Department of
Environmental Protection

Jeb Bush
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Colleen M. Castille
Secretary

August 16, 2005

Mr. William C. Ward III
Service Corporation International
7620 South U.S. Highway 41
Dunnellon, Florida 34432

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

NOTICE OF INELIGIBILITY TO USE NON-TITLE V AIR GENERAL PERMIT

Dear Mr. Ward:

Re: Air General Permit Notification for Human Crematory
0830080

This is to notify you that the Department, pursuant to your submittal received on August 1, 2005 has determined that your facility does not qualify to use the Non-Title V Air General Permit for a Human Crematory.

The requirements that a facility must meet in order to qualify for use of the Non-Title V Air General Permit are set forth in Rule 62-210.300, Florida Administrative Code (F.A.C.). Your submittal indicates your facility is not eligible for the reason(s) listed below:

The human crematory identical test submitted to demonstrate compliance with the carbon monoxide and particulate matter standards for your IE & E Model IE43-PPII human crematory unit is permitted to operate at a secondary chamber combustion zone temperature of not less than 1600 degrees Fahrenheit and provide for at least a 1.0 second gas residence time at 1800 degrees Fahrenheit.

Your unit's construction permit (AC42-161703) was submitted to the Department on March 6, 1989. For construction permits submitted prior to August 30, 1989,

Florida Administrative Code Rule 62-296.401(5)(d) requires that the crematory unit operate at a secondary chamber combustion zone temperature of not less than 1400 degrees Fahrenheit and provide for at least a 1.0 second gas residence time at 1600 degrees Fahrenheit.

The test results of another human crematory unit operated at a higher temperature, does not assure compliance at the permitted temperature of your unit.

If you have any questions regarding the Department's determination, please contact Louis Fernandez at the Southwest District Office Air Program at 813/744-6100, extension 126. However, if you believe you meet the requirements for a Non- TitleV Air General Permit, you may complete the enclosed blank notification form, making the corrections indicated above, and resubmit it to the Department. Any facility which does not qualify for a Non-Title V air general permit may require a standard air pollution control permit from the Department. A notice of your legal rights follows.

The DEP will consider the above-noted action final unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57, F.S

A person whose substantial interests are affected by the proposed decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received) by the Agency Clerk in the DEP Office of General Counsel, MS #35, 3900 Commonwealth Boulevard, Tallahassee, FL, 32399-3000 (Telephone: 850/488-9314, Fax: 850/487-4938). Petitions filed by the permit applicant or any of the parties listed below must be filed within 14 (fourteen) days of receipt of this notice. Petitions filed by any other person must be filed within 14 (fourteen) days of receipt of notice of this proposed action. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent

intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the permitting authority's action is based must contain the following information:

(a) The name and address of each agency affected and each agency's file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

(c) A statement of how and when each petitioner received notice of the agency action or proposed action;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief;

(f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and,

(g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the permitting authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the permitting authority's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the permitting authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation will not be available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply to the Department of Environmental Protection for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542, F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information:

(a) The name, address, and telephone number of the petitioner;

(b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any;

(c) Each rule or portion of a rule from which a variance or waiver is requested;

(d) The citation to the statute underlying (implemented by) the rule identified in (c) above;

(e) The type of action requested;

(f) The specific facts that would justify a variance or waiver for the petitioner;

(g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and,

(h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2), F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or

waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the United States Environmental Protection Agency and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the permitting authority in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the permitting authority.

7002 3150 0003 8458 2231

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OFFICIAL USE

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Certified Fee	
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Total Po	

8/18/05
Postmark Here

Sent To: Mr. William C. