88	Production	Caster - Wait on ladle	
4/17/2007 1:44:46 PM	4.1	55.18	Production	Furnace T/A	

4/18/07

Day	# EAF Heats	# CASTER Heats	Crew	Grade	Tons Produced	Tons Pourback	# Pourbacks
	1904	1902	D	40	90.72		0
	1905	1903	D	40	89.46		0
	1906	1904	D	40	82.94		0
	1907	1905	D	40	104.14		0
	1908	1906	D	40	54.18	35	1
	1909	1907	D	40	91.98		0
	1910	1908	D	40	85.68		0
	1911	1909	D	40	89.46		0
	1912	1910	D	40	95.76		0
	1913	1911	D	40	95.76		0
	1914	1912	D	60	90.58		0
	1915	1913	D	60	95.25		0
			D		0.00		0
			D		0.00		0
Totals	**12**	**12**	D		**1065.88**	**35**	**1**

Night	# EAF Heats	# CASTER Heats	Crew	Grade	Tons Produced	Tons Pourback	# Pourbacks
	1916	1914	B	60	88.00		0
	1917	1915	B	60	89.37		0
	1918	1916	B	60	89.37		0
	1919	1917	B	60	90.58		0
	1920	1918	B	60	91.79		0
	1921	1919	B	60	91.79		0
	1922	1920	B	60	99.03		0
	1923	1921	B	60	99.03		0
	1924	1922	B	60	96.62		0
	1925	1923	B	60	91.79		0
	1926	1924	B	60	90.58		0
	1927	1925	B	60	86.96		0
			B		0.00		0
			B		0.00		0
Totals	**12**	**12**	B		**1104.91**	**0**	**0**

Summary	Crew	Tot Sch Mins	Rebar Min	Wire Min	Down time
	D	720	720	0	0
	B	720	720	0	0
ELEC 2143	Daily	1440	1440.0	0.0	0.0

Tons Lost	Charge Weight Tons	Charge Weight Lbs	Length	# Billets	Length	# Billets	Length
	10.60	21200	362	72			
	106.00	212000	362	71			
	101.13	202260	362	65			
	101.25	202500	362	81			
	101.80	203600	362	43			
	101.50	203000	362	73			
	31.70	63400	362	68			
	97.25	194500	362	71			
	101.20	202400	362	76			
	101.40	202800	362	76			
	101.25	202500	347	75			
	99.13	198260	347	78			
		0					
		0					
0.995	**1054.21**	**2108420**		**849**		**0**	

Tons Lost	Charge Weight Tons	Charge Weight Lbs	Length	# Billets	Length	# Billets	Length
	101.05	202100	347	72			
	100.30	200600	347	74			
	100.70	201400	347	74			
	100.80	201600	347	75			
	100.45	200900	347	76			
	100.10	200200	347	76			
	100.25	200500	347	82			
	100.60	201200	347	82			
	99.45	198900	347	80			
	100.40	200800	347	76			
	100.10	200200	347	75			
	100.70	201400	347	72			
		0					
		0					
1.83	**1204.90**	**2409800**		**914**		**0**	

Down time Rebar	Down time Wire	Outage	Min. Ran	# Heats	Prod. Tons	Tons Pourback	# Pourbacks
0	0	0	720	12	1065.88	35	1
0	0	0	720	12	1104.91	0	0
0.0	0.0	0.0	1440	24	2170.79	35	1

GERDAU AMERISTEEL

Heat Sheet

1906 [redacted] Performance Report

Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
2816	4/18/2007 8:27:04 AM	4/18/2007 9:24:46 AM	57.7	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	57.7
Power On Time	41.9
Delay Time	15.9
Turnaround Time	9.4
Melting Time	39
Refining Time	9.3

Description	Units	Value
Charged Weight	Tons	101.13
Pourback Weight	Tons	0
Billets Weight	Tons	82.93
KWH	KWH	33000
KWH Average	KWH	47311.83
KWH/Prod. Ton	KWH/Tons	397.93
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	18800
O2 Total	SCF	106000
Carbon Total	SCF	

Alloys

Description	Weight
FeSi	150
SiMn	1100

Fluxes

Description	Weight
Lime	5300
MgO	3000

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	10200	4800	18000	33000
Scrap Weight	Tons	100450	65300	36500	202250
Burner 1 Oxygen	SCF	10400	3100	19400	32900
Burner 2 Oxygen	SCF	4700	3000	11900	19600
Burner 3 Oxygen	SCF	4900	2700	6400	14000
Burner 4 Oxygen	SCF	10700	3600	21400	35700
Burner Oxygen Total	SCF	30700	12400	59100	102200
Burner 1 Gas	SCF	2000	1000	1800	4800
Burner 2 Gas	SCF	1900	900	1600	4400
Burner 3 Gas	SCF	1600	1000	2400	5000
Burner 4 Gas	SCF	1800	1100	1700	4600
Burner Gas Total	SCF	7300	4000	7500	18800
Lance More Oxygen	SCF	3700	0	100	3800
Lance More Oxygen Total	SCF	3700	0	100	3800
Injection Point 1 Carbon	SCF	175	30	603	808
Injection Point 2 Carbon	SCF	0	11	500	511
Injection Point 3 Carbon	SCF	120	3	375	498
Injection Point Carbon Total	SCF	295	44	1478	1817

Events

Start Time	Description	Time In Heat (min)	Kwh
4/18/2007 8:27:04 AM	Start of Heat	0	0
4/18/2007 8:27:34 AM	Charge	0	0
4/18/2007 8:35:10 AM	Power ON	8.1	0
4/18/2007 8:48:52 AM	Power OFF	21.8	10200
4/18/2007 8:52:16 AM	Charge	25.2	10200
4/18/2007 8:52:28 AM	Power ON	25.4	10200
4/18/2007 8:59:04 AM	Charge	32	15000
4/18/2007 9:03:22 AM	Power OFF	36.3	18200
4/18/2007 9:05:16 AM	Power ON	38.2	18200
4/18/2007 9:14:10 AM	Furnace Refinning	47.1	25100
4/18/2007 9:18:08 AM	New Temperature	51.05	28400
4/18/2007 9:21:32 AM	New Temperature	54.45	31300
4/18/2007 9:21:55 AM	New Chemical Analysis	54.85	31600
4/18/2007 9:22:48 AM	New Temperature	55.7	32400

4/18/2007 9:23:28 AM	Power OFF	56.4	33000
4/18/2007 9:23:40 AM	New Temperature	56.6	33000
4/18/2007 9:23:51 AM	New Chemical Analysis	56.75	33000
4/18/2007 9:24:46 AM	End of Heat	57.7	33000

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/18/2007 9:18:08 AM	2835	0	0
4/18/2007 9:21:32 AM	2967	0	0
4/18/2007 9:22:48 AM	3003	0	0
4/18/2007 9:23:40 AM	3073	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/8/2006 12:12:18 AM	1P	0.001	0.054	0.063	0.17	0.0317	0.072	106	10.09	0.016	0.0003	0.0516	0.00049	0.017	0.002	0.009	0.041	0.004
4/8/2006 12:34:41 AM	1L	0.073	0.055	0.051	0.172	0.0326	0.296	100	15.86	0.012	0.0003	0.0055	0.00044	0.016	0.001	0.009	0.044	0.006
4/8/2006 12:44:24 AM	2L	0.085	0.055	0.054	0.171	0.032	0.32	106	17.08	0.012	0.0003	0.0037	0.00038	0.016	0.001	0.009	0.044	0.006
4/8/2006 1:31:11 AM	1F	0.094	0.054	0.056	0.174	0.0283	0.327	110	17.84	0.013	0.0003	0.004	0.00039	0.014	0.002	0.009	0.038	0.006
4/8/2006 1:32:55 AM	2F	0.09	0.054	0.056	0.17	0.0315	0.325	100	17.54	0.012	0.0003	0.0053	0.00037	0.016	0.001	0.009	0.044	0.006
4/8/2006 2:24:51 AM	3F	0.095	0.055	0.058	0.173	0.0342	0.332	111	18.2	0.012	0.0003	0.004	0.00043	0.016	0.002	0.009	0.044	0.006
4/18/2007 9:21:55 AM	F1	0.033	0.079	0.296	0.297	0.0441	0.169	10	40.55	0.021	0	0	0.0006	0.01	0.002	0.009	0.137	0.015
4/18/2007 9:23:51 AM	F2	0.019	0.081	0.28	0.295	0.0447	0.17	10	38.91	0.022	0	0	0.0007	0.011	0.002	0.009	0.152	0.016
4/18/2007 9:36:38 AM	L1	0.155	0.081	0.225	0.297	0.0454	0.538	11	46.44	0.02	0	0.002	0.0008	0.011	0.002	0.01	0.172	0.019
4/18/2007 10:42:24 AM	C2	0.173	0.08	0.247	0.292	0.0414	0.533	10	48.77	0.018	0	0.002	0.0006	0.01	0.002	0.009	0.172	0.018
4/18/2007 11:07:51 AM	C3	0.177	0.081	0.26	0.296	0.0442	0.54	11	50.64	0.019	0	0.002	0.0007	0.01	0.002	0.01	0.174	0.018

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/18/2007 8:27:04 AM	8.1	0	Production	Furnace T/A	
4/18/2007 8:48:52 AM	3.6	21.82	Maint.-Mechanical	Charge crane	
4/18/2007 9:03:22 AM	1.9	36.32	Production	Charge furnace	
4/18/2007 9:23:28 AM	1.3	56.42	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

1907 [redacted] Performance Report Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
2816	4/18/2007 9:24:46 AM	4/18/2007 10:28:40 AM	63.9	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	63.9
Power On Time	42.7
Delay Time	21.2
Turnaround Time	14.4
Melting Time	40.6
Refining Time	8.9

Description	Units	Value
Charged Weight	Tons	101.25
Pourback Weight	Tons	0
Billets Weight	Tons	104.14
KWH	KWH	32500
KWH Average	KWH	45703.13
KWH/Prod. Ton	KWH/Tons	312.08
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	18700
O2 Total	SCF	108200
Carbon Total	SCF	

Alloys

Description	Weight
Carbon	0
FeSi	150
SiMn	1100

Fluxes

Description	Weight
Lime	5300
MgO	2800

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	10700	8100	13700	32500
Scrap Weight	Tons	106600	64800	31100	202500
Burner 1 Oxygen	SCF	11900	7500	14400	33800
Burner 2 Oxygen	SCF	4900	7700	7400	20000
Burner 3 Oxygen	SCF	5500	4200	4100	13800
Burner 4 Oxygen	SCF	11900	8600	16100	36600
Burner Oxygen Total	SCF	34200	28000	42000	104200
Burner 1 Gas	SCF	2100	1400	1400	4900
Burner 2 Gas	SCF	1900	1300	1100	4300
Burner 3 Gas	SCF	1800	1300	1800	4900
Burner 4 Gas	SCF	2000	1300	1300	4600
Burner Gas Total	SCF	7800	5300	5600	18700
Lance More Oxygen	SCF	3800	0	200	4000
Lance More Oxygen Total	SCF	3800	0	200	4000
Injection Point 1 Carbon	SCF	194	154	407	755
Injection Point 2 Carbon	SCF	0	132	508	640
Injection Point 3 Carbon	SCF	156	90	316	562
Injection Point Carbon Total	SCF	350	376	1231	1957

Events

Start Time	Description	Time in Heat (min)	Kwh
4/18/2007 9:24:46 AM	Start of Heat	0	0
4/18/2007 9:25:16 AM	Charge	0	0
4/18/2007 9:36:40 AM	Power ON	11.9	0
4/18/2007 9:37:16 AM	Power OFF	12.5	200
4/18/2007 9:37:28 AM	Power ON	12.7	200
4/18/2007 9:39:40 AM	Power OFF	14.9	1600
4/18/2007 9:41:52 AM	Power ON	17.1	1600
4/18/2007 9:54:04 AM	Power OFF	29.3	10700
4/18/2007 9:55:40 AM	Charge	30.9	10700
4/18/2007 9:55:46 AM	Power ON	31	10700
4/18/2007 10:07:16 AM	Power OFF	42.5	18800
4/18/2007 10:08:46 AM	Charge	44	18800
4/18/2007 10:08:52 AM	Power ON	44.1	18800

4/18/2007 10:17:16 AM	Furnace Refinning	52.5	25100
4/18/2007 10:20:10 AM	New Temperature	55.4	27500
4/18/2007 10:22:31 AM	New Temperature	57.75	29400
4/18/2007 10:23:41 AM	New Chemical Analysis	58.9	30400
4/18/2007 10:23:55 AM	New Temperature	59.15	30600
4/18/2007 10:25:05 AM	New Temperature	60.3	31600
4/18/2007 10:25:53 AM	New Chemical Analysis	61.1	32300
4/18/2007 10:26:10 AM	Power OFF	61.4	32500
4/18/2007 10:28:40 AM	End of Heat	63.9	32500

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/18/2007 10:20:10 AM	2844	0	0
4/18/2007 10:22:31 AM	2929	0	0
4/18/2007 10:23:55 AM	2948	0	0
4/18/2007 10:25:05 AM	2992	0	0
4/18/2007 10:26:10 AM	3031	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/8/2006 1:17:46 AM	1P	0.001	0.04	0.051	0.119	0.0217	0.13	140	9.11	0.014	0.0003	0.0516	0.0001	0.014	0.001	0.003	0.065	0.002
4/8/2006 1:39:30 AM	1L	0.115	0.054	0.079	0.158	0.0309	0.354	98	21.28	0.012	0.0003	0.0048	0.00041	0.018	0.001	0.009	0.048	0.006
4/8/2006 2:26:45 AM	1F	0.127	0.052	0.076	0.154	0.0261	0.366	110	21.86	0.012	0.0003	0.0056	0.00029	0.017	0.002	0.01	0.052	0.006
4/8/2006 3:13:51 AM	2F	0.119	0.054	0.081	0.16	0.0242	0.358	104	21.64	0.011	0.0003	0.0045	0.00035	0.018	0.001	0.009	0.049	0.007
4/8/2006 3:24:40 AM	3F	0.117	0.054	0.079	0.159	0.0248	0.356	108	21.42	0.012	0.0003	0.0058	0.00037	0.018	0.001	0.009	0.049	0.006
4/18/2007 10:23:41 AM	F1	0.034	0.074	0.207	0.289	0.0466	0.154	10	31.2	0.02	0	0	0.0006	0.01	0.002	0.009	0.141	0.014
4/18/2007 10:25:53 AM	F2	0.012	0.073	0.18	0.283	0.0477	0.162	10	28.23	0.021	0	0	0.0005	0.01	0.002	0.009	0.154	0.015
4/18/2007 10:41:19 AM	L1	0.15	0.074	0.221	0.289	0.0521	0.534	11	45.37	0.018	0.001	0.003	0.0008	0.011	0.002	0.01	0.169	0.018
4/18/2007 11:14:33 AM	C1	0.18	0.077	0.253	0.298	0.054	0.542	11	50.13	0.019	0.002	0.004	0.0009	0.011	0.002	0.011	0.172	0.018
4/18/2007 11:43:55 AM	C2	0.175	0.076	0.255	0.298	0.0533	0.537	11	49.8	0.018	0	0.002	0.0009	0.011	0.002	0.01	0.17	0.018
4/18/2007 12:23:44 PM	C3	0.173	0.075	0.256	0.298	0.0503	0.54	11	49.75	0.018	0	0.002	0.0009	0.011	0.002	0.009	0.168	0.019

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/18/2007 9:24:46 AM	6	0	Production	Taphole/runner repair	
4/18/2007 9:30:46 AM	5.9	6	Production	Furnace T/A	
4/18/2007 9:39:40 AM	2.2	14.92	Production	Electrode - change	
4/18/2007 9:54:04 AM	1.7	29.32	Production	Charge furnace	
4/18/2007 10:07:16 AM	1.6	42.52	Production	Charge furnace	
4/18/2007 10:26:10 AM	2.5	61.42	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

1908 Performance Report Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
2816	4/18/2007 10:28:40 AM	4/18/2007 11:50:16 AM	81.6	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	81.6
Power On Time	43.8
Delay Time	37.9
Turnaround Time	33.8
Melting Time	38.6
Refining Time	9.2

Description	Units	Value
Charged Weight	Tons	101.8
Pourback Weight	Tons	0
Billets Weight	Tons	54.17
KWH	KWH	32600
KWH Average	KWH	44708.57
KWH/Prod. Ton	KWH/Tons	601.81
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	22300
O2 Total	SCF	119700
Carbon Total	SCF	

Alloys

Description	Weight
FeSi	150
SiMn	1100

Fluxes

Description	Weight
Lime	5300
MgO	3000

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	11300	6900	14400	32600
Scrap Weight	Tons	91900	65800	45900	203600
Burner 1 Oxygen	SCF	16500	5900	15600	38000
Burner 2 Oxygen	SCF	7800	6100	7700	21600
Burner 3 Oxygen	SCF	7500	3600	4100	15200
Burner 4 Oxygen	SCF	16400	7000	17200	40600
Burner Oxygen Total	SCF	48200	22600	44600	115400
Burner 1 Gas	SCF	3400	1200	1400	6000
Burner 2 Gas	SCF	3000	1200	1000	5200
Burner 3 Gas	SCF	2600	1200	1600	5400
Burner 4 Gas	SCF	3200	1200	1300	5700
Burner Gas Total	SCF	12200	4800	5300	22300
Lance More Oxygen	SCF	4000	0	300	4300
Lance More Oxygen Total	SCF	4000	0	300	4300
Injection Point 1 Carbon	SCF	242	132	481	855
Injection Point 2 Carbon	SCF	0	85	448	533
Injection Point 3 Carbon	SCF	193	63	416	672
Injection Point Carbon Total	SCF	435	280	1345	2060

Events

Start Time	Description	Time in Heat (min)	Kwh
4/18/2007 10:28:40 AM	Start of Heat	0	0
4/18/2007 10:29:10 AM	Charge	0	0
4/18/2007 11:00:22 AM	Power ON	31.7	0
4/18/2007 11:16:10 AM	Power OFF	47.5	11300
4/18/2007 11:17:46 AM	Charge	49.1	11300
4/18/2007 11:17:58 AM	Power ON	49.3	11300
4/18/2007 11:27:52 AM	Power OFF	59.2	18200
4/18/2007 11:29:28 AM	Charge	60.8	18200
4/18/2007 11:29:34 AM	Power ON	60.9	18200
4/18/2007 11:38:58 AM	Furnace Refinning	70.3	25100
4/18/2007 11:43:52 AM	New Temperature	75.2	29100
4/18/2007 11:45:41 AM	New Temperature	77	30600
4/18/2007 11:47:06 AM	New Temperature	78.4	31800
4/18/2007 11:47:23 AM	New Chemical Analysis	78.7	32000

4/18/2007 11:47:58 AM	New Temperature	79.3	32500
4/18/2007 11:48:10 AM	Power OFF	79.5	32600
4/18/2007 11:49:15 AM	New Chemical Analysis	80.55	32600
4/18/2007 11:50:16 AM	End of Heat	81.6	32600

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/18/2007 11:43:52 AM	2826	0	0
4/18/2007 11:45:41 AM	2893	0	0
4/18/2007 11:47:06 AM	2966	0	0
4/18/2007 11:47:58 AM	3017	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/8/2006 2:22:26 AM	1P	0.001	0.05	0.073	0.155	0.0377	0.076	105	11.27	0.016	0.0003	0.0516	0.00045	0.014	0.002	0.009	0.055	0.005
4/8/2006 3:27:36 AM	1F	0.1	0.052	0.057	0.161	0.0348	0.279	104	17.58	0.014	0.0003	0.0047	0.00051	0.015	0.002	0.01	0.061	0.006
4/8/2006 3:38:46 AM	2F	0.087	0.052	0.049	0.161	0.0337	0.27	103	15.6	0.012	0.0003	0.0035	0.00046	0.014	0.001	0.008	0.059	0.007
4/8/2006 4:29:43 AM	3F	0.088	0.052	0.059	0.16	0.0337	0.277	114	17.2	0.014	0.0003	0.0059	0.00045	0.015	0.002	0.009	0.06	0.007
4/18/2007 11:47:23 AM	F1	0.024	0.072	0.258	0.326	0.0578	0.138	10	36.26	0.025	0.001	0	0.0009	0.012	0.003	0.01	0.121	0.028
4/18/2007 11:49:15 AM	F2	0.023	0.075	0.259	0.32	0.0554	0.159	11	37.06	0.025	0	0	0.0008	0.012	0.003	0.01	0.136	0.025
4/18/2007 12:01:52 PM	L1	0.141	0.077	0.189	0.309	0.0528	0.538	10	42.17	0.022	0	0.003	0.0009	0.011	0.003	0.009	0.148	0.026
4/18/2007 12:49:23 PM	C1	0.152	0.078	0.254	0.312	0.0507	0.563	11	49.85	0.022	0.001	0.003	0.0009	0.011	0.003	0.01	0.154	0.026

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/18/2007 10:28:40 AM	5	0	Production	Furnace T/A	
4/18/2007 10:33:40 AM	26.7	5	Production	Drain furnace	
4/18/2007 11:16:10 AM	1.8	47.52	Production	Charge furnace	
4/18/2007 11:27:52 AM	1.7	59.22	Production	Charge furnace	
4/18/2007 11:48:10 AM	2.1	79.52	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

1909 [redacted] Performance Report Print Close

General Information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
2816	4/18/2007 11:50:16 AM	4/18/2007 12:46:10 PM	55.9	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	55.9
Power On Time	41.9
Delay Time	14
Turnaround Time	7.1
Melting Time	40.2
Refining Time	8.6

Description	Units	Value
Charged Weight	Tons	101.5
Pourback Weight	Tons	0
Billets Weight	Tons	91.97
KWH	KWH	32400
KWH Average	KWH	46433.12
KWH/Prod. Ton	KWH/Tons	352.29
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	17700
O2 Total	SCF	103600
Carbon Total	SCF	

Alloys

Description	Weight
FeSi	150
SiMn	1100

Fluxes

Description	Weight
Lime	5300
MgO	2800

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	10600	8200	13600	32400
Scrap Weight	Tons	105000	67300	30700	203000
Burner 1 Oxygen	SCF	10600	7400	14100	32100
Burner 2 Oxygen	SCF	4700	7600	7300	19600
Burner 3 Oxygen	SCF	4700	4100	4200	13000
Burner 4 Oxygen	SCF	11300	8500	15500	35300
Burner Oxygen Total	SCF	31300	27600	41100	100000
Burner 1 Gas	SCF	2000	1300	1400	4700
Burner 2 Gas	SCF	1700	1300	1000	4000
Burner 3 Gas	SCF	1500	1300	1700	4500
Burner 4 Gas	SCF	1800	1400	1300	4500
Burner Gas Total	SCF	7000	5300	5400	17700
Lance More Oxygen	SCF	4300	0	-700	3600
Lance More Oxygen Total	SCF	4300	0	-700	3600
Injection Point 1 Carbon	SCF	178	152	419	749
Injection Point 2 Carbon	SCF	0	113	312	425
Injection Point 3 Carbon	SCF	155	106	299	560
Injection Point Carbon Total	SCF	333	371	1030	1734

Events

Start Time	Description	Time In Heat (min)	Kwh
4/18/2007 11:50:16 AM	Start of Heat	0	0
4/18/2007 11:50:46 AM	Charge	0	0
4/18/2007 11:55:34 AM	Power ON	5.3	100
4/18/2007 11:57:10 AM	Power OFF	6.9	1000
4/18/2007 12:00:10 PM	Power ON	9.9	1000
4/18/2007 12:13:04 PM	Power OFF	22.8	10600
4/18/2007 12:14:34 PM	Charge	24.3	10600
4/18/2007 12:14:40 PM	Power ON	24.4	10600
4/18/2007 12:25:46 PM	Power OFF	35.5	18800
4/18/2007 12:27:16 PM	Charge	37	18800
4/18/2007 12:27:22 PM	Power ON	37.1	18800
4/18/2007 12:35:46 PM	Furnace Refinning	45.5	25100
4/18/2007 12:41:32 PM	New Temperature	51.25	30000
4/18/2007 12:43:27 PM	New Chemical Analysis	53.15	31600

4/18/2007 12:43:39 PM	New Temperature	53.35	31800
4/18/2007 12:44:22 PM	Power OFF	54.1	32400
4/18/2007 12:44:40 PM	New Temperature	54.4	32400
4/18/2007 12:45:34 PM	New Chemical Analysis	55.3	32400
4/18/2007 12:46:10 PM	End of Heat	55.9	32400

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/18/2007 12:41:32 PM	2942	0	0
4/18/2007 12:43:39 PM	2990	0	0
4/18/2007 12:44:40 PM	3047	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/8/2006 3:23:05 AM	1P	0.001	0.053	0.058	0.139	0.0357	0.097	100	10.22	0.017	0.0003	0.0516	0.0005	0.015	0.002	0.009	0.056	0.005
4/8/2006 3:51:05 AM	1L	0.102	0.056	0.063	0.144	0.0294	0.304	110	18.33	0.014	0.0003	0.0163	0.00048	0.016	0.001	0.009	0.054	0.006
4/8/2006 4:32:53 AM	1F	0.097	0.055	0.062	0.144	0.0271	0.299	99	17.82	0.013	0.0003	0.0066	0.00036	0.015	0.001	0.008	0.058	0.006
4/8/2006 5:12:07 AM	2F	0.102	0.055	0.069	0.145	0.0279	0.303	107	19.01	0.014	0.0003	0.0048	0.00042	0.016	0.002	0.009	0.054	0.006
4/8/2006 5:25:56 AM	3F	0.102	0.054	0.064	0.142	0.0288	0.305	112	18.51	0.014	0.0003	0.0054	0.00041	0.015	0.002	0.009	0.054	0.006
4/18/2007 12:43:27 PM	F1	0.017	0.078	0.161	0.297	0.0464	0.148	10	25.66	0.021	0.001	0	0.0008	0.012	0.003	0.01	0.108	0.015
4/18/2007 12:45:34 PM	F2	0.017	0.079	0.162	0.299	0.05	0.163	11	26.12	0.021	0	0	0.0008	0.011	0.002	0.01	0.113	0.016
4/18/2007 12:56:47 PM	L1	0.142	0.082	0.255	0.307	0.0484	0.535	10	47.89	0.018	0	0.003	0.0009	0.011	0.002	0.01	0.124	0.018
4/18/2007 1:42:29 PM	C1	0.166	0.081	0.245	0.301	0.0448	0.533	10	47.39	0.017	0	0.002	0.0007	0.011	0.002	0.009	0.125	0.017
4/18/2007 1:46:13 PM	C2	0.166	0.08	0.242	0.297	0.0469	0.527	11	46.67	0.016	0	0.002	0.0007	0.01	0.002	0.008	0.123	0.016
4/18/2007 2:18:44 PM	C3	0.173	0.081	0.255	0.307	0.0467	0.539	11	48.92	0.018	0	0.003	0.0009	0.011	0.002	0.009	0.125	0.018

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/18/2007 11:50:16 AM	5.3	0	Production	Furnace T/A	
4/18/2007 11:57:10 AM	3	6.93	Production	Electrode - change	
4/18/2007 12:13:04 PM	1.6	22.83	Production	Charge furnace	
4/18/2007 12:25:46 PM	1.6	35.53	Production	Charge furnace	
4/18/2007 12:44:22 PM	1.8	54.13	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

1910 [redacted] Performance Report Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
2816	4/18/2007 12:46:10 PM	4/18/2007 1:33:28 PM	47.3	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	47.3
Power On Time	25.5
Delay Time	21.9
Turnaround Time	7.4
Melting Time	41.3
Refining Time	0

Description	Units	Value
Charged Weight	Tons	31.7
Pourback Weight	Tons	0
Billets Weight	Tons	85.67
KWH	KWH	19800
KWH Average	KWH	46679.76
KWH/Prod. Ton	KWH/Tons	231.12
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	16000
O2 Total	SCF	70900
Carbon Total	SCF	

Alloys

Description	Weight
FeSi	150
SiMn	1100

Fluxes

Description	Weight

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	11100	8700	15200	35000
Scrap Weight	Tons	0	63400	38900	102300
Burner 1 Oxygen	SCF	9200	9100	9800	28100
Burner 2 Oxygen	SCF	8400	7200	19300	34900
Burner 3 Oxygen	SCF	6600	4300	5600	16500
Burner 4 Oxygen	SCF	11700	11000	19400	42100
Burner Oxygen Total	SCF	35900	31600	54100	121600
Burner 1 Gas	SCF	2800	1300	2800	6900
Burner 2 Gas	SCF	2700	1200	2400	6300
Burner 3 Gas	SCF	2400	1700	1900	6000
Burner 4 Gas	SCF	2700	1200	2400	6300
Burner Gas Total	SCF	10600	5400	9500	25500
Lance More Oxygen	SCF	3600	-200	-400	3000
Lance More Oxygen Total	SCF	3600	-200	-400	3000
Injection Point 1 Carbon	SCF	0	219	347	566
Injection Point 2 Carbon	SCF	27	160	587	774
Injection Point 3 Carbon	SCF	40	197	225	462
Injection Point Carbon Total	SCF	67	576	1159	1802

Events

Start Time	Description	Time in Heat (min)	Kwh
4/18/2007 12:46:10 PM	Start of Heat	0	0
4/18/2007 12:46:40 PM	Charge	0	0
4/18/2007 12:52:10 PM	Power ON	6	0
4/18/2007 12:52:46 PM	Power OFF	6.6	300
4/18/2007 12:53:10 PM	Power ON	7	300
4/18/2007 1:07:40 PM	Power OFF	21.5	11100
4/18/2007 1:15:04 PM	Power ON	28.9	11100
4/18/2007 1:15:16 PM	Power OFF	29.1	11100
4/18/2007 1:16:40 PM	Charge	30.5	11100
4/18/2007 1:19:04 PM	Power ON	32.9	11100
4/18/2007 1:27:40 PM	New Temperature	41.5	17700
4/18/2007 1:28:58 PM	New Temperature	42.8	18800
4/18/2007 1:29:40 PM	Power OFF	43.5	19400
4/18/2007 1:30:01 PM	New Temperature	43.85	19400

4/18/2007 1:31:11 PM	New Chemical Analysis	45	19400
4/18/2007 1:31:22 PM	Power ON	45.2	19400
4/18/2007 1:31:58 PM	New Temperature	45.8	19800
4/18/2007 1:32:04 PM	Power OFF	45.9	19800
4/18/2007 1:32:58 PM	New Chemical Analysis	46.8	19800
4/18/2007 1:33:28 PM	End of Heat	47.3	19800

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/18/2007 1:27:40 PM	2963	0	0
4/18/2007 1:28:58 PM	3019	0	0
4/18/2007 1:30:01 PM	3064	0	0
4/18/2007 1:31:58 PM	3064	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/8/2006 4:26:36 AM	1P	0.001	0.059	0.088	0.175	0.0299	0.094	98	13.54	0.018	0.0003	0.0516	0.00039	0.018	0.002	0.009	0.049	0.005
4/8/2006 5:09:17 AM	1L	0.083	0.059	0.05	0.173	0.0331	0.323	111	17.46	0.015	0.0003	0.0047	0.00041	0.018	0.002	0.01	0.055	0.007
4/8/2006 6:01:23 AM	1F	0.084	0.059	0.047	0.174	0.0308	0.33	107	17.38	0.015	0.0003	0.0048	0.00038	0.017	0.002	0.01	0.056	0.007
4/8/2006 6:32:08 AM	3F	0.08	0.06	0.053	0.179	0.0324	0.327	107	17.72	0.014	0.0003	0.0029	0.00047	0.018	0.002	0.01	0.055	0.008
4/18/2007 1:31:11 PM	F1	0.015	0.074	0.209	0.298	0.0519	0.212	10	31.89	0.022	0	0	0.0008	0.012	0.002	0.009	0.118	0.014
4/18/2007 1:32:58 PM	F2	0.011	0.075	0.175	0.304	0.051	0.212	10	28.38	0.021	0	0	0.0007	0.011	0.002	0.009	0.121	0.014
4/18/2007 1:44:59 PM	L1	0.157	0.075	0.224	0.303	0.0509	0.562	11	45.7	0.018	0	0.003	0.0009	0.011	0.002	0.01	0.12	0.013
4/18/2007 2:35:06 PM	C1	0.224	0.075	0.276	0.309	0.0496	0.578	10	53.71	0.02	0	0.003	0.0009	0.012	0.002	0.009	0.123	0.015
4/18/2007 3:21:45 PM	C3	0.217	0.076	0.268	0.307	0.0465	0.565	10	52.13	0.018	0	0.003	0.0008	0.011	0.002	0.009	0.121	0.013

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/18/2007 12:46:10 PM	6	0	Production	Furnace T/A	
4/18/2007 1:07:40 PM	7.4	21.52	Production	Caster - Breakout	
4/18/2007 1:15:16 PM	3.8	29.12	Production	Pourback heat	
4/18/2007 1:29:40 PM	1.7	43.52	Production	Other	
4/18/2007 1:32:04 PM	1.4	45.92	Production	Furnace T/A	

4/19/07

Day	# EAF Heats	# CASTER Heats	Crew	Grade	Tons Produced	Tons Pourback	# Pourbacks
	1928	1926	D	60	96.62		0
	1929	1927	D	60	88.93		0
	1930	1928	D	60	95.02		0
	1931	1929	D	60	90.14		0
	1932	1930	D	60	94.84		0
	1933	1931	D	60	82.84		0
	1934	1932	D	60	95.02		0
	1935	1933	D	60	90.14		0
	1936	1934	D	60	92.58		0
	1937	1935	D	60	92.58		0
	1938	1936	D	60	93.80		0
	1939	1937	D	60	92.58		0
			D		0.00		0
			D		0.00		0
Totals	**12**	**12**	D		**1105.09**	**0**	**0**

Night	# EAF Heats	# CASTER Heats	Crew	Grade	Tons Produced	Tons Pourback	# Pourbacks
	1940	1938	B	60	93.26		0
	1941	1939	B	60	93.26		0
	1942	1940	B	60	94.47		0
	1943	1941	B	60	92.05		0
	1944	1942	B	60	94.47		0
	1945	1943	B	60	93.26		0
	1946	1944	B	60	89.63		0
	1947	1945	B	60	94.47		0
	1948	1946	B	60	89.63		0
	1949	1947	B	60	90.84		0
	1950	1948	B	60	94.47		0
	1951	1949	B	60	99.32		0
	1952	1950	B	60	89.63		0
			B		0.00		0
Totals	**13**	**13**	B		**1208.79**	**0**	**0**

Summary	Crew	Tot Sch Mins	Rebar Min	Wire Min	Down time
	D	720	720	0	0
	B	720	720	0	0
ELEC 2143	Daily	1440	1440.0	0.0	0.0

Tons Lost	Charge Weight Tons	Charge Weight Lbs	Length	# Billets	Length	# Billets	Length
	66.40	132800	347	80			
	97.50	195000	350	73			
	99.00	198000	350	78			
	99.00	198000	350	74			
	99.05	198100	350	77			
	82.33	164660	350	68			
	98.30	196600	350	78			
	97.80	195600	350	74			
	83.10	166200	350	76			
	99.15	198300	350	76			
	99.35	198700	350	77			
	99.50	199000	350	76			
		0					
		0					
1.04	**1120.48**	**2240960**		**907**		**0**	

Tons Lost	Charge Weight Tons	Charge Weight Lbs	Length	# Billets	Length	# Billets	Length
	98.30	196600	348	77			
	99.90	199800	348	77			
	100.20	200400	348	78			
	99.90	199800	348	76			
	100.20	200400	348	78			
	100.90	201800	348	77			
	114.45	228900	348	74			
	100.90	201800	348	78			
	101.15	202300	348	74			
	100.10	200200	348	75			
	100.25	200500	348	78			
	100.75	201500	348	82			
	100.75	201500	348	74			
		0					
0	**1317.75**	**2635500**		**998**		**0**	

Down time Rebar	Down time Wire	Outage	Min. Ran	# Heats	Prod. Tons	Tons Pourback	# Pourbacks
0	0	0	720	12	1105.09	0	0
0	0	0	720	13	1208.79	0	0
0.0	0.0	0.0	1440	25	2313.89	0	0

GERDAU AMERISTEEL

Heat Sheet

1930 [redacted] Performance Report Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4213	4/19/2007 8:23:04 AM	4/19/2007 9:16:52 AM	53.8	0	B	1

Times

Description	Duration (min)
Tap to Tap Time	53.8
Power On Time	41.8
Delay Time	12
Turnaround Time	8.5
Melting Time	36.1
Refining Time	9.2

Description	Units	Value
Charged Weight	Tons	99
Pourback Weight	Tons	0
Billets Weight	Tons	95.01
KWH	KWH	33100
KWH Average	KWH	47530.91
KWH/Prod. Ton	KWH/Tons	348.38
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	18200
O2 Total	SCF	98400
Carbon Total	SCF	

Alloys

Description	Weight
Carbon	450
SiMn	3100

Fluxes

Description	Weight
Lime	5300
MgO	2300

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	10700	6800	15600	33100
Scrap Weight	Tons	104100	61100	32800	198000
Burner 1 Oxygen	SCF	10300	5700	16100	32100
Burner 2 Oxygen	SCF	4300	5800	7600	17700
Burner 3 Oxygen	SCF	4700	4000	4800	13500
Burner 4 Oxygen	SCF	9900	6800	17400	34100
Burner Oxygen Total	SCF	29200	22300	45900	97400
Burner 1 Gas	SCF	1900	1300	1500	4700
Burner 2 Gas	SCF	1700	1200	1300	4200
Burner 3 Gas	SCF	1500	1300	2000	4800
Burner 4 Gas	SCF	1700	1300	1500	4500
Burner Gas Total	SCF	6800	5100	6300	18200
Lance More Oxygen	SCF	2400	0	-1400	1000
Lance More Oxygen Total	SCF	2400	0	-1400	1000
Injection Point 1 Carbon	SCF	151	97	507	755
Injection Point 2 Carbon	SCF	0	101	439	540
Injection Point 3 Carbon	SCF	101	28	107	236
Injection Point Carbon Total	SCF	252	226	1053	1531

Events

Start Time	Description	Time in Heat (min)	Kwh
4/19/2007 8:23:04 AM	Start of Heat	0	0
4/19/2007 8:23:34 AM	Charge	0	0
4/19/2007 8:29:58 AM	Power ON	6.9	0
4/19/2007 8:43:52 AM	Power OFF	20.8	10700
4/19/2007 8:45:16 AM	Charge	22.2	10700
4/19/2007 8:45:22 AM	Power ON	22.3	10700
4/19/2007 8:54:40 AM	Power OFF	31.6	17500
4/19/2007 8:56:04 AM	Charge	33	17500
4/19/2007 8:56:10 AM	Power ON	33.1	17500
4/19/2007 9:06:04 AM	Furnace Refinning	43	25100
4/19/2007 9:12:28 AM	New Temperature	49.4	30600
4/19/2007 9:12:43 AM	New Chemical Analysis	49.6	30800
4/19/2007 9:14:03 AM	New Temperature	50.95	32000
4/19/2007 9:15:05 AM	New Temperature	52	32900

4/19/2007 9:15:16 AM	Power OFF	52.2	33100
4/19/2007 9:16:01 AM	New Chemical Analysis	52.95	33100
4/19/2007 9:16:52 AM	End of Heat	53.8	33100

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/19/2007 9:12:28 AM	2908	0	0
4/19/2007 9:14:03 AM	2980	0	0
4/19/2007 9:15:05 AM	3062	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/9/2006 5:45:04 AM	1P	0.001	0.057	0.066	0.155	0.0352	0.098	105	11.21	0.018	0.0003	0.0516	0.00051	0.01	0.002	0.009	0.049	0.004
4/9/2006 6:07:27 AM	1L	0.054	0.058	0.043	0.156	0.0406	0.288	105	14.35	0.015	0.0003	0.0027	0.00053	0.01	0.001	0.009	0.041	0.005
4/9/2006 6:27:47 AM	1F	0.11	0.058	0.041	0.156	0.0331	0.322	106	16.94	0.015	0.0003	0.0032	0.00041	0.01	0.002	0.009	0.044	0.005
4/9/2006 7:17:27 AM	2F	0.109	0.059	0.048	0.16	0.0344	0.333	110	18.2	0.016	0.0009	0.0038	0.00051	0.011	0.002	0.011	0.044	0.006
4/9/2006 7:49:48 AM	3F	0.102	0.058	0.047	0.16	0.0303	0.333	105	17.63	0.015	0.0003	0.0037	0.00044	0.011	0.002	0.01	0.043	0.006
4/19/2007 9:12:43 AM	F1	0.007	0.075	0.105	0.323	0.0393	0.094	10	18.46	0.023	0	0	0.0006	0.011	0.002	0.01	0.088	0.008
4/19/2007 9:16:01 AM	F2	0.011	0.077	0.128	0.311	0.039	0.114	10	20.96	0.02	0	0	0.0006	0.01	0.002	0.009	0.094	0.008
4/19/2007 9:27:07 AM	L1	0.268	0.077	0.296	0.315	0.0438	1.171	10	69.15	0.013	0	0.002	0.001	0.011	0.001	0.01	0.094	0.01
4/19/2007 9:37:49 AM	L2	0.265	0.078	0.405	0.318	0.0469	1.258	11	82.06	0.013	0.002	0.002	0.001	0.012	0.001	0.011	0.096	0.011
4/19/2007 10:09:42 AM	C1	0.258	0.078	0.417	0.32	0.0439	1.224	12	82.18	0.013	0	0.002	0.0011	0.011	0.001	0.01	0.095	0.011
4/19/2007 10:29:40 AM	C2	0.251	0.078	0.415	0.317	0.0447	1.233	10	81.91	0.013	0	0.001	0.001	0.011	0.001	0.01	0.095	0.011
4/19/2007 10:54:55 AM	C3	0.251	0.077	0.415	0.314	0.0426	1.237	11	81.86	0.012	0	0.001	0.0009	0.011	0.001	0.01	0.095	0.01

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/19/2007 8:23:04 AM	6.9	0	Production	Furnace T/A	
4/19/2007 8:43:52 AM	1.5	20.82	Production	Charge furnace	
4/19/2007 8:54:40 AM	1.5	31.62	Production	Charge furnace	
4/19/2007 9:15:16 AM	1.6	52.22	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

1931 Performance Report Print Close

General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4213	4/19/2007 9:16:52 AM	4/19/2007 10:24:46 AM	67.9	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	67.9
Power On Time	42.4
Delay Time	25.5
Turnaround Time	17.5
Melting Time	40.6
Refining Time	9.8

Description	Units	Value
Charged Weight	Tons	99
Pourback Weight	Tons	0
Billets Weight	Tons	90.14
KWH	KWH	33000
KWH Average	KWH	46734.85
KWH/Prod. Ton	KWH/Tons	366.1
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	19400
O2 Total	SCF	109400
Carbon Total	SCF	

Alloys

Description	Weight
Carbon	900
FeSi	-150
SiMn	5100

Fluxes

Description	Weight
Lime	5300
MgO	2600

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	9600	8300	15100	33000
Scrap Weight	Tons	100800	66700	30500	198000
Burner 1 Oxygen	SCF	10300	8100	16000	34400
Burner 2 Oxygen	SCF	4200	8400	7600	20200
Burner 3 Oxygen	SCF	4400	5200	4700	14300
Burner 4 Oxygen	SCF	10200	9700	17700	37600
Burner Oxygen Total	SCF	29100	31400	46000	106500
Burner 1 Gas	SCF	1900	1600	1600	5100
Burner 2 Gas	SCF	1700	1500	1200	4400
Burner 3 Gas	SCF	1400	1700	1900	5000
Burner 4 Gas	SCF	1800	1600	1500	4900
Burner Gas Total	SCF	6800	6400	6200	19400
Lance More Oxygen	SCF	1000	0	1900	2900
Lance More Oxygen Total	SCF	1000	0	1900	2900
Injection Point 1 Carbon	SCF	132	154	482	768
Injection Point 2 Carbon	SCF	0	151	583	734
Injection Point 3 Carbon	SCF	106	64	172	342
Injection Point Carbon Total	SCF	238	369	1237	1844

Events

Start Time	Description	Time In Heat (min)	Kwh
4/19/2007 9:16:52 AM	Start of Heat	0	0
4/19/2007 9:17:22 AM	Charge	0	0
4/19/2007 9:30:28 AM	Power ON	13.6	0
4/19/2007 9:31:16 AM	Power OFF	14.4	300
4/19/2007 9:31:52 AM	Power ON	15	300
4/19/2007 9:44:28 AM	Power OFF	27.6	9600
4/19/2007 9:45:58 AM	Charge	29.1	9600
4/19/2007 9:49:04 AM	Power ON	32.2	9600
4/19/2007 10:00:22 AM	Power OFF	43.5	17900
4/19/2007 10:01:52 AM	Charge	45	17900
4/19/2007 10:01:58 AM	Power ON	45.1	17900
4/19/2007 10:11:04 AM	Furnace Refinning	54.2	25100
4/19/2007 10:14:26 AM	New Temperature	57.55	27900

4/19/2007 10:16:23 AM	New Temperature	59.5	29600
4/19/2007 10:17:20 AM	New Chemical Analysis	60.45	30400
4/19/2007 10:17:58 AM	Power OFF	61.1	30900
4/19/2007 10:18:28 AM	Power ON	61.6	30900
4/19/2007 10:18:37 AM	New Temperature	61.75	31000
4/19/2007 10:19:36 AM	New Chemical Analysis	62.7	31900
4/19/2007 10:19:58 AM	New Temperature	63.1	32200
4/19/2007 10:20:52 AM	Power OFF	64	33000
4/19/2007 10:20:54 AM	New Temperature	64	33000
4/19/2007 10:24:46 AM	End of Heat	67.9	33000

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/19/2007 10:14:26 AM	2888	0	0
4/19/2007 10:16:23 AM	2950	0	0
4/19/2007 10:18:37 AM	2980	0	0
4/19/2007 10:19:58 AM	3024	0	0
4/19/2007 10:20:54 AM	3094	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/9/2006 6:47:19 AM	1P	0.003	0.053	0.073	0.16	0.0353	0.103	102	11.99	0.016	0.0003	0.0516	0.00047	0.011	0.002	0.009	0.054	0.006
4/9/2006 7:10:01 AM	1L	0.121	0.054	0.06	0.163	0.0285	0.366	107	20.43	0.015	0.0003	0.0057	0.00046	0.011	0.002	0.01	0.05	0.006
4/9/2006 8:13:09 AM	1F	0.125	0.053	0.062	0.163	0.0204	0.369	107	20.72	0.014	0.0005	0.0047	0.00034	0.011	0.002	0.01	0.05	0.006
4/9/2006 9:09:01 AM	2F	0.125	0.054	0.066	0.164	0.0205	0.37	105	21.16	0.014	0.0005	0.0047	0.00038	0.011	0.002	0.01	0.05	0.006
4/9/2006 9:17:57 AM	3F	0.123	0.054	0.058	0.162	0.0189	0.368	112	20.13	0.014	0.0003	0.0047	0.00027	0.011	0.002	0.009	0.05	0.006
4/19/2007 10:17:20 AM	F1	0.005	0.15	0.094	0.337	0.0412	0.107	9	18.79	0.023	0	0	0.0006	0.011	0.002	0.01	0.104	0.009
4/19/2007 10:19:36 AM	F2	0.013	0.142	0.08	0.33	0.043	0.121	10	17.7	0.022	0	0	0.0007	0.011	0.002	0.009	0.108	0.009
4/19/2007 10:34:35 AM	L1	0.23	0.144	0.278	0.332	0.0472	1.096	10	65.7	0.014	0	0.003	0.001	0.011	0.001	0.01	0.111	0.012
4/19/2007 11:09:46 AM	C1	0.235	0.145	0.413	0.331	0.052	1.32	11	84.8	0.014	0.003	0.002	0.001	0.011	0.002	0.012	0.119	0.012
4/19/2007 11:25:33 AM	C2	0.224	0.146	0.416	0.336	0.0495	1.297	13	84.04	0.014	0.001	0.002	0.0009	0.011	0.002	0.01	0.117	0.012
4/19/2007 11:57:31 AM	C3	0.228	0.146	0.419	0.338	0.0461	1.295	11	84.55	0.014	0.001	0.002	0.001	0.011	0.002	0.011	0.117	0.013

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/19/2007 9:16:52 AM	8	0	Production	Furnace T/A	
4/19/2007 9:24:52 AM	5.6	8	Production	Taphole/runner repair	
4/19/2007 9:44:28 AM	2.58	27.68	Production	Pile up	
4/19/2007 9:47:03 AM	2.02	30.27	Production	Charge furnace	
4/19/2007 10:00:22 AM	1.6	43.58	Production	Charge furnace	
4/19/2007 10:20:52 AM	3.9	64.08	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

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General information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4213	4/19/2007 10:24:46 AM	4/19/2007 11:20:52 AM	56.1	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	56.1
Power On Time	42
Delay Time	14.1
Turnaround Time	10
Melting Time	37
Refining Time	9.1

Description	Units	Value
Charged Weight	Tons	99.05
Pourback Weight	Tons	0
Billets Weight	Tons	94.84
KWH	KWH	32900
KWH Average	KWH	47000
KWH/Prod. Ton	KWH/Tons	346.9
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	17000
O2 Total	SCF	99500
Carbon Total	SCF	

Alloys

Description	Weight
Carbon	500
FeSi	0
SiMn	3100

Fluxes

Description	Weight
Lime	5300
MgO	2200

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	11300	7400	14200	32900
Scrap Weight	Tons	103700	64700	29700	198100
Burner 1 Oxygen	SCF	10800	6500	14700	32000
Burner 2 Oxygen	SCF	4300	6700	7400	18400
Burner 3 Oxygen	SCF	4200	4000	3900	12100
Burner 4 Oxygen	SCF	10200	7500	16300	34000
Burner Oxygen Total	SCF	29500	24700	42300	96500
Burner 1 Gas	SCF	1900	1300	1400	4600
Burner 2 Gas	SCF	1600	1200	1100	3900
Burner 3 Gas	SCF	1300	1300	1500	4100
Burner 4 Gas	SCF	1700	1300	1400	4400
Burner Gas Total	SCF	6500	5100	5400	17000
Lance More Oxygen	SCF	2900	0	100	3000
Lance More Oxygen Total	SCF	2900	0	100	3000
Injection Point 1 Carbon	SCF	231	138	450	819
Injection Point 2 Carbon	SCF	0	69	303	372
Injection Point 3 Carbon	SCF	85	67	237	389
Injection Point Carbon Total	SCF	316	274	990	1580

Events

Start Time	Description	Time In Heat (min)	Kwh
4/19/2007 10:24:46 AM	Start of Heat	0	0
4/19/2007 10:25:16 AM	Charge	0	0
4/19/2007 10:31:46 AM	Power ON	7	0
4/19/2007 10:46:28 AM	Power OFF	21.7	11300
4/19/2007 10:48:10 AM	Charge	23.4	11300
4/19/2007 10:48:16 AM	Power ON	23.5	11300
4/19/2007 10:58:28 AM	Power OFF	33.7	18700
4/19/2007 11:00:04 AM	Charge	35.3	18700
4/19/2007 11:00:16 AM	Power ON	35.5	18700
4/19/2007 11:08:46 AM	Furnace Refinning	44	25100
4/19/2007 11:14:13 AM	New Temperature	49.45	29700
4/19/2007 11:16:18 AM	New Temperature	51.5	31600
4/19/2007 11:17:10 AM	New Chemical Analysis	52.4	32400

4/19/2007 11:17:50 AM	New Temperature	53.05	32900
4/19/2007 11:17:52 AM	Power OFF	53.1	32900
4/19/2007 11:19:40 AM	New Chemical Analysis	54.9	32900
4/19/2007 11:20:52 AM	End of Heat	56.1	32900

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/19/2007 11:14:13 AM	2909	0	0
4/19/2007 11:16:18 AM	2970	0	0
4/19/2007 11:17:50 AM	3054	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/9/2006 8:02:32 AM	1P	0.001	0.049	0.083	0.158	0.0328	0.084	110	12.63	0.017	0.0003	0.0516	0.00045	0.011	0.002	0.01	0.053	0.005
4/9/2006 8:32:12 AM	1L	0.074	0.05	0.045	0.161	0.0288	0.299	102	15.24	0.012	0.0003	0.0028	0.0004	0.011	0.001	0.009	0.046	0.006
4/9/2006 9:19:57 AM	1F	0.118	0.049	0.046	0.158	0.026	0.308	107	17.38	0.014	0.0004	0.0041	0.00035	0.011	0.002	0.01	0.047	0.006
4/9/2006 9:41:39 AM	2F	0.126	0.051	0.056	0.164	0.028	0.315	112	19.11	0.015	0.0018	0.0048	0.00054	0.011	0.002	0.011	0.048	0.007
4/9/2006 11:04:00 AM	3F	0.126	0.055	0.047	0.171	0.0206	0.364	110	19.36	0.015	0.0021	0.0057	0.00036	0.014	0.002	0.011	0.046	0.006
4/19/2007 11:17:10 AM	F1	0.012	0.076	0.169	0.303	0.0447	0.139	10	26.25	0.024	0	0	0.0006	0.012	0.002	0.01	0.104	0.009
4/19/2007 11:19:40 AM	F2	0.007	0.075	0.14	0.297	0.0439	0.144	10	23.15	0.024	0	0	0.0005	0.011	0.002	0.009	0.105	0.009
4/19/2007 11:33:30 AM	L1	0.269	0.076	0.345	0.301	0.0477	1.259	11	76.73	0.015	0.004	0.002	0.0011	0.012	0.002	0.012	0.111	0.012
4/19/2007 11:41:28 AM	L2	0.248	0.076	0.397	0.303	0.0476	1.3	10	82	0.014	0.003	0.002	0.0009	0.012	0.002	0.011	0.113	0.013
4/19/2007 12:22:42 PM	C1	0.229	0.076	0.405	0.302	0.0442	1.305	11	82.27	0.014	0.002	0.002	0.0009	0.012	0.002	0.011	0.113	0.013
4/19/2007 12:33:36 PM	C2	0.23	0.075	0.407	0.3	0.044	1.304	11	82.45	0.014	0.002	0.002	0.0009	0.011	0.002	0.011	0.113	0.012
4/19/2007 12:56:56 PM	C3	0.234	0.077	0.418	0.303	0.046	1.294	12	83.53	0.015	0.002	0.002	0.0009	0.012	0.002	0.01	0.114	0.013

Delays

Start Time	Duration (min)	Time in Heat (min)	Category	Delay Description	Comments
4/19/2007 10:24:46 AM	7	0	Production	Furnace T/A	
4/19/2007 10:46:28 AM	1.8	21.72	Production	Charge furnace	
4/19/2007 10:58:28 AM	1.8	33.72	Production	Charge furnace	
4/19/2007 11:17:52 AM	3	53.12	Production	Furnace T/A	

GERDAU AMERISTEEL

Heat Sheet

1933 [redacted] Performance Report Print Close

General Information

Grade	Start Time	End Time	Duration (min)	Ladle number	Crew	Shift
4213	4/19/2007 11:20:52 AM	4/19/2007 12:53:16 PM	92.4	0	D	1

Times

Description	Duration (min)
Tap to Tap Time	92.4
Power On Time	42.6
Delay Time	49.8
Turnaround Time	27.8
Melting Time	56.1
Refining Time	8.5

Description	Units	Value
Charged Weight	Tons	82.33
Pourback Weight	Tons	0
Billets Weight	Tons	82.83
KWH	KWH	32000
KWH Average	KWH	45070.42
KWH/Prod. Ton	KWH/Tons	386.33
KWH/Fce. Ton	KWH/Tons	0
Gas Total	SCF	25900
O2 Total	SCF	131100
Carbon Total	SCF	6929

Alloys

Description	Weight
Carbon	500
SiMn	3100

Fluxes

Description	Weight
Charge Carbon	5300
MgO	2600

Refrac.

Description	Weight

Consumptions / Charges

Description	Units	Charge 1	Charge 2	Charge 3	Total
Electric Energy	Kwh	8500	7000	16500	32000
Scrap Weight	Tons	103500	61150	0	164650
Burner 1 Oxygen	SCF	12800	6200	21800	40800
Burner 2 Oxygen	SCF	8100	6500	11100	25700
Burner 3 Oxygen	SCF	6100	4500	5900	16500
Burner 4 Oxygen	SCF	13400	7100	23400	43900
Burner Oxygen Total	SCF	40400	24300	62200	126900
Burner 1 Gas	SCF	3600	1300	2000	6900
Burner 2 Gas	SCF	3400	1300	1700	6400
Burner 3 Gas	SCF	1900	1500	2300	5700
Burner 4 Gas	SCF	3400	1400	2100	6900
Burner Gas Total	SCF	12300	5500	8100	25900
Lance More Oxygen	SCF	3000	0	1200	4200
Lance More Oxygen Total	SCF	3000	0	1200	4200
Injection Point 1 Carbon	SCF	100	131	576	807
Injection Point 2 Carbon	SCF	0	68	429	497
Injection Point 3 Carbon	SCF	54	38	233	325
Injection Point Carbon Total	SCF	154	237	1238	1629

Events

Start Time	Description	Time in Heat (min)	Kwh
4/19/2007 11:20:52 AM	Start of Heat	0	0
4/19/2007 11:21:22 AM	Charge	0	0
4/19/2007 11:47:04 AM	Power ON	26.2	0
4/19/2007 11:47:46 AM	Power OFF	26.9	300
4/19/2007 11:48:10 AM	Power ON	27.3	300
4/19/2007 11:59:46 AM	Charge	38.9	8500
4/19/2007 12:03:34 PM	Power OFF	42.7	11400
4/19/2007 12:05:04 PM	Power ON	44.2	11400
4/19/2007 12:10:52 PM	Charge	50	15500
4/19/2007 12:14:46 PM	Power OFF	53.9	18300
4/19/2007 12:33:58 PM	Power ON	73.1	18300
4/19/2007 12:43:10 PM	Furnace Refinning	82.3	25100
4/19/2007 12:46:22 PM	New Temperature	85.5	27700
4/19/2007 12:48:11 PM	New Temperature	87.3	29200

4/19/2007 12:49:39 PM	New Chemical Analysis	88.75	30400
4/19/2007 12:49:56 PM	New Temperature	89.05	30700
4/19/2007 12:51:04 PM	New Temperature	90.2	31600
4/19/2007 12:51:34 PM	New Chemical Analysis	90.7	31900
4/19/2007 12:51:40 PM	Power OFF	90.8	32000
4/19/2007 12:51:58 PM	New Temperature	91.1	32000
4/19/2007 12:53:16 PM	End of Heat	92.4	32000

Temperatures

Time	Temperature	O2 ppm	% Carbon
4/19/2007 12:46:22 PM	2842	0	0
4/19/2007 12:48:11 PM	2920	0	0
4/19/2007 12:49:56 PM	2975	0	0
4/19/2007 12:51:04 PM	3054	0	0
4/19/2007 12:51:58 PM	3091	0	0

Chemistry

Time	Sample ID	Si	Ni	C	Cu	S	Mn	Zn	CE	Mo	Pb	Al	B	Sn	V	Nb	Cr	P
4/9/2006 9:09:55 AM	1P	0.001	0.054	0.072	0.172	0.0247	0.072	100	11.27	0.018	0.0003	0.0516	0.00043	0.015	0.002	0.009	0.044	0.004
4/9/2006 9:35:19 AM	1L	0.117	0.054	0.046	0.167	0.0255	0.348	106	18.12	0.014	0.0003	0.0045	0.0004	0.013	0.001	0.009	0.044	0.005
4/9/2006 10:19:53 AM	1F	0.13	0.054	0.053	0.171	0.0228	0.362	114	20.04	0.016	0.0016	0.006	0.00044	0.014	0.002	0.01	0.046	0.006
4/9/2006 10:42:14 AM	2F	0.124	0.055	0.053	0.172	0.022	0.356	108	19.51	0.015	0.0005	0.0071	0.00043	0.014	0.002	0.009	0.045	0.006
4/19/2007 12:49:39 PM	F1	0.009	0.075	0.157	0.351	0.0527	0.12	11	24.8	0.023	0	0	0.0007	0.012	0.002	0.009	0.104	0.014
4/19/2007 12:51:34 PM	F2	0.006	0.073	0.137	0.343	0.0533	0.13	10	22.86	0.022	0	0	0.0007	0.012	0.002	0.009	0.111	0.014
4/19/2007 1:03:39 PM	L1	0.265	0.077	0.324	0.358	0.0563	1.257	11	74.83	0.012	0	0.001	0.0012	0.013	0.002	0.01	0.126	0.018
4/19/2007 1:13:28 PM	L2	0.264	0.074	0.405	0.344	0.0552	1.305	12	83.94	0.012	0.002	0.002	0.001	0.013	0.002	0.011	0.128	0.018
4/19/2007 2:15:49 PM	C1	0.25	0.077	0.424	0.357	0.0531	1.341	10	86.13	0.011	0	0.003	0.001	0.012	0.002	0.01	0.128	0.018
4/19/2007 2:24:18 PM	C2	0.252	0.074	0.422	0.342	0.0511	1.336	11	85.5	0.01	0	0.002	0.0008	0.011	0.002	0.009	0.128	0.016
4/19/2007 2:43:36 PM	C3	0.253	0.074	0.429	0.342	0.055	1.333	11	86.37	0.011	0	0.002	0.001	0.012	0.002	0.01	0.128	0.017

Delays

Start Time	Duration (min)	Time In Heat (min)	Category	Delay Description	Comments
4/19/2007 11:20:52 AM	5	0	Production	Furnace T/A	
4/19/2007 11:25:52 AM	21.2	5	Production	Drain furnace	
4/19/2007 12:03:34 PM	1.5	42.72	Production	Charge furnace	
4/19/2007 12:14:46 PM	5	53.92	Production	Caster - T/A	
4/19/2007 12:19:46 PM	14.2	58.92	Production	Caster - T/A	
4/19/2007 12:51:40 PM	1.6	90.82	Production	Furnace T/A	

45.2
18.2
17.2

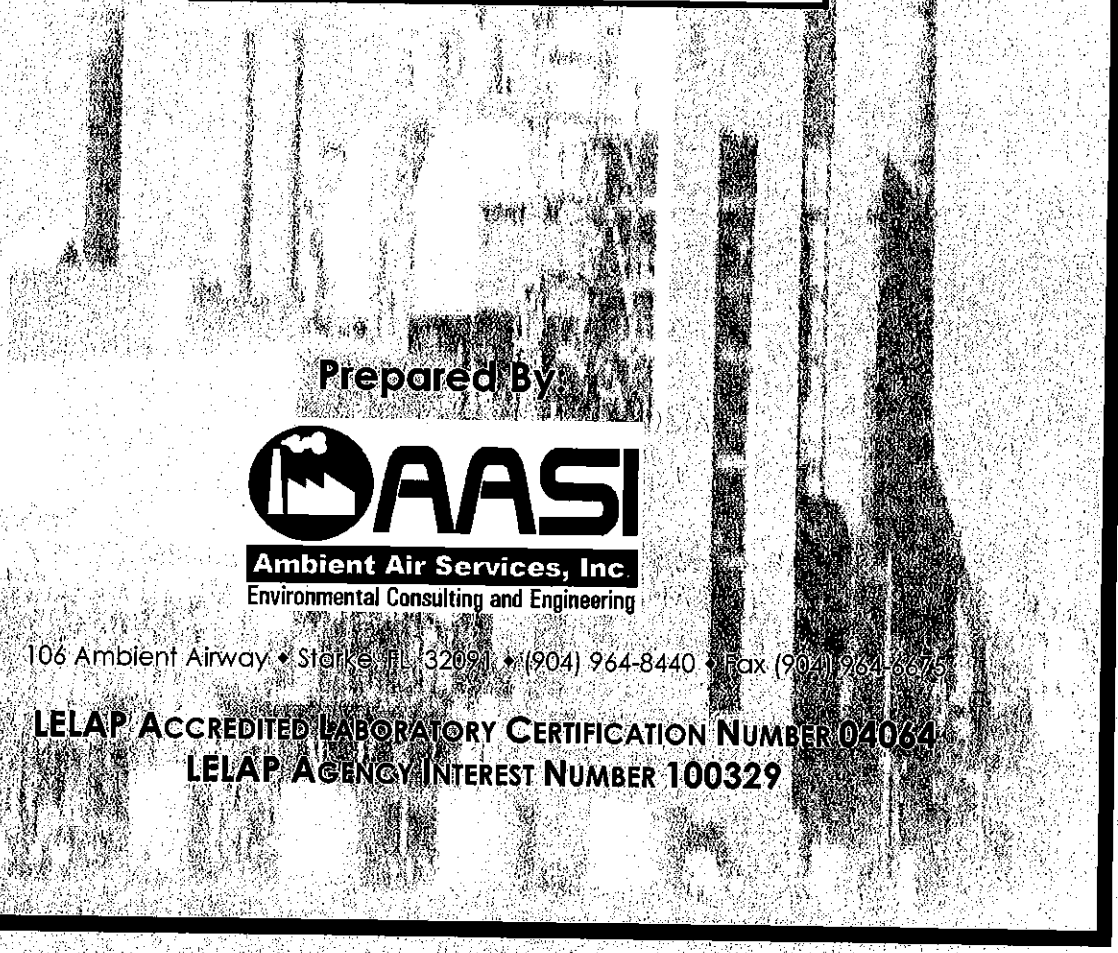
Compliance Test Report

Gerdau Ameristeel Corporation
Baldwin, Florida

Billet Reheat Furnace

April 20, 2007

Title V Permit Number 0310157-002-AV



Prepared By:

AASI
Ambient Air Services, Inc.
Environmental Consulting and Engineering

106 Ambient Airway • Starke, FL 32091 • (904) 964-8440 • Fax (904) 964-8675

LELAP Accredited Laboratory Certification Number 04064
LELAP Agency Interest Number 100329

Compliance Test Report

Gerdau Ameristeel Corporation
Baldwin, Florida

Billet Reheat Furnace

April 20, 2007

Title V Permit Number 0310157-002-AV

AMBIENT AIR SERVICES, INC.
106 AMBIENT AIRWAY
STARKE, FLORIDA 32091
(904) 964-8440
LELAP Accredited Laboratory Certification Number 04064
LELAP Agency Interest Number 100329

CERTIFICATION

Ambient Air Services, Inc. (AASI) of Starke, Florida has completed the testing as described in this report for Gerdau Ameristeel's Baldwin, Florida facility. To the best of our knowledge and abilities, all information, facts, and test data are true and correct. Information supplied to AASI for use in this report from Gerdau Ameristeel Corporation is perceived to be accurate and is used as such where necessary.

This report contains pages 1 through 82.

This report was reviewed by:

Joseph L. Cooksey, Technical Director — Date: 5/29/07

David C. Sholtes, Quality Assurance Manager — Date: 5/29/07

Any questions concerning this report or the process information should be directed to the following people:

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EXECUTIVE SUMMARY

Ambient Air Services, Inc. (AASI) conducted emission testing at Gerdau Ameristeel Corporation's Baldwin, Florida facility April 20, 2007. The testing involved the determination of particulate matter (PM), carbon monoxide (CO), oxides of nitrogen (NO_x), and visible emissions (VE) from the Billet Reheat Furnace. A summary of the results is listed in the Table below:

Executive Summary

Gerdau Ameristeel Corporation
Baldwin, Florida
Billet Reheat Furnace

April 20, 2007

Parameters	Permit Limits	Test Results
Particulate Matter (PM)	2.4 lbs/hr PM-10 10.2 tons/year PM-10	1.2 lbs/hr PM [A] 5.3 tons/year PM [A, B]
Carbon Monoxide (CO)	0.035 lbs/mmBtu 7.7 lbs/hr 33 tons/year	0.001 lbs/mmBtu 0.1 lbs/hr 0.5 tons/year [B]
Oxides of Nitrogen (as measured)	0.19 lbs/mmBtu 179.3 tons/year	0.12 lbs/mmBtu 68.8 tons/year [B]
Visible Emissions (VE)	15.0 % opacity	0.0 % opacity

NOTES:

[A] – Particulate Matter determined using USEPA Method 5. The reported number is total particulate matter, the emission limit is PM-10 particulate.

[B] – Tons per year based on 8500 operating hours per year at the tested emission rate and conditions.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

Revision History

Revision	Comments	Issue Date
0	Original issue to James Wold	May 29, 2007

1.0 INTRODUCTION

1.1 General

Gerdau Ameristeel Corporation contracted with Ambient Air Services, Inc. (AASI) to perform emission testing on the Billet Reheat Furnace located in Baldwin, Florida. The testing was conducted to satisfy the specific requirements for annual emission testing listed in the facilities Title V permit (number 0310157-002-AV). A summary of the testing performed is presented in Table 1-1-1.

Table 1-1-1

Summary of Testing

Gerdau Ameristeel Corporation
Baldwin, Florida

April 20, 2007

Source	Parameters	Test Methods	Time Duration
Billet Reheat Furnace	Particulate Matter	40 CFR Part 60 Appendix A, Methods 1-5	3 runs, 1 hour per run
	Carbon Monoxide	40 CFR Part 60 Appendix A, Method 10, 19	3 runs, 1 hour per run
	Oxides Of Nitrogen	40 CFR Part 60 Appendix A, Method 7E, 19	3 runs, 1 hour per run
	Visible Emissions	40 CFR Part 60 Appendix A, Method 9	1, 1 hour observation

1.2 Project Participants

The personnel indicated in Table 1-2-1 participated in this project.

Table 1-2-1

Name	Affiliation	Project Responsibility
Randy Weston	Ambient Air Services, Inc.	Project Manager, Field Testing
Landon Hall	Ambient Air Services, Inc.	Field Testing
George Hawkins	Ambient Air Services, Inc.	Visible Emissions Observer
Susan H. Anderson	Ambient Air Services, Inc.	Report Preparation
Joseph L. Cooksey	Ambient Air Services, Inc.	Technical Director, Field Testing
David C. Sholtes	Ambient Air Services, Inc.	Quality Assurance Manager
James Wold	Gerdau Ameristeel Corporation	Environmental Manager
Bill Kaufman	City of Jacksonville RESD	Test Observer

2.0 PROCESS DESCRIPTION

At the Baldwin plant of Gerdau Ameristeel Corporation the overall objective is to reclaim scrap steel in the form of bales, loose scrap, and shredded automobiles, refining this material to create concrete reinforcing bars as used in most concrete structures. The particular aspect of this operation examined in this report is the "Reheat Furnace" which is used to bring steel billets up to a sufficiently high temperature so that they may be rolled into reinforcing bar shapes as desired. In this process, relatively cold billets measuring approximately five inches square in cross-section and up to 30 feet in length are heated in the furnace to a temperature of 2100-2200°F at which point they are physically pushed from the furnace and into the automatic rolling apparatus which changes their shape to a progressively smaller cross-section.

The rate at which billets may be rolled into reinforcing bar is dictated somewhat by the size of the end product bar. The smaller this end product in cross-section, the less tonnage per hour that may be processed through the furnace. This particular furnace is designed to reheat billets in the manner described at a rate of 120 tons per hour daily average (i.e. 24 hour average). During the test the furnace was fired with natural gas and achieved an average push rate of 110.8 billet tons per hour (short term 3 hour average).

3.0 SUMMARY OF RESULTS

The results of the testing demonstrate compliance with the limits established in the facilities Title V permit. The results are summarized in the following tables:

Table 3-1 presents a summary of the test results.

Table 3-2 presents a summary of particulate matter (PM) emissions.

Table 3-3 presents a summary of carbon monoxide (CO) emissions.

Table 3-4 presents a summary of oxides of nitrogen (NO_x) emissions.

Table 3-5 presents a summary of visible (VE) emissions.

Table 3-1

Summary of Testing Gerdau Ameristeel Corporation Baldwin, Florida Billet Reheat Furnace April 20, 2007		
Parameters	**Permit Limits**	**Test Results**
Particulate Matter (PM)	2.4 lbs/hr PM-10 10.2 tons/year PM-10	1.2 lbs/hr PM [A] 5.3 tons/year PM [A, B]
Carbon Monoxide (CO)	0.035 lbs/mmBtu 7.7 lbs/hr 33 tons/year	0.001 lbs/mmBtu 0.1 lbs/hr 0.5 tons/year [B]
Oxides of Nitrogen (as measured)	0.19 lbs/mmBtu 179.3 tons/year	0.12 lbs/mmBtu 68.8 tons/year [B]
Visible Emissions (VE)	15.0 % opacity	0.0 % opacity

NOTES:

[A] – Particulate Matter determined using USEPA Method 5. The reported number is total particulate matter, the emission limit is PM-10 particulate.

[B] – Tons per year based on 8500 operating hours per year at the tested emission rate and conditions.

AASI

Particulate Emissions Summary

Gerdau Ameristeel Corporation
Baldwin, Florida
Billet Reheat Furnace
April 20, 2007

AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2005

Run			Particulate Emissions			Volumetric Flow Rates		Stack		Sample Volume	Percent
Date	Number	Time	GR/SCFD	TONS/YEAR	LBS/HR	ACFM	SCFMD	Temp. °F	Moisture %	SCFD	Isokinetic
4/20/2007	1	9:16 10:20	0.0081	7.0	1.6	68089	23739	822	15	44.038	94
4/20/2007	2	11:55 12:59	0.0040	3.7	0.9	73547	25447	817	16	48.234	96
4/20/2007	3	15:57 17:01	0.0053	5.1	1.2	73081	25920	804	15	47.877	93
Average			**0.0058**	**5.3**	**1.2**	**71572**	**25035**	**814**	**15**	**46.716**	**94**

Note: Tons per year based on 8500 operating hours per year at the tested emission rate.

AASI

Carbon Monoxide (CO) Emissions Summary
USEPA Method 10/19 (40 CFR Part 60 Appendix A)
Gerdau Ameristeel Corporation
Baldwin, Florida
Billet Reheat Furnace
April 20, 2007

Run			Concentration		Volumetric Flow Rates	Production	Mass Emissions		
Date	Number	Time	O_2 (%)	CO (ppm-v/v)	SCFM-Dry	Gas Consumption (mmBtu/hour)	Pounds per Hour	Tons per Year	Pounds per mmBtu
4/20/2007	1	9:16 10:18	5.1	2.5	23739	110.6	0.3	1.1	0.002
4/20/2007	2	11:55 12:58	5.0	0.6	25447	108.6	0.1	0.3	0.001
4/20/2007	3	15:58 17:00	5.3	0.4	25920	128.6	0.0	0.2	0.000
Average			**5.1**	**1.2**	**25035**	**115.9**	**0.1**	**0.5**	**0.001**

Pounds per hour and tons per year calculation based on concentration and flow. Pounds per mmBtu calculation based on EPA Method 19 formulas.
Tons per year based on 8500 operating hours at test conditions.
Fuel factor used for lbs/mmBtu calculation - 8710.

AASI

Oxides of Nitrogen (NOx) Emissions Summary
USEPA Method 7E/19 (40 CFR Part 60 Appendix A)
Gerdau Ameristeel Corporation
Baldwin, Florida
Billet Reheat Furnace
April 20, 2007

Oxides of Nitrogen (as measured)

Run			Concentration				Flow	Production	Mass Emissions		
Date	Number	Time	O_2 (%)	NO (ppm)	NO_2 (ppm)	NO_X (ppm)	SCFMD	Gas Consumption (mmBtu/hour)	Total Pounds per Hour	Total Tons per Year	Total Pounds per mmBtu
4/20/2007	1	9:16 10:18	5.1	102	8	110	23739	110.6	12.7	53.9	0.10
4/20/2007	2	11:55 12:58	5.0	128	5	133	25447	108.6	16.1	68.6	0.12
4/20/2007	3	15:58 17:00	5.3	152	7	159	25920	128.6	19.8	84.0	0.15
Average			**5.1**	**127**	**7**	**134**	**25035**	**115.9**	**16.2**	**68.8**	**0.12**

Pounds per hour and tons per year calculation based on concentration and flow. Pounds per mmBtu calculation based on EPA Method 19 formulas.
Tons per year based on 8500 operating hours at test conditions.
Fuel factor used for lbs/mmBtu calculation - 8710.

AASI

Visible Emission Observations (VE) Summary
USEPA Method 9 (40 CFR Part 60 Appendix A)
Gerdau Ameristeel Corporation
Baldwin, Florida
Billet Reheat Furnace
June 12, 2006

Date	Time	Source	Opacity (Highest 6-Minute Average)
6/12/2006	16:33 17:33	Reheat Furnace	0.0%

4.0 TESTING METHODOLOGY AND PROCEDURES

4.1 Methods 1-5

Sample and Velocity Traverse Points

USEPA Method 1, as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine the location of the traverse points for velocity and particulate measurements.

Velocity and Volumetric Flow Rate

USEPA Method 2, as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine average gas velocity. A type "S" pitot tube and oil manometer were used for velocity determination. Gas temperature was measured with a type K thermocouple. Calibration checks were performed on the pitot tube to verify the face opening alignments, external tubing diameter, and base-to-opening plane distances. A base-line coefficient of 0.84 was assigned to the pitot tube. Verification of these measurements is detailed in Appendix A.

Oxygen and Carbon Dioxide

USEPA Method 3A, as published in 40 CFR, Part 60, Appendix A, was used as the reference method for determining oxygen levels in the effluent gas stream. A Servomex 1440D analyzer was used.

USEPA Method 3 was used to determine carbon dioxide concentrations. A Fyrite analyzer was used for this determination. A grab sample measurement was made once per test run.

Moisture Content

USEPA Method 4, as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine the moisture content of the gas stream by extracting the gas sample at a known and regulated rate through a glass condenser train. The condenser train consisted of four glass impingers connected in series with leak free U-tube connectors. The gas sample was extracted through the impinger train (maintained at below 68° F in an ice bath) with a vacuum pump. The amount of gas sampled was measured with a calibrated dry gas meter. The amount of moisture collected during the test was gravimetrically determined and the amount of gas drawn, corrected to dry standard conditions, was determined.

Particulate Testing

USEPA Method 5 as published in 40 CFR, Part 60, Appendix A, was used as the reference method to determine the particulate matter emissions referencing EPA Methods 1-4 for traverse point selection, determination of stack gas molecular weight, stack gas moisture determination, and volumetric flow rate. The following is a synopsis of the method, a list of equipment and specifications, and a diagram illustrating the equipment used.

Particulate emissions were withdrawn isokinetically from the source and collected on a filter and in a pre-filter wash. The collected samples were dried and then weighed.

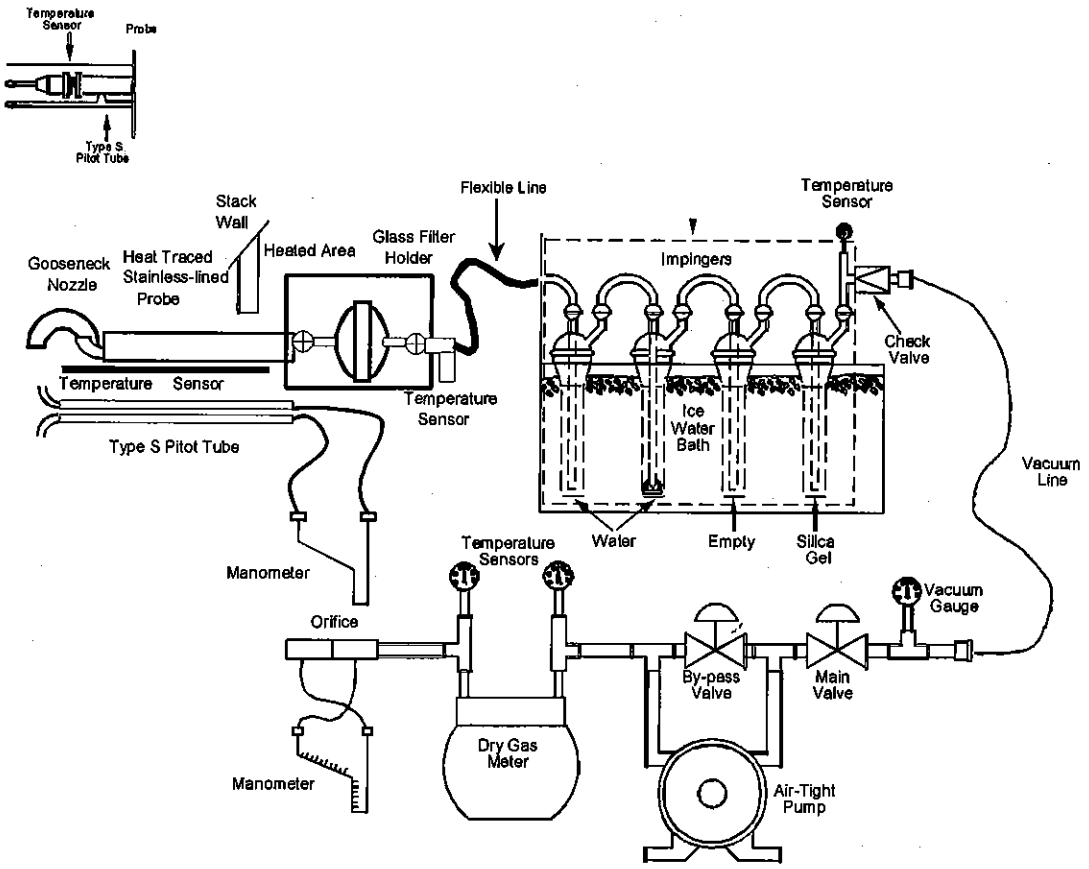
Sampling Apparatus

1)	Probe Nozzle	Stainless steel with sharp tapered leading edge.
2)	Probe	Stainless steel sheath with a 5/8" OD stainless insert.

3)	Pitot Tube	Standard "type S", attached to the probe.
4)	Filter Holder	The filter holder was constructed of glass. The gasket used was made of silicone rubber. The filter holder is designed to provide a positive seal against leakage from the outside or around the filter.
5)	Impingers	Four (4) glass impingers connected in series with glass ball joint fittings. The first, third, and fourth were of the Greenburg-Smith design modified by replacing the tip with a 1.3 cm (1/2 inch) Id glass tube extending to about ½ inch from the bottom of the flask. The second impinger was of the Greenburg-Smith design with a standard tip. All were submerged in an ice bath during the sample runs.
6)	Meter Box	Module containing a vacuum gauge, leak free pump, dry gas meter, valves, and related equipment to maintain isokinetic sampling rate and to determine sample volume.
7)	Barometer	Aneroid type to measure atmospheric pressure on-site to ±0.05 inches of mercury.
8)	Thermocouples	Type K thermocouples were utilized to monitor temperatures for stack gas, filter, last impinger, and dry gas meter.
9)	Filters	Whatman glass fiber filter, type 934-A/H.

Figure 4-1-1

Method 5 Train



4.2 Oxides of Nitrogen

NO_x emissions from the facility were determined in accordance with USEPA Method 7E as published in 40 CFR, Part 60, Appendix A. A gas sample was continuously extracted from the stack, and a portion of the sample conveyed to an instrumental chemiluminescent analyzer for determination of NO_x concentration. A TEI Model 42 CHL was used. Both NO and NO_2 were recorded and the emissions were reported as measured. This method of reporting is required in the facilities permit.

4.3 Opacity

The opacity from the stack was measured by a certified observer in accordance with USEPA Method 9 as published in 40 CFR, Part 60, Appendix A. The plume opacity was recorded every 15 seconds. Opacity was then calculated as the average of the highest concurrent 24 readings.

4.4 Carbon Monoxide

CO emissions from the facility were determined in accordance with USEPA Method 10 as published in 40 CFR, Part 60, Appendix A. A gas sample was continuously extracted from the stack and a portion of the sample conveyed to a gas filter correlation, non dispersive infrared analyzer (NDIR) for determination of CO concentration. A TEI Model 48 was used.

4.5 Reporting of NO_x and CO Emissions

The permit requires that NO_x and CO emissions be reported as pounds of NO_x (as measured) and CO per million British Thermal Units (lbs/mmBtu). To convert ppm to lbs/mmBtu the formulas as published in USEPA Method 19 were used.

Oxides of Nitrogen and Carbon Monoxide

NO_x and CO emission rates (pounds per million Btu) were determined using the following equation:

$$E = KCF \times 20.9/(20.9-O_2)$$

Where:

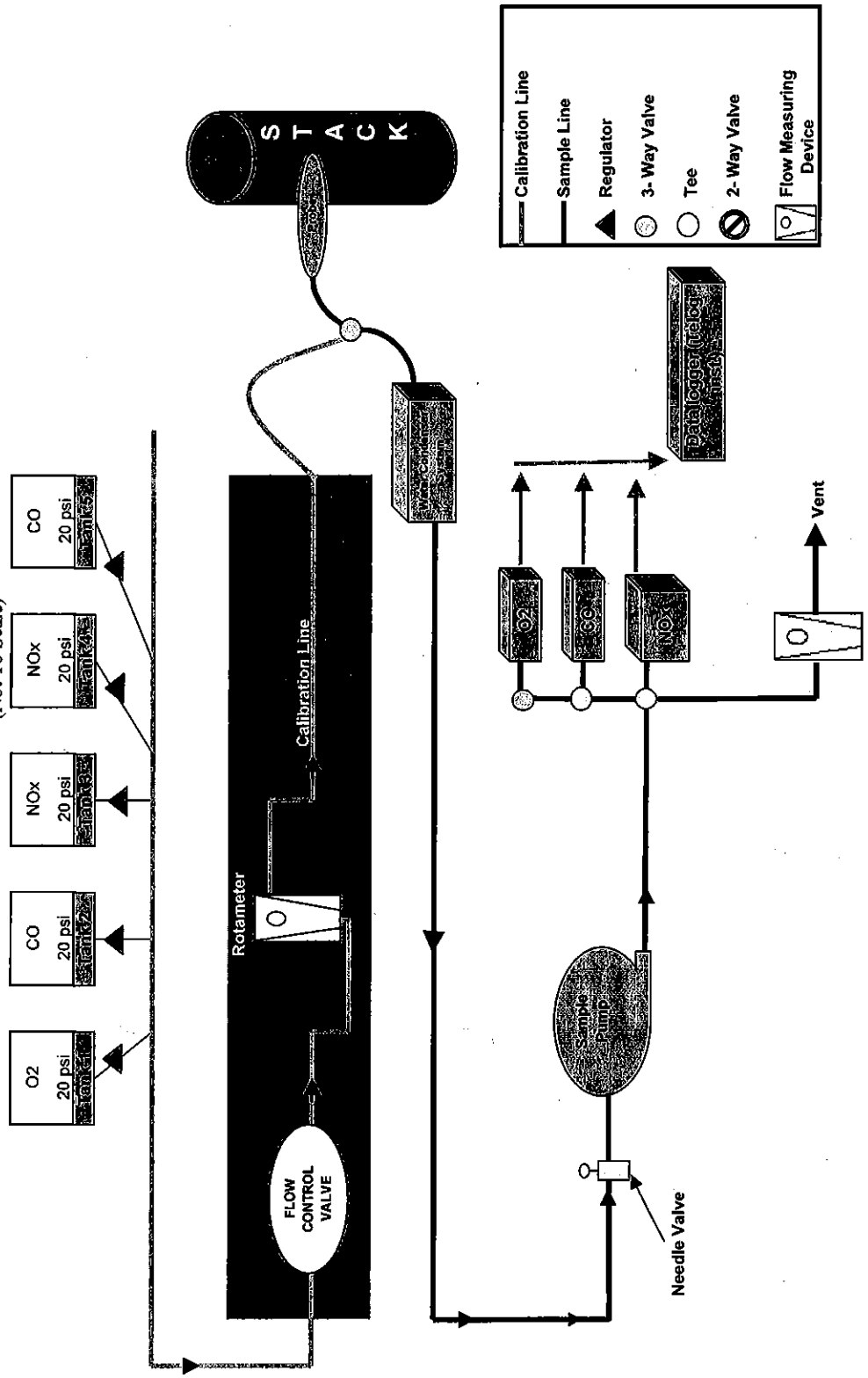
E = Mass emission of pollutant (lb/mmBtu)
K =Conversion factor for pollutant=
1.194×10^{-7} ([lb/scf]/ppm) for NO_2
7.790×10^{-8} ([lb/scf]/ppm) for NO
7.271×10^{-8} ([lb/scf]/ppm) for CO
C = Concentration of pollutant (ppm by volume, dry basis)
F =F-Factor for natural gas (dscf/mmBtu) = 8710
O_2 =Exhaust gas oxygen concentration (percent by volume, dry basis)

The NO_x number reported is as measured as required by the facility's Title V permit.

4.6 Sample System

A fully extractive sample system was utilized to convey the stack gas to the analytical instruments. The sample system consisted of the following components; a stainless steel probe, calibration tee, water condenser system, particulate filter, 200 feet of sample line (teflon), a sample pump and a sample manifold to distribute the sample gas to the analytical instruments. The system was designed so that all calibration gases were injected at the probe and passed through the same system as the sample gas. A schematic of the sampling system is shown in Figure 4-6-1.

Figure 4-6-1
SCHEMATIC
(Not To Scale)

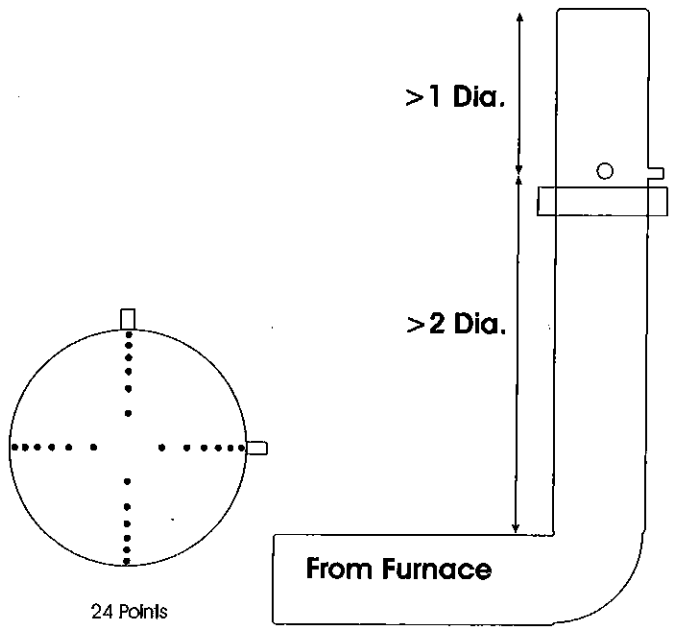


5.0 SAMPLING POINT LOCATION

Gerdau Ameristeel Corporation
Baldwin, Florida
Billet Reheat Furnace

Diameters Upstream:	>1
Diameters Downstream	>2
Stack diameter	87"
Drawing Date	4/20/06

Drawing Not to Scale



Particulate Sampling Points (inches)	
1	1.8"
2	5.8"
3	10.3"
4	15.4"
5	21.8"
6	31.0"
7	56.0"
8	65.3"
9	71.6"
10	76.7"
11	81.2"
12	85.2"

Note: Two equal distance, ninety-degree ports. Two ports with 12 points per port, 24 total points. All distances are approximate.

6.0 TEST DISCUSSION AND DEVIATIONS

Particulate Matter determined using USEPA Method 5. The reported number is total particulate matter, the emission limit is PM-10 particulate.

LIST OF APPENDICES

APPENDIX A

Particulate Matter (PM)

-Sample Calculations
-Emission Run Summaries
-Field Data Sheets
-Lab Data Sheet
-Chain of Custody
-Pre Test Gas Meter Calibration
-Post Test Gas Meter Calibration
-Post Test Pitot Calibration
-Thermocouple Calibration

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Example Calculations, PM Test Run 1

Facility	Gerdau Ameristeel Corporation	**Source**	Billet Reheat Furnace
Location	Baldwin, Florida	**Date**	April 20, 2007

1. **Stack Pressure (P_s)**

$$P_s = P_{bar} + (P_g / 13.6)$$

Example.	P_{bar}	=	29.95	P_s	=	**29.85**	in. Hg.
	P_g	=	-1.3				

2. **Volume Water Vapor, ($V_{w(std)}$).**

$$V_{lc} \times 0.04706$$

Example.	V_{lc}	=	166.9	$V_{w(std)}$	=	**7.856**	SCF

3. **Meter Volume, corrected to Standard Conditions, ($V_{m(std)}$)**

$$V_m \times Y \times 17.64 (P_{bar} + (\Delta H/13.6))/T_m$$

Example.	V_m	=	44.812	$V_{m(std)}$	=	**44.038**	SCF
	P_{bar}	=	29.95				
	T_m	=	546.2				
	Y	=	1.012				
	K_1	=	17.64				
	ΔH_{avg}	=	1.613				

4. **Total Volume Of Sample, (V_t).**

$$V_{w(std)} + V_{m(std)}$$

Example.	$V_{m(std)}$	=	44.038	V_t	=	**51.894**	SCF
	$V_{w(std)}$	=	7.856				

5. **Moisture in stack gas, volume fraction (B_{ws})**

$$V_{w(std)} / V_{w(std)} + V_{m(std)}$$

Example.	$V_{m(std)}$	=	44.038	B_{ws}	=	**0.151**	
	$V_{w(std)}$	=	7.856				

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Example Calculations, PM Test Run 1

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Location	Baldwin, Florida	**Date**	April 20, 2007

6. **Dry Stack Gas, volume fraction (B_{wd})**

$$= 1 - B_{ws}$$

Example.	B_{ws}	=	0.151	B_{wd}	=	**0.849**

7. **Molecular Weight of Stack Gas, Dry, (M_d).**

$$= (0.44 \times \%CO2) + (0.32 \times \%O2) + (0.28 \times \%N2) + (0.28 \times \%CO)$$

Example.	CO2	=	10	M_d	=	**29.80**
	O2	=	5.1			
	N2	=	84.9			
	CO	=	0.0			

8. **Molecular Weight of Stack Gas, Stack Conditions, (M_s).**

$$= M_d \times B_{wd} + 18.0 \times B_{ws}$$

Example.	M_d	=	29.80	M_s	=	**28.02**
	B_{wd}	=	0.849			
	B_{ws}	=	0.151			

9. **Specific Gravity of Gas, Relative to Air, (G_s)**

$$= M_S / 28.99$$

Example.	M_s	=	28.02	G_s	=	**0.966**

10. **Velocity of Stack Gas, as feet per minute, (v_s).**

$$= (K_p \times C_p \times (\Delta p_{avg})^{0.5} \times (T_{s(abs)} / P_s \times M_s)^{0.5}) \times 60$$

Example.	C_p	=	0.84	v_s	=	**1649.4**	**FPM**
	Δp_{avg}	=	0.3092				
	$T_{s(abs)}$	=	1282.38				
	P_s	=	29.85				
	M_s	=	28.02				
	K_p	=	85.490				

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Example Calculations, PM Test Run 1

Facility	Gerdau Ameristeel Corporation	**Source**	Billet Reheat Furnace
Location	Baldwin, Florida	**Date**	April 20, 2007

11. **Actual Stack Gas Flow Rate (Q_s).**

$$= A \times v_s$$

Example.	v_s	=	1649.4	Q_s	=	68089	ACFM
	A	=	41.28249096				

12. **Actual Stack Gas Flow Rate, Dry (Q_d)**

$$= Q_s \times B_{wd}$$

Example.	Q_s	=	68089	Q_d	=	57782	ACFMD
	B_{wd}	=	0.849				

13. **Stack Gas Flow Rate, Standard Temperature and Pressure, Dry, ($Q_{d(std)}$)**

$$= Q_d \times ((T_{std} \times P_s) / (P_{std} \times T_{s(abs)}))$$

Example	Q_d	=	57782	$Q_{d(std)}$	=	23739	SCFMD
	P_s	=	29.85				
	$T_{s(abs)}$	=	1282.38				
	P_{std}	=	29.92				
	T_{std}	=	528				

14. **Stack Gas Flow Rate, Standard Temperature and Pressure ($Q_{s(std)}$)**

$$= Q_{d(std)} / B_{wd}$$

	$Q_{d(std)}$	=	23739	$Q_{s(std)}$	=	27973	SCFMW
	B_{wd}	=	0.849				

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Example Calculations, PM Test Run 1

Facility	Gerdau Ameristeel Corporation	**Source**	Billet Reheat Furnace
Location	Baldwin, Florida	**Date**	April 20, 2007

15. **Percent Isokinetic Sampled, (I)**

$$I = (100 \times V_{m(std)} \times 29.92 \times T_{s(abs)}) / (528 \times v_s \times \Theta \times A_n \times P_s \times B_{wd})$$

Example.	A_n	=	0.001364	I	=	**94**	%
	Θ	=	60	P_{std}	=	29.92	
	$V_{m(std)}$	=	44.04	T_{std}	=	528	
	$T_{s(abs)}$	=	1282.38	P_s	=	29.85	
	v_s	=	1649.4	B_{wd}	=	0.849	

16. **Particulate Concentration, grains per Standard Cubic Foot, (C_s).**

$$(0.01543 \times Mg.) / V_{m(std)}$$

Example.	Mg	=	23.1	C_s	=	**0.0081**	**Grs/ SCF.**
	$V_{m(std)}$	=	44.038				

17. **Mass Emission Rate, Lbs / Hr, (Em).**

$$C_s \times Q_{d(std)} \times 60 / 7000$$

Example.	$Q_{d(std)}$	=	23739	Em	=	**1.65**	**Lbs/ Hr**

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Example Calculations, PM Test Run 1

Facility	Gerdau Ameristeel Corporation	**Source**	Billet Reheat Furnace
Location	Baldwin, Florida	**Date**	April 20, 2007

Constants

K	=	0.005 English	K_p	=	85.49 Velocity equation constant
K_1	=	17.64 °R/in. Hg	T_{std}	=	528 °R
K_2	=	0.04706 ft^3/ml	P_{std}	=	29.92 inches Hg
K_3	=	0.0154 gr/mg	p_w	=	0.9982 g/ml

Variables

A	=	Stack Area (ft^2)	Q_s	=	Actual Stack Gas Flow Rate, ACFM
A_n	=	Nozzle Area (ft^2)	Q_d	=	Actual Stack Gas Flow Rate, ACFMD
B_{ws}	=	Moisture in stack gas, volume fraction	$Q_{s(std)}$	=	Stack Gas Flow Rate Wet, SCFMW
B_{wd}	=	Dry Stack Gas, volume fraction	$Q_{d(std)}$	=	Stack Gas Flow Rate, SCFMD
C_p	=	Pitot Correction Factor	$T_{s(abs)}$	=	Stack Temp (degrees R)
C_s	=	Grains per DSCF	T_m	=	Meter Temp (degrees R)
D_e	=	Equivilent Diameter (inches)	v_s	=	Average Stack Velocity, FPM
E_m	=	Mass Emission Rate, Lb/hr	V_{lc}	=	Condensate Volume (ml)
I	=	Percent Isokinetic	V_m	=	Volume Metered (ft^3)
m_s	=	Prefilter Weight (grams)	$V_{m(std)}$	=	Gas Volume Sampled, STPD
m_n	=	Total Particulate (grams)	$V_{w(std)}$	=	Volume Water Vapor, SCF
M_d	=	Molecular Weight of Stack Gas (Dry Basis)	V_t	=	Total Volume Collected, SCF
M_s	=	Molecular Weight of Stack Gas (Stack conditions)	Y	=	Meter Correction
n	=	Number of Points	ΔH_{avg}	=	Delta H (inches H_2O)
P_{bar}	=	Barometric Pressure (Inches Hg)	Δp_{avg}	=	Avg of SQRT of V.H.
P_g	=	Static Pressure	Θ	=	Total Time (minutes)
P_s	=	Stack Pressure (Inches Hg)			

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Volumetric Flow Calculations Worksheet

Data Request Entry Area	PM Run 1
Facility	Gerdau Ameristeel Corporation
Location	Baldwin, Florida
Source	Billet Reheat Furnace
Date	04/20/07
Run Number	1
Start Time	9:16
Finish Time	10:20
Weather	ovc
Total Time (minutes) (Θ)	60.0
Number of Points (n)	24
Barometric Pressure (inches Hg) (P_{bar})	29.95
Static Pressure (inches H_2O) (P_g)	-1.30
Stack Diameter (inches) (D)	87.00
Nozzle Diameter (inches) (D_n)	0.500
Meter Y Factor (Y)	1.012
Pitot Factor (C_p)	0.84
Final Meter Reading (ft^3)	840.612
Initial Meter Reading (ft^3)	795.800
Condensate (grams or ml)	156
Silica Gel Weight (grams)	10.9
Carbon Dioxide (%)	10.0
Oxygen (%)	5.1
Carbon Monoxide (%)	0.0
Nitrogen (%)	84.9
Filter Weight (grams)	0.0107
Prefilter Weight (grams)	0.0124
Isokinetic Rate Factor	16.20

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Field Data Points - PM Run 1 | **Gerdau Ameristeel Corporation** | **Billet Reheat Furnace**

Port	Traverse Point	Velocity Head (inches H_2O)	Meter Orifice (Inches H_2O)	Stack Temperature (°F)	Meter Inlet Temperature (°F)	Meter Outlet Temperature (°F)	Square Root of Velocity Head
1	1	0.110	1.80	836	72	68	0.33
	2	0.100	1.60	836	77	69	0.32
	3	0.080	1.30	839	81	68	0.28
	4	0.050	0.81	839	73	70	0.22
	5	0.080	1.30	837	89	69	0.28
	6	0.080	1.30	838	92	69	0.28
	7	0.100	1.60	838	95	70	0.32
	8	0.100	1.60	839	97	70	0.32
	9	0.070	1.10	724	100	71	0.26
	10	0.060	0.97	835	101	71	0.24
	11	0.110	1.80	838	103	72	0.33
	12	0.100	1.60	841	105	73	0.32
2	1	0.180	2.90	828	96	74	0.42
	2	0.180	2.90	834	102	75	0.42
	3	0.180	2.90	835	105	75	0.42
	4	0.180	2.90	839	108	76	0.42
	5	0.150	2.40	827	110	77	0.39
	6	0.130	2.10	821	111	77	0.36
	7	0.080	1.30	820	111	78	0.28
	8	0.060	0.97	819	110	78	0.24
	9	0.060	0.97	800	109	79	0.24
	10	0.050	0.81	775	108	79	0.22
	11	0.050	0.81	795	108	79	0.22
	12	0.060	0.97	804	109	79	0.24

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PM Summary Run 1

Facility	Gerdau Ameristeel Corporation	Run Number	1
Location	Baldwin, Florida	Start Time	9:16
Stack	Billet Reheat Furnace	Finish Time	10:20
Run Date	4/20/2007	Weather	ovc

(Θ) Total Time (minutes)	60.0	Impinger Condensate (g or ml)	156.0
(P_{bar}) Barometric Pressure (Inches Hg)	29.95	Silica Gel Condensate (g)	10.9
(D) Stack Diameter (Inches)	87.00	(V_{lc}) Condensate Volume (ml)	166.9
(A) Stack Area (ft^2)	41.282	Carbon Dioxide (%)	10.0
(A_n) Nozzle Area (ft^2)	0.0013635	Oxygen (%)	5.1
(n) Number of Points	24	Carbon Monoxide (%)	0.0
(Δp_{avg}) Avg of SQRT of V.H.	0.3092	Nitrogen (%)	84.9
(Y) Meter Correction	1.012	(V_m) Volume Metered (ft^3)	44.812
Nozzle Diameter (inches)	0.500	(ΔH_{avg}) Delta H (inches H_2O)	1.6129
(Cp) Pitot Correction Factor	0.84	(P_g) Static Pressure (inches H_2O)	-1.30
Filter Weight (grams)	0.0107	(P_s)Stack Pressure (inches Hg)	29.85
(m_s) Prefilter Weight (grams)	0.0124	($T_{s(abs)}$) Stack Temp (°R)	1282.4
(m_n) Total Particulate (grams)	0.0231	(T_m) Meter Temp (°R)	546.2

($V_{w(std)}$) Volume Water Vapor, SCF	7.856
($V_{m(std)}$) Gas Volume Sampled, STPD	44.038
Total Volume, STP	51.894
(B_{ws}) Moisture in stack gas, volume fraction	0.151
(B_{wd}) Dry Stack Gas, volume fraction	0.849
(M_d) Molecular Weight of Stack Gas (Dry Basis)	29.80
(M_s) Molecular Weight of Stack Gas (Stack conditions)	28.02
(G_s) Specific gravity of Stack Gas Relative to Air	0.966
Excess Air (%)	29.2
(v_s) Average Stack Velocity, FPM	1649.4
(Q_s) Actual Stack Gas Flow Rate, ACFM	68089
(Q_d) Actual Stack Gas Flow Rate, ACFMD	57782
($Q_{d(std)}$) Stack Gas Flow Rate, SCFMD	23739
($Q_{s(std)}$) Stack Gas Flow Rate Wet, SCFMW	27973
(I) Percent Isokinetic	94

Stack Emissions:	(C_s) Grains per DSCF	0.0081
	(Em) Pounds per Hour	1.65

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Volumetric Flow Calculations Worksheet

Data Request Entry Area	PM Run 2
Facility	Gerdau Ameristeel Corporation
Location	Baldwin, Florida
Source	Billet Reheat Furnace
Date	04/20/07
Run Number	2
Start Time	11:55
Finish Time	12:59
Weather	Clear
Total Time (minutes) (Θ)	60.0
Number of Points (n)	24
Barometric Pressure (inches Hg) (P_{bar})	29.95
Static Pressure (inches H_2O) (P_g)	-1.10
Stack Diameter (inches) (D)	87.00
Nozzle Diameter (inches) (D_n)	0.500
Meter Y Factor (Y)	1.012
Pitot Factor (C_p)	0.84
Final Meter Reading (ft^3)	890.669
Initial Meter Reading (ft^3)	841.255
Condensate (grams or ml)	185
Silica Gel Weight (grams)	13.2
Carbon Dioxide (%)	12.0
Oxygen (%)	5.0
Carbon Monoxide (%)	0.0
Nitrogen (%)	83.0
Filter Weight (grams)	0.0070
Prefilter Weight (grams)	0.0056
Isokinetic Rate Factor	17.00

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Field Data Points - PM Run 2 | **Gerdau Ameristeel Corporation** | **Billet Reheat Furnace**

Port	Traverse Point	Velocity Head (inches H_2O)	Meter Orifice (Inches H_2O)	Stack Temperature (°F)	Meter Inlet Temperature (°F)	Meter Outlet Temperature (°F)	Square Root of Velocity Head
1	1	0.130	2.20	828	74	74	0.36
	2	0.130	2.20	828	80	74	0.36
	3	0.120	2.00	828	86	74	0.35
	4	0.090	1.50	828	91	74	0.30
	5	0.080	1.40	827	94	74	0.28
	6	0.080	1.40	829	97	74	0.28
	7	0.100	1.70	826	100	74	0.32
	8	0.130	2.20	826	104	75	0.36
	9	0.100	1.70	799	104	75	0.32
	10	0.090	1.50	811	105	76	0.30
	11	0.070	1.20	804	106	76	0.26
	12	0.110	1.90	818	107	77	0.33
2	1	0.190	3.20	806	102	78	0.44
	2	0.190	3.20	815	105	78	0.44
	3	0.170	2.90	815	108	79	0.41
	4	0.170	2.90	824	111	79	0.41
	5	0.170	2.90	821	112	80	0.41
	6	0.180	3.10	817	113	80	0.42
	7	0.130	2.20	811	114	81	0.36
	8	0.070	1.20	810	114	81	0.26
	9	0.070	1.20	806	113	81	0.26
	10	0.090	1.50	799	113	82	0.30
	11	0.060	1.00	804	113	82	0.24
	12	0.070	1.20	816	113	82	0.26

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PM Summary Run 2

Facility	Gerdau Ameristeel Corporation	Run Number	2
Location	Baldwin, Florida	Start Time	11:55
Stack	Billet Reheat Furnace	Finish Time	12:59
Run Date	4/20/2007	Weather	Clear

(Θ) Total Time (minutes)	60.0	Impinger Condensate (g or ml)	185.0
(P_{bar}) Barometric Pressure (inches Hg)	29.95	Silica Gel Condensate (g)	13.2
(D) Stack Diameter (inches)	87.00	(V_{lc}) Condensate Volume (ml)	198.2
(A) Stack Area (ft^2)	41.282	Carbon Dioxide (%)	12.0
(A_n) Nozzle Area (ft^2)	0.0013635	Oxygen (%)	5.0
(n) Number of Points	24	Carbon Monoxide (%)	0.0
(Δp_{avg}) Avg of SQRT of V.H.	0.3356	Nitrogen (%)	83.0
(Y) Meter Correction	1.012	(V_m) Volume Metered (ft^3)	49.414
Nozzle Diameter (inches)	0.500	(ΔH_{avg}) Delta H (inches H_2O)	1.9750
(Cp) Pitot Correction Factor	0.84	(P_g) Static Pressure (inches H_2O)	-1.10
Filter Weight (grams)	0.0070	(P_s)Stack Pressure (inches Hg)	29.87
(m_s) Prefilter Weight (grams)	0.0056	($T_{s(abs)}$) Stack Temp (°R)	1276.5
(m_n) Total Particulate (grams)	0.0126	(T_m) Meter Temp (°R)	550.4

($V_{w(std)}$) Volume Water Vapor, SCF	9.329
($V_{m(std)}$) Gas Volume Sampled, STPD	48.234
Total Volume, STP	57.563
(B_{ws}) Moisture in stack gas, volume fraction	0.162
(B_{wd}) Dry Stack Gas, volume fraction	0.838
(M_d) Molecular Weight of Stack Gas (Dry Basis)	30.12
(M_s) Molecular Weight of Stack Gas (Stack conditions)	28.16
(G_s) Specific gravity of Stack Gas Relative to Air	0.971
Excess Air (%)	29.3
(v_s) Average Stack Velocity, FPM	1781.5
(Q_s) Actual Stack Gas Flow Rate, ACFM	73547
(Q_d) Actual Stack Gas Flow Rate, ACFMD	61627
($Q_{d(std)}$) Stack Gas Flow Rate, SCFMD	25447
($Q_{s(std)}$) Stack Gas Flow Rate Wet, SCFMW	30369
(I) Percent Isokinetic	96

Stack Emissions:	(C_s) Grains per DSCF	0.0040
	(Em) Pounds per Hour	0.88

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Volumetric Flow Calculations Worksheet

Data Request Entry Area	PM Run 3
Facility	Gerdau Ameristeel Corporation
Location	Baldwin, Florida
Source	Billet Reheat Furnace
Date	04/20/07
Run Number	3
Start Time	15:57
Finish Time	17:01
Weather	Clear
Total Time (minutes) (Θ)	60.0
Number of Points (n)	24
Barometric Pressure (inches Hg) (P_{bar})	29.95
Static Pressure (inches H_2O) (P_g)	-1.20
Stack Diameter (inches) (D)	87.00
Nozzle Diameter (inches) (D_n)	0.500
Meter Y Factor (Y)	1.012
Pitot Factor (C_p)	0.84
Final Meter Reading (ft^3)	940.100
Initial Meter Reading (ft^3)	891.140
Condensate (grams or ml)	168
Silica Gel Weight (grams)	10.8
Carbon Dioxide (%)	10.0
Oxygen (%)	5.3
Carbon Monoxide (%)	0.0
Nitrogen (%)	84.7
Filter Weight (grams)	0.0065
Prefilter Weight (grams)	0.0101
Isokinetic Rate Factor	17.00

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Field Data Points - PM Run 3 | **Gerdau Ameristeel Corporation** | **Billet Reheat Furnace**

Port	Traverse Point	Velocity Head (inches H_2O)	Meter Orifice (inches H_2O)	Stack Temperature (°F)	Meter Inlet Temperature (°F)	Meter Outlet Temperature (°F)	Square Root of Velocity Head
1	1	0.100	1.70	754	72	72	0.32
	2	0.100	1.70	763	75	73	0.32
	3	0.100	1.70	783	81	72	0.32
	4	0.080	1.40	799	88	73	0.28
	5	0.100	1.70	817	92	73	0.32
	6	0.100	1.70	812	96	73	0.32
	7	0.100	1.70	811	98	73	0.32
	8	0.130	2.20	818	102	74	0.36
	9	0.130	2.20	810	104	75	0.36
	10	0.110	1.90	804	105	75	0.33
	11	0.110	1.90	793	107	76	0.33
	12	0.110	1.90	802	108	77	0.33
2	1	0.170	2.90	783	100	77	0.41
	2	0.170	2.90	797	103	78	0.41
	3	0.170	2.90	804	107	78	0.41
	4	0.170	2.90	803	109	79	0.41
	5	0.170	2.90	815	110	79	0.41
	6	0.170	2.90	816	112	80	0.41
	7	0.100	1.70	822	112	80	0.32
	8	0.080	1.40	829	113	81	0.28
	9	0.070	1.20	803	113	81	0.26
	10	0.070	1.20	796	113	81	0.26
	11	0.070	1.20	829	113	82	0.26
	12	0.070	1.20	825	113	82	0.26

Ambient Air Services, Inc.
Environmental Consultants
106 Ambient Airway Starke, Florida 32091 (904) 964-8440
AASI USEPA Method 5 24 Point Template - Rev 5/3-3-2005

PM Summary Run 3

Facility	Gerdau Ameristeel Corporation	Run Number	3
Location	Baldwin, Florida	Start Time	15:57
Stack	Billet Reheat Furnace	Finish Time	17:01
Run Date	4/20/2007	Weather	Clear

(Θ) Total Time (minutes)	60.0	Impinger Condensate (g or ml)	168.0
(P_{bar}) Barometric Pressure (inches Hg)	29.95	Silica Gel Condensate (g)	10.8
(D) Stack Diameter (Inches)	87.00	(V_{lc}) Condensate Volume (ml)	178.8
(A) Stack Area (ft^2)	41.282	Carbon Dioxide (%)	10.0
(A_n) Nozzle Area (ft^2)	0.0013635	Oxygen (%)	5.3
(n) Number of Points	24	Carbon Monoxide (%)	0.0
(Δp_{avg}) Avg of SQRT of V.H.	0.3345	Nitrogen (%)	84.7
(Y) Meter Correction	1.012	(V_m) Volume Metered (ft^3)	48.960
Nozzle Diameter (inches)	0.500	(ΔH_{avg}) Delta H (inches H_2O)	1.9583
(Cp) Pitot Correction Factor	0.84	(P_g) Static Pressure (inches H_2O)	-1.20
Filter Weight (grams)	0.0065	(P_s)Stack Pressure (inches Hg)	29.86
(m_s) Prefilter Weight (grams)	0.0101	($T_{s(abs)}$) Stack Temp (°R)	1263.7
(m_n) Total Particulate (grams)	0.0166	(T_m) Meter Temp (°R)	549.4

($V_{w(std)}$) Volume Water Vapor, SCF	8.416
($V_{m(std)}$) Gas Volume Sampled, STPD	47.877
Total Volume, STP	56.294
(B_{ws}) Moisture in stack gas, volume fraction	0.150
(B_{wd}) Dry Stack Gas, volume fraction	0.850
(M_d) Molecular Weight of Stack Gas (Dry Basis)	29.81
(M_s) Molecular Weight of Stack Gas (Stack conditions)	28.05
(G_s) Specific gravity of Stack Gas Relative to Air	0.967
Excess Air (%)	30.8
(v_s) Average Stack Velocity, FPM	1770.3
(Q_s) Actual Stack Gas Flow Rate, ACFM	73081
(Q_d) Actual Stack Gas Flow Rate, ACFMD	62155
($Q_{d(std)}$) Stack Gas Flow Rate, SCFMD	25920
($Q_{s(std)}$) Stack Gas Flow Rate Wet, SCFMW	30476
(I) Percent Isokinetic	93

Stack Emissions:	(C_s) Grains per DSCF	0.0053
	(Em) Pounds per Hour	1.19

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SOURCE SAMPLING FIELD DATA SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440	Facility	Gerdau Baldwin					Run No.	1			
	Source	Reheat Furnace					Date	4/20/07			
	Weather	Overcast					Test(s)	MS			
	Testers	RW/LH					Barometric Pressure	29.95			
Equipment Identification	Pitot	36	Probe	8-6	Heater Box	—	Meter Box	3	Cold Box	8	
Thermocouple Identification	Stack	TC-3-5	Impinger	TT 3	Heater	F-7	Meter In	M-1-36	Meter Out	TT-2	
Sampling	Total min (Θ)		60	Total Points (n)		24	Min/Pt			~~6~~ 2.5	
Profile	Stack Diameter (in) (D)		87	Downstream Dia.		—	Upstream Dia.			—	
Nozzle Diameter (avg) (D_n)	0.500	Nozzle Diameter Calibration Checks		1	0.501	2	0.500	3	0.500		
Isokinetic Factor Calculation	Pre T_s	—	Pre T_m	—	Pre Dry Stack Gas (B_{wd})	—	Meter (ΔHa)	1.513	Meter (Y)	~~1.5015~~ 1.012	
	a = $(D_n^2 X B_{wd})^2$		b= $(1.6+B_{wd})T_s$		c= $T_m X \Delta H_a$		F=1570(aXc)/b		Isokinetic Rate Factor		
	Computer Generated						—		16.195		
Start Time	0916	Final Meter Reading (ft3)	840.612	ORSAT (Fyrite) Analyzer		O_2 (%)	5.1	Comments:			
Finish Time	10:20	Initial Meter Reading (ft3)	795.800			CO_2 (%)	10				
Pre Test Leak Check	Post Test Leak Check		Static Pressure	Pitot Leak Check		Volume H_2O Collected		148+8 156 ml			
0.014 cfm@15" H_g	0.018 cfm@ 8 "H_g		−1.3 "H_2O	OK at 3"		Silica Gel Weight		10.9 (Weighed at AASI 64 CH) gr			

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
		~~795.800~~	0.11								
1-1	0	~~0.11~~	~~4.78~~	1.78	5	836	141	48	72	68	
2	2.5	797.6	0.1	1.62	5	836	280	47	77	69	
3	5	799.7	0.08	1.3	4	834	324	48	81	68	
4	7.5	801.6	0.05	0.81	3	839	303	51	73	70	
5	10	803.0	0.08	1.3	4	837	280	52	89	69	
6	12.5	804.7	0.08	1.3	4	838	285	53	92	68	
7	15	806.4	0.1	1.6	4.5	838	278	55	95	70	
8	17.5	808.3	0.1	1.6	4.5	839	272	56	97	70	
9	20	810.1	6.07	1.1	4	724	252	57	100	71	
10	22.5	~~Leak~~ 811.8	0.06	0.97	4	835	241	58	101	71	
11	25	813.4	0.11	1.8	5	838	200	59	103	72	
12	27.5	815.4	0.1	1.6	5	841	202	61	105	73	
	30	817.16									

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SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440			
	Facility	Gerdau Baldwin	Run No. 1
	Source	Reheat	Date 4/20/08
	Weather		Test(s) 1-5
	Testers	RW	Factor 1.6

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp(°F)	Meter Temp (°F)	Meter Temp (°F)	
2-1	30	817.16	0.18	2.9	7	828	149	66	96	74	
2	32.5	820.0	0.18	2.9	7	834	250	63	102	75	
3	35	821.9	0.18	2.9	7	835	289	65	105	75	
4	37.5	824.4	0.18	2.9	7	839	324	67	108	76	
5	40	828.9	0.15	2.4	7	827	342	70	110	77	
6	42.5	829.4	0.13	2.1	6	821	377	71	111	77	
7	45	831.3	0.08	1.3	5	820	326	72	111	78	
8	47.5	833.4	0.06	0.97	4	819	293	72	110	78	
9	50	834.8	0.06	0.97	4	800	261	72	109	79	
10	52.5	836.6	0.05	0.81	3.5	775	228	7	108	79	
11	55	837.8	0.05	0.81	3.5	795	210		108	79	
12	57.5	839.2	0.06	0.97	4	804	190		109	79	
	60	840.612	—	—	—	—	—	—	—	—	—

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SOURCE SAMPLING FIELD DATA SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440	Facility	Gerdau	Run No. 2
	Source	Reheat	Date 4/20/07
	Weather	Clear	Test(s) 1-5
	Testers	RW	Barometric Pressure 29.95

Equipment Identification	Pitot	—	Probe	—	Heater Box	—	Meter Box	—	Cold Box	—	
Thermocouple Identification	Stack	—	Impinger	—	Heater	—	Meter In	—	Meter Out	—	
Sampling	Total min (Θ)		60	Total Points (n)		24			Min/Pt	2.5	
Profile	Stack Diameter (in) (D)		87	Downstream Dia.		—			Upstream Dia.	—	
Nozzle Diameter (avg) (D_n)	6.500	Nozzle Diameter Calibration Checks		1	✓	2	✓	3	✓		
Isokinetic Factor Calculation	Pre T_s	—	Pre T_m	—	Pre Dry Stack Gas (B_{wd})	—	Meter (ΔHa)	—	Meter (Y)	—	
	$a = (D_n^2 X B_{wd})^2$		$b = (1.6+B_{wd})T_s$		$c = T_m X \Delta H_a$		$F = 1570(aXc)/b$		Isokinetic Rate Factor		
	computer generated								17.0		

Start Time	1155	Final Meter Reading (ft3)	860.669	ORSAT/Fyrite Analyzer	O_2 (%)	5.0	Comments:
Finish Time	1259	Initial Meter Reading (ft3)	841.255		CO_2 (%)	12.0	

Pre Test Leak Check	Post Test Leak Check	Static Pressure	Pitot Leak Check	Volume H_2O Collected	
0.01 cfm@15" H_g	0.01 cfm@ 10 "H_g	−1.1 "H_2O	OK at 3"	Silica Gel Weight	175+10 185 ml 13.2 (Weighed at AASI 64 CH) gr

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
1-1	0	841.255	0.13	2.2	5.5	828	123	051	74	74	
2	2.5	843.4	0.13	2.2	5.5	828	284	58	80	74	
3	5	845.5	0.12	2.0	6	828	334	61	86	74	
4	7.5	847.7	0.09	1.5	5	828	345	62	91	74	
5	10	849.6	0.08	1.4	5	827	347	64	94	74	
6	12.5	851.4	0.08	1.4	5	829	336	64	97	74	
7	15	853.1	0.1	1.7	5	826	319	65	100	74	
8	17.5	855.2	0.13	2.2	6.5	826	294	65	104	75	
9	20	857.3	0.1	1.7	5.5	799	288	65	104	75	
10	22.5	859.2	0.09	1.5	5	811	265	63	105	76	
11	25	861.0	0.07	1.2	4	804	234	64	106	76	
12	27.5	862.7	0.11	1.87	5	818	213	65	107	77	
	30	864.68									

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440			
	Facility	Gerdau	Run No. 2
	Source	Reheat	Date 4/20/07
	Weather	Clear	Test(s) M-5
	Testers	RW, LH	Factor 17.0

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
2-1	30	864.682	0.19	3.2	8	806	166	60	102	78	
2	32.5	867.2	0.19	3.2	8	815	199	65	105	78	
3	35	869.8	0.17	2.9	8	815	277	66	108	79	
4	37.5		0.17	2.9	8	824	315	66	111	79	
5	40	874.9	0.17	2.9	8	821	327	66	112	80	
6	42.5	877.4	0.18	3.0	8	817	342	65	113	80	
7	45	880.0	0.13	2.2	8	811	340	64	114	81	
8	47.5	882.2	0.07	1.2	5	810	308	64	114	81	
9	50	884.0	0.07	1.2	5	806	282	64	113	81	
10	52.5	885.6	0.09	1.5	5	799	246	64	113	82	
11	55	887.4	0.06	1.0	4	804	248	64	113	82	
12	57.5	889.0	0.07	1.2	4	816	249	65	113	82	
	60	890.669	—	—	—	—	—	—	—	—	

SOURCE SAMPLING FIELD DATA SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440													
	Facility	Gerdau Baldwin						Run No.		3			
	Source	Reheat						Date		4/20/07			
	Weather	Clear						Test(s)		MS			
	Testers	RW/LH						Barometric Pressure		29.95			
Equipment Identification	Pitot	–	Probe	–	Heater Box	–	Meter Box	–	Cold Box	–			
Thermocouple Identification	Stack	–	Impinger	–	Heater	–	Meter In	–	Meter Out	–			
Sampling	Total min (Θ)		60	Total Points (n)		24			Min/Pt		2.5		
Profile	Stack Diameter (in) (D)		87	Downstream Dia.		–			Upstream Dia.		–		
Nozzle Diameter (avg) (D_n)	0.500	Nozzle Diameter Calibration Checks		1	–	2	–	3	–				
Isokinetic Factor Calculation	Pre T_s	–	Pre T_m	–	Pre Dry Stack Gas (B_{wd})	–	Meter (ΔHa)	1.012	Meter (Y)	1.513			
	a = $(D_n^2 X B_{wd})^2$		b= $(1.6+B_{wd})T_s$		c= T_m X ΔH_a		F=1570(aXc)/b		Isokinetic Rate Factor				
	–		–		–		–		–				
Start Time	1557	Final Meter Reading (ft3)	940.100	ORSAT/Fyrite/ Analyzer		O_2 (%)	5.3	Comments:					
Finish Time	1701	Initial Meter Reading (ft3)	891.140			CO_2 (%)	10.0						
Pre Test Leak Check		Post Test Leak Check		Static Pressure		Pitot Leak Check		Volume H_2O Collected		155+13 = 168 ml			
0.01 cfm@15" H_g		0.012 cfm@ 10 "H_g		−1.2 "H_2O		OK at 3"		Silica Gel Weight		108 (weighed at AASI gr			

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	64 ch)
1-1	0	891.140	0.1	1.7	5	754	117	54	72	72	
2	2.5	892.6	0.1	1.7	5	763	145	53	75	73	
3	5	894.7	0.1	1.7	5	783	236	53	81	72	
4	7.5	897.4	0.08	1.4	4	799	268	56	88	73	
5	10	899.6	0.1	1.7	5	817	272	57	92	73	
6	12.5	901.5	0.1	1.7	5	812	279	57	96	73	
7	15	903.3	0.1	1.7	5	811	276	58	98	73	
8	17.5	905.5	0.13	2.2	7	818	262	58	102	74	
9	20		0.13	2.2	7	810	256	59	104	75	
10	22.5	909.6	0.11	1.9	6	804	248	60	105	75	
11	25	912.0	0.11	1.9	6	793	226	61	107	76	
12	27.5		0.11	1.9	6	802	210	62	108	77	
	30	914.700									

SOURCE SAMPLING FIELD DATA CONTINUATION SHEET

AMBIENT AIR SERVICES, INC. 106 Ambient Airway, Starke, Florida (904) 964-8440			
	Facility	Gerdau	Run No. 3
	Source	Reheat	Date 4/20/07
	Weather	Clear	Test(s) 1-5
	Testers	RW	Factor 17.0

Port and Sample Point	Clock Time (min)	Gas Meter Reading (cfm)	Stack Velocity (in H_2O)	Orifice Pressure Drop (in H_2O)	Vacuum (in H_g)	Stack Gas Temp (°F)	Filter Temp(°F)	Last Impinger Temp (°F)	Meter Temp (°F)	Meter Temp (°F)	
2-1	30	914.700	0.17	2.9	7	783	166	60	100	77	
2	32.5	917.2	0.17	2.9	7	797	197	60	103	78	
3	35	920.0	0.17	2.9	7	804	266	62	107	78	
4	37.5	922.3	0.17	2.9	7	803	304	62	109	79	
5	40	925.0	0.17	2.9	7	815	325	62	110	79	
6	42.5	927.1	0.17	2.9	7	816	332	63	112	80	
7	45	929.5	0.1	1.7	6	822	327	63	112	80	
8	47.5	931.6	0.08	1.4	5	829	303	63	113	81	
9	50	933.4	0.07	1.2	5	803	276	63	113	81	
10	52.5	935.2	0.07	1.2	5	796	252	62	113	81	
11	55	936.7	0.07	1.2	5	829	231	62	113	82	
12	57.5	938.5	0.07	1.2	5	825	225	62	113	82	
	60	940.100	—	—	—	—	—	—	—	—	

AMBIENT AIR SERVICES, INC.
LABORATORY DATA SHEET

PARTICULATE WEIGHT DETERMINATION

PLANT & LOCATION: Gerdau Baldwin, Fl

STACK: Reheat DATE R-4-20-07 P4-24-07

	RUN 1	RUN 2	RUN 3	RUN 4	INITIALS
FILTERS:					
Filter No.	3184	3198	3354		4-24-07CH
Filter Final Wt. (g)	0.3829	0.3802	0.3722		4-26-07CH
Filter Tare Wt. (g)	0.3722	0.3732	0.3657		4-26-07CH
Net Gain (gm)	0.0107	0.0070	0.0065		4-26-07 CH
PREFILTER:					
Sample No.	D 304	D 308	D317		4-24-07CH
Sample Volume	145 ml	95 ml	100 ml		4-24-07CH
Aliquot					
Factor					
Final Wt.	99.1439	94.2793	113.4726		4-26-07CH
Tare Wt.	99.1315	94.2737	113.4625		4-26-07CH
Net Gain	0.0124	0.0056	0.0101		4-26-07 CH
Net Gain x Factor = Total (gm)					
Blank Correction Factor					
Particulate Wt. (grams)					
SOLVENT BLANK:	D 314				4-24-07CH
Solvent	Acetone				4-24-07CH
Solvent Volume, ml	100 ml				4-24-07CH
Beaker Final Wt., grams	98.3259				4-26-07 CH
Beaker Tare Wt., grams	98.3259				4-26-07 CH
Net Gain, grams	0.0000				4-26-07 CH
Net Gain/100 ml solvent (gram)					
SILCA GEL:					
Sample No.	1	2	3		4-26-07CH
Final Wt., grams	224.8	215.4	208.4		4-26-07CH
Tare Wt., grams	213.9	202.2	197.6		4-26-07CH
Net Gain, grams	10.9	13.2	10.8		4-26-07 CH
EXTRACTABLE MATTER:					
Sample No.					
Final Wt., grams					
Tare Wt., grams					
Net Gain, grams					

AASI.02

Balance Checks

0.500 gm √0.5000 5.000 gm √5.0000 50.000 gm √N/A 2.000 gm √2.0000 10.000 gm √10.0000 100.000 gm √100.0000

I certify that the information contained herin is correct, weights are correct and balances used are in current calibration.

