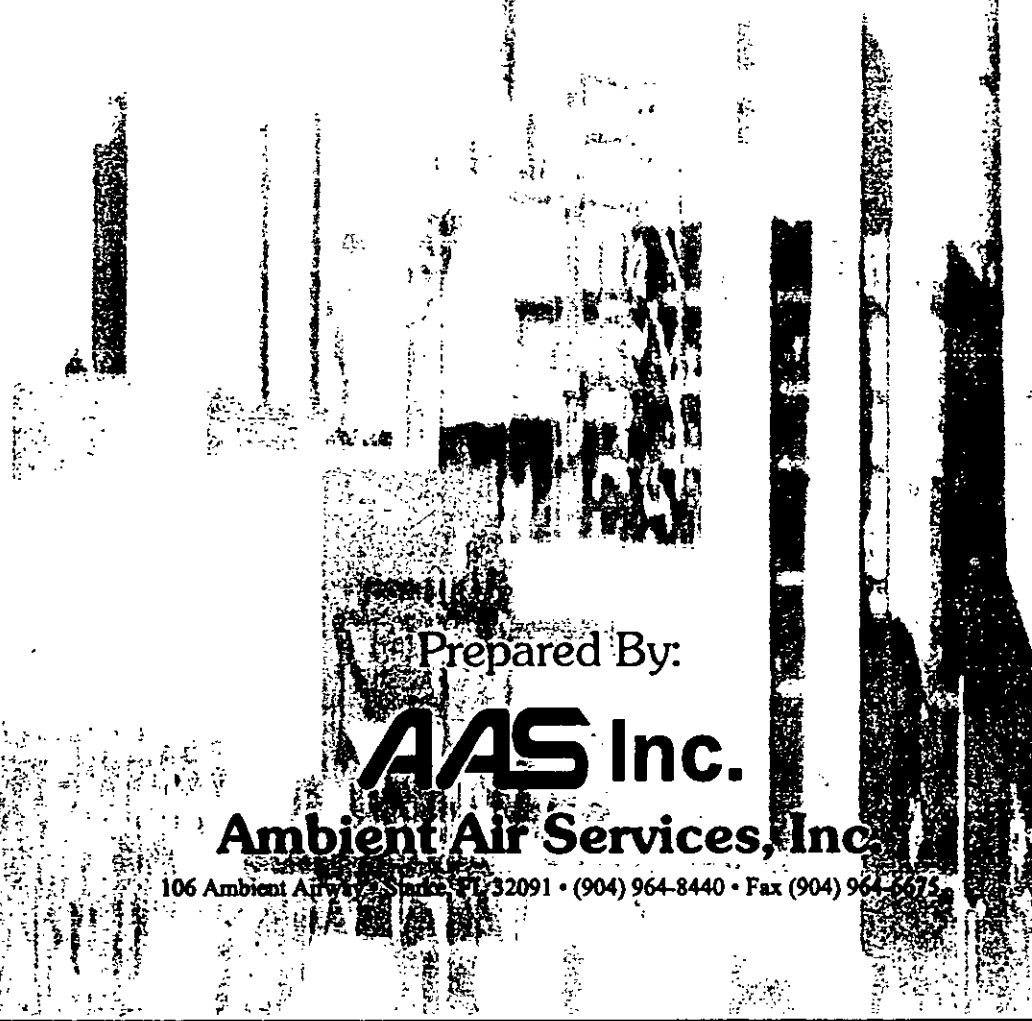
SOURCE TEST REPORT

Georgia-Pacific Corporation
Palatka, Florida

Bleach Plant

October 29-31, 2002



Prepared By:

AAS Inc.
Ambient Air Services, Inc.
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Ambient Air Services, Inc. of Starke, Florida, has completed the testing as described in this report for Georgia-Pacific Corporation's Palatka, Florida Bleach Plant. To the best of our knowledge and abilities, we certify that all information, facts, and test data are true and correct. Information supplied to AASI for use in this report from Georgia-Pacific Corporation is perceived to be accurate and is used as such where necessary. This report was prepared and certified by:

Report Number: 504-02-09

Prepared By:

Randy L Weston
19 November 2002

Reviewed By:

David Sholtes
19 November 2002

EXECUTIVE SUMMARY:

On 29 and 31 October, 2002 Ambient Air Services, Inc. performed the FDEP required permit stack test at Georgia-Pacific Corporation's Palatka, Florida Bleach Plant. During this test all required stack testing parameters were met. Table I summarizes the results of the test.

TABLE I

Georgia-Pacific Corporation Palatka, Florida 29 & 31 October, 2002					
PARAMETER	**TEST RESULTS**				
29 October					
	Permit Limits	R 1	R 2	R 3	Avg
Carbon Monoxide (CO)	N/A	979.0 ppm	788.7 ppm	N/A	883.9 ppm
	46 lb/hr	58.0 lb/hr	44.5 lb/hr	N/A	51.2 lb/hr
Chlorinated HAP (Cl2)	10 ppm	0.233 ppm	0.160 ppm	0.164 ppm	0.186 ppm
	N/A	0.016 lb/hr	0.011 lb/hr	0.012 lb/hr	0.013 lb/hr
31 October					
	Permit Limits	R 1	R 2	R 3	Avg
Carbon Monoxide (CO)	N/A	1155.1 ppm	1212.2 ppm	583.1 ppm	983.5 ppm
	46 lb/hr	72.4 lb/hr	74.6 lb.hr	36.5 lb/hr	61.1 lb/hr
Chlorinated HAP (Cl2)	10 ppm	0.073 ppm	0.020 ppm	0.032 ppm	0.042 ppm
	N/A	0.005 lb/hr	0.001 lb/hr	0.002 lb/hr	0.003 lb/hr

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1.0 Introduction

Georgia-Pacific Corporation contracted with Ambient Air Services Inc. of Starke, Florida to perform the Chlorine and Carbon Monoxide compliance testing on the Bleach Plant located in Palatka, Florida.

This testing was conducted in order to satisfy testing requirements of Permit Number 1070005-010-AC for emission sources associated with the Palatka, Florida Bleach Plant. For the testing perspective the requirements of the permit associated with this facility was tested under one mobilization effort.

A summary of the testing performed is summarized in Table 2.

The testing was conducted on October 29 & 31, 2002. Florida DEP was notified of the test dates.

Table 2

Georgia-Pacific Corporation Palatka, Florida 29 & 31 October, 2002 Summary of Permit Requirements Performance Emission Testing					
Source Description	**Approx. Stack Flow**	**Tests**	**EPA Method**	**No. of Runs**	**Min. hrs**
Bleach Plant	13,135 scfmd	Cl	40CFR60 AppA, Meth 26a	6	1 hour
		CO	40CFR60 AppA, Meth 10	5	1 hour

2.0 Summary and Discussion of Results

2.1 Summary of Results

The following is the summary table for the test conducted with all results in Parts per Million and lbs/hr:

Table 3

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

Carbon Monoxide Emission Summary

RUN NUMBER	START TIME	END TIME	Total Minutes Tested	Flow, SCFM-D	Carbon Monoxide, parts per million	Carbon Monoxide, pounds per hour
1	12:25	13:24	60	12676	979.0	58.0
2	14:33	15:32	60	12068	788.7	44.5
Averages			**120**	**12372**	**883.9**	**51.2**

Table 4

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 31, 2002

Carbon Monoxide Emission Summary

RUN NUMBER	START TIME	END TIME	Total Minutes Tested	Flow, SCFM-D	Carbon Monoxide, parts per million	Carbon Monoxide, pounds per hour
1	13:30	14:29	60	13401	1155.1	72.4
2	15:47	16:46	60	13171	1212.2	74.6
3	17:10	18:09	60	13375	583.1	36.5
Averages			**180**	**13316**	**983.5**	**61.1**

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Chlorine Emissions Summary

USEPA Method 26A (40 CFR Part 60 Appendix A)

Georgia Pacific

Palatka, Fl.

October 29, 2002

AASI USEPA Method 26A 12 Point Template - Rev 0/11-7-2002

Run			Chlorine Emissions			Volumetric Flow Rates		Stack		Sample Volume	Percent
Date	Number	Time (EDT)	GR/SCFD	PPM	LBS/HR	ACFM	SCFMD	Temp °F	Moisture %	SCFD	Isokinetic
10/29/02	1	12:18 13:23	1.50E-04	0.233	0.016	16316	12775	144.3	10.7	34.421	104.7
10/29/02	2	14:33 15:38	1.03E-04	0.160	0.011	15336	12139	145.0	9.6	32.247	103.3
10/29/02	3	17:00 18:02	1.06E-04	0.164	0.012	16770	13454	142.2	8.8	36.523	105.5
Average			**1.20E-04**	**0.186**	**0.013**	**16141**	**12789**	**143.8**	**9.7**	**34.397**	**104.5**

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Chlorine Emissions Summary

USEPA Method 26A (40 CFR Part 60 Appendix A)

Georgia Pacific

Palatka, Fl.

October 31, 2002

AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Run			Chlorine Emissions			Volumetric Flow Rates		Stack		Sample Volume	Percent
Date	Number	Time (EDT)	GR/SCFD	PPM	LBS/HR	ACFM	SCFMD	Temp °F	Moisture %	SCFD	Isokinetic
10/31/02	1	13:32 14:43	4.73E-05	0.073	0.005	16387	13401	142.0	7.4	35.830	103.9
10/31/02	2	15:50 16:56	1.29E-05	0.020	0.001	16475	13134	143.1	9.0	35.928	106.3
10/31/02	3	17:10 18:16	2.06E-05	0.032	0.002	16123	12870	140.3	9.3	35.118	106.1
Average			**2.69E-05**	**0.042**	**0.003**	**16328**	**13135**	**141.8**	**8.6**	**35.625**	**105.4**

3.0 Process Description

3.1 Source Operating Parameters

The following conditions were met and the required information was collected during the compliance test.

1. The Bleach Plant had been stabilized for one hour prior to testing.

2. The production rate, species, Kappa, and ClO2 application rates were recorded during the test.

3.2 Process Description

The absorbance of visible light by wood pulp fibers is caused mainly by lignin, one of the main constituents of wood. Residual lignin remaining after chemical pulping processes is highly colored. It also darkens with age. Most of the lignin is removed during the pulping process. Bleaching is a process whereby chemicals are applied to the pulp to increase its brightness by continuing the delignification process.

Bleaching increases the usefulness of the paper by enhancing its capacity for accepting printed or written images. It is also a means of purifying pulp, increasing its stability, and enhancing some of its properties.

The chemicals used in the Georgia-Pacific Palatka Mill include oxidants (chlorine dioxide, oxygen and peroxide) and an alkali (sodium hydroxide). The bleaching sequence is first a chlorine dioxide stage (D_0), followed by a caustic extraction stage enhanced with oxygen and peroxide (E_{op}), and finally another chlorine dioxide stage (D_1). These chemicals are mixed with pulp suspensions at prescribed pH, temperature, and concentration conditions for a specified time period. Bleaching chemicals are applied sequentially with intermediate washing between stages, because it is not possible to achieve sufficient delignification by the action of any one chemical in a single stage. Reaction times for bleaching chemicals range from a few minutes to several hours, requiring large towers to provide adequate retention time.

4.0 Sampling Point Location

Sample Site Diagram

Facility: Georgia Pacific

Location: Palatka, Florida

Source. Bleach Plant

Drawing Date: 10/29/02

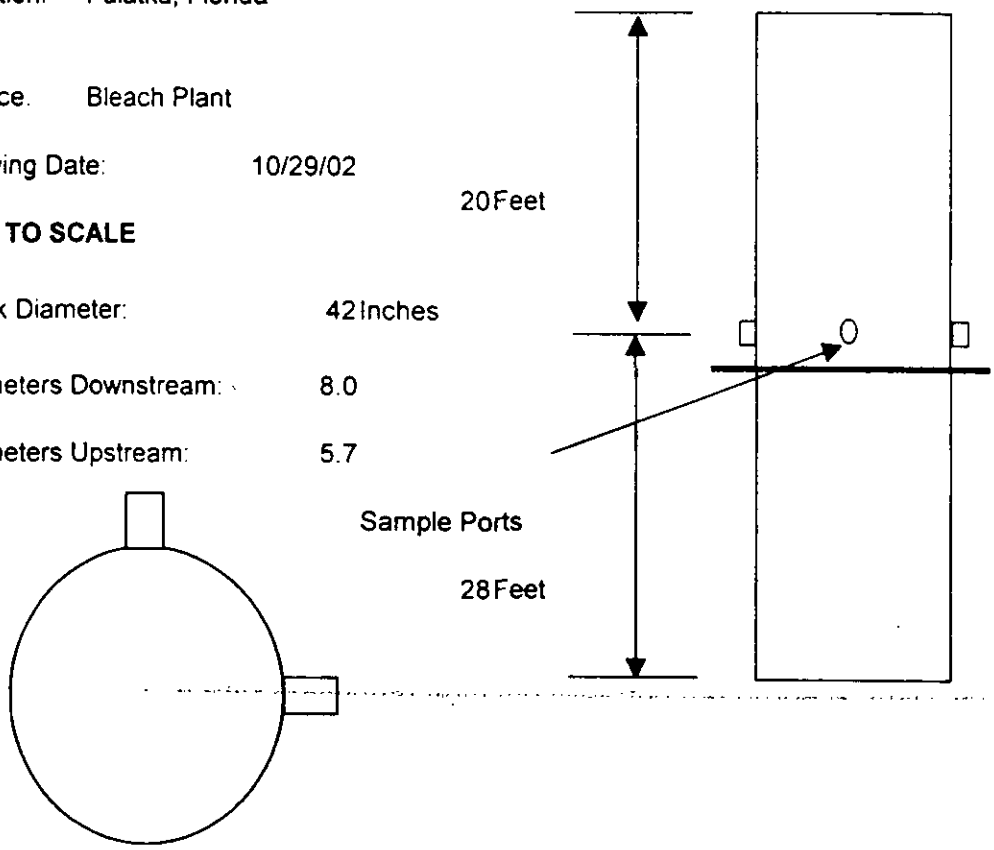
NOT TO SCALE

Stack Diameter: 42 Inches

Diameters Downstream: 8.0

Diameters Upstream: 5.7

Chlorine
Method 26a



Sampling Points	
1	1.8
2	6.1
3	12.4
4	29.6
5	35.9
6	40.2

Note: Two equal distances, ninety degree ports. Ports are 4 inches long. Two ports with 6 points per port, 12 total points.

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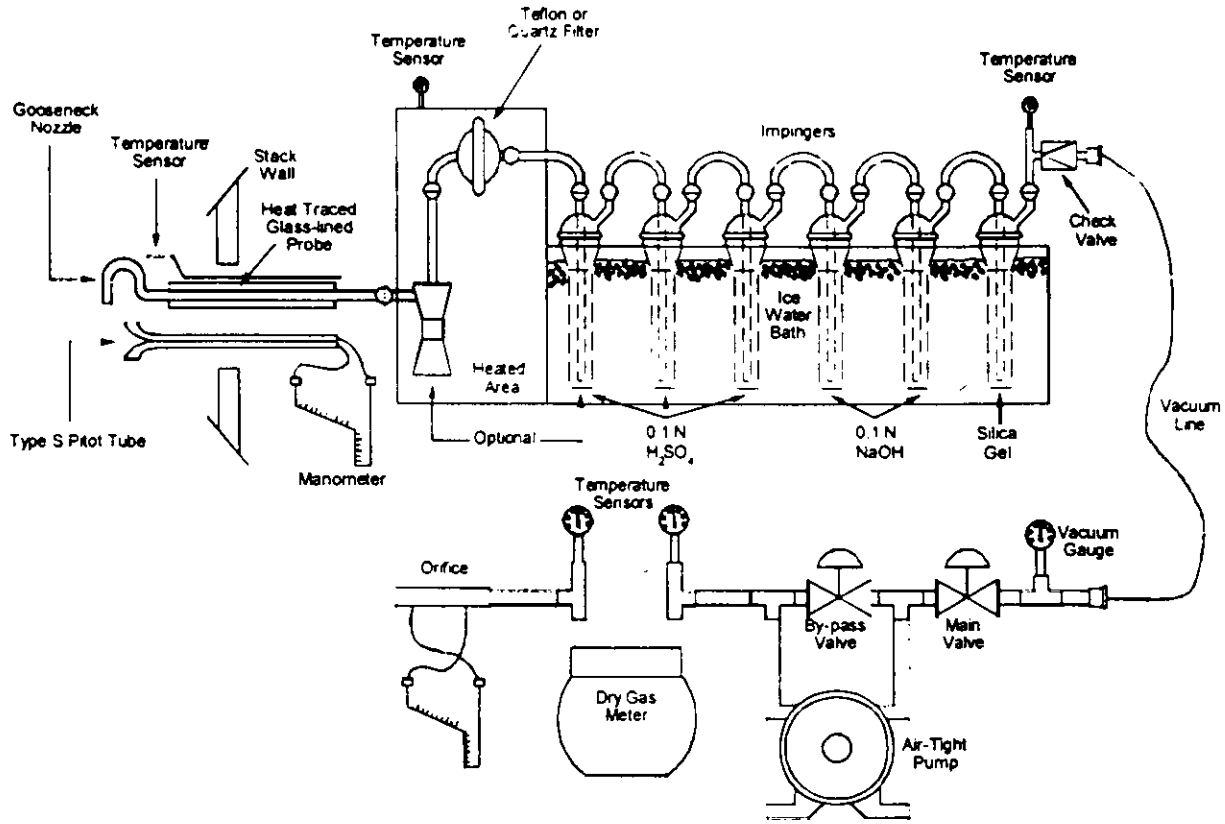
Figure 2-1

5.0 Testing Methodology and Procedures

5.1 Chlorine Testing (Method 26a)

USEPA method 26a was conducted on the Bleach Plant. The following is a synopsis of the method and a diagram illustrating the equipment in use.

Gaseous and particulate pollutants are withdrawn isokinetically from the source and collected in an optional cyclone, on a filter, and in absorbing solutions. The cyclone collects any liquid droplets and is not necessary if the source emissions do not contain them; however, it is preferable to include the cyclone in the sampling train to protect the filter from any liquid present. The filter collects particulate matter including halide salts but is not routinely recovered or analyzed. Acidic and alkaline absorbing solutions collect the gaseous hydrogen halides and halogens, respectively. Following sampling of emissions containing liquid droplets, any halides/halogens dissolved in the liquid in the cyclone and on the filter are vaporized to gas and collected in the impingers by pulling conditioned ambient air through the sampling train. The hydrogen halides are solubilized in the acidic solution and form chloride (Cl^-), bromide (Br^-), and fluoride (F^-) ions. The halogens have a very low solubility in the acidic solution and pass through to the alkaline solution where they are hydrolyzed to form a proton (H^+), the halide ion, and the hypohalous acid (HClO or HBrO). Sodium thiosulfate is added to the alkaline solution to assure reaction with the hypohalous acid to form a second halide ion such that 2 halide ions are formed for each molecule of halogen gas. The halide ions in the separate solutions are measured by ion chromatography (IC). If desired, the particulate matter recovered from the filter and the probe is analyzed following the procedures in Method 5.



5.2 Carbon Monoxide Testing (Method 10)

An integrated or continuous gas sample is extracted from a sampling point and analyzed for carbon monoxide (CO) content using a Luft-type nondispersive infrared analyzer (NDIR) or equivalent.

