

Compliance Testing for Particulate Emissions

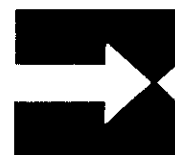
Multiple Sources

Georgia Gulf Chemicals and Vinyls, LLC

Aberdeen, Mississippi

June 14, 2000 - June 30, 2000

ENTEC Project No.: 20148



ENTEC

Emission Testing Services

Entec Services, Inc.
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**Results of the June 14, 2000 – June 30, 2000
Particulate Emissions Compliance Test on Multiple Sources
at the
Georgia Gulf Chemicals and Vinyls, LLC
facility in Aberdeen, Mississippi**

Submitted to:

Georgia Gulf

Post Office Box 91
New Highway 25
Aberdeen, Mississippi 39730-0091

Attention: Mr. Kenny Akins

Entec Project No. 20148

Date Report Submitted: July 28, 2000

Approved By:


Glen Corley
Project Manager

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Prior to the first test run a preliminary velocity measurement of the exhaust gas was determined to verify the absence of cyclonic flow in the gas stream and to allow the selection of the appropriate nozzle diameter for isokinetic sample withdrawal. Two Nutech Model 2010, one Apex Model 522, and a Nutech Model 201 sampling trains which meet the specifications in the above- cited reference methods, were used to isokinetically extract the particulate samples by means of a heated stainless steel probe and heated filter compartment. Integrated flue gas samples for Fyrite analysis were extracted from the exhaust gases for determination of the flue gas oxygen and carbon dioxide.

Due to the short exhaust configuration on each of the silo baghouse sources, an extension of the exhaust was attached and sealed to the outlet of each source in order for the test locations to meet the requirements of CFR 40 Part 60 Appendix A Method 1. Testing was conducted from two test ports oriented at 90 degree on the exhaust stack. The test ports were located at a minimum of 2.0 duct diameters downstream and 8.0 duct diameters upstream from the nearest disturbance. A 12 point traverse was used to determine the exhaust gas volumetric flow and to collect a representative sample of the particulate emissions. Each traverse was conducted for a total sampling time of sixty (60) minutes for each test run.

No difficulties were encountered in the field collection of the samples or in the laboratory analysis of the samples by Entec Services, Inc. Testing was conducted in accordance with the applicable CFR 40 Part 60 Appendix "A" test procedures.

On the basis of these facts and a complete review of the data and results, it is our opinion that the results reported herein are accurate and closely reflect the actual values which existed at the time the testing was conducted.

Test results indicate the sources tested have an average combined emission rate of 18.12 lbs/ hr of particulate emissions. The No. 3 and No. 4 boiler have a combined emission rate of 0.11 lbs/hr for carbon monoxide and 3.84 lbs/hr of nitrogen oxide.

2.0 Detailed Test Results

Georgia Gulf

Aberdeen, Mississippi

675 Silo Baghouse

Particulate Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	79.6	81.7	81.0	80.8
Stack Moisture, %	2.7	2.5	2.6	2.6
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,486	1,468	1,472	1,475
Stack Gas Flow DSCFM	1,418	1,399	1,403	1,407
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0030	0.0032	0.0038	0.0033
Particulate Emissions lbs per hour	0.04	0.04	0.05	0.04

Georgia Gulf

Aberdeen, Mississippi

676 Silo Baghouse

Particulate Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	76.3	71.9	77.5	75.3
Stack Moisture, %	2.3	2.3	2.4	2.3
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,473	1,428	1,427	1,443
Stack Gas Flow DSCFM	1,420	1,393	1,377	1,397
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0040	0.0045	0.0028	0.0038
Particulate Emissions lbs per hour	0.05	0.05	0.03	0.05

Georgia Gulf

Aberdeen, Mississippi

677 Silo Baghouse

Particulate Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	74.0	76.8	81.9	77.6
Stack Moisture, %	2.4	2.9	2.7	2.7
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,613	1,574	1,601	1,596
Stack Gas Flow DSCFM	1,557	1,504	1,519	1,527
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0071	0.0050	0.0063	0.0061
Particulate Emissions lbs per hour	0.09	0.06	0.08	0.08

Georgia Gulf

Aberdeen, Mississippi

678 Silo Baghouse

Particulate Emissions Test Summary
June 30, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	74.1	76.6	76.8	75.8
Stack Moisture, %	2.7	2.2	2.1	2.3
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,644	1,543	1,457	1,548
Stack Gas Flow DSCFM	1,587	1,489	1,409	1,495
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0021	0.0024	0.0037	0.0027
Particulate Emissions lbs per hour	0.03	0.03	0.04	0.03

Georgia Gulf

Aberdeen, Mississippi

679 Silo Baghouse

Particulate Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	85.7	85.7	87.4	86.3
Stack Moisture, %	3.0	3.1	2.5	2.9
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,201	1,203	1,181	1,195
Stack Gas Flow DSCFM	1,130	1,131	1,114	1,125
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0137	0.0089	0.0128	0.0118
Particulate Emissions lbs per hour	0.13	0.09	0.12	0.11

Georgia Gulf

Aberdeen, Mississippi

679 Silo Baghouse

Particulate Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	85.7	85.7	87.4	86.3
Stack Moisture, %	3.0	3.1	2.5	2.9
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,201	1,203	1,181	1,195
Stack Gas Flow DSCFM	1,130	1,131	1,114	1,125
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0137	0.0089	0.0128	0.0118
Particulate Emissions lbs per hour	0.13	0.09	0.12	0.11

Georgia Gulf

Aberdeen, Mississippi

680 Silo Baghouse

Particulate Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	76.3	75.0	72.0	74.4
Stack Moisture, %	3.5	3.2	2.3	3.0
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,129	1,468	1,508	1,368
Stack Gas Flow DSCFM	1,075	1,405	1,465	1,315
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0052	0.0018	0.0015	0.0028
Particulate Emissions lbs per hour	0.05	0.02	0.02	0.03

Georgia Gulf

Aberdeen, Mississippi

687 Silo Baghouse

Particulate Emissions Test Summary
June 30, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	73.7	75.6	76.8	75.4
Stack Moisture, %	4.5	3.0	3.2	3.6
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,070	1,133	1,124	1,109
Stack Gas Flow DSCFM	1,019	1,090	1,077	1,062
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0051	0.0031	0.0040	0.0040
Particulate Emissions lbs per hour	0.04	0.03	0.04	0.04

Georgia Gulf

Aberdeen, Mississippi

688 Silo Baghouse

Particulate Emissions Test Summary
June 30, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	80.3	80.0	79.3	79.8
Stack Moisture, %	4.1	4.5	4.4	4.3
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	1,577	1,451	1,574	1,534
Stack Gas Flow DSCFM	1,486	1,363	1,481	1,443
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0035	0.0057	0.0062	0.0051
Particulate Emissions lbs per hour	0.04	0.07	0.08	0.06

Georgia Gulf

Aberdeen, Mississippi

No. 10 Cyclone Dryer

Particulate Emissions Test Summary

June 14, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	106.4	105.3	105.0	105.5
Stack Moisture, %	13.6	10.6	11.4	11.9
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	77,293	79,421	77,252	77,989
Stack Gas Flow DSCFM	62,446	66,509	64,162	64,372
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0045	0.0187	0.0059	0.0097
Particulate Emissions lbs per hour	2.41	10.65	3.26	5.44

Georgia Gulf

Aberdeen, Mississippi

No. 11 Cyclone Dryer

Particulate Emissions Test Summary
June 14, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	106.5	106.4	106.8	106.5
Stack Moisture, %	14.2	14.0	10.7	13.0
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	73,236	74,985	70,590	72,937
Stack Gas Flow DSCFM	58,805	60,338	58,939	59,361
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0058	0.0065	0.0057	0.0060
Particulate Emissions lbs per hour	2.92	3.35	2.86	3.04

Georgia Gulf

Aberdeen, Mississippi

Fluidized Bed Dryer

Particulate Emissions Test Summary
June 15, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	148.7	149.6	149.1	149.1
Stack Moisture, %	24.2	24.9	26.0	25.0
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	33,709	33,605	34,663	33,992
Stack Gas Flow DSCFM	22,283	22,002	22,366	22,217
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0092	0.0141	0.0023	0.0085
Particulate Emissions lbs per hour	1.75	2.64	0.45	1.61

Georgia Gulf

Aberdeen, Mississippi

Ventilation Baghouse

Particulate Emissions Test Summary
June 16, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	88.5	98.1	85.5	90.7
Stack Moisture, %	3.5	4.2	3.3	3.7
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	24,820	24,161	23,946	24,309
Stack Gas Flow DSCFM	23,181	22,013	22,512	22,569
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0068	0.0150	0.0098	0.0105
Particulate Emissions lbs per hour	1.35	2.83	1.89	2.02

Georgia Gulf

Aberdeen, Mississippi

Rotary Dryer No. 4

Particulate Emissions Test Summary
June 14, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	131.8	112.8	116.5	120.3
Stack Moisture, %	7.1	6.9	6.6	6.8
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	23,631	24,906	23,982	24,173
Stack Gas Flow DSCFM	19,613	21,388	20,521	20,507
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0039	0.0031	0.0044	0.0038
Particulate Emissions lbs per hour	0.65	0.57	0.78	0.66

Georgia Gulf

Aberdeen, Mississippi

Rotary Dryer No. 5

Particulate Emissions Test Summary

June 15, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	153.8	150.0	152.3	152.0
Stack Moisture, %	7.1	6.4	6.8	6.7
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	22,101	23,722	21,265	22,363
Stack Gas Flow DSCFM	17,731	19,310	17,153	18,064
Particulate Concentration at Standard Conditions, Grains/Ft ³	0.0037	0.0098	0.0019	0.0051
Particulate Emissions lbs per hour	0.56	1.62	0.28	0.82

Georgia Gulf

Aberdeen, Mississippi

Rotary Dryer No. 6

Particulate Emissions Test Summary
June 15, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	156.4	158.1	157.3	157.3
Stack Moisture, %	6.4	4.4	5.4	5.4
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	24,008	24,567	24,689	24,421
Stack Gas Flow DSCFM	19,320	20,126	20,047	19,831
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0033	0.0042	0.0047	0.0041
Particulate Emissions lbs per hour	0.55	0.72	0.80	0.69

Georgia Gulf

Aberdeen, Mississippi

Rotary Dryer No. 7

Particulate Emissions Test Summary
June 16, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	155.8	157.4	157.0	156.8
Stack Moisture, %	7.7	7.1	6.2	7.0
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	25,672	27,328	25,585	26,195
Stack Gas Flow DSCFM	20,427	21,826	20,637	20,963
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0122	0.0145	0.0125	0.0130
Particulate Emissions lbs per hour	2.13	2.70	2.20	2.35

Georgia Gulf

Aberdeen, Mississippi

Rotary Dryer No. 8

Particulate Emissions Test Summary
June 15, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	168.8	160.1	169.0	166.0
Stack Moisture, %	3.9	3.5	4.7	4.0
Oxygen Concentration, %	20.0	20.0	20.0	20.0
Carbon Dioxide Concentration %	0	0	0	0
Stack Gas Flow ACFM	23,278	22,773	24,134	23,395
Stack Gas Flow DSCFM	18,892	18,821	19,443	19,052
Particulate Concentration at Standard Conditions, Grains/Ft³	0.0034	0.0100	0.0059	0.0064
Particulate Emissions lbs per hour	0.55	1.61	0.99	1.05

Georgia Gulf

Aberdeen, Mississippi

No. 3 Boiler

Pollutant Gas Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	205.2	204.9	205.8	205.3
Stack Moisture, %	8.1	7.6	8.3	8.0
Oxygen Concentration, %	14.19	14.21	14.28	14.23
Nitrogen Oxide Concentration ppm	19.43	19.71	19.89	19.68
Carbon Monoxide Concentration ppm	5.01	6.67	5.54	5.74
Carbon Dioxide Concentration %	3.28	3.31	3.30	3.30
Stack Gas Flow ACFM	4,784	4,517	5,112	4,804
Stack Gas Flow DSCFM	3,499	3,325	3,730	3,518
Nitrogen Oxide Emissions lbs per hour	0.49	0.47	0.53	0.50
Carbon Monoxide Emissions lbs per hour	0.08	0.10	0.09	0.09

Georgia Gulf

Aberdeen, Mississippi

No. 4 Boiler

Pollutant Gas Emissions Test Summary
June 29, 2000

Test No.	1	2	3	Average
Stack Temperature Fahrenheit	259.8	260.5	257.6	259.3
Stack Moisture, %	10.7	10.7	11.0	10.8
Oxygen Concentration, %	5.96	6.90	5.77	6.21
Nitrogen Oxide Concentration ppm	60.63	55.31	61.36	59.10
Carbon Monoxide Concentration ppm	0.71	0.69	0.32	0.57
Carbon Dioxide Concentration %	8.51	7.91	8.59	8.34
Stack Gas Flow ACFM	12,111	11,943	11,974	12,009
Stack Gas Flow DSCFM	7,948	7,835	7,862	7,882
Nitrogen Oxide Emissions lbs per hour	3.45	3.11	3.46	3.34
Carbon Monoxide Emissions lbs per hour	0.02	0.02	0.01	0.02

Appendix A

Test Procedures

Procedures

The particulate emission rates were determined using EPA Methods 1-5, CFR Title 40, Part 60, Appendix A. The calibration and quality assurance procedures of EPA CFR 40 Part 60 Appendix A Methods 1, 2, 3, 4, 5 and the "Quality Assurance Handbook for Air Pollution Measurement System" Volume III Stationary Source-Specific Methods were followed throughout the duration of the field and laboratory testing.

The most current revision of each method (as described in the Federal Register) was used.

Stack Gas Volumetric Flow

The velocity of the gas stream was determined according to EPA Reference Method 1 and 2 by reading the instantaneous velocity head with an inclined manometer at each sampling point with a calibrated S-type pitot tube attached adjacent to the sample nozzle. The stack pressure was measured with the static side of an S-type pitot tube. A calibrated pyrometer was used to measure stack temperature at each sampling point. The stack was tested for cyclonic flow according to EPA Reference Method 1.

Stack Gas Molecular Weight

The carbon dioxide and oxygen concentrations was determined using EPA Reference Method 3. An integrated sample of the flue gas was extracted from the gas stream during each particulate test run at a constant flow rate and collected in a 7.5 liter tedlar bag. The bags were then returned to the laboratory and analyzed by Fyrite analysis. Standard commercially prepared solutions were used in the Fyrite analyzer. The molecular weight of the gas was calculated using the moisture, oxygen and carbon dioxide content and the measured stack gas temperature.

The tedlar bags used for collecting the gas samples were verified to be leak free prior to collecting the bag samples. The Fyrite sampling system was also verified to be leak free prior to the analysis.

Moisture Content

The moisture content used for calculating the gas stream flow rate was determined by measuring the amount of condensed moisture in the impingers of the sampling train as described in EPA Reference Method 4 at the completion of each test.

The moisture collection system consist of four glass impingers. The first two impingers are loaded with 100 ml of deionized water the third impinger is left empty and the fourth impinger is loaded with fresh silica gel. Ice is placed around the impingers to maintain a temperature $<68^{\circ}$ F. The outlet temperature of the fourth impinger is monitored and recorded throughout the duration of the testing to verify the temperature is below $<68^{\circ}$ F.

Particulate Loading

The particulate sample train consist of a heated stainless steel sample probe and liner equipped with a S-type pitot tube and thermocouple. The probe is attached to a sample module consisting of a heated filter compartment which houses the in-line filter holder equipped with a pre-weighed glass fiber filter for the collection of the particulate. The sample module also holds the impingers on the outlet side of the heated filter compartment for the collection of the condensed moisture. The sample module is connected to a control module by means of an umbilical cord. The control module consist of a dry gas meter, calibrated orifice, leak free pump, two inclined manometers, temperature controllers for the heated filter compartment and probe and a thermocouple indicator to monitor the required temperatures during the testing.

Particulate samples are collected as follows: The sample gas is drawn through the sampling probe isokinetically and passed through a 3-inch Whartman glass fiber filter where particulates are removed. The sample gas is then passed through an ice-cooled impinger train and dessicant-packed column which absorbs any remaining moisture. The sample gas then passes through a vacuum pump followed by a dry gas meter. The

dry gas meter integrates the sample gas flow throughout the duration of the test. A calibrated orifice attached to the outlet of the dry gas meter provides real time flow rate data.

A representative particulate sample is acquired by sampling for equal periods of time at the centroid of a number of equal area regions in the exhaust stack. The sampling rate is adjusted at each test point maintaining an isokinetic sampling condition.

After the sampling is complete, the filter is removed and placed in a storage container for shipment back to the laboratory for analysis. The nozzle, probe liner and inlet side of the filter holder are quantitatively washed with a pure grade acetone and stored in a marked container. The samples are transferred back to the laboratory where they are logged in and analyzed. The volume of acetone rinse is noted and transferred to a tared flask and evaporated off at 97-105 °F. This temperature is used to prevent condensation of atmospheric moisture due to the cooling effects induced by the evaporating acetone. The acetone-free sample is placed in an oven and dried at 105 °C for thirty minutes and then placed in a desiccator. After the sample has desiccated for twenty four hours the sample is weighed to the nearest 0.1 mg. The filter sample is transferred to the original petri dish in which the original weight was obtained and placed in a drying oven for 2 hours at 105 °C. The filter and petri dish are then placed in a desiccator. After the filter and petri dish have desiccated for twenty four hours the sample is weighed to the nearest 0.1 mg. Visual examination of the samples are made to determine if any unusual characteristics of the samples are observed. The weight of the acetone rinse is corrected for the weight of the acetone blank.

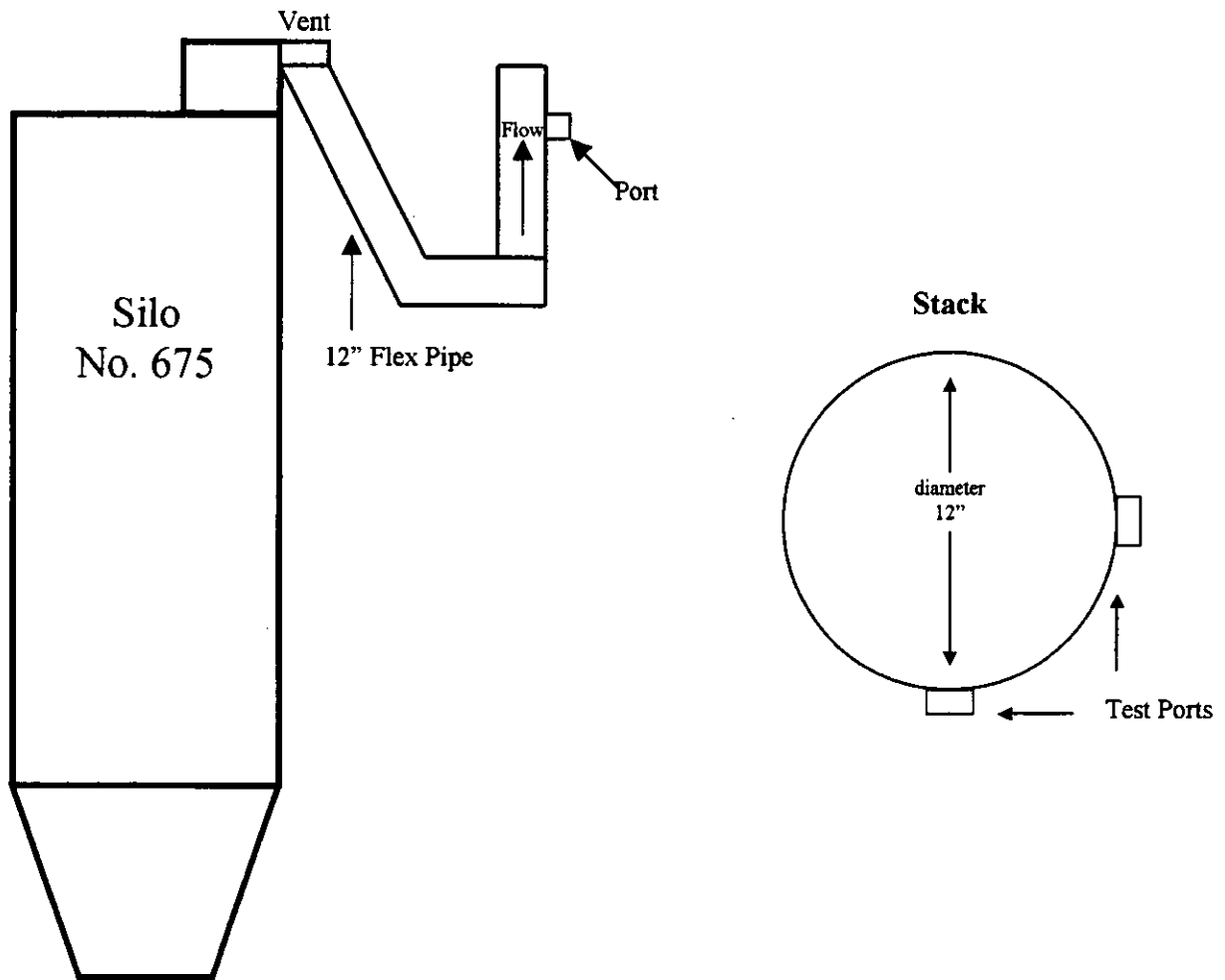
Appendix B

Field Data Sheets

675 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site Silo Baghouse No. 675



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 675

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-29-00	6-29-00	6-29-00	
Time Began-Ended	1537-1653	1704-1810	1823-1930	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.02	30.02	30.02	30.02
Stack Pressure, Inches of mercury	30.00	30.00	30.00	30.00
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.997	0.997	0.997	
Nozzle Diameter, Inches	0.250	0.250	0.250	
Meter Volume, Cubic feet	37.055	36.765	36.870	36.897
Meter Temperature, Degrees F	81.4	87.4	84.0	84.3
Avg. Orifice Delta P, Inches of Water	1.26	1.25	1.25	1.26
Volume H2O Collected, MilliLiters	21.0	19.0	20.00	20.0
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.553	0.545	0.547	0.55
Stack Temperature, Degrees F	79.6	81.7	81.0	80.8
Total particulate collected, grams	0.0071	0.0073	0.0089	0.0078

CALCULATED DATA

Standard Meter Volume, Cubic Feet	36.246	35.567	35.890	35.901
Standard Water Volume, Cubic Feet	0.988	0.894	0.941	0.941
Moisture Fraction	0.027	0.025	0.026	0.026
Molecular Weight Of Stack Gas	28.513	28.535	28.524	28.524
Density Of Stack Gas	0.0726	0.0724	0.0725	0.0725
Average Stack Gas Velocity, Feet/Second	31.528	31.144	31.240	31.304
Stack Gas Flow @ Stack Conditions, ACFM	1,486	1,468	1,472	1,475
Stack Gas Flow @ Standard Conditions, DSCFM	1,418	1,399	1,403	1,407
Isokinetic Sampling Rate, Percent	98.14	97.67	98.23	98.01
Particulate concentration @ Std Cond., Grains/Cu.Ft.	0.0030	0.0032	0.0038	0.0033
Particulate emissions, lbs per hour	0.04	0.04	0.05	0.04

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 675

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.17	0.4123	0.68	79	78	79
1-2	0.19	0.4359	0.76	80	79	79
1-3	0.30	0.5477	1.20	80	79	79
1-4	0.29	0.5385	1.16	81	79	79
1-5	0.40	0.6325	1.60	82	79	79
1-6	0.37	0.6083	1.48	83	79	79
2-1	0.19	0.4359	0.76	85	81	80
2-2	0.23	0.4796	0.92	84	81	80
2-3	0.30	0.5477	1.20	85	81	80
2-4	0.40	0.6325	1.60	84	81	80
2-5	0.44	0.6633	1.76	85	81	80
2-6	0.50	0.7071	2.00	86	82	81
	0.32	0.5534	1.26	82.83	81.4	79.6

Molature		Initial		Final		Gas Analyses		Average	
Impinger #1	100	110	CO2	2	2	2	2	2	
Impinger #2	100	104	O2	20.3	19.9	20.0	20	20	
Impinger #3	0	0	CO						
Impinger #4	263	770	N2						
Totals	563	784							
Date		6-29-80							
Run		# 1							
Stack Diameter		12"							
Time		3:37							
Meter #		E13							
Avg.									
Cp Value		K = 4.0							
Probe		ESP-3							
Meter Readings		#1		#2		#3			
Final		445.830		465.155		445.100			
Initial		428.100		445.830		445.100			
Net		17.730		19.325		19.325			
Leak Check		Pre-test		Volume @		Vac			
Post-test		0.002		21"		21"			
Volume @		0.002		Vac		7"			
Filter Weights		Filter #		Final		Initial			
Final		3.7679		3.7677		0.0067			
Initial		3.7677		0.0067		0.0067			
Net		0.0067		0.0067		0.0067			
cu.ft.		37.055		37.055		37.055			

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 675

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.14	0.3742	0.56	82	81	80
1-2	0.19	0.4359	0.76	81	81	80
1-3	0.28	0.5292	1.12	85	80	80
1-4	0.37	0.6083	1.48	88	85	80
1-5	0.43	0.6557	1.72	88	85	82
1-6	0.47	0.6856	1.88	93	90	83
2-1	0.50	0.7071	2.00	96	92	85
2-2	0.48	0.6928	1.92	95	90	84
2-3	0.40	0.6325	1.60	88	85	80
2-4	0.20	0.4472	0.80	89	85	81
2-5	0.16	0.4000	0.64	91	87	82
2-6	0.14	0.3742	0.56	92	89	83
	0.31	0.5452	1.25	89.00	87.4	81.7

Probe		Moisture		Initial		Final		Gas Analyses		Average	
Run	Georgian bull	Impinger #1	100	100	100	100	100	CO2	0	0	0
#	Amesbury MS	Impinger #2	100	100	100	100	100	O2	22.1	19.7	20
Time	Site	Impinger #3	0	0	0	0	0	CO			
5:24	5224 + 675	Impinger #4	770	770	770	770	770	N2			
6:10	Date	Totals	970	989	970	989	970				
	4-29-00										

Run		Stack Diameter		Nozzle Calibrations		Barometric Pressure		Leak Check		Probe Washings	
#	3	12"	Pre-test	0.350	Post-test	0.350	30.03	Pre-test	Volume @	Crucible #	Final
Time			0.350	0.350	0.350			Volume @	Vac		72.7935
5:24			0.350	0.350	0.350			Post-test	15"		72.7865
6:10			0.350	0.350	0.350			Volume @	Vac		0.0070
			0.350	0.350	0.350				7'		

Filter Weights		Filter #		Final		Initial		Net		cu.ft.	
109											
3.5899											
3.5893											
0.0001											

Meter Readings		#2		#3		Total	
485.700							
467.250							
18.450							

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 675

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.13	0.3606	0.52	84	83	81
1-2	0.16	0.4000	0.64	84	83	81
1-3	0.27	0.5196	1.08	85	83	80
1-4	0.33	0.5745	1.32	85	83	80
1-5	0.45	0.6708	1.80	84	83	80
1-6	0.51	0.7141	2.04	84	83	81
2-1	0.16	0.4000	0.64	84	83	80
2-2	0.19	0.4359	0.76	85	84	81
2-3	0.30	0.5477	1.20	85	84	81
2-4	0.37	0.6083	1.48	85	84	82
2-5	0.43	0.6557	1.72	85	84	82
2-6	0.46	0.6782	1.84	86	84	83
	0.31	0.5471	1.25	84.67	84.0	81.0

F. Dezember
Arbeits
 Site 675
 Date 6-24-00

Moisture
 Implinger #1 100
 Implinger #2 100
 Implinger #3 0
 Implinger #4 770
 Totals 970

Gas Analyses
 CO2 0
 O2 19.7
 CO 0
 N2 9
 Aven 0

Leak Check
 Pre-test Volume @ 0.004
 Post-test Volume @ 0.004
 Barometric Pressure 30.03
 Stack Pressure 3.3

Probe Washings
 Crucible # F13
 Final 71.9074
 Initial 71.8990
 Net 0.0084

Filter Weights
 Filter # 110
 Final 3.7710
 Initial 3.7707
 Net 0.0003

Meter Readings
 #1 523.030
 #2 541.770
 #3 533.030
 Total 36.870 cu.ft.

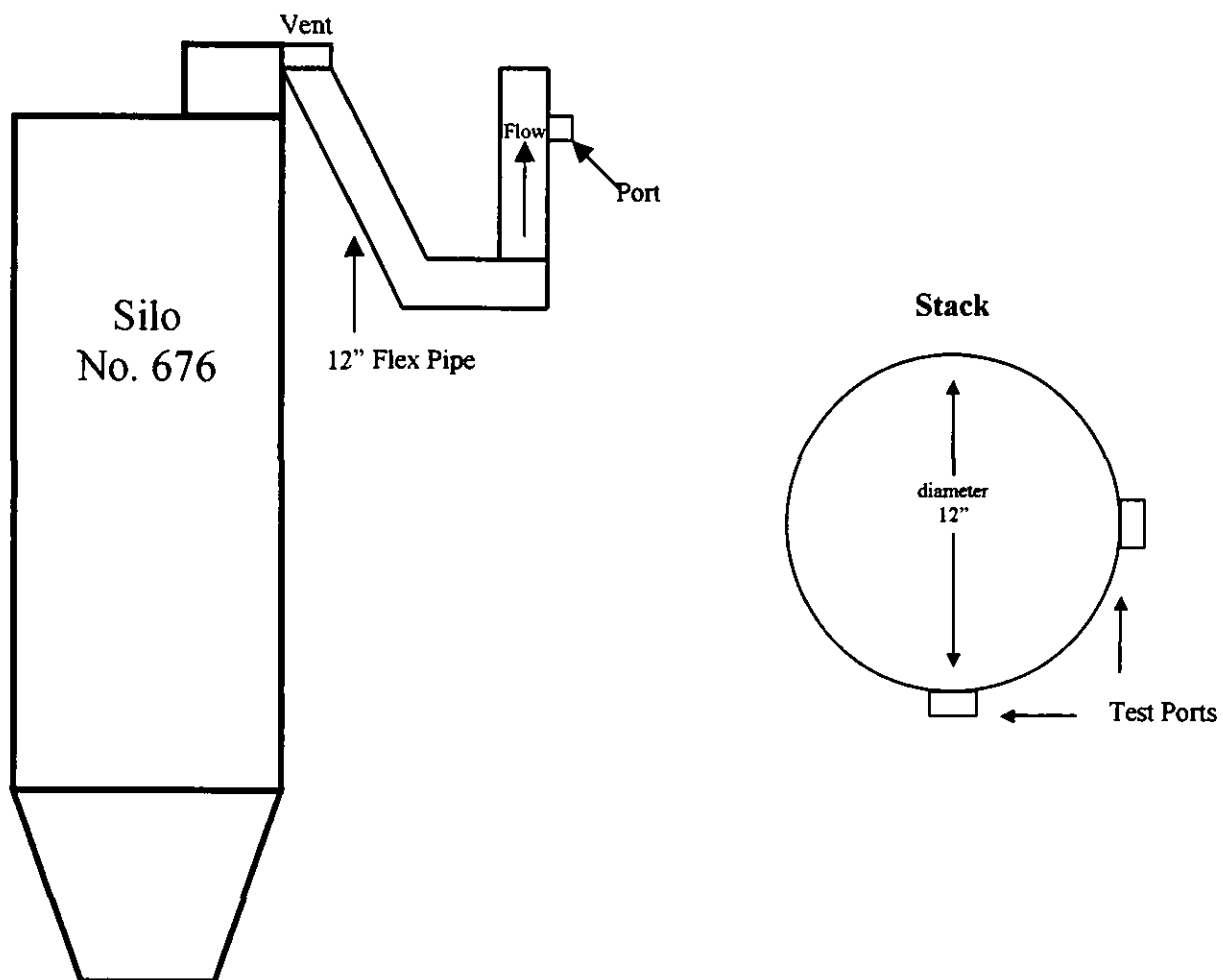
Temperatures (°F)
 Inlet 84
 Outlet 83
 Stack 81
 Oven 251
 Impinger 67
 Vacuum 1.0

Field Notes:

676 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site Silo Baghouse No. 676



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 676

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-29-00	6-30-00	6-30-00	
Time Began-Ended	1017-1128	0830-0930	0947-1053	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.02	30.13	30.13	30.09
Stack Pressure, Inches of mercury	30.00	30.11	30.11	30.07
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.996	0.996	0.996	
Nozzle Diameter, Inches	0.250	0.250	0.250	
Meter Volume, Cubic feet	38.360	35.840	35.684	36.628
Meter Temperature, Degrees F	75.9	75.3	83.4	78.2
Avg. Orifice Delta P, Inches of Water	1.24	1.18	1.17	1.20
Volume H2O Collected, MilliLiters	19.0	18.0	18.0	18.3
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.551	0.537	0.534	0.54
Stack Temperature, Degrees F	76.3	71.9	77.5	75.3
Total particulate collected, grams	0.0098	0.0105	0.0064	0.0089

CALCULATED DATA

Standard Meter Volume, Cubic Feet	37.871	35.546	34.861	36.092
Standard Water Volume, Cubic Feet	0.894	0.847	0.847	0.863
Moisture Fraction	0.023	0.023	0.024	0.023
Molecular Weight Of Stack Gas	28.551	28.549	28.544	28.548
Density Of Stack Gas	0.0732	0.0740	0.0732	0.0735
Average Stack Gas Velocity, Feet/Second	31.280	30.326	30.306	30.638
Stack Gas Flow @ Stack Conditions, ACFM	1,473	1,428	1,427	1,443
Stack Gas Flow @ Standard Conditions, DSCFM	1,420	1,393	1,377	1,397
Isokinetic Sampling Rate, Percent	102.37	97.95	97.18	99.17
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0040	0.0045	0.0028	0.0038
Particulate emissions, lbs per hour	0.05	0.05	0.03	0.05

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 676

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.17	0.4123	0.68	73	71	79
1-2	0.23	0.4796	0.92	74	71	77
1-3	0.25	0.5000	1.00	74	71	77
1-4	0.24	0.4899	0.96	75	72	77
1-5	0.31	0.5568	1.24	75	72	76
1-6	0.42	0.6481	1.68	76	72	77
2-1	0.21	0.4583	0.84	77	74	76
2-2	0.27	0.5196	1.08	79	75	76
2-3	0.34	0.5831	1.36	81	77	76
2-4	0.39	0.6245	1.56	82	78	75
2-5	0.43	0.6557	1.72	82	78	75
2-6	0.47	0.6856	1.88	84	78	75
	0.31	0.5511	1.24	77.67	75.9	76.3

Moisture		Gas Analyses		Average	
Impinger #1	Impinger #2	CO2	O2	CO	N2
100	100	0	20.1	0	19.7
0	0	0	0	0	0
607	607	635	635	635	635
827	827	840	840	840	840
Totals					

Nozzle Calibrations		Barometric Pressure	
Pre-test	Post-test	Pre-test	Post-test
0.250	0.250	30.03	30.03
0.250	0.250		
0.250	0.250		
0.250	0.250		
Avg.			

Stack Diameter		Leak Check		Probe Washings	
Run	Stack Diameter	Pre-test	Volume @	Crucible #	Final
# 1	12"		Vac		73.3555
					73.3161
					0.0094

Meter #		Filter Weights	
Time	Meter #	Filter #	Final
10:17	EM4		119
11:28			3.7871
			3.7869
			0.0002

Probe		Total	
Probe	Cp Value	Initial	Net
ESP-3	8.40		38.360
			cu.ft.

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 676

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.21	0.4583	0.84	70	70	71
1-2	0.27	0.5196	1.08	71	70	71
1-3	0.25	0.5000	1.00	73	71	71
1-4	0.22	0.4690	0.88	73	71	72
1-5	0.30	0.5477	1.20	74	71	72
1-6	0.37	0.6083	1.48	76	72	72
2-1	0.12	0.3464	0.48	77	74	72
2-2	0.25	0.5000	1.00	79	75	73
2-3	0.31	0.5568	1.24	79	75	73
2-4	0.40	0.6325	1.60	82	77	72
2-5	0.41	0.6403	1.64	84	79	72
2-6	0.44	0.6633	1.76	85	79	72
	0.30	0.5368	1.18	76.92	75.3	71.9

F 20200901 107 103 103 103 103
 Site 20200901 107 103 103 103 103
 Date 20200901 107 103 103 103 103
 Run # 2 12 12 12 12 12
 Time 8:30 8:35 8:40 8:45 8:50 8:55
 Meter # E13 E13 E13 E13 E13 E13
 Probe 6473 6473 6473 6473 6473 6473
 Cp Value 4.40 4.40 4.40 4.40 4.40 4.40
 Moisture Impinger #1 100 100 100 100 100 100
 Impinger #2 100 100 100 100 100 100
 Impinger #3 0 0 0 0 0 0
 Impinger #4 0 0 0 0 0 0
 Totals 200 200 200 200 200 200
 Nozzle Calibrations Pre-test 0.250 0.250 0.250 0.250 0.250 0.250
 Post-test 0.250 0.250 0.250 0.250 0.250 0.250
 Barometric Pressure 30.13 30.13 30.13 30.13 30.13 30.13
 Stack Pressure -0.28 -0.28 -0.28 -0.28 -0.28 -0.28
 Leak Check Pre-test Volume @ 0.004 0.004 0.004 0.004 0.004 0.004
 Post-test Volume @ 0.004 0.004 0.004 0.004 0.004 0.004
 Probe Washings Crucible # F19 F19 F19 F19 F19 F19
 Final 73.6435 73.6435 73.6435 73.6435 73.6435 73.6435
 Initial 73.6435 73.6435 73.6435 73.6435 73.6435 73.6435
 Net 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
 Filter Weights Filter # 113 113 113 113 113 113
 Final 3.7653 3.7653 3.7653 3.7653 3.7653 3.7653
 Initial 3.7650 3.7650 3.7650 3.7650 3.7650 3.7650
 Net 0.0003 0.0003 0.0003 0.0003 0.0003 0.0003
 Gas Analyses CO2 0 0 0 0 0 0
 O2 20.1 20.1 20.1 20.1 20.1 20.1
 CO 0 0 0 0 0 0
 N2 0 0 0 0 0 0
 Average 0 0 0 0 0 0

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	5	545.220	0.21	0.84	70	70	71	247	67	2.0
1 / 2	10	547.993	0.27	1.08	71	70	71	251	65	3.0
1 / 3	15	551.140	0.25	1.00	73	71	71	250	60	3.0
1 / 4	20	553.400	0.22	0.88	73	71	72	251	60	3.0
1 / 5	25	556.455	0.20	1.20	74	71	72	250	57	3.0
1 / 6	30	559.825	0.37	1.48	76	72	72	250	50	3.0
2 / 1	35	561.890	0.12	0.48	77	74	72	251	50	1.0
2 / 2	40	564.010	0.25	1.00	79	75	73	251	51	2.0
2 / 3	45	567.700	0.31	1.34	79	75	73	251	51	2.0
2 / 4	50	570.830	0.40	1.60	82	77	72	251	51	2.0
2 / 5	55	574.800	0.41	1.64	84	79	72	253	51	2.0
2 / 6	60	578.490	0.44	1.70	85	79	72	241	53	4.0
3 / 1										
3 / 2										
3 / 3										
3 / 4										
3 / 5										
3 / 6										
4 / 1										
4 / 2										
4 / 3										
4 / 4										
4 / 5										
4 / 6										
5 / 1										
5 / 2										
5 / 3										
5 / 4										
5 / 5										
5 / 6										

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 676

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.20	0.4472	0.80	80	78	74
1-2	0.29	0.5385	1.16	81	78	74
1-3	0.30	0.5477	1.20	81	80	74
1-4	0.35	0.5916	1.40	82	80	76
1-5	0.31	0.5568	1.24	83	81	77
1-6	0.37	0.6083	1.48	85	83	77
2-1	0.14	0.3742	0.56	87	84	78
2-2	0.17	0.4123	0.68	87	84	78
2-3	0.23	0.4796	0.92	86	84	79
2-4	0.28	0.5292	1.12	87	84	80
2-5	0.46	0.6782	1.84	88	85	81
2-6	0.41	0.6403	1.64	89	85	82
	0.29	0.5337	1.17	84.67	83.4	77.5

Moisture		Gas Analyses		Average
Implinger #1	CO ₂	O ₂	CO	N ₂
Implinger #2	7	0	0	0
Implinger #3	3	20.4	20.1	20.3
Implinger #4	-			
Totals	8			
	18			

Nozzle Calibrations		Barometric Pressure		Leak Check		Probe Washings	
Pre-test	Post-test	#1	#2	Volume @	Vac	Crucible #	Final
0.250	0.250	20.13		0.004	16"	F-2D	71.2423
0.250	0.250			0.004			71.2368
0.250	0.250			0.004			0.0055
0.250	0.250			0.002	6"		

Meter Readings		Filter Weights	
#1	#2	Filter #	Final
61.4584			3.9873
579.200			3.7866
35.684			0.0007

Stack Diameter		Cp Value	
Meter #	Probe	Time	Value
E13	E6P-3	9:47	4.0
		10:53	

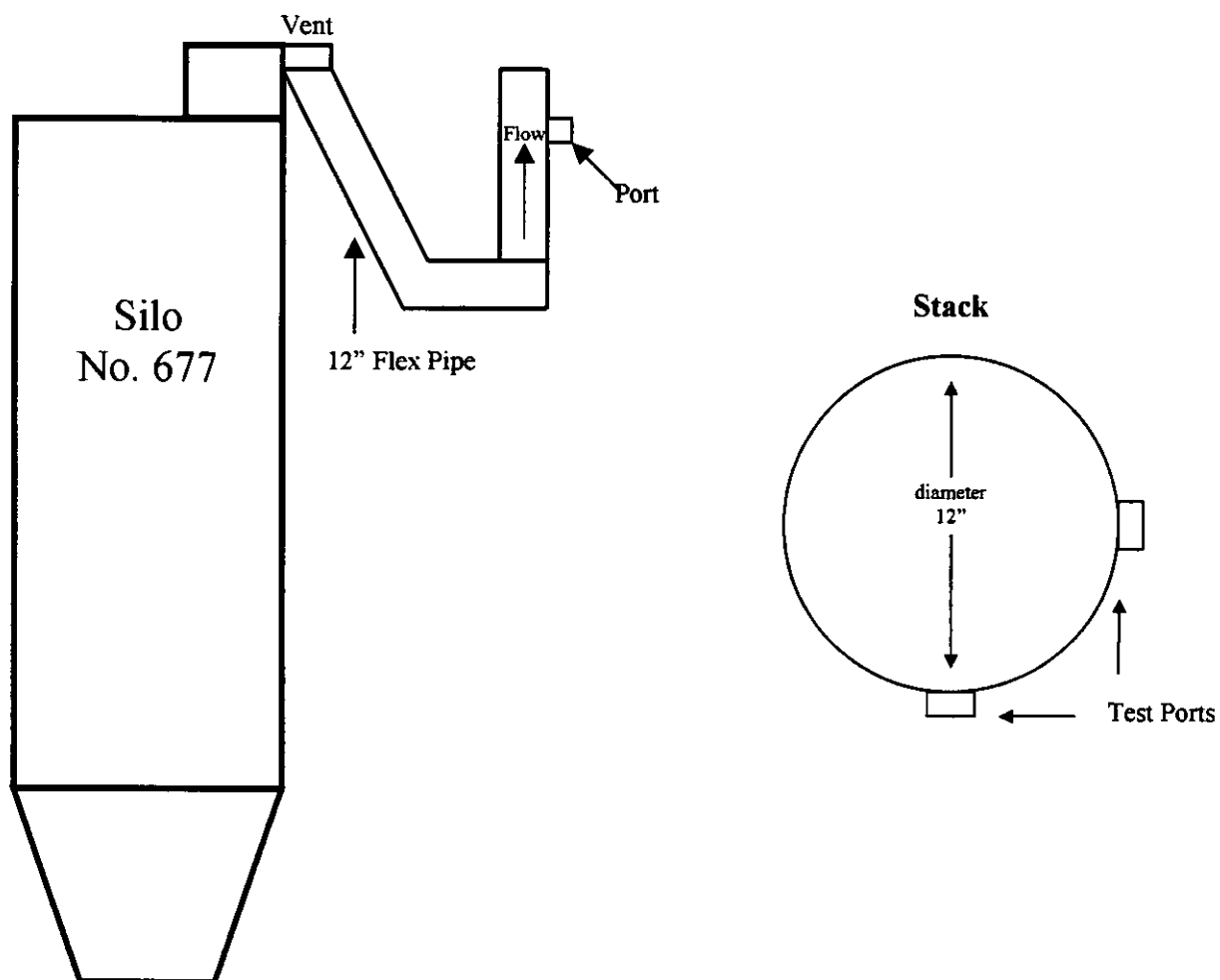
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Field Notes:

677 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site **Silo Baghouse No. 677**



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 677

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-29-00	6-29-00	6-29-00	
Time Began-Ended	1027-1130	1217-1321	1350-1457	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.02	30.02	30.02	30.02
Stack Pressure, Inches of mercury	29.96	29.96	29.97	29.96
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.997	0.997	0.996	
Nozzle Diameter, Inches	0.240	0.240	0.240	
Meter Volume, Cubic feet	38.310	37.955	38.483	38.249
Meter Temperature, Degrees F	77.3	78.7	87.8	81.3
Avg. Orifice Delta P, Inches of Water	1.49	1.39	1.43	1.44
Volume H2O Collected, MilliLiters	20.0	24.0	22.0	22.0
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.604	0.587	0.594	0.60
Stack Temperature, Degrees F	74.0	76.8	81.9	77.6
Total particulate collected, grams	0.0174	0.0120	0.0152	0.0149

CALCULATED DATA

Standard Meter Volume, Cubic Feet	37.785	37.328	37.180	37.431
Standard Water Volume, Cubic Feet	0.941	1.130	1.036	1.036
Moisture Fraction	0.024	0.029	0.027	0.027
Molecular Weight Of Stack Gas	28.537	28.483	28.507	28.509
Density Of Stack Gas	0.0733	0.0728	0.0722	0.0728
Average Stack Gas Velocity, Feet/Second	34.243	33.417	33.986	33.882
Stack Gas Flow @ Stack Conditions, ACFM	1,613	1,574	1,601	1,596
Stack Gas Flow @ Standard Conditions, DSCFM	1,557	1,504	1,519	1,527
Isokinetic Sampling Rate, Percent	101.06	103.38	101.93	102.12
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0071	0.0050	0.0063	0.0061
Particulate emissions, lbs per hour	0.09	0.06	0.08	0.08

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 677

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.20	0.4472	0.80	75	72	72
1-2	0.31	0.5568	1.24	76	73	73
1-3	0.35	0.5916	1.40	78	74	73
1-4	0.33	0.5745	1.32	79	75	74
1-5	0.32	0.5657	1.28	79	75	74
1-6	0.52	0.7211	2.08	80	76	73
2-1	0.28	0.5292	1.12	78	76	74
2-2	0.30	0.5477	1.20	78	76	75
2-3	0.53	0.7280	2.12	80	77	75
2-4	0.50	0.7071	2.00	81	77	75
2-5	0.43	0.6557	1.72	82	77	75
2-6	0.39	0.6245	1.56	82	78	75
	0.37	0.6041	1.49	79.00	77.3	74.0

Moisture	Initial	Final	Totals	Gas Analyses	Average
Impinger #1	100	109	9	CO2	0
Impinger #2	100	105	5	O2	20.3
Impinger #3	0	0	-	CO	20.1
Impinger #4	794	800	4	N2	20.0
Totals	994	1014	20		

Run	Stack Diameter	Nozzle Calibrations	Barometric Pressure	Leak Check	Probe Washings
# 1	12"	Pre-test 0.240	30.08	Pre-test Volume @	Crucible # Final
		0.240		0.005	81.0932
		0.240		Post-test Volume @	Initial
		0.240		0.001	81.0765
					Net
					0.0167

Time	Meter #	Slack	Probe	Cp Value	Filter Weights	cu.ft.
10:27	E13				Filter #	
11:30					Final	104
					Initial	3.7852
					Net	3.7817
					Total	0.0005
						38.310

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 677

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.22	0.4690	0.88	78	78	76
1-2	0.29	0.5385	1.16	78	78	76
1-3	0.34	0.5831	1.36	80	78	76
1-4	0.31	0.5568	1.24	81	78	77
1-5	0.31	0.5568	1.24	81	78	77
1-6	0.47	0.6856	1.88	81	78	77
2-1	0.26	0.5099	1.04	83	79	77
2-2	0.31	0.5568	1.24	83	78	77
2-3	0.41	0.6403	1.64	83	79	77
2-4	0.45	0.6708	1.80	84	80	77
2-5	0.41	0.6403	1.64	85	80	78
2-6	0.40	0.6325	1.60	84	80	77
	0.35	0.5867	1.39	81.75	78.7	76.8

Plant	Moisture	Initial	Final	Total	Gas Analyses	Average
Georgia Gulf	Impinger #1	100	111	11	CO ₂	0
Aberdeen, MS	Impinger #2	100	107	7	O ₂	19.6
	Impinger #3	0	0	-	CO	
Site	Impinger #4	800	806	6	N ₂	
Silo # 677	Totals	1000	1024	24		
Date						
6/29/00						

Run #	Stack Diameter	Nozzle Calibrations	Barometric Pressure	Leak Check	Probe Washings
# 2	12"	Pre-test 0.240	30.02	Pre-test Volume @	Crucible #
		0.240		0.007	Final
		0.240		Post-test	Initial
		0.240		Volume @	Net
Time	Meter #		Stack Pressure		
12:17	E13		-0.76		
1:01					

Probe	Cp Value	Meter Readings	Filter Weights
E573	K = 4.0	#1	Filter #
		407.320	Final
		389.200	Initial
		18.120	Net
		19.835	
			Total
			37.955 cu.ft.

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 677

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.21	0.4583	0.84	82	81	82
1-2	0.30	0.5477	1.20	84	82	82
1-3	0.34	0.5831	1.36	86	83	81
1-4	0.32	0.5657	1.28	87	85	82
1-5	0.39	0.6245	1.56	89	86	82
1-6	0.49	0.7000	1.96	90	86	83
2-1	0.29	0.5385	1.16	92	88	82
2-2	0.30	0.5477	1.20	94	87	82
2-3	0.47	0.6856	1.88	92	87	82
2-4	0.43	0.6557	1.72	92	89	82
2-5	0.40	0.6325	1.60	93	90	82
2-6	0.35	0.5916	1.40	93	90	81
	0.36	0.5942	1.43	89.50	87.8	81.9

Plate		Moisture		Initial		Final		Totals		Gas Analyses		Average	
GEORGETOWN		Impinger #1	100	107	7		0		CO2		0		
ABERDEEN, W.V.		Impinger #2	100	108	8		17.7		O2		19.8		
Site		Impinger #3	0	-	-		-		CO		-		
6677		Impinger #4	806	813	7		-		N2		-		
Totals			1006	1028	22		-						
Date		6/29/00											
Run		# 3											
Time		1:50 -											
2:57													
Probe		F473											
Cp Value		14.0											
Meter #		E14											
Avg.		0.240											
Nozzle Calibrations		Pre-test		0.240		0.240							
Post-test		0.240		0.240		0.240							
Stack Diameter		12"											
Barometric Pressure		30.02											
Leak Check		Pre-test		Volume @		Vac							
Post-test		0.005		0.005		15"							
Volume @		0.002		0.002		Vac							
Filter Weights		Filter #		530									
Final		71.6134		71.5987		0.0147							
Initial		71.6134		71.5987		0.0147							
Net		0.0147		0.0147		0.0147							
Total		38.483		38.483		38.483							

[illegible]

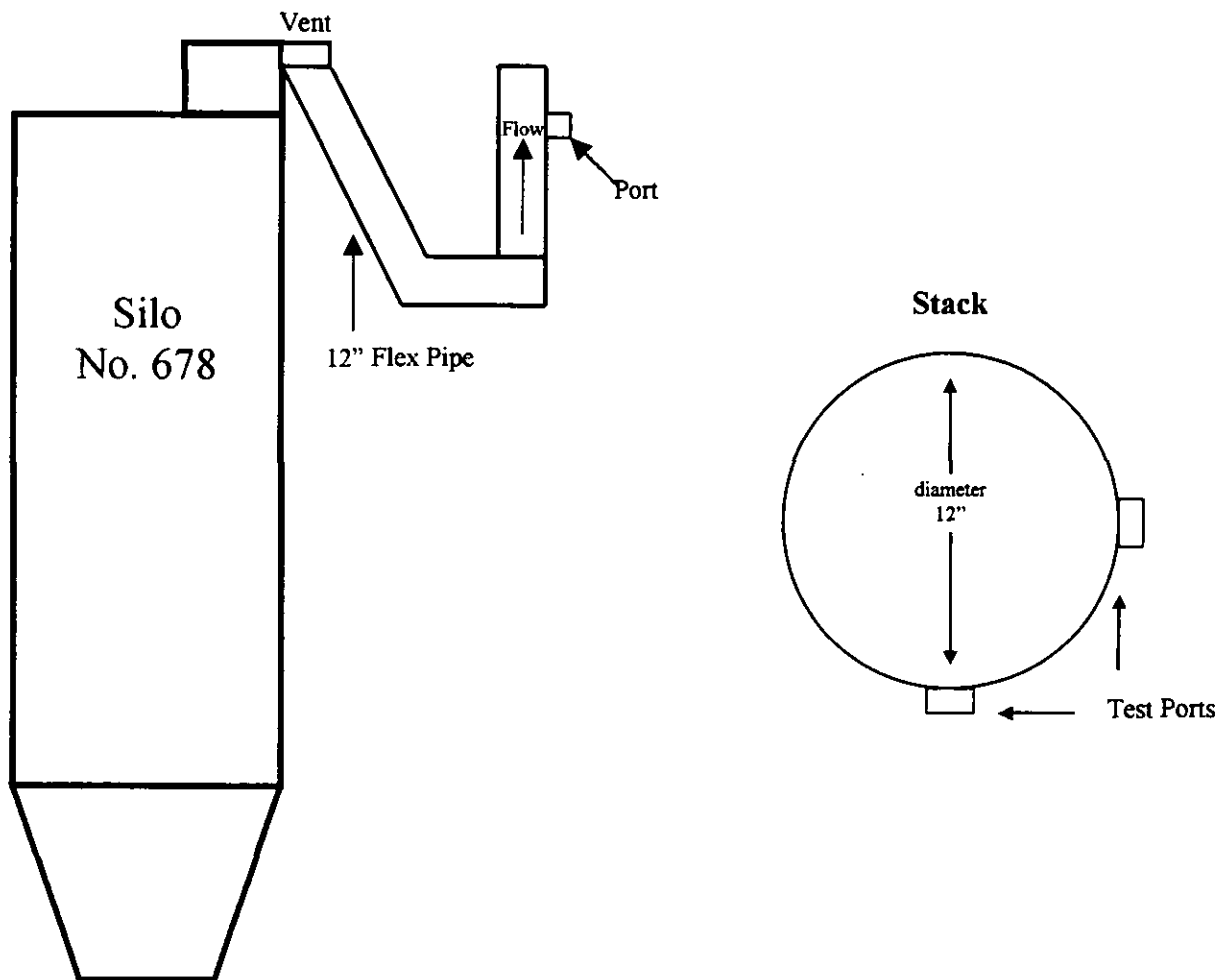
Field Notes:

678 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site

Silo Baghouse No. 678



ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 678

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-30-00	6-30-00	6-30-00	
Time Began-Ended	0819-0919	0941-1041	1105-1205	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.05	30.05	30.05	30.05
Stack Pressure, Inches of mercury	30.03	30.03	30.03	30.03
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.990	0.990	0.990	
Nozzle Diameter, Inches	0.250	0.250	0.250	
Meter Volume, Cubic feet	46.055	42.790	42.525	43.790
Meter Temperature, Degrees F	80.3	89.2	99.5	89.7
Avg. Orifice Delta P, Inches of Water	1.76	1.54	1.41	1.57
Volume H2O Collected, MilliLiters	26.0	20.0	18.0	21.3
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.6160	0.5767	0.5448	0.5792
Stack Temperature, Degrees F	74.1	76.6	76.8	75.8
Total particulate collected, grams	0.0061	0.0064	0.0095	0.0073

CALCULATED DATA

Standard Meter Volume, Cubic Feet	44.925	41.041	40.025	41.997
Standard Water Volume, Cubic Feet	1.224	0.941	0.847	1.004
Moisture Fraction	0.027	0.022	0.021	0.023
Molecular Weight Of Stack Gas	28.5136	28.5578	28.5761	28.5492
Density Of Stack Gas	0.073	0.073	0.073	0.073
Average Stack Gas Velocity, Feet/Second	34.898	32.756	30.945	32.866
Stack Gas Flow @ Stack Conditions, ACFM	1,644	1,543	1,457	1,548
Stack Gas Flow @ Standard Conditions, DSCFM	1,587	1,489	1,409	1,495
Isokinetic Sampling Rate, Percent	108.67	105.81	109.09	107.86
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0021	0.0024	0.0037	0.0027
Particulate emissions, lbs per hour	0.03	0.03	0.04	0.03

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 678

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.24	0.4899	1.08	80	76	72
1-2	0.24	0.4899	1.08	80	76	72
1-3	0.27	0.5196	1.22	81	77	73
1-4	0.27	0.5196	1.22	80	76	73
1-5	0.28	0.5292	1.26	82	75	74
1-6	0.36	0.6000	1.62	81	76	73
1-7	0.38	0.6164	1.71	82	76	73
1-8	0.43	0.6557	1.94	81	76	74
1-9	0.45	0.6708	2.03	82	77	75
1-10	0.61	0.7810	2.75	83	77	75
1-11	0.58	0.7616	2.61	82	76	74
1-12	0.58	0.7616	2.61	83	77	75
2-1	0.57	0.7550	2.57	84	78	74
2-2	0.53	0.7280	2.39	85	78	74
2-3	0.51	0.7141	2.30	85	78	74
2-4	0.48	0.6928	2.16	85	78	75
2-5	0.45	0.6708	2.03	86	79	76
2-6	0.42	0.6481	1.89	86	78	76
2-7	0.38	0.6164	1.71	86	79	74
2-8	0.41	0.6403	1.85	85	79	74
2-9	0.33	0.5745	1.49	85	79	75
2-10	0.24	0.4899	1.08	86	79	74
2-11	0.20	0.4472	0.90	85	78	75
2-12	0.17	0.4123	0.77	84	77	75
	0.39	0.6160	1.76	83	80	74

Plate Georgia Site #678 S.S. Date 6-30-00	Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals	Initial 100 100 0 0 200	Final 109 103 0 6 218	Total 9 3 0 6 18	Gas Analyses CO2 O2 CO N2	0 20.1 19.9 19.7 0 20	Average 0 20
Run #3 Time 11:05 12:05	Stack Diameter 12" Meter # E-10 Probe E-8.3 Op Value 4.5	Nozzle Calibrations Pre-test 0.250 0.250 0.250 0.250 Avg. 0.250	Post-test 0.250 0.250 0.250 0.250	Barometric Pressure 30.05" Stack Pressure -0.29 Meter Readings #2 #3 #4	Leak Check Pre-test Volume @ 0.004 Post-test Volume @ 0.004 Vac 15" Vac 8"	Probe Washings Crucible # Final 79.2063 Initial 79.1973 Net 0.0090 Filter Weights Filter # Final 3.7533 Initial 3.7530 Net 0.0003 cu.ft.	

Port / Point 1 / 1 1 / 2 1 / 3 1 / 4 1 / 5 1 / 6 1 / 7 1 / 8 1 / 9 1 / 10 1 / 11 1 / 12	Meter Reading 947.415 948.440 949.740 951.010 952.280 953.645 955.150 956.830 958.770 960.715 962.465 964.880 967.935 970.110 972.310 974.400 976.565 979.035 981.220 982.460 984.610 986.695 988.720 989.725	Time 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25.0 27.5 30.0 32.5 35.0 37.5 40.0 42.5 45.0 47.5 50.0 52.5 55.0 57.5 60.0	Δp .11 .11 .16 .16 .18 .20 .25 .30 .40 .41 .45 .49 .48 .54 .52 .48 .45 .35 .31 .30 .24 .22 .21 .13	Δh .50 .50 .72 .72 .81 .90 1.17 1.35 1.73 1.85 2.03 2.21 2.16 2.43 2.16 2.03 1.58 1.34 1.35 1.08 .99 .95 .81	Inlet 102 102 102 102 102 103 103 102 103 102 102 102 101 102 102 102 103 102 101 102 102 102 102	Outlet 96 96 96 96 97 97 97 97 97 97 97 97 96 97 97 97 97 97 97 97 97 98 96	Stack 73 74 75 76 75 75 75 76 76 75 76 77 78 78 78 78 79 78 79 78 79 78 79	Oven 244 244 247 248 249 248 249 250 250 251 251 250 250 251 250 250 250 251 249 250 251 250 250	Impinger 66 67 66 66 67 65 66 66 67 66 66 66 66 66 67 66 66 67 67 67 67 67 66	Vacuum 1 2
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Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 678

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.16	0.4000	0.72	86	79	74
1-2	0.18	0.4243	0.81	86	79	75
1-3	0.21	0.4583	0.95	86	80	76
1-4	0.21	0.4583	0.95	87	80	75
1-5	0.28	0.5292	1.26	90	82	77
1-6	0.38	0.6164	1.71	90	83	77
1-7	0.40	0.6325	1.80	90	83	78
1-8	0.51	0.7141	2.30	91	84	77
1-9	0.49	0.7000	2.21	91	84	76
1-10	0.47	0.6856	2.12	92	84	76
1-11	0.45	0.6708	2.03	93	85	76
1-12	0.39	0.6245	1.76	93	85	76
2-1	0.45	0.6708	2.03	93	84	77
2-2	0.50	0.7071	2.25	93	84	78
2-3	0.48	0.6928	2.16	93	84	79
2-4	0.40	0.6325	1.80	95	85	76
2-5	0.35	0.5916	1.58	95	85	76
2-6	0.35	0.5916	1.58	96	86	77
2-7	0.33	0.5745	1.49	98	89	77
2-8	0.29	0.5385	1.31	99	90	77
2-9	0.26	0.5099	1.17	100	91	78
2-10	0.25	0.5000	1.13	100	92	76
2-11	0.21	0.4583	0.95	100	93	77
2-12	0.21	0.4583	0.95	101	93	77
	0.34	0.5767	1.54	93	89	77

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 678

Run No.: 3

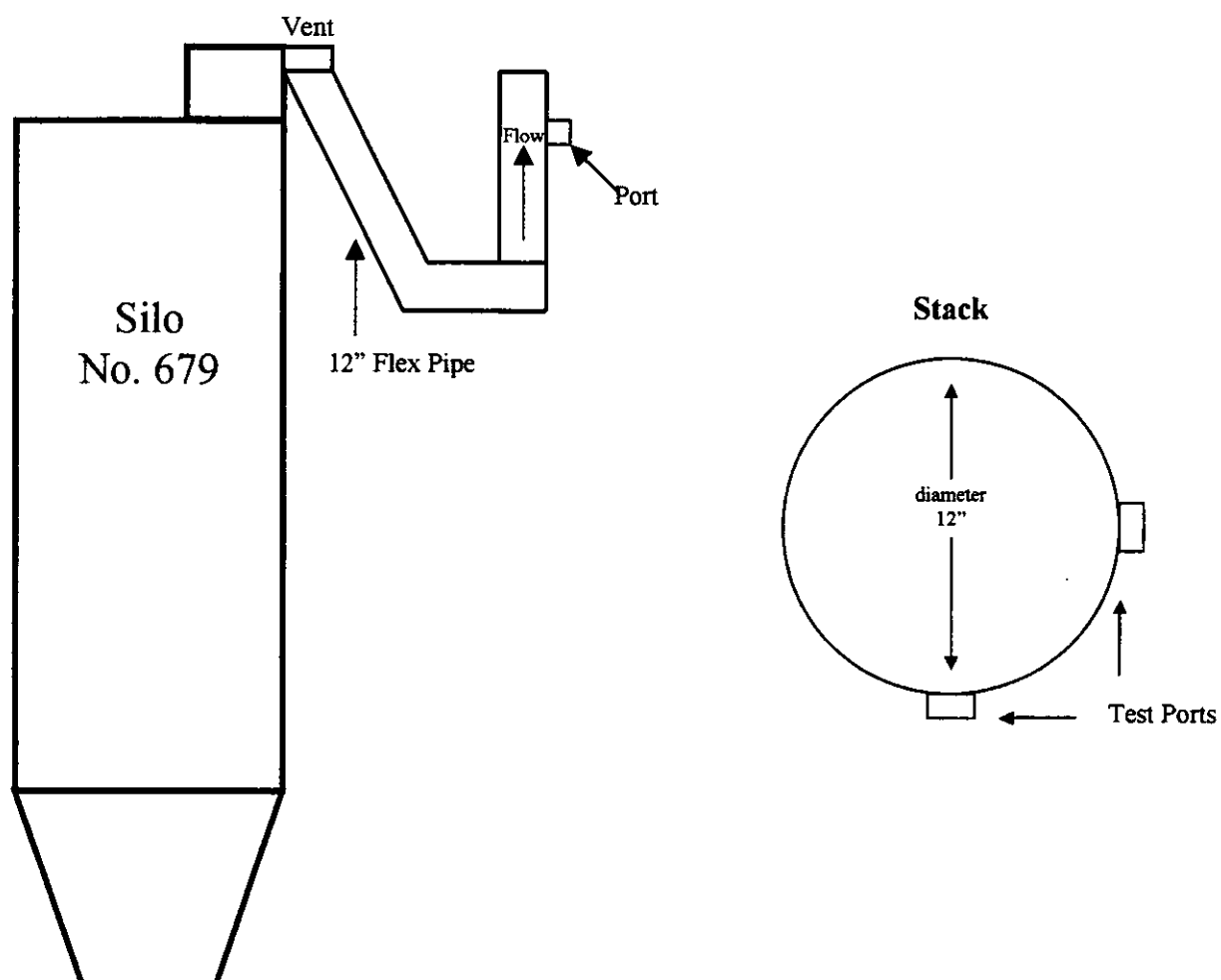
PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.11	0.3317	0.50	102	96	73
1-2	0.11	0.3317	0.50	102	96	74
1-3	0.16	0.4000	0.72	102	96	75
1-4	0.16	0.4000	0.72	102	96	76
1-5	0.18	0.4243	0.81	102	97	75
1-6	0.20	0.4472	0.90	103	97	75
1-7	0.25	0.5000	1.13	103	97	75
1-8	0.30	0.5477	1.35	102	97	76
1-9	0.40	0.6325	1.80	103	97	76
1-10	0.41	0.6403	1.85	103	97	75
1-11	0.45	0.6708	2.03	102	98	76
1-12	0.49	0.7000	2.21	102	97	77
2-1	0.48	0.6928	2.16	102	97	78
2-2	0.54	0.7348	2.43	101	96	78
2-3	0.52	0.7211	2.34	102	97	78
2-4	0.48	0.6928	2.16	102	97	78
2-5	0.45	0.6708	2.03	102	97	78
2-6	0.35	0.5916	1.58	102	97	79
2-7	0.31	0.5568	1.40	103	97	79
2-8	0.30	0.5477	1.35	102	97	78
2-9	0.24	0.4899	1.08	101	97	79
2-10	0.22	0.4690	0.99	102	97	78
2-11	0.21	0.4583	0.95	102	98	78
2-12	0.18	0.4243	0.81	102	96	79
	0.31	0.5448	1.41	102	99	77

679 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site Silo Baghouse No. 679



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 679

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-29-00	6-29-00	6-29-00	
Time Began-Ended	1547-1649	1709-1811	1835-1937	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.08	30.08	30.08	30.08
Stack Pressure, Inches of mercury	30.01	30.01	30.01	30.01
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.992	0.992	0.992	
Nozzle Diameter, Inches	0.250	0.250	0.250	
Meter Volume, Cubic feet	33.660	34.430	34.000	34.030
Meter Temperature, Degrees F	99.1	99.1	109.3	102.5
Avg. Orifice Delta P, Inches of Water	0.91	0.91	0.89	0.90
Volume H2O Collected, MilliLiters	21.0	22.0	17.0	20.0
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.445	0.445	0.437	0.44
Stack Temperature, Degrees F	85.7	85.7	87.4	86.3
Total particulate collected, grams	0.0282	0.0187	0.0262	0.0244

CALCULATED DATA

Standard Meter Volume, Cubic Feet	31.758	32.485	31.506	31.916
Standard Water Volume, Cubic Feet	0.988	1.036	0.800	0.941
Moisture Fraction	0.030	0.031	0.025	0.029
Molecular Weight Of Stack Gas	28.4740	28.4664	28.5325	28.4909
Density Of Stack Gas	0.072	0.072	0.072	0.072
Average Stack Gas Velocity, Feet/Second	25.504	25.538	25.077	25.373
Stack Gas Flow @ Stack Conditions, ACFM	1,201	1,203	1,181	1,195
Stack Gas Flow @ Standard Conditions, DSCFM	1,130	1,131	1,114	1,125
Isokinetic Sampling Rate, Percent	107.88	110.28	108.58	108.91
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0137	0.0089	0.0128	0.0118
Particulate emissions, lbs per hour	0.13	0.09	0.12	0.11

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 679

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.10	0.3162	0.45	92	90	80
1-2	0.30	0.5477	1.35	93	90	80
1-3	0.26	0.5099	1.17	94	92	82
1-4	0.25	0.5000	1.13	94	92	82
1-5	0.20	0.4472	0.90	96	94	84
1-6	0.18	0.4243	0.81	96	94	84
1-7	0.19	0.4359	0.86	98	96	85
1-8	0.18	0.4243	0.81	98	96	83
1-9	0.13	0.3606	0.59	100	96	87
1-10	0.27	0.5196	1.22	101	98	87
1-11	0.25	0.5000	1.13	101	98	87
1-12	0.24	0.4899	1.08	101	98	87
2-1	0.20	0.4472	0.90	98	96	85
2-2	0.18	0.4243	0.81	100	98	87
2-3	0.19	0.4359	0.86	100	98	88
2-4	0.15	0.3873	0.68	101	98	88
2-5	0.16	0.4000	0.72	102	100	88
2-6	0.25	0.5000	1.13	104	102	87
2-7	0.20	0.4472	0.90	105	103	87
2-8	0.17	0.4123	0.77	105	103	87
2-9	0.14	0.3742	0.63	105	103	88
2-10	0.12	0.3464	0.54	107	105	88
2-11	0.29	0.5385	1.31	108	105	88
2-12	0.24	0.4899	1.08	108	106	88
	0.20	0.4449	0.91	100	99	86

George Gulf
Abidjan, AB
 Site **S.10 # 679**
 Date **6/29/00**

Moisture
 Impinger #1
 Impinger #2
 Impinger #3
 Impinger #4
 Totals

Initial 100
 100
 0
 693
 893

Final 109
 105
 0
 700
 594

Gas Analyses
 CO2
 O2
 CO
 N2

Leak Check
 Pre-test Volume @ 0.002
 Post-test Volume @ 0.001

Barometric Pressure
 Pre-test 30.03
 Post-test 30.250
 Stack Pressure -1.000

Probe Washings
 Crucible #
 Final 75.6012
 Initial 75.5733
 Net 0.0279

Filter Weights
 Filter #
 Final 3.8035
 Initial 3.8034
 Net 0.0001

Meter Readings
 #1 695.150
 #2 711.270
 #3 695.150
 #4 33.660

Stack Diameter 12"
Meter # E16
Probe Exp-3a
Sp Value R-41.5

Run # 1
Time 3:47 pm
Start 4:49 pm
Stop 4:49 pm

Average 0

Port / Point	Time	Meter Reading	Δ p	Δ h	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	679.410	.10	.45	92	70	80	240	57	1.0
1 / 2	5.0	680.990	.30	1.33	93	90	80	247	59	1.5
1 / 3	7.5	682.310	.26	1.17	94	92	82	248	59	1.5
1 / 4	10.0	684.070	.25	1.13	94	92	82	247	59	1.5
1 / 5	12.5	685.620	.20	.90	94	94	84	249	60	1.0
1 / 6	15.0	687.070	.18	.81	96	94	84	247	60	1.0
1 / 7	17.5	688.470	.19	.86	98	96	86	249	61	1.0
1 / 8	20.0	689.680	.18	.81	98	96	86	249	61	1.0
1 / 9	22.5	690.970	.13	.59	100	96	87	251	63	1.0
1 / 10	25.0	692.070	.27	1.12	101	98	87	251	64	1.0 1.5
1 / 11	27.5	693.560	.25	1.13	101	98	87	250	64	1.0 1.5
1 / 12	30.0	695.150	.24	1.08	101	98	87	248	64	1.5
2 / 1	2.5	696.550	.20	.90	98	96	85	247	61	1.5
2 / 2	5.0	697.890	.18	.81	100	98	87	249	61	1.0
2 / 3	7.5	699.230	.19	.86	100	98	88	248	62	1.0
2 / 4	10.0	700.310	.15	.68	101	98	88	248	62	1.0
2 / 5	12.5	701.350	.16	.72	102	100	88	249	63	1.0
2 / 6	15.0	703.050	.28	1.13	104	102	87	246	63	1.5
2 / 7	17.5	704.400	.20	.90	105	103	87	249	64	1.5
2 / 8	20.0	705.760	.17	.77	105	103	87	248	64	1.0
2 / 9	22.5	706.960	.14	.63	105	103	88	251	65	1.0
2 / 10	25.0	708.070	.12	.54	107	105	88	251	65	1.0
2 / 11	27.5	709.670	.29	1.31	108	105	88	250	65	1.0 1.5
2 / 12	30.0	711.270	.24	1.08	108	106	88	248	65	1.5

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 679

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.10	0.3162	0.45	92	90	80
1-2	0.30	0.5477	1.35	93	90	80
1-3	0.26	0.5099	1.17	94	92	82
1-4	0.25	0.5000	1.13	94	92	82
1-5	0.20	0.4472	0.90	96	94	84
1-6	0.18	0.4243	0.81	96	94	84
1-7	0.19	0.4359	0.86	98	96	85
1-8	0.18	0.4243	0.81	98	96	83
1-9	0.13	0.3606	0.59	100	96	87
1-10	0.27	0.5196	1.22	101	98	87
1-11	0.25	0.5000	1.13	101	98	87
1-12	0.24	0.4899	1.08	101	98	87
2-1	0.20	0.4472	0.90	98	96	85
2-2	0.18	0.4243	0.81	100	98	87
2-3	0.19	0.4359	0.86	100	98	88
2-4	0.15	0.3873	0.68	101	98	88
2-5	0.16	0.4000	0.72	102	100	88
2-6	0.25	0.5000	1.13	104	102	87
2-7	0.20	0.4472	0.90	105	103	87
2-8	0.17	0.4123	0.77	105	103	87
2-9	0.14	0.3742	0.63	105	103	88
2-10	0.12	0.3464	0.54	107	105	88
2-11	0.29	0.5385	1.31	108	105	88
2-12	0.24	0.4899	1.08	108	106	88
	0.20	0.4449	0.91	100	99	86

Plate Georgia Gulf
Abbeville, MS
 Site Silo #1679
 Date 6/29/00
 Run # 2
 Time 5:09 pm
 Stop 6:11 pm
 Moisture Impinger #1 109
 Impinger #2 104
 Impinger #3 0
 Impinger #4 709
 Totals 922
 Gas Analyses CO2 0
 O2 20.0
 CO 0
 N2 0
 Average 0
 Leak Check Pre-test Volume @ 0.002
 Post-test Volume @ 0.002
 Barometric Pressure 30.02
 Stack Pressure -0.090
 Nozzle Calibrations Pre-test 0.250
 Post-test 0.250
 Avg. 0.250
 Stack Diameter 12"
 Meter # E10
 Cp Value E = 4.5
 Probe Exp-3a
 Filter Weights Filter # 108
 Final 3.5871
 Initial 3.5898
 Net 0.0001
 Probe Washings Crucible # F2
 Final 74.6017
 Initial 74.5833
 Net 0.0184
 Vacuum 1.0
 Impinger 60
 Oven 250
 Stack 87
 Inlet 110
 Outlet 108
 Δh .54
 Δp .12
 Meter Reading 712.650
 Time 2.5
 Port / Point 1 / 1

Temperatures (°F)
 Stack 87
 Inlet 110
 Outlet 108
 Δh .54
 Δp .12
 Meter Reading 712.650
 Time 2.5
 Port / Point 1 / 1
 Vacuum 1.0
 Impinger 60
 Oven 250
 Stack 87
 Inlet 110
 Outlet 108
 Δh .54
 Δp .12
 Meter Reading 712.650
 Time 2.5
 Port / Point 1 / 1
 Vacuum 1.0
 Impinger 60
 Oven 250
 Stack 87
 Inlet 110
 Outlet 108
 Δh .54
 Δp .12
 Meter Reading 712.650
 Time 2.5
 Port / Point 1 / 1

Temperatures (°F)
 Stack 87
 Inlet 110
 Outlet 108
 Δh .54
 Δp .12
 Meter Reading 712.650
 Time 2.5
 Port / Point 1 / 1
 Vacuum 1.0
 Impinger 60
 Oven 250
 Stack 87
 Inlet 110
 Outlet 108
 Δh .54
 Δp .12
 Meter Reading 712.650
 Time 2.5
 Port / Point 1 / 1
 Vacuum 1.0
 Impinger 60
 Oven 250
 Stack 87
 Inlet 110
 Outlet 108
 Δh .54
 Δp .12
 Meter Reading 712.650
 Time 2.5
 Port / Point 1 / 1

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 679

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.20	0.4472	0.90	108	106	86
1-2	0.15	0.3873	0.68	108	106	86
1-3	0.12	0.3464	0.54	109	106	86
1-4	0.10	0.3162	0.45	109	106	86
1-5	0.31	0.5568	1.40	109	106	87
1-6	0.28	0.5292	1.26	110	107	87
1-7	0.23	0.4796	1.04	110	107	87
1-8	0.19	0.4359	0.86	110	108	87
1-9	0.13	0.3606	0.59	110	108	87
1-10	0.32	0.5657	1.44	110	108	87
1-11	0.26	0.5099	1.17	110	108	88
1-12	0.21	0.4583	0.95	110	108	88
2-1	0.17	0.4123	0.77	110	109	88
2-2	0.11	0.3317	0.50	111	109	88
2-3	0.35	0.5916	1.58	111	108	88
2-4	0.27	0.5196	1.22	111	109	88
2-5	0.22	0.4690	0.99	111	109	88
2-6	0.14	0.3742	0.63	111	109	88
2-7	0.09	0.3000	0.41	111	110	88
2-8	0.11	0.3317	0.50	111	110	88
2-9	0.28	0.5292	1.26	112	110	88
2-10	0.22	0.4690	0.99	112	110	88
2-11	0.16	0.4000	0.72	112	110	88
2-12	0.13	0.3606	0.59	112	110	88
	0.20	0.4367	0.89	110	109	87

Plate Georgia Gulf
Abbeville, MS
 Site Silo # 679
 Date 6/29/00
 Moisture
 Impinger #1
 Impinger #2
 Impinger #3
 Impinger #4
 Totals

Run # 3
 Stack Diameter 12"
 Time 6:35pm Meter # E10
 Initial 100 Final 108
 Initial 100 Final 103
 Initial 0 Final 0
 Initial 709 Final 715
 Initial 905 Final 920
 Totals

Nozzle Calibrations
 Pre-test 0.250 Post-test 0.250
0.250 0.250
0.250 0.250
0.250 0.250
 Avg.

Barometric Pressure 30.08
 Stack Pressure - .090
 Meter Readings
 #1 764.910 #2 781.650 #3 764.910 #4 764.910
 Final 747.680 Initial 764.910 Net 17.260
 Final 17.260 Initial 16.74 Net 34.000 cu.ft.

Leak Check
 Pre-test Volume @ 0.002 Vac 19"
 Post-test Volume @ 0.002 Vac 11"
 Probe Washings
 Crucible # F4
 Final 74.2428
 Initial 74.2170
 Net 0.0258

Gas Analyses
 CO2 0
 O2 19.9
 CO 20.3
 N2 20.1
 Average 0

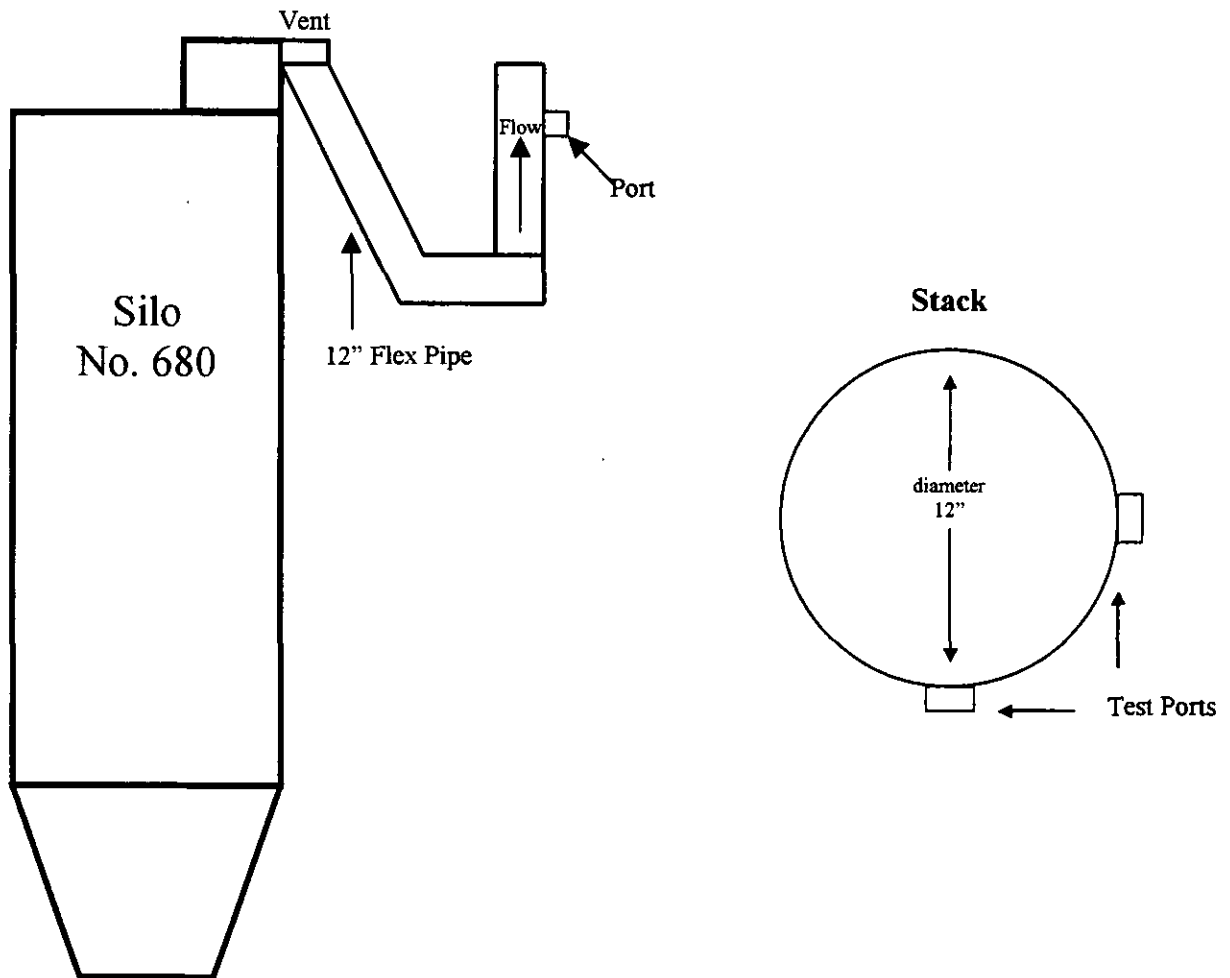
Temperatures (°F)
 Inlet 108 Outlet 106 Stack 86 Oven 251 Impinger 60 Vacuum 1.0
108 106 86 249 60 1.0
109 106 86 252 60 1.0
109 106 86 251 60 1.0
107 106 87 251 60 1.5
110 107 87 251 60 1.5
110 107 87 252 60 1.5
110 108 87 251 60 1.0
110 108 87 250 61 1.0
110 108 88 250 61 1.5
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112 110 88 250 62 1.5
112 110 88 250 62 1.5
112 110 88 251 62 1.0

Field Notes:

680 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site Silo Baghouse No. 680



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 680

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-29-00	6-29-00	6-29-00	
Time Began-Ended	0805-0906	0933-1040	1100-1210	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.02	30.02	30.02	30.02
Stack Pressure, Inches of mercury	30.00	30.00	30.00	30.00
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.992	0.992	0.992	
Nozzle Diameter, Inches	0.250	0.250	0.250	
Meter Volume, Cubic feet	32.000	41.013	42.280	38.431
Meter Temperature, Degrees F	102.6	90.6	82.4	91.9
Avg. Orifice Delta P, Inches of Water	0.80	1.36	1.45	1.21
Volume H2O Collected, MilliLiters	23.0	28.0	21.0	24.0
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.4213	0.5481	0.5656	0.5117
Stack Temperature, Degrees F	76.3	75.0	72.0	74.4
Total particulate collected, grams	0.0102	0.0045	0.0041	0.0063

CALCULATED DATA

Standard Meter Volume, Cubic Feet	29.940	39.260	41.094	36.765
Standard Water Volume, Cubic Feet	1.083	1.318	0.988	1.130
Moisture Fraction	0.035	0.032	0.023	0.030
Molecular Weight Of Stack Gas	28.4231	28.4492	28.5463	28.4729
Density Of Stack Gas	0.073	0.073	0.074	0.073
Average Stack Gas Velocity, Feet/Second	23.961	31.165	32.016	29.047
Stack Gas Flow @ Stack Conditions, ACFM	1,129	1,468	1,508	1,368
Stack Gas Flow @ Standard Conditions, DSCFM	1,075	1,405	1,465	1,315
Isokinetic Sampling Rate, Percent	106.93	107.28	107.71	107.31
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0052	0.0018	0.0015	0.0028
Particulate emissions, lbs per hour	0.05	0.02	0.02	0.03

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: Silo No. 680

Date: 6/29/2000
Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.18	0.4243	0.81	108	106	77
1-2	0.16	0.4000	0.72	108	106	77
1-3	0.22	0.4690	0.99	108	106	77
1-4	0.20	0.4472	0.90	108	106	77
1-5	0.16	0.4000	0.72	106	104	77
1-6	0.17	0.4123	0.77	104	101	77
1-7	0.16	0.4000	0.72	103	100	76
1-8	0.19	0.4359	0.86	103	100	76
1-9	0.16	0.4000	0.72	102	100	76
1-10	0.20	0.4472	0.90	103	100	76
1-11	0.21	0.4583	0.95	102	100	76
1-12	0.19	0.4359	0.86	102	100	76
2-1	0.18	0.4243	0.81	102	100	76
2-2	0.19	0.4359	0.86	102	100	76
2-3	0.16	0.4000	0.72	102	100	76
2-4	0.17	0.4123	0.77	103	101	76
2-5	0.19	0.4359	0.86	103	101	76
2-6	0.16	0.4000	0.72	103	101	76
2-7	0.14	0.3742	0.63	103	101	76
2-8	0.18	0.4243	0.81	103	101	76
2-9	0.17	0.4123	0.77	103	101	76
2-10	0.18	0.4243	0.81	102	100	76
2-11	0.17	0.4123	0.77	102	100	76
2-12	0.18	0.4243	0.81	103	100	76
	0.18	0.4213	0.80	104	103	76

Plate	Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals	Initial 100 100 0 700 900	Final 110 104 89 709 923	Total 10 4 - 9 23	Gas Analyses CO2 O2 CO N2	Average 0 20
Georgia Gulf Aberdeen, MS						
Site Silo #680						
Date 6/29/00						
Run #1	Stack Diameter 12"	Nozzle Calibrations Pre-test 0.250	Post-test 0.250	Barometric Pressure 30.02	Leak Check Pre-test Volume @ 0.007	Probe Washings Crucible # Final 73.3273 Initial 73.3176 Net 0.0097
Time Start - 8:05 pm	Meter # E12	0.250 0.250 0.250 Avg.	0.250 0.250 0.250	Slack Pressure -.27	Post-test Volume @ 0.002	Filter Weights Filter # Final 3.7848 Initial 3.9845 Net 0.0003
Stop - 9:06 pm	Cp Value K=4.5	#1 800.320	#2 816.020	#3 816.020	Vac 19"	
	Probe	Final 800.320	Initial 784.020	Net 16.300	Vac 4"	
				15.700	Total 32.000 cu.ft.	

Port / Point	Time	Meter Reading	ΔP	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1	1	785.500	.18	0.81	108	106	77	250	60	1.0
	2	786.780	.16	0.72	108	106	77	251	60	1.0
	3	788.210	.22	.99	108	106	77	250	60	1.5
	4	789.620	.20	.90	108	106	77	250	60	1.5
	5	790.880	.16	.77	106	104	77	248	60	1.0
	6	792.170	.17	.77	104	101	77	248	60	1.0
	7	793.480	.16	.72	103	100	76	248	60	1.0
	8	794.870	.19	.86	103	100	76	250	61	1.0
	9	796.160	.16	.72	102	100	76	251	60	1.0
	10	797.540	.20	.90	103	100	76	249	59	1.0
	11	799.010	.21	.95	102	100	76	248	59	1.0
	12	800.320	.19	.86	102	100	76	247	59	1.0
2	1	801.620	.18	.81	102	100	76	249	59	1.0
	2	803.050	.19	.86	102	100	76	248	59	1.0
	3	804.320	.16	.72	102	100	76	249	59	1.0
	4	805.620	.17	.77	103	101	76	251	59	1.0
	5	807.010	.19	.84	103	101	76	250	58	1.0
	6	808.270	.16	.72	103	101	76	249	58	1.0
	7	809.480	.14	.63	103	101	76	248	58	1.0
	8	810.780	.18	.81	103	101	76	251	58	1.0
	9	812.070	.17	.77	103	101	76	251	58	1.0
	10	813.420	.18	.81	102	100	76	248	57	1.0
	11	814.740	.17	.77	102	100	76	248	57	1.0
	12	816.070	.18	.81	103	100	76	249	57	1.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 680

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.30	0.5477	1.35	87	85	80
1-2	0.32	0.5657	1.44	91	87	80
1-3	0.27	0.5196	1.22	93	89	79
1-4	0.25	0.5000	1.13	94	89	79
1-5	0.35	0.5916	1.58	95	90	78
1-6	0.38	0.6164	1.71	94	91	76
1-7	0.37	0.6083	1.67	94	91	76
1-8	0.33	0.5745	1.49	94	90	75
1-9	0.30	0.5477	1.35	95	91	75
1-10	0.37	0.6083	1.67	94	91	74
1-11	0.38	0.6164	1.71	94	91	74
1-12	0.32	0.5657	1.44	93	90	74
2-1	0.18	0.4243	0.81	93	90	74
2-2	0.20	0.4472	0.90	93	90	74
2-3	0.27	0.5196	1.22	92	90	74
2-4	0.31	0.5568	1.40	92	90	74
2-5	0.27	0.5196	1.22	92	89	73
2-6	0.36	0.6000	1.62	91	89	73
2-7	0.32	0.5657	1.44	91	89	73
2-8	0.34	0.5831	1.53	91	89	73
2-9	0.30	0.5477	1.35	90	88	73
2-10	0.26	0.5099	1.17	90	87	73
2-11	0.25	0.5000	1.13	89	86	73
2-12	0.27	0.5196	1.22	89	86	73
	0.30	0.5481	1.36	92	91	75

Sample 6-29-00

Site 6-29-00

Date 6-29-00

Moisture
 Implinger #1 100
 Implinger #2 100
 Implinger #3 0
 Implinger #4 781
 Totals 981

Gas Analyses
 CO2 0
 O2 21
 CO 20
 N2 20

Average 0

Leak Check
 Pre-test Volume @ 0.000
 Post-test Volume @ 0.003

Probe Washings
 Crucible # F19
 Final Initial Net 73.6360
0.0039

Barometric Pressure
 Pre-test 30.02
 Post-test 30.02

Stack Pressure
 Pre-test 0.250
 Post-test 0.250

Meter Readings
 #1 837.720
 #2 837.720
 #3 837.720

Temperatures (°F)
 Inlet 87
 Outlet 85
 Stack 80
 Oven 250
 Impinger 63
 Vacuum 2.0

Port / Point	Meter Reading	Time	Δ p	Δ h	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	817.945	2.5	0.30	1.35	87	85	80	250	63	2.0
1 / 2	819.900	5.0	0.32	1.44	91	87	80	251	65	2.0
1 / 3	821.300	7.5	0.37	1.22	93	89	79	247	63	2.0
1 / 4	822.820	10.0	0.35	1.13	94	89	79	249	63	2.0
1 / 5	824.700	12.5	0.35	1.58	95	90	78	253	61	2.0
1 / 6	826.795	15.0	0.33	1.71	94	91	76	251	59	2.0
1 / 7	828.400	17.5	0.37	1.67	94	91	76	247	59	2.0
1 / 8	830.320	20.0	0.33	1.49	94	90	75	250	59	2.0
1 / 9	832.130	22.5	0.30	1.35	95	91	75	251	57	2.0
1 / 10	834.020	25.0	0.37	1.67	94	91	74	253	57	2.0
1 / 11	835.910	27.5	0.38	1.71	94	91	74	257	56	2.0
1 / 12	837.720	30.0	0.33	1.44	93	90	74	251	56	2.0
2 / 1	839.110	32.5	0.13	0.81	93	90	74	249	57	2.0
2 / 2	840.450	35.0	0.20	0.80	93	90	74	247	57	2.0
2 / 3	842.045	37.5	0.37	1.22	92	90	74	243	58	2.0
2 / 4	843.800	40.0	0.31	1.40	92	90	74	247	58	2.0
2 / 5	845.380	42.5	0.27	1.22	92	89	73	251	58	2.0
2 / 6	847.260	45.0	0.30	1.62	91	89	73	253	58	2.0
2 / 7	849.870	47.5	0.32	1.44	91	89	73	253	58	2.0
2 / 8	850.800	50.0	0.34	1.53	91	89	73	250	58	2.0
2 / 9	850.570	52.5	0.30	1.35	90	88	73	250	58	2.0
2 / 10	854.125	55.0	0.26	1.17	90	87	73	251	58	2.0
2 / 11	855.685	57.5	0.25	1.25	89	86	73	251	58	2.0
2 / 12	857.203	60.0	0.27	1.22	89	86	73	251	58	2.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/29/2000

Source: Silo No. 680

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.21	0.4583	0.95	86	84	73
1-2	0.27	0.5196	1.22	86	84	73
1-3	0.32	0.5657	1.44	86	83	73
1-4	0.35	0.5916	1.58	85	83	73
1-5	0.37	0.6083	1.67	85	83	73
1-6	0.38	0.6164	1.71	85	83	73
1-7	0.36	0.6000	1.62	85	82	73
1-8	0.35	0.5916	1.58	84	82	73
1-9	0.38	0.6164	1.71	84	82	72
1-10	0.34	0.5831	1.53	84	81	72
1-11	0.32	0.5657	1.44	84	81	72
1-12	0.27	0.5196	1.22	84	81	72
2-1	0.20	0.4472	0.90	84	81	72
2-2	0.26	0.5099	1.17	83	81	72
2-3	0.31	0.5568	1.40	83	81	72
2-4	0.35	0.5916	1.58	83	81	72
2-5	0.35	0.5916	1.58	83	80	72
2-6	0.37	0.6083	1.67	83	80	72
2-7	0.35	0.5916	1.58	82	80	71
2-8	0.38	0.6164	1.71	82	80	71
2-9	0.38	0.6164	1.71	81	80	71
2-10	0.34	0.5831	1.53	81	79	71
2-11	0.31	0.5568	1.40	81	79	71
2-12	0.22	0.4690	0.99	81	79	70
	0.32	0.5656	1.45	84	82	72

BEVERLY GULF AMERICAL WLS Site SLO 680 Date 6-29-00		Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 792 992		Final 109 103 - 801 1013		Gas Analyses CO2 O2 CO N2		0 20 19 19		Ave 0 20	
Run # 3		Stack Diameter 12"		Nozzle Calibrations Pre-test 0.250 Post-test 0.250		Barometric Pressure 30.02		Leak Check Pre-test Volume @ 0.002 Post-test Volume @ 0.002		Probe Washings Crucible # F20 Final 71.2420 Initial 71.2383 Net 0.0037			
Time 11:20 12:10		Meter # E12		Avg. 0.250 0.250 0.250 0.250		Stack Pressure - 0.30		Meter Readings #1 901.780 #2 852.500 #3 42.280		Filter Weights Filter # 116 Final 3.6391 Initial 3.6385 Net 0.0002			
Probe E37-3		Cp Value K=4.5		Final Initial Net 852.500 42.280									

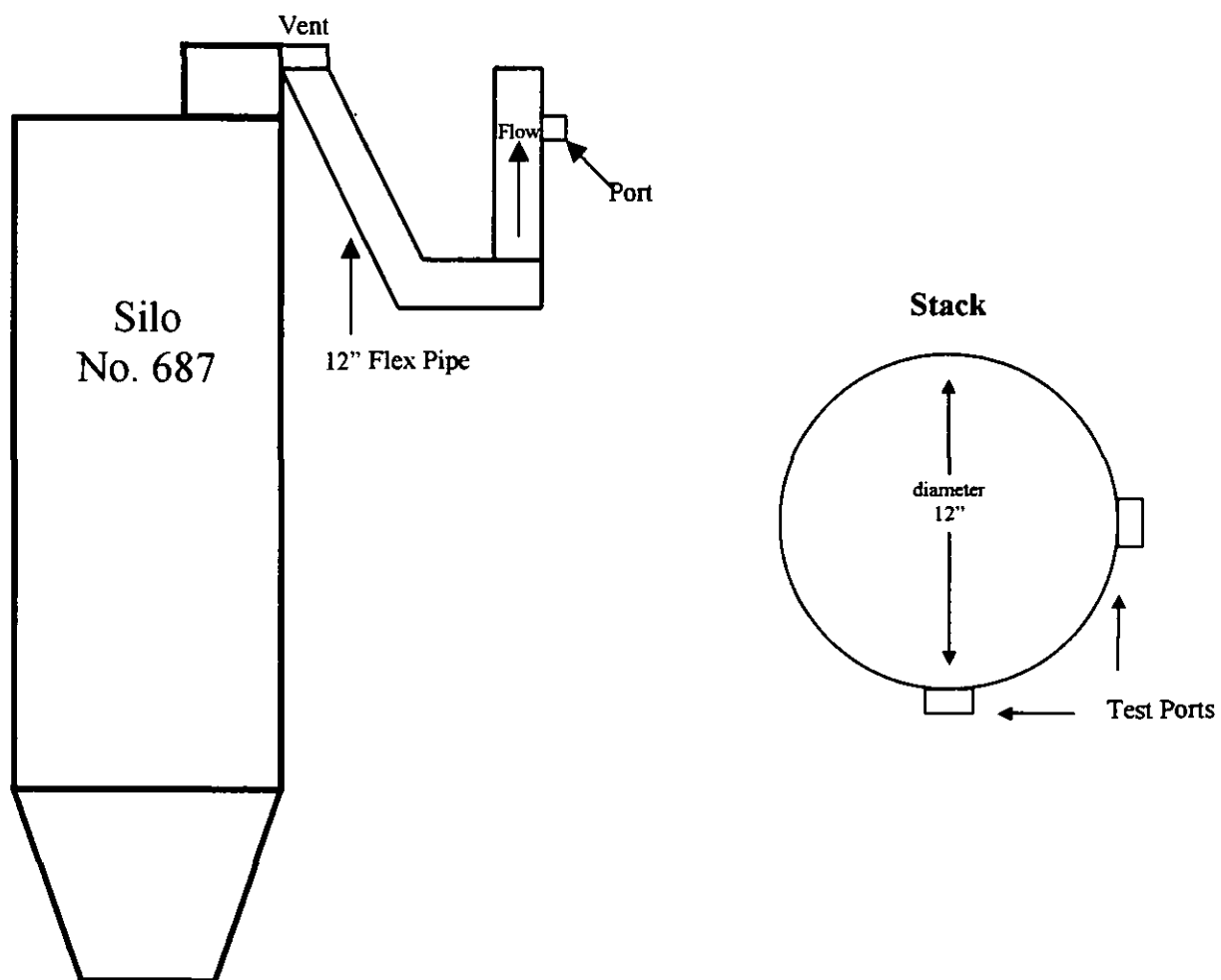
Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	860.945	0.21	0.95	84	84	73	251	63	2.0
1 / 2	5.0	862.570	0.27	1.22	84	84	73	251	65	2.0
1 / 3	7.5	864.510	0.32	1.44	84	83	73	250	60	2.0
1 / 4	10.0	866.400	0.35	1.58	85	83	73	250	57	2.0
1 / 5	12.5	868.470	0.37	1.67	85	83	73	250	57	2.0
1 / 6	15.0	870.490	0.38	1.71	85	83	73	250	57	2.0
1 / 7	17.5	872.125	0.36	1.62	85	82	73	247	56	2.0
1 / 8	20.0	873.880	0.35	1.58	84	82	73	249	57	2.0
1 / 9	22.5	875.775	0.38	1.71	84	82	72	250	56	2.0
1 / 10	25.0	877.570	0.34	1.53	84	81	72	253	56	2.0
1 / 11	27.5	879.315	0.32	1.44	84	81	72	251	56	2.0
1 / 12	30.0	880.920	0.37	1.22	84	81	72	251	56	2.0
2 / 1	32.5	882.355	0.20	0.50	84	81	72	251	56	2.0
2 / 2	35.0	883.975	0.26	1.17	83	81	72	251	56	2.0
2 / 3	37.5	885.035	0.31	1.40	83	81	72	251	56	2.0
2 / 4	40.0	887.450	0.35	1.58	83	81	72	250	57	2.0
2 / 5	42.5	889.285	0.35	1.58	83	80	72	250	57	2.0
2 / 6	45.0	891.170	0.37	1.67	83	80	72	250	57	2.0
2 / 7	47.5	892.970	0.35	1.58	82	80	71	251	57	2.0
2 / 8	50.0	894.720	0.38	1.71	82	80	71	251	57	2.0
2 / 9	52.5	896.835	0.58	1.71	81	80	71	251	56	2.0
2 / 10	55.0	898.080	0.34	1.53	81	79	71	251	56	2.0
2 / 11	57.5	900.370	0.31	1.40	81	79	71	251	56	2.0
2 / 12	60.0	901.780	0.22	0.95	81	79	70	251	67	2.0

Field Notes:

687 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site Silo Baghouse No. 687



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 687

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-30-00	6-30-00	6-30-00	
Time Began-Ended	0737-0849	0912-1024	1053-1159	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.13	30.13	30.13	30.13
Stack Pressure, Inches of mercury	30.13	30.12	30.12	30.12
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.992	0.992	0.992	
Nozzle Diameter, Inches	0.272	0.272	0.272	
Meter Volume, Cubic feet	30.860	38.405	37.485	35.583
Meter Temperature, Degrees F	97.6	100.1	100.2	99.3
Avg. Orifice Delta P, Inches of Water	0.72	0.81	0.80	0.78
Volume H2O Collected, MilliLiters	29.0	24.0	25.0	26.0
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.4007	0.4239	0.4199	0.4148
Stack Temperature, Degrees F	73.7	75.6	76.8	75.4
Total particulate collected, grams	0.0097	0.0072	0.0091	0.0087

CALCULATED DATA

Standard Meter Volume, Cubic Feet	29.232	36.224	35.350	33.602
Standard Water Volume, Cubic Feet	1.365	1.130	1.177	1.224
Moisture Fraction	0.045	0.030	0.032	0.036
Molecular Weight Of Stack Gas	28.3182	28.4734	28.4521	28.4145
Density Of Stack Gas	0.073	0.073	0.073	0.073
Average Stack Gas Velocity, Feet/Second	22.728	24.057	23.869	23.551
Stack Gas Flow @ Stack Conditions, ACFM	1,070	1,133	1,124	1,109
Stack Gas Flow @ Standard Conditions, DSCFM	1,019	1,090	1,077	1,062
Isokinetic Sampling Rate, Percent	93.07	107.78	106.46	102.44
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0051	0.0031	0.0040	0.0040
Particulate emissions, lbs per hour	0.04	0.03	0.04	0.04

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 687

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.15	0.3873	0.68	100	94	73
1-2	0.16	0.4000	0.72	100	94	73
1-3	0.16	0.4000	0.72	100	94	73
1-4	0.16	0.4000	0.72	100	95	73
1-5	0.15	0.3873	0.68	101	95	73
1-6	0.14	0.3742	0.63	101	95	73
1-7	0.15	0.3873	0.68	101	95	73
1-8	0.16	0.4000	0.72	101	95	73
1-9	0.16	0.4000	0.72	100	95	73
1-10	0.16	0.4000	0.72	100	95	74
1-11	0.16	0.4000	0.72	98	95	74
1-12	0.17	0.4123	0.77	98	94	74
2-1	0.14	0.3742	0.63	99	94	74
2-2	0.16	0.4000	0.72	100	95	74
2-3	0.17	0.4123	0.77	100	95	74
2-4	0.17	0.4123	0.77	100	95	74
2-5	0.17	0.4123	0.77	100	95	74
2-6	0.17	0.4123	0.77	100	95	74
2-7	0.16	0.4000	0.72	101	95	74
2-8	0.14	0.3742	0.63	101	95	74
2-9	0.14	0.3742	0.63	101	96	74
2-10	0.18	0.4243	0.81	101	96	74
2-11	0.18	0.4243	0.81	101	96	74
2-12	0.20	0.4472	0.90	101	96	75
	0.16	0.4007	0.72	100	98	74

Moisture		Initial		Final		Gas Analyzes		Average	
Impinger #1	Impinger #2	100	117	103	17	CO2	19	0	0
Impinger #3	Impinger #4	0	0	0	3	O2	21	20	20
Totals		791	800	1030	29	CO			
Date		991	1030			N2			
6-30-00									
Run #	1	Slack Diameter		12"		Barometric Pressure		30.13	
Time	7:37	Meter #		E 12		Leak Check Pre-test Volume @		0.005	
	8:49	Avg.				Post-test Volume @		0.003	
		Cp Value		12.45		Vac		18"	
		Probe				Vac		5"	
		Filter Weights		Filter #		Crucible #		FS	
		Final		1020.860		Final		71.6081	
		Initial		990.000		Initial		71.5991	
		Net		30.860		Net		0.0090	

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	991.120	0.15	0.72	100	94	73	251	47	1.0
1 / 2	5.0	992.385	0.16	0.72	100	94	73	250	45	1.0
1 / 3	7.5	993.630	0.16	0.72	100	94	73	250	45	1.0
1 / 4	10.0	994.900	0.16	0.72	100	95	73	247	44	1.0
1 / 5	12.5	996.035	0.15	0.68	101	95	73	249	44	1.0
1 / 6	15.0	997.070	0.14	0.63	101	95	73	253	44	1.0
1 / 7	17.5	998.200	0.15	0.68	101	95	73	254	42	1.0
1 / 8	20.0	999.430	0.16	0.72	101	95	73	251	40	1.0
1 / 9	22.5	1000.675	0.16	0.72	100	95	73	250	40	1.0
1 / 10	25.0	1001.900	0.16	0.72	100	95	74	251	59	1.0
1 / 11	27.5	1003.200	0.16	0.72	98	95	74	251	55	1.0
1 / 12	30.0	1004.575	0.17	0.77	98	94	74	253	57	1.0
2 / 1	32.5	1005.605	0.14	0.63	99	94	74	251	57	1.0
1 / 2	35.0	1006.855	0.16	0.72	100	95	74	247	57	1.0
1 / 3	37.5	1008.270	0.17	0.77	100	95	74	248	57	1.0
1 / 4	40.0	1009.535	0.17	0.77	100	95	74	250	57	1.0
1 / 5	42.5	1010.925	0.17	0.77	100	95	74	250	58	1.0
1 / 6	45.0	1012.280	0.17	0.77	100	95	74	251	57	1.0
1 / 7	47.5	1013.550	0.16	0.72	101	95	74	251	57	1.0
1 / 8	50.0	1014.670	0.14	0.63	101	95	74	250	57	1.0
1 / 9	52.5	1015.660	0.14	0.63	101	96	74	247	56	1.0
1 / 10	55.0	1016.980	0.18	0.83	101	96	74	247	56	1.0
1 / 11	57.5	1018.875	0.18	0.83	101	96	74	243	56	1.0
1 / 12	60.0	1020.860	0.20	0.90	101	96	75	241	56	1.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 687

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.14	0.3742	0.63	100	97	75
1-2	0.17	0.4123	0.77	100	95	75
1-3	0.17	0.4123	0.77	101	95	75
1-4	0.19	0.4359	0.86	101	95	75
1-5	0.19	0.4359	0.86	101	96	76
1-6	0.20	0.4472	0.90	101	96	75
1-7	0.20	0.4472	0.90	102	96	75
1-8	0.17	0.4123	0.77	102	96	75
1-9	0.17	0.4123	0.77	101	97	75
1-10	0.17	0.4123	0.77	101	97	76
1-11	0.18	0.4243	0.81	102	97	76
1-12	0.18	0.4243	0.81	102	97	76
2-1	0.15	0.3873	0.68	104	97	76
2-2	0.17	0.4123	0.77	104	97	76
2-3	0.18	0.4243	0.81	104	97	76
2-4	0.18	0.4243	0.81	105	98	76
2-5	0.18	0.4243	0.81	105	98	76
2-6	0.18	0.4243	0.81	105	98	76
2-7	0.18	0.4243	0.81	105	98	76
2-8	0.19	0.4359	0.86	105	98	76
2-9	0.19	0.4359	0.86	105	99	76
2-10	0.19	0.4359	0.86	105	99	76
2-11	0.20	0.4472	0.90	105	99	75
2-12	0.20	0.4472	0.90	106	100	76
	0.18	0.4239	0.81	103	100	76

GEORGETOWN ABERDEEN, MS Site # 687 SLD Date 6-30-00		Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 800 1000	Final 110 107 6 807 1024	Gas Analyses CO2 O2 CO N2	0 19 20 22	Average 0 20 20 20
Run # 2 Stack Diameter 12"		Nozzle Calibrations Pre-test Post-test		0.272 0.272 0.272 0.272	0.272 0.272 0.272 0.272	Leak Check Pre-test Volume @ Post-test Volume @		0.004 0.000
Time 9:12 Meter # E 12		Barometric Pressure Slack Pressure		30.13 -0.13	15" 0"	Probe Washings Crucible # F17 Final Initial Net		74.5525 74.5457 0.0068
Probe Cp Value K=4.5		Meter Readings #1 #2 #3		60.405 32.000 38.405	0.000 0.000 0.000	Filter Weights Filler # 124 Final Initial Net		3.7589 3.7587 0.0002
Total 38.405 cu.ft.								

Port / Point	Time	Meter Reading	Δ p	Δ h	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	23.020	0.14	0.63	100	97	75	241	63	1.0
1 / 2	5.0	24.385	0.17	0.77	100	95	75	243	63	1.0
1 / 3	7.5	25.760	0.17	0.77	101	95	75	243	61	1.0
1 / 4	10.0	27.605	0.19	0.86	101	95	75	245	60	1.0
1 / 5	12.5	29.495	0.19	0.86	101	94	76	247	57	1.0
1 / 6	15.0	31.475	0.20	0.90	101	94	75	248	57	1.0
1 / 7	17.5	33.420	0.20	0.90	102	96	75	248	57	1.0
1 / 8	20.0	34.760	0.17	0.77	102	96	75	251	57	1.0
1 / 9	22.5	36.000	0.17	0.77	101	97	75	250	57	1.0
1 / 10	25.0	37.500	0.17	0.77	101	97	76	250	57	1.0
1 / 11	27.5	39.125	0.18	0.81	102	97	76	250	57	1.0
1 / 12	30.0	40.675	0.18	0.81	102	97	76	250	58	1.0
2 / 1	32.5	41.800	0.15	0.68	104	97	76	253	58	1.0
1 / 2	35.0	43.145	0.17	0.77	104	97	76	251	58	1.0
1 / 3	37.5	44.830	0.18	0.81	104	97	76	250	58	1.0
1 / 4	40.0	46.245	0.18	0.81	105	98	76	249	58	1.0
1 / 5	42.5	47.795	0.18	0.81	105	98	74	245	58	1.0
1 / 6	45.0	49.445	0.18	0.81	105	98	76	247	58	1.0
1 / 7	47.5	50.025	0.18	0.81	105	98	76	247	59	1.0
1 / 8	50.0	52.875	0.19	0.86	105	98	76	249	59	1.0
1 / 9	52.5	54.790	0.19	0.86	105	99	76	251	59	1.0
1 / 10	55.0	56.695	0.19	0.86	105	99	76	250	59	1.0
1 / 11	57.5	58.400	0.20	0.90	105	99	75	251	60	1.0
1 / 12	60.0	60.405	0.20	0.90	106	100	76	243	60	1.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 687

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.16	0.4000	0.72	101	94	76
1-2	0.18	0.4243	0.81	101	93	76
1-3	0.18	0.4243	0.81	101	93	76
1-4	0.18	0.4243	0.81	102	93	75
1-5	0.19	0.4359	0.86	102	94	77
1-6	0.19	0.4359	0.86	102	94	77
1-7	0.17	0.4123	0.77	102	95	77
1-8	0.17	0.4123	0.77	102	95	77
1-9	0.17	0.4123	0.77	102	95	77
1-10	0.18	0.4243	0.81	102	95	77
1-11	0.20	0.4472	0.90	102	95	77
1-12	0.19	0.4359	0.86	103	95	78
2-1	0.10	0.3162	0.45	104	96	77
2-2	0.14	0.3742	0.63	104	97	77
2-3	0.18	0.4243	0.81	105	96	77
2-4	0.18	0.4243	0.81	106	97	77
2-5	0.17	0.4123	0.77	106	98	77
2-6	0.17	0.4123	0.77	106	98	77
2-7	0.19	0.4359	0.86	107	99	77
2-8	0.19	0.4359	0.86	107	100	77
2-9	0.20	0.4472	0.90	107	99	77
2-10	0.20	0.4472	0.90	108	99	77
2-11	0.19	0.4359	0.86	108	100	77
2-12	0.18	0.4243	0.81	108	100	77
	0.18	0.4199	0.80	104	100	77

Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 807 1007	Final 111 103 0 815 1032	Gas Analyses CO2 O2 CO N2	0 18 21 21	Average 0 20 20 20
Nozzle Calibrations Pre-test Post-test		0.272 0.272 0.272	0.272 0.272 0.272	Barometric Pressure 30.13		
Stack Diameter 12"		Slack Pressure -0.15		Leak Check Pre-test Volume @ Post-test Volume @		
Meter # E 12		Avg. 0.272		Probe Washings Crucible # Final Initial Net		
Time 10:53 11:39		Meter Readings #1 #2 #3		Filter Weights Filter # Final Initial Net		
Probe K 4.5		Cp Value 12.45		Total 37.485 cu.ft.		

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	62.490	0.16	0.72	101	94	76	243	67	1.0
1 / 2	5.0	64.150	0.18	0.81	101	93	76	240	65	1.0
1 / 3	7.5	65.705	0.18	0.81	101	93	76	257	64	1.0
1 / 4	10.0	67.025	0.18	0.81	102	93	75	232	64	1.0
1 / 5	12.5	68.900	0.19	0.86	102	94	77	250	62	1.0
1 / 6	15.0	70.825	0.19	0.86	102	94	77	250	62	2.0
1 / 7	17.5	72.230	0.17	0.77	102	95	77	252	61	2.0
1 / 8	20.0	73.565	0.17	0.77	102	95	77	251	61	2.0
1 / 9	22.5	74.940	0.17	0.77	102	95	77	254	61	2.0
1 / 10	25.0	76.500	0.18	0.81	102	95	77	251	61	2.0
1 / 11	27.5	78.435	0.20	0.90	102	95	77	251	62	2.0
1 / 12	30.0	80.335	0.19	0.86	103	95	78	251	62	2.0
2 / 1	32.5	81.300	0.10	0.45	104	96	77	251	62	2.0
2 / 2	35.0	82.420	0.14	0.63	104	97	77	250	63	2.0
2 / 3	37.5	83.905	0.18	0.81	105	94	77	250	65	2.0
2 / 4	40.0	85.490	0.18	0.81	106	97	77	247	65	2.0
2 / 5	42.5	86.805	0.17	0.77	106	98	77	249	65	2.0
2 / 6	45.0	88.200	0.17	0.77	106	98	77	249	66	2.0
2 / 7	47.5	90.060	0.19	0.86	107	99	77	251	66	2.0
2 / 8	50.0	91.885	0.19	0.86	107	100	77	251	65	2.0
2 / 9	52.5	93.680	0.20	0.90	107	99	77	250	66	2.0
2 / 10	55.0	95.540	0.20	0.90	108	99	77	250	64	2.0
2 / 11	57.5	97.195	0.19	0.86	108	100	77	260	64	2.0
2 / 12	60.0	98.785	0.18	0.81	108	100	77	260	64	2.0

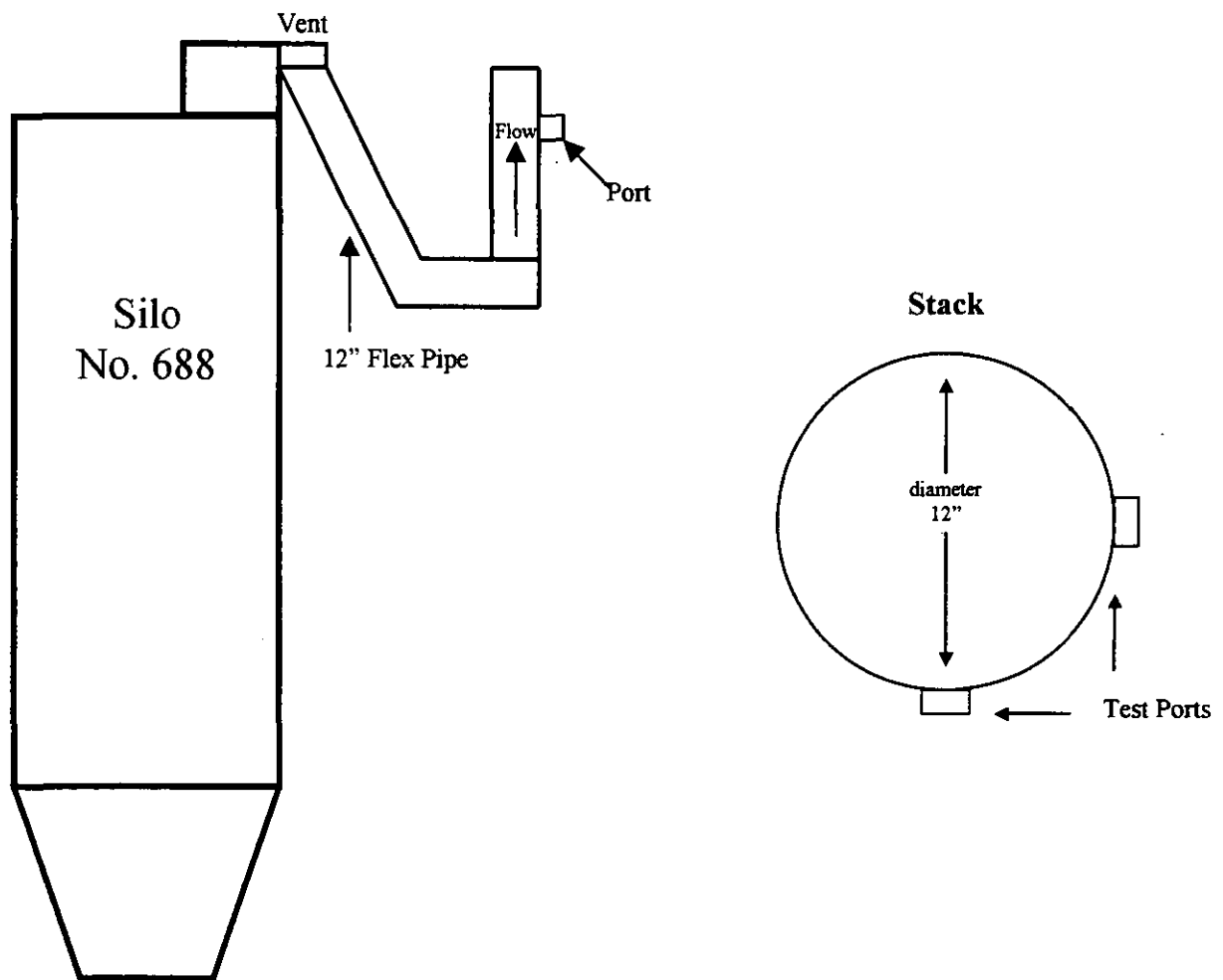
Field Notes:

688 Silo Baghouse

Field Data Sheets

Schematic of Sampling Site

Silo Baghouse No. 688



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Silo No. 688

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-30-00	6-30-00	6-30-00	
Time Began-Ended	1237-1339	1400-1505	1525-1631	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	0.785	0.785	0.785	
Barometric Pressure, Inches of mercury	30.13	30.13	30.13	30.13
Stack Pressure, Inches of mercury	30.10	30.10	30.10	30.10
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.996	0.996	0.996	
Nozzle Diameter, Inches	0.250	0.250	0.250	
Meter Volume, Cubic feet	39.310	36.265	39.305	38.293
Meter Temperature, Degrees F	103.0	101.8	126.7	110.5
Avg. Orifice Delta P, Inches of Water	1.41	1.20	1.40	1.34
Volume H2O Collected, MilliLiters	34.0	34.0	35.00	34.3
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.586	0.539	0.585	0.57
Stack Temperature, Degrees F	80.3	80.0	79.3	79.8
Total particulate collected, grams	0.0085	0.0126	0.0143	0.0118

CALCULATED DATA

Standard Meter Volume, Cubic Feet	37.089	34.269	35.587	35.649
Standard Water Volume, Cubic Feet	1.600	1.600	1.647	1.616
Moisture Fraction	0.041	0.045	0.044	0.043
Molecular Weight Of Stack Gas	28.353	28.318	28.322	28.331
Density Of Stack Gas	0.0724	0.0723	0.0724	0.0724
Average Stack Gas Velocity, Feet/Second	33.470	30.783	33.406	32.553
Stack Gas Flow @ Stack Conditions, ACFM	1,577	1,451	1,574	1,534
Stack Gas Flow @ Standard Conditions, DSCFM	1,486	1,363	1,481	1,443
Isokinetic Sampling Rate, Percent	95.86	96.59	92.26	94.90
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0035	0.0057	0.0062	0.0051
Particulate emissions, lbs per hour	0.04	0.07	0.08	0.06

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 688

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.19	0.4359	0.76	104	97	81
1-2	0.29	0.5385	1.16	105	99	81
1-3	0.33	0.5745	1.32	106	99	80
1-4	0.45	0.6708	1.80	107	100	80
1-5	0.50	0.7071	2.00	107	100	80
1-6	0.51	0.7141	2.04	107	100	81
2-1	0.16	0.4000	0.64	106	99	80
2-2	0.27	0.5196	1.08	106	100	80
2-3	0.30	0.5477	1.20	107	100	80
2-4	0.37	0.6107	1.49	107	100	80
2-5	0.45	0.6708	1.80	107	101	80
2-6	0.42	0.6481	1.68	107	101	80
	0.35	0.5865	1.41	106.33	103.0	80.3

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 688

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.21	0.4583	0.84	102	96	81
1-2	0.27	0.5196	1.08	104	98	81
1-3	0.30	0.5477	1.20	105	98	81
1-4	0.42	0.6481	1.68	105	99	80
1-5	0.50	0.7071	2.00	105	99	80
1-6	0.44	0.6633	1.76	105	100	80
2-1	0.19	0.4359	0.76	106	100	80
2-2	0.31	0.5568	1.24	105	99	79
2-3	0.37	0.6083	1.48	105	99	80
2-4	0.20	0.4472	0.80	105	99	80
2-5	0.17	0.4123	0.68	105	99	79
2-6	0.21	0.4583	0.84	106	100	79
	0.30	0.5386	1.20	104.83	101.8	80.0

Plant	Moisture	Initial	Final	Totals	Gas Analyses	Average
Georgetown Gulf	Impinger #1	100	115	15	CO ₂	0
Amesbury, W.S.	Impinger #2	100	107	7	O ₂	19.7
	Impinger #3	0	3	3	CO	
Site	Impinger #4	752	761	9	N ₂	
Date	Totals	952	986	34		
6-30-00						
Run #	Slack Diameter	Nozzle Calibrations	Barometric Pressure	Leak Check	Probe Washings	
2	12"	Pre-test	30.13	Pre-test	Crucible #	F-11
		Post-test		Volume @	Final	71.46265
		0.250		0.006	Initial	71.46846
		0.250		Post-test	Net	0.0131
Time	Meter #	0.250		Volume @		
3:00	114	0.250		0.005		
3:05						
Probe	Cp Value	Meter Readings	Filter Weights			
ESP-4A	K=4.0	#1	#2	#3	Filter #	121
		776.965			Final	3.7467
		740.300			Initial	3.7464
		36.265			Net	0.0003
					Total	36.265 cu.ft.

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/30/2000

Source: Silo No. 688

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.21	0.4583	0.84	104	98	79
1-2	0.25	0.5000	1.00	104	97	79
1-3	0.30	0.5477	1.20	103	98	80
1-4	0.38	0.6164	1.52	104	699	79
1-5	0.42	0.6481	1.68	105	99	79
1-6	0.49	0.7000	1.96	105	99	79
2-1	0.17	0.4123	0.68	105	100	79
2-2	0.29	0.5385	1.16	106	99	79
2-3	0.41	0.6403	1.64	105	99	79
2-4	0.44	0.6633	1.76	105	99	79
2-5	0.47	0.6856	1.88	105	99	80
2-6	0.37	0.6083	1.48	105	98	80
	0.35	0.5849	1.40	104.67	126.7	79.3

No. 10 Cyclone Dryer

Field Data Sheets

No. 10 Cyclone Dryer Sampling Port Information

Stack Diameter: 55" diameter

Stack Area : 16.499 Square feet

Stack Height: Approx. 150 feet

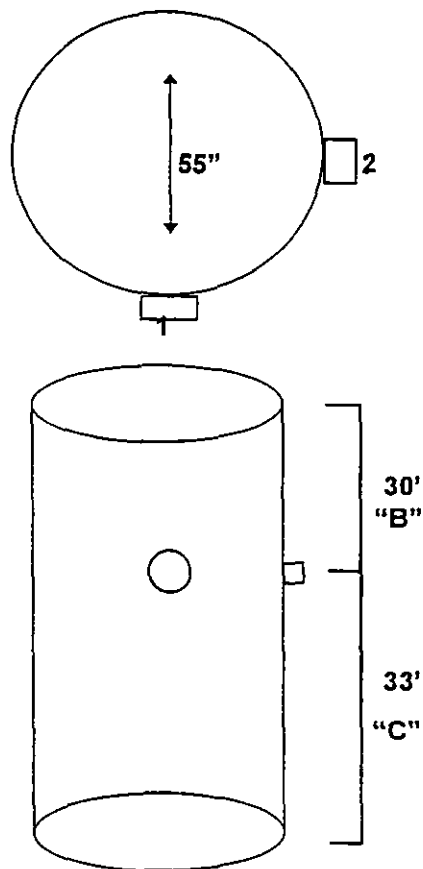
Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 6.55
- C. Downstream Disturbance (L/D): 7.21

Number of Traverse Points:

Minimum Number of Traverse Points Required:

SAMPLING POINT NUMBER	DISTANCE FROM STACK WALL (INCHES)
1	1.43
2	4.51
3	8.03
4	12.43
5	18.81
6	36.19
7	42.57
8	46.97
9	50.49
10	53.57



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: No. 10 Cyclone Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-14-00	6-14-00	6-14-00	
Time Began-Ended	1737-1843	1905-2012	2025-2132	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	16.499	16.499	16.499	
Barometric Pressure, Inches of mercury	30.08	30.08	30.08	30.08
Stack Pressure, Inches of mercury	30.02	30.02	30.02	30.02
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.996	0.996	0.996	
Nozzle Diameter, Inches	0.200	0.200	0.200	
Meter Volume, Cubic feet	52.750	54.300	53.710	53.587
Meter Temperature, Degrees F	83.0	76.5	76.1	78.5
Avg. Orifice Delta P, Inches of Water	1.90	2.02	1.91	1.94
Volume H2O Collected, MilliLiters	172.4	135.6	145.2	151.1
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.310	1.354	1.315	1.33
Stack Temperature, Degrees F	106.4	105.3	105.0	105.5
Total particulate collected, grams	0.0151	0.0652	0.0205	0.0336

CALCULATED DATA

Standard Meter Volume, Cubic Feet	51.578	53.756	53.192	52.842
Standard Water Volume, Cubic Feet	8.115	6.383	6.835	7.111
Moisture Fraction	0.136	0.106	0.114	0.119
Molecular Weight Of Stack Gas	27.332	27.654	27.570	27.519
Density Of Stack Gas	0.0664	0.0673	0.0671	0.0669
Average Stack Gas Velocity, Feet/Second	78.078	80.229	78.037	78.781
Stack Gas Flow @ Stack Conditions, ACFM	77.293	79.421	77.252	77.989
Stack Gas Flow @ Standard Conditions, DSCFM	62.446	66.509	64.162	64.372
Isokinetic Sampling Rate, Percent	104.13	101.89	104.51	103.51
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0045	0.0187	0.0059	0.0097
Particulate emissions, lbs per hour	2.41	10.65	3.26	5.44

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/14/2000

Source: No. 10 Cyclone Dryer

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.00	1.0000	1.10	92	91	106
1-2	1.70	1.3038	1.87	86	87	106
1-3	1.90	1.3784	2.09	86	87	106
1-4	1.80	1.3416	1.98	85	86	107
1-5	1.80	1.3416	1.98	85	85	106
1-6	1.90	1.3784	2.09	85	85	107
1-7	1.80	1.3416	1.98	84	84	106
1-8	1.90	1.3784	2.09	83	84	106
1-9	1.90	1.3784	2.09	83	84	107
1-10	1.80	1.3416	1.98	83	83	107
2-1	1.50	1.2247	1.65	82	82	106
2-2	1.50	1.2247	1.65	82	81	107
2-3	1.50	1.2247	1.65	82	81	106
2-4	1.60	1.2649	1.76	82.00	80.0	106.0
2-5	1.70	1.3038	1.87	82.00	80.0	107.0
2-6	1.70	1.3038	1.87	82.00	80.0	106.0
2-7	1.70	1.3038	1.87	82.00	80.0	107.0
2-8	1.80	1.3416	1.98	80.00	78.0	106.0
2-9	2.00	1.4142	2.20	80.00	78.0	106.0
2-10	2.00	1.4142	2.20	80.00	78.0	106.0
	1.73	1.3102	1.90	83.30	83.0	106.4

Mt Georgia Gulf Aberdeen, Ms Site Cyclone Viper #10 Date 6-14-00		Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 24.6 446.3		Final 135 200 25 259.2 619.2		Totals 35 100 25 12.4 172.4		Gas Analyses CO2 O2 CO N2		Average 2 20.3 20.1 20.3	
Run # 1		Stack Diameter 55"		Nozzle Calibrations Pre-test 0.200 0.200 0.200 0.200		Post-test 0.200 0.200 0.200 0.200		Barometric Pressure 30.02		Leak Check Pre-test Volume @ 0.000 Post-test Volume @ 0.000		Probe Washings Crucible # F13 Final 74.4099 Initial 74.3974 Net 0.0125	
Time 17:37 18:43		Meter # E-14		Avg.		Stack Pressure -0.73		Meter Readings #1 314.570 #2 345.760 #3 319.580 Net 26.130		Filter Weights Filter # 503 Final 3.7606 Initial 3.7532 Net 0.0074		Total 52.750 cu.ft.	
Probe ESP-7		Cp Value 1.10		Final Initial Net		Final Initial Net		Final Initial Net		Final Initial Net		Final Initial Net	

Port / Point	Meter Reading	Time	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	745.065	3	1.00	1.10	92	91	106	248	62	4.0
1 / 2	797.640	6	1.70	1.87	86	87	106	250	61	5.0
1 / 3	800.345	9	1.90	2.09	86	87	106	239	68	6.0
1 / 4	803.070	12	1.90	1.98	85	86	107	250	68	6.0
1 / 5	805.710	15	1.80	1.98	85	85	106	244	68	6.0
1 / 6	808.510	18	1.90	2.09	85	85	107	251	67	6.0
1 / 7	811.240	21	1.80	1.98	84	84	106	248	68	6.0
1 / 8	814.450	24	1.90	2.09	83	84	106	250	68	6.0
1 / 9	816.320	27	1.90	2.09	83	84	107	250	68	6.0
1 / 10	819.570	30	1.80	1.98	83	83	107	251	68	6.0
2 / 1	822.120	33	1.50	1.65	82	82	106	250	67	5.0
2 / 2	825.000	36	1.50	1.65	81	81	107	251	66	5.0
2 / 3	827.020	39	1.50	1.65	82	81	106	250	62	5.0
2 / 4	829.530	42	1.60	1.76	82	80	106	250	62	5.0
2 / 5	832.160	45	1.70	1.87	82	80	107	250	63	6.0
2 / 6	834.810	48	1.70	1.87	82	80	106	251	63	6.0
2 / 7	837.575	51	1.70	1.87	82	80	107	250	63	6.0
2 / 8	840.060	54	1.80	1.98	80	78	106	250	64	6.0
2 / 9	842.880	57	2.00	2.20	80	78	106	245	66	6.0
2 / 10	845.760	60	2.00	2.20	80	78	106	248	66	6.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/14/2000

Source: No. 10 Cyclone Dryer

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.50	1.2247	1.65	75	75	107
1-2	1.70	1.3038	1.87	75	75	105
1-3	1.80	1.3416	1.98	75	75	105
1-4	1.80	1.3416	1.98	75	75	106
1-5	1.90	1.3784	2.09	75	75	105
1-6	1.80	1.3416	1.98	75	75	106
1-7	1.80	1.3416	1.98	75	75	105
1-8	1.80	1.3416	1.98	78	74	105
1-9	1.90	1.3784	2.09	77	74	105
1-10	1.90	1.3784	2.09	77	74	105
2-1	1.70	1.3038	1.87	79	74	105
2-2	1.90	1.3784	2.09	80	75	105
2-3	1.80	1.3416	1.98	81	75	105
2-4	1.80	1.3416	1.98	81.00	75.0	105.0
2-5	1.80	1.3416	1.98	81.00	75.0	105.0
2-6	1.90	1.3784	2.09	81.00	75.0	105.0
2-7	2.00	1.4142	2.20	81.00	75.0	106.0
2-8	1.90	1.3784	2.09	80.00	75.0	105.0
2-9	2.00	1.4142	2.20	81.00	75.0	105.0
2-10	2.00	1.4142	2.20	81.00	75.0	105.0
	1.84	1.3539	2.02	78.15	76.5	105.3

Totals	30
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Initial
100

106

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/14/2000

Source: No. 10 Cyclone Dryer

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.50	1.2247	1.65	76	75	105
1-2	1.50	1.2247	1.65	76	74	105
1-3	2.00	1.4142	2.20	77	74	105
1-4	2.00	1.4142	2.20	78	74	105
1-5	2.00	1.4142	2.20	78	74	105
1-6	1.90	1.3784	2.09	78	74	105
1-7	1.90	1.3784	2.09	78	74	105
1-8	2.00	1.4142	2.20	79	74	105
1-9	1.80	1.3416	1.98	79	73	105
1-10	1.90	1.3784	2.09	80	73	105
2-1	1.40	1.1832	1.54	78	73	105
2-2	1.50	1.2247	1.65	78	73	105
2-3	1.60	1.2649	1.76	78	73	105
2-4	1.70	1.3038	1.87	78.00	72.0	105.0
2-5	1.70	1.3038	1.87	78.00	73.0	105.0
2-6	1.70	1.3038	1.87	78.00	74.0	105.0
2-7	1.60	1.2649	1.76	79.00	74.0	105.0
2-8	1.70	1.3038	1.87	81.00	74.0	105.0
2-9	1.70	1.3038	1.87	82.00	74.0	105.0
2-10	1.60	1.2649	1.76	82.00	75.0	105.0
	1.74	1.3153	1.91	78.55	76.1	105.0

No. 11 Cyclone Dryer

Field Data Sheets

No. 11 Cyclone Dryer Sampling Port Information

Stack Diameter: 55" diameter

Stack Area : 16.499 Square feet

Stack Height: Approx. 150 feet

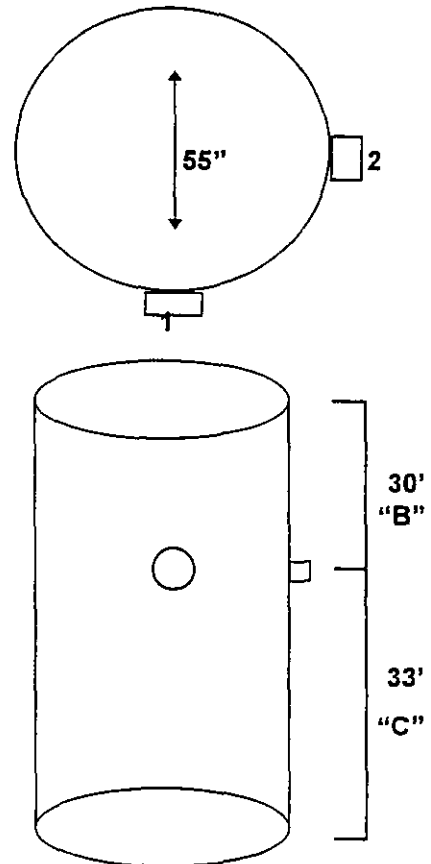
Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 6.55
- C. Downstream Disturbance (L/D): 7.21

Number of Traverse Points:

Minimum Number of Traverse Points Required:

SAMPLING POINT NUMBER	DISTANCE FROM STACK WALL (INCHES)
1	1.43
2	4.51
3	8.03
4	12.43
5	18.81
6	36.19
7	42.57
8	46.97
9	50.49
10	53.57



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: No. 11 Cyclone Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-14-00	6-14-00	6-14-00	
Time Began-Ended	0956-1102	1140-1250	1440-1551	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	16.499	16.499	16.499	
Barometric Pressure, Inches of mercury	30.08	30.08	30.08	30.08
Stack Pressure, Inches of mercury	30.04	30.04	30.04	30.04
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.996	0.996	0.996	
Nozzle Diameter, Inches	0.200	0.200	0.200	
Meter Volume, Cubic feet	49.860	52.160	49.560	50.527
Meter Temperature, Degrees F	112.0	95.1	95.0	100.7
Avg. Orifice Delta P, Inches of Water	1.71	1.78	1.60	1.70
Volume H2O Collected, MilliLiters	162.2	172.5	120.6	151.8
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.240	1.269	1.202	1.24
Stack Temperature, Degrees F	106.5	106.4	106.8	106.5
Total particulate collected, grams	0.0174	0.0210	0.0174	0.0186

CALCULATED DATA

Standard Meter Volume, Cubic Feet	46.258	49.880	47.379	47.839
Standard Water Volume, Cubic Feet	7.635	8.120	5.677	7.144
Moisture Fraction	0.142	0.140	0.107	0.130
Molecular Weight Of Stack Gas	27.270	27.288	27.644	27.401
Density Of Stack Gas	0.0662	0.0663	0.0671	0.0666
Average Stack Gas Velocity, Feet/Second	73.980	75.747	71.308	73.678
Stack Gas Flow @ Stack Conditions, ACFM	73.236	74.985	70.590	72.937
Stack Gas Flow @ Standard Conditions, DSCFM	58.805	60.338	58.939	59.361
Isokinetic Sampling Rate, Percent	99.17	104.22	101.34	101.57
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0058	0.0065	0.0057	0.0060
Particulate emissions, lbs per hour	2.92	3.35	2.86	3.04

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/14/2000

Source: #11 Cyclone Dryer

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.20	1.0954	1.32	88	88	106
1-2	1.20	1.0954	1.32	92	88	107
1-3	1.50	1.2247	1.65	91	88	106
1-4	1.60	1.2649	1.76	91	88	106
1-5	1.70	1.3038	1.87	92	89	107
1-6	1.70	1.3038	1.87	92	90	107
1-7	1.70	1.3038	1.87	92	90	108
1-8	1.80	1.3416	1.98	94	91	108
1-9	1.80	1.3416	1.98	97	91	105
1-10	1.90	1.3784	2.09	97	91	105
2-1	0.70	0.8367	0.77	94	91	105
2-2	1.10	1.0488	1.21	93	91	106
2-3	1.50	1.2247	1.65	94	92	107
2-4	1.90	1.3784	2.09	93.00	92.0	108.0
2-5	1.60	1.2649	1.76	93.00	92.0	107.0
2-6	1.60	1.2649	1.76	96.00	92.0	106.0
2-7	1.60	1.2649	1.76	95.00	91.0	106.0
2-8	1.50	1.2247	1.65	96.00	92.0	106.0
2-9	1.70	1.3038	1.87	95.00	92.0	107.0
2-10	1.80	1.3416	1.98	95.00	92.0	106.0
	1.56	1.2404	1.71	93.50	112.0	106.5

Ph Georgea Corp
Asheboro, N.C.
 Silo #16 CHEVASE DRYER
 Date 10-14-88
 Moisture
 Impinger #1
 Impinger #2
 Impinger #3
 Impinger #4
 Totals
 Initial 100
 Final 205
 135
 5
 218.7
 563.7
 401.5
 162.2
 Gas Analyses
 CO2 0
 O2 19.9
 CO
 N2
 Average 0
 20

Run # 1
 Slack Diameter 55" x 16.499
 Time 11:02
 Meter # E-14
 Avg. 1.10
 Probe ESP-7
 Cp Value
 Nozzle Calibrations
 Pre-test 0.200
 Post-test 0.200
 0.200
 0.200
 0.200
 0.200
 Barometric Pressure
 30.08
 Slack Pressure
 -0.46
 Meter Readings
 #1 661.925
 #2 686.360
 #3
 #4
 Final 661.925
 Initial 636.500
 Net 25.425
 Leak Check
 Pre-test Volume @ 0.003
 Post-test Volume @ 0.003
 Probe Washings
 Crucible #
 Final 5105
 Initial 77.9333
 Net 77.075
 0.0158
 Filter Weights
 Filter # 116
 Final 3.7695
 Initial 3.7681
 Net 0.0014
 Total 49.860 cu.ft.

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	3	638.775	1.20	1.32	88	88	106	250	55	5.0
1 / 2	6	641.095	1.20	1.32	92	88	107	250	62	5.0
1 / 3	9	643.400	1.50	1.65	91	88	106	250	61	6.0
1 / 4	12	645.990	1.60	1.76	91	88	107	250	60	6.0
1 / 5	15	648.743	1.70	1.87	92	89	109	250	61	6.0
1 / 6	18	651.990	1.70	1.87	92	90	108	250	63	6.0
1 / 7	21	653.750	1.70	1.87	92	90	108	250	63	6.0
1 / 8	24	656.430	1.80	1.98	94	91	105	250	66	6.0
1 / 9	27	659.110	1.80	1.98	97	91	105	250	63	7.0
1 / 10	30	661.925	1.90	2.09	97	91	105	250	64	7.0
2 / 1	33	663.440	90	1.77	94	91	106	250	62	4.0
2 / 2	36	665.520	1.10	1.21	93	92	107	250	63	4.0
2 / 3	39	667.915	1.50	1.65	94	92	107	250	66	5.0
2 / 4	42	670.702	1.90	2.09	93	92	107	250	65	5.0
2 / 5	45	677.325	1.60	1.76	93	92	107	250	66	6.0
2 / 6	48	675.910	1.60	1.76	96	92	106	250	65	6.0
2 / 7	51	678.520	1.60	1.76	95	91	106	250	66	6.0
2 / 8	54	680.055	1.50	1.65	96	92	106	250	65	6.0
2 / 9	57	683.710	1.70	1.87	95	92	107	250	67	7.0
2 / 10	60	688.360	1.80	1.98	95	92	106	250	67	7.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: #11 Cyclone Dryer

Date: 6/14/2000
Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.00	1.0000	1.10	93	92	106
1-2	1.60	1.2649	1.76	93	92	107
1-3	1.70	1.3038	1.87	94	92	108
1-4	2.00	1.4142	2.20	96	92	106
1-5	1.60	1.2649	1.76	96	92	108
1-6	1.60	1.2649	1.76	96	92	107
1-7	1.70	1.3038	1.87	96	92	106
1-8	1.70	1.3038	1.87	97	92	108
1-9	1.80	1.3416	1.98	96	92	107
1-10	1.80	1.3416	1.98	96	92	108
2-1	1.50	1.2247	1.65	97	93	104
2-2	1.30	1.1402	1.43	97	94	105
2-3	1.60	1.2649	1.76	97	94	106
2-4	1.50	1.2247	1.65	99.00	94.0	107.0
2-5	1.60	1.2649	1.76	99.00	94.0	106.0
2-6	1.60	1.2649	1.76	99.00	95.0	107.0
2-7	1.70	1.3038	1.87	100.00	95.0	105.0
2-8	1.90	1.3784	2.09	99.00	95.0	105.0
2-9	2.00	1.4142	2.20	99.00	95.0	106.0
2-10	1.20	1.0954	1.32	99.00	95.0	105.0
	1.62	1.2690	1.78	96.90	95.1	106.4

[illegible]

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Temperatures (°F)	Oven	Impinger	Vacuum
2 / 1	3	686.380	1.00	1.1	93	92	106	250	60	5.0
2 / 2	6	688.000	1.40	1.6	93	92	107	250	60	5.0
3 / 3	9	691.235	1.90	1.87	94	92	108	250	64	6.0
4 / 4	12	694.102	2.00	2.20	96	92	106	250	68	7.0
5 / 5	15	696.760	1.60	1.76	96	92	108	252	68	8.0
6 / 6	18	699.330	1.60	1.76	96	92	107	251	68	6.0
7 / 7	21	702.045	1.70	1.87	96	92	106	252	66	7.0
8 / 8	24	704.775	1.90	1.87	97	92	108	260	59	6.0
9 / 9	27	707.425	1.80	1.98	96	92	107	258	55	7.0
10 / 10	30	710.150	1.80	1.98	96	92	108	257	54	7.0
1 / 1	33	713.680	1.50	1.65	97	93	104	270	54	5.0
2 / 2	36	716.060	1.30	1.43	97	94	105	266	53	6.0
3 / 3	39	718.585	1.60	1.6	97	94	106	265	55	6.0
4 / 4	42	721.750	1.50	1.65	99	94	107	270	55	6.0
5 / 5	45	723.785	1.60	1.76	99	94	106	265	55	6.0
6 / 6	48	726.425	1.60	1.76	99	95	107	251	56	6.0
7 / 7	51	729.100	1.70	1.87	100	95	105	250	56	6.0
8 / 8	54	731.925	1.90	2.04	99	95	105	248	56	7.0
9 / 9	57	734.830	2.00	2.20	99	95	106	249	56	7.0
10 / 10	60	737.250	1.80	1.32	99	95	105	248	56	5.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: #11 Cyclone Dryer

Date: 6/14/2000
Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.10	1.0488	1.21	92	92	107
1-2	1.50	1.2247	1.65	92	91	106
1-3	1.30	1.1402	1.43	93	92	106
1-4	1.50	1.2247	1.65	94	93	107
1-5	1.50	1.2247	1.65	95	93	106
1-6	1.50	1.2247	1.65	97	94	108
1-7	1.50	1.2247	1.65	97	94	107
1-8	1.60	1.2649	1.76	100	96	107
1-9	1.60	1.2649	1.76	100	95	107
1-10	1.80	1.3416	1.98	99	94	108
2-1	1.20	1.0954	1.32	97	94	106
2-2	1.20	1.0954	1.32	98	94	107
2-3	1.20	1.0954	1.32	95	94	108
2-4	1.50	1.2247	1.65	95.00	94.0	107.0
2-5	1.50	1.2247	1.65	94.00	93.0	107.0
2-6	1.70	1.3038	1.87	94.00	93.0	106.0
2-7	1.50	1.2247	1.65	98.00	95.0	106.0
2-8	1.40	1.1832	1.54	98.00	95.0	107.0
2-9	1.40	1.1832	1.54	99.00	95.0	107.0
2-10	1.50	1.2247	1.65	97.00	94.0	105.0
	1.45	1.2020	1.60	96.20	95.0	106.8

[illegible]

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	3	745.195	1.10	1.21	92	92	105	240	60	5.0
1 / 2	6	747.670	1.50	1.65	92	91	106	245	60	5.0
1 / 3	9	749.995	1.30	1.43	93	92	106	248	62	5.0
1 / 4	12	752.475	1.50	1.65	94	93	107	253	64	5.0
1 / 5	15	755.000	1.50	1.65	95	93	106	254	64	5.0
1 / 6	18	757.495	1.50	1.65	97	94	108	263	65	5.0
1 / 7	21	759.985	1.50	1.65	97	94	107	265	65	5.0
1 / 8	24	762.610	1.60	1.76	100	96	107	267	67	5.0
1 / 9	27	765.260	1.60	1.76	100	95	107	267	67	5.0
1 / 10	30	767.000	1.80	1.98	99	94	108	264	68	5.0
2 / 1	33	770.330	1.20	1.32	97	94	106	253	68	5.0
2 / 2	36	772.610	1.20	1.32	98	94	107	250	68	5.0
2 / 3	39	774.940	1.20	1.32	95	91	108	239	68	5.0
2 / 4	42	777.420	1.50	1.65	95	91	107	245	68	5.0
2 / 5	45	779.930	1.50	1.65	94	93	107	247	64	5.0
2 / 6	48	782.635	1.70	1.87	94	93	106	250	62	5.0
2 / 7	51	785.145	1.50	1.65	98	95	106	251	59	5.0
2 / 8	54	787.570	1.40	1.54	98	95	107	250	58	5.0
2 / 9	57	789.085	1.40	1.54	99	95	107	248	59	5.0
2 / 10	60	792.590	1.50	1.65	97	94	105	250	58	5.0

Field Notes:

Fluidized Bed Dryer

Field Data Sheets

Fluid Bed Sampling Port Information

Stack Diameter: 45" diameter

Stack Area : 11.045 Square feet

Stack Height: Approx. 150 feet

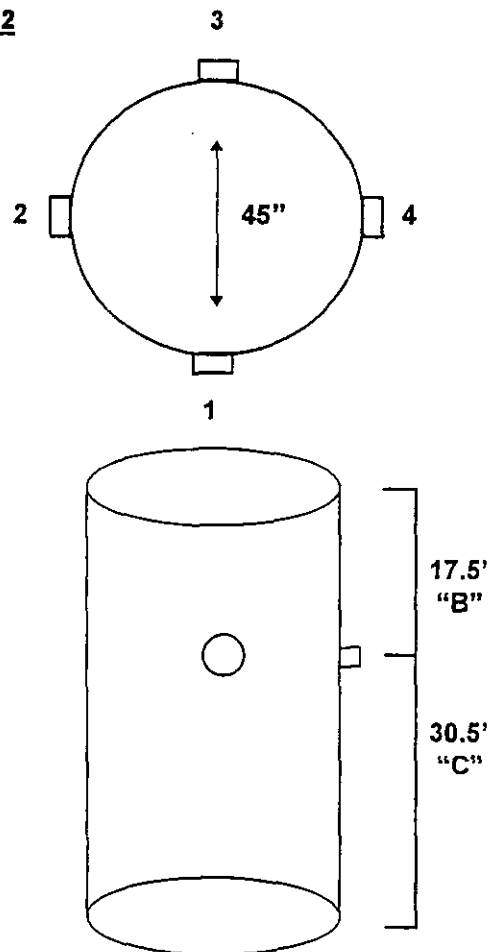
Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 4.67
- C. Downstream Disturbance (L/D): 8.13

Number of Traverse Points: 12

Minimum Number of Traverse Points Required: 12

SAMPLING POINT NUMBER	DISTANCE FROM STACK WALL (INCHES)
1	1.98
2	6.57
3	13.32



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Fluid Bed Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-15-00	6-15-00	6-15-00	
Time Began-Ended	1320-1429	1515-1620	1637-1750	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	11.045	11.045	11.045	
Barometric Pressure, Inches of mercury	30.13	30.13	30.13	30.13
Stack Pressure, Inches of mercury	30.11	30.11	30.11	30.11
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.996	0.996	0.996	
Nozzle Diameter, Inches	0.221	0.221	0.221	
Meter Volume, Cubic feet	34.050	34.150	34.655	34.285
Meter Temperature, Degrees F	93.5	93.0	85.4	90.7
Avg. Orifice Delta P, Inches of Water	0.68	0.68	0.72	0.69
Volume H2O Collected, MilliLiters	221.8	230.1	251.60	234.5
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	0.807	0.802	0.826	0.81
Stack Temperature, Degrees F	148.7	149.6	149.1	149.1
Total particulate collected, grams	0.0194	0.0298	0.0051	0.0181

CALCULATED DATA

Standard Meter Volume, Cubic Feet	32.620	32.742	33.694	33.019
Standard Water Volume, Cubic Feet	10.440	10.831	11.843	11.038
Moisture Fraction	0.242	0.249	0.260	0.250
Molecular Weight Of Stack Gas	26.181	26.115	25.991	26.096
Density Of Stack Gas	0.0593	0.0591	0.0589	0.0591
Average Stack Gas Velocity, Feet/Second	50.866	50.709	52.306	51.294
Stack Gas Flow @ Stack Conditions, ACFM	33,709	33,605	34,663	33,992
Stack Gas Flow @ Standard Conditions, DSCFM	22,283	22,002	22,366	22,217
Isokinetic Sampling Rate, Percent	101.18	102.85	104.12	102.72
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0092	0.0140	0.0023	0.0085
Particulate emissions, lbs per hour	1.75	2.64	0.45	1.61

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: Fluid Bed Dryer

Date: 6/15/2000
 Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.63	0.7937	0.66	91	92	145
1-2	0.64	0.8000	0.67	93	92	147
1-3	0.64	0.8000	0.67	93	92	147
1-4	0.62	0.7874	0.65	93	92	148
1-5	0.65	0.8062	0.68	93	91	149
1-6	0.68	0.8246	0.71	94	91	150
2-1	0.68	0.8246	0.71	95	92	149
2-2	0.70	0.8367	0.74	95	92	149
2-3	0.69	0.8307	0.72	96	92	150
2-4	0.65	0.8062	0.68	97	94	150
2-5	0.63	0.7937	0.66	98	94	150
2-6	0.61	0.7810	0.64	98	94	150
	0.65	0.8071	0.68	94.67	93.5	148.7

Moisture
 Impinger #1
 Impinger #2
 Impinger #3
 Impinger #4
 Totals
 Initial
 100
 100
 0
 204.5
 404.5
 Final
 285
 180
 35
 216.3
 626.3
 Totals
 105
 80
 25
 118
 221.3
 Gas Analyses
 CO2
 0
 20.3
 0
 20.3
 O2
 20.3
 20.3
 CO
 0
 0
 N2
 0
 0
 Average
 0
 20

Leak Check
 Pre-test
 Volume @
 0003
 Post-test
 Volume @
 0003
 Probe Washings
 Crucible #
 Final
 71.616
 Initial
 71.5982
 Net
 0.0179
 F 5

Barometric Pressure
 30.13
 Stack Pressure
 -0.23
 Meter Readings
 #1
 972.275
 #2
 989.555
 #3
 972.300
 #4
 972.300
 Total
 34.050
 cu.ft.
 Filter Weights
 Filter #
 Final
 507
 Initial
 3.8129
 Net
 3.8116
 0.0013

Nozzle Calibrations
 Pre-test
 0.221
 Post-test
 0.221
 Initial
 0.221
 Final
 0.221
 Net
 0.221
 Cp Value
 1.05
 Probe
 Esp. 6
 Meter #
 6-14
 Time
 13:20
 14:29
 Run
 #1
 Stack Diameter
 45"

Port / Point
 1 / 1
 1 / 2
 1 / 3
 1 / 4
 1 / 5
 1 / 6
 2 / 1
 2 / 2
 1 / 3
 1 / 4
 1 / 5
 1 / 6
 Meter
 Reading
 958.395
 961.040
 963.775
 966.610
 969.505
 972.295
 975.200
 978.185
 981.140
 984.000
 986.795
 989.555
 Time
 5
 10
 15
 20
 25
 30
 35
 40
 45
 50
 55
 60
 Temperatures (°F)
 Inlet
 91
 93
 93
 93
 93
 94
 95
 95
 96
 97
 98
 98
 Outlet
 92
 92
 92
 92
 91
 91
 92
 92
 92
 94
 94
 94
 Slack
 145
 147
 147
 148
 149
 150
 149
 149
 150
 150
 150
 150
 Oven
 245
 253
 255
 251
 248
 249
 255
 260
 261
 260
 262
 261
 Impinger
 68
 68
 68
 67
 65
 65
 61
 61
 62
 62
 60
 61
 Vacuum
 3.0
 3.0
 3.0
 3.0
 3.0
 3.0
 3.0
 3.0
 3.0
 3.0
 3.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/1/2000

Source: Fluid Bed Dryer

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.51	0.7141	0.54	97	97	148
1-2	0.70	0.8367	0.74	97	96	149
1-3	0.75	0.8660	0.79	97	96	150
1-4	0.68	0.8246	0.71	100	98	150
1-5	0.64	0.8000	0.67	99	97	148
1-6	0.60	0.7746	0.63	93	95	149
2-1	0.53	0.7280	0.56	94	95	150
2-2	0.68	0.8246	0.71	89	91	150
2-3	0.65	0.8062	0.68	88	90	150
2-4	0.64	0.8000	0.67	87	88	150
2-5	0.68	0.8246	0.71	87	88	151
2-6	0.68	0.8246	0.71	87	87	150
	0.65	0.8020	0.68	92.92	93.0	149.6

Moisture		Gas Analyses		Average	
Impinger #1	Impinger #2	CO2	O2	CO	N2
100	100	20.4	20.1	0	0
0	25	20.4	20.1	0	0
216.3	231.4	20.4	20.1	0	0
416.3	646.4	20.4	20.1	0	0
Totals		230.1			

Leak Check		Probe Washings	
Pre-test	Volume @	Crucible #	Final
0.004	15"	F6	72.7150
0.004	15"		72.7658
0.004	15"		0.0292

Filter Weights		Filter #	
Final	Initial	Final	Initial
508	3.7752	508	3.7752
3.7748	0.0004	3.7748	0.0004
34.150	cu.ft.	34.150	cu.ft.

Meter Readings		#3	
#2	#3	#2	#3
1024.515	1007.330	1024.515	1007.330
16.965	16.965	16.965	16.965

Nozzle Calibrations		Stack Pressure	
Pre-test	Post-test	Pre-test	Post-test
0.221	0.221	0.221	0.221
0.221	0.221	0.221	0.221
0.221	0.221	0.221	0.221

Barometric Pressure		Stack Pressure	
Pre-test	Post-test	Pre-test	Post-test
30.13	30.13	0.31	0.31

Cp Value		Probe	
Final	Initial	Final	Initial
1.05	1.05	1.05	1.05

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Temperatures (°F)	Oven	Impinger	Vacuum
2 / 1	5	943.195	.51	.54	99	97	148	260	68	3.0
1 / 2	10	945.885	.70	.71	97	96	149	261	62	4.0
1 / 3	15	948.810	.75	.79	97	96	150	258	56	4.0
1 / 4	20	1001.770	.68	.71	100	98	150	250	56	4.0
1 / 5	25	1004.560	.64	.67	99	97	148	253	55	4.0
1 / 6	30	1007.330	.60	.63	93	95	149	252	54	4.0
1 / 1	35	1008.030	.53	.56	94	95	150	245	56	4.0
1 / 2	40	1012.450	.68	.71	89	91	150	246	52	4.0
1 / 3	45	1015.335	.65	.68	88	90	150	246	55	4.0
1 / 4	50	1018.650	.64	.67	87	88	150	249	57	4.0
1 / 5	55	1021.610	.68	.71	87	88	151	249	58	4.0
1 / 6	60	1024.515	.68	.71	87	89	150	248	58	4.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/15/2000

Source: Fluid Bed Dryer

Run No.: 3

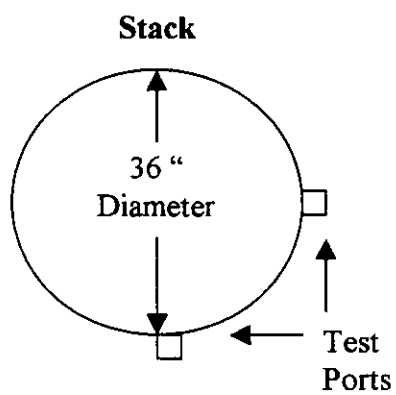
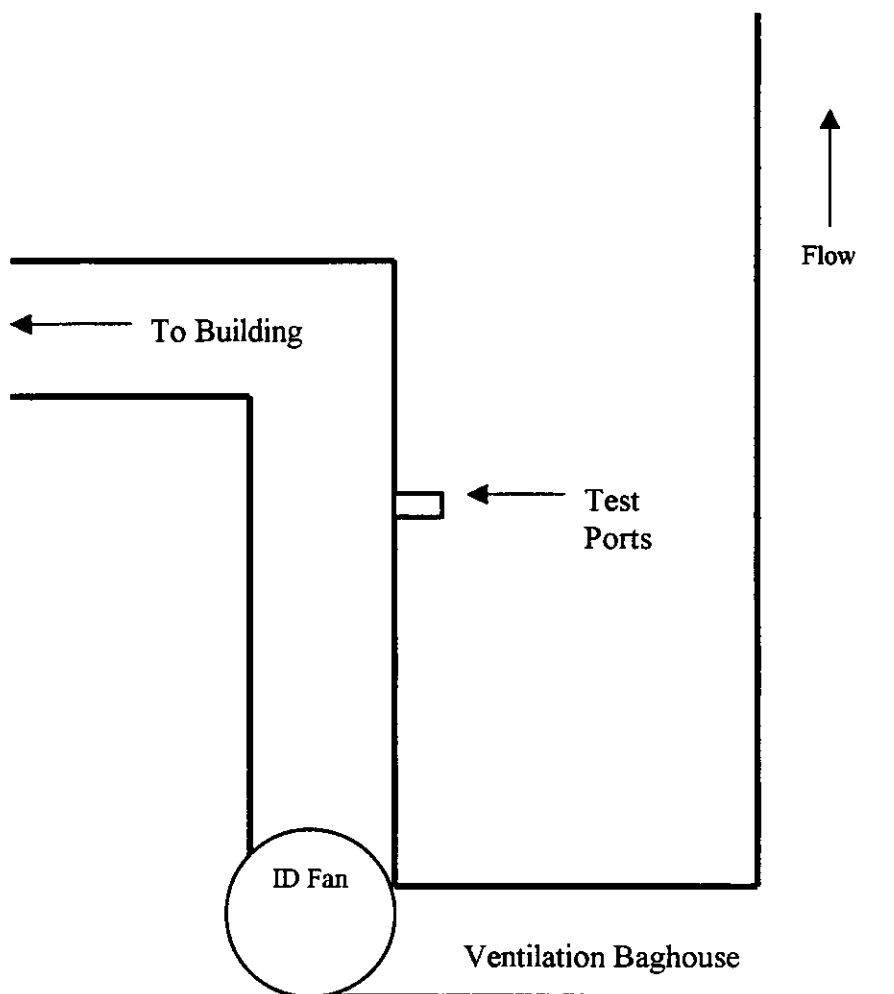
PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.45	0.6708	0.47	86	86	150
1-2	0.70	0.8367	0.74	87	86	148
1-3	0.62	0.7874	0.65	87	85	149
1-4	0.65	0.8062	0.68	87	86	150
1-5	0.68	0.8246	0.71	87	86	150
1-6	0.71	0.8426	0.75	87	85	149
2-1	0.75	0.8660	0.79	86	84	148
2-2	0.81	0.9000	0.85	86	85	148
2-3	0.81	0.9000	0.85	85	84	149
2-4	0.72	0.8485	0.76	85	84	150
2-5	0.68	0.8246	0.71	85	84	150
2-6	0.64	0.8000	0.67	84	83	148
	0.69	0.8256	0.72	86.00	85.4	149.1

Ventilation Baghouse

Field Data Sheets

Schematic of Sampling Site Ventilation Baghouse



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: Ventilation Baghouse

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-16-00	6-16-00	6-16-00	
Time Began-Ended	1220-1327	1341-1445	1507-1610	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	7.069	7.069	7.069	
Barometric Pressure, Inches of mercury	30.10	30.10	30.10	30.10
Stack Pressure, Inches of mercury	30.08	30.08	30.08	30.08
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.996	0.996	0.996	
Nozzle Diameter, Inches	0.200	0.200	0.200	
Meter Volume, Cubic feet	44.882	42.950	42.145	43.326
Meter Temperature, Degrees F	88.7	94.5	88.3	90.5
Avg. Orifice Delta P, Inches of Water	1.22	1.10	1.11	1.15
Volume H2O Collected, MilliLiters	33.0	38.0	30.0	33.7
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.017	0.981	0.985	0.99
Stack Temperature, Degrees F	88.5	98.1	85.5	90.7
Total particulate collected, grams	0.0192	0.0400	0.0259	0.0284

CALCULATED DATA

Standard Meter Volume, Cubic Feet	43.386	41.073	40.764	41.741
Standard Water Volume, Cubic Feet	1.553	1.789	1.412	1.585
Moisture Fraction	0.035	0.042	0.033	0.037
Molecular Weight Of Stack Gas	28.427	28.349	28.438	28.405
Density Of Stack Gas	0.0714	0.0700	0.0718	0.0711
Average Stack Gas Velocity, Feet/Second	58.519	56.965	56.457	57.314
Stack Gas Flow @ Stack Conditions, ACFM	24,820	24,161	23,946	24,309
Stack Gas Flow @ Standard Conditions, DSCFM	23,181	22,013	22,512	22,569
Isokinetic Sampling Rate, Percent	101.09	100.78	97.80	99.89
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0068	0.0150	0.0098	0.0105
Particulate emissions, lbs per hour	1.35	2.83	1.89	2.02

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/16/2000

Source: Ventilation Baghouse

Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	2.10	1.4491	2.37	87	87	85
1-2	0.60	0.7746	0.68	86	86	85
1-3	0.57	0.7550	0.64	87	86	85
1-4	0.89	0.9434	1.01	88	86	87
1-5	1.00	1.0000	1.13	89	87	90
1-6	1.10	1.0488	1.24	90	87	92
2-1	1.50	1.2247	1.70	90	87	90
2-2	1.70	1.3038	1.92	92	87	91
2-3	1.40	1.1832	1.58	92	88	91
2-4	0.66	0.8124	0.75	92	89	87
2-5	0.71	0.8426	0.80	94	90	90
2-6	0.76	0.8718	0.86	92	90	89
	1.08	1.0175	1.22	89.92	88.7	88.5

Moisture		Initial	Final	Totals	Gas Analyses		Average
Impinger #1	100	121			CO2	0	0
Impinger #2	100	100			O2	20.1	20.0
Impinger #3	0	0			CO		
Impinger #4	718	723			N2		
Totals	918	951		33			

Nozzle Calibrations		Barometric Pressure		Leak Check
Pre-test	0.200	30.10		Pre-test
Post-test	0.200			Volume @
	0.200			17"
	0.200			
	0.200			Post-test
	0.200			Volume @
	0.200			13"
Avg.	0.200			

Meter Readings		Filter Weights	
#1	105.832	Filter #	521
Final	100.350	Final	3.7664
Initial	44.882	Initial	3.7620
Net		Net	0.0044
		Total	44.882

Probe		Cp Value	
Probe	ESD-36	1.13	
Run	1		
Time	12:30-1:27		

Stack Diameter		Crucible #	
Stack Diameter	36" = 7.069	Final	72.0636
		Initial	72.0490
		Net	0.0146

Ventilation Balance		F8	
Site	GEORGIA GULF		
Date	ASHERDEN, MS		

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/16/2000

Source: Ventilation Baghouse

Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.40	1.1832	1.58	90	90	94
1-2	1.30	1.1402	1.47	90	90	93
1-3	0.70	0.8367	0.79	92	90	95
1-4	0.81	0.9000	0.92	94	91	99
1-5	0.92	0.9592	1.04	97	93	102
1-6	0.96	0.9798	1.08	98	94	100
2-1	1.50	1.2247	1.70	101	95	101
2-2	0.89	0.9434	1.01	103	97	105
2-3	0.83	0.9110	0.94	97	96	102
2-4	0.77	0.8775	0.87	97	95	98
2-5	0.83	0.9110	0.94	96	95	97
2-6	0.81	0.9000	0.92	94	93	91
	0.98	0.9806	1.10	95.75	94.5	98.1

Site	Moisture Impinger #1	Initial	Final	Totals	Gas Analyses	Average
Impinger #2	100	126			CO ₂	0
Impinger #3	0	108			O ₂	19.8
Impinger #4	723	6			CO	
Totals	923	727			N ₂	
Date	0-16-00	161				

Run #	Stack Diameter	Nozzle Calibrations	Barometric Pressure	Leak Check	Probe Washings
2	36"	Pre-test 0.300 Post-test 0.300	30.10	Pre-test Volume @ Vac	Crucible # Final Initial Net
		0.300 0.300		Post-test Volume @ Vac	74.0652 74.0790 0.0362
Time 11:41-2:45	Meter # EHM	0.300 0.300	Stack Pressure -0.27		

Probe	Cp Value	Meter Readings	Total	cu.ft.
Esf-36	1.13	#1 #2 #3		
		Final 150.250		
		Initial 107.300		
		Net 42.950		

[illegible]

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf

Date: 6/16/2000

Source: Ventilation Baghouse

Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.30	1.1402	1.47	89	88	84
1-2	1.30	1.1402	1.47	88	88	85
1-3	0.76	0.8718	0.86	89	88	86
1-4	0.84	0.9165	0.95	90	88	86
1-5	0.96	0.9798	1.08	90	87	86
1-6	0.92	0.9592	1.04	90	87	88
2-1	1.70	1.3038	1.92	91	87	88
2-2	0.90	0.9487	1.02	91	86	90
2-3	0.85	0.9220	0.96	89	86	86
2-4	0.81	0.9000	0.92	89	86	83
2-5	0.76	0.8718	0.86	88	86	82
2-6	0.74	0.8602	0.84	90	87	82
	0.99	0.9845	1.11	89.50	88.3	85.5

Moisture		Initial		Final		Totals		Gas Analyses		Average	
Impinger #1	100	120	20	CO2	0	0	0				
Impinger #2	100	106	6	O2	19.7	203	20				
Impinger #3	0	0	0	CO							
Impinger #4	727	731	4	N2							
Totals	927	957	30								

Nozzle Calibrations		Barometric Pressure		Leak Check		Probe Washings	
Pre-test	0.300	Pre-test	30.10	Volume @	Vac	Crucible #	Final
0.300	0.300	Stack Pressure	0.27	Post-test	17"	Initial	72.7018
0.300	0.300			Volume @	Vac	Net	72.6876
0.300	0.300				10"		0.0235
Avg.	0.300						

Meter Readings		Filter Weights	
#1	193.295	Filter #	524
Final	193.295	Final	3.6312
Initial	190.550	Initial	3.6290
Net	42.145	Net	0.0022
		Total	42.145

Cp Value	
Probe	1.13
ESP-30	

Run	
#	3
Time	3:07-4:10

Stack Diameter	
	36"
Meter #	E14

Date	
	8-16-00

Site	
	VERMILION PLANT

Impinger #	
	1

Impinger #	
	2

Impinger #	
	3

Impinger #	
	4

Totals	
	927

Moisture	
	100

Initial	
	120

Final	
	20

Totals	
	30

Barometric Pressure	
	30.10

Stack Pressure	
	0.27

Leak Check	
Pre-test	Volume @
	17"
Post-test	Volume @
	10"

Probe Washings	
Crucible #	Final
	Initial
	Net

Filter Weights	
Filter #	Final
	Initial
	Net
	Total

Cp Value	
Probe	1.13
ESP-30	

Run	
#	3
Time	3:07-4:10

Stack Diameter	
	36"
Meter #	E14

Date	
	8-16-00

Site	
	VERMILION PLANT

Impinger #	
	1

Impinger #	
	2

Impinger #	
	3

Impinger #	
	4

Totals	
	927

[illegible]

Field Notes:

No. 4 Rotary Dryer

Field Data Sheets

No. 4 Rotary Dryers Sampling Port Information

Stack Diameter: 27" x 24"

Stack Area : 4.50 Square feet

Stack Height: Approx. 10 feet

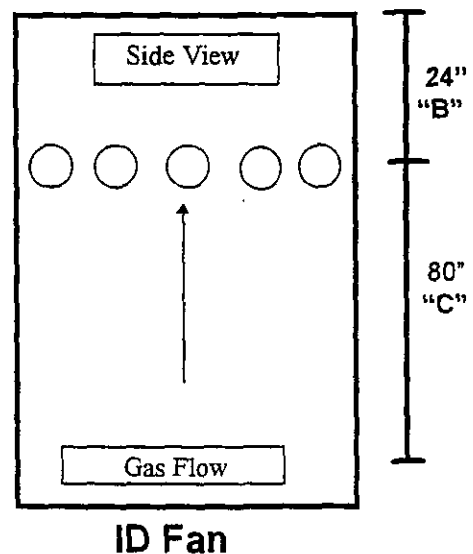
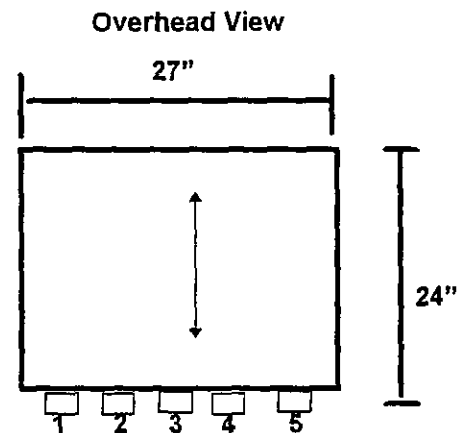
Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 0.91
- C. Downstream Disturbance (L/D): 3.14

Number of Traverse Points: 25

Minimum Number of Traverse Points Required: 25

SAMPLING POINT NUMBER	DISTANCE FROM STACK WALL (INCHES)
1	2.4"
2	7.2"
3	12.0"
4	16.8"
5	21.6"



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: No. 4 Rotary Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-14-00	6-14-00	6-14-00	
Time Began-Ended	1602-1725	1745-1857	2017-2029	
Sampling Time, Minutes	62.5	62.5	62.5	62.5
Stack Area, Square Feet	4.500	4.500	4.500	
Barometric Pressure, Inches of mercury	30.05	30.05	30.05	30.05
Stack Pressure, Inches of mercury	29.96	29.94	29.93	29.94
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.990	0.990	0.990	
Nozzle Diameter, Inches	0.180	0.180	0.180	
Meter Volume, Cubic feet	49.425	53.250	52.505	51.727
Meter Temperature, Degrees F	94.4	83.9	84.0	87.4
Avg. Orifice Delta P, Inches of Water	2.16	2.44	2.29	2.30
Volume H2O Collected, MilliLiters	76.0	81.0	76.0	77.7
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.454	1.556	1.494	1.50
Stack Temperature, Degrees F	131.8	112.8	116.5	120.3
Total particulate collected, grams	0.0118	0.0104	0.0146	0.0123

CALCULATED DATA

Standard Meter Volume, Cubic Feet	47.028	51.684	50.934	49.882
Standard Water Volume, Cubic Feet	3.577	3.813	3.577	3.656
Moisture Fraction	0.071	0.069	0.066	0.068
Molecular Weight Of Stack Gas	28.037	28.058	28.091	28.062
Density Of Stack Gas	0.0650	0.0672	0.0668	0.0663
Average Stack Gas Velocity, Feet/Second	87.522	92.246	88.824	89.530
Stack Gas Flow @ Stack Conditions, ACFM	23,631	24,906	23,982	24,173
Stack Gas Flow @ Standard Conditions, DSCFM	19,613	21,388	20,521	20,507
Isokinetic Sampling Rate, Percent	97.72	98.47	101.15	99.11
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0039	0.0031	0.0044	0.0038
Particulate emissions, lbs per hour	0.65	0.57	0.78	0.66

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: #4 Rotary Dryer

Date: 6/14/2000
Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.45	0.6708	0.43	91	90	125
1-2	0.58	0.7616	0.55	92	90	128
1-3	1.30	1.1402	1.24	94	91	130
1-4	2.40	1.5492	2.28	95	91	133
1-5	3.10	1.7607	2.98	96	92	129
2-1	0.77	0.8775	0.74	97	93	125
2-2	1.00	1.0000	0.96	98	93	122
2-3	1.50	1.2247	1.44	99	94	131
2-4	2.70	1.6432	2.59	99	95	130
2-5	3.30	1.8166	3.17	99	95	131
3-1	0.93	0.9644	0.89	99	95	135
3-2	2.10	1.4491	2.02	100	95	133
3-3	3.40	1.8439	3.26	101	96	135
3-4	3.10	1.7607	2.98	101	96	141
3-5	3.50	1.8708	3.36	102	96	144
4-1	1.10	1.0488	1.06	102	97	139
4-2	2.30	1.5166	2.21	102	98	137
4-3	2.90	1.7029	2.78	102	98	134
4-4	2.70	1.6432	2.59	102	97	131
4-5	3.10	1.7607	2.98	101	97	130
5-1	2.80	1.6733	2.69	101	96	127
5-2	1.90	1.3784	1.82	100	95	129
5-3	2.40	1.5492	2.30	100	94	130
5-4	3.20	1.7889	3.07	100	94	134
5-5	3.80	1.9494	3.65	100	93	131
	2.25	1.4538	2.16	98.92	94.4	131.8

Plant 0002024 Gulf
 Impinger #1 0002024, 413
 Site #4 Ramsey Dryer
 Date 6-14-00

Moisture
 Impinger #1
 Impinger #2
 Impinger #3
 Impinger #4
 Totals

Initial
 100
 100
 0
 003.4
 403.4

Final
 145
 125
 6
 201
 479

Gas Analyses
 CO2
 O2
 CO
 N2

Average
 0
 20.3
 20
 20

Leak Check
 Pre-test
 Volume @
 Post-test
 Volume @

Crucible #
 Final
 Initial
 Net

Probe Washings
 Final
 Initial
 Net

Filler Weights
 Filler #
 Final
 Initial
 Net

Barometric Pressure
 30.05

Stack Pressure
 -1.20

Meter Readings
 #2
 #3

Probe
 557-3

Cp Value
 8.0.90

Time
 4:00-6:25

Port / Point
 1 / 1
 1 / 2
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 1 / 4
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 2 / 2
 2 / 3
 2 / 4
 2 / 5
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 5 / 4
 5 / 5

Meter Reading
 94.320
 95.425
 97.100
 99.015
 101.410
 103.850
 104.010
 105.890
 108.050
 110.485
 111.890
 113.790
 116.050
 119.310
 121.265
 123.790
 124.580
 126.770
 129.080
 131.325
 133.720
 135.700
 137.820
 140.060
 142.730

Δ p
 2.45
 0.53
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 2.40
 3.10
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Δ h
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 0.80
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 2.30
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 2.02
 3.26
 0.93
 3.30
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 2.60
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 2.32
 3.07
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Temperatures (°F)
 Inlet
 Outlet
 Stack
 Oven
 Impinger
 Vacuum

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Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: #4 Rotary Dryer

Date: 6/14/2000
Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (F)	Tm Out (F)	Ts (F)
5-1	1.30	1.1402	1.25	86	86	124
5-2	2.20	1.4832	2.11	86	85	121
5-3	3.20	1.7889	3.07	87	85	120
5-4	4.30	2.0736	4.13	87	85	123
5-5	3.80	1.9494	3.65	87	84	119
4-1	1.40	1.1832	1.34	86	83	115
4-2	2.30	1.5166	2.21	86	82	118
4-3	3.00	1.7321	2.88	86	82	116
4-4	3.90	1.9748	3.74	86	82	114
4-5	3.70	1.9235	3.55	85	81	111
3-1	1.00	1.0000	0.96	85	80	113
3-2	2.20	1.4832	2.11	85	80	109
3-3	3.10	1.7607	2.98	84	80	109
3-4	3.20	1.7889	3.07	84	80	107
3-5	3.70	1.9235	3.55	84	81	109
2-1	1.30	1.1402	1.25	85	81	111
2-2	1.80	1.3416	1.73	85	81	114
2-3	2.30	1.5166	2.21	86	82	109
2-4	2.90	1.7029	2.78	86	82	111
2-5	3.50	1.8708	3.36	87	82	113
1-1	0.75	0.8660	0.72	87	81	109
1-2	0.97	0.9849	0.93	86	81	107
1-3	1.80	1.3416	1.73	86	81	106
1-4	2.80	1.6733	2.69	86	82	106
1-5	3.00	1.7321	2.88	86	82	105
	2.54	1.5557	2.44	85.76	83.9	112.8

Plant	GEORGIA CLUF		Moisture	Impinger #1		Initial	Final		Totals	Gas Analyses		Average
Site	ANDREWS, MS		Impinger #2	100		151		51	CO2		0	0
Date	4/20/2024		Impinger #3	0		123		23	CO		19.7	20
			Impinger #4	20.9		216		7	N2			
			Totals	409		490		81				

Run	# 2		Stack Diameter	24" x 27"		Barometric Pressure	30.05	
Time	5:45		Meter #	E10		Stack Pressure	-1.50	
			Avg.			Pre-test	0.180	
						Post-test	0.180	
						Pre-test	0.180	
						Post-test	0.180	

Probe	ESP-3		Cp Value	0.96	
Final	147.340		#1	147.340	
Initial	144.110		#2	144.110	
Net	3.230		#3	3.230	

Leak Check	Pre-test		Volume @		Vac	Probe Washings	Crucible #	
	0.005		15"				F3	
	Post-test		Volume @		Vac		Final	
	0.004		15"				74.1292	
							Initial	
							74.1201	
							Net	
							0.0068	

Filter Weights	Filter #		501	
	Final		3.7704	
	Initial		3.7680	
	Net		0.0024	
	Total		53.250 cu.ft.	