Signature [signature] Date 5-3-07

Quality Assurance Signature [signature] Date 5-9-07

Ambient Air Services, Inc

106 Ambient Air Way Starke, FL 32091 (904) 964-8440 FAX: (904) 964-6675

Analysis Request & Chain-of-Custody Record

Project Name: Gerdau Location: Baldwin

Laboratory Name: AAST
Address: STARKE
Laboratory Contact: Jack Jory
Project #:

Samplers: R. Weston, L. Hall

Page of
RUSH
Standard X
Date Report Desired:

Sample ID	Sample Date	Source	Run	Method	Medium	Matrix	Number of Containers	Required Analysis: Gravimetric	Remarks
3184	4-20-07	Retreat		5	Glass	Filter	1	X	
3354				↓	↓	↓	1	X	
3198				↓	↓	↓	1	X	
PW-1			1		Acetone	Prefilter	1	X	
PW-2			2		↓	↓	1	X	
PW-3			3		↓	↓	1	X	
Acetone			Blank		Acetone	Blank	1	X	
S-1			1		Silica	Impinger	1	X	
S-2			2		↓	↓	1	X	
S-3			3	↓	↓	↓	1	X	

Relenquished by: (Sampler)	Time 800 Date 4/24/07	Received by: (Signature and affiliation) Colin S. Hunter AAST	Date 4-24-07 Time 0800
Relenquished by:	Time Date	Received by: (Signature and affiliation)	Date Time
Relenquished by:	Time Date	Received by: (Signature and affiliation)	Date Time

For Lab Use Only

Sample Integrity:
(Note here any damage or loss during transport)
Good

Lab results issued to:
By: When:

Disposition of samples to others:

Where stored:

Remarks:

Revision 2 Apr 5, 2005

APEX INSTRUMENTS METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	AASI
Console Serial Number	3
DGM Model Number	D77S
DGM Serial Number	713855

Calibration Conditions			
Date	Time	22-Dec-04	1130
Barometric Pressure		30.00	in Hg
Theoretical Critical Vacuum[1]		14.2	in Hg
Calibration Technician		DWL	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3*°R^{1/2})/(in.Hg*min)$.

Calibration Data

Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
14.0	3.9	163.100	178.450	65	70	73	0.8486	51	52	16
19.0	1.9	178.900	194.474	70	71	63	0.6213	52	54	17
28.0	1.1	195.000	212.560	71	69	55	0.4793	54	57	18
32.0	0.6	214.000	229.300	69	67	48	0.3740	57	59	19
35.0	0.3	229.900	241.260	67	65	40	0.2511	59	62	20

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
(V_{mstd})	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
15.553	1.111	15.759	1.126	1.013	0.001	1.126	1.772	0.259
15.614	0.822	15.636	0.823	1.001	-0.011	0.823	1.591	0.078
17.588	0.628	17.733	0.633	1.008	-0.004	0.633	1.551	0.037
15.363	0.480	15.775	0.493	1.027	0.015	0.493	1.351	-0.162
11.441	0.327	11.556	0.330	1.010	-0.002	0.330	1.301	-0.212
				1.012	Y Average		1.513	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature [signature] Date 22 Dec 04 Q.A. Signature: [signature] Date: 12/23/04

APEX INSTRUMENTS METHOD 5 POST-TEST CONSOLE CALIBRATION
USING CALIBRATED CRITICAL ORIFICES
3-POINT ENGLISH UNITS

Meter Console Information	
Console Number	3
Pre-test "Y" value	1.012
DGM Model Number	D 77 S
DGM Serial Number	713855

Calibration Conditions			
Date	Time	7-May-07	0930
Barometric Pressure		30.01	in Hg
Theoretical Critical Vacuum[1]		14.2	in Hg
Calibration Technician		Elliott	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

[1]For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.

[2]The Critical Orifice Coefficient, K', must be entered in English units, $(ft^3*°R^{1/2})/(in.Hg*min)$.

Calibration Data										
Run Time	Metering Console					Critical Orifice				
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final	Serial Number	Coefficient	Amb Temp Initial	Amb Temp Final	Actual Vacuum
(Θ)	(P_{m})	(V_{mi})	(V_{mf})	(t_{mi})	(t_{mf})		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
32	1.9	299.660	325.427	68	73	63	0.6213	66	65	22
17	1.9	325.427	339.282	73	78	63	0.6213	65	66	22
13	1.9	339.282	349.701	78	83	63	0.6213	66	67	22

Results								
Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Critical Orifice		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vcr_{(std)}$)	($Q_{cr(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
25.842	0.808	26.027	0.813	1.007	-0.007	0.813	1.629	0.014
13.766	0.810	13.827	0.813	1.004	-0.009	0.813	1.614	-0.001
10.256	0.789	10.564	0.813	1.030	0.016	0.813	1.602	-0.013
				1.014	Y Average		1.615	ΔH@ Average

Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Technician Sign: J. Elliott Date: 5-7-07 Q A Signature: Date: 5-7-07

AAS Inc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

PITOT TUBE CALIBRATION MEASUREMENTS 880

DATE CALIBRATED 5/2/07 PITOT TUBE 8F 86

Technician name: BJP

Pitot tube assembly level ? ✓ Yes ____ No

Pitot tube openings damaged? ____ Yes (explain below) ✓ NO

a1 = 1 degrees (< 10 deg) a2 = 2 degrees (< 10 deg)

b2 = 1 degrees (<5 deg) b1 = 2 degrees (<5 deg)

Y = 0 degrees Θ = 0 degrees A = 1.164 inches = (Pa + Pb)

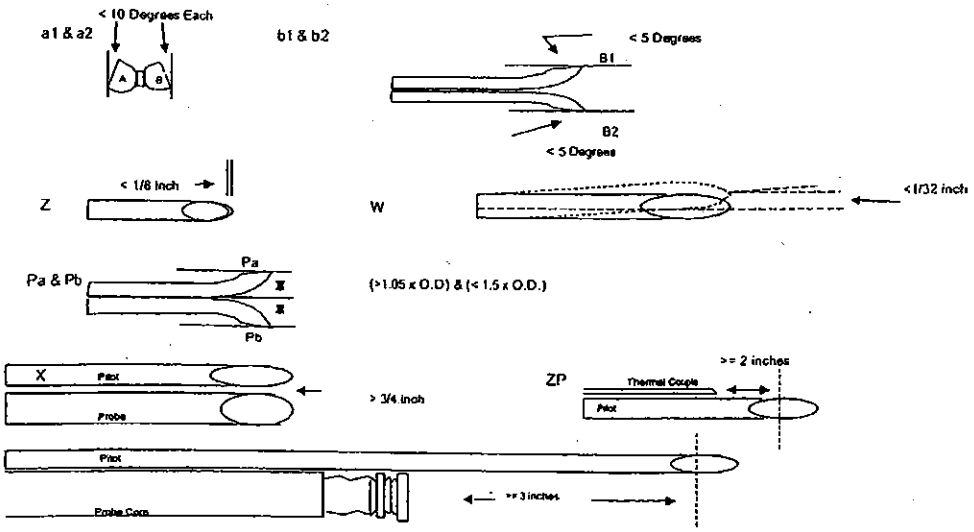
Pa = 0.582 Pb = 0.582 Dt = 0.375

z = A sin Y = 0 inches ; / < 1/8 inches

w = A sin Θ = 0 inches ; / < 1/32 inches

Calibration required ? ____ Yes ✓ No Technician signature David J Pate

Quality Assurance Review by: David Shutter 5/03/07
QA date



AMBIENT AIR SERVICES, INC.
106 Ambient Airway
Starke, Flroida 32091

Baldwin Reheat

THERMOCOUPLE CALIBRATION FORM

Date 5-7-07 Time 1030
Ambient Temperature 68° Source STD therm
Barometric Pressure 30.01 Source HB-1
Technician's Name

Standard Thermometer Type Merc in glass
Manufacturer H-B-USA
Serial Number 12004-1
Pyrometer Manufacturer Jenco Model 768
Serial Number 23553 Meter Box 3

TEMPERATURE SOURCE (A)		Ice H2O			Ambient H2O			Boiling H2O						
REFERENCE THERMOMETER	Actual Reading	32°			68°			212°						
	Corrected Temperature													
CALIBRATED THERMOCOUPLE		Indicated Temp.	Difference (B)	Percent Diff. (C)	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.	
Serial Number	Location													
TC-8-5	Stack	32°	0		68°	0		212°	0					
TC-F7	Filter	33°	+1		69°	+1		212°	0					
TT-3	Impinger	31°	-1		68°	0		211°	-1					
M-1-36	Meter In	33°	+1		69°	+1		212°	-1					
TT-2	Meter Out	32°	0		69°	+1		211°	-1					

COMMENTS:

Technician Signature
Quality Assurance Signature Travis J Pate Date 5/8/07

Calibration Tolerances Stack = 1.5% of value, Filter Box = ±5.4°F, Impinger = ±2°F, Meter = ±5.4°F (40 CFR Pt, App. A Method 5, and QA Handbook Section 3.4, Method 5, page 13, Rev. 0)

(A) Type of calibration system used (B) Reference - Indicated = Difference

$$(C)\left[\frac{(\text{ref. temp. oF} + 460) - (\text{indicatedtemp. oF} + 460)}{(\text{referencetemp. oF} + 460)}\right] \times 100$$

AASI 68A

APPENDIX B

Carbon Monoxide (CO), Oxides of Nitrogen (NO_x), and Oxygen (O_2)

-Instrument Calibration Data
-Data Printout and Test Log
-Sample Calculations
-Calibration Gas Certificates

O_2	11.1	%
NO_x	124.8	ppm
	245.3	ppm
CO	23.4	ppm
	48.1	ppm

Gerdau Ameristeel Corporation - Baldwin, Florida - Reheat Furnace - Gas Calibration Data - 4/20/07

Oxides of Nitrogen (NOx)

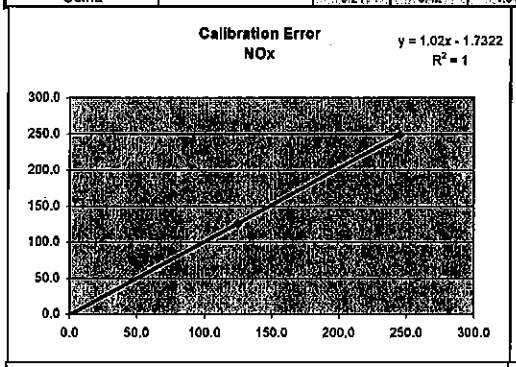
Instrument Information	Manuf.	Thermo Environmental		Model	42C			Serial #	42CHL-68655-361		
CALIBRATION GAS VALUE	INITIAL CALIBRATION	CALIBRATION ERROR, % SPAN	POST RUN 1	POST RUN 2	POST RUN 3						
0.0	-1.8	-0.73	-0.3	-1.0	-0.9						
124.8	125.7	0.37	127.2	123.6	129.7						
245.3	248.4	1.26	N/A	N/A	N/A						
RANGE	245.3										
Co	N/A		-1.05	-0.65	-0.95						
Cm			126.45	125.40	126.65						
Cma			124.80	124.80	124.80						
Cdo			0.61	0.33	0.37						
Cdma			0.61	-0.86	1.63						

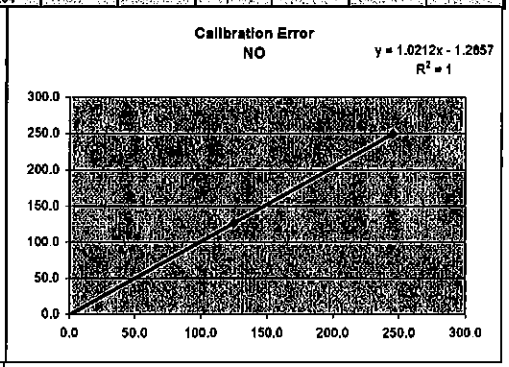
Oxides of Nitrogen (NO)

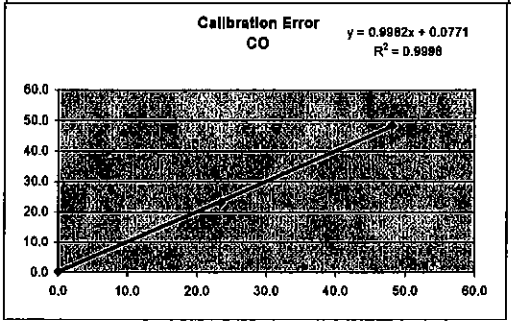
Instrument Information	Manuf.	Thermo Environmental		Model	42C			Serial #	42CHL-68655-361		
CALIBRATION GAS VALUE	INITIAL CALIBRATION	CALIBRATION ERROR, % SPAN	POST RUN 1	POST RUN 2	POST RUN 3						
0.0	-1.5	-0.61	0.3	-0.5	-0.7						
124.8	126.6	0.73	125.9	125.0	131.1						
245.3	249.0	1.51	N/A	N/A	N/A						
RANGE	245.3										
Co	N/A		-0.60	-0.10	0.60						
Cm			126.25	125.45	128.05						
Cma			124.80	124.80	124.80						
Cdo			0.73	0.41	0.33						
Cdma			-0.29	-0.653	1.83						

Carbon Monoxide

Instrument Information	Manuf.	Thermo Environmental		Model	48			Serial #	48-51604-288		
CALIBRATION GAS VALUE	INITIAL CALIBRATION	CALIBRATION ERROR, % SPAN	POST RUN 1	POST RUN 2	POST RUN 3						
0.0	0.3	0.62	0.3	0.1	0.1						
23.4	23.0	0.83	23.1	23.2	23.5						
46.1	46.3	0.42	N/A	N/A	N/A						
RANGE	46.1										
Co	N/A		0.30	0.20	0.10						
Cm			23.05	23.15	23.35						
Cma			23.40	23.40	23.40						
Cdo			0.00	-0.42	-0.42						
Cdma			0.21	0.42	1.04						



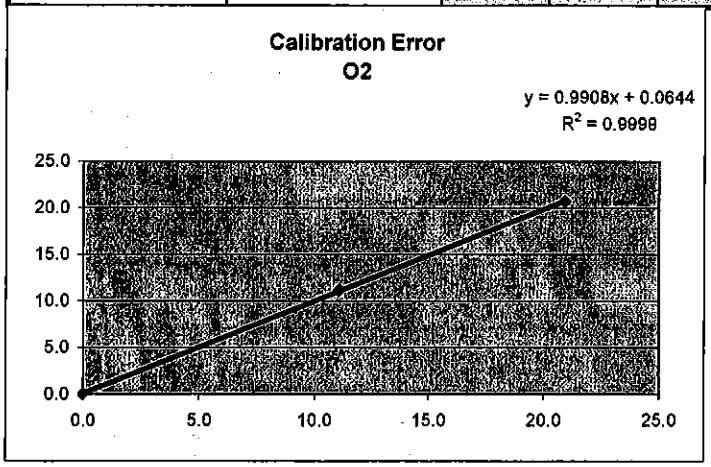




Gerdau Ameristeel Corporation - Baldwin, Florida - Reheat Furnace - Gas Calibration Data - 4/20/07

Oxygen

Instrument Information	Manuf.	Servomex		Model	1440			Serial #	01440C1STD/2855		
CALIBRATION GAS VALUE	INITIAL CALIBRATION	CALIBRATION ERROR, % SPAN	POST RUN 1	POST RUN 2	POST RUN 3						
0.0	0.0	0.00	0.3	0.1	0.0						
20.9	20.7	-0.96	20.4	20.5	20.8						
11.1	11.2	0.48	NA	NA	NA						
RANGE	20.9										
Co	N/A		0.15	0.20	0.05						
Cm			20.55	20.45	20.65						
Cma			20.90	20.90	20.90						
Cdo			1.44	0.48	0.00						
Cdma			-1.44	-0.96	0.48						



Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - 4/20/07

Billet Reheat Furnace

TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 8:45	19.2	7.8	-0.3	0.3																	
4/20/2007 8:46	18.8	2.7	-1.8	2.7																	
4/20/2007 8:47	7.5	144.1	145.1	5.3																	
4/20/2007 8:48	2.3	207.1	207.8	0.4																	
4/20/2007 8:49	0.2	230.3	230.8	0.0																	
4/20/2007 8:50	0.1	230.9	232.4	0.0																	
4/20/2007 8:51	5.6	154.3	155.5	0.0																	
4/20/2007 8:52	15.8	17.2	17.2	0.2																	
4/20/2007 8:53	1.0	6.0	5.8	30.2																	
4/20/2007 8:54	0.1	-0.3	-1.2	48.2																	
4/20/2007 8:55	0.6	3.6	-0.3	47.8																	
4/20/2007 8:56	8.1	9.3	0.0	39.7																	
4/20/2007 8:57	20.5	8.1	-0.3	3.5																	
4/20/2007 8:58	20.7	7.5	-1.5	0.3	20.9 O2																
	20.7	7.5	-1.5	0.3	**20.9 O2 Average**																
4/20/2007 8:59	15.9	6.3	5.8	0.7																	
4/20/2007 9:00	3.7	97.7	99.3	3.5																	
4/20/2007 9:01	0.9	125.7	126.6	0.3	124.8 NOx/ Zero CO																
	0.9	125.7	126.6	0.3	**124.8 NOx/ Zero CO Average**																
4/20/2007 9:02	0.6	128.1	129.1	2.2																	
4/20/2007 9:03	0.3	180.9	182.0	1.3																	
4/20/2007 9:04	0.0	247.8	249.0	0.1																	
4/20/2007 9:05	0.0	248.4	249.0	0.0	245.3 NOx																
	0.0	248.4	249.0	0.0	**245.3 NOx Average**																
4/20/2007 9:06	0.2	192.0	193.0	1.2																	
4/20/2007 9:07	0.0	4.8	5.2	37.5																	
4/20/2007 9:08	0.0	-1.8	-1.2	48.3	48.3 CO																
	0.0	-1.8	-1.2	48.3	**48.3 CO Average**																
4/20/2007 9:09	0.1	1.8	2.5	45.5																	
4/20/2007 9:10	0.3	8.4	7.7	24.3																	
4/20/2007 9:11	0.0	-1.2	-0.6	22.5																	
4/20/2007 9:12	0.0	-1.8	-1.5	23.0	23.4 CO/ ZERO O2, NO, NOx																
	0.0	-1.8	-1.5	23.0	**23.4 CO/ ZERO O2, NO, NOx Average**																
4/20/2007 9:13	3.3	-0.6	-0.9	20.8																	
4/20/2007 9:14	11.2	0.6	-2.5	2.4	11.1 O2																
	11.2	0.6	-2.5	2.4	**11.1 O2 Average**																
4/20/2007 9:15	7.1	73.0	63.6	0.4																	
4/20/2007 9:16	4.7	90.9	83.9	1.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.7	90.0	83.2	1.5
4/20/2007 9:17	4.5	106.4	98.4	2.6	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	105.1	97.4	2.4
4/20/2007 9:18	4.6	32.7	29.5	2.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.6	33.0	29.6	2.0
4/20/2007 9:19	4.6	129.6	120.2	2.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	127.9	118.8	2.3
4/20/2007 9:20	4.6	129.3	119.9	2.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	127.6	118.5	1.9
4/20/2007 9:21	4.6	126.7	117.4	2.7	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	125.1	116.1	2.5
4/20/2007 9:22	4.6	125.1	115.9	6.7	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	123.5	114.6	6.6
4/20/2007 9:23	4.6	127.4	118.0	1.9	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.6	125.7	116.7	1.7

Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - 4/20/07

Billet Reheat Furnace

TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 9:24	4.6	126.1	116.8	1.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	124.5	115.5	1.5
4/20/2007 9:25	4.5	116.7	108.5	8.9	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.4	115.3	107.3	8.8
4/20/2007 9:26	4.5	80.8	75.9	2.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	80.1	75.3	2.3
4/20/2007 9:27	4.6	124.2	116.2	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	122.6	114.9	1.3
4/20/2007 9:28	4.6	125.8	117.4	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.6	124.1	116.1	1.2
4/20/2007 9:29	4.6	124.8	115.9	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.6	123.2	114.6	1.3
4/20/2007 9:30	4.4	113.2	105.7	5.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.4	111.8	104.6	5.1
4/20/2007 9:31	4.6	81.2	75.3	11.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	80.5	74.7	11.2
4/20/2007 9:32	4.6	120.6	111.9	2.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	119.1	110.7	2.0
4/20/2007 9:33	4.5	77.3	71.3	7.0	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	76.7	70.8	6.9
4/20/2007 9:34	4.6	122.2	113.1	1.4	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	120.7	111.9	1.2
4/20/2007 9:35	4.5	120.3	111.3	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	118.8	110.1	1.3
4/20/2007 9:36	4.6	55.3	50.7	1.6	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	55.1	50.5	1.4
4/20/2007 9:37	8.0	86.3	79.9	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	8.1	85.5	79.2	1.3
4/20/2007 9:38	9.2	95.7	88.8	0.6	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	9.3	94.7	88.0	0.3
4/20/2007 9:39	10.1	62.1	57.5	2.4	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	10.2	61.8	57.1	2.2
4/20/2007 9:40	14.7	47.2	44.3	0.9	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	14.9	47.2	44.1	0.6
4/20/2007 9:41	4.9	115.7	107.3	4.9	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.8	114.3	106.1	4.8
4/20/2007 9:42	4.5	120.0	111.3	2.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	118.4	110.1	2.1
4/20/2007 9:43	4.5	122.5	114.0	1.4	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	121.0	112.8	1.1
4/20/2007 9:44	4.5	122.9	113.7	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	121.3	112.5	1.2
4/20/2007 9:45	4.5	116.7	108.2	3.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.4	115.3	107.0	3.3
4/20/2007 9:46	4.4	112.5	104.2	14.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.4	111.2	103.1	14.3
4/20/2007 9:47					Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40				
4/20/2007 9:48					Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40				
4/20/2007 9:49	5.8	108.0	100.2	2.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.8	106.7	99.2	2.3
4/20/2007 9:50	4.5	58.8	54.1	3.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	58.6	53.8	3.0
4/20/2007 9:51	4.5	20.7	18.8	1.9	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	21.3	19.0	1.7
4/20/2007 9:52	4.6	42.7	38.7	2.0	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	42.8	38.7	1.8
4/20/2007 9:53	4.5	90.2	83.3	2.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	89.3	82.5	2.6
4/20/2007 9:54	4.6	133.9	124.2	2.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	132.0	122.8	2.0
4/20/2007 9:55	4.4	118.0	109.4	5.0	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.4	116.5	108.3	4.8
4/20/2007 9:56	4.5	130.6	121.1	1.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	128.9	119.7	1.5
4/20/2007 9:57	4.4	80.5	74.4	5.6	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.4	79.8	73.8	5.5
4/20/2007 9:58	4.5	84.4	77.8	4.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.5	83.6	77.1	4.0
4/20/2007 9:59	4.9	147.4	137.1	1.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	145.3	135.5	1.1
4/20/2007 10:00	5.0	143.2	133.7	0.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	141.2	132.1	0.6
4/20/2007 10:01	4.9	142.6	132.8	1.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	140.6	131.2	1.0
4/20/2007 10:02	4.9	96.0	88.8	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	95.0	88.0	1.2
4/20/2007 10:03	5.0	139.0	129.1	1.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	137.1	127.6	1.0
4/20/2007 10:04	5.0	142.6	132.5	1.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	140.6	130.9	1.5
4/20/2007 10:05	4.9	139.7	129.4	2.1	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	137.7	127.9	1.8
4/20/2007 10:06	5.0	141.6	131.6	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.0	139.6	130.0	1.2
4/20/2007 10:07	5.0	141.6	131.6	1.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	139.6	130.0	1.5
4/20/2007 10:08	5.0	132.9	123.0	1.7	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.0	131.1	121.6	1.4
4/20/2007 10:09	4.9	98.0	91.6	1.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.8	96.9	90.7	1.5

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TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 10:10	5.4	135.5	125.4	1.5	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.4	133.6	124.0	1.2
4/20/2007 10:11	4.9	137.7	127.6	2.3	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	135.8	126.1	2.0
4/20/2007 10:12	5.0	141.0	130.0	0.8	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.0	139.0	128.5	0.6
4/20/2007 10:13	7.0	119.6	110.7	1.1	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	7.0	118.1	109.5	0.8
4/20/2007 10:14	5.3	134.5	124.5	1.1	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.2	132.7	123.1	0.8
4/20/2007 10:15	6.0	130.3	120.2	1.1	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	6.0	128.6	118.8	0.8
4/20/2007 10:16	5.2	136.8	126.6	1.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.1	134.9	125.2	0.9
4/20/2007 10:17	4.9	140.0	130.3	1.1	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	4.9	138.1	128.8	0.8
4/20/2007 10:18	5.3	133.9	123.6	1.2	Run 1	0.15	20.55	20.90	-1.05	126.45	124.80	-0.60	126.25	124.80	0.30	23.05	23.40	5.3	132.0	122.2	0.9
	5.2	111.5	103.4	2.7	**Run 1 Average**													5.1	110.1	102.3	2.5
4/20/2007 10:19	5.0	144.2	133.7	1.2																	
4/20/2007 10:20	4.9	116.2	111.6	1.4																	
4/20/2007 10:21	15.0	36.2	34.2	1.1																	
4/20/2007 10:22	20.2	0.8	-0.8	0.2																	
4/20/2007 10:23	20.4	1.9	0.3	0.3	20.9 O2/ Zero CO																
	20.4	1.9	0.3	0.3	**20.9 O2/ Zero CO Average**																
4/20/2007 10:24	20.2	0.3	1.1	0.1																	
4/20/2007 10:25	5.6	91.9	90.8	0.3																	
4/20/2007 10:26	1.7	118.4	116.6	0.2																	
4/20/2007 10:27	0.9	122.7	121.4	0.2																	
4/20/2007 10:28	0.3	126.9	125.9	0.2																	
4/20/2007 10:29	0.3	127.2	125.9	0.2	124.3 NOx/ Zero O2																
	0.3	127.2	125.9	0.2	**124.3 NOx/ Zero O2 Average**																
4/20/2007 10:30	0.5	121.3	119.8	0.2																	
4/20/2007 10:31	0.8	8.8	11.8	12.7																	
4/20/2007 10:32	0.2	-0.2	0.0	23.0																	
4/20/2007 10:33	1.7	-0.3	0.3	23.1	23.4 CO/ ZERO NO, NOx																
	1.7	-0.3	0.3	23.1	**23.4 CO/ ZERO NO, NOx Average**																
4/20/2007 10:34	18.1	0.0	0.0	8.2																	
4/20/2007 10:35	20.1	0.3	-0.3	0.3																	
4/20/2007 10:36	20.3	0.3	-0.3	0.2																	
4/20/2007 10:37	20.4	0.3	-0.3	0.2																	
4/20/2007 10:38	20.4	0.0	-1.3	0.2																	
4/20/2007 10:39	20.5	1.1	-0.3	0.2																	
4/20/2007 10:40	20.5	1.1	-0.3	0.2																	
4/20/2007 10:41	20.6	1.1	-0.3	0.2																	
4/20/2007 10:42	20.6	1.1	-0.3	0.2																	
4/20/2007 10:43	20.6	0.5	-0.3	0.2																	
4/20/2007 10:44	20.6	1.1	-0.3	0.2																	
4/20/2007 10:45	20.6	0.3	-0.3	0.2																	
4/20/2007 10:46	20.6	0.5	-0.3	0.2																	
4/20/2007 10:47	20.6	1.1	-0.3	0.2																	
4/20/2007 10:48	20.7	1.3	-0.3	0.2																	
4/20/2007 10:49	20.6	0.5	-0.3	0.2																	
4/20/2007 10:50	20.7	1.1	0.0	0.2																	
4/20/2007 10:51	20.6	0.5	-0.3	0.2																	