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APPENDIX – A

Complete Emission Data
- Emissions Run Summaries
- Flow Calculation Data

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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

CI Summary Run 1

Facility	Georgia Pacific	**Impinger Condensate**	81.0
Location	Palatka, Fl.	**Silica Gel Condensate**	7.0
Stack	Bleach Plant	**Volume Metered**	37.030
Run Date	10/29/02	**Meter Temp (Deg R)**	572.0
Run Number	1	**Carbon Dioxide, %**	0.0
Start Time	12:18	**Oxygen, %**	20.9
Finish Time	13:23	**Carbon Monoxide, %**	0.0
Weather	Clear, Warm	**Nitrogen, %**	79.1
Total Time (minutes)	60	**Condensate Volume**	88.0
Barometric Pressure	30.03	**Delta H (inches H2O)**	1.2900
Stack Diameter (inches)	42.00	**Stack Pressure**	30.026
Stack Area square feet	9.621	**Stack Temp (Rainkin Degrees)**	604.3
Nozzle Area square feet	0.0004125	**Laboratory Results (ug)**	438.9
Number of Points	12	**Blank Correction**	104.3
Avg of SQRT of V.H.	0.4616	**Total**	334.6
Meter Correction (Y)	1.000		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		4.142
Gas Volume Sampled, STPD		34.421
Total Volume, STP		38.563
Moisture in stack gas, volume fraction		0.107
Dry Stack Gas, volume fraction		0.893
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.68
Specific gravity of Stack Gas Relative to Air		0.955
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1695.9
Actual Stack Gas Flow Rate, ACFM		16316
Actual Stack Gas Flow Rate, ACFMD		14570
Stack Gas Flow Rate, SCFMD		12775
Stack Gas Flow Rate Wet, SCFMW		14306
Percent Isokinetic		105
Stack Emissions:	**Grains per DSCF**	0.00015
	Pounds per Hour	0.016

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CI Summary Run 2

Facility	Georgia Pacific	Impinger Condensate	66.0
Location	Palatka, Fl.	Silica Gel Condensate	6.9
Stack	Bleach Plant	Volume Metered	35.145
Run Date	10/29/02	Meter Temp (Deg R)	579.3
Run Number	2	Carbon Dioxide, %	0.0
Start Time	14:33	Oxygen, %	20.9
Finish Time	15:38	Carbon Monoxide, %	0.0
Weather	Partial Clouds	Nitrogen, %	79.1
Total Time (minutes)	60	Condensate Volume	72.9
Barometric Pressure	30.03	Delta H (inches H2O)	1.1530
Stack Diameter (inches)	42.00	Stack Pressure	30.018
Stack Area square feet	9.621	Stack Temp (Rainkin Degrees)	605.0
Nozzle Area square feet	0.0004125	Laboratory Results (ug)	320.0
Number of Points	12	Blank Correction	104.3
Avg of SQRT of V.H.	0.4345	Total	215.7
Meter Correction (Y)	1.000		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.431
Gas Volume Sampled, STPD		32.247
Total Volume, STP		35.678
Moisture in stack gas, volume fraction		0.096
Dry Stack Gas, volume fraction		0.904
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.8
Specific gravity of Stack Gas Relative to Air		0.959
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1594.0
Actual Stack Gas Flow Rate, ACFM		15336
Actual Stack Gas Flow Rate, ACFMD		13864
Stack Gas Flow Rate, SCFMD		12139
Stack Gas Flow Rate Wet, SCFMW		13428
Percent Isokinetic		103
Stack Emissions:	Grains per DSCF	0.00010
	Pounds per Hour	0.011

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CI Summary Run 3

Facility	Georgia Pacific	**Impinger Condensate**	68.0
Location	Palatka, Fl.	**Silica Gel Condensate**	7.1
Stack	Bleach Plant	**Volume Metered**	38.870
Run Date	10/29/02	**Meter Temp (Deg R)**	566.0
Run Number	3	**Carbon Dioxide, %**	0.0
Start Time	17:00	**Oxygen, %**	20.9
Finish Time	18:02	**Carbon Monoxide, %**	0.0
Weather	Partial Clouds	**Nitrogen, %**	79.1
Total Time (minutes)	60	**Condensate Volume**	75.1
Barometric Pressure	30.03	**Delta H (inches H2O)**	1.3840
Stack Diameter (inches)	42.00	**Stack Pressure**	30.019
Stack Area square feet	9.621	**Stack Temp (Rainkin Degrees)**	602.2
Nozzle Area square feet	0.0004125	**Laboratory Results (ug)**	354.6
Number of Points	12	**Blank Correction**	104.3
Avg of SQRT of V.H.	0.4770	**Total**	250.3
Meter Correction (Y)	1.000		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.535
Gas Volume Sampled, STPD		36.523
Total Volume, STP		40.058
Moisture in stack gas, volume fraction		0.088
Dry Stack Gas, volume fraction		0.912
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.89
Specific gravity of Stack Gas Relative to Air		0.962
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1743.1
Actual Stack Gas Flow Rate, ACFM		16770
Actual Stack Gas Flow Rate, ACFMD		15294
Stack Gas Flow Rate, SCFMD		13454
Stack Gas Flow Rate Wet, SCFMW		14752
Percent Isokinetic		106
Stack Emissions:	**Grains per DSCF**	0.00011
	Pounds per Hour	0.012

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

CI Summary Run 1

Facility	Georgia Pacific	**Impinger Condensate**	54.0
Location	Palatka, Fl.	**Silica Gel Condensate**	7.0
Stack	Bleach Plant	**Volume Metered**	37.945
Run Date	10/31/02	**Meter Temp (Deg R)**	564.1
Run Number	1	**Carbon Dioxide, %**	0.0
Start Time	13:32	**Oxygen, %**	20.9
Finish Time	14:43	**Carbon Monoxide, %**	0.0
Weather	Cloudy	**Nitrogen, %**	79.1
Total Time (minutes)	60	**Condensate Volume**	61.0
Barometric Pressure	30.14	**Delta H (inches H2O)**	1.3530
Stack Diameter (inches)	42.00	**Stack Pressure**	30.128
Stack Area square feet	9.621	**Stack Temp (Rainkin Degrees)**	602.0
Nozzle Area square feet	0.0004125	**Laboratory Results (ug)**	214.2
Number of Points	12	**Blank Correction**	104.3
Avg of SQRT of V.H.	0.4683	**Total**	109.9
Meter Correction (Y)	0.998		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		2.871
Gas Volume Sampled, STPD		35.830
Total Volume, STP		38.701
Moisture in stack gas, volume fraction		0.074
Dry Stack Gas, volume fraction		0.926
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		28.04
Specific gravity of Stack Gas Relative to Air		0.967
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1703.3
Actual Stack Gas Flow Rate, ACFM		16387
Actual Stack Gas Flow Rate, ACFMD		15174
Stack Gas Flow Rate, SCFMD		13401
Stack Gas Flow Rate Wet, SCFMW		14472
Percent Isokinetic		104
Stack Emissions:	**Grains per DSCF**	0.00005
	Pounds per Hour	0.005

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CI Summary Run 2

Facility	Georgia Pacific	**Impinger Condensate**	68.0
Location	Palatka, Fl.	**Silica Gel Condensate**	7.1
Stack	Bleach Plant	**Volume Metered**	38.025
Run Date	10/31/02	**Meter Temp (Deg R)**	560.2
Run Number	2	**Carbon Dioxide, %**	0.0
Start Time	15:50	**Oxygen, %**	20.9
Finish Time	16:56	**Carbon Monoxide, %**	0.0
Weather	Partial Clouds	**Nitrogen, %**	79.1
Total Time (minutes)	60	**Condensate Volume**	75.1
Barometric Pressure	29.95	**Delta H (inches H2O)**	1.3480
Stack Diameter (inches)	42.00	**Stack Pressure**	29.940
Stack Area square feet	9.621	**Stack Temp (Rainkin Degrees)**	603.1
Nozzle Area square feet	0.0004125	**Laboratory Results (ug)**	134.3
Number of Points	12	**Blank Correction**	104.3
Avg of SQRT of V.H.	0.4674	**Total**	30.0
Meter Correction (Y)	0.998		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.535
Gas Volume Sampled, STPD		35.928
Total Volume, STP		39.463
Moisture in stack gas, volume fraction		0.090
Dry Stack Gas, volume fraction		0.91
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.86
Specific gravity of Stack Gas Relative to Air		0.961
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1712.4
Actual Stack Gas Flow Rate, ACFM		16475
Actual Stack Gas Flow Rate, ACFMD		14992
Stack Gas Flow Rate, SCFMD		13134
Stack Gas Flow Rate Wet, SCFMW		14433
Percent Isokinetic		106
Stack Emissions:	**Grains per DSCF**	0.00001
	Pounds per Hour	0.001

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

CI Summary Run 3

Facility	Georgia Pacific	**Impinger Condensate**	70.0
Location	Palatka, Fl.	**Silica Gel Condensate**	6.9
Stack	Bleach Plant	**Volume Metered**	37.000
Run Date	10/31/02	**Meter Temp (Deg R)**	557.6
Run Number	3	**Carbon Dioxide, %**	0.0
Start Time	17:10	**Oxygen, %**	20.9
Finish Time	18:16	**Carbon Monoxide, %**	0.0
Weather	Partial Clouds	**Nitrogen, %**	79.1
Total Time (minutes)	60	**Condensate Volume**	76.9
Barometric Pressure	29.95	**Delta H (inches H2O)**	1.2970
Stack Diameter (inches)	42.00	**Stack Pressure**	29.938
Stack Area square feet	9.621	**Stack Temp (Rainkin Degrees)**	600.3
Nozzle Area square feet	0.0004125	**Laboratory Results (ug)**	151.1
Number of Points	12	**Blank Correction**	104.3
Avg of SQRT of V.H.	0.4582	**Total**	46.8
Meter Correction (Y)	0.998		
Nozzle Diameter	0.275		
Pitot Correction Factor	0.84		

Volume Water Vapor, SCF		3.620
Gas Volume Sampled, STPD		35.118
Total Volume, STP		38.738
Moisture in stack gas, volume fraction		0.093
Dry Stack Gas, volume fraction		0.907
Molecular Weight of Stack Gas (Dry Basis)		28.84
Molecular Weight of Stack Gas (Stack conditions)		27.83
Specific gravity of Stack Gas Relative to Air		0.960
Excess Air (%)		14864.9
Average Stack Velocity, FPM		1675.8
Actual Stack Gas Flow Rate, ACFM		16123
Actual Stack Gas Flow Rate, ACFMD		14624
Stack Gas Flow Rate, SCFMD		12870
Stack Gas Flow Rate Wet, SCFMW		14190
Percent Isokinetic		106
Stack Emissions:	**Grains per DSCF**	0.00002
	Pounds per Hour	0.002

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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 1
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/29/02
Run Number	1
Start Time	12:18
Finish Time	13:23
Weather	Clear, Warm
Total Time (minutes)	60.00
Number of Points	12
Barometric Pressure	30.03
Static Pressure (inches of water)	-0.05
Stack Diameter (inches)	42.000
Nozzle Diameter (inches)	0.275
Meter Y Factor	1.000
Pitot Factor	0.84
Final Meter Reading (cubic feet)	193.480
Initial Meter Reading (cubic feet)	156.450
Condensate (ml)	81
Silica Gel Weight (grams)	7.0
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	0.0
Nitrogen (percent)	79.1
Laboratory Results (ug)	438.9
Blank Correction	104.3
Isokinetic Rate Factor	6.00

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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Field Data Points - CI Run 1				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.26	1.56	142	106	106	0.51
	2	0.26	1.56	142	107	107	0.51
	3	0.23	1.38	145	107	107	0.48
	4	0.22	1.32	145	108	108	0.47
	5	0.18	1.08	143	110	110	0.42
	6	0.16	0.96	141	111	111	0.40
2	7	0.26	1.56	144	113	113	0.51
	8	0.27	1.62	145	114	114	0.52
	9	0.22	1.32	148	115	115	0.47
	10	0.18	1.08	148	117	117	0.42
	11	0.18	1.08	145	118	118	0.42
	12	0.16	0.96	143	118	118	0.40

Ambient Air Services, Inc.
Environmental Consultants

106 Ambient Air Way
Starke, FL. 32091
(904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 2
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/29/02
Run Number	2
Start Time	14:33
Finish Time	15:38
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	30.03
Static Pressure (inches of water)	-0.16
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	1.000
Pitot Factor	0.84
Final Meter Reading (cubic feet)	230.200
Initial Meter Reading (cubic feet)	195.055
Condensate (ml)	66
Silica Gel Weight (grams)	6.9
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	320.0
Blank Correction	104.3
Isokinetic Rate Factor	6.04

Ambient Air Services, Inc.
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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Field Data Points - CI Run 2				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.21	1.27	145	115	115	0.46
	2	0.2	1.21	145	117	117	0.45
	3	0.16	0.97	146	118	118	0.40
	4	0.16	0.97	147	118	118	0.40
	5	0.16	0.97	145	119	119	0.40
	6	0.12	0.72	139	120	120	0.35
2	7	0.25	1.51	146	120	120	0.50
	8	0.25	1.51	146	120	120	0.50
	9	0.22	1.33	147	121	121	0.47
	10	0.22	1.33	147	121	121	0.47
	11	0.18	1.09	144	121	121	0.42
	12	0.16	0.97	143	121	121	0.40

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AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 3
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/29/02
Run Number	3
Start Time	17:00
Finish Time	18:02
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	30.03
Static Pressure (inches of water)	-0.15
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	1.000
Pitot Factor	0.84
Final Meter Reading (cubic feet)	269.620
Initial Meter Reading (cubic feet)	230.750
Condensate (ml)	68
Silica Gel Weight (grams)	7.1
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	354.6
Blank Correction	104.3
Isokinetic Rate Factor	6.04

Ambient Air Services, Inc.
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(904) 964-8440

AASI USEPA Method 5 24 Point Template - Rev 0/11-7-2002

Field Data Points - CI Run 3				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.26	1.57	144	109	109	0.51
	2	0.28	1.69	142	102	102	0.53
	3	0.26	1.57	144	107	107	0.51
	4	0.25	1.51	143	107	107	0.50
	5	0.2	1.21	141	107	107	0.45
	6	0.18	1.09	140	107	107	0.42
2	7	0.26	1.57	141	106	106	0.51
	8	0.28	1.69	143	106	106	0.53
	9	0.22	1.33	144	106	106	0.47
	10	0.2	1.21	142	105	105	0.45
	11	0.18	1.09	142	105	105	0.42
	12	0.18	1.09	140	105	105	0.42

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 1
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/31/02
Run Number	1
Start Time	13:32
Finish Time	14:43
Weather	Cloudy
Total Time (minutes)	60.00
Number of Points	12
Barometric Pressure	30.14
Static Pressure (inches of water)	-0.17
Stack Diameter (inches)	42.000
Nozzle Diameter (inches)	0.275
Meter Y Factor	0.998
Pitot Factor	0.84
Final Meter Reading (cubic feet)	313.155
Initial Meter Reading (cubic feet)	275.210
Condensate (ml)	54
Silica Gel Weight (grams)	7.0
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	0.0
Nitrogen (percent)	79.1
Laboratory Results (ug)	214.2
Blank Correction	104.3
Isokinetic Rate Factor	6.08

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Field Data Points - CI Run 1				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.28	1.70	142	100	101	0.53
	2	0.26	1.58	144	102	100	0.51
	3	0.24	1.46	141	103	99	0.49
	4	0.18	1.09	141	105	100	0.42
	5	0.16	0.97	141	108	101	0.40
	6	0.14	0.85	142	108	102	0.37
2	7	0.27	1.64	141	109	103	0.52
	8	0.29	1.76	141	109	103	0.54
	9	0.27	1.64	142	109	103	0.52
	10	0.24	1.46	142	109	102	0.49
	11	0.18	1.09	144	109	102	0.42
	12	0.16	0.97	143	109	102	0.40

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 2
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/31/02
Run Number	2
Start Time	15:50
Finish Time	16:56
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	29.95
Static Pressure (inches of water)	-0.14
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	0.998
Pitot Factor	0.84
Final Meter Reading (cubic feet)	359.105
Initial Meter Reading (cubic feet)	321.080
Condensate (ml)	68
Silica Gel Weight (grams)	7.1
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	134.3
Blank Correction	104.3
Isokinetic Rate Factor	6.08

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Field Data Points - CI Run 2				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.27	1.64	140	94	93	0.52
	2	0.28	1.70	141	95	92	0.53
	3	0.24	1.46	143	103	96	0.49
	4	0.22	1.34	145	103	96	0.47
	5	0.18	1.09	144	105	97	0.42
	6	0.16	0.97	144	105	97	0.40
2	7	0.29	1.76	141	105	97	0.54
	8	0.3	1.82	142	105	97	0.55
	9	0.22	1.34	144	108	99	0.47
	10	0.2	1.22	145	108	98	0.45
	11	0.16	0.97	144	108	98	0.40
	12	0.14	0.85	144	108	97	0.37

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Volumetric Flow Calculations Worksheet

Data Request Entry Area	CI Run 3
Facility	Georgia Pacific
Location	Palatka, Fl.
Source	Bleach Plant
Date	10/31/02
Run Number	3
Start Time	17:10
Finish Time	18:16
Weather	Partial Clouds
Total Time (minutes)	60.0
Number of Points	12
Barometric Pressure	29.95
Static Pressure (inches of water)	-0.16
Stack Diameter (inches)	42.00
Nozzle Diameter (inches)	0.275
Meter Y Factor	0.998
Pitot Factor	0.84
Final Meter Reading (cubic feet)	396.405
Initial Meter Reading (cubic feet)	359.405
Condensate (ml)	70
Silica Gel Weight (grams)	6.9
Carbon Dioxide (percent)	0.0
Oxygen (percent)	20.9
Carbon Monoxide (percent)	
Nitrogen (percent)	79.1
Laboratory Results (ug)	151.1
Blank Correction	104.3
Isokinetic Rate Factor	6.08

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AASI USEPA Method 26A 12 Point Template - Rev 0/11-14-2002

Field Data Points - CI Run 3				Georgia Pacific		Bleach Plant	
Port	Traverse Point	Velocity Head	Meter Orifice	Stack Temp. (°F)	Meter Inlet Temp. (°F)	Meter Outlet Temp. (°F)	Square Root of Velocity Head
1	1	0.28	1.70	138	97	95	0.53
	2	0.26	1.58	140	100	96	0.51
	3	0.22	1.34	142	98	95	0.47
	4	0.2	1.22	140	100	93	0.45
	5	0.16	0.97	139	101	93	0.40
	6	0.14	0.85	142	102	94	0.37
2	7	0.3	1.82	142	102	94	0.55
	8	0.26	1.58	141	102	94	0.51
	9	0.24	1.46	140	102	94	0.49
	10	0.2	1.22	140	102	94	0.45
	11	0.16	0.97	139	103	95	0.40
	12	0.14	0.85	140	102	95	0.37

APPENDIX – B

Field Data Sheets
- Chlorine and Flow Data Sheets
- Carbon Monoxide Data

M CTM-027

HCl

AMBIENT AIR SERVICES
106 AMBIENT AIR WAY
STARKE FL. 32091 (904) 964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: GP Palatka — RUN No. 1
SOURCE: Bleach — DATE: 10/29/02
WEATHER: Partial Clouds — PRE-TEST.
TYPE TEST: 027 — Ts = 142 602 — CO2 ____
TESTERS: RW, JR — Tm = 105 565 — O2 20.9
12 PTS. @ 5 MIN/PT = ____ MIN F.D.A. = .94 — CO ____
BAROMETRIC PRESS. 30.03
METER BOX ID: ~~RS1~~ #10
METER DELTA H: 2.050
PROBE ID: 6B
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. N/A
STACK ID (IN.)= 42
UP/DOWN STREAM 28 22
Y meter = .998 — Filter No. = ____
COMMENTS: Nozzle .275, .275, .273 Avg .275
TIME START 1218 — START VOLUME 156.450 — -1.9
TIME END ____ — END VOLUME 193.480
PORT LENGTH (IN) 7" — Factors: F = 6.01

9188.64
1529.08

LEAK CHECK: PRE.TEST 0 CFM@15". POST: ____ " Hg.
PITOT LEAK CHECK = ____ AT 3"
VOL. WATER COLLECTED = ML ~~200~~ 81
WEIGHT MOIS. SILICA GEL = GR
STAT.PRESS= -1.9

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORRIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGER TEMP.	VACUUM INCHES Hg.	PROBE GAS TEMP.	
1-	0 ~~2.5~~	156.450	.26	1.6	142	106	240	76	5	N/A	a) .005053
2	5 5	159.8	.26	1.6	142	107	247	70	5.5		b) 1529.08
3 ~~2~~	10 ~~7.5~~	162.9	.23	1.4	145	107	255	66	5		c) 1158.25
4	15 ~~10~~	166.0	.22	~~1.4~~ 1.3	145	108	222	~~66~~ 59	5		
5 3	~~20~~ ~~12.5~~	169.2	.18	1.1	143	110	220	60	5		
6	25 ~~15~~	172.1	.16	.96	141	111	260	61	4.5		
2-1 ~~4~~	30 ~~17.5~~	174.98	.26	1.6	144	113	220	64	5.5		
2	35 ~~20~~	178.0	.27	1.6	145	114	274	62	5.5		
~~3~~ 5	40 ~~22.5~~	181.6	.22	1.3	148	115	247	62	5.5		
4	45 ~~25~~	~~184.6~~ 184.6	.18	1.1	148	117	209	63	5.5		
5 ~~6~~	50 ~~27.5~~	187.7	.18	1.1	145	118	264	63	5.5		
6	55 ~~30~~	190.7	.16	.96	143	118	229	64	5		
	60	193.480	—	—	—	—	—	—	—		

CTM-027 206
HCL 406

AMBIENT AIR SERVICES 106 AMBIENT AIR WAY STARKE FL. 32091 (904) 964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: GP Palatka — RUN No. 2
SOURCE: Bleach Plant — DATE: 10/29/02
WEATHER: Partial Clouds — PRE-TEST ~~135~~ 605
TYPE TEST: CTM-027 — Ts = ~~140~~ ~~600~~
TESTERS: BW, RD — Tm = ~~105~~ ~~565~~ 571
12 PTS. @ 5 MIN/PT = 60 MIN F.D.A. = .94
Y meter = 0.998 Filter No. = _____

BAROMETRIC PRESS. 30.03
METER BOX ID: ~~RS1~~ 10
METER DELTA H: 2.050
PROBE ID: 6B
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. N/A
STACK ID (IN.)= 42"
UP/DOWN STREAM 78 72

CO2 _____
O2 20.9
CO _____

9286.22
1570 X 1170.55 X 0.05 05
1536.7

COMMENTS:

TIME START	1733	START VOLUME	195,055	static -.16
TIME END	1538	END VOLUME		

PORT LENGTH (IN) 7" Factors: 6.04

LEAK CHECK: PRE.TEST 0 CFM@15". POST: .015 8 " Hg. | PITOT LEAK CHECK = OK AT 3" | VOL. WATER COLLECTED = 66 ML, WEIGHT MOIS. SILICA GEL = GR | STAT.PRESS= -.16

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORRIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGER TEMP.	VACUUM INCHES Hg.	PROBE GAS TEMP.	
1-1 ~~1~~	0 ~~2.5~~	195,055	.21	1.5	~~193~~ ~~HSR~~	115	125	76	~~205~~	N/A	a) $(.275^2 \times .94)^2$
2	5 ~~5~~	197.7	.2	1.2	145	117	274	60	6		b) $(1.6 \times .94) 605$
3 ~~2~~	10 ~~7.5~~	201.1	.16	.96	146	118	254	59	4.5		c) 571×2.05
4	15 ~~10~~	205.8	.16	.96	147	118	220	60	4.5		
5 ~~3~~	20 ~~12.5~~	206.5	.16	.96	145	119	263	56	4.5		
6	25 ~~15~~	209.2	.12	.72	139	120	245	54	4		
2-1 ~~4~~	30 ~~17.5~~	~~3~~ 211.665	.25	1.5	146	120	274	54	5		
2	35 ~~20~~	214.7	.25	1.5	146	120	238	50	5		
3 ~~5~~	40 ~~22.5~~	218.0	.22	1.3	147	121	284	52	5		
4	45 ~~25~~	221.2	.22	1.3	147	121	272	52	5		
5 ~~6~~	50 ~~27.5~~	224.4	.18	1.1	144	121	221	54	5		
6	55 ~~30~~	227.4	.16	.96	143	121	259	55	4.5		
	60	230.2	—	—	—	—	—	—	—		

AMBIENT AIR SERVICES
106 AMBIENT AIR WAY
STARKE FL. 32091 (904) 964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: GP Palatka
SOURCE: Black Plant
WEATHER: Partial Clouds PRE-TEST.
TYPE TEST: CTM-027 HCl Ts = 745 605
TESTERS: RW Tm = ~~Amb~~ 115 585
12 PTS. @ 5 MIN/PT = 60 MIN F.D.A. = .94
Y meter = 0.998 Filter No. = _____
COMMENTS:

RUN No. 3
DATE: 10/29/02
CO2 _____
O2 _____
CO _____

BAROMETRIC PRESS. 30.03
METER BOX ID: ~~RS1~~ #10
METER DELTA H: 2.05
PROBE ID: 6.3
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. N/A
STACK ID (IN.)= 42
UP/DOWN STREAM 28 >2

TIME	START	1700	START VOLUME	230.750
TIME	END	1802	END VOLUME	269.62

-.15

PORT LENGTH (IN) 7" Factors: 6.04

LEAK CHECK: PRE.TEST 0 CFM@15". POST: _____ " Hg.
PITOT LEAK CHECK = OK AT 3"
VOL. WATER COLLECTED = 68 ML
WEIGHT MOIS. SILICA GEL = _____ GR
STAT.PRESS= -.15

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORRIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGER TEMP.	VACUUM INCHES Hg.	PROBE GAS TEMP.	
	0										
1-1 ~~1~~	~~0~~ 2.5	230.750	.26	1.6	144	109	250	63	5.5	N/A	
2	5 ~~5~~	234.0	.28	1.7	142	102	243	52	5.5		
3 ~~2~~	10 ~~7.5~~	237.5	.26	1.6	144	107	278	51	5.5		
4	15 ~~10~~	240.9	.25	1.6	143	107	240	50	5.5		
5 ~~3~~	20 ~~12.5~~	244.3	.2	1.2	141	107	237	50	5.5		
6	25 ~~15~~	247.5	.18	1.1	140	107	291	50	5		
2-1 ~~4~~	30 ~~17.5~~	250.56	.26	1.6	141	106	222	52	7		
2	35 ~~20~~	254.2	.28	1.7	143	106	278	50	7		
3 ~~5~~	40 ~~22.5~~	257.8	.22	1.3	144	106	263	50	6		
4	45 ~~25~~	261.0	.2	1.2	142	105	225	50	5		
5 ~~6~~	50 ~~27.5~~	264.2	.18	1.1	142	105	225	50	5		
6	55 ~~30~~	266.9	.18	1.1	140	105	242	50	5		
	60	269.620	—	—	—	—	—	—	—		

AMBIENT AIR SERVICES, INC.
STARKE, FL
(904)964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: **Georgia-Pacific, Palatka**
SOURCE: **Bleach Plant**
WEATHER: p. cloudy
TYPE TEST: HCl method 26A
TESTERS: ______
__12_ PTS. @ _5___ MIN/PT = _60_ MIN
Y meter = 0.998   Filter No. = ______
COMMENTS:

RUN No. 1
DATE: 10/31/02
ORSAT:
CO2 ______
O2 ______
CO ______

PRE-TES
Ts = ______
Tm = 94 - 85d
F.D.A. = 0.94

BAROMETRIC PRESS ______
METER BOX ID 10
METER DELTA Ha 2.05
PROBE ID ______
PITOT CORR. FACTOR 0.84
NOZZLE DIA. 0.275 in.
PROBE TEMP. ~250
STACK ID (IN): 42"
PORT LENGTH 6"

TIME START	1332	**START VOLUME**	275.210
TIME END	1443	**END VOLUME**	

Factors: ______

F=1570(aXc)/b
a = (Dn^2XFDA)^2
b= (1.6+FDA)Ts
c= Tm X DHa

LEAK CHECK: PRE.TEST 0.012 CFM@15". POS 0.016/8 " Hg.		PITOT LEAK CHECK = OK AT 3"	VOL.WATER COLLECT = 68 ML; WT. MOIS. SILICA GEL = GR	STAT.PRESS=

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGE TEMP.	VACUUM INCHES Hg.	A) 0.0051 b) 251 Ts c) 1164
1-1	0	275.210	0.28	1.70	142	100	101	246	64	<5	T(144) - 6.08
2	5	78.64	0.26	1.58	144	102	100	256	56	<6	
3	10	82.01	0.24	1.45	141	103	99	258	56	<5	
4	15	85.32	0.18	1.09	141	105	100	259	55	<5	
5	20	88.35	0.16	0.97	141	108	101	260	56	<5	
6	25	91.11	0.14	0.85	142	108	102	258	56	<5	
2-1	30	94.185	0.27	1.64	141	109	103	261	57	<6	
2	35	97.45	0.29	1.76	141	109	103	260	55	<5	
3	40	300.74	0.27	1.64	142	109	103	262	55	<6	
4	45	04.18	0.24	1.45	142	109	102	259	56	<6	
5	50	07.71	0.18	1.09	144	109	102	261	56	<5	
6	55	10.44	0.16	0.97	143	109	102	258	56	<5	
	60	313.155	---	---	---	---	---	---	---	---	

1-1.9
2 6
3 12.
4 26.
5 36.
6 40.
2 90

AMBIENT AIR SERVICES, INC.
STARKE, FL
(904)964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: **Georgia-Pacific, Palatka**

SOURCE: **Bleach Plant**

RUN No. 2

DATE: 10/31/02

BAROMETRIC PRESS _____

METER BOX ID 10

METER DELTA Ha 2.050

PROBE ID _____

PITOT CORR. FACTOR 0.84

NOZZLE DIA. 0.275 in.

PROBE TEMP. ~250

STACK ID (IN): 42

PORT LENGTH 6

WEATHER: cloudy

TYPE TEST: HCl method 26A

TESTERS: _____

__12_ PTS. @ _5___ MIN/PT = _60__ MIN

Y meter = 0.998

Filter No. = _____

COMMENTS:

PRE-TES

Ts = _____

Tm = _____

F.D.A. = _____

ORSAT:

CO2 _____

O2 _____

CO _____

F=1570(aXc)/b

a = (Dn^2XFDA)^2

b= (1.6+FDA)Ts

c= Tm X DHa

Factors: _____

TIME START	1550	START VOLUME	321.080
TIME END	1656	END VOLUME	359.105

LEAK CHECK: PRE.TEST 0.014 CFM@15". POS 0.009 " Hg.

PITOT LEAK CHECK = ok AT 3"

VOL.WATER COLLECT = 68 ML

WT. MOIS. SILICA GEL = GR

STAT.PRESS= -0.14

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGE TEMP.	VACUUM INCHES Hg.	
1-1	0	321.080	0.27	1.64	140	94	93	242	61	<5	
2	5	24.27	0.28	1.70	141	95	92	256	55	<6	
3	10	28.91	0.24	1.45	143	103	96	258	56	<6	
4	15	31.16	0.22	1.34	145	103	96	260	56	<6	
5	20	34.18	0.18	1.09	144	105	97	262	56	<5	
6	25	37.14	0.16	0.97	144	105	97	259	56	<5	
2-1	30	339.69	0.29	1.76	141	105	97	262	55	<6	
2	35	43.12	0.30	1.82	142	105	97	260	56	<6	
3	40	47.32	0.22	1.34	144	108	99	258	56	<6	
4	45	50.51	0.20	1.22	145	108	98	260	57	<6	
5	50	53.54	0.16	0.97	144	108	98	261	56	<6	
6	55	56.52	0.14	0.85	144	108	97	259	56	<5	
	60	359.105	---	---	---	---	---	---	---	---	

AMBIENT AIR SERVICES, INC.
STARKE, FL
(904)964-8440

SOURCE SAMPLING FIELD DATA SHEET

FACILITY: **Georgia-Pacific, Palatka**

SOURCE: **Bleach Plant**

RUN No. 3

DATE: 10/31/02

BAROMETRIC PRESS _____

METER BOX ID 10

METER DELTA Ha 2.050

PROBE ID _____

PITOT CORR. FACTOR 0.84

NOZZLE DIA. 0.275 in.

PROBE TEMP. ~250

STACK ID (IN): 42

PORT LENGTH 6"

WEATHER: cloudy

TYPE TEST: HCl method 26A

TESTERS: GH, RB

__12_ PTS. @ _5___ MIN/PT = _60__ MIN

Y meter = 0.998

Filter No. = _____

COMMENTS:

PRE-TES

Ts = _____

Tm = _____

F.D.A. = _____

ORSAT:

CO2 _____

O2 _____

CO _____

F=1570(aXc)/b

a = (Dn^2XFDA)^2

b= (1.6+FDA)Ts

c= Tm X DHa

TIME START	~~1730~~ 1710	START VOLUME	359.405
TIME END	1816	END VOLUME	396.405

Factors: _____

LEAK CHECK: PRE.TEST 0.008 CFM@15". POS 0.006/7 " Hg.

PITOT LEAK CHECK = OK AT 3"

VOL.WATER COLLEC = 70 ML

WT. MOIS. SILICA GE = GR

STAT.PRESS= -0.16

PORT & SAMPLE POINT	CLOCK TIME	GAS METER READING	STACK VELOCITY Dp	ORIFICE PRESS. DROP	STACK GAS TEMP.	METER TEMP (F)	METER TEMP (F)	FILTER TEMP. (F)	LAST IMPINGE TEMP.	VACUUM INCHES Hg.	
1-1	0	359.405	0.30	1.70	138	97	95	243	59	<6	
2	5	62.62	0.26	1.58	140	100	96	257	54	<6	
3	10	66.36	0.22	1.34	142	98	95	260	54	<6	
4	15	69.28	0.20	1.21	140	100	93	257	54	<6	
5	20	72.31	0.16	0.97	139	101	93	259	54	<6	
6	25	77.50	0.14	0.85	142	102	94	260	54	<6	
2-1	30	77.92	0.30	1.82	142	102	94	258	54	<6	
2	35	81.40	0.26	1.58	141	102	94	259	55	<6	
3	40	84.84	0.24	1.46	140	102	94	262	55	<6	
4	45	88.22	0.20	1.21	140	102	94	263	55	<6	
5	50	91.11	0.16	0.97	139	103	95	264	56	<6	
6	55	93.91	0.14	0.85	140	102	95	263	55	<6	
	60	396.405	---	---	---	---	---	---	---	---	

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_w	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 12:01	1982.2		1994 CO Cal						
10/29/02 12:02	1929.0								
10/29/02 12:03	982.2								
10/29/02 12:04	995.6		991 CO Cal						
10/29/02 12:05	995.1		991 CO Cal						
10/29/02 12:06	621.1								
10/29/02 12:07	580.7								
10/29/02 12:08	588.0		594.4 CO Cal						
10/29/02 12:09	588.0		594.4 CO Cal						
10/29/02 12:10	588.0		594.4 CO Cal						
10/29/02 12:11	572.3								
10/29/02 12:12	279.5								
10/29/02 12:13	299.1		301.9 CO Cal						
10/29/02 12:14	299.1		301.9 CO Cal						
10/29/02 12:15	299.1		301.9 CO Cal						
10/29/02 12:16	299.1		301.9 CO Cal						
10/29/02 12:17	299.1		301.9 CO Cal						
10/29/02 12:18	234.7								
10/29/02 12:19	10.2								
10/29/02 12:20	4.0		0 CO Cal						
10/29/02 12:21	4.6								
10/29/02 12:22	454.3								
10/29/02 12:23	917.7								
10/29/02 12:24	994.3								
10/29/02 12:25	969.3	1		4.80	996.85	991.00	963.5	12068	54.35
10/29/02 12:26	984.3	1		4.80	996.85	991.00	978.5	12676	57.97
10/29/02 12:27	1002.7	1		4.80	996.85	991.00	996.8	12676	59.06
10/29/02 12:28	987.7	1		4.80	996.85	991.00	981.8	12676	58.17
10/29/02 12:29	981.0	1		4.80	996.85	991.00	975.2	12676	57.78
10/29/02 12:30	996.0	1		4.80	996.85	991.00	990.2	12676	58.67
10/29/02 12:31	1009.3	1		4.80	996.85	991.00	1003.5	12676	59.45
10/29/02 12:32	987.7	1		4.80	996.85	991.00	981.8	12676	58.17
10/29/02 12:33	997.7	1		4.80	996.85	991.00	991.8	12676	58.76
10/29/02 12:34	1004.3	1		4.80	996.85	991.00	998.5	12676	59.16
10/29/02 12:35	996.0	1		4.80	996.85	991.00	990.2	12676	58.67
10/29/02 12:36	992.7	1		4.80	996.85	991.00	986.8	12676	58.47
10/29/02 12:37	976.0	1		4.80	996.85	991.00	970.2	12676	57.48
10/29/02 12:38	961.0	1		4.80	996.85	991.00	955.2	12676	56.59
10/29/02 12:39	954.3	1		4.80	996.85	991.00	948.5	12676	56.20
10/29/02 12:40	972.7	1		4.80	996.85	991.00	966.8	12676	57.28
10/29/02 12:41	959.3	1		4.80	996.85	991.00	953.5	12676	56.50
10/29/02 12:42	949.3	1		4.80	996.85	991.00	943.5	12676	55.90
10/29/02 12:43	977.7	1		4.80	996.85	991.00	971.8	12676	57.58
10/29/02 12:44	971.0	1		4.80	996.85	991.00	965.2	12676	57.19
10/29/02 12:45	974.3	1		4.80	996.85	991.00	968.5	12676	57.38
10/29/02 12:46	981.0	1		4.80	996.85	991.00	975.2	12676	57.78
10/29/02 12:47	956.0	1		4.80	996.85	991.00	950.2	12676	56.30
10/29/02 12:48	966.0	1		4.80	996.85	991.00	960.2	12676	56.89
10/29/02 12:49	957.7	1		4.80	996.85	991.00	951.9	12676	56.40

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 12:50	926.0	1		4.80	996.85	991.00	920.2	12676	54.52
10/29/02 12:51	937.7	1		4.80	996.85	991.00	931.9	12676	55.21
10/29/02 12:52	906.0	1		4.80	996.85	991.00	900.2	12676	53.34
10/29/02 12:53	934.3	1		4.80	996.85	991.00	928.5	12676	55.02
10/29/02 12:54	926.0	1		4.80	996.85	991.00	920.2	12676	54.52
10/29/02 12:55	887.7	1		4.80	996.85	991.00	881.9	12676	52.25
10/29/02 12:56	912.7	1		4.80	996.85	991.00	906.9	12676	53.73
10/29/02 12:57	921.0	1		4.80	996.85	991.00	915.2	12676	54.23
10/29/02 12:58	929.3	1		4.80	996.85	991.00	923.6	12676	54.72
10/29/02 12:59	962.7	1		4.80	996.85	991.00	956.9	12676	56.69
10/29/02 13:00	956.0	1		4.80	996.85	991.00	950.2	12676	56.30
10/29/02 13:01	979.3	1		4.80	996.85	991.00	973.5	12676	57.68
10/29/02 13:02	979.3	1		4.80	996.85	991.00	973.5	12676	57.68
10/29/02 13:03	1002.7	1		4.80	996.85	991.00	996.8	12676	59.06
10/29/02 13:04	1026.0	1		4.80	996.85	991.00	1020.1	12676	60.44
10/29/02 13:05	1011.0	1		4.80	996.85	991.00	1005.1	12676	59.55
10/29/02 13:06	1012.7	1		4.80	996.85	991.00	1006.8	12676	59.65
10/29/02 13:07	1014.3	1		4.80	996.85	991.00	1008.5	12676	59.75
10/29/02 13:08	996.0	1		4.80	996.85	991.00	990.2	12676	58.67
10/29/02 13:09	1014.3	1		4.80	996.85	991.00	1008.5	12676	59.75
10/29/02 13:10	1026.0	1		4.80	996.85	991.00	1020.1	12676	60.44
10/29/02 13:11	1007.7	1		4.80	996.85	991.00	1001.8	12676	59.36
10/29/02 13:12	1036.0	1		4.80	996.85	991.00	1030.1	12676	61.03
10/29/02 13:13	1024.3	1		4.80	996.85	991.00	1018.5	12676	60.34
10/29/02 13:14	1001.0	1		4.80	996.85	991.00	995.1	12676	58.96
10/29/02 13:15	1017.7	1		4.80	996.85	991.00	1011.8	12676	59.95
10/29/02 13:16	1032.7	1		4.80	996.85	991.00	1026.8	12676	60.84
10/29/02 13:17	1027.7	1		4.80	996.85	991.00	1021.8	12676	60.54
10/29/02 13:18	1011.0	1		4.80	996.85	991.00	1005.1	12676	59.55
10/29/02 13:19	1024.3	1		4.80	996.85	991.00	1018.5	12676	60.34
10/29/02 13:20	1026.0	1		4.80	996.85	991.00	1020.1	12676	60.44
10/29/02 13:21	1036.0	1		4.80	996.85	991.00	1030.1	12676	61.03
10/29/02 13:22	1051.0	1		4.80	996.85	991.00	1045.1	12676	61.92
10/29/02 13:23	1034.3	1		4.80	996.85	991.00	1028.4	12676	60.93
10/29/02 13:24	1034.3	1		4.80	996.85	991.00	1028.4	12676	60.93
10/29/02 13:25	1037.7			***Run 1 Average***			***979.0***		***57.96***
10/29/02 13:26	771.0								
10/29/02 13:27	54.0								
10/29/02 13:28	13.8								
10/29/02 13:29	13.8								
10/29/02 13:30	5.6		0 CO Cal						
10/29/02 13:31	723.3								
10/29/02 13:32	1990.0								
10/29/02 13:33	1993.1		1994 CO Cal						
10/29/02 13:34	1993.1		1994 CO Cal						
10/29/02 13:35	1993.1		1994 CO Cal						
10/29/02 13:36	1521.4								
10/29/02 13:37	978.7								
10/29/02 13:38	998.3		991 CO Cal						

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 13:39	645.1								
10/29/02 13:40	587.4		594.4 CO Cal						
10/29/02 13:41	464.9								
10/29/02 13:42	282.6								
10/29/02 13:43	300.1		301.9 CO Cal						
10/29/02 13:44	204.3								
10/29/02 13:45	212.6								
10/29/02 13:46	1138.3								
10/29/02 13:47	1186.7								
10/29/02 13:48	1184.7								
10/29/02 13:49	1186.7								
10/29/02 13:50	1190.9								
10/29/02 13:51	1201.2								
10/29/02 13:52	1212.5								
10/29/02 13:53	1192.9								
10/29/02 13:54	1207.3								
10/29/02 13:55	1193.9								
10/29/02 13:56	1187.8								
10/29/02 13:57	1191.9								
10/29/02 13:58	1190.9								
10/29/02 13:59	1208.4								
10/29/02 14:00	1241.3								
10/29/02 14:01	1223.8								
10/29/02 14:02	1219.7								
10/29/02 14:03	1213.5								
10/29/02 14:04	1212.5								
10/29/02 14:05	1235.1								
10/29/02 14:06	1251.6								
10/29/02 14:07	1234.1								
10/29/02 14:08	1223.8								
10/29/02 14:09	1224.8								
10/29/02 14:10	1227.9								
10/29/02 14:11	1269.1								
10/29/02 14:12	1271.2								
10/29/02 14:13	1253.7								
10/29/02 14:14	1269.1								
10/29/02 14:15	1250.6								
10/29/02 14:16	1227.9								
10/29/02 14:17	1246.5								
10/29/02 14:18	1245.4								
10/29/02 14:19	1193.9								
10/29/02 14:20	1220.7								
10/29/02 14:21	1215.6								
10/29/02 14:22	1155.8								
10/29/02 14:23	1162.0								
10/29/02 14:24	1153.8								
10/29/02 14:25	1111.6								
10/29/02 14:26	1081.7								
10/29/02 14:27	1051.8								

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 14:28	1024.0								
10/29/02 14:29	1026.1								
10/29/02 14:30	1002.4								
10/29/02 14:31	1007.6								
10/29/02 14:32	978.7								
10/29/02 14:33	961.2	2		4.05	997.8	991	954.5	12068	53 84
10/29/02 14:34	960.2	2		4.05	997.8	991	953.5	12068	53.78
10/29/02 14:35	933.4	2		4.05	997.8	991	926.8	12068	52 28
10/29/02 14:36	940.6	2		4.05	997.8	991	934.0	12068	52.68
10/29/02 14:37	930.3	2		4.05	997.8	991	923.7	12068	52.10
10/29/02 14:38	905.6	2		4.05	997.8	991	899.1	12068	50.71
10/29/02 14:39	923.1	2		4.05	997.8	991	916.5	12068	51.70
10/29/02 14:40	895.3	2		4.05	997.8	991	888.8	12068	50.13
10/29/02 14:41	897.4	2		4.05	997.8	991	890.8	12068	50.25
10/29/02 14:42	901.5	2		4.05	997 8	991	894.9	12068	50.48
10/29/02 14:43	890.2	2		4.05	997.8	991	883.7	12068	49.84
10/29/02 14:44	897.4	2		4.05	997 8	991	890.8	12068	50 25
10/29/02 14:45	880.9	2		4 05	997.8	991	874.4	12068	49.32
10/29/02 14:46	887.1	2		4 05	997.8	991	880.6	12068	49.67
10/29/02 14:47	853.1	2		4.05	997 8	991	846.7	12068	47 76
10/29/02 14:48	857.2	2		4.05	997.8	991	850.8	12068	47.99
10/29/02 14:49	862.4	2		4 05	997.8	991	855.9	12068	48.28
10/29/02 14:50	840.7	2		4.05	997.8	991	834.4	12068	47 06
10/29/02 14:51	856.2	2		4.05	997.8	991	849 8	12068	47.93
10/29/02 14:52	834.5	2		4.05	997.8	991	828 2	12068	46.72
10/29/02 14:53	811.9	2		4.05	997.8	991	805.6	12068	45 44
10/29/02 14:54	821.2	2		4.05	997.8	991	814.8	12068	45.96
10/29/02 14:55	807.8	2		4.05	997 8	991	801.5	12068	45.21
10/29/02 14:56	802.6	2		4.05	997 8	991	796.4	12068	44.92
10/29/02 14:57	789.2	2		4 05	997.8	991	783.0	12068	44.17
10/29/02 14:58	765.6	2		4.05	997 8	991	759.4	12068	42.84
10/29/02 14:59	768.6	2		4.05	997.8	991	762.5	12068	43.01
10/29/02 15:00	756.3	2		4.05	997.8	991	750.2	12068	42.31
10/29/02 15:01	778.9	2		4.05	997.8	991	772.7	12068	43 59
10/29/02 15:02	772.8	2		4.05	997.8	991	766.6	12068	43 24
10/29/02 15:03	763.5	2		4 05	997.8	991	757.3	12068	42.72
10/29/02 15:04	749.1	2		4.05	997.8	991	743.0	12068	41.91
10/29/02 15:05	728.5	2		4 05	997.8	991	722.4	12068	40.75
10/29/02 15:06	730.5	2		4.05	997.8	991	724.5	12068	40 87
10/29/02 15:07	732.6	2		4.05	997.8	991	726 5	12068	40.98
10/29/02 15:08	722.3	2		4.05	997.8	991	716 3	12068	40.40
10/29/02 15:09	736.7	2		4.05	997.8	991	730 6	12068	41.21
10/29/02 15:10	731.6	2		4.05	997 8	991	725.5	12068	40.92
10/29/02 15:11	742.9	2		4.05	997.8	991	736.8	12068	41.56
10/29/02 15:12	727.4	2		4.05	997.8	991	721 4	12068	40.69
10/29/02 15:13	735.7	2		4.05	997.8	991	729.6	12068	41.16
10/29/02 15:14	742.9	2		4.05	997.8	991	736 8	12068	41 56
10/29/02 15:15	735.7	2		4 05	997 8	991	729 6	12068	41 16
10/29/02 15:16	737.7	2		4.05	997.8	991	731.7	12068	41 27

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 29, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_s	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/29/02 15:17	730.5	2		4.05	997.8	991	724.5	12068	40.87
10/29/02 15:18	715.1	2		4.05	997.8	991	709.1	12068	40.00
10/29/02 15:19	731.6	2		4.05	997.8	991	725.5	12068	40.92
10/29/02 15:20	739.8	2		4.05	997.8	991	733.7	12068	41.39
10/29/02 15:21	732.6	2		4.05	997.8	991	726.5	12068	40.98
10/29/02 15:22	730.5	2		4.05	997.8	991	724.5	12068	40.87
10/29/02 15:23	720.2	2		4.05	997.8	991	714.2	12068	40.29
10/29/02 15:24	708.9	2		4.05	997.8	991	702.9	12068	39.65
10/29/02 15:25	723.3	2		4.05	997.8	991	717.3	12068	40.46
10/29/02 15:26	732.6	2		4.05	997.8	991	726.5	12068	40.98
10/29/02 15:27	713.0	2		4.05	997.8	991	707.0	12068	39.88
10/29/02 15:28	706.9	2		4.05	997.8	991	700.9	12068	39.53
10/29/02 15:29	714.1	2		4.05	997.8	991	708.0	12068	39.94
10/29/02 15:30	704.8	2		4.05	997.8	991	698.8	12068	39.42
10/29/02 15:31	740.8	2		4.05	997.8	991	734.7	12068	41.44
10/29/02 15:32	749.1	2		4.05	997.8	991	743.0	12068	41.91
10/29/02 15:33	737.7			*Run 2 Average*			***788.7***		***44.49***
10/29/02 15:34	739.8								
10/29/02 15:35	731.6								
10/29/02 15:36	720.2								
10/29/02 15:37	726.4								
10/29/02 15:38	723.3								
10/29/02 15:39	500.9								
10/29/02 15:40	6.6								
10/29/02 15:41	2.5		0 CO Cal						
10/29/02 15:42	2.5		0 CO Cal						
10/29/02 15:43	2.5		0 CO Cal						
10/29/02 15:44	8.7								
10/29/02 15:45	758.3								
10/29/02 15:46	996.2		991 CO Cal						
10/29/02 15:47	998.3		991 CO Cal						
10/29/02 15:48	850.0								
10/29/02 15:49	731.6								
10/29/02 15:50	716.1								
10/29/02 15:51	716.1								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 7:13	684.2								
10/31/02 7:14	691.4								
10/31/02 7:15	698.6								
10/31/02 7:16	687.3								
10/31/02 7:17	679.0								
10/31/02 7:18	229.0								
10/31/02 7:19	15.9								
10/31/02 7:20	8.7		0 cal						
10/31/02 7:21	8.7								
10/31/02 7:22	111.6								
10/31/02 7:23	896.3								
10/31/02 7:24	1019.9								
10/31/02 7:25	1022.0		991 cal						
10/31/02 7:26	1022.0		991 cal						
10/31/02 7:27	1022.0		991 cal						
10/31/02 7:28	1022.0		991 cal						
10/31/02 7:29	1022.0		991 cal						
10/31/02 7:30	1730.5								
10/31/02 7:31	1993.1		1994 cal						
10/31/02 7:32	1993.1		1994 cal						
10/31/02 7:33	1993.1		1994 cal						
10/31/02 7:34	1993.1		1994 cal						
10/31/02 7:35	1993.1		1994 cal						
10/31/02 7:36	1971.4								
10/31/02 7:37	1009.6								
10/31/02 7:38	610.1								
10/31/02 7:39	602.8		594 cal						
10/31/02 7:40	602.8								
10/31/02 7:41	599.8								
10/31/02 7:42	657.4								
10/31/02 7:43	558.6								
10/31/02 7:44	322.7								
10/31/02 7:45	309.4		301 cal						
10/31/02 7:46	309.4								
10/31/02 7:47	315.5								
10/31/02 7:48	583.3						#DIV/0!		#DIV/0!
10/31/02 7:49	679.0								
10/31/02 7:50	680.1								
10/31/02 7:51	688.3								
10/31/02 7:52	679.0								
10/31/02 7:53	673.9								
10/31/02 7:54	676.0								
10/31/02 7:55	661.5								
10/31/02 7:56	670.8								
10/31/02 7:57	682.1								
10/31/02 7:58	687.3								
10/31/02 7:59	683.2								
10/31/02 8:00	666.7								
10/31/02 8:01	683.2								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO_2, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 8:02	678.0								
10/31/02 8:03	673.9								
10/31/02 8:04	681.1								
10/31/02 8:05	692.4								
10/31/02 8:06	672.9								
10/31/02 8:07	692.4								
10/31/02 8:08	698.6								
10/31/02 8:09	680.1								
10/31/02 8:10	687.3								
10/31/02 8:11	685.2								
10/31/02 8:12	680.1								
10/31/02 8:13	689.3								
10/31/02 8:14	691.4								
10/31/02 8:15	682.1								
10/31/02 8:16	690.4								
10/31/02 8:17	688.3								
10/31/02 8:18	690.4								
10/31/02 8:19	688.3								
10/31/02 8:20	674.9								
10/31/02 8:21	682.1								
10/31/02 8:22	697.6								
10/31/02 8:23	682.1								
10/31/02 8:24	682.1								
10/31/02 8:25	693.5								
10/31/02 8:26	687.3								
10/31/02 8:27	692.4								
10/31/02 8:28	680.1								
10/31/02 8:29	689.3								
10/31/02 8:30	694.5								
10/31/02 8:31	681.1								
10/31/02 8:32	687.3								
10/31/02 8:33	687.3								
10/31/02 8:34	667.7								
10/31/02 8:35	664.6								
10/31/02 8:36	667.7								
10/31/02 8:37	655.4								
10/31/02 8:38	670.8								
10/31/02 8:39	667.7								
10/31/02 8:40	674.9								
10/31/02 8:41	691.4								
10/31/02 8:42	693.5								
10/31/02 8:43	704.8								
10/31/02 8:44	717.2								
10/31/02 8:45	717.2								
10/31/02 8:46	728.5								
10/31/02 8:47	721.3								
10/31/02 8:48	720.2								
10/31/02 8:49	719.2								
10/31/02 8:50	719.2								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_d	CO C_{dc}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 8:51	714.1								
10/31/02 8:52	708.9								
10/31/02 8:53	699.6								
10/31/02 8:54	702.7								
10/31/02 8:55	688.3								
10/31/02 8:56	698.6								
10/31/02 8:57	700.7								
10/31/02 8:58	695.5								
10/31/02 8:59	705.8								
10/31/02 9:00	707.9								
10/31/02 9:01	701.7								
10/31/02 9:02	711.0								
10/31/02 9:03	709.9								
10/31/02 9:04	705.8								
10/31/02 9:05	721.3								
10/31/02 9:06	681.1								
10/31/02 9:07	678.0								
10/31/02 9:08	681.1								
10/31/02 9:09	679.0								
10/31/02 9:10	679.0								
10/31/02 9:11	680.1								
10/31/02 9:12	673.9								
10/31/02 9:13	680.1								
10/31/02 9:14	674.9								
10/31/02 9:15	673.9								
10/31/02 9:16	676.0								
10/31/02 9:17	663.6								
10/31/02 9:18	667.7								
10/31/02 9:19	664.6								
10/31/02 9:20	648.2								
10/31/02 9:21	642.0								
10/31/02 9:22	633.7								
10/31/02 9:23	618.3								
10/31/02 9:24	616.2								
10/31/02 9:25	609.0								
10/31/02 9:26	597.7								
10/31/02 9:27	566.8								
10/31/02 9:28	553.4								
10/31/02 9:29	78.7								
10/31/02 9:30	6.6								
10/31/02 9:31	16.9								
10/31/02 9:32	263.0								
10/31/02 9:33	614.2								
10/31/02 9:34	685.2								
10/31/02 9:35	680.1								
10/31/02 9:36	689.3								
10/31/02 9:37	685.2								
10/31/02 9:38	673.9								
10/31/02 9:39	699.6								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_g	CO C_w	CO C_{wa}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 9:40	700.7								
10/31/02 9:41	686.3								
10/31/02 9:42	686.3								
10/31/02 9:43	690.4								
10/31/02 9:44	673.9								
10/31/02 9:45	679.0								
10/31/02 9:46	691.4								
10/31/02 9:47	680.1								
10/31/02 9:48	696.6								
10/31/02 9:49	689.3								
10/31/02 9:50	680.1								
10/31/02 9:51	679.0								
10/31/02 9:52	676.0								
10/31/02 9:53	671.8								
10/31/02 9:54	681.1								
10/31/02 9:55	670.8								
10/31/02 9:56	678.0								
10/31/02 9:57	668.8								
10/31/02 9:58	661.5								
10/31/02 9:59	661.5								
10/31/02 10:00	660.5								
10/31/02 10:01	654.3								
10/31/02 10:02	666.7								
10/31/02 10:03	664.6								
10/31/02 10:04	658.5								
10/31/02 10:05	674.9								
10/31/02 10:06	671.8								
10/31/02 10:07	666.7								
10/31/02 10:08	677.0								
10/31/02 10:09	685.2								
10/31/02 10:10	673.9								
10/31/02 10:11	671.8								
10/31/02 10:12	659.5								
10/31/02 10:13	662.6								
10/31/02 10:14	666.7								
10/31/02 10:15	650.2								
10/31/02 10:16	656.4								
10/31/02 10:17	660.5								
10/31/02 10:18	649.2								
10/31/02 10:19	658.5								
10/31/02 10:20	661.5								
10/31/02 10:21	654.3								
10/31/02 10:22	663.6								
10/31/02 10:23	662.6								
10/31/02 10:24	659.5								
10/31/02 10:25	678.0								
10/31/02 10:26	672.9								
10/31/02 10:27	667.7								
10/31/02 10:28	671.8								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 10:29	670.8								
10/31/02 10:30	676.0								
10/31/02 10:31	680.1								
10/31/02 10:32	670.8								
10/31/02 10:33	660.5								
10/31/02 10:34	664.6								
10/31/02 10:35	658.5								
10/31/02 10:36	664.6								
10/31/02 10:37	662.6								
10/31/02 10:38	658.5								
10/31/02 10:39	672.9								
10/31/02 10:40	662.6								
10/31/02 10:41	653.3								
10/31/02 10:42	666.7								
10/31/02 10:43	664.6								
10/31/02 10:44	678.0								
10/31/02 10:45	678.0								
10/31/02 10:46	671.8								
10/31/02 10:47	680.1								
10/31/02 10:48	684.2								
10/31/02 10:49	672.9								
10/31/02 10:50	681.1								
10/31/02 10:51	677.0								
10/31/02 10:52	666.7								
10/31/02 10:53	667.7								
10/31/02 10:54	661.5								
10/31/02 10:55	656.4								
10/31/02 10:56	655.4								
10/31/02 10:57	652.3								
10/31/02 10:58	662.6								
10/31/02 10:59	649.2								
10/31/02 11:00	657.4								
10/31/02 11:01	661.5								
10/31/02 11:02	661.5								
10/31/02 11:03	678.0								
10/31/02 11:04	666.7								
10/31/02 11:05	654.3								
10/31/02 11:06	673.9								
10/31/02 11:07	672.9								
10/31/02 11:08	669.8								
10/31/02 11:09	676.0								
10/31/02 11:10	666.7								
10/31/02 11:11	680.1								
10/31/02 11:12	674.9								
10/31/02 11:13	666.7								
10/31/02 11:14	679.0								
10/31/02 11:15	680.1								
10/31/02 11:16	672.9								
10/31/02 11:17	682.1								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO $C_{M,A}$	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 11:18	673.9								
10/31/02 11:19	687.3								
10/31/02 11:20	691.4								
10/31/02 11:21	679.0								
10/31/02 11:22	690.4								
10/31/02 11:23	686.3								
10/31/02 11:24	681.1								
10/31/02 11:25	691.4								
10/31/02 11:26	693.5								
10/31/02 11:27	699.6								
10/31/02 11:28	704.8								
10/31/02 11:29	700.7								
10/31/02 11:30	695.5								
10/31/02 11:31	700.7								
10/31/02 11:32	694.5								
10/31/02 11:33	697.6								
10/31/02 11:34	697.6								
10/31/02 11:35	701.7								
10/31/02 11:36	699.6								
10/31/02 11:37	687.3								
10/31/02 11:38	680.1								
10/31/02 11:39	688.3								
10/31/02 11:40	686.3								
10/31/02 11:41	689.3								
10/31/02 11:42	700.7								
10/31/02 11:43	695.5								
10/31/02 11:44	699.6								
10/31/02 11:45	695.5								
10/31/02 11:46	703.8								
10/31/02 11:47	701.7								
10/31/02 11:48	706.9								
10/31/02 11:49	700.7								
10/31/02 11:50	705.8								
10/31/02 11:51	697.6								
10/31/02 11:52	701.7								
10/31/02 11:53	704.8								
10/31/02 11:54	698.6								
10/31/02 11:55	695.5								
10/31/02 11:56	704.8								
10/31/02 11:57	693.5								
10/31/02 11:58	694.5								
10/31/02 11:59	698.6								
10/31/02 12:00	686.3								
10/31/02 12:01	694.5								
10/31/02 12:02	699.6								
10/31/02 12:03	689.3								
10/31/02 12:04	703.8								
10/31/02 12:05	699.6								
10/31/02 12:06	699.6								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 12:07	704.8								
10/31/02 12:08	711.0								
10/31/02 12:09	697.6								
10/31/02 12:10	706.9								
10/31/02 12:11	715.1								
10/31/02 12:12	709.9								
10/31/02 12:13	693.5								
10/31/02 12:14	708.9								
10/31/02 12:15	712.0								
10/31/02 12:16	702.7								
10/31/02 12:17	708.9								
10/31/02 12:18	701.7								
10/31/02 12:19	760.4								
10/31/02 12:20	988.0								
10/31/02 12:21	1000.3		Interim Cal 991						
10/31/02 12:22	1000.3								
10/31/02 12:23	789.2								
10/31/02 12:24	56.0								
10/31/02 12:25	4.5		Interim Cal 0						
10/31/02 12:26	3.5								
10/31/02 12:27	103.4								
10/31/02 12:28	628.6								
10/31/02 12:29	717.2								
10/31/02 12:30	702.7								
10/31/02 12:31	705.8								
10/31/02 12:32	708.9								
10/31/02 12:33	708.9								
10/31/02 12:34	696.6								
10/31/02 12:35	702.7								
10/31/02 12:36	700.7								
10/31/02 12:37	699.6								
10/31/02 12:38	695.5								
10/31/02 12:39	702.7								
10/31/02 12:40	706.9								
10/31/02 12:41	703.8								
10/31/02 12:42	699.6								
10/31/02 12:43	700.7								
10/31/02 12:44	692.4								
10/31/02 12:45	701.7								
10/31/02 12:46	714.1								
10/31/02 12:47	706.9								
10/31/02 12:48	730.5								
10/31/02 12:49	719.2								
10/31/02 12:50	719.2								
10/31/02 12:51	735.7								
10/31/02 12:52	729.5								
10/31/02 12:53	723.3								
10/31/02 12:54	738.8								
10/31/02 12:55	753.2								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 12:56	764.5								
10/31/02 12:57	791.3								
10/31/02 12:58	805.7								
10/31/02 12:59	824.2								
10/31/02 13:00	852.1								
10/31/02 13:01	875.7								
10/31/02 13:02	887.1								
10/31/02 13:03	900.5								
10/31/02 13:04	941.6								
10/31/02 13:05	969.4								
10/31/02 13:06	981.8								
10/31/02 13:07	1003.4								
10/31/02 13:08	1006.5								
10/31/02 13:09	1008.6								
10/31/02 13:10	1039.5								
10/31/02 13:11	1036.4								
10/31/02 13:12	1032.3								
10/31/02 13:13	1035.4								
10/31/02 13:14	1015.8								
10/31/02 13:15	1006.5								
10/31/02 13:16	1027.1								
10/31/02 13:17	1038.4								
10/31/02 13:18	1039.5								
10/31/02 13:19	1047.7								
10/31/02 13:20	1064.2								
10/31/02 13:21	1057.0								
10/31/02 13:22	1073.5								
10/31/02 13:23	1094.1								
10/31/02 13:24	1092.0								
10/31/02 13:25	1104.4								
10/31/02 13:26	1106.4								
10/31/02 13:27	1111.56								
10/31/02 13:28	1142.453								
10/31/02 13:29	1165.109		***Begin Run 1***						
10/31/02 13:30	1159.96	1		6.25	1008	991	1141.3	13401	71.49
10/31/02 13:31	1182.615	1		6.25	1008	991	1163.7	13401	72.89
10/31/02 13:32	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 13:33	1188.794	1		6.25	1008	991	1169.9	13401	73.28
10/31/02 13:34	1167.168	1		6.25	1008	991	1148.5	13401	71.94
10/31/02 13:35	1166.139	1		6.25	1008	991	1147.4	13401	71.87
10/31/02 13:36	1157.9	1		6.25	1008	991	1139.3	13401	71.36
10/31/02 13:37	1151.722	1		6.25	1008	991	1133.2	13401	70.98
10/31/02 13:38	1162.02	1		6.25	1008	991	1143.4	13401	71.62
10/31/02 13:39	1171.288	1		6.25	1008	991	1152.5	13401	72.19
10/31/02 13:40	1135.245	1		6.25	1008	991	1116.9	13401	69.96
10/31/02 13:41	1149.662	1		6.25	1008	991	1131.1	13401	70.85
10/31/02 13:42	1164.079	1		6.25	1008	991	1145.4	13401	71.75
10/31/02 13:43	1155.841	1		6.25	1008	991	1137.3	13401	71.24
10/31/02 13:44	1170.258	1		6.25	1008	991	1151.5	13401	72.13

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 13:45	1171.288	1		6.25	1008	991	1152.5	13401	72.19
10/31/02 13:46	1153.781	1		6.25	1008	991	1135.2	13401	71.11
10/31/02 13:47	1178.496	1		6.25	1008	991	1159.7	13401	72.64
10/31/02 13:48	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 13:49	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 13:50	1215.569	1		6.25	1008	991	1196.3	13401	74.94
10/31/02 13:51	1181.585	1		6.25	1008	991	1162.7	13401	72.83
10/31/02 13:52	1190.854	1		6.25	1008	991	1171.9	13401	73.40
10/31/02 13:53	1165.109	1		6.25	1008	991	1146.4	13401	71.81
10/31/02 13:54	1147.602	1		6.25	1008	991	1129.1	13401	70.72
10/31/02 13:55	1141.424	1		6.25	1008	991	1123.0	13401	70.34
10/31/02 13:56	1135.245	1		6.25	1008	991	1116.9	13401	69.96
10/31/02 13:57	1142.453	1		6.25	1008	991	1124.0	13401	70.41
10/31/02 13:58	1144.513	1		6.25	1008	991	1126.0	13401	70.53
10/31/02 13:59	1130.096	1		6.25	1008	991	1111.8	13401	69.64
10/31/02 14:00	1141.424	1		6.25	1008	991	1123.0	13401	70.34
10/31/02 14:01	1115.679	1		6.25	1008	991	1097.5	13401	68 75
10/31/02 14:02	1139.364	1		6.25	1008	991	1121.0	13401	70.21
10/31/02 14:03	1142.453	1		6.25	1008	991	1124.0	13401	70.41
10/31/02 14:04	1132.156	1		6.25	1008	991	1113.8	13401	69 77
10/31/02 14:05	1147.602	1		6.25	1008	991	1129.1	13401	70 72
10/31/02 14:06	1182.615	1		6.25	1008	991	1163.7	13401	72.89
10/31/02 14:07	1173.347	1		6.25	1008	991	1154.6	13401	72.32
10/31/02 14:08	1190.854	1		6.25	1008	991	1171 9	13401	73 40
10/31/02 14:09	1227.926	1		6.25	1008	991	1208.6	13401	75.70
10/31/02 14:10	1205.271	1		6.25	1008	991	1186 2	13401	74.30
10/31/02 14:11	1191.883	1		6.25	1008	991	1172.9	13401	73.47
10/31/02 14:12	1225.866	1		6.25	1008	991	1206.5	13401	75.57
10/31/02 14:13	1212.479	1		6.25	1008	991	1193.3	13401	74.74
10/31/02 14:14	1186.734	1		6.25	1008	991	1167 8	13401	73.15
10/31/02 14:15	1221.747	1		6.25	1008	991	1202.5	13401	75.32
10/31/02 14:16	1196.003	1		6.25	1008	991	1177.0	13401	73.72
10/31/02 14:17	1157.9	1		6.25	1008	991	1139 3	13401	71.36
10/31/02 14:18	1186.734	1		6.25	1008	991	1167 8	13401	73.15
10/31/02 14:19	1186.734	1		6.25	1008	991	1167.8	13401	73.15
10/31/02 14:20	1178.496	1		6.25	1008	991	1159.7	13401	72.64
10/31/02 14:21	1200.122	1		6.25	1008	991	1181.1	13401	73 98
10/31/02 14:22	1172.317	1		6.25	1008	991	1153.6	13401	72.26
10/31/02 14:23	1178.496	1		6.25	1008	991	1159.7	13401	72.64
10/31/02 14:24	1200.122	1		6.25	1008	991	1181.1	13401	73.98
10/31/02 14:25	1184.675	1		6.25	1008	991	1165 8	13401	73.02
10/31/02 14:26	1194.973	1		6.25	1008	991	1176.0	13401	73.66
10/31/02 14:27	1186.734	1		6.25	1008	991	1167.8	13401	73.15
10/31/02 14:28	1185.705	1		6.25	1008	991	1166 8	13401	73 09
10/31/02 14:29	1218.658	1		6.25	1008	991	1199.4	13401	75.13
10/31/02 14:30	1220.718			***Run 1 Average***			***1155.1***		***72.35***
10/31/02 14:31	1206.3								
10/31/02 14:32	1236.164								
10/31/02 14:33	1118.768								

Georgia Pacific - Palatka, Florida

Bleach Plant Carbon Monoxide Test

October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 14:34	159.004								
10/31/02 14:35	6.5951								
10/31/02 14:36	3.5057		Zero CO Cal						
10/31/02 14:37	3.5057		Zero CO Cal						
10/31/02 14:38	8.6546								
10/31/02 14:39	656.3926								
10/31/02 14:40	989.0148								
10/31/02 14:41	995.1935		991 CO Cal						
10/31/02 14:42	995.1935		991 CO Cal						
10/31/02 14:43	1068.309								
10/31/02 14:44	1213.509								
10/31/02 14:45	1194.973								
10/31/02 14:46	1191.883								
10/31/02 14:47	1166.139								
10/31/02 14:48	1138.334								
10/31/02 14:49	1182.615								
10/31/02 14:50	1179.526								
10/31/02 14:51	1163.049								
10/31/02 14:52	1172.317								
10/31/02 14:53	1160.99								
10/31/02 14:54	1174.377								
10/31/02 14:55	1160.99								
10/31/02 14:56	1171.288								
10/31/02 14:57	1190.854								
10/31/02 14:58	1191.883								
10/31/02 14:59	1176.437								
10/31/02 15:00	1190.854								
10/31/02 15:01	1192.913								
10/31/02 15:02	1191.883								
10/31/02 15:03	1215.569								
10/31/02 15:04	1186.734								
10/31/02 15:05	1169.228								
10/31/02 15:06	1178.496								
10/31/02 15:07	1181.585								
10/31/02 15:08	1187.764								
10/31/02 15:09	1217.628								
10/31/02 15:10	1228.956								
10/31/02 15:11	1193.943								
10/31/02 15:12	1201.151								
10/31/02 15:13	1210.42								
10/31/02 15:14	1228.956								
10/31/02 15:15	1200.122								
10/31/02 15:16	1233.075								
10/31/02 15:17	1228.956								
10/31/02 15:18	1199.092								
10/31/02 15:19	1219.688								
10/31/02 15:20	1237.194								
10/31/02 15:21	1208.36								
10/31/02 15:22	1221.747								

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October 31, 2002

DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_d	CO C_w	CO C_{wA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 15:23	1214.539								
10/31/02 15:24	1203.211								
10/31/02 15:25	1205.271								
10/31/02 15:26	1229.986								
10/31/02 15:27	1212.479								
10/31/02 15:28	1200.122								
10/31/02 15:29	1242.343								
10/31/02 15:30	1227.926								
10/31/02 15:31	1227.926								
10/31/02 15:32	1243.373								
10/31/02 15:33	1216.598								
10/31/02 15:34	1221.747								
10/31/02 15:35	1202.181								
10/31/02 15:36	1218.658								
10/31/02 15:37	1213.509								
10/31/02 15:38	1211.449								
10/31/02 15:39	1221.747								
10/31/02 15:40	1209.39								
10/31/02 15:41	1217.628								
10/31/02 15:42	1234.105								
10/31/02 15:43	1216.598								
10/31/02 15:44	1205.271								
10/31/02 15:45	1209.39								
10/31/02 15:46	1194.973		*Begin Run 2*						
10/31/02 15:47	1190.854	2		4	995.5	991	1186.3	13171	73.03
10/31/02 15:48	1209.39	2		4	995.5	991	1204.8	13171	74.17
10/31/02 15:49	1221.747	2		4	995.5	991	1217.1	13171	74.93
10/31/02 15:50	1209.39	2		4	995.5	991	1204.8	13171	74.17
10/31/02 15:51	1240.284	2		4	995.5	991	1235.7	13171	76.07
10/31/02 15:52	1235.135	2		4	995.5	991	1230.5	13171	75.75
10/31/02 15:53	1231.015	2		4	995.5	991	1226.4	13171	75.50
10/31/02 15:54	1245.432	2		4	995.5	991	1240.8	13171	76.39
10/31/02 15:55	1211.449	2		4	995.5	991	1206.8	13171	74.30
10/31/02 15:56	1201.151	2		4	995.5	991	1196.5	13171	73.66
10/31/02 15:57	1229.986	2		4	995.5	991	1225.4	13171	75.44
10/31/02 15:58	1215.569	2		4	995.5	991	1211.0	13171	74.55
10/31/02 15:59	1216.598	2		4	995.5	991	1212.0	13171	74.61
10/31/02 16:00	1223.807	2		4	995.5	991	1219.2	13171	75.06
10/31/02 16:01	1196.003	2		4	995.5	991	1191.4	13171	73.35
10/31/02 16:02	1197.032	2		4	995.5	991	1192.4	13171	73.41
10/31/02 16:03	1182.615	2		4	995.5	991	1178.0	13171	72.52
10/31/02 16:04	1170.258	2		4	995.5	991	1165.7	13171	71.76
10/31/02 16:05	1185.705	2		4	995.5	991	1181.1	13171	72.71
10/31/02 16:06	1177.466	2		4	995.5	991	1172.9	13171	72.21
10/31/02 16:07	1186.734	2		4	995.5	991	1182.1	13171	72.78
10/31/02 16:08	1192.913	2		4	995.5	991	1188.3	13171	73.16
10/31/02 16:09	1198.062	2		4	995.5	991	1193.5	13171	73.47
10/31/02 16:10	1226.896	2		4	995.5	991	1222.3	13171	75.25
10/31/02 16:11	1211.449	2		4	995.5	991	1206.8	13171	74.30

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_S	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 16:12	1214.539	2		4	995.5	991	1209.9	13171	74.49
10/31/02 16:13	1219.688	2		4	995.5	991	1215.1	13171	74.80
10/31/02 16:14	1215.569	2		4	995.5	991	1211.0	13171	74.55
10/31/02 16:15	1200.122	2		4	995.5	991	1195.5	13171	73.60
10/31/02 16:16	1198.062	2		4	995.5	991	1193.5	13171	73.47
10/31/02 16:17	1194.973	2		4	995.5	991	1190.4	13171	73.28
10/31/02 16:18	1206.3	2		4	995.5	991	1201.7	13171	73.98
10/31/02 16:19	1210.42	2		4	995.5	991	1205.8	13171	74.23
10/31/02 16:20	1221.747	2		4	995.5	991	1217.1	13171	74.93
10/31/02 16:21	1216.598	2		4	995.5	991	1212.0	13171	74.61
10/31/02 16:22	1208.36	2		4	995.5	991	1203.8	13171	74.11
10/31/02 16:23	1199.092	2		4	995.5	991	1194.5	13171	73.54
10/31/02 16:24	1219.688	2		4	995.5	991	1215.1	13171	74.80
10/31/02 16:25	1216.598	2		4	995.5	991	1212.0	13171	74.61
10/31/02 16:26	1207.33	2		4	995.5	991	1202.7	13171	74.04
10/31/02 16:27	1217.628	2		4	995.5	991	1213.0	13171	74.68
10/31/02 16:28	1211.449	2		4	995.5	991	1206.8	13171	74.30
10/31/02 16:29	1224.837	2		4	995.5	991	1220.2	13171	75.12
10/31/02 16:30	1244.403	2		4	995.5	991	1239.8	13171	76.32
10/31/02 16:31	1240.284	2		4	995.5	991	1235.7	13171	76.07
10/31/02 16:32	1235.135	2		4	995.5	991	1230.5	13171	75.75
10/31/02 16:33	1241.313	2		4	995.5	991	1236.7	13171	76.13
10/31/02 16:34	1231.015	2		4	995.5	991	1226.4	13171	75.50
10/31/02 16:35	1238.224	2		4	995.5	991	1233.6	13171	75.94
10/31/02 16:36	1251.611	2		4	995.5	991	1247.0	13171	76.77
10/31/02 16:37	1236.164	2		4	995.5	991	1231.5	13171	75.82
10/31/02 16:38	1234.105	2		4	995.5	991	1229.5	13171	75.69
10/31/02 16:39	1234.105	2		4	995.5	991	1229.5	13171	75.69
10/31/02 16:40	1232.045	2		4	995.5	991	1227.4	13171	75.56
10/31/02 16:41	1222.777	2		4	995.5	991	1218.2	13171	74.99
10/31/02 16:42	1225.866	2		4	995.5	991	1221.2	13171	75.18
10/31/02 16:43	1233.075	2		4	995.5	991	1228.5	13171	75.63
10/31/02 16:44	1225.866	2		4	995.5	991	1221.2	13171	75.18
10/31/02 16:45	1233.075	2		4	995.5	991	1228.5	13171	75.63
10/31/02 16:46	1241.313	2		4	995.5	991	1236.7	13171	76.13
10/31/02 16:47	1240.284			***Run 2 Average***			***1212.2***		***74.6***
10/31/02 16:48	1232.045								
10/31/02 16:49	1254.701								
10/31/02 16:50	1280.445								
10/31/02 16:51	1276.326								
10/31/02 16:52	1218.658								
10/31/02 16:53	982.836								
10/31/02 16:54	996.2233		991 CO Cal						
10/31/02 16:55	996.2233								
10/31/02 16:56	862.3506								
10/31/02 16:57	81.7697								
10/31/02 16:58	4.5355								
10/31/02 16:59	4.5355		0 CO Cal						
10/31/02 17:00	4.5355								

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 17:01	4.5355								
10/31/02 17:02	4.5355								
10/31/02 17:03	713.031								
10/31/02 17:04	1258.82								
10/31/02 17:05	1270.147								
10/31/02 17:06	1279.416								
10/31/02 17:07	1303.101								
10/31/02 17:08	1293.833								
10/31/02 17:09	1296.922		*Begin Run 3*						
10/31/02 17:10	1322.667	3		4.5	996.5	991	1316.8	12999	80.01
10/31/02 17:11	1314.428	3		4.5	996.5	991	1308.6	12999	79.51
10/31/02 17:12	1292.803	3		4.5	996.5	991	1287.0	12999	78.20
10/31/02 17:13	1296.922	3		4.5	996.5	991	1291.1	12999	78.45
10/31/02 17:14	1282.505	3		4.5	996.5	991	1276.7	12999	77.57
10/31/02 17:15	1256.76	3		4.5	996.5	991	1251.0	12999	76.01
10/31/02 17:16	1223.807	3		4.5	996.5	991	1218.1	12999	74.01
10/31/02 17:17	1246.462	3		4.5	996.5	991	1240.7	12999	75.38
10/31/02 17:18	1213.509	3		4.5	996.5	991	1207.8	12999	73.38
10/31/02 17:19	1224.837	3		4.5	996.5	991	1219.1	12999	74.07
10/31/02 17:20	1255.73	3		4.5	996.5	991	1250.0	12999	75.95
10/31/02 17:21	1256.76	3		4.5	996.5	991	1251.0	12999	76.01
10/31/02 17:22	1245.432	3		4.5	996.5	991	1239.7	12999	75.32
10/31/02 17:23	1259.849	3		4.5	996.5	991	1254.1	12999	76.20
10/31/02 17:24	1260.879	3		4.5	996.5	991	1255.1	12999	76.26
10/31/02 17:25	1267.058	3		4.5	996.5	991	1261.3	12999	76.63
10/31/02 17:26	1287.654	3		4.5	996.5	991	1281.9	12999	77.88
10/31/02 17:27	1280.445	3		4.5	996.5	991	1274.7	12999	77.45
10/31/02 17:28	1263.969	3		4.5	996.5	991	1258.2	12999	76.45
10/31/02 17:29	1277.356	3		4.5	996.5	991	1271.6	12999	77.26
10/31/02 17:30	1294.862	3		4.5	996.5	991	1289.1	12999	78.32
10/31/02 17:31	1281.475	3		4.5	996.5	991	1275.7	12999	77.51
10/31/02 17:32	1269.118	3		4.5	996.5	991	1263.3	12999	76.76
10/31/02 17:33	1268.088	3		4.5	996.5	991	1262.3	12999	76.70
10/31/02 17:34	1252.641	3		4.5	996.5	991	1246.9	12999	75.76
10/31/02 17:35	1231.015	3		4.5	996.5	991	1225.3	12999	74.45
10/31/02 17:36	1248.522	3		4.5	996.5	991	1242.8	12999	75.51
10/31/02 17:37	1234.105	3		4.5	996.5	991	1228.4	12999	74.63
10/31/02 17:38	1242.343	3		4.5	996.5	991	1236.6	12999	75.13
10/31/02 17:39	1253.671	3		4.5	996.5	991	1247.9	12999	75.82
10/31/02 17:40	1234.105	3		4.5	996.5	991	1228.4	12999	74.63
10/31/02 17:41	1227.926	3		4.5	996.5	991	1222.2	12999	74.26
10/31/02 17:42	1250.581	3		4.5	996.5	991	1244.8	12999	75.63
10/31/02 17:43	1240.284	3		4.5	996.5	991	1234.5	12999	75.01
10/31/02 17:44	1247.492	3		4.5	996.5	991	1241.7	12999	75.45
10/31/02 17:45	1254.701	3		4.5	996.5	991	1248.9	12999	75.88
10/31/02 17:46	1238.224	3		4.5	996.5	991	1232.5	12999	74.88
10/31/02 17:47	1240.284	3		4.5	996.5	991	1234.5	12999	75.01
10/31/02 17:48	1256.76	3		4.5	996.5	991	1251.0	12999	76.01
10/31/02 17:49	1249.552	3		4.5	996.5	991	1243.8	12999	75.57

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DATA RECORDER PRINTOUT and TEST SUMMARY

Time	CO, ppm	Run Number	COMMENTS	CO C_o	CO C_M	CO C_{MA}	CO, ppm Drift Corrected	Flow, SCFM-Dry	CO, pounds per hour
10/31/02 17:50	1278.386	3		4.5	996.5	991	1272.6	12999	77.32
10/31/02 17:51	1292.803	3		4.5	996.5	991	1287.0	12999	78.20
10/31/02 17:52	1252.641	3		4.5	996.5	991	1246.9	12999	75.76
10/31/02 17:53	1244.403	3		4.5	996.5	991	1238.7	12999	75.26
10/31/02 17:54	1267.058	3		4.5	996.5	991	1261.3	12999	76.63
10/31/02 17:55	1237.194	3		4.5	996.5	991	1231.5	12999	74.82
10/31/02 17:56	1227.926	3		4.5	996.5	991	1222.2	12999	74.26
10/31/02 17:57	1244.403	3		4.5	996.5	991	1238.7	12999	75.26
10/31/02 17:58	1236.164	3		4.5	996.5	991	1230.4	12999	74.76
10/31/02 17:59	1232.045	3		4.5	996.5	991	1226.3	12999	74.51
10/31/02 18:00	1203.211	3		4.5	996.5	991	1197.5	12999	72.76
10/31/02 18:01	1145.543	3		4.5	996.5	991	1139.9	12999	69.26
10/31/02 18:02	1080.666	3		4.5	996.5	991	1075.1	12999	65.32
10/31/02 18:03	1049.772	3		4.5	996.5	991	1044.2	12999	63.45
10/31/02 18:04	1069.338	3		4.5	996.5	991	1063.8	12999	64.63
10/31/02 18:05	1129.066	3		4.5	996.5	991	1123.4	12999	68.26
10/31/02 18:06	1173.347	3		4.5	996.5	991	1167.7	12999	70.95
10/31/02 18:07	1174.377	3		4.5	996.5	991	1168.7	12999	71.01
10/31/02 18:08	1167.168	3		4.5	996.5	991	1161.5	12999	70.57
10/31/02 18:09	1150.692	3		4.5	996.5	991	1145.0	12999	69.57
10/31/02 18:10	1134.215			***Run 3 Average***			***1231.0***		***74.8***
10/31/02 18:11	1163.049								
10/31/02 18:12	350.5449								
10/31/02 18:13	-17.9228								
10/31/02 18:14	4.5355		0 CO Cal						
10/31/02 18:15	4.5355								
10/31/02 18:16	149.7359								
10/31/02 18:17	894.274								
10/31/02 18:18	997.2531		991 CO Cal						
10/31/02 18:19	998.2829								
10/31/02 18:20	968.4189								

APPENDIX – C

Laboratory Analysis

TECHNICAL SERVICES, INC.
ENVIRONMENTAL CONSULTANTS

For Ambient Air Services, Inc.
106 AMBIENT AIR WAY
STARKE, FL 32091
Contact: Joe Cooksey

Report Date 11-Nov-02
Date Received 11/01/2002 @ 16:15
Purchase Order #:

CERTIFICATE OF ANALYSIS

LAB	MATRIX	SAMPLE DATE	SAMPLE TIME	SAMPLED BY
SAMPLE DESCRIPTION				
02110037	IMP. CATCH	10/31/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 1				
02110038	IMP. CATCH	10/31/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 2				
02110039	IMP. CATCH	10/31/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 3				
02110040	IMP. CATCH	10/29/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 1				
02110041	IMP. CATCH	10/29/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 2				
02110042	IMP. CATCH	10/29/2002	UNKNOWN	
GP/PALATKA, BLEACH PLANT, RUN 3				
02110043		UNKNOWN	UNKNOWN	
GP/PALATKA, BLEACH PLANT, FIELD BLANK				

Respectfully submitted,
Technical Services, Inc.

Ambient Air Services, Inc.

Lab No.	Parameter	Result		Code	Method	Detection Limit
02110037	Chloride in base	214.2	ug/ml Cl-	A	Method 26A	0.02
02110038	Chloride in base	134.3	ug/ml Cl-		Method 26A	0.02
02110039	Chloride in base	151.1	TOTAL UG		Method 26A	0.02
02110040	Chloride in base	438.9	TOTAL UG		Method 26A	0.02
02110041	Chloride in base	320.0	TOTAL UG		Method 26A	0.02
02110042	Chloride in base	354.6	TOTAL UG		Method 26A	0.02
02110043	Chloride in base	104.3	TOTAL UG	A	Method 26A	0.02

Ambient Air Services, Inc.

Lab No.	Parameter	Date of Analysis	Analysis Time	Analyst	Prep Date
02110037	Chloride in base	11/11/2002		CRB	
02110038	Chloride in base	11/11/2002		CRB	
02110039	Chloride in base	11/11/2002		CRB	
02110040	Chloride in base	11/11/2002		CRB	
02110041	Chloride in base	11/11/2002		CRB	
02110042	Chloride in base	11/11/2002		CRB	
02110043	Chloride in base	11/11/2002		CRB	

APPENDIX – D

Equipment Calibration Data
- Carbon Monoxide Analyzer Calibration
- Annual Meter Calibration
- Post Test Meter Calibration
- Pitot Tube Calibration
- Thermocouple Calibration

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test

October 29, 2002
Equipment List

Carbon Monoxide Instrument: **Manufacturer -** Thermo Environmental Instruments **Model -** 48 CHL
Serial Number - 63892-341
CO Range - zero to 2000 ppm

Calibration Gas Standards		Concentration	Manufacturer	Cylinder Number	Expiration Date	PSI
Zero	Zero	0.00	Air Products	Nitrogen	N/A	1200
Low	CO	991.00	Air Liquide	CC121974	Jul-04	800
	CO	1994.00	Air Liquide	CC70989	Jul-04	900
Mid	CO	594.40	Praxair	SA12251	Jan-04	1200
High	CO	301.90	Air Liquide	CC121974	Jul-04	1100

Description of Sampling System :
6', 1/4" SS probe to valve to H_2O condenser to 200 feet 3/8 Teflon sample line to SS pump to instruments
all calibration gases injected direct to probe valve location
Sampling probe located nominally mid of 42" stack

Test Participants :
CO Testing - Joe Cooksey, Ambient Air Services, Inc.
Joe Taylor - Georgia-Pacific Representitive

Other Comments :

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 29, 2002
Calibration Sheet

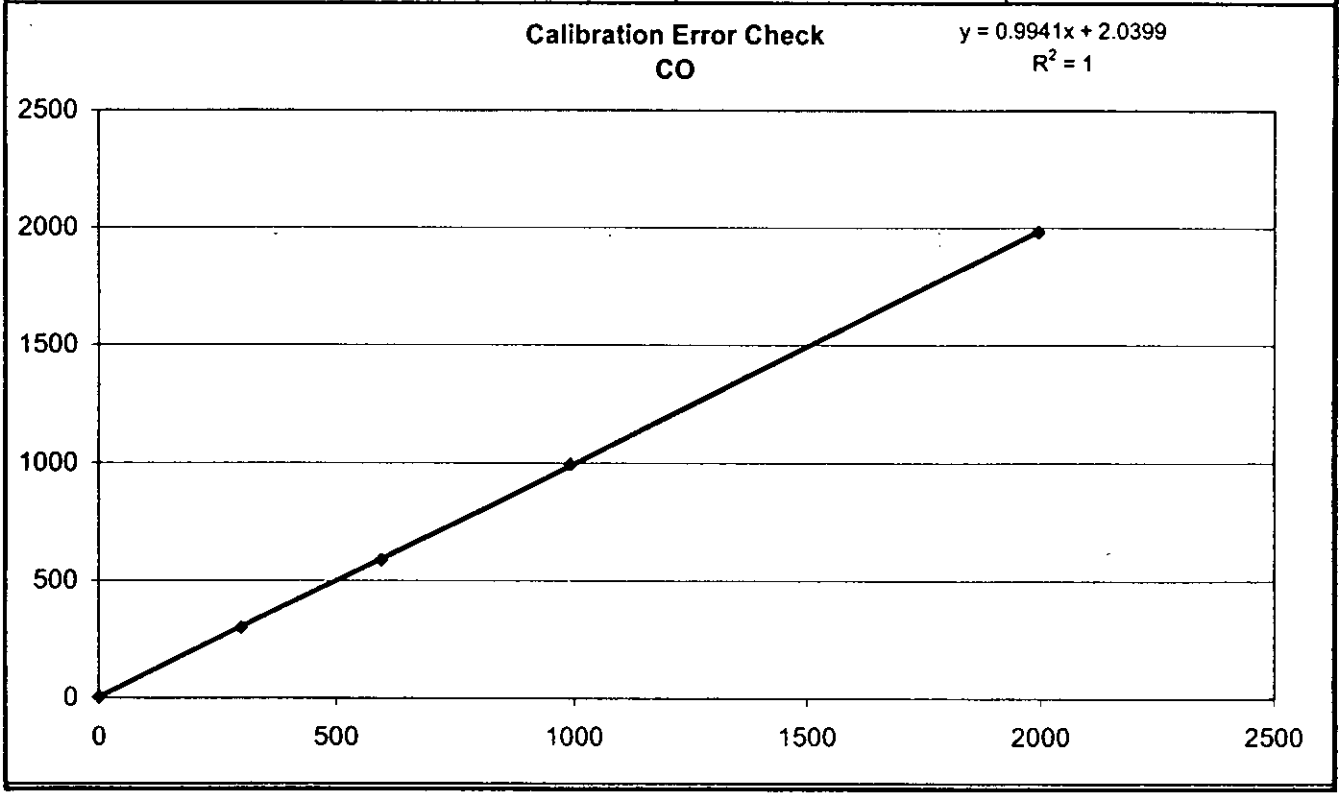
Initial Calibration

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	12:00	4
CO	991	12:00	995.4
CO	1994	12:00	1982.2
CO	594.4	12:00	588
CO	301.9	12:00	299.1

% Error of Range Table

Inject (ppm)		Time	% Error of Range
Gas	Conc.		CO
Zero	0	12:00	0.20%
CO	991	12:00	0.22%
CO	1994	12:00	-0.59%
CO	594.4	12:00	-0.32%
CO	301.9	12:00	-0.14%



Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 29, 2002
Calibration Sheet

Calibration - Post Run 1

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	13:30	5.6
CO	991	13:30	998.3

Drift Analysis From Initial Calibrations to the End of Run 1

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	13:30	0.08%
CO	991	13:30	0.14%

Drift Variables for Run 1

Variable	CO	
Co	4.80	
Cm	996.85	
Cma	991.00	

Calibration - Post Run 2

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0		2.5
CO	991		997.3

Drift Analysis From Initial Calibrations to the End of Run 2

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	0:00	-0.08%
CO	991	0:00	0.09%

Drift Variables for Run 2

Variable	CO	
Co	4.05	
Cm	997.80	
Cma	991	

Calibration - Post Run 3

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0		
CO	991		

Drift Analysis From Initial Calibrations to the End of Run 3

Inject (ppm)	Time	Drift Analysis (%)

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 29, 2002

Calibration Sheet

Gas	Conc.		CO
Zero	0	0:00	-0.20%
CO	991	0:00	-49.77%

Drift Variables for Run 3

Variable	CO	
Co	1.25	
Cm	498.65	
Cma	991	

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test

October 31, 2002
Equipment List

Carbon Monoxide Instrument: **Manufacturer** - Thermo Environmental Instruments **Model** - 48 CHL
Serial Number - 63892-341
CO Range - zero to 2000 ppm

Calibration Gas Standards		Concentration	Manufacturer	Cylinder Number	Expiration Date	PSI
Zero	Zero	0.00	Air Products	Nitrogen	N/A	1200
Low	CO	991.00	Air Liquide	CC121974	Jul-04	800
	CO	1994.00	Air Liquide	CC70989	Jul-04	900
Mid	CO	594.40	Praxair	SA12251	Jan-04	1200
High	CO	301.90	Air Liquide	CC121974	Jul-04	1100

Description of Sampling System :
6', 1/4" SS probe to valve to H_2O condenser to 200 feet 3/8 Teflon sample line to SS pump to instruments
all calibration gases injected direct to probe valve location
Sampling probe located nominally mid of 42" stack

Test Participants :
CO Testing - Randy Weston, Ambient Air Services, Inc.
Joe Taylor, Georgia Pacific Palatka Environmental contact

Other Comments :

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 31, 2002
Calibration Sheet

Initial Calibration

Response Table

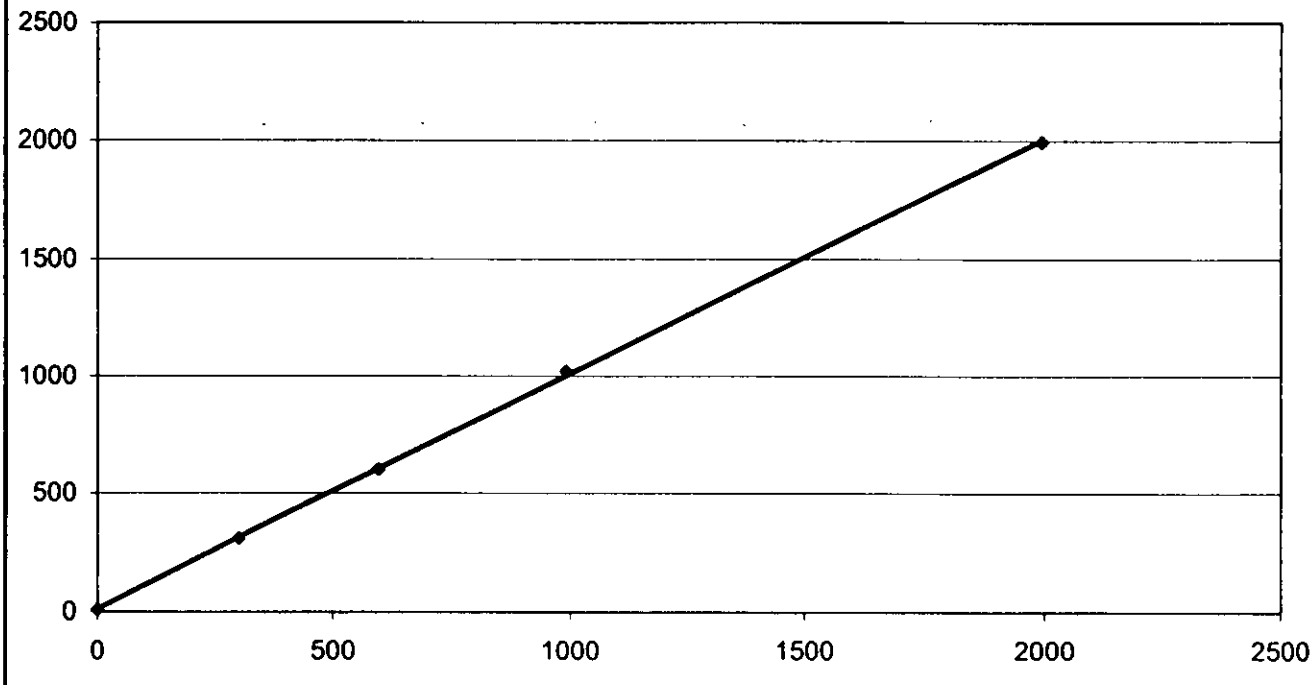
Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	12:00	9
CO	991	12:00	1021
CO	1994	12:00	1994
CO	594.4	12:00	602
CO	301.9	12:00	309

% Error of Range Table

Inject (ppm)		Time	% Error of Range
Gas	Conc.		CO
Zero	0	12:00	0.45%
CO	991	12:00	1.50%
CO	1994	12:00	0.00%
CO	594.4	12:00	0.38%
CO	301.9	12:00	0.36%

Calibration Error Check
CO

$y = 0.9978x + 12.46$
$R^2 = 0.9998$



Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 31, 2002
Calibration Sheet

Calibration - Post Run 1

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	14:36	3.5
CO	991	14:42	995

Drift Analysis From Initial Calibrations to the End of Run 1

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	14:36	-0.28%
CO	991	14:42	-1.30%

Drift Variables for Run 1

Variable	CO	
Co	6.25	
Cm	1008.00	
Cma	991.00	

Calibration - Post Run 2

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	16:59	4.5
CO	991	16:54	996

Drift Analysis From Initial Calibrations to the End of Run 2

Inject (ppm)		Time	Drift Analysis (%)
Gas	Conc.		CO
Zero	0	16:59	-0.23%
CO	991	16:54	-1.25%

Drift Variables for Run 2

Variable	CO	
Co	4	
Cm	995.50	
Cma	991	

Calibration - Post Run 3

Response Table

Inject (ppm)		Time	Response (ppm)
Gas	Conc.		CO
Zero	0	18:14	4.5
CO	991	18:18	997

Drift Analysis From Initial Calibrations to the End of Run 3

Inject (ppm)		Time	Drift Analysis (%)

Georgia Pacific - Palatka, Florida
Bleach Plant Carbon Monoxide Test
0
October 31, 2002
Calibration Sheet

Gas	Conc.		CO
Zero	0	18:14	-0.23%
CO	991	18:18	-1.20%

Drift Variables for Run 3

Variable	CO	
Co	4.5	
Cm	996.50	
Cma	991	

Ambient Air Services, Inc. - Method 5 Dry Gas Meter Annual Calibration

USING CALIBRATED CRITICAL ORIFICES

5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	AASI
Console Serial Number	Box 10
DGM Model Number	6947372
DGM Serial Number	

Calibration Conditions			
Date	Time	5-Sep-02	10.00
Barometric Pressure		29.8	in Hg
Theoretical Critical Vacuum[1]		14.1	in Hg
Calibration Technician		JOE 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, $(ft^3 \cdot R^{1/2})/(in.Hg \cdot min)$.

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_m)	(V_m)	(t_m)	(t_m)		K'	(t_{amb})	(t_{amb})	
min	in H_2O	cubic feet	cubic feet	°F	°F		see above2	°F	°F	in Hg
14.1	2.8	55.603	67.154	92	92	63	0.6213	89	89	21
6.0	4.6	67.154	75.011	98	98	73	0.8486	83	80	19
11.7	1.4	75.011	82.876	99	98	55	0.4793	81	79	22
13.4	0.8	82.876	88.974	98	99	48	0.3740	79	77	24
18.4	0.4	88.974	95.110	99	99	40	0.2511	77	77	24

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	
11.080	0.786	11.142	0.790	1.006	0.007	0.790	2.438	0.388
7.489	1.248	6.520	1.087	0.871	-0.128	1.087	2.114	0.063
7.431	0.635	7.191	0.615	0.968	-0.031	0.615	1.978	-0.072
5.753	0.429	6.439	0.481	1.119	0.121	0.481	1.890	-0.160
5.778	0.314	5.941	0.323	1.028	0.030	0.323	1.832	-0.219
				0.998	Y Average		2.050	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: Joe Elliott Date: 5 Sept 02

Quality Assurance Data Review:

Signature: [signature] Date: 5 Sept 02

Ambient Air Services, Inc. - Method 5 Post Test Dry Gas Meter Calibration

USING CALIBRATED CRITICAL ORIFICES

3-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	AASI
Console Serial Number	Box 10
Pre Test Y Value	0.989
DGM Serial Number	################

Calibration Conditions			
Date	Time	1-Nov-02	13:12
Barometric Pressure		29.9	in Hg
Theoretical Critical Vacuum[1]		14.1	in Hg
Calibration Technician		JE	

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	°R/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, $(ft^3 \cdot {}^\circ R^{1/2})/(in.Hg \cdot min)$.

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_m)	(V_m)	(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
7.5	2.3	401.578	407.667	72	75	63	0.6213	71	72	21
62.9	2.3	407.667	459.392	75	76	63	0.6213	73	74	21
14.5	2.3	459.392	471.442	79	79	63	0.6213	74	75	21

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	
6.056	0.808	6.043	0.806	0.998	0.009	0.806	1.995	0.003
51.255	0.815	50.589	0.804	0.987	-0.002	0.804	1.995	0.003
11.863	0.818	11.651	0.804	0.982	-0.007	0.804	1.985	-0.006
				0.989	Y Average		1.992	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 # 3786, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature Joe Elliott Date 11-01-02

Quality Assurance Data Review:

Signature Don Fairfield Date 11-01-02

AAS Inc. AMBIENT AIR SERVICES INCORPORATED
ENVIRONMENTAL CONSULTANTS

PITOT TUBE CALIBRATION MEASUREMENTS

DATE CALIBRATED 11/02/02 PITOT TUBE 6B

Pitot tube assembly level? ✓ (Yes) No

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

α_1 = 10 ° (<10°), α_2 = 0.5 ° (<10°), β_1 = 00 ° (<5°),

β_2 = 00 ° (<5°)

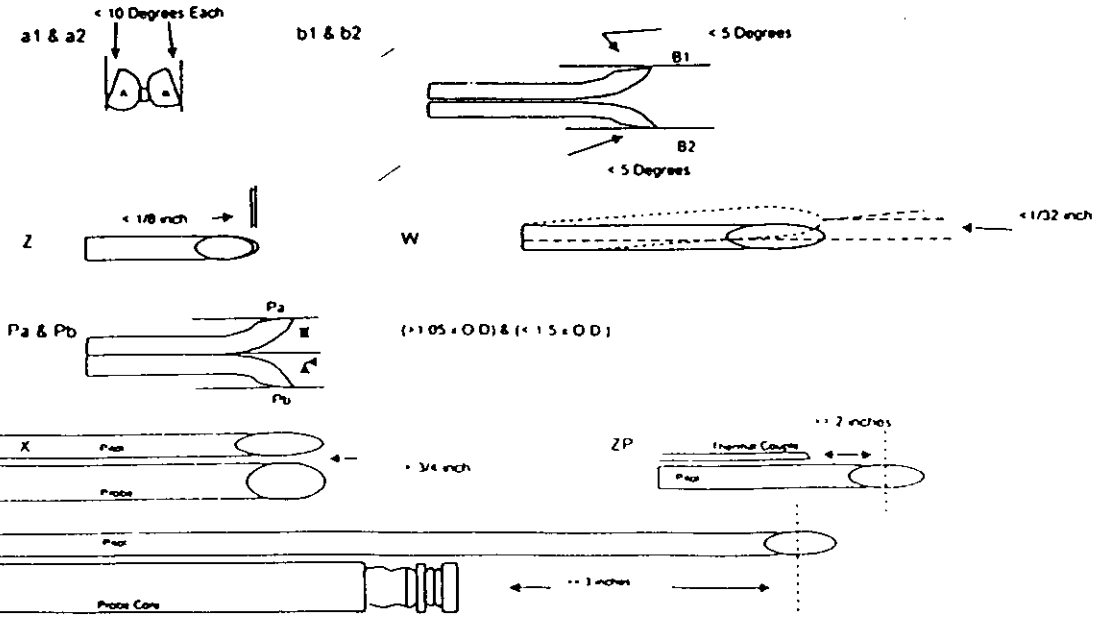
γ = 1.5 °, θ = .5 °, A = 1.202 in. = (Pa + Pb)

z = A sin γ = 0031 in.; <0.32 / <1/8 in.

w = A sin θ = 0010 in.; <0.08 / <1/32 in.

P_a .600 in. P_b .602 in. D_t = .375

Calibration required? ____ Yes ✓ (No)



THERMOCOUPLE CALIBRATION FORM

Date 11/02/02 Time 08:30
Ambient Temperature 79 Source GP PALATKA
Barometric Pressure 30.05 Source
Technician's Signature

Standard Thermometer Type MERCURY IN GLASS
Manufacturer PRINCO
Serial Number 0932
Pyrometer Manufacturer ATKINS Model 396E
Serial Number AA-ST #4 Meter Box # 10

TEMPERATURE SOURCE (A)													
REFERENCE THERMOMETER	Actual Reading	AMBIENT AIR			BOILING H_2O			ICE BATH					
	Corrected Temperature	79°			212°			32°					
CALIBRATED THERMOCOUPLE													
Serial Number	Location	Indicated Temp.	Difference (B)	Percent Diff. (C)	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.	Indicated Temp.	Difference	Percent Diff.
6B	Stack	79	0		212	0		32	0				
Box 10	Filter	78	-1		211	-1		32	0				
Box 4	Impinger	80	+1		212	0		31	-1				
Box 10	Meter In	79	0		212	0		32	0				
Box 10	Meter Out	79	0		213	+1		33	+1				

Comments:

Calibration Tolerances Stack = 1.5% of value, Filter Box = ±5.4°F, Impinger = ±2°F, Meter = ±5.4°F (40CFR Pt 60, App. A Method 5, and QA Handbook Section 3.4, Method 5, page 13, Rev. 0)

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

$$\left[\frac{(\text{ref. temp. °F} + 460) - (\text{indicated temp. °F} + 460)}{(\text{reference temp °F} + 460)}\right] \times 100$$

AASI 68A

APPENDIX – E

Sample Chain of Custody

0211037-1
thru
0211043-1

Technical Services, Inc.
2901 Danese St., Jacksonville, FL 32206
(904) 353-5761 / fax (904) 358-2908

CHAIN of CUSTODY RECORD

CLIENT NAME & ADDRESS (REPORT TO BE SENT TO:)
Ambient Air Services, Inc.

REMARKS:
Na2S2O3 added in Sampling @ TSI

PROJ. NO.

PROJECT NAME/ ADDRESS:
GP/Pottka
Bleach Plant

SAMPLERS: (SIGNATURE)

Sample Location ID	SAMPLE DATE	TIME	COMP	GRAB	TOTAL NO. of Containers	BOTTLE MAKEUP: 0.1 N NaOH ½ gl. poly	Amber Glass 0.1 N NaOH	½ Gal. Poly w/ NaOH			PARAMETERS
Run 1 Imp. Catch	10/31/02				1	✓					Cl- / BASE
2	↓				1	✓					
3	↓				1	✓					
Run 1 Imp Catch	10/29/02				1		✓				
2	↓				1		✓				
3	↓				1		✓				
FIELD Blank					1			1			↓

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
RELINQUISHED BY:	DATE/TIME	RECEIVED BY: H. C. Gray	DATE/TIME 1430 - 11/1/02
RELINQUISHED BY: H C Gray	DATE/TIME 1515 - 11/1/02	RECEIVED BY:	DATE/TIME
		RECEIVED FOR LABORATORY BY: Debra A. Dittle	DATE/TIME 11/1/02 1615

02110037-1
thru
02110043-1

Technical Services, Inc.
2901 Danese St., Jacksonville, FL 32206
(904) 353-5761 / fax (904) 358-2908

CHAIN of CUSTODY RECORD

CLIENT NAME & ADDRESS (REPORT TO BE SENT TO:) Ambient Air Services, Inc.

REMARKS

PROJ. NO.

PROJECT NAME/ ADDRESS GP/Palatka Bleach Plant

SAMPLERS: (SIGNATURE)

BOTTLE MAKEUP

Sample Location ID	SAMPLE DATE	TIME	COMP	GRAB	TOTAL NO of Containers	0.1 N NaOH w/ PL. Poly	Amber Glass w/ 0.1 N NaOH				PARAMETERS
Run 1 Imp Catch	10/31/02				1	✓					Cl- / BASE
2	↓				1	✓					
3 ↓	↓				1	✓					
Run 1 Imp Catch	10/29/02				1		✓				
2	↓				1		✓				
3 ↓	↓				1		✓				
Field Blank					1						↓

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
[signature]	0900 10-30-02	D. W. Satterfield	10/30/02 09:00
D. W. Satterfield	11/1/02 1430	W. C. Gray	1430 - 11/1/02
W. C. Gray	1615 - 11/1/02		
		RECEIVED FOR LABORATORY BY: Debra S. Walter	11/1/02 1615

APPENDIX - F

Calibration Gas Certificates

PRAXAIR

Praxair Distribution, Inc.
145 Shimersville Road
Bethlehem, PA 18015
Tel. (610) 691-2474
Fax (610) 758-8384

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER PRAXAIR SOUTHEAST **P.O NUMBER** 333045-00

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON MONOXIDE 503.2PPM GMIS VS	1680B	CLM-009396	490.4 PPM

ANALYZER READINGS

R=REFERENCE STANDARD ***Z=ZERO GAS*** ***C=GAS CANDIDATE***

1. **COMPONENT** CARBON MONOXIDE 503.2PPM GMI **ANALYZER MAKE-MODEL-S/N** Siemens Ultramat 5E S/N B8-900

ANALYTICAL PRINCIPLE NON-DISPERSIVE INFRARED **LAST CALIBRATION DATE** 12/31/00

FIRST ANALYSIS DATE 12/27/00 **SECOND ANALYSIS DATE** [illegible]

Z [illegible]	R 503	C 301	CONC. [illegible]	Z 0	R 504	C 302	CONC. [illegible]
R 502	Z 0	C 302	CONC. 302.3	R 504	Z 0	C 302	CONC. 301.5
Z 0	C 302	R 503	CONC. 302.3	Z 0	C 303	R 504	CONC. 302.3
U/M ppm		MEAN TEST ASSAY 302.0		U/M ppm		MEAN TEST ASSAY 301.9	

VALUES NOT VALID BELOW 150 PSIG

UNCERTAINTIY OF CARBON MONOXIDE: ±1.3PPM

THIS CYLINDER NO. CC114912
HAS BEEN CERTIFIED ACCORDING TO SECTION 2.2
OF TRACEABILITY PROTOCOL NO. EPA-600/R97/121
PROCEDURE G1
CERTIFIED ACCURACY ± 1 % NIST TRACEABLE
CYLINDER PRESSURE 2000 PSIG
CERTIFICATION DATE 01/03/01
EXPIRATION DATE 01/03/04 TERM

CERTIFIED CONCENTRATION

CARBON MONOXIDE	301.9PPM
AIR	BALANCE

ANALYZED BY JOHN PRIBISH

CERTIFIED BY KEVIN BRADY

PRAXAIR

Praxair Distribution, Inc.
145 Shimersville Road
Bethlehem, PA 18015
Tel. (610) 691-2474
Fax (610) 758-8384

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER PRAXAIR SOUTHEAST **P.O NUMBER** 333045-00

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON MONOXIDE 503.2PPM GMIS VS	1680B	CLM-009396	490.4 PPM

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** CARBON MONOXIDE 503.2PPM GMIS **ANALYZER MAKE-MODEL-S/N** Siemens Ultramat 5E S/N B8-900

ANALYTICAL PRINCIPLE NON-DISPERSIVE INFRARED **LAST CALIBRATION DATE** 12/31/00

FIRST ANALYSIS DATE 12/27/00 **SECOND ANALYSIS DATE** 01/03/01

Z	0	R	503	C	595	CONC.	595.6	Z	0	R	504	C	595	CONC.	594.1
R	502	Z	0	C	595	CONC.	595.6	R	504	Z	0	C	595	CONC.	594.1
Z	0	C	594	R	503	CONC.	594.6	Z	0	C	595	R	504	CONC.	594.1
U/M	ppm			MEAN TEST ASSAY			595.3	U/M	ppm			MEAN TEST ASSAY			594.1

VALUES NOT VALID BELOW 150 PSIG

UNCERTAINTIY OF CARBON MONOXIDE:±4.2PPM

THIS CYLINDER NO. SA12251
HAS BEEN CERTIFIED ACCORDING TO SECTION 2.2
OF TRACEABILITY PROTOCOL NO. EPA 600/R97/121
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 01/03/01
EXPIRATION DATE 01/03/04 **TERM**

CERTIFIED CONCENTRATION

CARBON MONOXIDE	594.7PPM
AIR	BALANCE

ANALYZED BY JOHN PRIBISH

CERTIFIED BY [illegible]

Making Our Planet More Productive

AIR LIQUIDE™

CERTIFICATE of ANALYSIS

Interference-Free Multi-Component EPA Protocol Gases

Cyl. Number: CC121974	Cyl. Pressure:* 1667psig	Document Number: 9032348
Assay Date: 07/23/01	Expiration Date: 07/22/04	Item Number:
Customer: Technical Services	P.O. Number: 070601	Notes:

*Mixture is valid only to 150 psig

COMPONENT Name	REQUESTED Concentration	ASSAY Concentration
Carbon Monoxide	1000 ppm	991 ±15 ppm
Nitrogen	Balance	Balance

EPA Protocol Section No. 2.2
Procedure G1

NOTE: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/123

REFERENCE STANDARD EMPLOYED FOR ANALYSIS

Std Type	Std #	Conc.	Units	Std Error	Comp	Balance	Cyl No.	Exp Date	Source No.
GMIS91	GMIS91	1500.0	ppm	21.0	CO	N2	CC113811	06/22/03	N.A.