Port / Point	Time	Meter Reading	Δ p	Δ h	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
5 / 1	2.5	145.900	1.30	1.03	86	86	124	240	65	1.0
5 / 2	5.0	147.880	2.20	0.11	86	85	121	245	63	3.0
5 / 3	7.5	150.255	3.30	3.67	87	85	120	249	61	4.0
5 / 4	10.0	153.000	4.30	4.13	87	86	123	251	60	5.0
5 / 5	12.5	155.050	3.80	3.65	87	84	119	250	57	5.0
4 / 1	15.0	157.300	1.40	1.24	86	83	115	247	57	2.0
4 / 2	17.5	159.350	2.30	2.20	86	82	118	241	57	3.0
4 / 3	20.0	161.675	3.00	2.83	86	82	116	244	56	4.0
4 / 4	22.5	164.335	3.90	3.74	86	82	114	249	56	5.0
4 / 5	25.0	166.700	3.70	3.56	85	81	111	251	56	6.0
3 / 1	27.5	168.375	1.00	0.96	85	80	113	247	56	2.0
3 / 2	30.0	170.340	2.20	2.11	85	80	109	251	56	3.0
3 / 3	32.5	172.750	3.10	2.98	84	80	109	253	55	3.0
3 / 4	35.0	175.170	3.20	3.07	84	80	107	250	55	4.0
3 / 5	37.5	177.820	3.70	3.55	84	81	109	253	55	4.0
2 / 1	40.0	179.405	1.30	1.25	85	81	111	247	55	1.0
2 / 2	42.5	181.420	1.80	1.73	85	81	114	241	55	2.0
2 / 3	45.0	183.550	2.30	0.91	86	82	109	247	55	3.0
2 / 4	47.5	186.380	2.90	4.78	86	82	111	250	55	4.0
2 / 5	50.0	188.350	3.50	3.36	87	82	113	251	56	4.0
1 / 1	52.5	189.405	0.75	0.72	87	81	109	247	56	1.0
1 / 2	55.0	191.020	0.97	0.93	86	81	107	243	56	2.0
1 / 3	57.5	192.880	1.80	1.73	86	81	106	246	56	2.0
1 / 4	60.0	195.000	2.80	2.67	86	82	106	243	56	3.0
1 / 5	62.5	197.820	3.00	2.88	86	82	105	241	56	4.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: Silo #679

Date: 6/14/2000
Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.71	0.8426	0.68	85	85	107
1-2	0.83	0.9110	0.80	86	83	109
1-3	1.50	1.2247	1.44	86	82	113
1-4	2.60	1.6125	2.50	86	82	117
1-5	3.20	1.7889	3.07	86	82	115
2-1	1.20	1.0954	1.15	86	83	116
2-2	1.70	1.3038	1.63	86	83	114
2-3	2.40	1.5492	2.30	86	82	115
2-4	2.70	1.6432	2.59	86	83	111
2-5	3.30	1.8166	3.17	86	83	109
3-1	1.00	1.0000	0.96	86	82	113
3-2	2.20	1.4832	2.11	85	82	118
3-3	3.20	1.7889	3.07	85	82	117
3-4	0.40	0.6325	0.38	85	82	120
3-5	3.40	1.8439	3.26	86	82	119
4-1	1.30	1.1402	1.25	86	82	121
4-2	2.50	1.5811	2.40	86	82	120
4-3	3.10	1.7607	2.98	85	81	117
4-4	3.70	1.9235	3.55	86	82	119
4-5	4.00	2.0000	3.84	86	82	120
5-1	1.10	1.0488	1.06	86	82	121
5-2	2.20	1.4832	2.11	86	81	121
5-3	3.40	1.8439	3.26	86	81	124
5-4	4.10	2.0248	3.94	87	82	120
5-5	4.00	2.0000	3.84	86	81	117
	2.39	1.4937	2.29	85.84	84.0	116.5

No. 5 Rotary Dryer

Field Data Sheets

No. 5 Rotary Dryers Sampling Port Information

Stack Diameter: 27" x 24"

Stack Area : 4.50 Square feet

Stack Height: Approx. 10 feet

Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 0.91
- C. Downstream Disturbance (L/D): 3.14

Number of Traverse Points: 25

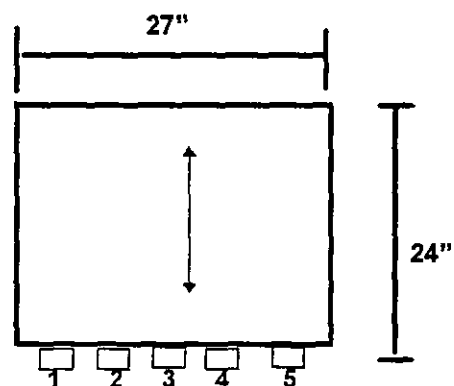
Minimum Number of Traverse Points Required: 25

**SAMPLING POINT
NUMBER**

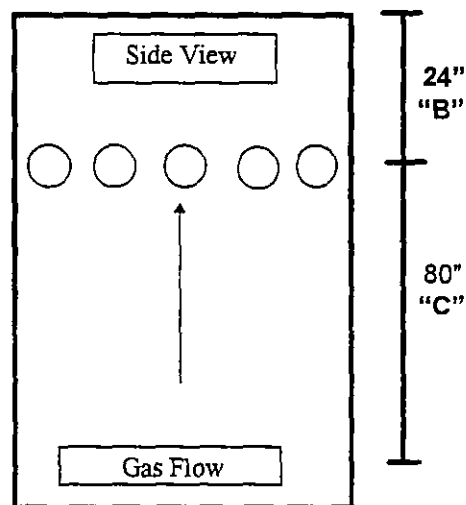
**DISTANCE FROM
STACK WALL (INCHES)**

1	2.4"
2	7.2"
3	12.0"
4	16.8"
5	21.6"

Overhead View



Side View



ID Fan

ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: No. 5 Rotary Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-15-00	6-15-00	6-15-00	
Time Began-Ended	0920-1030	1053-1200	1220-1340	
Sampling Time, Minutes	62.5	62.5	62.5	62.5
Stack Area, Square Feet	4.500	4.500	4.500	
Barometric Pressure, Inches of mercury	30.13	30.13	30.13	30.13
Stack Pressure, Inches of mercury	30.04	30.06	30.03	30.04
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.990	0.990	0.990	
Nozzle Diameter, Inches	0.185	0.185	0.185	
Meter Volume, Cubic feet	43.380	50.305	44.445	46.043
Meter Temperature, Degrees F	93.5	97.3	97.5	96.1
Avg. Orifice Delta P, Inches of Water	2.06	2.39	1.95	2.13
Volume H2O Collected, MilliLiters	67.0	69.0	65.0	67.0
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.337	1.440	1.287	1.35
Stack Temperature, Degrees F	153.8	150.0	152.3	152.0
Total particulate collected, grams	0.0100	0.0304	0.0052	0.0152

CALCULATED DATA

Standard Meter Volume, Cubic Feet	41.448	47.769	42.144	43.787
Standard Water Volume, Cubic Feet	3.154	3.248	3.060	3.154
Moisture Fraction	0.071	0.064	0.068	0.067
Molecular Weight Of Stack Gas	28.036	28.112	28.069	28.073
Density Of Stack Gas	0.0629	0.0635	0.0631	0.0631
Average Stack Gas Velocity, Feet/Second	81.854	87.860	78.759	82.825
Stack Gas Flow @ Stack Conditions, ACFM	22,101	23,722	21,265	22,363
Stack Gas Flow @ Standard Conditions, DSCFM	17,731	19,310	17,153	18,064
Isokinetic Sampling Rate, Percent	90.18	95.44	94.79	93.47
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0037	0.0098	0.0019	0.0051
Particulate emissions, lbs per hour	0.56	1.62	0.28	0.82

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: No. 5 Rotary Dryer

Date: 6/15/2000
 Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.10	1.0488	1.21	91	83	149
1-2	1.70	1.3038	1.87	91	86	150
1-3	2.30	1.5166	2.53	92	86	152
1-4	2.40	1.5492	2.64	92	86	155
1-5	3.20	1.7889	3.52	93	87	153
2-1	1.70	1.3038	1.87	94	87	157
2-2	2.00	1.4142	2.20	95	87	155
2-3	2.40	1.5492	2.64	95	87	151
2-4	3.00	1.7321	3.30	95	87	153
2-5	3.10	1.7607	3.41	96	88	156
3-1	1.00	1.0000	1.10	96	88	153
3-2	1.90	1.3784	2.09	96	88	153
3-3	2.50	1.5811	2.75	96	89	157
3-4	1.60	1.2649	1.76	97	90	161
3-5	1.80	1.3416	1.98	99	91	163
4-1	1.70	1.3038	1.87	99	91	157
4-2	2.40	1.5492	2.64	99	92	155
4-3	3.10	1.7607	3.41	99	92	156
4-4	2.30	1.5166	2.53	100	93	158
4-5	1.60	1.2649	1.76	101	93	153
5-1	0.61	0.7810	0.67	101	93	151
5-2	0.70	0.8367	0.77	103	93	147
5-3	0.68	0.8246	0.75	103	95	149
5-4	1.00	1.0000	1.10	104	95	150
5-5	1.10	1.0488	1.21	105	95	151
	1.88	1.3368	2.06	97.28	93.5	153.8

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: No. 5 Rotary Dryer

Date: 6/15/2000
Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.68	0.8246	0.75	95	91	137
1-2	0.79	0.8888	0.87	95	92	141
1-3	0.99	0.9950	1.09	96	92	143
1-4	1.40	1.1832	1.54	96	92	151
1-5	2.00	1.4142	2.20	97	93	153
2-1	1.90	1.3784	2.09	97	93	149
2-2	1.30	1.1402	1.43	98	93	151
2-3	2.20	1.4832	2.42	98	93	153
2-4	1.90	1.3784	2.09	99	93	150
2-5	1.70	1.3038	1.87	99	93	149
3-1	1.30	1.1402	1.43	99	93	151
3-2	1.70	1.3038	1.87	100	94	153
3-3	2.80	1.6733	3.08	100	94	157
3-4	3.10	1.7607	3.41	101	94	154
3-5	3.40	1.8439	3.74	102	94	151
4-1	1.50	1.2247	1.65	102	94	146
4-2	1.90	1.3784	2.09	102	95	151
4-3	2.30	1.5166	2.53	102	95	156
4-4	3.40	1.8439	3.74	103	96	161
4-5	3.00	1.7321	3.30	104	96	153
5-1	1.90	1.3784	2.09	104	97	147
5-2	3.40	1.8439	3.74	104	97	145
5-3	3.90	1.9748	4.29	105	98	149
5-4	3.30	1.8166	3.63	105	98	151
5-5	2.50	1.5811	2.75	105	99	147
	2.17	1.4401	2.39	100.32	97.3	150.0

Moisture		Initial		Final		Gas Analyses		Ave	
Impinger #1	Impinger #2	Impinger #3	Impinger #4	Totals	CO2	O2	CO	N2	CO2
100	100	0	751	951	140	111	11	12	19.7
6-15-00	6-15-00	6-15-00	6-15-00	6-15-00	6-15-00	6-15-00	6-15-00	6-15-00	6-15-00
Run #	Stack Diameter	24 x 27							
Time	Meter #	E10							
10:53	Probe	E57.3							
12:00	Cp Value	16.110							
	Final	350.305							
	Initial	350.000							
	Net	90.305							
	Meter Readings	#1	#2	#3	#4				
	Stack Pressure	-0.185							
	Barometric Pressure	30.13							
	Leak Check	Pre-test	Volume @	Vac					
	Post-test	Volume @	16"						
	Probe Washings	Crucible #	Final	Initial	Net				
	Filter Weights	Filter #	Final	Initial	Net				
			5.7532	3.7527	0.0005				

Port / Point

Temperatures (°F)

Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	301.000	0.68	0.75	95	91	137	247	68	2.0
1 / 2	302.310	0.79	0.87	95	92	141	251	66	2.0
1 / 3	304.000	0.99	1.09	96	92	143	253	65	3.0
1 / 4	305.230	1.4	1.54	96	92	151	254	63	3.0
1 / 5	307.890	2.0	2.20	97	93	153	257	63	4.0
2 / 1	309.740	1.9	2.09	97	93	149	250	61	1.0
1 / 2	311.290	1.3	1.43	98	93	151	251	61	4.0
1 / 3	313.500	2.3	2.42	98	93	153	253	60	4.0
1 / 4	315.205	1.9	2.09	99	93	150	251	60	4.0
1 / 5	317.130	1.7	1.67	99	93	149	250	60	4.0
3 / 1	318.045	1.3	1.43	99	93	151	247	60	4.0
1 / 2	320.420	1.7	1.87	100	94	153	249	60	4.0
1 / 3	322.505	2.8	3.02	100	94	157	245	59	4.0
1 / 4	325.245	3.1	3.41	101	94	154	243	59	5.0
1 / 5	327.970	3.4	3.74	102	94	151	245	59	5.0
4 / 1	329.240	1.5	1.65	102	94	146	247	58	4.0
1 / 2	331.500	1.5	2.09	102	95	161	246	58	4.0
1 / 3	333.590	2.3	2.53	102	95	156	249	58	4.0
1 / 4	335.005	3.4	3.74	103	96	161	251	58	5.0
1 / 5	337.570	3.0	3.30	104	96	153	253	57	5.0
5 / 1	339.395	1.9	2.09	104	97	147	250	57	5.0
1 / 2	341.490	3.4	3.74	104	97	145	247	57	5.0
1 / 3	344.310	3.9	4.29	105	98	149	252	58	6.0
1 / 4	347.980	3.3	3.63	105	98	151	250	58	6.0
1 / 5	350.305	2.5	2.75	105	99	147	247	58	6.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: No. 5 Rotary Dryer

Date: 6/15/2000
 Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.70	1.3038	1.87	94	90	147
1-2	2.40	1.5492	2.64	97	91	151
1-3	3.20	1.7889	3.52	97	91	154
1-4	3.90	1.9748	4.29	97	91	159
1-5	3.70	1.9235	4.07	97	91	157
2-1	1.60	1.2649	1.76	98	92	146
2-2	1.80	1.3416	1.98	98	92	150
2-3	1.70	1.3038	1.87	99	92	153
2-4	2.20	1.4832	2.42	99	93	151
2-5	2.50	1.5811	2.75	100	93	149
3-1	1.30	1.1402	1.43	101	93	153
3-2	1.60	1.2649	1.76	100	93	157
3-3	2.00	1.4142	2.20	101	93	160
3-4	2.40	1.5492	2.64	102	94	153
3-5	1.80	1.3416	1.98	102	95	152
4-1	1.20	1.0954	1.32	102	94	147
4-2	0.97	0.9849	1.07	102	95	150
4-3	0.71	0.8426	0.78	103	95	151
4-4	0.53	0.7280	0.58	103	96	153
4-5	0.48	0.6928	0.53	105	97	154
5-1	0.70	0.8367	0.77	105	97	150
5-2	0.79	0.8888	0.87	106	97	147
5-3	1.10	1.0488	1.21	106	98	153
5-4	1.90	1.3784	2.09	107	98	154
5-5	2.10	1.4491	2.31	107	98	156
	1.77	1.2868	1.95	101.12	97.5	152.3



Average

153

No. 6 Rotary Dryer

Field Data Sheets

No. 6 Rotary Dryers Sampling Port Information

Stack Diameter: 27" x 24"

Stack Area : 4.50 Square feet

Stack Height: Approx. 10 feet

Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 0.91
- C. Downstream Disturbance (L/D): 3.14

Number of Traverse Points: 25

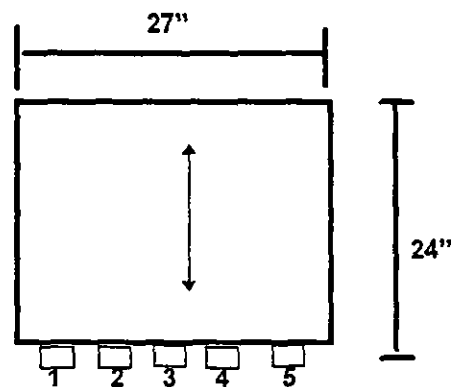
Minimum Number of Traverse Points Required: 25

**SAMPLING POINT
NUMBER**

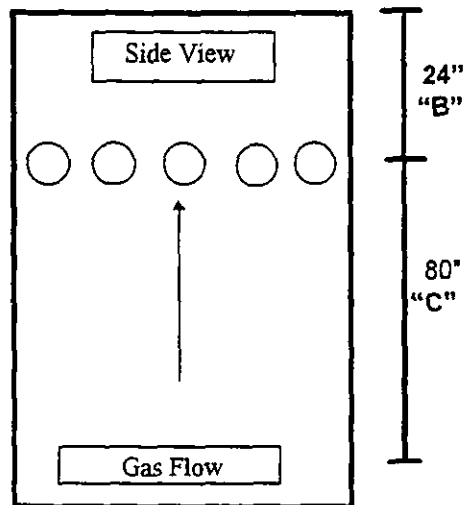
**DISTANCE FROM
STACK WALL (INCHES)**

1	2.4"
2	7.2"
3	12.0"
4	16.8"
5	21.6"

Overhead View



Side View



ID Fan

ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: No. 6 Rotary Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-15-00	6-15-00	6-16-00	
Time Began-Ended	1600-1719	1759-1920	0824-0940	
Sampling Time, Minutes	62.5	62.5	62.5	62.5
Stack Area, Square Feet	4.500	4.500	4.500	
Barometric Pressure, Inches of mercury	30.13	30.13	30.13	30.13
Stack Pressure, Inches of mercury	30.03	30.03	30.03	30.03
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.993	0.993	0.993	
Nozzle Diameter, Inches	0.180	0.180	0.180	
Meter Volume, Cubic feet	48.415	53.225	52.010	51.217
Meter Temperature, Degrees F	101.5	93.1	95.3	96.6
Avg. Orifice Delta P, Inches of Water	2.12	2.22	2.24	2.19
Volume H2O Collected, MilliLiters	66.0	50.0	60.0	58.7
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.451	1.486	1.492	1.48
Stack Temperature, Degrees F	156.4	158.1	157.3	157.3
Total particulate collected, grams	0.0098	0.0139	0.0151	0.0129

CALCULATED DATA

Standard Meter Volume, Cubic Feet	45.740	51.064	49.700	48.835
Standard Water Volume, Cubic Feet	3.107	2.354	2.824	2.761
Moisture Fraction	0.064	0.044	0.054	0.054
Molecular Weight Of Stack Gas	28.1131	28.3242	28.2193	28.2189
Density Of Stack Gas	0.063	0.063	0.063	0.063
Average Stack Gas Velocity, Feet/Second	88.919	90.988	91.440	90.449
Stack Gas Flow @ Stack Conditions, ACFM	24,008	24,567	24,689	24,421
Stack Gas Flow @ Standard Conditions, DSCFM	19,320	20,126	20,047	19,831
Isokinetic Sampling Rate, Percent	96.48	103.40	101.03	100.30
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0033	0.0042	0.0047	0.0041
Particulate emissions, lbs per hour	0.55	0.72	0.80	0.69

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: No. 6 Rotary Dryer

Date: 6/15/2000
 Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.30	1.1402	1.30	100	98	149
1-2	1.40	1.1832	1.40	100	98	152
1-3	1.80	1.3416	1.80	102	100	155
1-4	2.00	1.4142	2.00	102	102	160
1-5	2.10	1.4491	2.10	104	101	159
2-1	1.90	1.3784	1.90	103	102	159
2-2	2.00	1.4142	2.00	103	101	155
2-3	1.90	1.3784	1.90	103	100	153
2-4	2.10	1.4491	2.10	103	100	155
2-5	2.10	1.4491	2.10	103	101	154
3-1	2.40	1.5492	2.40	102	101	156
3-2	2.30	1.5166	2.30	102	100	158
3-3	2.40	1.5492	2.40	102	101	160
3-4	2.60	1.6125	2.60	102	100	158
3-5	2.10	1.4491	2.10	100	100	159
4-1	2.30	1.5166	2.30	100	102	160
4-2	2.10	1.4491	2.10	104	101	158
4-3	2.20	1.4832	2.20	104	101	158
4-4	2.30	1.5166	2.30	104	102	160
4-5	2.10	1.4491	2.10	102	100	155
5-1	2.40	1.5492	2.40	102	100	150
5-2	2.30	1.5166	2.30	103	100	156
5-3	2.30	1.5166	2.30	104	101	155
5-4	2.20	1.4832	2.20	106	100	157
5-5	2.30	1.5166	2.30	104	100	159
	2.12	1.4508	2.12	102.56	101.5	156.4

[illegible]

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Temperatures ($^{\circ}F$)	Oven	Impinger	Vacuum
1 / 1	2.5	340.750	1.3	1.3	100	98	149	230	268	0.1
1 / 2	5.0	342.020	1.4	1.4	100	98	152	236		0.1
1 / 3	7.5	343.635	1.8	1.8	102	100	155	241		0.1
1 / 4	10.0	345.140	2.0	2.0	102	100	160	243		0.1
1 / 5	12.5	346.485	2.1	2.1	104	102	159	245		0.1
2 / 1	15.0	347.985	1.9	1.9	103	101	159	246		0.1
2 / 2	17.5	349.720	2.0	2.0	103	102	155	250		0.1
2 / 3	20.0	351.710	1.9	1.9	103	101	153	246		0.1
2 / 4	22.5	353.870	2.1	2.1	103	100	155	248		0.1
2 / 5	25.0	355.910	2.1	2.1	103	100	154	247		0.1
3 / 1	27.5	358.255	2.4	2.4	102	101	156	245		0.18
3 / 2	30.0	360.310	2.3	2.3	102	100	158	250		0.18
3 / 3	32.5	362.750	2.4	2.4	102	101	160	241		0.18
3 / 4	35.0	364.890	2.6	2.6	102	100	158	243		0.15
3 / 5	37.5	366.980	2.1	2.1	100	100	159	240		0.15
4 / 1	40.0	368.070	2.3	2.3	106	102	160	245		0.15
4 / 2	42.5	370.455	2.1	2.1	104	101	158	247		0.18
4 / 3	45.0	372.510	2.2	2.2	104	101	158	250		0.18
4 / 4	47.5	374.715	2.3	2.2	104	102	160	250		0.18
4 / 5	50.0	376.485	2.1	2.1	102	100	155	248		0.20
5 / 1	52.5	377.570	2.4	2.4	102	100	150	250		0.18
5 / 2	55.0	379.425	2.3	2.3	103	100	152	249		0.18
5 / 3	57.5	380.785	2.3	2.3	104	101	155	250		0.18
5 / 4	60.0	383.710	2.2	2.2	100	100	157	247		0.18
5 / 5	62.5	385.525	2.2	2.2	104	100	154	250		0.18

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: No. 6 Rotary Dryer

Date: 6/15/2000
Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	2.20	1.4832	2.20	90	88	145
1-2	2.30	1.5166	2.30	92	90	152
1-3	2.30	1.5166	2.30	93	92	150
1-4	2.40	1.5492	2.40	94	92	161
1-5	2.50	1.5811	2.50	96	92	159
2-1	2.10	1.4491	2.10	97	92	150
2-2	2.30	1.5166	2.30	98	93	162
2-3	2.40	1.5492	2.40	98	92	160
2-4	2.40	1.5492	2.40	98	94	160
2-5	2.50	1.5811	2.50	94	92	167
3-1	2.50	1.5811	2.50	96	92	165
3-2	2.60	1.6125	2.60	98	96	166
3-3	2.60	1.6125	2.60	94	94	168
3-4	2.30	1.5166	2.30	97	94	160
3-5	2.30	1.5166	2.30	98	94	161
4-1	2.00	1.4142	2.00	96	94	155
4-2	1.90	1.3784	1.90	90	98	153
4-3	2.00	1.4142	2.00	92	95	155
4-4	2.00	1.4142	2.00	94	90	155
4-5	2.10	1.4491	2.10	90	88	160
5-1	1.90	1.3784	1.90	90	89	158
5-2	2.10	1.4491	2.10	90	88	160
5-3	1.70	1.3038	1.70	92	89	158
5-4	1.80	1.3416	1.80	93	90	157
5-5	2.20	1.4832	2.20	94	92	156
	2.22	1.4863	2.22	94.16	93.1	158.1

Georgia Gulf
Aberdeen, Ms
Site
No 6 Rotary Dr
Date 6-15-00

Moisture
Impinger #1
Impinger #2
Impinger #3
Impinger #4
Totals

Initial
100
100
0
197.4
397.4

Final
135
104
0
209.4
447.4

Gas Analyses
CO2
O2
CO
N2

Leak Check
Pre-test
Volume @
Post-test
Volume @

Probe Washings
Crucible #
Final
Initial
Net

Filter Weights
Filter #
Final
Initial
Net

Stack Pressure
Barometric Pressure
Stack Pressure
Meter Readings

Op Value
Probe
Time
Run #

Stack Diameter
24" x 27"

Average
0
20
0
0
0

Vac
16"

Vac
10"

Total
53.225

Impinger
268

Vacuum
7
7
7
7
5
5
5
6
6
7
7
7
7
7
8
8
8
8
8

Temperatures (°F)
Outlet
Inlet
Δh
Δp
Meter Reading
Time
Port / Point

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: #6 Rotary Dryer

Date: 6/16/2000
 Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.50	1.2247	1.50	90	88	145
1-2	1.80	1.3416	1.80	92	89	150
1-3	1.80	1.3416	1.80	92	90	151
1-4	1.90	1.3784	1.90	93	90	153
1-5	2.00	1.4142	2.00	94	91	155
2-1	2.00	1.4142	2.00	92	88	160
2-2	2.10	1.4491	2.10	93	92	160
2-3	2.10	1.4491	2.10	94	92	159
2-4	2.20	1.4832	2.20	95	93	158
2-5	2.20	1.4832	2.20	95	93	159
3-1	2.60	1.6125	2.60	95	94	160
3-2	2.60	1.6125	2.60	98	95	159
3-3	2.50	1.5811	2.50	99	97	156
3-4	2.30	1.5166	2.30	95	93	158
3-5	2.40	1.5492	2.40	97	95	160
4-1	2.80	1.6733	2.80	99	96	159
4-2	2.30	1.5166	2.30	99	97	160
4-3	2.30	1.5166	2.30	100	98	158
4-4	2.40	1.5492	2.40	97	96	160
4-5	2.50	1.5811	2.50	98	96	160
5-1	2.60	1.6125	2.60	98	96	160
5-2	2.30	1.5166	2.30	98	96	157
5-3	2.40	1.5492	2.40	101	100	157
5-4	2.30	1.5166	2.30	103	100	160
5-5	2.00	1.4142	2.00	103	101	159
	2.24	1.4919	2.24	96.40	95.3	157.3

Georgia Gulf Abbeville, MS		Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 208.4 408.4	Final 140 103 0 225.4 468.4	Gas Analyses CO2 O2 CO N2	0 20.2 20.1 0	Average 0 20 0 0
Date 6-16-80		Stack Diameter 24" x 27"		Nozzle Calibrations Pre-test Post-test		Leak Check Pre-test Volume @ Post-test Volume @		Probe Washings Crucible # Final Initial Net
Run #3		Stack Pressure -1.3		Barometric Pressure 30.13		Vac 16"		F15 73.7718 73.7205 0.0113
Time 8:24 9:40		Meter # E-11		Stack Pressure -1.3		Vac 10"		Filter Weights Filler # Final Initial Net
Probe ESP-3		Cp Value 1.00		Meter Readings #2 #3 #4		Total 52.010		cu.ft. 517 3.9426 3.7840 0.0036

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	441.250	1.55	1.5	90	88	145	245	62	4
1 / 2	5.0	442.550	1.8	1.8	92	89	150	248	62	4
1 / 3	7.5	443.855	1.8	1.8	92	90	157	250	62	4
1 / 4	10.0	444.775	1.9	1.9	93	90	153	249	63	5
1 / 5	12.5	448.528	2.0	2.0	94	91	155	249	63	5
2 / 1	15.0	450.440	2.0	2.0	92	88	160	250	63	5
2 / 2	17.5	452.355	2.1	2.1	93	92	160	250	65	5
2 / 3	20.0	454.250	2.1	2.1	94	92	159	247	64	6
2 / 4	22.5	453.385	2.2	2.2	95	93	158	248	64	6
2 / 5	25.0	458.975	2.2	2.2	95	93	159	260	66	6
3 / 1	27.5	460.715	2.6	2.6	95	94	160	247	64	6
3 / 2	30.0	462.975	2.6	2.6	98	95	164	244	63	8
3 / 3	32.5	464.420	2.5	2.5	94	97	156	243	62	8
3 / 4	35.0	467.650	2.3	2.3	95	93	158	247	63	8
3 / 5	37.5	469.815	2.4	2.4	97	95	160	250	63	8
4 / 1	40.0	471.935	2.8	2.8	99	96	159	248	64	7
4 / 2	42.5	473.075	2.3	2.3	99	97	160	247	62	8
4 / 3	45.0	476.110	2.3	2.3	100	98	158	250	63	8
4 / 4	47.5	478.235	2.4	2.4	97	96	160	249	65	8
4 / 5	50.0	480.495	2.5	2.5	98	96	160	250	65	8
5 / 1	52.5	482.340	2.6	2.6	98	96	160	249	66	8
5 / 2	55.0	484.985	2.3	2.3	98	96	157	246	67	8
5 / 3	57.5	486.980	2.4	2.4	101	100	157	247	67	8
5 / 4	60.0	489.210	2.3	2.3	103	100	160	244	68	8
5 / 5	62.5	491.345	2.0	2.0	103	101	159	249	67	8

Field Notes:

No. 7 Rotary Dryer

Field Data Sheets

No. 7 Rotary Dryers Sampling Port Information

Stack Diameter: 27" x 24"

Stack Area : 4.50 Square feet

Stack Height: Approx. 10 feet

Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 0.91
- C. Downstream Disturbance (L/D): 3.14

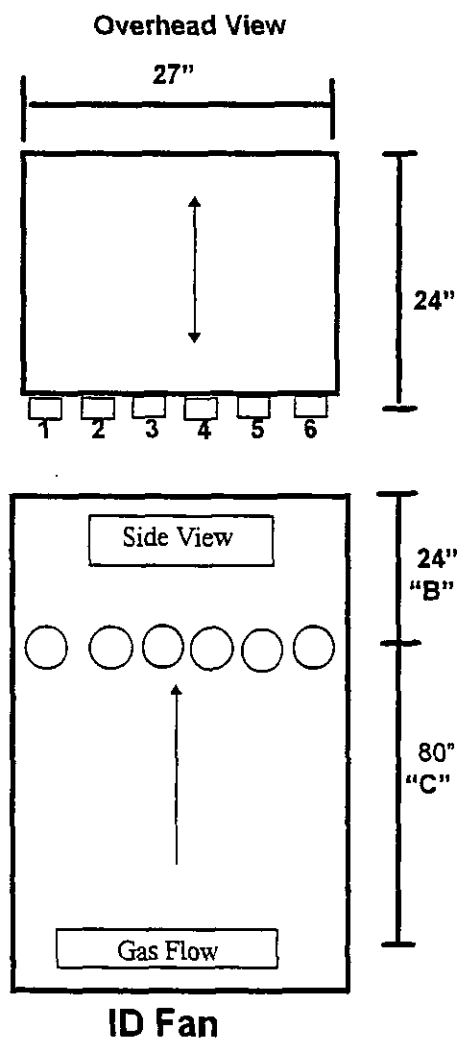
Number of Traverse Points: 25

Minimum Number of Traverse Points Required: 25

**SAMPLING POINT
NUMBER**

**DISTANCE FROM
STACK WALL (INCHES)**

1	2"
2	6"
3	10"
4	14"
5	18"
6	22"



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: No. 7 Rotary Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-16-00	6-16-00	6-16-00	
Time Began-Ended	1015-1128	1210-1317	1336-1442	
Sampling Time, Minutes	60.0	60.0	60.0	60.0
Stack Area, Square Feet	4.500	4.500	4.500	
Barometric Pressure, Inches of mercury	30.13	30.13	30.13	30.13
Stack Pressure, Inches of mercury	30.08	30.08	30.08	30.08
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.990	0.990	0.990	
Nozzle Diameter, Inches	0.175	0.176	0.176	
Meter Volume, Cubic feet	43.665	46.825	51.047	47.179
Meter Temperature, Degrees F	97.5	97.1	97.9	97.5
Avg. Orifice Delta P, Inches of Water	2.45	2.71	2.46	2.54
Volume H ₂ O Collected, MilliLiters	73.0	72.0	68.0	71.0
CO ₂ Concentration, Percent	0.0	0.0	0.0	0.0
O ₂ Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.550	1.647	1.545	1.58
Stack Temperature, Degrees F	155.8	157.4	157.0	156.8
Total particulate collected, grams	0.0328	0.0418	0.0392	0.0379

CALCULATED DATA

Standard Meter Volume, Cubic Feet	41.460	44.520	48.438	44.806
Standard Water Volume, Cubic Feet	3.436	3.389	3.201	3.342
Moisture Fraction	0.077	0.071	0.062	0.070
Molecular Weight Of Stack Gas	27.973	28.036	28.131	28.047
Density Of Stack Gas	0.0626	0.0626	0.0628	0.0627
Average Stack Gas Velocity, Feet/Second	95.083	101.215	94.758	97.019
Stack Gas Flow @ Stack Conditions, ACFM	25,672	27,328	25,585	26,195
Stack Gas Flow @ Standard Conditions, DSCFM	20,427	21,826	20,637	20,963
Isokinetic Sampling Rate, Percent	91.15	90.57	104.21	95.31
Particulate concentration @ Std. Cond., Grains/Cu.Ft.	0.0122	0.0145	0.0125	0.0130
Particulate emissions, lbs per hour	2.13	2.70	2.20	2.35

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: No. 7 Rotary Dryer

Date: 6/16/2000
 Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.77	0.8775	0.75	88	85	150
1-2	1.20	1.0954	1.18	89	87	152
1-3	1.20	1.0954	1.18	90	89	151
1-4	1.50	1.2247	1.47	92	90	153
1-5	1.60	1.2649	1.57	92	91	154
1-6	1.10	1.0488	1.08	94	92	156
2-1	1.30	1.1402	1.27	94	92	156
2-2	1.80	1.3416	1.76	95	93	148
2-3	2.70	1.6432	2.65	96	93	150
2-4	2.80	1.6733	2.74	97	93	150
2-5	2.90	1.7029	2.84	98	94	153
2-6	3.00	1.7321	2.94	98	96	155
3-1	3.20	1.7889	3.14	99	97	160
3-2	3.40	1.8439	3.33	101	100	158
3-3	3.50	1.8708	3.43	102	101	159
3-4	3.80	1.9494	3.72	102	100	158
3-5	3.80	1.9494	3.72	103	100	160
3-6	2.70	1.6432	2.65	102	101	159
4-1	2.40	1.5492	2.35	103	102	158
4-2	2.50	1.5811	2.45	104	102	160
4-3	2.70	1.6432	2.65	106	103	161
4-4	3.20	1.7889	3.14	106	104	160
4-5	3.40	1.8439	3.33	107	104	159
4-6	3.60	1.8974	3.53	107	105	160
	2.50	1.5496	2.45	98.54	97.48	155.83

Plant	Georgia Gulf			Moisture	Initial	Final	Total	Gas Analyses	Average
Site	Abbeville, Ne			Impinger #1	100	120	40	CO2	0
Date	6-16-60			Impinger #2	100	127	27	O2	20.1
Run	#1			Impinger #3	0	0	0	CO	19.7
Time	10:15			Impinger #4	0	0	0	N2	0
Meter #	E-10			Totals	871	944	73		
Probe	E-8.3			Stack Diameter	24" x 27"				
Cp Value	.98			Stack Pressure	-8.5				
Filter Weights	Filter #			Barometric Pressure	30.13				
	Final			Pre-test	0.175				
	Initial			Post-test	0.175				
	Net			Avg.	0.175				
Crucible #	F17			Pre-test	0.175				
Final	74.5752			Post-test	0.175				
Initial	74.5449								
Net	0.0303								
Vac	16"								
Vac	10"								
Total	43.665								

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	493.265	1.2	1.1	88	85	150	247	62	2
1 / 2	5.0	494.425	1.2	1.1	89	87	152	249	62	2
1 / 3	7.5	495.630	1.3	1.2	90	89	151	249	63	2
1 / 4	10.0	497.025	1.5	1.4	92	90	153	250	64	2
1 / 5	12.5	498.710	1.6	1.5	92	91	154	250	64	2
1 / 6	15.0	500.385	1.1	1.0	94	92	156	248	65	2
2 / 1	17.5	501.970	1.3	1.2	94	92	156	247	63	3
1 / 2	20.0	507.425	1.8	1.7	95	93	158	243	62	3
1 / 3	22.5	505.025	2.7	2.6	96	93	150	248	63	3
1 / 4	25.0	506.550	2.8	2.7	97	93	150	250	64	3
1 / 5	27.5	508.125	2.9	2.8	98	94	153	245	62	3
1 / 6	30.0	510.230	3.0	2.9	98	96	155	246	62	3
2 / 1	32.5	512.315	3.2	3.1	99	97	160	250	62	3
1 / 2	35.0	514.520	3.4	3.3	101	100	158	250	63	3
1 / 3	37.5	516.945	3.5	3.4	102	101	154	250	64	3
1 / 4	40.0	518.720	3.8	3.7	102	100	158	247	65	5
1 / 5	42.5	520.340	3.9	3.8	102	100	160	250	66	5
1 / 6	45.0	522.580	2.7	2.6	102	101	159	245	64	5
4 / 1	47.5	524.210	2.4	2.3	103	102	158	245	62	5
1 / 2	50.0	526.380	2.5	2.4	104	102	160	247	63	6
1 / 3	52.5	528.465	2.7	2.6	106	103	161	250	65	6
1 / 4	55.0	530.710	3.2	3.1	106	104	160	249	67	6
1 / 5	57.5	532.885	3.4	3.3	107	104	159	250	68	6
1 / 6	60.0	535.010	3.6	3.5	107	105	160	249	69	7

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: No. 7 Rotary Dryer

Date: 6/16/2000
Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.30	1.1402	1.27	85	82	150
1-2	1.40	1.1832	1.37	87	86	149
1-3	1.50	1.2247	1.47	89	87	152
1-4	2.70	1.6432	2.65	90	89	155
1-5	2.80	1.6733	2.74	92	90	160
1-6	3.10	1.7607	3.04	92	90	161
2-1	1.90	1.3784	1.86	94	92	160
2-2	2.10	1.4491	2.06	94	93	159
2-3	2.50	1.5811	2.45	96	94	157
2-4	2.60	1.6125	2.55	97	94	158
2-5	2.80	1.6733	2.74	98	95	155
2-6	3.00	1.7321	2.94	98	97	156
3-1	3.40	1.8439	3.33	101	98	160
3-2	3.50	1.8708	3.43	101	97	160
3-3	3.40	1.8439	3.33	102	99	157
3-4	3.50	1.8708	3.43	101	99	158
3-5	3.70	1.9235	3.63	102	100	160
3-6	3.70	1.9235	3.63	103	101	159
4-1	2.50	1.5811	2.45	103	101	158
4-2	2.70	1.6432	2.65	104	102	158
4-3	2.80	1.6733	2.74	106	104	159
4-4	3.00	1.7321	2.94	106	104	159
4-5	3.10	1.7607	3.04	108	105	157
4-6	3.30	1.8166	3.23	107	105	160
	2.76	1.6473	2.71	98.17	97.1	157.4

Plc Georgia Gulf
 Address Adrian, Ms
 Site Barry Drive No 7
 Date 6-16-80

Moisture	Initial	Final	Total	Gas Analyses	Average
Impinger #1	100	143	43	CO2	0
Impinger #2	100	118	18	O2	20.1
Impinger #3	0	0	0	CO	19.9
Impinger #4	677	678	11	N2	
Totals	877	939	72		

Run	Slack Diameter	Barometric Pressure	Leak Check	Probe Washings
# <u>2</u>	<u>2 1/2" x 27"</u>	<u>30.13</u>	Pre-test Volume @ <u>0.003</u>	Crucible # <u>F18</u>
Time <u>12:10</u>			Post-test Volume @ <u>0.003</u>	Final <u>74.164</u>
<u>12:17</u>				Initial <u>74.1349</u>
				Net <u>0.0357</u>

Meter #	Slack Pressure	Vac	Filter Weights
<u>E-10</u>	<u>87</u>	<u>11"</u>	Filter # <u>520</u>
			Final <u>3.7865</u>
			Initial <u>3.7805</u>
			Net <u>0.0065</u>

Meter	Cp Value	Meter Readings	Temperatures (°F)
<u>E-10</u>	<u>.98</u>	#2 <u>#3</u> <u>#4</u>	Outlet Inlet
			82 85
			86 87
			87 89
			89 90
			90 92
			92 92
			94 94
			96 97
			97 98
			98 98
			101 101
			101 102
			102 103
			103 103
			104 104
			106 106
			108 108
			109 109
			110 110

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	537.125	1.3	1.2	85	82	150	240	62	5
1 / 2	5.0	538.940	1.4	1.3	87	86	149	245	63	5
1 / 3	7.5	540.765	1.5	1.4	89	87	152	250	62	5
1 / 4	10.0	542.820	2.7	2.6	90	89	155	249	63	5
1 / 5	12.5	544.910	2.8	2.7	92	90	160	250	64	6
1 / 6	15.0	546.525	3.1	3.0	92	90	161	251	64	6
2 / 1	17.5	548.970	1.9	1.8	94	92	160	251	65	6
2 / 2	20.0	550.435	2.1	2.0	94	93	159	250	65	6
2 / 3	22.5	552.025	2.5	2.4	96	94	157	248	66	6.5
2 / 4	25.0	553.230	2.6	2.5	97	94	158	248	66	7
2 / 5	27.5	557.455	2.8	2.7	98	95	155	247	67	7
2 / 6	30.0	559.180	3.0	2.9	98	97	156	247	67	7
3 / 1	32.5	561.235	3.4	3.3	101	99	160	243	67	7
3 / 2	35.0	562.160	3.5	3.4	101	99	160	242	67	7
3 / 3	37.5	565.245	3.4	3.3	102	99	157	247	60	7
3 / 4	40.0	566.910	3.5	3.4	101	99	158	247	62	7
3 / 5	42.5	568.750	3.7	3.6	102	100	160	249	62	7
3 / 6	45.0	570.740	3.7	3.6	103	101	159	248	64	8
4 / 1	47.5	572.175	2.5	2.4	103	101	158	248	64	9
4 / 2	50.0	574.810	2.7	2.6	104	102	158	246	65	8
4 / 3	52.5	576.995	2.8	2.7	106	104	159	247	65	8
4 / 4	55.0	579.210	3.0	2.9	106	104	159	250	65	8
4 / 5	57.5	581.340	3.1	3.1	108	105	167	259	66	8
4 / 6	60.0	582.585	3.3	3.2	107	105	160	247	65	8

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: No. 7 Rotary Dryer

Date: 6/16/2000
Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	2.60	1.6125	2.55	85	83	145
1-2	2.80	1.6733	2.74	87	85	147
1-3	2.80	1.6733	2.74	88	86	150
1-4	3.40	1.8439	3.33	92	90	153
1-5	3.60	1.8974	3.53	92	91	155
1-6	2.90	1.7029	2.84	93	91	157
2-1	3.30	1.8166	3.23	93	91	158
2-2	3.40	1.8439	3.33	94	92	160
2-3	3.20	1.7889	3.14	96	95	161
2-4	3.60	1.8974	3.53	98	96	160
2-5	3.70	1.9235	3.63	98	97	160
2-6	3.70	1.9235	3.63	100	98	158
3-1	2.50	1.5811	2.45	101	99	160
3-2	2.10	1.4491	2.06	102	100	160
3-3	2.20	1.4832	2.16	102	100	158
3-4	2.30	1.5166	2.25	103	101	160
3-5	3.20	1.7889	3.14	104	102	158
3-6	3.30	1.8166	3.23	105	103	158
4-1	0.95	0.9747	0.93	106	103	160
4-2	0.90	0.9487	0.88	105	103	158
4-3	0.95	0.9747	0.93	106	104	158
4-4	0.98	0.9899	0.96	108	105	156
4-5	0.95	0.9747	0.93	108	105	160
4-6	0.98	0.9899	0.96	104	107	159
	2.51	1.5452	2.46	98.75	97.85	157.04

Plant	Georgia Gulf		Moisture	Impinger #1		Initial	Final	Totals	Gas Analyses		Average
Site	Abbeville, MS		Impinger #2	100		100	149	49	CO2		0
Impinger #3	0		Impinger #3	0		0	110	10	O2		19.7
Impinger #4	6.73		Impinger #4	6.73		6.73	6.73	6.73	CO		20
Totals	8.78		Totals	8.78		8.78	446	68	N2		
Date	6-16-00										
Run #	3		Slack Diameter	24" x 27"					Leak Check		Probe Washings
Time	12:30		Meter #	E-10					Pre-test		Crucible #
	14:42		Avg.	98					Volume @		Final
									Post-test		Initial
									Volume @		Net
									Vac		Final
									Vac		Initial
									Total		Net
									51.047		cu.ft.