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TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 10:52	20.6	0.8	-0.3	0.2																	
4/20/2007 10:53	20.6	0.0	-0.3	0.2																	
4/20/2007 10:54	20.7	0.5	-0.3	0.2																	
4/20/2007 10:55	20.7	0.8	-0.3	0.3																	
4/20/2007 10:56	20.7	0.8	-0.3	0.3																	
4/20/2007 10:57	20.7	0.8	-0.3	0.2																	
4/20/2007 10:58	20.7	0.3	-0.3	0.2																	
4/20/2007 10:59	20.7	0.8	-0.3	0.2																	
4/20/2007 11:00	20.7	0.8	-0.3	0.2																	
4/20/2007 11:01	20.7	0.8	-0.3	0.2																	
4/20/2007 11:02	20.7	0.8	-0.3	0.2																	
4/20/2007 11:03	20.7	0.8	-0.3	0.2																	
4/20/2007 11:04	20.7	0.8	-0.3	0.3																	
4/20/2007 11:05	20.7	0.8	-0.3	0.2																	
4/20/2007 11:06	20.7	0.8	-0.3	0.2																	
4/20/2007 11:07	20.7	0.8	0.0	0.3																	
4/20/2007 11:08	20.8	0.8	-0.3	0.2																	
4/20/2007 11:09	20.7	0.3	-0.3	0.2																	
4/20/2007 11:10	20.8	0.8	-0.3	0.2																	
4/20/2007 11:11	20.7	0.0	-0.3	0.2																	
4/20/2007 11:12	20.8	0.8	-0.3	0.2																	
4/20/2007 11:13	20.8	-0.3	-1.3	0.2																	
4/20/2007 11:14	20.8	0.8	-0.3	0.2																	
4/20/2007 11:15	20.8	0.8	-0.3	0.2																	
4/20/2007 11:16	20.8	0.8	-0.3	0.2																	
4/20/2007 11:17	20.8	0.8	-0.3	0.2																	
4/20/2007 11:18	20.8	0.8	-0.3	0.2																	
4/20/2007 11:19	20.8	0.8	-0.3	0.2																	
4/20/2007 11:20	20.7	0.5	-0.3	0.1																	
4/20/2007 11:21	20.8	0.8	-0.3	0.4																	
4/20/2007 11:22	20.8	0.8	-0.3	0.3																	
4/20/2007 11:23	20.8	0.8	-0.3	0.2																	
4/20/2007 11:24	16.7	21.4	20.0	4.6																	
4/20/2007 11:25	4.9	88.1	84.5	34.1																	
4/20/2007 11:26	4.5	84.6	81.1	33.3																	
4/20/2007 11:27	4.5	87.3	83.7	76.4																	
4/20/2007 11:28	4.6	90.8	86.9	17.0																	
4/20/2007 11:29	4.4	84.4	81.1	95.9																	
4/20/2007 11:30	4.5	100.4	96.1	24.1																	
4/20/2007 11:31	4.1	86.5	82.9	42.4																	
4/20/2007 11:32	4.0	81.1	77.9	38.2																	
4/20/2007 11:33	4.1	82.8	79.3	44.9																	
4/20/2007 11:34	4.0	76.9	73.7	62.6																	
4/20/2007 11:35	4.1	83.3	79.8	60.5																	
4/20/2007 11:36	4.2	97.2	93.2	10.0																	
4/20/2007 11:37	4.1	89.2	85.6	33.8																	

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TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cms, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 11:38	4.1	90.8	87.1	26.1																	
4/20/2007 11:39	4.0	89.7	86.1	38.8																	
4/20/2007 11:40	4.1	81.1	77.7	46.7																	
4/20/2007 11:41	4.1	76.9	73.5	20.8																	
4/20/2007 11:42	4.0	91.1	87.4	32.4																	
4/20/2007 11:43	4.1	100.4	96.4	22.7																	
4/20/2007 11:44	4.2	112.2	107.7	9.8																	
4/20/2007 11:45	4.2	108.5	104.0	15.0																	
4/20/2007 11:46	4.2	109.5	105.1	2.2																	
4/20/2007 11:47	4.2	109.0	104.8	5.7																	
4/20/2007 11:48	4.8	137.4	132.2	1.0																	
4/20/2007 11:49	4.9	138.5	133.2	0.2																	
4/20/2007 11:50	4.9	135.2	130.1	0.3																	
4/20/2007 11:51	4.8	134.7	129.5	0.3																	
4/20/2007 11:52	4.8	132.3	127.2	0.3																	
4/20/2007 11:53	4.9	132.3	127.4	0.4																	
4/20/2007 11:54	4.8	132.0	126.9	0.3																	
4/20/2007 11:55	4.8	131.2	126.1	0.5	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.7	130.6	125.5	0.3
4/20/2007 11:56	4.8	132.0	126.9	0.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.7	131.4	126.2	0.1
4/20/2007 11:57	4.9	137.1	131.9	0.2	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	136.4	131.2	0.0
4/20/2007 11:58	4.9	132.8	127.7	0.2	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	132.2	127.0	0.0
4/20/2007 11:59	4.8	134.7	129.5	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	134.0	128.9	0.2
4/20/2007 12:00	4.8	132.6	127.4	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.7	131.9	126.8	0.2
4/20/2007 12:01	4.8	133.4	128.0	0.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.7	132.7	127.3	0.1
4/20/2007 12:02	4.8	132.0	126.9	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.7	131.4	126.2	0.2
4/20/2007 12:03	4.8	134.2	129.0	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.7	133.5	128.3	0.2
4/20/2007 12:04	4.9	137.7	132.4	0.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	136.9	131.7	0.1
4/20/2007 12:05	5.0	139.0	133.8	0.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	138.3	133.1	0.1
4/20/2007 12:06	5.0	138.2	133.0	0.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	137.5	132.3	0.1
4/20/2007 12:07	4.9	134.2	129.0	0.8	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	133.5	128.3	0.7
4/20/2007 12:08	5.0	136.3	131.1	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	135.6	130.4	0.2
4/20/2007 12:09	5.2	140.1	134.8	0.5	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.1	139.3	134.1	0.3
4/20/2007 12:10	4.9	136.3	131.1	0.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	135.6	130.4	0.1
4/20/2007 12:11	4.9	136.0	130.9	0.8	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	135.3	130.2	0.6
4/20/2007 12:12	4.9	136.6	131.4	0.5	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	135.9	130.7	0.3
4/20/2007 12:13	4.9	137.1	131.9	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	136.4	131.2	0.2
4/20/2007 12:14	4.8	135.5	130.3	0.8	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	134.8	129.6	0.6
4/20/2007 12:15	4.9	138.2	132.7	0.5	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	137.5	132.0	0.3
4/20/2007 12:16	4.9	138.5	133.2	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	137.7	132.5	0.2
4/20/2007 12:17	5.7	127.5	122.4	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.6	126.9	121.8	0.6
4/20/2007 12:18	4.8	136.0	130.6	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	135.3	129.9	0.6
4/20/2007 12:19	8.1	105.2	100.8	0.6	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	8.2	104.8	100.3	0.4
4/20/2007 12:20	5.1	132.6	127.4	0.5	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.1	131.9	126.8	0.3
4/20/2007 12:21	5.2	129.9	124.8	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.2	129.2	124.2	0.5
4/20/2007 12:22	5.8	126.1	121.1	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.8	125.5	120.5	0.6
4/20/2007 12:23	4.8	135.5	130.1	0.8	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	134.8	129.4	0.6

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TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 12:24	4.8	136.0	130.9	0.8	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.7	135.3	130.2	0.6
4/20/2007 12:25	4.8	137.1	131.6	0.8	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	136.4	131.0	0.7
4/20/2007 12:26	4.9	136.3	131.1	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	135.6	130.4	0.6
4/20/2007 12:27	14.0	49.3	46.9	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40				
4/20/2007 12:28	10.2	49.3	46.6	0.8	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40				
4/20/2007 12:29	4.9	136.3	130.9	1.9	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	135.6	130.2	1.7
4/20/2007 12:30	4.9	135.5	130.1	1.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	134.8	129.4	1.2
4/20/2007 12:31	4.9	135.2	129.8	1.5	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	134.5	129.1	1.4
4/20/2007 12:32	4.9	134.7	129.3	1.5	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	134.0	128.6	1.3
4/20/2007 12:33	4.9	135.2	129.8	1.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	134.5	129.1	1.2
4/20/2007 12:34	4.9	133.4	128.2	1.6	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	132.7	127.6	1.5
4/20/2007 12:35	4.9	134.7	129.3	1.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	134.0	128.6	1.5
4/20/2007 12:36	4.9	135.8	130.3	1.2	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	135.1	129.6	1.0
4/20/2007 12:37	5.0	141.9	136.4	1.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	141.2	135.7	1.2
4/20/2007 12:38	5.0	89.7	85.8	1.0	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	89.5	85.4	0.8
4/20/2007 12:39	4.9	133.1	128.0	1.6	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.8	132.4	127.3	1.5
4/20/2007 12:40	4.9	135.5	130.6	1.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	134.8	129.9	1.1
4/20/2007 12:41	5.0	140.1	134.8	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	139.3	134.1	0.9
4/20/2007 12:42	5.1	139.0	133.8	0.6	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.1	138.3	133.1	0.4
4/20/2007 12:43	5.0	133.6	128.5	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	133.0	127.8	0.9
4/20/2007 12:44	5.0	134.7	129.5	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	134.0	128.9	0.9
4/20/2007 12:45	5.0	135.0	129.8	1.2	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	134.3	129.1	1.0
4/20/2007 12:46	5.2	137.7	132.4	1.0	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.2	136.9	131.7	0.8
4/20/2007 12:47	5.0	132.6	127.7	1.0	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	131.9	127.0	0.8
4/20/2007 12:48	5.1	133.4	128.5	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.1	132.7	127.8	0.9
4/20/2007 12:49	4.9	133.4	128.5	1.3	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	132.7	127.8	1.1
4/20/2007 12:50	5.1	136.9	131.6	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	136.1	131.0	0.9
4/20/2007 12:51	6.1	122.1	117.4	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	6.1	121.6	116.8	0.9
4/20/2007 12:52	5.0	130.7	125.6	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	130.0	124.9	0.9
4/20/2007 12:53	5.8	130.4	125.3	1.1	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.8	129.8	124.7	0.9
4/20/2007 12:54	5.1	135.5	130.3	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	134.8	129.6	0.5
4/20/2007 12:55	5.0	134.2	128.7	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	133.5	128.1	0.6
4/20/2007 12:56	5.0	135.8	130.9	0.7	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	135.1	130.2	0.6
4/20/2007 12:57	5.0	137.1	131.6	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	5.0	136.4	131.0	0.2
4/20/2007 12:58	5.0	134.7	130.9	0.4	Run 2	0.20	20.45	20.90	-0.65	125.40	124.80	-0.10	125.45	124.80	0.20	23.15	23.40	4.9	134.0	130.2	0.2
	5.3	131.0	125.9	0.8	**Run 2 Average**													5.0	132.9	127.8	0.6
4/20/2007 12:59	4.0	67.8	73.2	2.3																	
4/20/2007 13:00	0.1	-1.0	0.5	20.5																	
4/20/2007 13:01	0.0	-0.8	-0.5	23.1																	
4/20/2007 13:02	0.0	-0.2	-0.5	23.2																	
4/20/2007 13:03	0.0	-0.2	-0.5	23.2																	
4/20/2007 13:04	0.0	-0.7	-0.5	23.3																	
4/20/2007 13:05	0.0	-1.0	-0.5	23.2	23.4 CO/ Zero NO, NOx																
	0.0	-1.0	-0.5	23.2	**23.4 CO/ Zero NO, NOx Average**																
4/20/2007 13:06	0.1	-0.7	-0.5	23.3																	
4/20/2007 13:07	0.1	-0.4	-0.5	23.3																	

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TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 13:08	0.0	-0.5	-0.5	23.2																	
4/20/2007 13:09	0.0	-0.5	3.4	23.2																	
4/20/2007 13:10	0.0	103.3	106.3	10.8																	
4/20/2007 13:11	0.0	121.1	123.8	0.2																	
4/20/2007 13:12	0.0	121.8	124.3	0.1																	
4/20/2007 13:13	0.0	121.8	124.3	0.1																	
4/20/2007 13:14	0.0	122.3	124.6	0.1																	
4/20/2007 13:15	0.0	123.1	125.0	0.1																	
4/20/2007 13:16	0.1	123.6	125.0	0.1	124.8 NO, NOx/ Zero O2, CO																
	0.1	123.6	125.0	0.1	**124.8 NO, NOx/ Zero O2, CO Average**																
4/20/2007 13:17	2.4	112.0	108.5	0.3																	
4/20/2007 13:18	18.6	6.9	5.8	0.3																	
4/20/2007 13:19	20.0	1.2	0.2	0.2																	
4/20/2007 13:20	20.2	1.2	0.2	0.2																	
4/20/2007 13:21	20.3	1.2	0.2	0.1																	
4/20/2007 13:22	20.3	1.2	0.2	0.2																	
4/20/2007 13:23	20.4	1.2	0.2	0.2																	
4/20/2007 13:24	20.4	1.0	0.2	0.2																	
4/20/2007 13:25	20.5	1.2	0.2	0.2	20.9 O2																
	20.5	1.2	0.2	0.2	**20.9 O2 Average**																
4/20/2007 13:26	20.5	1.0	0.2	0.2																	
4/20/2007 13:27	20.5	1.2	0.2	0.3																	
4/20/2007 13:28	20.5	1.2	0.2	0.3																	
4/20/2007 13:29	20.6	1.2	0.2	0.2																	
4/20/2007 13:30	20.6	1.0	0.2	0.2																	
4/20/2007 13:31	20.6	1.0	0.2	0.2																	
4/20/2007 13:32	20.6	1.2	0.2	0.2																	
4/20/2007 13:33	20.6	1.2	0.2	0.2																	
4/20/2007 13:34	20.6	1.2	0.2	0.2																	
4/20/2007 13:35	20.6	1.2	0.2	0.2																	
4/20/2007 13:36	20.6	1.2	0.2	0.2																	
4/20/2007 13:37	20.6	1.2	0.2	0.2																	
4/20/2007 13:38	20.6	1.2	0.2	0.2																	
4/20/2007 13:39	20.7	1.2	0.2	0.2																	
4/20/2007 13:40	20.7	1.2	0.2	0.2																	
4/20/2007 13:41	20.7	1.2	0.2	0.2																	
4/20/2007 13:42	20.7	1.2	0.2	0.2																	
4/20/2007 13:43	20.7	1.0	0.2	0.2																	
4/20/2007 13:44	20.7	1.2	0.2	0.2																	
4/20/2007 13:45	20.7	1.2	0.2	0.2																	
4/20/2007 13:46	20.7	1.2	0.2	0.2																	
4/20/2007 13:47	20.7	1.0	0.2	0.2																	
4/20/2007 13:48	20.7	1.2	0.2	0.2																	
4/20/2007 13:49	20.7	1.2	0.2	0.2																	
4/20/2007 13:50	20.7	1.2	0.2	0.2																	
4/20/2007 13:51	20.7	1.2	0.2	0.2																	

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TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 13:52	20.7	1.2	0.2	0.2																	
4/20/2007 13:53	20.7	1.2	0.2	0.2																	
4/20/2007 13:54	20.7	1.2	0.2	0.2																	
4/20/2007 13:55	20.7	1.2	0.2	0.2																	
4/20/2007 13:56	20.8	1.2	0.2	0.2																	
4/20/2007 13:57	20.8	1.0	0.2	0.2																	
4/20/2007 13:58	20.8	1.0	0.2	0.2																	
4/20/2007 13:59	20.8	1.2	0.2	0.2																	
4/20/2007 14:00	20.8	1.2	0.2	0.2																	
4/20/2007 14:01	20.8	1.0	0.2	0.2																	
4/20/2007 14:02	20.8	1.0	0.2	0.2																	
4/20/2007 14:03	20.8	1.0	0.2	0.2																	
4/20/2007 14:04	20.8	1.2	0.2	0.2																	
4/20/2007 14:05	20.8	1.0	0.2	0.2																	
4/20/2007 14:06	20.8	1.2	0.2	0.2																	
4/20/2007 14:07	20.8	1.2	0.2	0.2																	
4/20/2007 14:08	20.8	1.2	0.2	0.2																	
4/20/2007 14:09	20.8	1.2	0.2	0.2																	
4/20/2007 14:10	20.8	1.2	0.5	0.2																	
4/20/2007 14:11	20.8	1.2	0.5	0.2																	
4/20/2007 14:12	20.8	1.2	0.2	0.2																	
4/20/2007 14:13	20.8	1.2	0.5	0.2																	
4/20/2007 14:14	20.8	1.0	0.2	0.2																	
4/20/2007 14:15	20.8	1.0	0.2	0.2																	
4/20/2007 14:16	20.8	0.5	0.0	0.2																	
4/20/2007 14:17	20.8	1.0	0.0	0.2																	
4/20/2007 14:18	20.8	1.0	0.0	0.1																	
4/20/2007 14:19	20.8	1.0	0.2	0.1																	
4/20/2007 14:20	20.8	1.0	0.0	0.2																	
4/20/2007 14:21	20.8	1.0	0.2	0.1																	
4/20/2007 14:22	20.8	0.7	0.0	0.2																	
4/20/2007 14:23	20.8	0.7	-0.2	0.2																	
4/20/2007 14:24	20.8	0.7	-0.2	0.2																	
4/20/2007 14:25	20.8	0.7	-0.2	0.2																	
4/20/2007 14:26	20.8	0.7	-0.2	0.2																	
4/20/2007 14:27	20.8	0.7	-0.2	0.2																	
4/20/2007 14:28	20.8	0.7	-0.2	0.2																	
4/20/2007 14:29	20.8	0.7	-0.2	0.2																	
4/20/2007 14:30	20.8	0.7	-0.2	0.2																	
4/20/2007 14:31	20.8	0.7	-0.2	0.2																	
4/20/2007 14:32	20.8	0.7	-0.2	0.1																	
4/20/2007 14:33	20.8	0.7	0.0	0.2																	
4/20/2007 14:34	20.8	0.7	-0.2	0.2																	
4/20/2007 14:35	20.8	0.7	-0.2	0.2																	
4/20/2007 14:36	20.8	0.7	-0.2	0.2																	
4/20/2007 14:37	20.8	0.7	-0.2	0.1																	

Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - 4/20/07

Billet Reheat Furnace

TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 14:38	20.9	0.7	0.0	0.2																	
4/20/2007 14:39	20.8	1.0	0.0	0.1																	
4/20/2007 14:40	20.8	0.7	-0.2	0.2																	
4/20/2007 14:41	20.8	1.0	0.0	0.2																	
4/20/2007 14:42	20.9	0.7	-0.2	0.2																	
4/20/2007 14:43	20.9	0.7	-0.2	0.2																	
4/20/2007 14:44	20.8	0.7	-0.2	0.2																	
4/20/2007 14:45	20.8	0.7	-0.2	0.2																	
4/20/2007 14:46	20.9	0.7	-0.2	0.1																	
4/20/2007 14:47	20.8	0.7	-0.2	0.2																	
4/20/2007 14:48	20.8	0.7	-0.2	0.2																	
4/20/2007 14:49	20.8	0.7	-0.2	0.2																	
4/20/2007 14:50	20.8	0.7	-0.2	0.2																	
4/20/2007 14:51	20.8	0.7	0.0	0.2																	
4/20/2007 14:52	20.8	0.7	-0.2	0.2																	
4/20/2007 14:53	20.8	0.7	-0.2	0.2																	
4/20/2007 14:54	20.9	0.5	-0.2	0.2																	
4/20/2007 14:55	20.9	0.7	-0.2	0.2																	
4/20/2007 14:56	20.9	0.7	-0.2	0.2																	
4/20/2007 14:57	20.9	0.7	-0.2	0.2																	
4/20/2007 14:58	20.9	0.7	-0.2	0.2																	
4/20/2007 14:59	20.9	0.7	-0.2	0.2																	
4/20/2007 15:00	20.9	0.7	-0.2	0.2																	
4/20/2007 15:01	20.9	0.7	0.0	0.1																	
4/20/2007 15:02	20.9	0.7	-0.2	0.1																	
4/20/2007 15:03	20.9	0.7	-0.2	0.2																	
4/20/2007 15:04	20.9	0.7	-0.2	0.1																	
4/20/2007 15:05	20.9	0.7	-0.2	0.2																	
4/20/2007 15:06	20.9	0.7	-0.2	0.2																	
4/20/2007 15:07	20.9	0.7	-0.2	0.2																	
4/20/2007 15:08	20.9	0.7	-0.2	0.2																	
4/20/2007 15:09	20.9	0.7	-0.2	0.3																	
4/20/2007 15:10	20.9	1.0	-0.2	0.8																	
4/20/2007 15:11	20.9	0.7	-0.2	0.2																	
4/20/2007 15:12	20.9	0.7	-0.2	0.3																	
4/20/2007 15:13	20.9	0.7	-0.2	0.3																	
4/20/2007 15:14	20.9	0.7	-0.2	0.2																	
4/20/2007 15:15	20.9	0.7	-0.2	0.3																	
4/20/2007 15:16	20.9	0.7	-0.2	0.5																	
4/20/2007 15:17	20.9	0.7	-0.2	0.3																	
4/20/2007 15:18	20.9	0.7	-0.2	0.2																	
4/20/2007 15:19	20.9	0.7	-0.2	0.2																	
4/20/2007 15:20	20.9	1.0	-0.2	0.2																	
4/20/2007 15:21	20.9	0.7	-0.2	0.2																	
4/20/2007 15:22	20.9	0.7	-0.2	0.2																	
4/20/2007 15:23	20.9	0.7	-0.2	0.2																	

Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - 4/20/07

Billet Reheat Furnace

TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 15:24	20.9	0.7	-0.2	0.2																	
4/20/2007 15:25	20.9	0.7	-0.2	0.2																	
4/20/2007 15:26	20.9	0.7	-0.2	0.2																	
4/20/2007 15:27	20.9	0.7	-0.2	0.2																	
4/20/2007 15:28	20.9	0.7	-0.2	0.2																	
4/20/2007 15:29	20.9	0.7	-0.2	0.2																	
4/20/2007 15:30	20.9	0.7	-0.2	0.2																	
4/20/2007 15:31	20.9	0.7	-0.2	0.2																	
4/20/2007 15:32	20.9	0.7	-0.2	0.2																	
4/20/2007 15:33	20.9	0.7	-0.2	0.2																	
4/20/2007 15:34	20.9	0.2	-0.2	0.2																	
4/20/2007 15:35	20.9	0.7	-0.2	0.2																	
4/20/2007 15:36	20.9	0.7	-0.2	0.2																	
4/20/2007 15:37	20.9	0.7	-0.2	0.2																	
4/20/2007 15:38	20.9	0.7	-0.2	0.2																	
4/20/2007 15:39	20.9	0.7	-0.2	0.2																	
4/20/2007 15:40	20.9	0.7	-0.2	0.2																	
4/20/2007 15:41	20.9	0.7	-0.2	0.2																	
4/20/2007 15:42	20.9	0.7	-0.2	0.2																	
4/20/2007 15:43	20.9	0.7	-0.2	0.2																	
4/20/2007 15:44	20.9	0.7	-0.2	0.2																	
4/20/2007 15:45	20.9	0.7	-0.2	0.2																	
4/20/2007 15:46	20.9	0.5	-0.2	0.2																	
4/20/2007 15:47	18.4	35.5	33.7	0.2																	
4/20/2007 15:48	13.0	103.1	98.8	0.3																	
4/20/2007 15:49	11.5	115.9	111.4	0.4																	
4/20/2007 15:50	10.0	120.9	116.3	0.5																	
4/20/2007 15:51	9.0	140.3	135.0	0.9																	
4/20/2007 15:52	6.8	153.4	147.6	1.6																	
4/20/2007 15:53	5.9	143.8	138.4	2.1																	
4/20/2007 15:54	5.9	144.0	138.6	2.2																	
4/20/2007 15:55	5.9	154.6	148.8	2.0																	
4/20/2007 15:56	5.4	158.6	152.7	1.3																	
4/20/2007 15:57	5.2	149.2	143.7	1.0																	
4/20/2007 15:58	5.0	99.9	95.9	0.6	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	98.6	93.6	0.5
4/20/2007 15:59	4.8	134.7	129.4	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.8	132.6	126.1	0.4
4/20/2007 16:00	4.9	141.6	136.2	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.9	139.4	132.7	0.3
4/20/2007 16:01	4.8	144.5	139.4	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.9	142.3	135.8	0.3
4/20/2007 16:02	4.8	142.6	137.4	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.8	140.4	133.9	0.3
4/20/2007 16:03	4.8	143.8	138.6	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.8	141.6	135.1	0.3
4/20/2007 16:04	4.8	142.1	136.7	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.8	139.9	133.2	0.4
4/20/2007 16:05	4.8	144.5	139.1	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.8	142.3	135.5	0.4
4/20/2007 16:06	4.9	151.2	146.4	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.9	148.8	142.6	0.3
4/20/2007 16:07	4.8	154.6	149.6	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.8	152.2	145.7	0.3
4/20/2007 16:08	4.9	164.0	158.3	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	161.3	154.2	0.2
4/20/2007 16:09	4.9	109.5	105.1	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	108.0	102.6	0.2

Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - 4/20/07

Billet Reheat Furnace

TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 16:10	5.0	165.0	159.0	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	162.3	154.9	0.2
4/20/2007 16:11	4.9	163.5	157.8	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.9	160.9	153.7	0.2
4/20/2007 16:12	4.8	164.8	159.0	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.9	162.1	154.9	0.3
4/20/2007 16:13	4.9	166.5	160.7	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.9	163.8	156.5	0.2
4/20/2007 16:14	4.9	172.4	166.3	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	4.9	169.5	161.9	0.2
4/20/2007 16:15	4.9	171.9	165.8	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	169.1	161.5	0.1
4/20/2007 16:16	5.0	120.1	115.8	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	118.4	112.9	0.1
4/20/2007 16:17	5.0	170.4	164.6	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	167.6	160.3	0.1
4/20/2007 16:18	5.1	182.3	175.8	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	179.2	171.1	0.2
4/20/2007 16:19	5.2	184.7	178.2	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.2	181.6	173.5	0.1
4/20/2007 16:20	5.8	141.3	136.5	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.9	139.2	133.0	0.1
4/20/2007 16:21	5.1	140.1	135.0	0.1	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.2	137.9	131.5	0.0
4/20/2007 16:22	5.7	166.5	160.5	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.7	163.8	156.3	0.2
4/20/2007 16:23	6.7	173.6	167.5	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	6.8	170.8	163.1	0.1
4/20/2007 16:24	5.5	179.1	172.9	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.5	176.1	168.3	0.1
4/20/2007 16:25	6.8	160.6	155.2	0.3	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	6.8	158.0	151.1	0.2
4/20/2007 16:26	5.2	176.3	170.2	0.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.2	173.4	165.7	0.1
4/20/2007 16:27	5.0	116.9	112.7	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	115.3	109.9	0.4
4/20/2007 16:28	5.0	183.5	177.2	0.6	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	180.4	172.5	0.5
4/20/2007 16:29	13.0	79.4	76.2	0.6	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40				
4/20/2007 16:30	17.4	35.5	33.7	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40				
4/20/2007 16:31	5.7	117.2	112.7	1.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.7	115.5	109.9	1.3
4/20/2007 16:32	5.1	176.8	170.7	0.9	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	173.9	166.2	0.8
4/20/2007 16:33	5.0	167.0	161.0	0.8	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	164.2	156.7	0.7
4/20/2007 16:34	5.0	128.0	123.3	0.8	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	126.1	120.2	0.8
4/20/2007 16:35	5.1	172.6	166.6	1.0	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	169.8	162.2	0.9
4/20/2007 16:36	5.0	171.9	165.8	1.2	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.0	169.1	161.5	1.1
4/20/2007 16:37	5.1	168.5	162.4	1.1	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	165.7	158.2	1.0
4/20/2007 16:38	5.1	168.2	162.2	1.1	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	165.4	157.9	1.0
4/20/2007 16:39	5.0	167.2	161.2	0.8	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	164.5	157.0	0.8
4/20/2007 16:40	5.0	167.0	161.2	0.8	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.1	164.2	157.0	0.8
4/20/2007 16:41	5.3	178.8	172.4	0.8	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.3	175.8	167.8	0.7
4/20/2007 16:42	5.3	178.1	171.9	0.7	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.4	175.1	167.3	0.6
4/20/2007 16:43	5.3	176.3	170.0	0.6	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.4	173.4	165.5	0.5
4/20/2007 16:44	5.2	170.4	164.4	0.7	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.3	167.6	160.0	0.6
4/20/2007 16:45	5.3	148.0	142.8	0.6	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.4	145.7	139.1	0.5
4/20/2007 16:46	5.3	136.9	131.8	0.7	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.3	134.8	128.5	0.6
4/20/2007 16:47	5.5	184.2	177.7	0.8	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.5	181.1	173.0	0.7
4/20/2007 16:48	5.8	196.1	189.4	0.7	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.8	192.7	184.3	0.6
4/20/2007 16:49	5.5	185.2	178.7	0.6	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.5	182.1	173.9	0.5
4/20/2007 16:50	5.6	185.2	178.9	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.6	182.1	174.2	0.4
4/20/2007 16:51	5.7	174.9	168.7	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.7	172.0	164.3	0.4
4/20/2007 16:52	5.8	183.0	176.5	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.8	179.9	171.8	0.4
4/20/2007 16:53	5.6	184.0	177.5	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.6	180.9	172.8	0.4
4/20/2007 16:54	7.1	151.2	145.9	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	7.1	148.8	142.1	0.4
4/20/2007 16:55	5.5	180.8	174.3	0.4	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.5	177.7	169.7	0.3

Gerdau Ameristeel Corporation - Baldwin, Florida - Gaseous Emissions Test Summary - 4/20/07

Billet Reheat Furnace

TimeStamp	O2	NOx	No	CO	COMMENTS	Co, O2	Cm, O2	Cma, O2	Co, NOx	Cm, NOx	Cma, NOx	Co, No	Cm, No	Cma, No	Co, CO	Cm, CO	Cma, CO	CORR % O2	CORR PPM NOx	CORR PPM No	CORR PPM CO
4/20/2007 16:56	5.5	180.0	173.6	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.6	177.0	169.0	0.4
4/20/2007 16:57	5.5	176.1	170.0	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.5	173.2	165.5	0.4
4/20/2007 16:58	5.5	176.6	170.4	0.6	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.5	173.6	165.9	0.5
4/20/2007 16:59	5.6	179.1	172.9	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.6	176.1	168.3	0.4
4/20/2007 17:00	5.7	178.3	172.1	0.5	Run 3	0.05	20.65	20.90	-0.95	126.65	124.80	-0.60	128.05	124.80	0.10	23.35	23.40	5.8	175.3	167.6	0.4
	5.6	158.7	153.0	0.5	**Run 3 Average**													5.3	159.3	152.1	0.4
4/20/2007 17:01	5.9	179.8	173.4	0.7																	
4/20/2007 17:02	12.7	78.4	78.7	0.5																	
4/20/2007 17:03	8.2	70.5	75.0	0.3																	
4/20/2007 17:04	0.1	129.5	131.1	0.2																	
4/20/2007 17:05	0.0	130.0	130.8	0.2																	
4/20/2007 17:06	0.0	129.7	131.1	0.1	124.8 NO, NOx/ Zero O2, CO																
	0.0	129.7	131.1	0.1	**124.8 NO, NOx/ Zero O2, CO Average**																
4/20/2007 17:07	0.0	25.2	31.6	10.5																	
4/20/2007 17:08	0.1	-0.4	-0.2	23.3																	
4/20/2007 17:09	0.1	-0.9	-0.7	23.5	23.4 CO/ Zero NO, NOx																
	0.1	-0.9	-0.7	23.5	**23.4 CO/ Zero NO, NOx Average**																
4/20/2007 17:10	0.1	-0.2	-0.5	23.4																	
4/20/2007 17:11	11.8	-0.8	0.2	15.2																	
4/20/2007 17:12	20.8	-0.2	0.2	0.2	20.9 O2																
	20.8	-0.2	0.2	0.2	**20.9 O2 Average**																

EXAMPLE CALCULATIONS FOR GASEOUS EMISSIONS

Calculations for Run 1 of the Carbon Monoxide Test

Correction of CO Concentrations for Instrument Drift

EPA Method 7E provides an equation for correcting the measured gaseous concentrations over a valid test run for instrument drift during the test run.

The EPA equation presented in Section 12 of EPA Method 7E is:

$$Cgas = (Cavg - Co)(Cma / (Cm - Co))$$

Where:

Cgas = Effluent gas concentration, dry basis, ppm.

Cavg = Average gas concentration indicated by the gas analyzer, ppm.

Co = Average of initial and final system calibration bias check responses for the zero gas, ppm.

Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm.

Cma = Actual concentration of the upscale calibration gas, ppm.

Using the average for Run 1 of the CO test:

Cavg = 2.7

From the Pre test / post test calibration

	Pre test +	Post Test	/ 2	
Co =	0.30	0.30	2	0.30 ppm
Cm =	23.00	23.10	2	23.05 ppm

Cma = 23.40 ppm

Cgas = (Cavg - Co)(Cma / (Cm - Co))

	Cavg	Co	Cma	Cm	Co
Cgas =	2.70	0.30	23.40	23.05	0.30

Cgas = 2.5

Calculation of the Mass of CO Emissions During the Test Run

The stack gas flow rate for each sampling run was measured using EPA Methods 1 through 4. Flow data in Appendix A presents the measured stack gas parameters and calculation of the stack gas flow rate for Run 1 of the CO test.

The average mass emission rate of a pollutant over a sampling run was calculated by using the following equation:

$$M = \frac{C_{gas(avg)} \times MW \times Q \times 60}{385.1 \times 10^6}$$

Where:

M	=	Average mass emission rate of the pollutant over the sampling run in lbs/hr.
Cgas(avg)	=	Average concentration of the stack gas during the sampling run in ppm. This concentration is expressed on a dry stack basis.
MW	=	Molecular weight of the pollutant in lbs/lb-mole.
Q	=	Stack gas flow rate during the sampling run in dry standard cubic feet per minute (dscfm).
385.1	=	Number of cubic feet occupied by one pound of gas at standard conditions (68° F and 29.92 in. Hg), assuming ideal gas behavior.
10^6	=	Conversion constant for parts per million to cubic feet of pollutant (1 ppm = 10^{-6} ft^3 pollutant / ft^3 stack gas)
60	=	Conversion constant for minutes to hours (1 hr = 60 Minutes)

Example Calculation:

For the CO test:

$C_{gas(avg)}$ = 2.5 ppm

MW = 28 = 12 + 16

Q = 23739 SCFMD

$$\frac{C_{gas(avg)} \times MW \times Q \times 60}{385.1 \times 10^6}$$

M	=	$C_{gas(avg)}$	MW	Q		
		2.5	28	23739	60	
			3.85E+08			

M = 0.3 lbs/hr

Calculation of tons/year and Lbs/mmBtu of CO during the test run

The tons/year of CO was calculated with the following equation:

$$T = \frac{M \times H}{2000}$$

Where:

T = Tons per year of CO emissions

M = Mass emissions of CO (Lbs/hr)

H = Operating hours per year

Example Calculation:

M = 0.3 lbs/hr
H = 8500 hours/year

$$T = \frac{M \times H}{2000} = \frac{0.3 \times 8500}{2000}$$

T = 1.1 tons/year

The lb/mmBtu of CO was calculated with the following equation:

$$E = C_d \times F_d \times \frac{20.9}{20.9 - \%O_{2d}}$$

$$C_d = C_{gas(avg)} \times \frac{28}{385100000}$$

F_d = Fuel Factor = 8710

$\%O_{2d}$ Emissions Oxygen Concentration 5.1 %

Example Calculation:

C_d	F_d		
1.825E-07	8710	20.9	20.9 - 5.1 $\%O_{2d}$

E = 0.002 lb/mmBtu

Correction of NOx Concentrations for Instrument Drift

EPA Method 7E provides an equation for correcting the measured gaseous concentrations over a valid test run for instrument drift during the test run.

The EPA equation presented in Section 12 of EPA Method 7E is:

$$Cgas = (Cavg - Co)(Cma / (Cm - Co))$$

Where:

Cgas = Effluent gas concentration, dry basis, ppm.

Cavg = Average gas concentration indicated by the gas analyzer, ppm.

Co = Average of initial and final system calibration bias check responses for the zero gas, ppm.

Cm = Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm.

Cma = Actual concentration of the upscale calibration gas, ppm.

Using the average for Run 1 of the NOx test:

Cavg = 111.50

From the Pre test / post test calibration

	Pre test +	Post Test	/ 2	
Co =	-1.80	-0.30	2	-1.05 ppm
Cm =	125.70	127.20	2	126.45 ppm
Cma =	124.80	ppm		

Cgas = (Cavg - Co)(Cma / (Cm - Co))

	Cavg	Co	Cma	Cm	Co
Cgas =	111.50	-1.05	124.80	126.45	-1.05

Cgas = 110.2

Calculation of NO2 Concentration During the Test Run

The concentration of NOx as measured can be expressed in terms of its components:

$$C_{NOx} = C_{NO} + C_{NO2}$$

Where:

C_{NOx} = Effluent gas concentration, dry basis, of NOx (ppm drift corrected)

C_{NO} = Effluent gas concentration, dry basis, of NO (ppm,drift corrected)

C_{NO2} = Effluent gas concentration, dry basis, of NO2 (ppm,drift corrected)

Example Calculation:

For Run 1 of the NOx Test:

$C_{NOx} = C_{NO} + C_{NO2}$ or $C_{NO2} = C_{NOx} - C_{NO}$

$C_{NO2} = C_{NOx} - C_{NO}$

$110 - 102$

$C_{NO2} = 8$

Calculation of the Mass of NOx Emissions During the Test Run

The stack gas flow rate for each sampling run was measured using EPA Methods 1 through 4. Flow data in Appendix A presents the measured stack gas parameters and calculation of the stack gas flow rate for Run 1 of the NOx test.

The average mass emission rate of a pollutant over a sampling run was calculated by using the following equation:

$$M = \frac{(C_{NO2} \text{ or } C_{NO}) \times MW \times Q \times 60}{385.1 \times 10^6}$$

Where:

M	=	Average mass emission rate of the pollutant over the sampling run in lbs/hr.
C_{NO2} or C_{NO}	=	Average concentration of the stack gas during the sampling run in ppm. This concentration is expressed on a dry stack basis.
MW	=	Molecular weight of the pollutant in lbs/lb-mole.
Q	=	Stack gas flow rate during the sampling run in dry standard cubic feet per minute (dscfm).
385.1	=	Number of cubic feet occupied by one pound of gas at standard conditions (68° F and 29.92 in. Hg), assuming ideal gas behavior.
10^6	=	Conversion constant for parts per million to cubic feet of pollutant (1 ppm = 10^{-6} ft^3 pollutant / ft^3 stack gas)
60	=	Conversion constant for minutes to hours (1 hr = 60 Minutes)

Example Calculation:

For the NO2 test:

C_{NO2}	=	8.0 ppm				
MW	=	46	=	14 + 16 + 16		
C_{NO}	=	102 ppm				
MW	=	30	=	14 + 16		
Q	=	23739 SCFMD				

$$\frac{C_{NO2} \text{ or } C_{NO} \times MW \times Q \times 60}{385.1 \times 10^6}$$

M	=	C_{NO2}		MW		Q		
		8.0		46		23739		60
				3.85E+08				

M_{NO2}	=	1.4	lbs/hr
M_{NO}	=	11.3	lbs/hr
M_{NOx}	=	12.7	lbs/hr

Calculation of tons/year and Lbs/mmBtu of NOx (as measured) during the test run

The tons/year of NOx was calculated with the following equation:

$$T = \frac{M \times H}{2000}$$

Where:

T = Tons per year of NOx emissions

M = Mass emissions of NOx (Lbs/hr)

H = Operating hours per year

Example Calculation:

M = 12.7 lbs/hr
H = 8500 hours/year

$$T = \frac{M \times H}{2000} = \frac{12.7 \times 8500}{2000}$$

T = 53.9 tons/year

The lb/mmBtu of NOx (as measured) was calculated with the following equation:

$$E_{NO} = C_{dNO} \times F_d \times \frac{20.9}{20.9 - \%O_{2d}} + E_{NO2} = C_{dNO2} \times F_d \times \frac{20.9}{20.9 - \%O_{2d}} = E_{NOx}$$

$$C_{dNO} = C_{gas(avg)} \times \frac{30}{385100000}$$

$$C_{dNO2} = C_{gas(avg)} \times \frac{46}{385100000}$$

F_d = Fuel Factor = 8710

$\%O_{2d}$ Emissions Oxygen Concentration 5.1 %

Example Calculation:

C_{dNO}	C_{dNO2}	F_d	
7.946E-06	9.556E-07	8710	$\frac{20.9}{20.9 - 5.1\ \%O_{2d}}$

E_{NO} = 0.09 lb/mmBtu
E_{NO2} = 0.01 lb/mmBtu
E_{NOx} = 0.10 lb/mmBtu

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Fla)
Date	October 10, 2006
Delivery Receipt	DR-18015
Gas Standard	10.00-12.00% Oxygen/Nitrogen - EPA PROTOCOL
Final Analysis Date	September 22, 2006
Expiration Date	September 22, 2009

Component	Oxygen
Balance Gas	Nitrogen

Analytical Data:
EPA Protocol, Section No. 2.2, Procedure G-1

DO NOT USE BELOW 150 psig

Reported Concentrations

Oxygen: 11.10% +/- 0.11%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-166423	CC-184208
Concentration:	10.1% Oxygen/Nitrogen	21.04% Oxygen/Nitrogen
Expiration Date:	June 03, 2007	March 10, 2009

Certification Instrumentation

Component:	Oxygen
Make/Model:	Servomex 244a
Serial Number:	1847
Principal of Measurement:	Paramagnetic
Last Calibration:	September 01, 2006

Cylinder Data

Cylinder Serial Number:	CC-112032	Cylinder Outlet:	CGA 590
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F
Expiration Date:	September 22, 2006		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:
Date: October 10, 2006

Unmatched Excellence

2564 Pemberton Drive - Apopka, Florida 32703 - Phone (407)-292-2990
Fax (407)-292-3313

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	June 13, 2006
Delivery Receipt	DR-17351
Gas Standard	120.0 - 140.0 ppm Nitric Oxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	June 13, 2006
Expiration Date	June 13, 2008

DO NOT USE BELOW 150 psig

Cylinder Data

Cylinder Serial Number:	CC-165594	Cylinder Outlet:	CGA 660
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F
Expiration Date:	June 13, 2008		

Analytical Data

EPA Protocol, Section No. 2.2, Procedure G-1

Replicate Concentrations (NO)
Nitric Oxide: 124.8 ppm +/- 1.24 ppm
Nitrogen: Balance
Total Oxides of Nitrogen: 124.8 ppm
**** NOx for Reference Use Only ****

Reference Standard(s):

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-76327	CC-129028
Concentration:	99.25 ppm NO/Nitrogen	169.8 ppm NO/Nitrogen
Expiration Date:	November 04, 2009	Octobert 05, 2008

Certification Instrumentation

Component:	Nitric Oxide
Make/Model:	Nicolet - NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	June 01, 2006

Analytical uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:

Date: June 13, 2006

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Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	June 13, 2006
Delivery Receipt	DR-17351
Gas Standard	200.0 - 300.0 ppm Nitric Oxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	June 13, 2006
Expiration Date	June 13, 2008

DO NOT USE BELOW 150 psig

Cylinder Data

Cylinder Serial Number:	CC-56688	Cylinder Outlet:	CGA 660
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F
Expiration Date:	June 13, 2008		

Analytical Data

EPA Protocol, Section No. 2.2, Procedure G-1

Replicate Concentrations (NO)
Nitric Oxide: 245.3 ppm +/- 2.4 ppm
Nitrogen: Balance
Total Oxides of Nitrogen: 245.3 ppm
**** NOx for Reference Use Only ****

Reference Standard(s):

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-129028	CC-184281
Concentration:	169.8 ppm NO/Nitrogen	305.17 ppm NO/Nitrogen
Expiration Date:	October 05, 2008	August 25, 2008

Certification Instrumentation

Component:	Nitric Oxide
Make/Model:	Nicolet - NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	June 01, 2006

Analytical uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Jeremy Brown

Date: June 13, 2006

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Certificate of Analysis
- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	March 19, 2007
Delivery Receipt	DR-18911
Gas Standard	20.0 - 30.0 ppm Carbon Monoxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	March 19, 2007
Expiration Date	March 19, 2010

Component	Carbon Monoxide
Balance Gas	Nitrogen

Analytical Data:
EPA Protocol, Section No. 2.2, Procedure G-1

DO NOT USE BELOW 150 psig

Replicate Concentrations

Carbon Monoxide: 23.4 ppm +/- 0.23 ppm

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-233827	CC-158976
Concentration:	18.9 ppm CO/Nitrogen	25.1 ppm CO/Nitrogen
Expiration Date	May 04, 2010	August 04, 2010

Certification Instrumentation

Component:	Carbon Monoxide
Make/Model:	Nicolet - NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	March 01, 2007

Cylinder Data

Cylinder Serial Number:	CC-231404	Cylinder Outlet:	CGA 350
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:
Date: March 19, 2007

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~ www.liquidtechcorp.com ~

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Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	Ambient Air Services (Starke, Florida)
Date	December 02, 2005
Delivery Receipt	DR-16262
Gas Standard	45.0-55.0 ppm Carbon Monoxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	December 02, 2005
Expiration Date	December 02, 2008

Component	Carbon Monoxide
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Replicate Concentrations

Carbon Monoxide: 48.1 ppm +/- 0.48 ppm

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-125604	CC-88798
Concentration:	25.9 ppm CO/N2	49.9 ppm CO/N2
Expiration Date:	July 24, 2006	October 27, 2008

Certification Instrumentation

Component:	Carbon Monoxide
Make/Model:	Nicolet-NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	November 01, 2005

Cylinder Data

Cylinder Serial Number:	CC-185119	Cylinder Outlet:	CGA 350
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F
Expiration Date:	December 02, 2008		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:

Date: December 02, 2005

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2564 Pemberton Drive - Apopka, Florida 32703 - Phone (407)-292-2990
Fax (407)-292-3313

APPENDIX C

Visible Emissions

-Field Data
-Observer Certificate

A A S I

Ambient Air Services, Inc.
106 Ambient Air Way
Starke, Florida 32091
OFFICE 904 - 964-8440 FAX 904 -964-6675

during stack test

PAGE 1 OF 1

START TIME 1558 END TIME 1658

OBSERVATION DATE 04/20/07 TIME ZONE EASTERN

FACILITY Ameristeel

SOURCE Reheat Furnace

ADDRESS Yellow Water Rd.

CITY Baldwin STATE FL

PHONE

PROCESS Reheat Furnace OPERATING MODE: see chart

CONTROL EQUIP. - OPERATING MODE: -

DESCRIBE EMISSION POINT looking NE - the tallest most northern stack

HEIGHT OF EMISSION POINT START ~150' END 150'

HEIGHT RELATIVE TO OBSERVER START ~145' END 145'

DISTANCE TO EMISSIONS POINT START ~1/4 mile END same

DIRECTION TO EM. PT. START 100° END 100°

VERTICAL ANGLE TO OBS. PT. START 8° END 8°

DESCRIBE EMISSIONS START exhaust END same

EMISSION COLOR START - END -

WATER DROPLET PLUME YES (NO) ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND START sky END sky

BACKGROUND COLOR START gray END gray

SKY CONDITION START overcast END same

WIND SPEED START 6-10 END 6-10

WIND DIRECTION START NNE END NNE

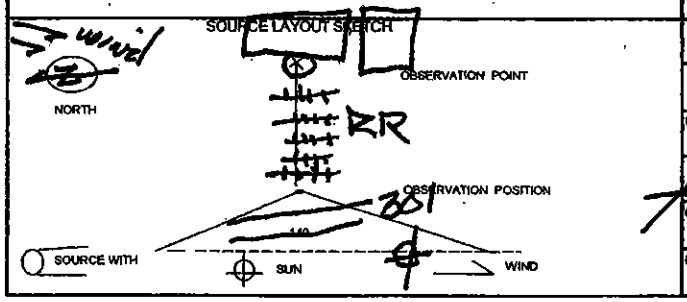
AMBIENT TEMPERATURE START 72° END 72°

WET BULB TEMP 64° %RH 64

COMMENTS.....

SEC/MIN	0	15	30	45	SEC/MIN	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST SIX MINUTE PERIOD: 0

OBSERVER'S NAME George H Hawkins

SIGNATURE George H Hawkins DATE 04/20/07

ORGANIZATION Ambient Air Services, Inc.

CERTIFIED BY ETA 11/31/06

VISIBLE EMISSIONS EVALUATOR

This is to certify that

George H. Hawkins

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

346910	Jacksonville, Florida	November 29, 2006
Certificate Number	Location	Date of Issue

President

Director of Training

APPENDIX D

Production Data/Fuel Consumption/Correspondence

Billter Reheat Furnace Stack Test Data
4/20/2007

Run #1

Start Time	9:16	**Gas Reading**	335005	**Billet Count**	91
Finish Time	10:20	**Gas Reading**	335123	**Billet Weight**	1.2805
Minutes	64	**MMBTU**	118	**Total Weight**	116.5255
Hr	1.066667	**MMBTU/HR**	110.625	**Tons / hr**	109.2427

Run #2

Start Time	11:56	**Gas Reading**	335133	**Billet Count**	90
Finish Time	12:59	**Gas Reading**	335247	**Billet Weight**	1.2805
Minutes	63	**MMBTU**	114	**Total Weight**	115.245
Hr	1.05	**MMBTU/HR**	108.5714	**Tons / hr**	109.7571

Run #3

Start Time	15:58	**Gas Reading**	335259	**Billet Count**	93
Finish Time	17:01	**Gas Reading**	335394	**Billet Weight**	1.2805
Minutes	63	**MMBTU**	135	**Total Weight**	119.0865
Hr	1.05	**MMBTU/HR**	128.5714	**Tons / hr**	113.4157