Component 1: Carbon Monoxide, Gas Analyzer Employed		Component 2: None, Gas Analyzer Employed	Component 3: Gas Analyzer Employed
Manufacturer:	KVB/Analect	Manufacturer:	Manufacturer:
Model Number:	EN3024	Model Number:	Model Number:
Serial Number:	3024	Serial Number:	Serial Number:
Analytical Principle:	FTIR	Analytical Principle:	Analytical Principle:
MPC Calibrated:	07/05/01	MPC Calibrated:	MPC Calibrated:

Component 1
Carbon Monoxide

07/16/01	Trial 1	Trial 2	Trial 3	Units
Zero	-0.11	-0.33	-0.28	
Reference 1	1614.16	1639.01	1648.95	
Reference 2				
Candidate	1061.20	1082.36	1088.32	
Result	974.23	993.65	999.12	ppm
		Mean Result:	989.00	ppm

07/23/01	Trial 1	Trial 2	Trial 3	Units
Zero	-0.02	0.05	0.16	
Reference 1	1673.01	1678.36	1674.41	
Reference 2				
Candidate	1113.28	1105.85	1105.95	
Result	996.79	990.14	990.23	ppm
		Mean Result:	992.39	ppm

Analyst: [signature]

Air Liquide America Corporation
11426 Fairmont Parkway, La Porte, Texas 77571-6000
Phone: (281) 474-8400 Fax (281) 474-8419

AIR LIQUIDE

CERTIFICATE of ANALYSIS

Interference-Free Multi-Component EPA Protocol Gases

Cyl. Number: CC70989	**Cyl. Pressure:*** 1667psig	**Document Number:** 9032348
Assay Date: 07/23/01	**Expiration Date:** 07/22/04	**Item Number:**
Customer: Technical Services	**P.O. Number:** 070601	**Notes:**

*Mixture is valid only to 150 psig

[illegible]	[illegible]	[illegible]
Carbon Monoxide	2000 ppm	1994 ±30 ppm
Nitrogen	Balance	Balance

[illegible]

NOTE: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/123

REFERENCE STANDARD EMPLOYED FOR ANALYSIS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GMIS91	GMIS91	1500.0	ppm	21.0	CO	N2	CC113811	06/22/03	N.A.

[illegible]		[illegible]		[illegible]	
Manufacturer:	KVB/Analect	Manufacturer:		Manufacturer:	
Model Number:	EN3024	Model Number:		Model Number:	
Serial Number:	3024	Serial Number:		Serial Number:	
Analytical Principle:	FTIR	Analytical Principle:		Analytical Principle:	
MPC Calibrated:	07/05/01	MPC Calibrated:		MPC Calibrated:	

[illegible]	Trial 1	Trial 2	Trial 3	Units
[illegible]	-0.11	-0.33	-0.28	
[illegible]	1614.16	1639.01	1648.95	
[illegible]				
[illegible]	2132.25	2176.69	2193.10	
[illegible]	1957.28	1998.07	2013.12	ppm
		Mean Result	[illegible]	ppm

Component 1

Carbon Monoxide

07/23/01	Trial 1	Trial 2	Trial 3	Units
[illegible]	-0.02	0.05	0.16	
[illegible]	1673.01	1678.36	1674.41	
[illegible]				
[illegible]	2226.87	2236.96	2235.43	
[illegible]	1993.92	2002.95	2001.58	ppm
		Mean Result	1999.49	ppm

Analyst: [signature]

Air Liquide America Corporation
11426 Fairmont Parkway, La Porte, Texas 77571-6000
Phone. (281) 474-8400 Fax. (281) 474-8419

Airgas

Airgas Specialty Gases
12722 South Wentworth Avenue
Chicago, IL 60628
773.785.3000 Fax: 773 785 1928
www.airgas.com

Certificate of Analysis: E.P.A. Protocol Gas Mixture

Certification performed in accordance with "EPA Traceability Protocol (Sept.1997)" using assay procedures listed.

Cylinder No:	SG9140092BAL	Order No:	008973-00
Certification Date:	09/9/2002	Expiration Date:	09/9/2005
Cylinder Pressure:	2000	Part No:	E02NI95E15A0077

*Do not use cylinder below 150 psig.

Component	*Certified Concentration*	*Unit of Measure*	*Accuracy*	*Procedure*	*Analytical Principle*
Carbon Dioxide	5.049	%	1%	G-1	NDIR
Nitrogen	Balance				
Nox (Reference Value Only)		ppm			

Reference Standard Information

Type	*Component*	*Concentration*	*Unit*	*Cylinder Number*
Ntrm	Carbon Dioxide	4.204	%	SG9169571BAL

Analytical Data

Component 1: Carbon Dioxide

1st Analysis Date: 09/9/2002

Zero	0.000	Cand	5.046	Ref	4.202
Zero	0.000	Cand	5.045	Ref	4.200
Zero	0.000	Cand	5.046	Ref	4.201

2nd Analysis Date:

Zero		Cand		Ref	
Zero		Cand		Ref	
Zero		Cand		Ref	

Analyzed by: _____

Approved by: _____

APPENDIX – G

Process Data

PRODUCTION DATA FOR OCTOBER 29 AND 31, 2002 CO TESTING

DATE	10/29/02		10/31/02		
RUN	1	2	1	2	3
TIME	1225-1324	1433-1532	1330-1429	1547-1646	1710-1809

Notes: ADTBPH is air-dried tons of bleached pulp per hour
Kappa is the pre-washer kappa
%ClO2 is the %ClO2 applied in that stage

		Do Stage				Eop Stage		D1 Stage		
Run	ADTBPH	%SW	%HW	Kappa	%ClO2	%SW	%HW	%SW	%HW	%ClO2
1 (29th)	49.8	100	0	22.0	2.0	100	0	100	0	0.5
2 (29th)	30.1	100	0	22.4	2.0	100	0	100	0	0.6
1 (31st)	50.0	100	0	22.8	2.2	100	0	100	0	0.7
2 (31st)	50.2	100	0	23.3	2.2	100	0	100	0	0.7
3 (31st)	50.1	100	0	23.3	2.2	100	0	100	0	0.7

THE KAPPA AND %ClO2 APPLIED ARE CONFIDENTIAL BUSINESS INFORMATION.

PRODUCTION AND SCRUBBER DATA FOR OCTOBER 29 AND 31, 2002 CHLORINATED HAP (METHOD 26A) TESTS

DATE	10/29/02			10/31/02		
RUN	1	2	3	1	2	3
TIME	1218-1323	1433-1538	1700-1802	1332-1443	1550-1656	1710-1816

Notes: ADTBPH is air-dried tons of bleached pulp per hour
Kappa is the pre-washer kappa
$\%ClO_2$ is the $\%ClO_2$ applied in that stage

		Do Stage				Eop Stage		D1 Stage		
Run	ADTBPH	%SW	%HW	Kappa	$\%ClO_2$	%SW	%HW	%SW	%HW	$\%ClO_2$
1 (29th)	49.8	100.0	0.0	21.9	2.0	100.0	0.0	100.0	0.0	0.5
2 (29th)	30.1	100.0	0.0	22.4	2.0	100.0	0.0	100.0	0.0	0.7
3 (29th)	30.0	100.0	0.0	22.9	1.6	100.0	0.0	100.0	0.0	0.7
1 (31st)	49.8	100.0	0.0	21.9	2.2	100.0	0.0	100.0	0.0	0.5
2 (31st)	49.8	100.0	0.0	21.9	2.2	100.0	0.0	100.0	0.0	0.5
3 (31st)	49.8	100.0	0.0	21.9	2.2	100.0	0.0	100.0	0.0	0.5

THE KAPPA AND $\%ClO_2$ APPLIED ARE CONFIDENTIAL BUSINESS INFORMATION.

Run	Flow, gpm	pH	Fan Load, %	Fan Amps	Fan Differential, in. H_2O
1 (29th)	1262	9.2	84	15.0	20.8
2 (29th)	1207	8.9	84	15.1	20.8
3 (29th)	1153	9.0	85	15.2	21.1
1 (31st)	1252	9.3	85	15.4	21.3
2 (31st)	1258	9.3	85	15.4	21.3
3 (31st)	1263	9.2	86	15.4	21.4

Cl2 Testing Raw Scrubber Data

Run 1 10/29/02 1218-1323

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1218-1233	1263	9.2	85	15.2	20 9
1233-1248	1263	9.1	84	15.1	20.9
1248-1303	1263	9.1	84	15.1	20.8
1303-1318	1262	9.0	83	15.0	20.8
Average	1262	9.1	84	15.1	20.9

Cl2 Testing Raw Scrubber Data

Run 2 10/29/02 1433-1538

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1433-1448	1239	8.9	83	15.0	20.8
1448-1503	1228	8.9	83	15.0	20.8
1503-1518	1217	8.9	83	15.0	20.8
1518-1533	1207	8.9	84	15.1	20.9
Average	1223	8.9	84	15.0	20.8

Cl2 Testing Raw Scrubber Data

Run 3 10/29/02 1700-1802

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1700-1715	1163	9.0	84	15.2	21.1
1715-1730	1159	9.0	84	15.2	21.1
1730-1745	1156	9.0	85	15.2	21.1
1745-1800	1153	9.0	85	15.2	21.1
Average	1158	9.0	84	15.2	21.1

Cl2 Testing Raw Scrubber Data

Run 1 10/31/02 1332-1443

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1332-1347	1252	9.3	86	15.4	21.4
1347-1402	1252	9.3	85	15.4	21.3
1402-1417	1252	9.3	85	15.4	21.3
1417-1432	1254	9.3	86	15.4	21.3
1432-1447	1254	9.3	86	15.4	21.3
Average	1253	9.3	85	15.4	21.3

Cl2 Testing Raw Scrubber Data

	Run 2	10/31/02	1550-1656			
	Flow, gpm		pH	Fan Load, %	Fan Amps	Scrubber Differential, in. H2O
1550-1605	1258		9.3	85	15.4	21.3
1605-1620	1258		9.3	85	15.4	21.4
1620-1635	1259		9.3	85	15.4	21.4
1635-1650	1259		9.3	86	15.4	21.4
Average	1259		9.3	85	15.4	21 4

Cl2 Testing Raw Scrubber Data

Run 3 10/31/02 1710-1816

	Flow, gpm	pH	Fan Load, %	Fan Amps	Scrubber Differential, in H2O
1710-1725	1261	9.3	86	15.5	21.4
1725-1740	1261	9.3	86	15.4	21.4
1740-1755	1262	9.3	86	15.5	21.5
1755-1810	1263	9.2	86	15.4	21.5
Average	1262	9.3	86	15.4	21.4

APPENDIX – H

Project Participants

Joe Cooksey of AASI	Report Review
Randy L Weston of AASI	Project Manager Report Preparation Field Testing
George Hawkins of AASI	Field Testing
Roger Dilinger of AASI	Field Testing
Joe Taylor of GP	Testing Support

Attachment D

Subsection K. This section addresses the following emissions unit(s).

E.U. ID No.	Brief Description
036	Elemental Chlorine Free (ECF) No. 3 Bleach Plant

Emissions Unit 036 consists of an ECF bleach plant. This plant uses chlorine dioxide in the bleaching process. Emissions are controlled by a wet scrubber. This emissions unit is regulated under 40 CFR 63 Subpart S - National Emission Standards for Hazardous Air Pollutants for Pulp Mills, adopted and incorporated by reference in Rule 62-204.800, F.A.C.; Rule 212.400(5), F.A.C., Prevention of Significant Deterioration (PSD): Permit(s) No. PSD-FL-264; Rule 62-212.400(6), F.A.C., and Best Available Control Technology (BACT) Determination, dated June 30, 1999.

The following specific conditions apply to the emissions unit(s) listed above:

Operational Parameters

K.0. The Permittee shall meet the compliance milestones stated in Appendix CP-Compliance Plan.

K.1. Permitted Capacity. Until compliance is demonstrated with the air construction permit issued pursuant to the PSD review identified in the Compliance Schedule of the Compliance Plan, Appendix CP, Condition X.1, the maximum production rate of this emissions unit shall not exceed 840 tons per day of air-dried bleached pulp (ADBP) as a maximum monthly average. [Consent Order OGC File No. 02-1886]

K.2. Hours of Operation. The hours of operation are not restricted, i.e. 8,760 hours per year. [Rules 62-4.1610(2) and 62-210.200(PTE), F.A.C., Construction Permit No. 1070005-006-AC/PSD/FL-264]

Operating Standards

K.3. Bleaching Stage Equipment. The equipment at each bleaching stage, of the No. 3 Bleach Plant, where chlorinated compounds are introduced shall be enclosed and vented into a closed-vent system and routed to the wet scrubber stack for control. The enclosures and closed-vent system shall meet the requirements specified in Condition K.5.
[63.445(b)]

K.4. Chloroform air emissions. To reduce chloroform air emissions to the atmosphere, the No. 3 Bleach Plant shall not use hypochlorite or chlorine for bleaching in the bleaching system or line. [63.445(d)(2), Construction Permit No. 1070005-006-AC/PSD-FL-264]

K.5. Enclosures and Closed-Vent Systems. The enclosure and closed-vent system specified in Condition K.3 for capturing and transporting vent streams that contain HAP shall meet the following requirements:

(a) Each enclosure shall maintain negative pressure at each enclosure or hood opening as demonstrated by the procedures specified in Condition K.18. Each enclosure or hood opening closed during the initial performance test specified in 40 CFR 63.457(a) shall be maintained in the same closed and sealed position as during the performance test at all times except when necessary to use the opening for sampling, inspection, maintenance, or repairs.

(b) Each component of the closed-vent system used to comply with Condition K.3. that is operated at positive pressure and located prior to a control device shall be designed for and operated with no detectable leaks as indicated by an instrument reading of less than 500 parts per million by volume above background, as measured by the procedures specified in Condition K.17..

(c)Each bypass line in the closed-vent system that could divert vent streams containing HAP to the atmosphere without meeting the emission limitations in 40 CFR 63.445 shall comply with either of the following requirements:

(1) On each bypass line, the owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications a flow indicator that provides a record of the presence of gas stream flow in the bypass line at least once every 15 minutes. The flow indicator shall be installed in the bypass line in such a way as to indicate flow in the bypass line; or

(2) For bypass line valves that are not computer controlled, the owner or operator shall maintain the bypass line valve in the closed position with a car seal or a seal placed on the valve or closure mechanism in such a way that valve or closure mechanism cannot be opened without breaking the seal.

[63.450]

Emission Limitations and Standards

{Permitting note: Table 1-1, Summary of Air Pollutant Standards and Terms, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

{Permitting Note: Unless otherwise specified, the averaging time for this condition is based on the specified averaging time of the applicable test method.}

K.6. Carbon Monoxide. Carbon monoxide emissions shall not exceed 46 lbs/hr and 201 tons per year[1]. Carbon monoxide emissions shall be minimized to the extent practicable by efficient bleaching operations.

[1] Compliance issues associated with CO emissions from this emissions unit are addressed within Consent Order OGC File No. 02-1886 until compliance is demonstrated with the air construction permit issued pursuant to the PSD review identified in the Compliance Schedule of the Compliance Plan, Appendix CP, Condition X.1.

[Rule 62-212.410, F.A.C., Construction Permit No. 1070005-006-AC/PSD-FL-264, Consent Order OGC File No. 02-1886]

K.7. Total Chlorinated HAPs. The total chlorinated HAP outlet concentration shall not exceed 10 parts per million by volume
[63.445(c)(2); Construction Permit No. 1070005-006-AC/PSD-FL-264]

K.8. Visible Emissions. Visible Emissions form this emissions unit shall not exceed 20% opacity. The visible emissions limit shall only be effective if the visible emission measurement can be made without being substantially affected by plume mixing or moisture condensation.
[Rule 62-296.320, F.A.C.; Rule 62-296.404(2)(b), F.A.C.; Construction Permit No. 1070005-006-AC/PSD-FL-264]

Excess Emissions

K.9. Excess emissions resulting from startup, shutdown or malfunction of any source shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration.
[62-201.700(1), F.A.C.]

K.10. Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited.
[Rule 62-210.700(4), F.A.C.]

K.11. Considering operational variations in types of industrial equipment operations affected by this rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest.
[Rule 62-210.700(5), F.A.C.]

K.12. In case of excess emissions resulting from malfunctions, each source shall notify the Department or the appropriate Local program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department.
[Rule 62-210.700(6), F.A.C.]

Test Methods and Procedures

{Permitting note: Table 2-1, Summary of Compliance Requirements, summarizes information for convenience purposes only. This table does not supersede any of the terms or conditions of this permit.}

K.13. Carbon Monoxide. The test method for carbon monoxide emissions shall be EPA Method 10 as incorporated in 40 CFR 60, Appendix A. The compliance testing shall be conducted annually with a frequency base date of 05/25[1].

[1] Compliance issues associated with CO emissions from this emissions unit are addressed within Consent Order OGC File No. 02-1886 until compliance is demonstrated with the air construction permit issued pursuant to the PSD review identified in the Compliance Schedule of the Compliance Plan, Appendix CP, Condition X.1.
[Construction Permit No. 1070005-006-AC/PSD-FL-264, Rule 62-204.800, F.A.C., Consent Order OGC File No. 02-1886]

K.14. Total Chlorinated HAPs. The test method for total chlorinated HAPs shall be EPA Method 26A as incorporated in 40 CFR 60, Appendix A. The compliance testing shall be conducted annually with a frequency base date of 05/26.
[Construction Permit No. 1070005-006-AC/PSD-FL-264; Rule 62-297.310(7)(a)4.c., F.A.C.]

K.15. Visible Emissions. The test method for visible emissions shall be EPA Method 9 as incorporated in 40 CFR 60, Appendix A. The compliance testing shall be conducted annually with a frequency base date of 05/25.
[Construction Permit No. 1070005-006-AC/PSD-FL-264, Rule 62-204.800, F.A.C.]

K.16. Vent sampling port locations and gas stream properties. For purposes of selecting vent sampling port locations and determining vent gas stream properties, required in 40 CFR 63.445, the owner or operator shall comply with the following procedures:

(1) Method 1 or 1A of part 60, appendix A, as appropriate, shall be used for selection of the sampling site as follows:

(i) To sample for vent gas concentrations and volumetric flow rates, the sampling site shall be located prior to dilution of the vent gas stream and prior to release to the atmosphere;

(ii) For determining compliance with percent reduction requirements, sampling sites shall be located prior to the inlet of the control device and at the outlet of the control device; measurements shall be performed simultaneously at the two sampling sites; and

(iii) For determining compliance with concentration limits or mass emission rate limits, the sampling site shall be located at the outlet of the control device.

(2) No traverse site selection method is needed for vents smaller than 0.10 meter (4.0 inches) in diameter.

(3) The vent gas volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D of part 60, appendix A, as appropriate.

(4) The moisture content of the vent gas shall be measured using Method 4 of part 60, appendix A.

(5) To determine vent gas concentrations, the owner or operator shall collect a minimum of three test runs that are representative of normal conditions and average the resulting pollutant concentrations using the following procedures.

(i) Method 308 in Appendix A of this part shall be used to determine the methanol concentration.

(ii) Except for the modifications specified in paragraphs (b)(5)(ii)(A) through (b)(5)(ii)(K) of this section, Method 26A of part 60, appendix A shall be used to determine chlorine concentration in the vent stream.

(A) *Probe/Sampling Line.* A separate probe is not required. The sampling line shall be an appropriate length of 0.64 cm (0.25 in) OD Teflon® tubing. The sample inlet end of the sampling line shall be inserted into the stack in such a way as to not entrain liquid condensation from the vent gases. The other end shall be connected to the impingers. The length of the tubing may vary from one sampling site to another, but shall be as short as possible in each situation. If sampling is conducted in sunlight, opaque tubing shall be used. Alternatively, if transparent tubing is used, it shall be covered with opaque tape.

(B) *Impinger Train.* Three 30 milliliter (ml) capacity midget impingers shall be connected in series to the sampling line. The impingers shall have regular tapered stems.

Silica gel shall be placed in the third impinger as a desiccant. All impinger train connectors shall be glass and/or Teflon®.

(C) *Critical Orifice.* The critical orifice shall have a flow rate of 200 to 250 ml/min and shall be followed by a vacuum pump capable of providing a vacuum of 640 millimeters of mercury (mm Hg). A 45 millimeter diameter in-line Teflon® 0.8 micrometer filter shall follow the impingers to project the critical orifice and vacuum pump.

(D) The following are necessary for the analysis apparatus:

(*1*) Wash bottle filled with deionized water;

(*2*) 25 or 50 ml graduated burette and stand;

(*3*) Magnetic stirring apparatus and stir bar;

(*4*) Calibrated pH Meter;

(*5*) 150-250 ml beaker or flask; and

(*6*) A 5 ml pipette.

(E) The procedures listed in paragraphs (b)(5)(ii)(E)(*1*) through (b)(5)(ii)(E)(*7*) of this section shall be used to prepare the reagents.

(*1*) To prepare the 1 molarity (M) potassium dihydrogen phosphate solution, dissolve 13.61 grams (g) of potassium dihydrogen phosphate in water and dilute to 100 ml.

(*2*) To prepare the 1 M sodium hydroxide solution (NaOH), dissolve 4.0 g of sodium hydroxide in water and dilute to 100 ml.

(*3*) To prepare the buffered 2 percent potassium iodide solution, dissolve 20 g of potassium iodide in 900 ml water. Add 50 ml of the 1 M potassium dihydrogen phosphate solution and 30 ml of the 1 M sodium hydroxide solution. While stirring solution, measure the pH of solution electrometrically and add the 1 M sodium hydroxide solution to bring pH to between 6.95 and 7.05.

(*4*) To prepare the 0.1 normality (N) sodium thiosulfate solution, dissolve 25 g of sodium thiosulfate, pentahydrate, in 800 ml of freshly boiled and cooled distilled water in a 1-liter volumetric flask. Dilute to volume. To prepare the 0.01 N sodium thiosulfate solution, add 10.0 ml standardized 0.1 N sodium thiosulfate solution to a 100 ml volumetric flask, and dilute to volume with water.

(*5*)To standardize the 0.1 N sodium thiosulfate solution, dissolve 3.249 g of anhydrous potassium bi-iodate, primary standard quality, or 3.567 g potassium iodate dried at 103 +/- 2 degrees Centigrade for 1 hour, in distilled water and dilute to 1000 ml to yield a 0.1000 N solution. Store in a glass-stoppered bottle. To 80 ml distilled water, add, with constant stirring, 1 ml concentrated sulfuric acid, 10.00 ml 0.1000 N anhydrous potassium bi-iodate, and 1 g potassium iodide. Titrate immediately with 0.1 n sodium thiosulfate titrant until the yellow color of the liberated iodine is almost discharged. Add 1 ml starch indicator solution and continue titrating until the blue color disappears. The normality of the sodium thiosulfate solution is inversely proportional to the ml of sodium thiosulfate solution consumed:

$$\text{Normality of Sodium Thiosulfate} = \frac{1}{\text{ml Sodium Thiosulfate Consumed}}$$

(6) To prepare the starch indicator solution, add a small amount of cold water to 5 g starch and grind in a mortar to obtain a thin paste. Pour paste into 1 L of boiling distilled water, stir, and let settle overnight. Use clear supernate for starch indicator solution.