Port / Point	Meter Reading	Time	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	584.025	2.5	2.6	2.5	85	83	145	240	62	5
1 / 2	586.510	5.0	2.8	2.7	87	85	147	243	63	5
1 / 3	588.336	7.5	2.8	2.7	88	86	150	247	64	5
1 / 4	590.350	10.0	3.4	3.3	92	90	153	250	64	5
1 / 5	592.480	12.5	3.6	3.5	92	91	155	250	64	5
1 / 6	595.590	15.0	2.9	2.8	93	91	157	247	65	7
2 / 1	597.435	17.5	3.3	3.2	93	91	158	245	65	7
1 / 2	600.165	20.0	3.4	3.4	94	92	160	250	62	7
1 / 3	602.765	22.5	3.2	3.1	96	95	161	248	63	7
1 / 4	605.335	25.0	3.6	3.5	98	96	160	247	62	7
1 / 5	607.415	27.5	3.7	3.6	98	97	160	250	62	7
1 / 6	610.510	30.0	3.7	3.6	100	98	158	249	63	7
3 / 1	612.630	32.5	2.5	2.4	101	99	160	250	62	7
1 / 2	614.690	35.0	2.1	2.0	102	100	160	248	64	7
1 / 3	616.630	37.5	2.2	2.1	102	100	158	249	65	7
1 / 4	618.815	40.0	2.3	2.2	103	101	160	250	65	7
1 / 5	620.735	42.5	3.2	3.1	104	102	158	249	65	7
1 / 6	622.870	45.0	3.3	3.2	104	103	158	250	65	7
4 / 1	625.270	47.5	9.5	9.3	106	103	160	250	66	7
1 / 2	627.525	50.0	9.0	8.8	105	103	158	248	66	7
1 / 3	628.910	52.5	9.5	9.3	106	104	158	246	64	7
1 / 4	630.320	55.0	9.8	9.6	108	105	156	245	65	7
1 / 5	632.535	57.5	9.5	9.3	108	105	160	247	67	7
1 / 6	634.740	60.0	9.8	9.6	109	107	159	250	68	7

Field Notes:

No. 8 Rotary Dryer

Field Data Sheets

No. 8 Rotary Dryers Sampling Port Information

Stack Diameter: 27" x 24"

Stack Area : 4.50 Square feet

Stack Height: Approx. 10 feet

Test Port Data:

- A. Diameter: 4 inches
- B. Upstream Disturbance (L/D): 0.91
- C. Downstream Disturbance (L/D): 3.14

Number of Traverse Points: 25

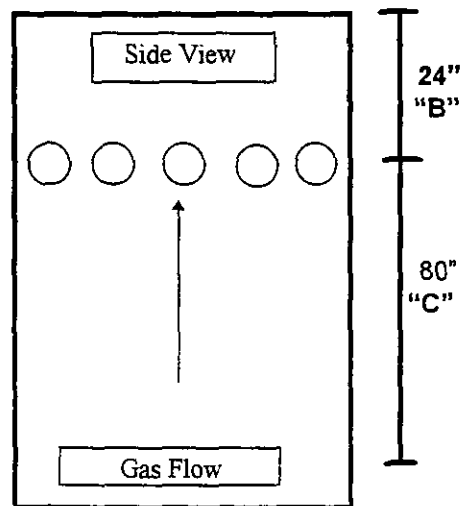
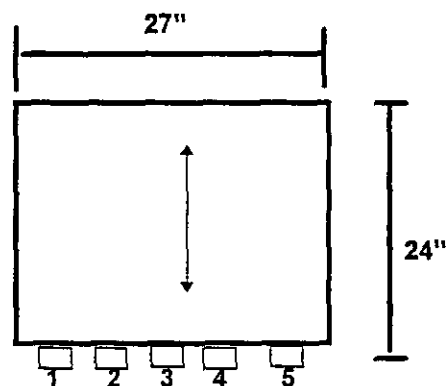
Minimum Number of Traverse Points Required: 25

**SAMPLING POINT
NUMBER**

**DISTANCE FROM
STACK WALL (INCHES)**

1	2.4"
2	7.2"
3	12.0"
4	16.8"
5	21.6"

Overhead View



ID Fan

ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

PARTICULATE EMISSIONS CALCULATIONS

Client: Georgia Gulf

Job No.: 20148

Source: No. 8 Rotary Dryer

Data Input By: L. Beane

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-15-00	6-16-00	6-16-00	
Time Began-Ended	1855-2005	0825-0930	1000-1103	
Sampling Time, Minutes	62.5	62.5	62.5	62.5
Stack Area, Square Feet	4.500	4.500	4.500	
Barometric Pressure, Inches of mercury	30.13	30.13	30.13	30.13
Stack Pressure, Inches of mercury	30.10	30.11	30.13	30.11
Pitot Tube Correction factor	0.84	0.84	0.84	
Meter Correction Factor	0.992	0.992	0.992	
Nozzle Diameter, Inches	0.175	0.175	0.175	
Meter Volume, Cubic feet	44.305	43.640	44.870	44.272
Meter Temperature, Degrees F	84.3	82.5	88.6	85.1
Avg. Orifice Delta P, Inches of Water	1.86	1.81	1.98	1.88
Volume H2O Collected, MilliLiters	37.0	33.0	45.0	38.3
CO2 Concentration, Percent	0.0	0.0	0.0	0.0
O2 Concentration, Percent	20.0	20.0	20.0	20.0
Avg. Sq. Rt. of Delta P, Inches of Water	1.401	1.380	1.449	1.41
Stack Temperature, Degrees F	168.8	160.1	169.0	166.0
Total particulate collected, grams	0.0095	0.0276	0.0167	0.0179

CALCULATED DATA

Standard Meter Volume, Cubic Feet	43.111	42.597	43.331	43.013
Standard Water Volume, Cubic Feet	1.742	1.553	2.118	1.804
Moisture Fraction	0.039	0.035	0.047	0.040
Molecular Weight Of Stack Gas	28.381	28.420	28.297	28.366
Density Of Stack Gas	0.0622	0.0632	0.0621	0.0625
Average Stack Gas Velocity, Feet/Second	86.215	84.345	89.386	86.649
Stack Gas Flow @ Stack Conditions, ACFM	23,278	22,773	24,134	23,395
Stack Gas Flow @ Standard Conditions, DSCFM	18,892	18,821	19,443	19,052
Isokinetic Sampling Rate, Percent	98.38	97.58	96.09	97.35
Particulate concentration @ Std.Cond., Grains/Cu.Ft.	0.0034	0.0100	0.0059	0.0064
Particulate emissions, lbs per hour	0.55	1.61	0.99	1.05

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: No. 8 Rotary Dryer

Date: 6/15/2000
 Run No.: 1

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (F)	Tm Out (F)	Ts (F)
1-1	1.50	1.2247	1.32	81	83	165
1-2	2.70	1.6432	2.38	81	84	166
1-3	3.20	1.7889	2.82	81	84	167
1-4	3.80	1.9494	3.34	81	84	168
1-5	3.80	1.9494	3.34	81	84	169
2-1	1.10	1.0488	0.97	82	85	168
2-2	2.20	1.4832	1.94	83	85	169
2-3	3.30	1.8166	2.90	85	85	169
2-4	3.10	1.7607	2.73	85	85	170
2-5	3.40	1.8439	2.99	85	85	170
3-1	0.80	0.8944	0.70	85	87	168
3-2	1.50	1.2247	1.32	85	86	169
3-3	2.50	1.5811	2.20	84	86	169
3-4	3.60	1.8974	3.17	84	86	170
3-5	2.00	1.4142	1.76	85	86	168
4-1	0.70	0.8367	0.62	85	86	168
4-2	1.10	1.0488	0.97	86	86	169
4-3	2.00	1.4142	1.76	85	85	170
4-4	2.70	1.6432	2.38	85	85	170
4-5	2.80	1.6733	2.46	86	85	170
5-1	0.50	0.7071	0.44	86	85	170
5-2	0.70	0.8367	0.62	83	84	170
5-3	0.80	0.8944	0.70	83	84	169
5-4	1.50	1.2247	1.32	83	84	170
5-5	1.50	1.2247	1.32	83	83	170
	2.11	1.4010	1.86	83.72	84.3	168.8

Georgia Gulf
Shawheen, Ms.
Site Rotary Packer #8
Date 6-15-00

Run #	Stack Diameter	Meter #	Time	Moisture Impinger #1	Moisture Impinger #2	Moisture Impinger #3	Moisture Impinger #4	Totals	Initial	Final	Gas Analyses	Leak Check	Probe Washings
1	24" x 27"	E-12	18:55	Impinger #1	Impinger #2	Impinger #3	Impinger #4	741	100	125	CO2 0	Pre-test Volume @ 0.004	Crucible # F3
2			20:05					941	100	103	O2 20.1	Post-test Volume @ 0.001	Final Initial Net
									0	0	CO 19.7		Final Initial Net
									0	0	N2 20.1		Final Initial Net
								37					Final Initial Net

Barometric Pressure		Stack Pressure		Meter Readings		Temperatures (°F)		Filter Weights	
Pre-test	Post-test	Pre-test	Post-test	#1	#2	#3	#4	Filter #	Final Initial Net
30.13	1.75	0.175	1.75	573.630				515	3.6835
-0.39	1.75	0.175	1.75	529.325				3.6819	0.0016
	1.75	0.175	1.75	44.305					

Nozzle Calibrations		Cp Value	
Pre-test	Post-test	Pre-test	Post-test
0.175	1.75	0.88	
0.175	1.75		
0.175	1.75		

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	2.5	530.340	1.50	1.32	81	83	165	242	68	4.0
1 / 2	5.0	532.025	2.7	2.32	81	84	166	245	68	4.0
1 / 3	7.5	534.275	3.2	2.82	81	84	167	246	68	4.0
1 / 4	10.0	536.680	3.8	3.34	81	84	168	248	68	5.0
1 / 5	12.5	539.150	3.8	3.34	81	84	169	247	68	5.0
2 / 1	15.0	540.550	1.1	.97	82	85	168	249	68	4.0
1 / 2	17.5	542.400	2.2	1.94	83	85	169	250	68	4.0
1 / 3	20.0	544.680	3.3	2.90	85	85	169	246	68	5.0
1 / 4	22.5	546.900	3.1	2.73	85	85	170	245	68	5.0
1 / 5	25.0	549.270	3.4	2.99	85	85	170	245	68	5.0
3 / 1	27.5	550.920	3.0	.70	85	87	168	244	68	3.0
1 / 2	30.0	552.495	1.50	1.32	85	86	169	246	68	4.0
1 / 3	32.5	554.660	2.50	2.20	84	86	169	249	68	5.0
1 / 4	35.0	557.010	3.60	3.10	84	86	170	248	68	5.0
1 / 5	37.5	558.500	2.00	1.76	85	86	168	250	68	4.0
4 / 1	40.0	559.950	1.70	.62	85	86	168	249	68	3.0
1 / 2	42.5	561.370	1.10	.97	86	86	169	248	69	3.0
1 / 3	45.0	563.200	2.00	1.76	85	85	170	250	68	4.0
1 / 4	47.5	565.310	2.70	2.34	85	85	170	245	68	4.0
1 / 5	50.0	567.440	2.30	2.46	86	85	170	246	68	5.0
5 / 1	52.5	568.480	.50	.44	86	85	170	245	68	3.0
1 / 2	55.0	569.375	.70	.62	83	84	170	251	68	3.0
1 / 3	57.5	570.920	.80	.70	83	84	169	248	68	3.0
1 / 4	60.0	572.050	1.50	1.32	83	84	170	249	68	4.0
5	62.5	573.630	1.50	1.32	85	83	170	249	68	4.0

Field Notes:

ENTEC Services, Inc.

25 Commerce Ave., Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
Source: No. 8 Rotary Dryer

Date: 6/16/2000
Run No.: 2

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	1.10	1.0488	0.97	79	83	148
1-2	1.30	1.1402	1.14	80	79	149
1-3	2.80	1.6733	2.46	80	79	155
1-4	3.60	1.8974	3.17	80	79	160
1-5	3.50	1.8708	3.08	82	80	162
2-1	1.10	1.0488	0.97	83	80	164
2-2	2.00	1.4142	1.76	85	80	16
2-3	1.20	1.0954	1.06	83	80	167
2-4	3.20	1.7889	2.82	84	80	168
2-5	3.50	1.8708	3.08	84	80	169
3-1	0.80	0.8944	0.70	84	80	169
3-2	1.50	1.2247	1.32	84	81	169
3-3	2.20	1.4832	1.94	84	81	169
3-4	3.50	1.8708	3.08	85	82	170
3-5	3.20	1.7889	2.82	86	82	170
4-1	0.50	0.7071	0.44	85	82	170
4-2	1.00	1.0000	0.88	85	82	170
4-3	2.00	1.4142	1.76	85	82	170
4-4	2.80	1.6733	2.46	85	82	169
4-5	3.00	1.7321	2.64	85	83	170
5-1	0.50	0.7071	0.44	85	83	170
5-2	0.45	0.6708	0.40	85	83	170
5-3	1.50	1.2247	1.32	85	83	169
5-4	2.50	1.5811	2.20	86	83	170
5-5	2.80	1.6733	2.46	86	83	169
	2.06	1.3798	1.81	83.80	82.5	160.1

Plate Georgia Gulf Aberdeen, MS Site W. Gary Orger #2 Date 6-16-00	Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals	Initial 100 100 0 750 950	Final 120 100 0 763 983	Total 20 0 0 13 33	Gas Analyses CO2 O2 CO N2	0 20.0 20.3 20.2	Average 0 20 20
Run # 2	Stack Diameter 14" x 27"	Nozzle Calibrations Pre-test 1.75 1.75 1.75 1.75	Post-test 1.75 1.75 1.75 1.75	Barometric Pressure 30.13	Leak Check Pre-test Volume @ 0.000	Probe Washings Crucible # Final 76.0754 Initial 76.0537 Net 0.0206	F14
Time 8:26 9:30	Meter # E-12	Avg. 1.75	Stack Pressure -0.34	Meter Readings #2 #3 #4	Vacuum 15" 10"	Filter Weights Filter # Final 516 Initial 3.6558 Net 3.6490 0.0068	cu.ft.

Port / Point 1 / 1 1 / 2 1 / 3 1 / 4 1 / 5 2 / 1 2 / 2 2 / 3 2 / 4 2 / 5 3 / 1 3 / 2 3 / 3 3 / 4 3 / 5 4 / 1 4 / 2 4 / 3 4 / 4 4 / 5 5 / 1 5 / 2 5 / 3 5 / 4 5 / 5	Time 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0 22.5 25.0 27.5 30.0 32.5 35.0 37.5 40.0 42.5 45.0 47.5 50.0 52.5 55.0 57.5 60.0 62.5	Meter Reading 574.950 576.520 578.600 580.960 583.280 584.820 586.490 587.930 590.065 592.320 593.745 595.055 596.845 599.170 601.415 602.345 603.665 605.350 607.400 609.915 610.895 611.740 613.325 615.310 617.455	$k = 0.83$ Δp 1.1 1.3 2.2 3.6 3.5 1.1 2.0 1.2 3.2 3.5 1.40 1.50 2.20 3.50 3.2 .50 1.00 2.00 2.8 3.0 .50 .45 1.50 2.50 2.8	Inlet 79 80 80 80 82 83 85 83 84 84 84 84 84 85 85 86 85 85 85 85 85 85 86 86	Outlet 83 79 79 79 80 80 80 80 80 80 80 81 81 82 82 82 82 82 82 82 82 83 83 83 83 83	Stack 148 149 155 160 162 164 166 167 168 169 169 169 169 170 170 169 170 170 169 170 170 169 170 169	Impinger 68 66 66 66 68	Vacuum 3.0 3.0 4.0 4.0 5.0 3.0 3.0 3.0 4.0 3.0 3.0 4.0 4.0 4.0 5.0 3.0 3.0 5.0 4.0 3.0 3.0 3.0 4.0 5.0
Field Notes:								

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf
 Source: No. 8 Rotary Dryer

Date: 6/16/2000
 Run No.: 3

PARTICULATE FIELD DATA, METHOD 5

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.58	0.7616	0.51	84	84	165
1-2	0.90	0.9487	0.79	85	84	165
1-3	1.50	1.2247	1.32	86	85	166
1-4	2.70	1.6432	2.38	86	85	167
1-5	2.70	1.6432	2.38	86	86	168
2-1	0.70	0.8367	0.62	86	86	169
2-2	1.00	1.0000	0.88	87	86	170
2-3	2.00	1.4142	1.76	88	87	170
2-4	3.10	1.7607	2.73	90	87	170
2-5	3.10	1.7607	2.73	91	87	169
3-1	0.80	0.8944	0.70	87	88	169
3-2	1.10	1.0488	0.97	88	88	170
3-3	2.20	1.4832	1.94	90	88	170
3-4	3.10	1.7607	2.73	90	88	170
3-5	3.50	1.8708	3.08	91	88	170
4-1	1.10	1.0488	0.97	90	87	168
4-2	1.10	1.0488	0.97	90	87	169
4-3	3.00	1.7321	2.64	91	89	170
4-4	3.50	1.8708	3.08	92	89	170
4-5	3.80	1.9494	3.34	93	90	170
5-1	3.80	1.9494	3.34	94	90	170
5-2	2.20	1.4832	1.94	94	90	170
5-3	2.70	1.6432	2.38	94	90	170
5-4	2.50	1.5811	2.20	94	90	170
5-5	3.50	1.8708	3.08	94	90	170
	2.25	1.4492	1.98	89.64	88.6	169.0

Place	Georgia Gulf		Moisture	Initial	Final	Totals	Gas Analyses	Average
Site	Pineblow, MS		Impinger #1	100	125	225	CO2	0
Site	Pottery, Nyer #8		Impinger #2	100	105	205	O2	20.1
Date	6-16-00		Impinger #3	0	0	0	CO	
			Impinger #4	76.3	775	851	N2	
			Totals	903	1005	1908		

Run #	3	Stack Diameter	24" x 27"	Nozzle Calibrations	Pre-test	Post-test	Barometric Pressure
Time	10:00	Meter #	E-12	Pre-test	1.75	1.75	30.13
	11:03			Post-test	1.75	1.75	
		Cp Value	.88	Stack Pressure	-0.31		
		Probe	E-8-3	Meter Readings	#2	#3	
				Final	662.870		
				Initial	618.000		
				Net	44.870		

Leak Check	Pre-test	Volume @	0.003	Vac	16"
	Post-test	Volume @	0.001	Vac	10"
Probe Washings	Crucible #	Final	75.2524		
	Initial	Initial	75.2408		
	Net	Net	0.0116		
Filter Weights	Filter #	Final	519		
	Initial	Initial	3.5837		
	Net	Net	3.5790		
		Total	0.0049		
		cu.ft.	44.870		

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1	1	619.000	.53	.51	84	84	165	250	68	2.0
1	2	620.125	.90	.79	85	84	165	249	68	3.0
1	3	621.575	1.50	1.32	86	85	166	250	68	3.0
1	4	623.355	2.7	2.38	86	85	167	249	68	4.0
1	5	625.175	2.7	2.38	86	86	167	250	68	4.0
2	1	626.245	.70	.62	86	86	167	249	68	3.0
2	2	627.540	1.0	.88	87	86	170	248	68	3.0
2	3	629.250	2.0	1.76	88	87	170	243	68	4.0
2	4	631.400	3.1	2.73	90	87	170	244	68	4.0
2	5	633.630	3.1	2.73	91	87	169	247	68	5.0
3	1	634.890	.80	.70	87	88	169	248	68	5.0
3	2	636.225	1.1	.97	88	88	170	250	68	4.0
3	3	638.000	2.2	1.94	90	88	170	246	68	4.0
3	4	640.270	3.1	2.73	90	88	170	245	68	5.0
3	5	642.585	3.5	3.08	91	88	170	245	68	5.0
4	1	643.950	1.1	.97	90	87	168	243	68	3.0
4	2	645.320	1.1	.97	90	87	169	246	68	3.0
4	3	647.350	3.0	2.64	91	84	170	245	68	5.0
4	4	649.755	3.5	3.08	92	87	170	244	68	5.0
4	5	652.325	3.8	3.34	93	90	170	248	68	6.0
5	1	654.620	3.8	3.34	94	90	170	248	68	6.0
5	2	656.650	2.2	1.94	94	90	170	244	68	4.0
5	3	658.565	2.7	2.38	94	90	170	246	68	5.0
5	4	660.615	2.5	2.2	94	90	170	241	68	5.0
5	5	662.870	3.5	3.08	94	90	170	250	68	5.0

Field Notes:

No. 3 Boiler

Field Test Data

No. 3 Boiler Sampling Port Information

Stack Diameter: 39 diameter

Stack Area : 8.296 Square feet

Stack Height: Approx. 20 feet

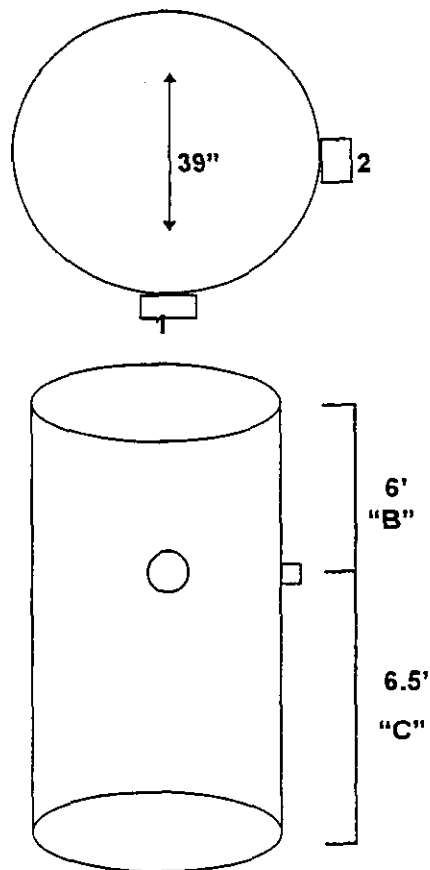
Test Port Data:

- A. Diameter: 1/2 inches
- B. Upstream Disturbance (L/D): 1.85
- C. Downstream Disturbance (L/D): 2.0

Number of Traverse Points: 12

Minimum Number of Traverse Points Required: 12

SAMPLING POINT NUMBER	DISTANCE FROM STACK WALL (INCHES)
1	0.82
2	2.61
3	4.60
4	6.90
5	9.75
6	13.88
7	25.12
8	29.25
9	32.10
10	34.30
11	36.39
12	38.18



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

POLLUTANT GAS EMISSIONS CALCULATIONS

Client: Georgia Gulf - Aberdeen, Mississippi Job No.: 20148

Source: No. 3 Boiler Data Input By: G. Corley

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-29-00	6-29-00	6-29-00	
Time Began-Ended	1734-1834	1842-1942	1957-2057	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	8.296	8.296	8.296	
Barometric Pressure, Inches of mercury	30.04	30.04	30.04	30.04
Stack Pressure, Inches of mercury	30.02	30.02	30.02	30.02
Pitot Tube Correction factor	1.00	1.00	1.00	
Meter Correction Factor	0.996	0.996	0.996	
Meter Volume, Cubic feet	22.560	21.440	21.650	21.883
Meter Temperature, Degrees F	87.8	90.0	88.9	88.9
Avg. Orifice Velocity Head, Inches of Water	2.00	2.00	2.00	2.00
Volume H2O Collected, MilliLiters	41.0	36.0	40.0	39.00
CO2 Concentration, Percent	3.28	3.31	3.30	3.30
O2 Concentration, Percent	14.19	14.21	14.28	14.23
Avg. Sq. Rt. of Velocity Head, Inches of Water	0.1268	0.1199	0.1354	0.13
Stack Temperature, Degrees F	205.2	204.9	205.8	205.29
Carbon Monoxide, ppm	5.01	6.67	5.54	5.74
Oxides of Nitrogen, ppm	19.43	19.71	19.89	19.68

CALCULATED DATA

Standard Meter Volume, Cubic Feet	21.842	20.675	20.919	21.145
Standard Water Volume, Cubic Feet	1.930	1.695	1.883	1.836
Moisture Fraction	0.081	0.076	0.083	0.080
Molecular Weight Of Stack Gas	28.192	28.257	28.183	28.211
Density Of Stack Gas	0.0583	0.0584	0.0582	0.058
Average Stack Gas Velocity, Feet/Second	9.611	9.076	10.270	9.652
Stack Gas Flow @ Stack Conditions, ACFM	4,784	4,517	5,112	4,804
Stack Gas Flow @ Standard Conditions, DSCFM	3,499	3,325	3,730	3,518
Carbon Monoxide Emissions, lbs per hour	0.08	0.10	0.09	0.0878
Nitrogen Oxide Emissions, lbs per hour	0.49	0.47	0.53	0.496

No. 3 Boiler

Test No. 1

Field Test Data

Georgia Gulf Corporation

Aberdeen, Mississippi

June 29, 2000

No. 3 Boiler

Test No. 1

<u>Time</u>	<u>Carbon Dioxide</u>	<u>Carbon Monoxide</u>	<u>Oxygen</u>	<u>Nitrogen Oxide</u>
17:34:19	3.26	3.45	14.01	18.94
17:35:19	3.26	2.35	14.03	18.91
17:36:19	3.23	9.87	14.03	18.94
17:37:19	3.23	4.36	14.04	19.13
17:38:19	3.23	4.09	14.04	19.13
17:39:19	3.24	5.47	14.03	19.1
17:40:19	3.23	6.41	14.04	19.1
17:41:19	3.23	5.58	14.05	19.13
17:42:19	3.23	4.41	14.03	19.13
17:43:19	3.24	3.21	14.01	19.13
17:44:19	3.25	0	14.03	19.28
17:45:19	3.25	0	14.02	19.28
17:46:19	3.26	0	14.01	19.13
17:47:19	3.26	0	14.03	19.1
17:48:19	3.23	0	14.05	19.13
17:49:19	3.24	0	14.03	19.13
17:50:19	3.23	1.7	14.05	19.13
17:51:19	3.23	1.58	14.05	19.13
17:52:19	3.22	7.16	14.08	19.1
17:53:19	3.23	6.23	14.05	19.13
17:54:19	3.25	5.88	14.04	19.13
17:55:19	3.24	5.06	14.03	19.28
17:56:19	3.25	4.43	14.01	19.31
17:57:19	3.25	4.66	14.02	19.28
17:58:19	3.24	4.62	14.03	19.28
17:59:19	3.25	4.92	13.99	19.28
18:00:19	3.25	3.3	14	19.46
18:01:19	3.27	4.69	13.98	19.31
18:02:19	3.28	4.21	14	19.46
18:03:19	3.29	4.53	13.97	19.49
18:04:19	3.3	4.66	13.94	19.28
18:05:19	3.29	2.75	13.99	19.31
18:06:19	3.29	1.98	13.98	19.46
18:07:19	3.29	0.35	13.98	19.49
18:08:19	3.29	0.29	13.97	19.46
18:09:19	3.28	1.43	13.97	19.49
18:10:19	3.3	3.88	13.97	19.46
18:11:19	3.3	3.94	13.96	19.64
18:12:19	3.28	4.16	13.97	19.64
18:13:19	3.29	4.29	13.98	19.46
18:14:19	3.29	5.41	13.97	19.46
18:15:19	3.31	2.19	13.98	19.46
18:16:19	3.3	6.86	13.94	19.46
18:17:19	3.31	4.3	13.98	19.46
18:18:19	3.29	13.96	13.99	19.46
18:19:19	3.28	14.59	13.98	19.64
18:20:19	3.29	7.76	14	19.67
18:21:19	3.29	11.2	13.98	19.61
18:22:19	3.27	11.72	13.99	19.67
18:23:19	3.28	8.31	13.99	19.64
18:24:19	3.29	9.24	14.01	19.64
18:25:19	3.28	8.93	14.01	19.64
18:26:19	3.28	12.49	14.01	19.46
18:27:19	3.28	5.45	14.02	19.46
18:28:19	3.26	5.12	14.03	19.46
18:29:19	3.25	4.65	14.03	19.46
18:30:19	3.25	5.13	14.02	19.46
18:31:19	3.26	7.65	13.98	19.49
18:32:19	3.28	8.98	13.97	19.46
18:33:19	3.27	7.32	14.01	19.46
18:34:19	3.26	5.56	14.03	19.49
Average	3.26	5.03	14.01	19.35

ENTEC Services, Inc.

25 Commerce Ave. Suite 104 Hueytown, Alabama 35023

Client: Georgia Gulf - Aberdeen, Mississippi

Date: 6-29-00

Source: No. 3 Boiler

Run No.: 1

VOLUMETRIC FLOW FIELD DATA, METHOD 1-4

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.02	0.1414	2.00	87	85	204
1-2	0.02	0.1414	2.00	89	85	206
1-3	0.01	0.1000	2.00	91	86	207
1-4	0.02	0.1414	2.00	91	86	208
1-5	0.01	0.1000	2.00	92	86	208
1-6	0.02	0.1414	2.00			208
1-7	0.02	0.1414	2.00			207
1-8	0.01	0.1000	2.00			206
1-9	0.01	0.1000	2.00			204
1-10	0.01	0.1000	2.00			206
1-11	0.01	0.1000	2.00			206
1-12	0.01	0.1000	2.00			206
2-1	0.01	0.1000	2.00			200
2-2	0.01	0.1000	2.00			203
2-3	0.02	0.1414	2.00			204
2-4	0.02	0.1414	2.00			204
2-5	0.03	0.1732	2.00			204
2-6	0.03	0.1732	2.00			204
2-7	0.02	0.1414	2.00			205
2-8	0.02	0.1414	2.00			205
2-9	0.02	0.1414	2.00			206
2-10	0.02	0.1414	2.00			206
2-11	0.01	0.1000	2.00			204
2-12	0.02	0.1414	2.00			204
AVERAGE		0.1268	2.00		87.8	205.2

Gas Analyses

CO2
O2
CO
N2

Moisture

Impinger #1
Impinger #2
Impinger #3
Impinger #4
Totals

Georgia Gulf
Abbeville, MS.
Site
No. 3 Boiler
Date 6-29-00

Run #1
Stack Diameter 39"

Leak Check

Pre-test Volume @ 0.000
Post-test Volume @ 0.002

Barometric Pressure 30.04
Stack Pressure -0.24 = 30.02

Nozzle Calibrations
Pre-test
Post-test

Time 1734
1834

Meter # 13-14
Probe STP-05

Cp Value 1.00

Probe Washings

Crucible #
Final
Initial
Net

Meter Readings
#1 #2 #3 #4

Final Initial Net

Filter Weights
Filter #
Final
Initial
Net

Total cu.ft.

Temperatures (°F)

Outlet

Inlet

Δh

Δp

Meter Reading

Time

Port / Point

Stack

Oven

Impinger

Vacuum

201
206
207
208
209
208
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Field Notes:

No. 3 Boiler

Test No. 2

Field Test Data

Georgia Gulf Corporation

Aberdeen, Mississippi

June 29, 2000

No. 3 Boiler

Test No. 2

<u>Time</u>	<u>Carbon Dioxide</u>	<u>Carbon Monoxide</u>	<u>Oxygen</u>	<u>Nitrogen Oxide</u>
18:42:19	3.28	6.99	13.99	19.64
18:43:19	3.28	6.99	13.97	19.64
18:44:19	3.29	6.14	13.97	19.61
18:45:19	3.28	5.93	13.97	19.64
18:46:19	3.28	13.06	13.98	19.83
18:47:19	3.28	15.6	13.97	19.83
18:48:19	3.28	6.5	13.98	19.64
18:49:19	3.27	7.73	14	19.83
18:50:19	3.27	6.8	13.98	19.64
18:51:19	3.28	5.97	13.99	19.64
18:52:19	3.3	6.77	13.98	19.64
18:53:19	3.28	6.75	14.01	19.64
18:54:19	3.26	7.12	14.01	19.64
18:55:19	3.25	7.78	14.03	19.46
18:56:19	3.24	7.54	14.03	19.46
18:57:19	3.26	6.51	14.02	19.46
18:58:19	3.28	6.79	13.97	19.49
18:59:19	3.29	6.75	13.97	19.46
19:00:19	3.28	6.95	13.97	19.49
19:01:19	3.28	6.85	13.96	19.46
19:02:19	3.29	7.45	13.97	19.49
19:03:19	3.29	6.56	13.98	19.49
19:04:19	3.27	0	14	19.31
19:05:19	3.26	6.23	14.02	19.31
19:06:19	3.25	5.7	14.03	19.49
19:07:19	3.24	6.82	14.03	19.46
19:08:19	3.24	6.46	14.05	19.46
19:09:19	3.23	6.39	14.05	19.49
19:10:19	3.25	7.27	14.04	19.49
19:11:19	3.25	6.76	14.03	19.46
19:12:19	3.25	7.49	14.03	19.67
19:13:19	3.26	7.84	14.08	19.64
19:14:19	3.26	6.93	14.02	19.67
19:15:19	3.26	7.13	14.03	19.64
19:16:19	3.26	7.24	14.03	19.64
19:17:19	3.28	7	13.99	19.49
19:18:19	3.29	7.88	13.97	19.64
19:19:19	3.29	8.08	14	19.67
19:20:19	3.27	5.3	14.02	19.64
19:21:19	3.28	6.27	14	19.67
19:22:19	3.28	6.39	13.98	19.49
19:23:19	3.27	0.39	14.03	19.64
19:24:19	3.27	12.23	14	19.64
19:25:19	3.27	6.97	14	19.61
19:26:19	3.29	6.8	13.99	19.64
19:27:19	3.28	7.67	14	19.64
19:28:19	3.29	0.64	14.01	19.64
19:29:19	3.28	4.88	14.01	19.49
19:30:19	3.27	6.92	14.01	19.49
19:31:19	3.26	7.72	14.04	19.46
19:32:19	3.26	8.05	14.04	19.46
19:33:19	3.26	7.59	14.03	19.49
19:34:19	3.26	11.35	14.02	19.49
19:35:19	3.27	4.79	14.01	19.64
19:36:19	3.26	0.11	14	19.64
19:37:19	3.27	2.93	14.01	19.64
19:38:19	3.28	6.04	13.99	19.64
19:39:19	3.29	5.34	13.97	19.83
19:40:19	3.31	6.65	13.99	19.86
19:41:19	3.29	2.43	13.97	19.83
19:42:19	3.3	5.71	13.98	19.64
Average	3.27	6.62	14.00	19.59

ENTEC Services, Inc.

25 Commerce Ave. Suite 104 Hueytown, Alabama 35023

Client: Georgia Gulf - Aberdeen, Mississippi

Date: 6-29-00

Source: No. 3 Boiler

Run No.: 2

VOLUMETRIC FLOW FIELD DATA, METHOD 1-4

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.01	0.1000	2.00	91	87	200
1-2	0.02	0.1414	2.00	92	87	204
1-3	0.02	0.1414	2.00	93	88	204
1-4	0.02	0.1414	2.00	93	88	206
1-5	0.01	0.1000	2.00	93	88	207
1-6	0.01	0.1000	2.00			207
1-7	0.01	0.1000	2.00			207
1-8	0.01	0.1000	2.00			207
1-9	0.01	0.1000	2.00			207
1-10	0.01	0.1000	2.00			206
1-11	0.01	0.1000	2.00			206
1-12	0.01	0.1000	2.00			206
2-1	0.01	0.1000	2.00			198
2-2	0.02	0.1414	2.00			201
2-3	0.02	0.1414	2.00			201
2-4	0.02	0.1414	2.00			204
2-5	0.01	0.1000	2.00			205
2-6	0.01	0.1000	2.00			205
2-7	0.03	0.1732	2.00			205
2-8	0.03	0.1732	2.00			206
2-9	0.01	0.1000	2.00			206
2-10	0.02	0.1414	2.00			206
2-11	0.02	0.1414	2.00			207
2-12	0.01	0.1000	2.00			207
AVERAGE		0.1199	2.00		90.0	204.9

Georgia Gulf
Aberdeen, MS.
 Site
No. 3 Boiler
 Date 6-29-02

Molsture
 Impinger #1
 Impinger #2
 Impinger #3
 Impinger #4
 Totals

Initial 100
 100
 0
154

Final 130
 104
 0
156

Gas Analyses
 CO2
 O2
 CO
 N2

Leak Check
 Pre-test
 Volume @
0.000
 Post-test
 Volume @
0.000

Crucible #
 Final
 Initial
 Net

Vac
15"
 Vac
5"

Probe Washings
 Crucible #
 Final
 Initial
 Net

Filter Weights
 Filter #
 Final
 Initial
 Net
 cu.ft.

Barometric Pressure
30.04
 Slack Pressure
-0.23 = 30.02

Meter Readings
 #1
818.215
 #2
856.835
 #3
21.440

Nozzle Calibrations
 Pre-test
 Post-test

Slack Diameter
39"
 Meter #
E-14
 Avg.
1.00

Run
 # 2
 Time
1842
1942
 Probe
STP-05
 Cp Value
1.00

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	5	NA	.01	2.0	91	87	200	NA	263	4.5
1 / 2	10	J	.02	J	92	87	204	J	J	J
1 / 3	15	J	.02	J	93	88	204	J	J	J
1 / 4	20	J	.02	J	93	88	206	J	J	J
1 / 5	25	J	.01	J	93	87	207	J	J	J
1 / 6			.01	J			207	J	J	J
1 / 7			.01	J			207	J	J	J
1 / 8			.01	J			207	J	J	J
1 / 9			.01	J			207	J	J	J
1 / 10			.01	J			206	J	J	J
1 / 11			.01	J			206	J	J	J
2 / 1			.01	J			204	J	J	J
2 / 2			.02	J			198	J	J	J
2 / 3			.02	J			201	J	J	J
2 / 4			.02	J			204	J	J	J
2 / 5			.01	J			205	J	J	J
2 / 6			.01	J			205	J	J	J
2 / 7			.03	J			205	J	J	J
2 / 8			.03	J			206	J	J	J
2 / 9			.01	J			206	J	J	J
2 / 10			.02	J			206	J	J	J
2 / 11			.02	J			207	J	J	J
2 / 12			.01	J			207	J	J	J

Field Notes:

No. 3 Boiler

Test No. 3

Field Test Data

Georgia Gulf Corporation

Aberdeen, Mississippi

June 29, 2000

No. 3 Boiler

Test No. 3

<u>Time</u>	<u>Carbon Dioxide</u>	<u>Carbon Monoxide</u>	<u>Oxygen</u>	<u>Nitrogen Oxide</u>
19:57:19	3.29	4.62	13.97	19.83
19:58:19	3.27	4.92	14	19.86
19:59:19	3.3	3.3	13.98	19.86
20:00:19	3.29	4.69	13.97	19.64
20:01:19	3.31	4.21	13.94	19.61
20:02:19	3.29	4.53	13.99	19.86
20:03:19	3.3	4.66	13.97	19.86
20:04:19	3.27	2.75	13.98	19.83
20:05:19	3.3	1.98	13.98	19.83
20:06:19	3.29	0	13.98	19.86
20:07:19	3.28	0.29	14.01	19.83
20:08:19	3.28	1.43	14.03	19.83
20:09:19	3.23	3.88	14.05	19.83
20:10:19	3.27	3.94	14.03	19.67
20:11:19	3.25	4.16	14.03	19.64
20:12:19	3.27	4.29	14.02	19.67
20:13:19	3.28	5.97	13.98	19.64
20:14:19	3.28	6.77	14.01	19.67
20:15:19	3.27	6.75	14.02	19.67
20:16:19	3.27	7.12	14	19.64
20:17:19	3.27	7.78	14.03	19.67
20:18:19	3.27	7.54	14.01	19.83
20:19:19	3.27	6.51	14.02	19.83
20:20:19	3.27	6.79	14	19.64
20:21:19	3.29	6.75	14	19.64
20:22:19	3.28	6.95	14.01	19.83
20:23:19	3.28	6.85	13.99	19.86
20:24:19	3.29	7.45	14	19.86
20:25:19	3.27	6.56	14.03	19.83
20:26:19	3.25	0	14.05	19.67
20:27:19	3.29	6.23	14	19.67
20:28:19	3.28	5.7	14	19.67
20:29:19	3.28	6.82	14	19.64
20:30:19	3.27	6.46	14.02	19.64
20:31:19	3.28	6.39	14.02	19.67
20:32:19	3.29	7.27	14	19.64
20:33:19	3.29	6.76	13.99	19.67
20:34:19	3.28	7.49	14	19.64
20:35:19	3.28	7.84	14.03	19.67
20:36:19	3.28	6.93	13.98	19.67
20:37:19	3.29	7.13	14.01	19.83
20:38:19	3.28	7.24	14	19.86
20:39:19	3.28	7	13.99	19.83
20:40:19	3.3	7.88	13.97	19.83
20:41:19	3.29	8.08	13.98	19.83
20:42:19	3.3	5.3	14	19.83
20:43:19	3.29	6.27	14	19.86
20:44:19	3.29	6.39	14	19.83
20:45:19	3.3	0.39	14.01	19.83
20:46:19	3.27	3.23	14.04	19.86
20:47:19	3.26	6.97	14.03	19.67
20:48:19	3.28	6.8	14.03	19.64
20:49:19	3.25	7.67	14.06	19.67
20:50:19	3.24	0.64	14.08	19.67
20:51:19	3.25	4.88	14.05	19.67
20:52:19	3.25	6.92	14.04	19.64
20:53:19	3.26	7.72	14.06	19.64
20:54:19	3.23	8.05	14.06	19.64
20:55:19	3.26	7.59	14.03	19.86
20:56:19	3.27	6.24	14.03	19.86
20:57:19	3.27	4.52	14.02	19.83
Average	3.28	5.54	14.01	19.75

ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf - Aberdeen, Mississippi

Date: 6-29-00

Source: No. 3 Boiler

Run No.: 3

VOLUMETRIC FLOW FIELD DATA, METHOD 1-4

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.01	0.1000	2.00	88	86	205
1-2	0.01	0.1000	2.00	90	87	205
1-3	0.02	0.1414	2.00	91	87	205
1-4	0.02	0.1414	2.00	93	87	205
1-5	0.02	0.1414	2.00	93	87	205
1-6	0.02	0.1414	2.00			206
1-7	0.03	0.1732	2.00			206
1-8	0.03	0.1732	2.00			207
1-9	0.02	0.1414	2.00			207
1-10	0.02	0.1414	2.00			207
1-11	0.02	0.1414	2.00			207
1-12	0.01	0.1000	2.00			207
2-1	0.01	0.1000	2.00			199
2-2	0.01	0.1000	2.00			204
2-3	0.01	0.1000	2.00			206
2-4	0.03	0.1732	2.00			206
2-5	0.02	0.1414	2.00			206
2-6	0.02	0.1414	2.00			207
2-7	0.02	0.1414	2.00			207
2-8	0.01	0.1000	2.00			206
2-9	0.01	0.1000	2.00			206
2-10	0.01	0.1000	2.00			207
2-11	0.01	0.1000	2.00			206
2-12	0.10	0.3162	2.00			206
AVERAGE		0.1354	2.00		88.9	205.8

[illegible]

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Temperatures (°F)	Oven	Impinger	Vacuum
1 / 1	5	NA	.01	2.0	88	86	205	NA	22.68	4.0
1 / 2	10		.01	↓	90	87	205	↓		
1 / 3	15		.02		91	87	205			
1 / 4	20		.02		93	87	205			
1 / 5	25		.02		93	87	205			
1 / 6			.02				206			
1 / 7			.03				206			
1 / 8			.03				207			
1 / 9			.02				207			
1 / 10			.02				207			
1 / 11			.02				207			
1 / 12			.01				207			
2 / 1			.01				199			
2 / 2			.01				204			
2 / 3			.01				206			
2 / 4			.03				206			
2 / 5			.02				206			
2 / 6			.02				207			
2 / 7			.02				207			
2 / 8			.01				206			
2 / 9			.01				206			
2 / 10			.01				207			
2 / 11			.01				206			
2 / 12			.01				206			

Field Notes:

No. 4 Boiler

Field Test Data

No. 4 Boiler Sampling Port Information

Stack Diameter: 36 diameter

Stack Area : 7.069 Square feet

Stack Height: Approx. 20 feet

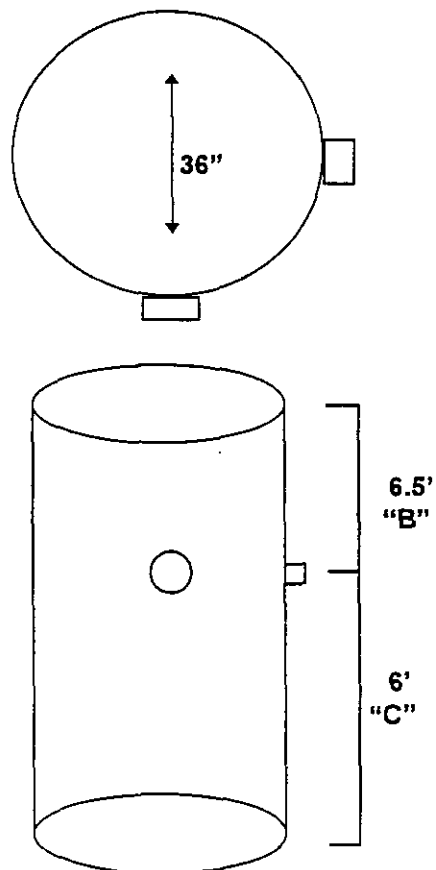
Test Port Data:

- A. Diameter: 1/2 inches
- B. Upstream Disturbance (L/D): 2.16
- C. Downstream Disturbance (L/D): 2.0

Number of Traverse Points: 12

Minimum Number of Traverse Points Required: 12

SAMPLING POINT NUMBER	DISTANCE FROM STACK WALL (INCHES)
1	0.76
2	2.41
3	4.25
4	6.37
5	9.00
6	12.82
7	23.18
8	27.00
9	29.63
10	31.75
11	33.59
12	35.24



ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

POLLUTANT GAS EMISSIONS CALCULATIONS

Client: Georgia Gulf - Aberdeen, Mississippi

Job No.: 20148

Source: No. 4 Boiler

Data Input By: G. Corley

INPUT DATA

Run Number	1	2	3	AVERAGE
Date	6-29-00	6-29-00	6-29-00	
Time Began-Ended	2128-2228	2237-2337	2344-0044	
Sampling Time, Minutes	60	60	60	60
Stack Area, Square Feet	7.069	7.069	7.069	
Barometric Pressure, Inches of mercury	30.02	30.02	30.02	30.02
Stack Pressure, Inches of mercury	30.00	30.00	30.00	30.00
Pitot Tube Correction factor	1.00	1.00	1.00	
Meter Correction Factor	0.996	0.996	0.996	
Meter Volume, Cubic feet	21.780	21.060	23.985	22.275
Meter Temperature, Degrees F	86.4	84.7	84.9	85.3
Avg. Orifice Velocity Head, Inches of Water	2.00	2.00	2.00	2.00
Volume H2O Collected, Milliliters	54.0	52.0	61.0	55.67
CO2 Concentration, Percent	8.51	7.91	8.59	8.34
O2 Concentration, Percent	5.96	6.90	5.77	6.21
Avg. Sq. Rt. of Velocity Head, Inches of Water	0.3631	0.3576	0.3594	0.3600
Stack Temperature, Degrees F	259.8	260.5	257.6	259.32
Carbon Monoxide, ppm	0.71	0.69	0.32	0.57
Oxides of Nitrogen, ppm	60.63	55.31	61.36	59.10

CALCULATED DATA

Standard Meter Volume, Cubic Feet	21.127	20.492	23.330	21.650
Standard Water Volume, Cubic Feet	2.542	2.448	2.871	2.620
Moisture Fraction	0.107	0.107	0.110	0.108
Molecular Weight Of Stack Gas	28.354	28.310	28.333	28.333
Density Of Stack Gas	0.0541	0.0540	0.0543	0.054
Average Stack Gas Velocity, Feet/Second	28.554	28.158	28.231	28.314
Stack Gas Flow @ Stack Conditions, ACFM	12,111	11,943	11,974	12,009
Stack Gas Flow @ Standard Conditions, DSCFM	7,948	7,835	7,862	7,882
Carbon Monoxide Emissions, lbs per hour	0.02	0.02	0.01	0.0197
Nitrogen Oxide Emissions, lbs per hour	3.45	3.11	3.46	3.339

No. 4 Boiler

Test No. 1

Field Test Data

Georgia Gulf Corporation
Aberdeen, Mississippi
June 29, 2000
No. 4 Boiler
Test No. 1

<u>Time</u>	<u>Carbon Dioxide</u>	<u>Carbon Monoxide</u>	<u>Oxygen</u>	<u>Nitrogen Oxide</u>
21:28:19	8.6	10.48	5.48	61.59
21:29:19	8.61	4.98	5.49	62.14
21:30:19	8.61	2.73	5.49	62.14
21:31:19	8.6	0.22	5.51	62.14
21:32:19	8.6	0.11	5.72	62.29
21:33:19	8.21	0.14	6.39	62.29
21:34:19	7.91	0.09	6.56	62.14
21:35:19	8.22	0	5.92	54.72
21:36:19	8.53	0	5.55	49.09
21:37:19	8.63	0	5.47	52.8
21:38:19	8.63	0.06	5.53	59.13
21:39:19	8.55	0.08	5.71	61.94
21:40:19	8.37	0.13	6.03	62.14
21:41:19	8.18	0.17	6.22	60.89
21:42:19	8.12	0.16	6.35	57.02
21:43:19	8.04	0.09	6.46	53.33
21:44:19	7.96	0.17	6.56	51.88
21:45:19	7.91	0.2	6.59	49.95
21:46:19	7.92	0.15	6.58	49.25
21:47:19	7.92	0.09	6.58	49.09
21:48:19	7.91	0.16	6.6	48.9
21:49:19	7.92	1.18	6.51	48.75
21:50:19	8.17	4.01	6.03	48.36
21:51:19	8.36	4.79	5.79	48.25
21:52:19	8.59	3.86	5.34	48.21
21:53:19	8.84	1.08	5.06	56.51
21:54:19	8.94	0.16	4.9	60.54
21:55:19	9	0.09	4.81	65.82
21:56:19	9.07	0.1	4.72	69.36
21:57:19	9.09	0.17	4.68	71.46
21:58:19	9.11	0.2	4.64	73.08
21:59:19	9.13	0.18	4.6	73.74
22:00:19	9.17	0.2	4.55	74.1
22:01:19	9.18	0.28	4.55	74.81
22:02:19	9.19	0.31	4.51	74.81
22:03:19	9.21	0.3	4.45	75.17
22:04:19	9.24	0.22	4.43	75.35
22:05:19	9.24	0.19	4.4	76.4
22:06:19	9.28	0.25	4.36	77.64
22:07:19	9.28	0.19	4.44	78.33
22:08:19	9.05	0.22	5.06	79.17
22:09:19	8.65	0.13	5.58	79.22
22:10:19	8.41	0.02	5.9	74.5
22:11:19	8.31	0.03	5.96	65.86
22:12:19	8.29	0.17	5.99	60.01
22:13:19	8.27	0.27	6.04	56.85
22:14:19	8.27	0.25	6.04	55.63
22:15:19	8.27	0.27	6.05	55.42
22:16:19	8.28	0.26	6.07	55.42
22:17:19	8.28	0.58	6.04	54.39
22:18:19	8.29	1.27	6.03	54.93
22:19:19	8.23	1.15	6.8	55.09
22:20:19	7.37	1	7.74	55.42
22:21:19	7.4	0.91	7.13	52.97
22:22:19	7.87	0.94	6.58	43.1
22:23:19	7.73	0.91	7.2	43.42
22:24:19	7.47	0.83	7.47	51.21
22:25:19	7.4	0.89	7.57	52.44
22:26:19	7.33	0.73	7.67	49.64
22:27:19	7.31	0.71	7.73	48.21
22:28:19	7.3	0.64	7.71	47.64
Average	8.39	0.82	5.87	59.94

ENTEC Services, Inc.

25 Commerce Ave. Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf - Aberdeen, Mississippi

Date: 6-29-00

Source: No. 4 Boiler

Run No.: 1

VOLUMETRIC FLOW FIELD DATA, METHOD 1-4

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.14	0.3742	2.00	86	84	260
1-2	0.15	0.3873	2.00	87	84	261
1-3	0.15	0.3873	2.00	89	84	261
1-4	0.16	0.4000	2.00	90	85	261
1-5	0.17	0.4123	2.00	90	85	262
1-6	0.16	0.4000	2.00			262
1-7	0.16	0.4000	2.00			260
1-8	0.14	0.3742	2.00			260
1-9	0.13	0.3606	2.00			260
1-10	0.13	0.3606	2.00			258
1-11	0.12	0.3464	2.00			258
1-12	0.11	0.3317	2.00			259
2-1	0.13	0.3606	2.00			259
2-2	0.13	0.3606	2.00			260
2-3	0.13	0.3606	2.00			259
2-4	0.14	0.3742	2.00			260
2-5	0.14	0.3742	2.00			260
2-6	0.13	0.3606	2.00			260
2-7	0.12	0.3464	2.00			260
2-8	0.11	0.3317	2.00			260
2-9	0.11	0.3317	2.00			260
2-10	0.11	0.3317	2.00			259
2-11	0.11	0.3317	2.00			258
2-12	0.10	0.3162	2.00			258
AVERAGE		0.3631	2.00		86.4	259.8

Georgia Gulf Aberdeen, MS Site No. 4 Boiler Date 6-29-00		Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 760	Final 150 102 0 762	Gas Analyses CO2 O2 CO N2	Average
Run # 1	Stack Diameter 36"	Nozzle Calibrations Pre-test Post-test	Barometric Pressure 30.02	Leak Check Pre-test Volume @ 12"	Post-test Volume @ 12"	Probe Washings Crucible # Final Initial Net	
Time 2128 2228	Meter # 6-14 Probe SP-05	Stack Pressure -0.33 ± 30.00	Meter Readings #1 #2 #3 #4	Filter Weights Filter # Final Initial Net	Total	cu.ft.	
Cp Value 1.00	Avg.	Final Initial Net	921.945 900.165 21.780				

Port / Point	Time	Meter Reading	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	5	NA	.14	2.0	86	84	260	260	260	5.0
1 / 2	10		.15	↓	87	84	261	261	↓	
1 / 3	15		.15		85	84	261	261		
1 / 4	20		.16		90	85	261	261		
1 / 5	25		.17		90	85	262	262		
1 / 6			.16				262	262		
1 / 7			.16				260	260		
1 / 8			.14				260	260		
1 / 9			.13				260	260		
1 / 10			.13				259	259		
1 / 11			.12				258	258		
1 / 12			.11				258	258		
2 / 1			.13				259	259		
2 / 2			.13				260	260		
2 / 3			.14				259	259		
2 / 4			.14				260	260		
2 / 5			.13				260	260		
2 / 6			.12				260	260		
2 / 7			.11				260	260		
2 / 8			.11				260	260		
2 / 9			.11				259	259		
2 / 10			.11				258	258		
2 / 11			.10				258	258		
2 / 12										

Field Notes:

No. 4 Boiler
Test No. 2
Field Test Data

Georgia Gulf Corporation
Aberdeen, Mississippi
June 29, 2000
No. 4 Boiler
Test No. 2

<u>Time</u>	<u>Carbon Dioxide</u>	<u>Carbon Monoxide</u>	<u>Oxygen</u>	<u>Nitrogen Oxide</u>
22:37:19	7.29	0.58	7.75	46.62
22:38:19	7.28	0.48	7.74	46.29
22:39:19	7.28	0.54	7.74	46.29
22:40:19	7.3	0.63	7.82	46.29
22:41:19	7.16	0.59	8.06	46.44
22:42:19	7.07	0.57	8.18	46.44
22:43:19	7.01	0.58	8.28	46.47
22:44:19	6.99	0.58	8.29	46.1
22:45:19	6.97	0.53	8.35	45.76
22:46:19	6.94	0.57	8.39	45.17
22:47:19	6.93	0.59	8.36	44.66
22:48:19	6.96	0.54	8.37	44.33
22:49:19	6.99	0.61	8.22	43.79
22:50:19	7.03	0.58	8.15	43.64
22:51:19	7.12	0.65	8.03	43.6
22:52:19	7.19	0.78	7.86	43.79
22:53:19	7.27	0.48	7.71	44.18
22:54:19	7.35	0.36	7.59	44.66
22:55:19	7.41	0.44	7.48	45.39
22:56:19	7.48	0.74	7.4	49.44
22:57:19	7.53	0.82	7.29	49.99
22:58:19	7.56	0.81	7.24	50.85
22:59:19	7.58	0.76	7.07	51.88
23:00:19	7.67	0.9	7	52.24
23:01:19	7.68	0.79	7	53.29
23:02:19	7.72	0.67	6.94	53.82
23:03:19	7.72	0.68	6.92	53.82
23:04:19	7.73	0.54	6.84	53.86
23:05:19	7.8	0.62	6.82	54.02
23:06:19	7.77	0.52	6.8	54.19
23:07:19	7.83	0.51	6.77	54.39
23:08:19	7.85	4.17	6.71	54.72
23:09:19	7.86	7.69	6.73	55.05
23:10:19	7.84	5.69	6.72	55.76
23:11:19	7.79	2.2	6.79	56.13
23:12:19	7.8	0.79	6.84	56.47
23:13:19	7.79	1.14	6.78	56.68
23:14:19	7.8	1.38	6.9	56.68
23:15:19	7.75	0.44	6.91	55.97
23:16:19	7.76	0.25	6.9	55.8
23:17:19	7.76	0.24	6.89	55.63
23:18:19	7.8	0.32	6.73	55.59
23:19:19	7.93	0.25	6.59	55.26
23:20:19	8.03	0.26	6.42	56.47
23:21:19	8.09	0.29	6.26	57.57
23:22:19	8.18	0.27	6.15	57.91
23:23:19	8.24	0.33	6.05	58.25
23:24:19	8.36	0.3	5.91	58.77
23:25:19	8.39	0.32	5.85	63.2
23:26:19	8.43	0.36	5.79	64.6
23:27:19	8.47	0.29	5.7	65.29
23:28:19	8.56	0.3	5.54	65.13
23:29:19	8.62	0.28	5.47	66.52
23:30:19	8.66	0.26	5.41	67.93
23:31:19	8.72	0.26	5.31	68.13
23:32:19	8.77	0.31	5.21	68.3
23:33:19	8.8	0.29	5.15	68.68
23:34:19	8.89	0.24	4.99	69.31
23:35:19	8.94	0.3	4.94	69.87
23:36:19	9.02	0.3	4.77	73.56
23:37:19	9.09	0.82	4.77	74.32
Average	7.80	0.81	6.85	54.68

ENTEC Services, Inc.

25 Commerce Ave.-Suite 104-Hueytown, Alabama 35023

Client: Georgia Gulf - Aberdeen, Mississippi

Date: 6-29-00

Source: No. 4 Boiler

Run No.: 2

VOLUMETRIC FLOW FIELD DATA, METHOD 1-4

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.13	0.3606	2.00	85	83	257
1-2	0.14	0.3742	2.00	86	83	257
1-3	0.14	0.3742	2.00	86	83	258
1-4	0.15	0.3873	2.00	87	83	258
1-5	0.15	0.3873	2.00	88	83	258
1-6	0.15	0.3873	2.00			259
1-7	0.15	0.3873	2.00			260
1-8	0.14	0.3742	2.00			260
1-9	0.16	0.4000	2.00			260
1-10	0.15	0.3873	2.00			260
1-11	0.14	0.3742	2.00			260
1-12	0.13	0.3606	2.00			260
2-1	0.10	0.3162	2.00			260
2-2	0.11	0.3317	2.00			261
2-3	0.12	0.3464	2.00			261
2-4	0.13	0.3606	2.00			263
2-5	0.13	0.3606	2.00			263
2-6	0.14	0.3742	2.00			263
2-7	0.14	0.3742	2.00			264
2-8	0.11	0.3317	2.00			263
2-9	0.10	0.3162	2.00			262
2-10	0.10	0.3162	2.00			262
2-11	0.09	0.3000	2.00			262
2-12	0.09	0.3000	2.00			262
AVERAGE		0.3576	2.00		84.7	260.5

Location <u>Georgia Gulf</u> <u>Abbeville, MS.</u>		Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 762		Final 146 104 0 766		Totals 46 4 0 4 52		Gas Analyses CO2 O2 CO N2		Average	
Date <u>6-29-00</u>		Stack Diameter <u>36"</u>		Nozzle Calibrations Pre-test Post-test		Barometric Pressure <u>30.02</u>		Leak Check Pre-test Volume @ <u>0.000</u>		Probe Washings Crucible # Final Initial Net			
Run # <u>2</u>		Meter # <u>15-14</u>		Stack Pressure <u>-0.33</u>		Stack Pressure <u>30.00</u>		Post-test Volume @ <u>0.000</u>		Filter Weights Filter # Final Initial Net			
Time <u>2337</u>		Avg. <u>2337</u>		Meter Readings #1 #2 #3 #4		Final Initial Net		Total		cu.ft.			
Probe <u>SIP-05</u>		Cp Value <u>1.00</u>		Final Initial Net		943.027 921.967 21.060							

Port / Point	Meter Reading	Time	Δp	Δh	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	NA	5	.13	2.0	85	83	257	NA	268	5.0
1 / 2		10	.14		86	83	257			
1 / 3		15	.14		86	83	258			
1 / 4		20	.15		87	83	258			
1 / 5		25	.15		88	83	258			
1 / 6			.15				259			
1 / 7			.15				260			
1 / 8			.14				260			
1 / 9			.16				260			
1 / 10			.15				260			
1 / 11			.14				260			
1 / 12			.13				260			
2 / 1			.10				260			
2 / 2			.11				261			
2 / 3			.12				261			
2 / 4			.13				263			
2 / 5			.13				263			
2 / 6			.14				263			
2 / 7			.14				264			
2 / 8			.11				263			
2 / 9			.10				262			
2 / 10			.10				262			
2 / 11			.09				262			
2 / 12			.09				262			

Field Notes:

No. 4 Boiler

Test No. 3

Field Test Data

Georgia Gulf Corporation
Aberdeen, Mississippi
June 29, 2000
No. 4 Boiler
Test No. 3

<u>Time</u>	<u>Carbon Dioxide</u>	<u>Carbon Monoxide</u>	<u>Oxygen</u>	<u>Nitrogen Oxide</u>
23:44:19	9	1.48	4.95	75.71
23:45:19	8.85	0.51	5.26	76.4
23:46:19	8.65	0.37	5.61	76.03
23:47:19	8.38	0.35	6.14	72.86
23:48:19	7.85	0.32	7.01	69.36
23:49:19	7.67	0.31	6.86	64.24
23:50:19	7.88	0.42	6.53	55.26
23:51:19	8.13	0.44	6.16	48.36
23:52:19	8.33	0.47	5.87	49.44
23:53:19	8.47	0.57	5.73	52.6
23:54:19	8.49	0.73	5.7	56.3
23:55:19	8.51	0.62	5.67	58.94
23:56:19	8.53	0.46	5.64	59.66
23:57:19	8.54	0.35	5.65	59.85
23:58:19	8.55	0.24	5.63	60.01
23:59:19	8.55	0.33	5.65	60.01
0:00:19	8.52	0.32	5.67	60.16
0:01:19	8.5	0.33	5.71	60.35
0:02:19	8.43	0.42	5.94	60.39
0:03:19	8.12	0.38	6.47	60.54
0:04:19	7.95	0.39	6.55	60.2
0:05:19	7.93	0.36	6.66	53.7
0:06:19	7.86	0.34	6.76	49.44
0:07:19	7.79	0.3	6.9	48.36
0:08:19	7.72	0.27	7.01	47.49
0:09:19	7.69	0.27	7.04	46.25
0:10:19	7.64	0.28	7.15	45.21
0:11:19	7.61	0.25	7.19	44
0:12:19	7.57	0.25	7.28	42.92
0:13:19	7.52	0.25	7.36	42.21
0:14:19	7.46	0.27	7.52	42.03
0:15:19	7.35	0.28	7.69	40.8
0:16:19	7.32	0.27	7.71	40.1
0:17:19	7.31	0.27	7.7	38.53
0:18:19	7.32	0.24	7.72	38.53
0:19:19	7.31	0.24	7.73	38.33
0:20:19	7.3	0.27	7.7	38.16
0:21:19	7.41	0.28	7.31	38.16
0:22:19	7.68	0.28	6.72	37.99
0:23:19	8.18	0.26	5.95	37.99
0:24:19	8.6	0.3	5.36	42.56
0:25:19	8.84	0.28	5.01	51.56
0:26:19	9.02	0.32	4.75	58.77
0:27:19	9.18	0.27	4.49	65.25
0:28:19	9.27	0.28	4.36	70.9
0:29:19	9.33	0.28	4.27	74.27
0:30:19	9.35	0.3	4.24	77.45
0:31:19	9.37	0.27	4.22	79.41
0:32:19	9.39	0.28	4.21	79.93
0:33:19	9.4	0.27	4.18	80.45
0:34:19	9.4	0.27	4.18	80.5
0:35:19	9.4	0.28	4.19	80.59
0:36:19	9.4	0.39	4.19	80.64
0:37:19	9.39	1.77	4.19	80.83
0:38:19	9.4	2.75	4.11	81.17
0:39:19	9.48	1.35	3.94	81.31
0:40:19	9.57	0.83	3.82	81.69
0:41:19	9.65	0.74	3.67	82.03
0:42:19	9.72	0.56	3.51	82.71
0:43:19	9.83	0.53	3.35	88.57
0:44:19	9.91	0.28	3.24	90.65
Average	8.47	0.45	5.72	60.62

ENTEC Services, Inc.

25 Commerce Ave. Suite 104 Hueytown, Alabama 35023

Client: Georgia Gulf - Aberdeen, Mississippi

Date: 6-29-00

Source: No. 4 Boiler

Run No.: 3

VOLUMETRIC FLOW FIELD DATA, METHOD 1-4

Traverse Point	Delta P	Sq. Rt. Delta P	Delta H	Tm In (°F)	Tm Out (°F)	Ts (°F)
1-1	0.13	0.3606	2.00	85	83	254
1-2	0.13	0.3606	2.00	85	84	256
1-3	0.13	0.3606	2.00	86	84	256
1-4	0.14	0.3742	2.00	87	84	256
1-5	0.14	0.3742	2.00	88	83	257
1-6	0.15	0.3873	2.00			257
1-7	0.16	0.4000	2.00			257
1-8	0.16	0.4000	2.00			257
1-9	0.15	0.3873	2.00			259
1-10	0.14	0.3742	2.00			259
1-11	0.15	0.3873	2.00			259
1-12	0.14	0.3742	2.00			259
2-1	0.10	0.3162	2.00			252
2-2	0.12	0.3464	2.00			254
2-3	0.11	0.3317	2.00			257
2-4	0.13	0.3606	2.00			258
2-5	0.13	0.3606	2.00			258
2-6	0.13	0.3606	2.00			259
2-7	0.14	0.3742	2.00			259
2-8	0.14	0.3742	2.00			260
2-9	0.12	0.3464	2.00			260
2-10	0.11	0.3317	2.00			260
2-11	0.09	0.3000	2.00			260
2-12	0.08	0.2828	2.00			260
AVERAGE		0.3594	2.00		84.9	257.6

Georgia Gulf Aberdeen, MS No. 4 Boiler Date 6-29-02		Moisture Impinger #1 Impinger #2 Impinger #3 Impinger #4 Totals		Initial 100 100 0 766	Final 152 104 0 771	Totals 52 4 0 5 61	Gas Analyses CO2 O2 CO N2	Average
Run # 3	Stack Diameter 36"	Nozzle Calibrations Pre-test Post-test	Barometric Pressure 30.02	Leak Check Pre-test Volume @ 0.000 Post-test Volume @ 0.000	Probe Washings Crucible # Final Initial Net	Stack Pressure -0.32 30.00	Vacuum 10"	Filler Weights Filler # Final Initial Net cu.ft.
Time 2344 044	Meter # 15-14	Avg.	Meter Readings #1 #2 #3 #4	Stack Pressure -0.32 30.00	Vacuum 7"	Total	Total	Total
Probe STP-05	Cp Value 1.00	Final Initial Net	967.080 943.095 23.985	967.080 943.095 23.985	967.080 943.095 23.985	967.080 943.095 23.985	967.080 943.095 23.985	967.080 943.095 23.985

Port / Point	Time	Meter Reading	Δ p	Δ h	Inlet	Outlet	Stack	Oven	Impinger	Vacuum
1 / 1	5	NA	.13	2.0	85	83	254	NA	268	4.0
1 / 2	10		.13		85	84	256			
1 / 3	15		.13		86	84	256			
1 / 4	20		.14		87	84	256			
1 / 5	25		.14		88	83	257			
1 / 6			.15				257			
1 / 7			.16				257			
1 / 8			.16				257			
1 / 9			.15				259			
1 / 10			.14				259			
1 / 11			.15				259			
1 / 12			.14				259			
2 / 1			.10				252			
2 / 2			.12				254			
2 / 3			.11				257			
2 / 4			.13				257			
2 / 5			.13				258			
2 / 6			.13				259			
2 / 7			.14				259			
2 / 8			.14				260			
2 / 9			.12				260			
2 / 10			.11				260			
2 / 11			.09				260			
2 / 12			.08				260			

Field Notes:

Appendix C

Laboratory Analysis

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #675 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	106	109	110
Initial Weight, grams - Date/Time 7/10/00	3.7677	3.5898	3.7707
Final Weight, grams - Date/Time 7/10/00	3.7679	3.5899	3.7710
Total Weight of Particulate on Filter, grams	0.0002	0.0001	0.0003
	Acetone Wash		
Wash Bottle ID #	F6	F7	F13
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	72.7642	72.7865	71.8990
Final Weight, grams - Date/Time 7/10/00	72.7709	72.7935	71.9074
Total Weight of Acetone Wash, grams	0.0067	0.0070	0.0084
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0071	0.0073	0.0089

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #676 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	119	113	118
Initial Weight, grams - Date/Time 7/10/00	3.7869	3.7650	3.7866
Final Weight, grams - Date/Time 7/10/00	3.7871	3.7653	3.7873
Total Weight of Particulate on Filter, grams	0.0002	0.0003	0.0007
	Acetone Wash		
Wash Bottle ID #	F15	F19	F20
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	73.3161	73.6339	71.2368
Final Weight, grams - Date/Time 7/10/00	73.3255	73.6439	71.2423
Total Weight of Acetone Wash, grams	0.0094	0.0100	0.0055
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0098	0.0105	0.0064

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #677 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	104	105	530
Initial Weight, grams - Date/Time 7/10/00	3.7847	3.7107	3.6624
Final Weight, grams - Date/Time 7/10/00	3.7852	3.7110	3.6627
Total Weight of Particulate on Filter, grams	0.0005	0.0003	0.0003
	Acetone Wash		
Wash Bottle ID #	S111	S110	F5
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	81.0765	75.8125	71.5987
Final Weight, grams - Date/Time 7/10/00	81.0932	75.8240	71.6134
Total Weight of Acetone Wash, grams	0.0167	0.0115	0.0147
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0174	0.0120	0.0152

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #678 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	116	117	123
Initial Weight, grams - Date/Time 7/10/00	3.7639	3.8012	3.7530
Final Weight, grams - Date/Time 7/10/00	3.7640	3.8014	3.7533
Total Weight of Particulate on Filter, grams	0.0001	0.0002	0.0003
	Acetone Wash		
Wash Bottle ID #	S105	S106	S108
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	77.8309	79.9284	79.1973
Final Weight, grams - Date/Time 7/10/00	77.8367	79.9344	79.2063
Total Weight of Acetone Wash, grams	0.0058	0.0060	0.0090
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0061	0.0064	0.0095

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #679 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

Filters			
Run Identification	1	2	3
Filter ID #	107	108	111
Initial Weight, grams - Date/Time 7/10/00	3.8034	3.7725	3.5840
Final Weight, grams - Date/Time 7/10/00	3.8035	3.7726	3.5842
Total Weight of Particulate on Filter, grams	0.0001	0.0001	0.0002
Acetone Wash			
Wash Bottle ID #	F1	F2	F4
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	75.5733	74.5833	74.2170
Final Weight, grams - Date/Time 7/10/00	75.6012	74.6017	74.2428
Total Weight of Acetone Wash, grams	0.0279	0.0184	0.0258
Acetone Blank			
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
Total Weight of Front Half Particulate			
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0282	0.0187	0.0262

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #680 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

Filters			
Run Identification	1	2	3
Filter ID #	112	114	115
Initial Weight, grams - Date/Time 7/10/00	3.7848	3.6650	3.6389
Final Weight, grams - Date/Time 7/10/00	3.7848	3.6654	3.6391
Total Weight of Particulate on Filter, grams	0.0003	0.0004	0.0002
Acetone Wash			
Wash Bottle ID #	F15	F19	F20
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	73.3176	73.6360	71.2383
Final Weight, grams - Date/Time 7/10/00	73.3273	73.6399	71.2420
Total Weight of Acetone Wash, grams	0.0097	0.0039	0.0037
Acetone Blank			
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
Total Weight of Front Half Particulate			
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0102	0.0045	0.0041

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #687 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	529	124	125
Initial Weight, grams - Date/Time 7/10/00	3.8010	3.7587	3.7454
Final Weight, grams - Date/Time 7/10/00	3.8015	3.7589	3.7459
Total Weight of Particulate on Filter, grams	0.0005	0.0002	0.0005
	Acetone Wash		
Wash Bottle ID #	F5	F17	F13
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	71.5991	74.5457	74.4008
Final Weight, grams - Date/Time 7/10/00	71.6081	74.5525	74.4092
Total Weight of Acetone Wash, grams	0.0090	0.0068	0.0084
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0097	0.0072	0.0091

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Silo #688 Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	120	121	122
Initial Weight, grams - Date/Time 7/10/00	3.7625	3.7464	3.7667
Final Weight, grams - Date/Time 7/10/00	3.7630	3.7467	3.7671
Total Weight of Particulate on Filter, grams	0.0005	0.0003	0.0004
	Acetone Wash		
Wash Bottle ID #	F10	F11	F12
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	71.2480	71.4565	71.4998
Final Weight, grams - Date/Time 7/10/00	71.2558	71.4686	71.5135
Total Weight of Acetone Wash, grams	0.0078	0.0121	0.0137
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0085	0.0126	0.0143

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, #10 Cyclone Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

Filters			
Run Identification	1	2	3
Filter ID #	503	505	504
Initial Weight, grams - Date/Time 7/10/00	3.7582	3.7980	3.7664
Final Weight, grams - Date/Time 7/10/00	3.7606	3.8021	3.7714
Total Weight of Particulate on Filter, grams	0.0024	0.0041	0.0050
Acetone Wash			
Wash Bottle ID #	F13	S111	S108
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	74.3974	81.0781	79.1979
Final Weight, grams - Date/Time 7/10/00	74.4099	81.1390	79.2132
Total Weight of Acetone Wash, grams	0.0125	0.0609	0.0153
Acetone Blank			
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
Total Weight of Front Half Particulate			
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0151	0.0652	0.0205

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, #11 Cyclone Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

Filters			
Run Identification	1	2	3
Filter ID #	116	117	502
Initial Weight, grams - Date/Time 7/10/00	3.7681	3.7437	3.7817
Final Weight, grams - Date/Time 7/10/00	3.7695	3.7452	3.7847
Total Weight of Particulate on Filter, grams	0.0014	0.0015	0.0030
Acetone Wash			
Wash Bottle ID #	S105	S110	S106
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	77.0775	75.9403	79.9298
Final Weight, grams - Date/Time 7/10/00	77.9333	75.9596	79.9440
Total Weight of Acetone Wash, grams	0.0158	0.0193	0.0142
Acetone Blank			
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
Total Weight of Front Half Particulate			
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0174	0.0210	0.0174

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Fluid Bed Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	507	508	509
Initial Weight, grams - Date/Time 7/10/00	3.8116	3.7748	3.7884
Final Weight, grams - Date/Time 7/10/00	3.8129	3.7752	3.7889
Total Weight of Particulate on Filter, grams	0.0013	0.0004	0.0005
	Acetone Wash		
Wash Bottle ID #	F5	F6	F7
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	71.5982	72.7658	72.7886
Final Weight, grams - Date/Time 7/10/00	71.6161	72.7950	72.7930
Total Weight of Acetone Wash, grams	0.0179	0.0292	0.0044
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0194	0.0298	0.0051

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, Ventilation Baghouse Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	521	523	524
Initial Weight, grams - Date/Time 7/10/00	3.7620	3.7790	3.6290
Final Weight, grams - Date/Time 7/10/00	3.7664	3.7826	3.6312
Total Weight of Particulate on Filter, grams	0.0044	0.0036	0.0022
	Acetone Wash		
Wash Bottle ID #	F8	F9	F10
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	72.0490	74.0290	72.6876
Final Weight, grams - Date/Time 7/10/00	72.0636	74.0652	72.7095
Total Weight of Acetone Wash, grams	0.0146	0.0362	0.0235
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0192	0.0400	0.0259

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, #4 Rotary Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	500	501	506
Initial Weight, grams - Date/Time 7/10/00	3.7107	3.7670	3.6226
Final Weight, grams - Date/Time 7/10/00	3.7136	3.7704	3.6266
Total Weight of Particulate on Filter, grams	0.0029	0.0034	0.0040
	Acetone Wash		
Wash Bottle ID #	F7	F8	F9
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	72.7664	74.1224	74.0328
Final Weight, grams - Date/Time 7/10/00	72.7751	74.1294	74.0432
Total Weight of Acetone Wash, grams	0.0087	0.0068	0.0104
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0118	0.0104	0.0146

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, #5 Rotary Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	510	511	512
Initial Weight, grams - Date/Time 7/10/00	3.5890	3.7527	3.7693
Final Weight, grams - Date/Time 7/10/00	3.5898	3.7532	3.7694
Total Weight of Particulate on Filter, grams	0.0008	0.0005	0.0001
	Acetone Wash		
Wash Bottle ID #	F1	F2	F4
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	75.5700	74.5787	74.2130
Final Weight, grams - Date/Time 7/10/00	75.5790	74.6084	74.2179
Total Weight of Acetone Wash, grams	0.0090	0.0297	0.0049
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0100	0.0304	0.0052

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, #6 Rotary Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	513	514	517
Initial Weight, grams - Date/Time 7/10/00	3.6913	3.7374	3.7890
Final Weight, grams - Date/Time 7/10/00	3.6992	3.7428	3.7926
Total Weight of Particulate on Filter, grams	0.0079	0.0054	0.0036
	Acetone Wash		
Wash Bottle ID #	F11	F12	F15
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	73.0473	73.6318	73.3205
Final Weight, grams - Date/Time 7/10/00	73.0490	73.6401	73.3318
Total Weight of Acetone Wash, grams	0.0017	0.0083	0.0113
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0098	0.0139	0.0151

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, #7 Rotary Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	518	520	522
Initial Weight, grams - Date/Time 7/10/00	3.7530	3.7800	3.6500
Final Weight, grams - Date/Time 7/10/00	3.7553	3.7865	3.6567
Total Weight of Particulate on Filter, grams	0.0023	0.0065	0.0067
	Acetone Wash		
Wash Bottle ID #	F17	F18	F19
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	74.5449	74.1343	73.6369
Final Weight, grams - Date/Time 7/10/00	74.5752	74.1694	73.6692
Total Weight of Acetone Wash, grams	0.0303	0.0351	0.0323
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0328	0.0418	0.0392

Laboratory Data

Particulate Matter Gravimetric Analysis

Client: Georgia Gulf, #8 Rotary Dryer Job No.: 20148

City/State Aberdeen, Mississippi Analyst: Tim Draheim

Barometric Pressure, in hg 30.10 Lab Amb. Temp, F 73 Rel Humidity in Lab, % 48

Analytical Balance ID OHAUS Date July 10, 2000

	Filters		
Run Identification	1	2	3
Filter ID #	515	516	519
Initial Weight, grams - Date/Time 7/10/00	3.6819	3.6490	3.5790
Final Weight, grams - Date/Time 7/10/00	3.6835	3.6558	3.5839
Total Weight of Particulate on Filter, grams	0.0016	0.0068	0.0049
	Acetone Wash		
Wash Bottle ID #	F3	F14	F20
Volume of Acetone Used, ml	100	100	100
Initial Weight, grams - Date/Time 7/10/00	73.4373	76.0553	75.2408
Final Weight, grams - Date/Time 7/10/00	73.4450	76.0759	75.2524
Total Weight of Acetone Wash, grams	0.0077	0.0206	0.0116
	Acetone Blank		
Wash Bottle ID #	1	1	1
Initial Weight, grams - Date/Time 7/10/00	74.0301	74.0301	74.0301
Final Weight, grams - Date/Time 7/10/00	74.0303	74.0303	74.0303
Total Weight of Acetone blank, grams	0.0002	0.0002	0.0002
	Total Weight of Front Half Particulate		
Total Weight of Residue in Acetone Wash, grams (ml used) * (acetone blank, g/ml)	0.0002	0.0002	0.0002
Total Weight of Particulate Matter Collected grams	0.0095	0.0276	0.0167

No. 3 Boiler Instrument Calibration

Instrumentation Calibration

Client: Georgia Gulf - Aberdeen, Mississippi

Job No.:

20148

Source: No. 3 Boiler

Date:

June 29, 2000

Test No. 1

Corrected Effluent Gas Concentration, dry basis, ppm

Run #	Average Zero System Calibration Response (ppm)	Average Upscale System Calibration Response (ppm)	Upscale Gas (ppm)	Uncorrected Average Concentration Indicated by Analyzer (ppm)	Corrected Average Concentration Indicated by Analyzer (ppm)
NOx	0.13	25.06	25.20	19.35	19.43
CO	0.17	14.62	14.89	5.03	5.01
O2	0.07	10.19	10.30	14.01	14.19
CO2	0.04	9.76	9.89	3.26	3.28

Test No. 2

Corrected Effluent Gas Concentration, dry basis, ppm

Run #	Average Zero System Calibration Response (ppm)	Average Upscale System Calibration Response (ppm)	Upscale Gas (ppm)	Uncorrected Average Concentration Indicated by Analyzer (ppm)	Corrected Average Concentration Indicated by Analyzer (ppm)
NOx	0.11	25.02	25.20	19.59	19.71
CO	0.15	14.59	14.89	6.62	6.67
O2	0.07	10.17	10.30	14.00	14.21
CO2	0.02	9.73	9.89	3.27	3.31

Test No. 3

Corrected Effluent Gas Concentration, dry basis, ppm

Run #	Average Zero System Calibration Response (ppm)	Average Upscale System Calibration Response (ppm)	Upscale Gas (ppm)	Uncorrected Average Concentration Indicated by Analyzer (ppm)	Corrected Average Concentration Indicated by Analyzer (ppm)
NOx	0.11	24.99	25.20	19.75	19.89
CO	0.16	14.63	14.89	5.54	5.54
O2	0.06	10.12	10.30	14.01	14.28
CO2	0.03	9.76	9.89	3.28	3.30

Analyzer Calibration Data

Source: Geogia Gulf - No. 3 Boiler
 Test Personnel: G. Corley

Test No.: 1-3
 Date: 6/29/00

Gas ID: NOx
 Span: 46.61

	Cylinder Value (ppm)	Analyzer Calibration Response (ppm)	Absolute Difference (ppm)	Difference % of Span
Zero Gas	0.00	0.05	0.1	0.11
Mid-Range Gas	25.20	25.14	-0.1	-0.13
High Range Gas	46.61	46.45	-0.2	-0.34

Gas ID: O2
 Span: 20.90

	Cylinder Value (%)	Analyzer Calibration Response (%)	Absolute Difference (%)	Difference % of Span
Zero Gas	0.00	0.06	0.1	0.29
Mid-Range Gas	10.30	10.28	0.0	-0.10
High Range Gas	20.90	20.83	-0.1	-0.33

Gas ID: CO2
 Span: 20.13

	Cylinder Value (%)	Analyzer Calibration Response (%)	Absolute Difference (%)	Difference % of Span
Zero Gas	0.00	0.00	0.0	0.00
Mid-Range Gas	9.89	9.77	-0.1	-0.60
High Range Gas	20.13	20.04	-0.1	-0.45

Gas ID: CO
 Span: 90.92

	Cylinder Value (ppm)	Analyzer Calibration Response (ppm)	Absolute Difference (ppm)	Difference % of Span
Zero Gas	0.00	0.21	0.21	0.23
Low-Range Gas	14.89	14.93	0.04	0.04
Mid-Range Gas	49.01	49.21	0.20	0.22
High Range Gas	90.92	91.07	0.15	0.16

Test No. 1 System Calibration Data

Source: Georgia Gulf - No. 3 Boiler
Test Personnel: L. Bean

Test No.: 1
Date: 6/29/00

Gas ID: NOx
Span: 46.61

	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.2	0.14	0.2	0.04
Mid-Range Gas	25.14	25.05	-0.2	25.06	-0.2	0.02

Gas ID: O2
Span: 20.90

	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.06	0.07	0.0	0.07	0.0	0.00
Mid-Range Gas	10.28	10.20	-0.4	10.18	-0.5	-0.10

Gas ID: CO2
Span: 20.13

	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.00	0.02	0.1	0.05	0.2	0.15
Mid-Range Gas	9.77	9.75	-0.1	9.76	0.0	0.05

Gas ID: CO
Span: 90.92

	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.21	0.17	-0.04	0.16	-0.05	-0.01
Low-Range Gas	14.93	14.65	-0.31	14.58	-0.38	-0.08

Test No. 2 System Calibration Data

Source: Georgia Gulf - No. 3 Boiler
Test Personnel: L. Bean

Test No.: 2
Date: 6/29/00

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.2	0.10	0.1	-0.04
Mid-Range Gas	25.14	25.05	-0.2	24.98	-0.3	-0.15

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.06	0.07	0.0	0.07	0.0	0.00
Mid-Range Gas	10.28	10.20	-0.4	10.14	-0.7	-0.29

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.00	0.02	0.1	0.01	0.0	-0.05
Mid-Range Gas	9.77	9.75	-0.1	9.71	-0.3	-0.20

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.21	0.17	-0.04	0.12	-0.10	-0.05
Low-Range Gas	14.93	14.65	-0.31	14.52	-0.45	-0.14

Test No. 3 System Calibration Data

Source: Georgia Gulf - No. 3 Boiler
Test Personnel: L. Bean

Test No.: 3
Date: 6/29/00

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.2	0.10	0.1	-0.04
Mid-Range Gas	25.14	25.05	-0.2	24.93	-0.5	-0.26

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.06	0.07	0.0	0.04	-0.1	-0.14
Mid-Range Gas	10.28	10.20	-0.4	10.03	-1.2	-0.81

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.00	0.02	0.1	0.03	0.1	0.05
Mid-Range Gas	9.77	9.75	-0.1	9.76	0.0	0.05

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.21	0.17	-0.04	0.15	-0.07	-0.02
Low-Range Gas	14.93	14.65	-0.31	14.61	-0.35	-0.04

No. 4 Boiler Instrument Calibration

Instrumentation Calibration

Client: Georgia Gulf - Aberdeen, Mississippi

Job No.:

20148

Source: No. 4 Boiler

Date:

June 29, 2000

Test No. 1

Corrected Effluent Gas Concentration, dry basis, ppm

Run #	Average Zero System Calibration Response (ppm)	Average Upscale System Calibration Response (ppm)	Upscale Gas (ppm)	Uncorrected Average Concentration Indicated by Analyzer (ppm)	Corrected Average Concentration Indicated by Analyzer (ppm)
NOx	0.08	46.10	46.61	59.94	60.63
CO	0.13	14.54	14.89	0.82	0.71
O2	0.04	10.12	10.30	5.87	5.96
CO2	0.03	9.74	9.89	8.39	8.51

Test No. 2

Corrected Effluent Gas Concentration, dry basis, ppm

Run #	Average Zero System Calibration Response (ppm)	Average Upscale System Calibration Response (ppm)	Upscale Gas (ppm)	Uncorrected Average Concentration Indicated by Analyzer (ppm)	Corrected Average Concentration Indicated by Analyzer (ppm)
NOx	0.07	46.09	46.61	54.68	55.31
CO	0.14	14.54	14.89	0.81	0.69
O2	0.06	10.20	10.30	6.85	6.90
CO2	0.03	9.74	9.89	7.80	7.91

Test No. 3

Corrected Effluent Gas Concentration, dry basis, ppm

Run #	Average Zero System Calibration Response (ppm)	Average Upscale System Calibration Response (ppm)	Upscale Gas (ppm)	Uncorrected Average Concentration Indicated by Analyzer (ppm)	Corrected Average Concentration Indicated by Analyzer (ppm)
NOx	0.09	46.07	46.61	60.62	61.36
CO	0.14	14.56	14.89	0.45	0.32
O2	0.07	10.15	10.30	5.72	5.77
CO2	0.03	9.75	9.89	8.47	8.59

Analyzer Calibration Data

Source: Geogia Gulf - No. 4 Boiler

Test No.: 1-3

Test Personnel: G. Corley

Date: 6/29/00

Gas ID: NOx

Span: 46.61

	Cylinder Value (ppm)	Analyzer Calibration Response (ppm)	Absolute Difference (ppm)	Difference % of Span
Zero Gas	0.00	0.05	0.1	0.11
Mid-Range Gas	25.20	25.14	-0.1	-0.13
High Range Gas	46.61	46.45	-0.2	-0.34

Gas ID: O2

Span: 20.90

	Cylinder Value (%)	Analyzer Calibration Response (%)	Absolute Difference (%)	Difference % of Span
Zero Gas	0.00	0.06	0.1	0.29
Mid-Range Gas	10.30	10.28	0.0	-0.10
High Range Gas	20.90	20.83	-0.1	-0.33

Gas ID: CO2

Span: 20.13

	Cylinder Value (%)	Analyzer Calibration Response (%)	Absolute Difference (%)	Difference % of Span
Zero Gas	0.00	0.00	0.0	0.00
Mid-Range Gas	9.89	9.77	-0.1	-0.60
High Range Gas	20.13	20.04	-0.1	-0.45

Gas ID: CO

Span: 90.92

	Cylinder Value (ppm)	Analyzer Calibration Response (ppm)	Absolute Difference (ppm)	Difference % of Span
Zero Gas	0.00	0.21	0.21	0.23
Low-Range Gas	14.89	14.93	0.04	0.04
Mid-Range Gas	49.01	49.21	0.20	0.22
High Range Gas	90.92	91.07	0.15	0.16

Test No. 1 System Calibration Data

Source: Georgia Gulf - No. 4 Boiler
Test Personnel: L. Bean

Test No.: 1
Date: 6/29/00

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.2	0.03	0.0	-0.19
High-Range Gas	46.45	46.14	-0.7	46.06	-0.8	-0.17

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.06	0.07	0.0	0.01	-0.2	-0.29
Mid-Range Gas	10.28	10.20	-0.4	10.04	-1.1	-0.77

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.00	0.02	0.1	0.03	0.1	0.05
Mid-Range Gas	9.77	9.75	-0.1	9.72	-0.2	-0.15

Gas ID: Span:	Analyzer Calibration Response	Initial Values		Final Values		Drift % of Span
		System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.21	0.17	-0.04	0.09	-0.13	-0.09
Low-Range Gas	14.93	14.65	-0.31	14.43	-0.55	-0.24

Test No. 2 System Calibration Data

Source: Georgia Gulf - No. 4 Boiler
Test Personnel: L. Bean

Test No.: 2
Date: 6/29/00

Gas ID: NOx Span: 46.61	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.2	0.02	-0.1	-0.21
High-Range Gas	46.45	46.14	-0.7	46.04	-0.9	-0.21

Gas ID: O2 Span: 20.90	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.06	0.07	0.0	0.04	-0.1	-0.14
Mid-Range Gas	10.28	10.20	-0.4	10.19	-0.4	-0.05

Gas ID: CO2 Span: 20.13	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.00	0.02	0.1	0.04	0.2	0.10
Mid-Range Gas	9.77	9.75	-0.1	9.73	-0.2	-0.10

Gas ID: CO Span: 90.92	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.21	0.17	-0.04	0.10	-0.12	-0.08
Low-Range Gas	14.93	14.65	-0.31	14.43	-0.55	-0.24

Test No. 3 System Calibration Data

Source: Georgia Gulf - No. 4 Boiler
Test Personnel: L. Bean

Test No.: 3
Date: 6/29/00

Gas ID: NOx Span: 46.61	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.05	0.12	0.2	0.05	0.0	-0.15
High-Range Gas	46.45	46.14	-0.7	46.00	-1.0	-0.30

Gas ID: O2 Span: 20.90	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.06	0.07	0.0	0.06	0.0	-0.05
Mid-Range Gas	10.28	10.20	-0.4	10.10	-0.9	-0.48

Gas ID: CO2 Span: 20.13	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.00	0.02	0.1	0.03	0.1	0.05
Mid-Range Gas	9.77	9.75	-0.1	9.74	-0.1	-0.05

Gas ID: CO Span: 90.92	Initial Values			Final Values		Drift % of Span
	Analyzer Calibration Response	System Calibration Response	System Cal. Bias % of Span	System Calibration Response	System Cal. Bias % of Span	
Zero Gas	0.21	0.17	-0.04	0.11	-0.11	-0.07
Low-Range Gas	14.93	14.65	-0.31	14.47	-0.51	-0.20

Calibration Gas Protocol Certificates



Specialty Gases

5480 Hamilton Blvd.
 The AL 36582
 P.O. 190969
 Mobile, AL 36619
 Phone: (334) 653-2500
 FAX: (334) 653-2530

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

Cylinder No : CC14785
 Cylinder Pressure: 2000PSIG
 Certification Date 4/25/00

Order No. 388470
 Expiration Date: 4/25/02
 Laboratory: ASG-MOBILE

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM81684	NITRIC OXIDE	CC66785	96.9PPM

Instrumentation:

Instrument/Model/Serial No.
 ECOPhysics/CLD700EL/72411

Analytical Principle
 Chemiluminescence

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
NITRIC OXIDE	46.61 PPM	+/-1%	G1
NOX	46.61 PPM		
NITROGEN	Balance		

Analytical Results:

1st Component:

NITRIC OXIDE

1st Analysis Date: 4/18/00

R	<u>96.80</u>	S	<u>46.70</u>	Z	<u>0.000</u>	Conc	<u>46.75</u>
S	<u>47.00</u>	Z	<u>0.000</u>	R	<u>96.90</u>	Conc	<u>47.00</u>
Z	<u>0.000</u>	R	<u>96.90</u>	S	<u>46.80</u>	Conc	<u>46.80</u>
						AVG:	<u>67.52</u>

2nd Analysis Date: 4/25/00

R	<u>96.70</u>	S	<u>46.20</u>	Z	<u>0.000</u>	Conc	<u>46.30</u>
S	<u>46.30</u>	Z	<u>0.000</u>	R	<u>96.90</u>	Conc	<u>46.30</u>
Z	<u>0.000</u>	R	<u>96.90</u>	S	<u>46.50</u>	Conc	<u>46.50</u>
						AVG:	<u>46.37</u>

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

Do not use cylinder below 150 psig.