(7) To prepare the 10 percent sulfuric acid solution, add 10 ml of concentrated sulfuric acid to 80 ml water in an 100 ml volumetric flask. Dilute to volume.

(F) The procedures specified in paragraphs (b)(5)(ii)(F)(1) through (b)(5)(ii)(F)(5) of this section shall be used to perform the sampling.

(1) Preparation of Collection Train. Measure 20 ml buffered potassium iodide solution into each of the first two impingers and connect probe, impingers, filter, critical orifice, and pump. The sampling line and the impingers shall be shielded from sunlight.

(2) Leak and Flow Check Procedure. Plug sampling line inlet tip and turn on pump. If a flow of bubbles is visible in either of the liquid impingers, tighten fittings and adjust connections and impingers. A leakage rate not in excess of 2 percent of the sampling rate is acceptable. Carefully remove the plug from the end of the probe. Check the flow rate at the probe inlet with a bubble tube flow meter. The flow should be comparable or slightly less than the flow rate of the critical orifice with the impingers off-line. Record the flow and turn off the pump.

(3) Sample Collection. Insert the sampling line into the stack and secure it with the tip slightly lower than the port height. Start the pump, recording the time. End the sampling after 60 minutes, or after yellow color is observed in the second in-line impinger. Record time and remove the tubing from the vent. Recheck flow rate at sampling line inlet and turn off pump. If the flow rate has changed significantly, redo sampling with fresh capture solution. A slight variation (less than 5 percent) in flow may be averaged. With the inlet end of the line elevated above the impingers, add about 5 ml water into the inlet tip to rinse the line into the first impinger.

(4) Sample Analysis. Fill the burette with 0.01 N sodium thiosulfate solution to the zero mark. Combine the contents of the impingers in the beaker or flask. Stir the solution and titrate with thiosulfate until the solution is colorless. Record the volume of the first endpoint (TN, ml). Add 5 ml of the 10 percent sulfuric acid solution, and continue the titration until the contents of the flask are again colorless. Record the total volume of titrant required to go through the first and to the second endpoint (TA, ml). If the volume of neutral titer is less than 0.5 ml, repeat the testing for a longer period of time. It is important that sufficient lighting be present to clearly see the endpoints, which are

determined when the solution turns from pale yellow to colorless. A lighted stirring plate and a white background are useful for this purpose.

(5) Interferences. Known interfering agents of this method are sulfur dioxide and hydrogen peroxide. Sulfur dioxide, which is used to reduce oxidant residuals in some bleaching systems, reduces formed iodine to iodide in the capture solution. It is therefore a negative interference for chlorine, and in some cases could result in erroneous negative chlorine concentrations. Any agent capable of reducing iodine to iodide could interfere in this manner. A chromium trioxide impregnated filter will capture sulfur dioxide and pass chlorine and chlorine dioxide. Hydrogen peroxide, which is commonly used as a bleaching agent in modern bleaching systems, reacts with iodide to form iodine and thus can cause a positive interference in the chlorine measurement. Due to the chemistry involved, the precision of the chlorine analysis will decrease as the ratio of chlorine dioxide to chlorine increases. Slightly negative calculated concentrations of chlorine may occur when sampling a vent gas with high concentrations of chlorine dioxide and very low concentrations of chlorine.

(6) The minimum sampling time for each of the three test runs shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the test run.

(G) The following calculation shall be performed to determine the corrected sampling flow rate:

$$S_c = \frac{S_u(BP - PW)(293)}{(760)(273 + t)}$$

where:

S_C = Corrected (dry standard) sampling flow rate, liters per minute;
S_U = Uncorrected sampling flow rate, L/min;
BP = Barometric pressure at time of sampling;
PW = Saturated partial pressure of water vapor, mm Hg at temperature; and
t = Ambient temperature, °C.

(H) The following calculation shall be performed to determine the moles of chlorine in the sample:

Cl_2 Moles = 1/8000 (5 T_N - T_A) x N_{Thio}

where:

T_N = Volume neutral titer, ml;
T_A = Volume acid titer (total), ml; and
N_{Thio} = Normality of sodium thiosulfate titrant.

(I) The following calculation shall be performed to determine the concentration of chlorine in the sample:

$$ClO_2\ Moles = 1/4000\,(T_A - T_N) \times N_{Thio}$$

where:

T_A = Volume acid titer (total), ml;
T_N = Volume neutral titer, ml; and
N_{Thio} = Normality of sodium thiosulfate titrant.

(K) The following calculation shall be performed to determine the concentration of chlorine dioxide in the sample:

$$ClO_2\ ppmv = \frac{6010(T_A - T_N) \times N_{Thio}}{S_c \times t_s}$$

where:

S_C = Corrected (dry standard) sampling flow rate, liters per minute;
t_S = Time sampled, minutes;
T_A = Volume acid titer (total), ml;
T_N = Volume neutral titer, ml; and
N_{Thio} = Normality of sodium thiosulfate titrant.

(iii) Any other method that measures the total HAP or methanol concentration that has been demonstrated to the Administrator's satisfaction.

(6) The minimum sampling time for each of the three runs per method shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run.
[63.457(b)]

K.17. Detectable leak procedures. To measure detectable leaks for closed-vent systems as specified in Condition K.5., the owner or operator shall comply with the following:

(1) Method 21, of Part 60, Appendix A; and

(2) The instrument specified in Method 21 shall be calibrated before use according to the procedures specified in Method 21 on each day that leak checks are performed. The following calibration gases shall be used:

(i) Zero air (less than 10 parts per million by volume of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 parts per million by volume methane or n-hexane.
[63.457(d)]

K.18. Negative pressure procedures. To demonstrate negative pressure at process equipment enclosure openings as specified in Condition K.5., the owner or operator shall use one of the following procedures:

(1) An anemometer to demonstrate flow into the enclosure opening;

(2) Measure the static pressure across the opening;

(3) Smoke tubes to demonstrate flow into the enclosure opening; or

(4) Any other industrial ventilation test method demonstrated to the Administrator's satisfaction.
[63.457(e)]

Please reference the Permit No., Facility ID No., and appropriate Emissions Unit(s) ID No(s). on all correspondence, test report submittals, applications, etc.

K.19. Bleaching HAP concentration measurement. For purposes of complying with the bleaching system requirements in § 63.445. the owner or operator shall measure the total HAP concentration as the sum of all individual chlorinated HAPs or as chlorine.
[63.457(h)]

Continuous Monitoring Requirements

K.20. The permittee shall install, calibrate, certify, operate, and maintain according to the manufacturer's specifications, a continuous monitoring system (CMS, as defined in §63.2) as specified in Condition K.21. The CMS shall include a continuous recorder.
[63.453(a), Construction Permit No. 1070005-006-AC/PSD-FL-264]

K.21. A CMS shall be operated to measure the following parameters:
(1) The pH or the oxidation/reduction potential of the gas scrubber effluent;
(2) Fan amperage of the bleaching system vent gas fan*; and
(3) The gas scrubber liquid influent flow rate.

*EPA Approved Alternative Monitoring Parameter dated December 22, 2000.
[63.453(c), Construction Permit No. 1070005-006-AC/PSD-FL-264]

K.22. Enclosure and Closed-Vent System. The enclosure and closed-vent system shall comply with the following requirements:

(1) For each enclosure opening, a visual inspection of the closure mechanism specified in K.5.(a) shall be performed at least once every 30 days to ensure the opening is maintained in the closed position and sealed.

(2) The closed-vent system shall be visually inspected every 30 days and at other times as requested by the Administrator. The visual inspection shall include inspection of ductwork, piping, enclosures, and connections to covers for visible evidence of defects.

(3) For positive pressure closed-vent systems or portions of closed-vent systems, demonstrate no detectable leaks as specified in Condition K.5.(b) measured initially and annually by the procedures in Condition K.17..

(4) Demonstrate initially and annually that each enclosure opening is maintained at negative pressure as specified in Condition K.18..

(5) The valve or closure mechanism specified in Condition K.5.(c)(2) shall be inspected at least once every 30 days to ensure that the valve is maintained in the closed position and the emission point gas stream is not diverted through the bypass line.

(6) If an inspection required by paragraphs (1) through (5) of this Condition identifies visible defects in ductwork, piping, enclosures or connections to covers required by Condition K.5., or if an instrument reading of 500 parts per million by volume or greater above background is measured, or if enclosure openings are not maintained at negative pressure, then the following corrective actions shall be taken as soon as practicable.

(i) A first effort to repair or correct the closed-vent system shall be made as soon as practicable but no later than 5 calendar days after the problem is identified.

(ii) The repair or corrective action shall be completed no later than 15 calendar days after the problem is identified. Delay of repair or corrective action is allowed if the repair or corrective action is technically infeasible without a process unit shutdown or if the owner or

operator determines that the emissions resulting from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.
[63.453(k)]

K.23. Wet Scrubber Operating Parameters. The wet scrubber shall be operated in a manner consistent with the minimum pH of the scrubbing medium effluent at 9.1 s.u., the minimum fan motor loading of 85% (15.3 amps), and the minimum scrubber recirculation flow rate of 1,229 gpm. Operation of the wet scrubber below these minimum operating parameter values or failure to perform procedures required by 40 CFR 63 Subpart S shall constitute a violation of Condition K.7. and be reported as a period of excess emissions.

{Permitting Note: Unless otherwise specified, the averaging time for this condition is based on the specified averaging time of the applicable test method.}
[63.453(o), Applicant Request dated 12/20/02]

Recordkeeping Requirements

K.24. The permittee shall maintain daily records of the following information in order to document continuous compliance with Condition Nos. K.1., K.6.., K.7., and K.21.:

- Quantity of pulp processed through the No. 3 Bleach Plant in air-dried bleach tons.
- Scrubber parameters monitored per Condition K.21.

K.25. The permittee shall comply with the recordkeeping requirements of 40 CFR 63.10, as shown in Table 1 of 40 CFR Part 63 Subpart S.
[63.454(a)]

K.26. Enclosure Opening, Closed-Vent System and Closed Collection System. For each applicable enclosure opening, closed-vent system, and closed collection system, the owner or operator shall prepare and maintain a site-specific inspection plan including a drawing or schematic of the components of applicable affected equipment and shall record the following information for each inspection:

(1) Date of inspection;
(2) The equipment type and identification;
(3) Results of negative pressure tests for enclosures;
(4) Results of leak detection tests;
(5) The nature of the defect or leak and the method of detection (i.e., visual inspection or instrument detection);
(6) The date the defect or leak was detected and the date of each attempt to repair the defect or leak;
(7) Repair methods applied in each attempt to repair the defect or leak;
(8) The reason for the delay if the defect or leak is not repaired within 15 days after discovery;
(9) The expected date of successful repair of the defect or leak if the repair is not completed within 15 days;
(10) The date of successful repair of the defect or leak;

(11) The position and duration of opening of bypass line valves and the condition of any valve seals; and

(12) The duration of the use of bypass valves on computer controlled valves.
[63.454(b)]

K.27. New affected Process Equipment. The permittee shall record the CMS parameters specified in §63.453 and meet the requirements specified in Condition K.25., for any new affected process equipment that becomes subject to the standards of 40 CFR Part 63 Subpart S due to a process change or modification.
[63.454(d)]

Reporting Requirements

K.28. The permittee shall comply with the reporting requirements of 40 CFR Part 63, Subpart A as specified in Table 1 of Subpart S.
[63.455(a)]

Common Conditions - F.A.C. Test Requirements

K.29. This emissions unit is also subject to applicable F.A.C. Test Requirements in Subsection N.

Common Conditions - Periodic Monitoring

K.30. This emissions unit is also subject to applicable Periodic Monitoring Requirements in Subsection P.

Appendix CP- Compliance Plan

X.1. Compliance Schedule. The following dates shall be met to satisfy measurable progress milestones for the facility to come into compliance with Conditions A.10., K.6., and K.7.

E.U. ID. No.	Milestone	Milestone Date
036 014	Responsible Official to enter into a consent order agreement with Department concerning the No. 3 ECF Bleach Plant, and initiate agreements concerning any other non-compliant conditions.	November 12, 2002
036	Facility to submit a complete application, including completed responses to Department requests for additional information, for an air construction permit/PSD Determination.	February 1, 2003
Facility	Responsible Official to submit "Certification of Compliance", addressing the entire facility, indicating what is not in compliance, when non-compliance started, the degree or amount of non-compliance, the duration of non-compliant operations, steps taken to identify and correct non-compliant conditions, and actions (with time table), to correct any current non-compliant conditions and achieve compliance.	March 1, 2003
036	Initiation of on-site construction and/or installation of emission control equipment or process change authorized by air construction permit	No later than 3 months from the date of issuance of the resulting air construction permit/PSD Determination
036	Completion of on-site construction or installation of emission control equipment or process change authorized by air construction permit	No later than 9 months from the date of issuance of the resulting air construction permit/PSD Determination
036	Compliance Testing conducted and test reports submitted pursuant to requirements of air construction permit	Pursuant to the timeframes established in the air construction permit/PSD Determination
014	Compliance Testing conducted and test reports submitted for the No. 4 Power Boiler	April 1, 2003
036	Submittal of Title V Operation Permit Revision for the incorporation of the air construction permit/PSD Determination for the No. 3 ECF Bleach Plant	At least 90 days prior to expiration of air construction permit, but no later than 180 days after commencement of operation

036	Final Compliance	No later than 11 months from the date of issuance of the resulting air construction permit/PSD Determination
Facility	Responsible Official to submit "Certification of Compliance", addressing the entire facility, indicating what is not in compliance, when non-compliance started, the degree or amount of non-compliance, the duration of non-compliant operations, steps taken to identify and correct non-compliant conditions, and actions (with time table), to correct any current non-compliant conditions and achieve compliance.	No later than 12 months from the date of issuance of the resulting air construction permit/PSD Determination

X.2. Permitted Capacity. Until compliance is demonstrated with the air construction permit issued pursuant to the PSD review identified in the Compliance Schedule of Condition X.1, above, the maximum throughput rate of this emissions unit shall not exceed 840 tons per day of air-dried bleached pulp (ADBP) as a maximum monthly average.
[Consent Order OGC File No. 02-1886]

X.3. Recordkeeping. The Permittee shall maintain material throughput logs that indicate the type and amount of material used daily.
[Consent Order OGC File No. 02-1886]

Department of
Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

November 26, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Theodore D. Kennedy, Vice President
Palatka Operations
Georgia-Pacific Corporation
Post Office Box 919
Palatka, Florida 32178-0919

Re: DEP File No. 1070005-019-AC (PSD-FL-264A)
Palatka Mill, No. 3 Bleach Plant

Dear Mr. Kennedy:

The Department has received the revised application on November 14, 2002 for increasing the CO emission rate for the No. 3 Bleach Plant at the above referenced facility in Putnam County. Based on our initial review of the proposed project, we have determined that additional information is needed in order to continue processing this application package. Please submit the information requested below to the Department's Bureau of Air Regulation:

1. Please provide the total pulp production at the facility for the years 1999, 2000 and 2001. Also, give a breakdown of where this pulp was utilized in the facility (bleached and unbleached areas). Additionally, provide a detailed accounting of this pulp when utilized in the tissue-making mill. If, additional pulp was bought during those years, please include that in the accounting. The Department is expecting a complete material balance of the pulp produced in the facility and the pulp bought by the facility when compared to the material shipped from the facility.
2. Please give a detailed accounting of how much of softwood and hardwood was utilized in the total pulp production at the facility for the years 1999, 2000 and 2001. How are the two types of woods segregated when feeding to the digesters? How is the pulp kept segregated and is there any blending of the pulp taking place prior to making final product.
3. During the plant trip on November 12, the No. 3 Bleach Plant was operating at 30 tph. Please indicate if the production rate was 30 ADTBP per hour?
4. During the plant trip on November 12, the facility personnel talked about a chart at the No. 3 Bleach Plant presentation, which indicated, reduced usage of ClO_2 and increased usage of oxygen and hydrogen peroxide to get the same bleach ability. If testing was done to authenticate this fact, please provide the necessary documents. Also, provide a detailed written description as well as the chart showed to the Department.

5. Please indicate if 100% of softwood pulp or 100% of hardwood pulp is processed through the bleach plant at any given time. Are there occasions when a mix of the two type of wood pulp is processed at the same time? What indicators are available in the control room to help the operators know what type and how much of either hardwood or softwood pulp is being processed.
6. Please explain how the ClO_2 application rate to the pulp is monitored. If data is kept on the application rate, how often is it recorded?
7. Please provide a copy of the initial and annual compliance tests done for this plant. The report should include information on the production rate of the bleach plant during the compliance tests.
8. The Department is in receipt of daily pulp production data covering a period from January 2000 until October 2002 (34 months). The daily bleached pulp production data indicates a highest daily production rate of 1197.9 tons on June 30, 2002, and a highest monthly average of 884 tons per day in September 2002. Please explain the reasons for not achieving the permitted production rates of 1702 tons daily maximum and 1350 tons per day monthly average for the No. 3 Bleach Plant.
9. Please provide detail test reports of the series of tests conducted in October 2002 to measure actual CO emissions from the plant.
10. Please provide the ClO_2 application rate for the series of tests conducted in October 2002.
11. Please list the pertinent information (% ClO_2 applied, kappa number, temperature etc.) that a compliance inspector should gather during an inspection of a bleach plant to ensure that the source is complying with the permitted CO emission limits. How will these parameters or others provide assurance that the limit is not exceeded?
12. Please explain if there is a nexus between ClO_2 application rate and HAP emissions from a bleach plant. If a nexus exists, how is it being applied to keep HAP emissions to a minimum from the plant?
13. Please explain how the quantity of lignin in the pulp entering the bleach plant is being monitored and what role, if any, is that playing in the ClO_2 application rate.
14. The application pages under Section I, Page 20 proposes 3-hour average basis for monitoring pH of the gas scrubbing medium, fan amperage of the bleaching system vent gas fan and the scrubber recirculation flow. Please indicate if continuous monitoring of these parameters is required in 40 CFR 60, Subpart S. If so, EPA will have to approve this request.
15. Please provide the information submitted by you to the vendors in getting the quote for CO removal using thermal oxidation, catalytic incineration or incineration in an existing boiler. Provide copies of the quotes received for the three options listed. Also, indicate if the thermal oxidizer and the catalytic incinerator are designed to be located upstream or downstream of the existing scrubber. What advantage does one location have over the other?
16. Please provide cost analysis in modifying (if required) the existing thermal oxidizer used for NCG's control to accommodate the bleach plant exhaust for CO control.
17. The BACT analysis refers to the removal of some VOC and HAP's with the control options selected for CO removal. Explain the reasons for not including the removal of VOC and HAP's in the cost effectiveness ($/ton) figure obtained for CO removal.

18. EPA Air Pollution Control Cost Manual recommends using a flat 10 percent over the operations labor wage rate for maintenance labor costs. Table B-2 of the application indicates the maintenance labor cost to be twice the operating labor cost. Please explain the discrepancy.

19. Please explain the reasons for adding the cost of a new stack in Table B-2 using thermal oxidation or catalytic incineration when a stack already exists.

20. In the original PSD permitting done in 1999, the purchased equipment cost for Regenerative Catalytic Oxidation providing 95% removal of CO emissions was given as $427,250. The same equipment cost for this modification is given to be $1,163,400. Please justify the increase of over $0.7M in a three-year period. Also, explain the reasons for not including the cost of gas conditioning equipment in the original project.

We have not yet received comments from the Northeast District, U.S. Fish and Wildlife Service or from the EPA. Their comments will be forwarded to you as soon as we receive them.

The Department will resume processing this application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. A new certification statement by the authorized representative or responsible official must accompany any material changes to the application. Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days.

Please note that in accordance with Rule 62-4.055(1), "The applicant shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department..... Failure of an applicant to provide the timely requested information by the applicable date shall result in denial of the application."

If you have any questions regarding this matter, please call Syed Arif, P.E. at (850) 921-9528.

Sincerely,

A. A. Linero, P.E. Administrator
New Source Review Section

AAL/sa

cc: Jeaneanne Gettle, EPA region IV
John Bunyak, NPS
C. Kirts, DEP-NED
M. Carpenter, Georgia Pacific
D. Buff, Golder Associates

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1. Article Addressed to:

Mr. Theodore D. Kennedy
Vice President
Georgia-Pacific Corporation -
Palatka Operations
Post Office Box 919
Palatka, FL 32178-0919

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If YES, enter delivery address below: ☐ No

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PS Form 3800, January 2001 — See Reverse for Instructions

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

November 13, 2002

0237561

Florida Department of Environmental Protection
New Source Review Section
2600 Blair Stone Road MS 5505
Tallahassee, FL 32399-2400

Attention: Mr. Syed Arif, P.E.

RE: GEORGIA-PACIFIC PALATKA MILL, CO EMISSION RATE INCREASE, REVISED APPLICATION

Dear Syed:

Enclosed please find four (4) copies of a revised version of Attachment GP-EU1-J9 from the above-referenced air permit application to revise the PSD permit for the No. 3 Bleach Plant at Georgia-Pacific's (G-P) Palatka mill. Please replace Attachment GP-EU1-J9 in the application that was submitted on November 12, 2002, with this revised Attachment GP-EU1-J9.

If you have any questions, please contact me at (352) 336-5600 or Myra Carpenter, G-P Palatka, at (386) 329-0918.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

David A. Buff, P.E., Q.E.P.
Principal Engineer
Florida P.E. #19011
Seal

DB/FWH/nav

Enclosures

cc: M. Aguilar, G-P Atlanta
M. Carpenter, G-P Palatka
F. Howard, Golder
J. Taylor, G-P Palatka
T. Wyles, G-P Atlanta

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Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

November 12, 2002

Florida Department of Environmental Protection
New Source Review Section
2600 Blair Stone Road MS 5505
Tallahassee, FL 32399-2400

Attention: Mr. Syed Arif, P.E.

RE: GEORGIA-PACIFIC PALATKA MILL, CO EMISSION RATE INCREASE, REVISED APPLICATION

Dear Syed:

Enclosed please find four (4) copies of a revised version of Table 2-1 from the above-referenced air permit application to revise the PSD permit for the No. 3 Bleach Plant at Georgia-Pacific's (G-P) Palatka mill. Please replace Table 2-1 in the application that was submitted on November 12, 2002 with this revised Table 2-1.

If you have any questions, please contact me at (352) 336-5600 or Myra Carpenter, G-P Palatka, at (386) 329-0918.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff

David A. Buff, P.E., Q.E.P.
Principal Engineer

Florida P.E. #19011
SEAL

DB/FWH/jkw

Enclosures

cc: M. Aguilar, G-P Atlanta
M. Carpenter, G-P Palatka
F. Howard, Golder
J. Taylor, G-P Palatka
T. Wyles, G-P Atlanta

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