Bridget H. Hickson
 Approved for Release

Airgas**Specialty Gases**

5480 Hamilton Blvd.
 The AL 38562
 P.O. 90969
 Mobile, AL 36619
 Phone: (334) 653-2500
 FAX: (334) 653-2530

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

Cylinder No : CC96317
 Cylinder Pressure: 2000PSIG
 Certification Date 4/25/00

Order No. 388470
 Expiration Date: 4/25/02
 Laboratory: ASG-MOBILE

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM81684	NITRIC OXIDE	CC66785	96.9PPM

Instrumentation:

Instrument/Model/Serial No.
 ECOPhysics/CLD700EL/72411

Analytical Principle
 Chemiluminescence

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
NITRIC OXIDE	24.73 PPM	+/-1%	G1
NOX	25.20 PPM		
NITROGEN	Balance		

Analytical Results:

1st Component:

NITRIC OXIDE

1st Analysis Date: 4/18/00

R	<u>97.10</u>	S	<u>24.90</u>	Z	<u>0.000</u>	Conc	<u>24.85</u>
S	<u>24.80</u>	Z	<u>0.000</u>	R	<u>96.70</u>	Conc	<u>24.85</u>
Z	<u>0.000</u>	R	<u>96.80</u>	S	<u>24.80</u>	Conc	<u>24.83</u>
						AVG:	<u>24.84</u>

2nd Analysis Date: 4/25/00

R	<u>97.00</u>	S	<u>24.80</u>	Z	<u>0.000</u>	Conc	<u>24.77</u>
S	<u>24.50</u>	Z	<u>0.000</u>	R	<u>96.70</u>	Conc	<u>24.55</u>
Z	<u>0.000</u>	R	<u>96.70</u>	S	<u>24.50</u>	Conc	<u>24.55</u>
						AVG:	<u>24.62</u>

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

Do not use cylinder below 150 psig.

Budget H. Richardson
 Approved for Release

Airgas

Specialty Gases

5400 Milton Blvd.

Tomball, AL 36582

P.O. Box 190969

Mobile, AL 36619

Phone: (334) 653-2500

FAX: (334) 653-2530

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

Cylinder No : CC51538
 Cylinder Pressure: 2000 psig
 Certification Date 7/7/99

Order No. 340910
 Expiration Date: 7/6/02
 Laboratory: ASG-MOBILE

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM81675	CARBON DIOXIDE	CC34949	14.08%
NTRM82659	OXYGEN	CC45577	20.11%

Instrumentation:

Instrument/Model/Serial No.
 SIEMENS ULTRAMAT 5E K3-684
 SIEMENS OXYMAT 5E KE-904

Analytical Principle
 NDIR
 PARAMAGNETIC

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
CARBON DIOXIDE	20.13 %	+/- 1%	G1
OXYGEN	4.958 %	+/- 1%	G1
NITROGEN	BALANCE		

Analytical Results:**1st Component:****CARBON DIOXIDE**1st Analysis Date: 7/6/99

R	<u>14.08</u>	S	<u>20.14</u>	Z	<u>0.000</u>	Conc	<u>20.14 %</u>
S	<u>20.12</u>	Z	<u>0.000</u>	R	<u>14.08</u>	Conc	<u>20.12 %</u>
Z	<u>0.000</u>	R	<u>14.08</u>	S	<u>20.12</u>	Conc	<u>20.12 %</u>
						AVG:	<u>20.13 %</u>

2nd Component:**OXYGEN**1st Analysis Date: 7/6/99

R	<u>20.10</u>	S	<u>4.960</u>	Z	<u>0.000</u>	Conc	<u>4.962 %</u>
S	<u>4.960</u>	Z	<u>0.000</u>	R	<u>20.12</u>	Conc	<u>4.958 %</u>
Z	<u>0.000</u>	R	<u>20.12</u>	S	<u>4.955</u>	Conc	<u>4.953 %</u>
						AVG:	<u>4.956 %</u>

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

Do not use cylinder below 150 psig.

Richard Y. Rickwood
 Approved for Release

APCI CHICAGO

Fax: 1-773-725-1928

Fed 0 10 10-42

**AIR
PRODUCTS**

For Technical Information Call
1-800-752-1597

Air Products and Chemicals, Inc. • 12722 S. Kentworth Avenue, Chicago, IL 60628

ISO CERTIFICATION: 9002

CERTIFICATE OF ANALYSIS: EPA PROTOCOL GAS STANDARD

PERFORMED ACCORDING TO EPA TRACEABILITY PROTOCOL FOR ASSAY AND CERTIFICATION OF GASEOUS CALIBRATION STANDARDS (PROCEDURE #G1)

Customer: CHEROKEE INSTRUMENTS, INC.
901 BRIDGE STREET
FUGUAY - VARINA NC 27526-
Order No: C93-190550-02
Batch No: 861-51903
PO: 3303
Release:
Cylinder No: SG9133186BAL
Bar Code No: BXH449
Cylinder Pressure*: 2000 psig
Certification Date: 12/15/1998
Expiration Date: 12/15/2001

CERTIFIED CONCENTRATION			REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Cylinder Type	Standard Concentration	Standard Type	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principle
CARBON DIOXIDE	9.89 ± .06 %	SG9169295BAL	21704 82743K	17.89 %		HORIBA VJA-510	5113563	11/18/98	NON DISPERSIVE INFRARED
ETHANE	10.3 ± .08 %	SG9152735BAL	21705	22.31 %		Shimadzu GC-8A	32079	11/28/98	GC-TCD
Balance Gas: Nitrogen									

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst:

Approved By:

Bryan Baker

James Laba

(18921)

Pub. No. 320-8702

EPA PROTOCOL GAS
CERTIFICATE OF ANALYSIS

ORDER NO. 978886

CUSTOMER

ALABAMA POWER CO. VARNONS
Varnons GSC
Bldg 8
VARNONS, AL 35040
ATTENTION TO: Bill Pockatolier

PURCHASE ORDER: CREDIT CARD

CYLINDER NO: CC13286
EXPIRATION DATE: 11/19/01
CERTIFICATION DATE: 11/19/98
CYLINDER PRESSURE: 2030 psig

COMPONENT	CERTIFIED CONCENTRATION	TOTAL RELATIVE UNCERTAINTY	CALIBRATION STANDARDS USED IN ASSAY TYPE	LOT ID	CYLINDER CONC.	CAS NO.
Carbon Monoxide	90.92 ppm	+/- 1 %	NTRM 1676	100-00324	98.2 ppm	630-08-0
Nitrogen	Balance Gas					7727-37-9

ANALYZER READINGS

ASSAY LABORATORY: Port Allen

COMPONENT: Carbon Monoxide

Analyser: Rosemount Model 880A NDIR S/N 2000203
Last Multipoint Calibration: 10/26/98

First Triad: 11/12/98 Analyst: R. JACARUSO
Zero Std. Sample
16 1010 928
16 1012 928
16 1010 928
Mean First Assay: 90.85 ppm

Second Triad: 11/19/98 Analyst: R. JACARUSO
Zero Std. Sample
11 995 914
11 995 914
11 995 914
Mean Second Assay: 90.99 ppm

TEST NUMBERS: 1690219

This Calibration Standard has been certified per the September, 1993 EPA Traceability Protocol, Document EPA 600/RS-93/224, using Procedure B1.
All values certified to be +/- 1% NIST Traceable. Do not use this cylinder below 1.0 Megapascals, i.e., 150psig

QA APPROVED

R. J. Caruso

A410

BOC GASES

EPA PROTOCOL GAS
CERTIFICATE OF ANALYSIS

ORDER NO. 978888

CUSTOMER

ALABAMA POWER CO. VARNONS
Varnons GSC
Bldg 8
VARNONS, AL 35040
ATTENTION TO: Bill Pockstoller

PURCHASE ORDER: CREDIT CARD

CYLINDER NO: CC94822
EXPIRATION DATE: 11/19/01
CERTIFICATION DATE: 11/16/98
CYLINDER PRESSURE: 2000 psig

COMPONENT	CERTIFIED CONCENTRATION	TOTAL RELATIVE UNCERTAINTY	CALIBRATION STANDARDS USED IN ASSAY	CONC.	CAS NO.
Carbon Monoxide	48.01 ppm	+/- 1 %	NTRM 1823	99.2 ppm	630-08-0
Nitrogen	Balancing Gas				7727-37-8

ANALYZER READINGS

ASSAY LABORATORY: Port Allen

COMPONENT: Carbon Monoxide

Analyzer: Rosemount Model 880A NDIR S/N 2000203

Last Multipoint Calibration: 10/26/98

Zero	Ref.	Sample	Zero	Ref.	Sample	Mean
16	1010	511	11	995	498	49.06 ppm
16	1012	511	11	995	498	
16	1010	509	11	995	498	

First Trial: 11/12/98 Analyst: R JACARUSO
Second Trial: 11/19/98 Analyst: R JACARUSO
Mean First Assay: 49.06 ppm
Mean Second Assay: 48.96 ppm

TEST NUMBER: 1998218

This Calibration Standard has been certified per the September, 1995 EPA Traceability Protocol Document EPA-800/R-95/224, using Procedure G1.
All values certified to be +/- 1% NIST Traceable. Do not use this cylinder below 1.0 Megapascal, i.e., 150 psig

QA APPROVED

R. Jarama

A410

BOC GASES**EPA PROTOCOL GAS
CERTIFICATE OF ANALYSIS**

ORDER NO. 028474

CUSTOMER

BOC Gases - Bessemer
2610 18th Avenue, North
Bessemer, AL 35021

CYLINDER NO:

XC003887B

EXPIRATION DATE:

07/22/02

CERTIFICATION DATE:

07/22/99

CYLINDER PRESSURE:

2000.000

PURCHASE ORDER: ALABAMA POWER EB528

TOTAL RELATIVE
UNCERTAINTY

+/- 1 %

CERTIFIED
CONCENTRATION

14.88 ppm

Balance Gas

CALIBRATION STANDARDS USED IN ASSAY

TYPE

SRM 2636a

LOT ID

CAL01100

CONC.

25.08 ppm

CAS NO.

830-08-0

7727-37-9

TEST NUMBER: 74004

ANALYZER READINGS

ASSAY LABORATORY: Royal Oak

COMPONENT: Carbon Monoxide

Analyzer: ROBEMOUNT Model 880A NON-DISPERSIVE INFRARED S/N 2000258

Last MultiPoint Calibration: 07/06/98

First Triplet: 07/13/98 Analyst: Rilla Palmieri Second Triplet: 07/22/98 Analyst: Rilla Palmieri

Zero Ref. Sample Zero Ref. Sample

.02 1.25 .75 .02 1.25 .75

.02 1.25 .75 .02 1.25 .75

.02 1.25 .75 .02 1.25 .75

Mean First Assay: 14.82 ppm Mean Second Assay: 14.78 ppm

This Calibration Standard has been certified per the September, 1993 EPA Traceability Protocol, Document EPA-800/R03/224, using Procedure 01.
All values certified to be +/- 1% NIST Traceable. Do not use this cylinder below 1.0 Megapascals, i.e., 150psig

QA APPROVED

R. Palmieri

Appendix D

Equipment Calibration

ENTEC Inc., Inc.
EPA method 5
Meter Box Calibration
Pre-Test Calibration Orifice Method

Model #: Nutech 201
Serial #: E-10
Date: 04/03/00
Barometric Pressure: 30.08
Theoretical Critical Vacuum: 14.19

CRITICAL ORIFICE READINGS									
Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Final Temp. Inlet (deg F)	Final Temp. Outlet (deg F)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Average (deg F)
73	0.817	12.0	69.0	87.0	71.0	199.553	207.024	7.471	69.0
63	0.590	15.5	69.0	91.0	77.0	207.024	214.929	7.905	69.0
55	0.459	17.0	69.0	93.0	79.0	214.929	221.214	6.285	69.0
48	0.347	19.0	69.0	94.0	82.0	221.214	228.350	7.136	69.0
40	0.240	20.5	69.0	96.0	82.0	228.350	234.935	6.585	69.0

***** RESULTS *****

DRY GAS METER

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)
7.420	210.1
7.755	219.6
6.121	173.4
6.924	196.1
6.369	180.4

ORIFICE

VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)
7.479	211.8
7.716	218.5
6.003	170.0
6.807	192.8
6.278	177.8

Average Y

0.990

DRY GAS METER

Value (number)	Variation (number)
1.008	0.018
0.995	0.004
0.981	-0.010
0.983	-0.007
0.986	-0.005

ORIFICE

Value (in H2O)	Variation (in H2O)
1.861	0.058
1.864	0.061
1.686	-0.117
1.819	0.016
1.786	-0.017

Average dh@

45.80

Calibrated By: Wade Drew

ENTECH Services, Inc.
EPA Method 5
Meter Box Calibration
Pre-Test Calibration Orifice Method

Model #: Apex
Serial #: E-11
Date: 05/03/00
Barometric Pressure: 30.05
Theoretical Critical Vacuum: 14.17

***** DRY GAS METER READINGS *****										***** CRITICAL ORIFICE READINGS *****				
dH (in H ₂ O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temp. Inlet (deg F)	Initial Temp. Outlet (deg F)	Final Temp. Inlet (deg F)	Final Temp. Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Ambient Temperature Final (deg F)	Average (deg F)
4.20	7.00	188.485	206.100	7.605	83.0	72.0	84.0	74.0	73	0.817	17.0	72.0	72.0	72.0
2.10	10.00	206.100	213.995	7.895	84.0	74.0	86.0	77.0	83	0.590	21.0	72.0	72.0	72.0
1.20	10.00	213.995	220.180	6.185	86.0	77.0	88.0	78.0	55	0.459	22.0	72.0	72.0	72.0
0.77	15.00	220.180	227.145	6.965	88.0	78.0	90.0	80.0	48	0.347	24.0	72.0	72.0	72.0
0.35	20.00	227.145	233.525	6.380	90.0	80.0	91.0	82.0	40	0.240	25.5	72.0	72.0	72.0

***** RESULTS *****

DRY GAS METER

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME CORRECTED
Vm(std) (cu ft)	Vm(std) (liters)	Vm(std) (cu ft)
7.567	214.3	7.567
7.786	220.5	7.786
6.044	171.2	6.044
6.819	193.1	6.819
6.202	175.6	6.202

Average Y

ORIFICE

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME CORRECTED
Vcr (cu ft)	Vcr (liters)	Vcr (cu ft)
7.451	211.0	7.451
7.687	217.7	7.687
5.980	169.4	5.980
6.781	192.0	6.781
6.254	177.1	6.254

0.993

DRY GAS METER

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME CORRECTED
Vcr (cu ft)	Vcr (liters)	Vcr (cu ft)
0.985	-0.008	0.985
0.987	-0.008	0.987
0.989	-0.003	0.989
0.984	0.002	0.984
1.008	0.015	1.008

CALIBRATION FACTOR			
Value (in H ₂ O)	Value (mm H ₂ O)	Value (in H ₂ O)	Value (mm H ₂ O)
2.075	52.69	1.980	50.29
1.862	47.30	2.085	52.98
1.874	50.13	1.995	50.67

verage dH@

Calibrated Bwade Orew

ENTEC Services, Inc.
EPA Method 5
Meter Box Calibration
Pre-Test Calibration Orifice Method

Model #: Nutech 2010
Serial #: E-13
Date: 04/03/00
Barometric Pressure: 29.96
Theoretical Critical Vacuum: 14.13

-CRITICAL ORIFICE READINGS-									
DRY GAS METER READINGS									
dH (in H ₂ O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)
3.90	7.00	50.701	58.281	7.580	82.0	71.0	85.0	72.0	73
2.00	10.00	58.281	66.020	7.739	82.0	72.0	84.0	73.0	63
1.20	10.00	67.181	73.160	5.979	82.0	73.0	83.0	74.0	55
0.68	15.00	73.160	80.146	6.988	79.0	75.0	84.0	76.0	48
0.31	20.00	87.815	94.236	6.421	80.0	74.0	82.0	75.0	40
					K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Final (deg F)	Average (deg F)
					0.817	18.0	70.0	70.0	70.0
					0.590	20.5	70.0	70.0	70.0
					0.459	22.0	70.0	70.0	70.0
					0.347	23.5	70.0	70.0	70.0
					0.240	25.5	70.0	70.0	70.0

***** RESULTS *****

DRY GAS METER

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME CORRECTED
Vm(std) (cu ft)	Vm(std) (liters)	Vm(std) (cu ft)
7.524	213.1	7.443
7.643	216.5	7.678
5.891	166.8	5.973
6.868	194.5	6.774
6.315	178.8	6.247
Average Y		

ORIFICE

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME NOMINAL
Vc(std) (cu ft)	Vc(std) (liters)	Vc (cu ft)
7.443	210.8	7.464
7.678	217.4	7.700
5.973	169.2	5.990
6.774	191.8	6.793
6.247	176.9	6.264
Average Y		

DRY GAS METER

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME NOMINAL
Vc(std) (cu ft)	Vc(std) (liters)	Vc (cu ft)
7.443	210.8	7.464
7.678	217.4	7.700
5.973	169.2	5.990
6.774	191.8	6.793
6.247	176.9	6.264
Average Y		

ORIFICE

VOLUME CORRECTED	VOLUME CORRECTED	VOLUME NOMINAL
Vc(std) (cu ft)	Vc(std) (liters)	Vc (cu ft)
7.443	210.8	7.464
7.678	217.4	7.700
5.973	169.2	5.990
6.774	191.8	6.793
6.247	176.9	6.264
Average Y		

Calibrated By: Wade Drew

ENTEC Systems, Inc.
 EPA Method 5
 Meter Box Calibration
 Pre-Test Calibration Orifice Method

Model #: Nutech 2010
 Serial #: 30.10
 Box #: E-14
 Date: 6/02/00
 Barometric Pressure: 30.10
 Theoretical Critical Vacuum: 14.20

- DRY GAS METER READINGS -										- CRITICAL ORIFICE READINGS -			
dH (in. H ₂ O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)	IC Orifice Coefficient (see above)	Actual Vacuum (in. Hg)	Ambient Temperature Initial (deg F)	Average (deg F)
3.80	7.00	432.740	440.289	7.559	76.0	77.0	82.0	75.0	73	0.817	18.0	76.0	76.5
2.00	10.00	440.289	448.089	7.790	79.0	76.0	86.0	77.0	63	0.590	21.0	77.0	77.0
1.20	10.00	448.089	454.185	8.098	85.0	81.0	88.0	79.0	55	0.459	22.0	77.0	77.0
0.64	15.00	454.185	461.140	6.955	86.0	84.0	87.0	81.0	48	0.347	22.0	77.0	77.0
0.28	20.00	461.140	467.513	6.373	89.0	86.0	87.0	83.0	40	0.240	24.0	77.0	77.0

***** RESULTS *****

DRY GAS METER					ORIFICE					DRY GAS METER					ORIFICE				
VOLUME CORRECTED					VOLUME CORRECTED					VOLUME CORRECTED					VOLUME CORRECTED				
Vm(Std) (cu ft)	Vm(Std) (liters)	Vn(Std) (cu ft)	Vn(Std) (liters)	Vn(Std) (liters)	Vc(Std) (cu ft)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (cu ft)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (cu ft)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (liters)	Vc(Std) (liters)
7.531	213.3	213.3	213.3	213.3	7.432	210.5	210.5	210.5	210.5	7.509	211.5	211.5	211.5	211.5	7.509	211.5	211.5	211.5	211.5
7.704	218.2	218.2	218.2	218.2	7.664	217.0	217.0	217.0	217.0	7.751	218.0	218.0	218.0	218.0	7.751	218.0	218.0	218.0	218.0
5.981	169.4	169.4	169.4	169.4	5.962	168.8	168.8	168.8	168.8	6.030	170.0	170.0	170.0	170.0	6.030	170.0	170.0	170.0	170.0
6.793	192.4	192.4	192.4	192.4	6.761	191.5	191.5	191.5	191.5	6.838	193.0	193.0	193.0	193.0	6.838	193.0	193.0	193.0	193.0
6.189	175.6	175.6	175.6	175.6	6.235	174.8	174.8	174.8	174.8	6.306	176.0	176.0	176.0	176.0	6.306	176.0	176.0	176.0	176.0
Average Y					Average Y					Average Y					Average Y				
0.996					0.996					0.996					0.996				
1.802					1.802					1.802					1.802				
45.77					45.77					45.77					45.77				
verage dH@					verage dH@					verage dH@					verage dH@				

Calibrated By: Tim Draheim

THERMOCOUPLE CALIBRATION

Client: Georgia Gulf

Date:

5-12-00

Source: Multiple Sources

Tech:

Lynn Beane

Thermocouple Identification		Reference Thermometer Temperature	Thermocouple Potentiometer Temperature	% Temperature Difference
Meter Box In (Console E-10)	Cold	42	42	0.00
	Ambient	74	74	0.00
	Hot	251	250	0.14
Meter Box Out (Console E-10)	Cold	50	49	0.20
	Ambient	70	70	0.00
	Hot	251	251	0.00
Heater Box (HB-01)	Cold	47	48	-0.20
	Ambient	70	70	0.00
	Hot	259	258	0.14
Stack Gas Probe ESP-3C	Cold	53	54	-0.19
	Ambient	74	75	-0.19
	Hot	275	276	-0.14
Impinger Exit (HB-01)	Cold	53	53	0.00
	Ambient	70	71	-0.19
	Hot	229	230	-0.15

% Difference = $\frac{((\text{Ref. Thermometer} + 460) - (\text{Thermocouple} + 460))}{(\text{Ref. Thermometer} + 460)} \times 100 < 1.5\%$

THERMOCOUPLE CALIBRATION

Client: Georgia Gulf

Date:

5-12-00

Source: Multiple Sources

Tech:

Lynn Beane

Thermocouple Identification		Reference Thermometer Temperature	Thermocouple Potentiometer Temperature	% Temperature Difference
Meter Box In (Console E-10)	Cold	42	42	0.00
	Ambient	74	74	0.00
	Hot	251	250	0.14
Meter Box Out (Console E-10)	Cold	50	49	0.20
	Ambient	70	70	0.00
	Hot	251	251	0.00
Heater Box (HB-01)	Cold	51	51	0.00
	Ambient	71	70	0.19
	Hot	250	251	-0.14
Stack Gas Probe ESP-3D	Cold	53	54	-0.19
	Ambient	74	75	-0.19
	Hot	275	276	-0.14
Impinger Exit (HB-02)	Cold	53	53	0.00
	Ambient	70	71	-0.19
	Hot	229	230	-0.15

% Difference = $\frac{[(\text{Ref. Thermometer} + 460) - (\text{Thermocouple} + 460)]}{(\text{Ref. Thermometer} + 460)} \times 100 < 1.5\%$

THERMOCOUPLE CALIBRATION

Client: Georgia Gulf

Date:

6-06-00

Source: Multiple Sources

Tech:

Lynn Beane

Thermocouple Identification		Reference Thermometer Temperature	Thermocouple Potentiometer Temperature	% Temperature Difference
Meter Box In (Console E-11)	Cold	45	45	0.00
	Ambient	72	73	-0.19
	Hot	251	251	0.00
Meter Box Out (Console E-11)	Cold	51	51	0.00
	Ambient	71	70	0.19
	Hot	249	250	-0.14
Heater Box (HB-02)	Cold	45	45	0.00
	Ambient	73	73	0.00
	Hot	253	252	0.14
Stack Gas Probe ESP-3A	Cold	55	54	0.19
	Ambient	73	72	0.19
	Hot	253	254	-0.14
Impinger Exit (HB-03)	Cold	47	48	-0.20
	Ambient	71	71	0.00
	Hot	231	231	0.00

% Difference = $\frac{((\text{Ref. Thermometer} + 460) - (\text{Thermocouple} + 460))}{(\text{Ref. Thermometer} + 460)} \times 100 < 1.5\%$

THERMOCOUPLE CALIBRATION

Client: Georgia Gulf

Date:

6-09-00

Source: Multiple Sources

Tech:

Bradley Hall

Thermocouple Identification		Reference Thermometer Temperature	Thermocouple Potentiometer Temperature	% Temperature Difference
Meter Box In (Console E-12)	Cold	48	48	0.00
	Ambient	72	72	0.00
	Hot	251	252	-0.14
Meter Box Out (Console E-12)	Cold	51	50	0.20
	Ambient	73	73	0.00
	Hot	248	248	0.00
Heater Box (HB-04)	Cold	51	51	0.00
	Ambient	74	73	0.19
	Hot	237	237	0.00
Stack Gas Probe ESP-6A	Cold	55	54	0.19
	Ambient	72	73	-0.19
	Hot	749	749	0.00
Impinger Exit (HB-04)	Cold	50	50	0.00
	Ambient	70	71	-0.19
	Hot	230	231	-0.14

% Difference = $\frac{((\text{Ref. Thermometer} + 460) - (\text{Thermocouple} + 460))}{(\text{Ref. Thermometer} + 460)} \times 100 < 1.5\%$

THERMOCOUPLE CALIBRATION

Client: Georgia Gulf

Date:

5-09-00

Source: Multiple Sources

Tech:

Tim Draheim

Thermocouple Identification		Reference Thermometer Temperature	Thermocouple Potentiometer Temperature	% Temperature Difference
Meter Box In (Console E-13)	Cold	43	44	-0.20
	Ambient	70	71	-0.19
	Hot	253	253	0.00
Meter Box Out (Console E-13)	Cold	48	48	0.00
	Ambient	71	71	0.00
	Hot	250	251	-0.14
Heater Box (HB-02)	Cold	50	51	-0.20
	Ambient	72	72	0.00
	Hot	245	245	0.00
Stack Gas Probe ESP-7A	Cold	50	50	0.00
	Ambient	71	73	-0.38
	Hot	251	252	-0.14
Impinger Exit (HB-03)	Cold	55	55	0.00
	Ambient	70	71	-0.19
	Hot	229	230	-0.15

$$\% \text{ Difference} = \frac{[(\text{Ref. Thermometer} + 460) - (\text{Thermocouple} + 460)]}{(\text{Ref. Thermometer} + 460)} \times 100 < 1.5\%$$

THERMOCOUPLE CALIBRATION

Client: Georgia Gulf

Date:

5-12-00

Source: Multiple Sources

Tech:

Lynn Beane

Thermocouple Identification		Reference Thermometer Temperature	Thermocouple Potentiometer Temperature	% Temperature Difference
Meter Box In (Console E-14)	Cold	41	42	-0.20
	Ambient	71	72	-0.19
	Hot	247	247	0.00
Meter Box Out (Console E-14)	Cold	47	48	-0.20
	Ambient	73	73	0.00
	Hot	251	251	0.00
Heater Box (HB-03)	Cold	47	47	0.00
	Ambient	72	73	-0.19
	Hot	240	241	-0.14
Stack Gas Probe ESP-3B	Cold	51	50	0.20
	Ambient	75	75	0.00
	Hot	280	281	-0.14
Impinger Exit (HB-03)	Cold	51	50	0.20
	Ambient	74	74	0.00
	Hot	219	220	-0.15

$$\% \text{ Difference} = \frac{((\text{Ref. Thermometer} + 460) - (\text{Thermocouple} + 460))}{(\text{Ref. Thermometer} + 460)} \times 100 < 1.5\%$$

Pitot Tube Calibration

Project: Georgia Gulf

Date:

4-03-00

Pitot Tube ID: ESP-6A

Calibrated By: WD

"A" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (A)$
1	0.43	0.60	0.84	0.003
2	0.43	0.60	0.84	0.003
3	0.44	0.60	0.85	0.006
Cp (Side A)			0.84	

"B" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (B)$
1	0.43	0.60	0.84	0.000
2	0.43	0.60	0.84	0.000
3	0.43	0.60	0.84	0.000
Cp (Side B)			0.84	

Average Pitot Tube Cp	0.84
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Pitot Tube Calibration

Project: Georgia Gulf

Date:

3-13-00

Pitot Tube ID: ESP-7A

Calibrated By: GC

"A" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (A)$
1	0.43	0.60	0.84	0.000
2	0.43	0.60	0.84	0.000
3	0.43	0.60	0.84	0.000
Cp (Side A)			0.84	

"B" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (B)$
1	0.42	0.60	0.83	0.006
2	0.43	0.60	0.84	0.004
3	0.42	0.59	0.84	0.001
Cp (Side b)			0.83	

Average Pitot Tube Cp	0.84
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Pitot Tube Calibration

Project: Georgia Gulf

Date:

3-13-00

Pitot Tube ID: ESP-3B

Calibrated By: TD

"A" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (A)$
1	0.43	0.60	0.84	0.001
2	0.43	0.60	0.84	0.001
3	0.42	0.59	0.84	0.002
Cp (Side A)			0.84	

"B" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (B)$
1	0.43	0.60	0.84	0.006
2	0.44	0.60	0.85	0.003
3	0.44	0.60	0.85	0.003
Cp (Side B)			0.84	

Average Pitot Tube Cp	0.84
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Pitot Tube Calibration

Project: Georgia Gulf

Date:

3-13-00

Pitot Tube ID: ESP-3A

Calibrated By: GC

"A" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (A)$
1	0.43	0.60	0.84	0.000
2	0.43	0.60	0.84	0.000
3	0.43	0.60	0.84	0.000
Cp (Side A)			0.84	

"B" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (B)$
1	0.43	0.59	0.85	0.005
2	0.43	0.60	0.84	0.002
3	0.43	0.60	0.84	0.002
Cp (Side B)			0.84	

Average Pitot Tube Cp	0.84
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Pitot Tube Calibration

Project: Georgia Gulf

Date:

4-02-00

Pitot Tube ID: ESP-3D

Calibrated By: TD

"A" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (A)$
1	0.43	0.60	0.84	0.002
2	0.43	0.60	0.84	0.002
3	0.43	0.59	0.85	0.005
Cp (Side A)			0.84	

"B" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$C_{p(s)}$	Deviation $C_{p(s)} - C_p (B)$
1	0.44	0.60	0.85	0.000
2	0.44	0.60	0.85	0.000
3	0.44	0.60	0.85	0.000
Cp (Side B)			0.85	

Average Pitot Tube Cp	0.844
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Pitot Tube Calibration

Project: Georgia Gulf

Date:

4-03-00

Pitot Tube ID: ESP-3C

Calibrated By: TD

"A" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$Cp_{(s)}$	Deviation $Cp_{(s)} - Cp (A)$
1	0.43	0.60	0.84	0.002
2	0.43	0.59	0.85	0.005
3	0.43	0.60	0.84	0.002
Cp (Side A)			0.84	

"B" Side Calibration

Run No.	ΔP_{std} in. H ₂ O	$\Delta P_{(s)}$ in. H ₂ O	$Cp_{(s)}$	Deviation $Cp_{(s)} - Cp (B)$
1	0.43	0.59	0.85	0.005
2	0.43	0.60	0.84	0.002
3	0.43	0.60	0.84	0.002
Cp (Side B)			0.84	

Average Pitot Tube Cp	0.84
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ENTEC Services, Inc.
EPA Method 5
Meter Box Calibration
Post Test Calibration Orifice Method

Model #: Nutech 201
 Serial #: E-10

Date: 7-14-00
 Barometric Pressure: 29.94
 Theoretical Critical Vacuum: 14.12

----- DRY GAS METER READINGS -----										-CRITICAL ORIFICE READINGS-			
dh (in H ₂ O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temps. Inlet (deg F)	Initial Temps. Outlet (deg F)	Final Temps. Inlet (deg F)	Final Temps. Outlet (deg F)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Average (deg F)
2.00	10.00	675.190	682.952	7.762	84.0	82.0	85.0	83.0	63	0.590	16.0	83.0	83.0
2.00	10.00	682.952	690.760	7.808	85.0	82.0	87.0	84.0	63	0.590	16.0	83.0	83.0
2.00	10.00	690.760	698.559	7.799	85.0	83.0	87.0	83.0	63	0.590	16.0	83.0	83.0

***** RESULTS *****

DRY GAS METER

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vc(std) (cu ft)	VOLUME CORRECTED Vc(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	Y	Value (number)	Variation (number)
7.664	217.1	7.616	215.7	7.758	-0.002	0.994	-0.002
7.611	215.5	7.581	214.7	7.794	0.000	0.996	0.000
7.602	215.3	7.581	214.7	7.794	0.002	0.997	0.002
Average Y						0.996	

DRY GAS METER

ORIFICE	Value (in H ₂ O)	Variation (in H ₂ O)
dh@	Value (mm H ₂ O)	Variation (in H ₂ O)
	1.901	-0.002
	1.905	0.001
	1.905	0.001
Average dh@	1.904	48.35

Post Meter Calibration

Date: 07/10/00
 Pb: 30.12 in. Hg
 Box No.: E11
 Calibrated By: DLB

Orifice Manometer delta H dtm (In. H ₂ O)	delta H wtm (In. H ₂ O)	Wet Test Meter		Gas Volume		Dry Gas Meter		Temperatures (°F)		Y
		Initial (cu.ft.)	Final (cu.ft.)	Initial (cu.ft.)	Final (cu.ft.)	Initial (cu.ft.)	Final (cu.ft.)	Inlet	Outlet	
1.600	1.50	0.00	9.310	852.660	861.945	82	85	83	85	0.99742
1.600	1.50	0.00	8.985	861.945	871.000	85	86	85	86	0.98524
1.600	1.50	0.00	8.875	871.000	879.820	86	87	88	90	1.00093

Average 0.99453

Pump must be operated for at least 15 minutes at each delta H setting

Tdgm = Average temperature of dry gas meter (inlet and outlet) + 460 °F

Twtm = Average temperature of wet test meter + 460 °F

Pwtm = Pb - (delta H wtm/13.6)

Pdgm = Pb + (delta H dtm/13.6)

delta H wtm = negative pressure on wet test meter, in. H₂O

Y = ((wet final - wet initial)(Tdgm)(Pwtm))/((dry final - dry initial)(Twtm)(Pdgm))

Average MCF (1.00 + or - 0.02) = 0.99453

ENTECH Services, Inc.
EPA Method 5
Meter Box Calibration
Post Test Calibration Orifice Method

Model #: Nutech
Serial #: E-12

Date: 7-6-00
Barometric Pressure: 30.11
Theoretical Critical Vacuum: 14.20

----- DRY GAS METER READINGS -----										-CRITICAL ORIFICE READINGS-			
dH (in H ₂ O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temp. Inlet (deg F)	Initial Temp. Outlet (deg F)	Final Temp. Inlet (deg F)	Final Temp. Outlet (deg F)	Orifice Serial# (number)	K Orifice Coefficient (see above)	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Average (deg F)
2.00	10.00	836.225	844.075	7.850	85.0	81.0	86.0	81.0	63	0.590	21.0	81.0	81.0
2.00	10.00	844.075	851.935	7.860	86.0	82.0	88.0	82.0	63	0.590	21.0	81.0	81.0
2.00	10.00	851.935	859.780	7.845	85.0	82.0	88.0	82.0	63	0.590	21.0	81.0	81.0

***** RESULTS *****

DRY GAS METER

VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	VOLUME CORRECTED Vc(std) (cu ft)	VOLUME CORRECTED Vc(std) (liters)	Average V
7.646	216.5	7.617	215.7	
7.705	218.2	7.638	216.3	
7.693	217.9	7.638	216.3	
				0.993

DRY GAS METER

VOLUME NOMINAL Vcr (cu ft)	VOLUME CORRECTED Vc(std) (cu ft)	VOLUME CORRECTED Vc(std) (liters)	VOLUME CORRECTED Vc(std) (cu ft)	Average Y
7.801	7.801	215.7	215.7	
7.780	7.780	216.3	216.3	
7.780	7.780	216.3	216.3	
				0.993

ORIFICE

Value (in H ₂ O)	Value (mm H ₂ O)	Value (in H ₂ O)	Average dH
1.873	47.59	1.873	
1.881	48.02	1.881	
1.891	48.02	1.891	
			1.885

Post Meter Calibration

Date: 07/10/00
 Pb: 30.14 in. Hg
 Box No.: E13
 Calibrated By: DLB

Orifice Manometer	delta H dtm (In. H ₂ O)	delta H wtm (In. H ₂ O)	Gas Volume				Temperatures (°F)						Y
			Wet Test Meter	Initial	Final	Dry Gas Meter	Initial	Final	Wet Test Meter	Initial	Final	Dry Gas Meter	
			(cu.ft.)			(cu.ft.)			(cu.ft.)			(cu.ft.)	
1.500	1.40	0.00	0.00	8.985	421.075	430.060	81	84	82	82	83	84	0.99341
1.500	1.40	0.00	0.00	9.325	430.060	439.385	84	85	83	84	85	86	0.99386
1.500	1.40	0.00	0.00	8.785	439.385	448.140	84	85	86	85	84	88	0.99864

Average 0.99530

Pump must be operated for at least 15 minutes at each delta H setting

Tdgm = Average temperature of dry gas meter (inlet and outlet) + 460 °F

Twtm = Average temperature of wet test meter + 460 °F

Pwtm = Pb - (delta H wtm/13.6)

Pdgm = Pb + (delta H dtm/13.6)

delta H wtm = negative pressure on wet test meter, in. H₂O

Y = ((wet final - wet initial)(Tdgm)(Pwtm))/((dry final - dry initial)(Twtm)(Pdgm))

Average MCF (1.00 + or - 0.02) = 0.99530

Post Meter Calibration

Date: 07/17/00

Pb: 30.07 in. Hg

Box No.: E14

Calibrated By:

Orifice		Gas Volume				Temperatures (°F)				Y		
Manometer		Wet Test Meter		Dry Gas Meter		Wet Test Meter		Dry Gas Meter				
delta H dtm (In. H ₂ O)	delta H dtm (In. H ₂ O)	Initial (cu.ft.)	Final (cu.ft.)	Initial (cu.ft.)	Final (cu.ft.)	Initial	Final	Inlet	Outlet		Inlet	Outlet
1.600	1.50	0.00	8.405	546.640	554.980	81	82	83	82	85	84	1.00388
1.600	1.50	0.00	9.340	554.980	564.585	82	83	85	84	86	85	0.96952
1.600	1.50	0.00	8.745	564.585	573.205	83	85	86	85	87	84	1.00962

Average 0.99434

Pump must be operated for at least 15 minutes at each delta H setting

Tdgm = Average temperature of dry gas meter (inlet and outlet) + 460 °F

Twtm = Average temperature of wet test meter + 460 °F

$$P_{wtm} = P_b - (\Delta H_{wtm}/13.6)$$
$$P_{dgm} = P_b + (\Delta H_{dtm}/13.6)$$

ΔH_{wlm} = negative pressure on wet test meter, in. H_2O

$$Y = ((\text{wet final} - \text{wet initial}) / (\text{Pdgm}(\text{Pwtm}))) / ((\text{dry final} - \text{dry initial}) / (\text{Twtm}(\text{Pdgm})))$$

Average MCF (1.00 + or - 0.02) = 0.99434

Appendix E

Test Calculations

TEST CALCULATIONS

I. Determination of Moisture in Stack Gases

- a. Volume of Water Vapor Collected (Cubic Feet):

$$V_{wstd} = 0.04707 * (V_{lc})$$
- b. Dry Gas Volume Through Meter (Cubic Feet):

$$V_{mstd} = 17.64 * V_m * Y * \{ (P_{bar} + (H/13.6)) / T_m \}$$
- c. Moisture Content (Percent):

$$B_{ws} = V_{wstd} / \{ V_{wstd} + V_{mstd} \} * 100$$
- d. Wet Molecular Weight : (Ms)

$$M_s = \{ M_d * (1 - B_{ws}) \} + \{ 18.0 * B_{ws} \}$$

II. Actual Stack Gas Volume Sampled (Cubic Feet):

$$V_{ma} = \{ V_{mstd} * T_s * P_{std} \} / \{ (1 - B_{ws}) * T_{std} * P_s \}$$

III. Determination of Stack Gas Velocity & Volumetric Flow Rate

- a. Stack Gas Velocity (Feet per Second):

$$V_s = K_p * C_p * (S_q R P) * \{ S_q R (T_s / (P_s * M_s)) \}$$
- b. Stack Volumetric Flow Rate (Cubic Feet per Minute):
 1. Dry Standard Conditions (Qs)

$$Q_s = 60 * (1 - B_{ws}) * V_s * A_s * (T_{std}/T_s) * (P_s/P_{std})$$
 2. Actual Conditions (Qa)

$$Q_a = V_s * A_s * 60$$

IV. Determination of Particulate Concentration (Grainloading)

- a. Dry Standard Conditions: (cs)

$$cs = 0.01543 * (M_n / V_{mstd})$$
- b. Actual Conditions: (csl)

$$csl = 0.01543 * (M_n / V_{ma})$$

V. Emission Rate (Pounds per Hour)

$$E = 60 * Q_s * cs / 7000$$

VI. Determination of Acceptability of Sampling Results: (I)

$$I = (0.0945 * T_s * V_{mstd}) / \{ O * V_s * P_s * A_n * (1 - B_{ws}) \}$$

NOMENCLATURE

As	Cross-sectional area of stack, square feet
An	Cross-sectional area of nozzle, square feet
ACF	Actual cubic feet of gas at stack conditions
ACFM	Actual cubic feet of gas per minute at stack conditions
Bws	Proportion by volume of water vapor in gas stream
cs	Particulate concentration in stack gas, gr/dscf
csI	Particulate concentration in stack gas, gr/ACF
Ca	Acetone blank residue concentration, mg/g
Cp	Pitot tube coefficient
delta H	Pressure drop across orifice meter, inches water
dp	Nozzle diameter, inches
delta P	Velocity head of stack gas, inches water
dscf	Cubic feet of dry gas corrected to standard conditions
E	Particulate emission rate, pounds/hour
E/Btu	Particulate Emission Rate, pounds/mmBtu
F	F-factor, 9640 dscf/MMBTU's of heat input
Kp	Constant (85.49)
Ma	Mass of residue of acetone after evaporation, mg
Maw	Mass of residue of acetone blank, mg
Mf	Particulate matter collected on filter, mg
Mn	Total particulate matter collected, mg
I	Percent of isokinetic sampling
Pa	Density of acetone, mg/ml
Pbar	Barometric pressure, inches mercury
Pm	Barometric pressure of dry gas meter, in. mercury
Ps	Absolute stack gas pressure, inches mercury
Pstd	Barometric pressure, standard conditions, 29.92 "Hg
Qa	Volumetric flow rate, actual conditions, ACF/min
Qs	Volumetric flow rate, dry standard conditions, dscf/min
Tm	Absolute average dry gas meter temperature, degree R
Ts	Absolute average stack gas temperature, degree R
Tstd	Absolute temperature at standard conditions, 528 R
O	Total sampling time, minutes
Va	Volume of acetone blank, ml
Vaw	Volume of acetone used in wash, ml
Vf	Final volume of impinger contents, ml
Vi	Initial volume of impinger contents, ml
Vlc	Total volume collected in impingers and silica gel, ml
Vm	Volume of gas sampled through gas meter, cubic feet
Vma	Stack gas volume sampled, ACF
Vmstd	Volume of gas sampled through gas meter, cubic feet
Vs	Average stack gas velocity, feet/sec
Vwstd	Volume of water vapor in gas sampled, standard cubic feet
Wa	Weight of residue in acetone wash, mg
Wf	Final weight of filter or probe wash beaker, g
Wi	Initial weight of filter or probe wash beaker, g
Y	Dry gas meter calibration factor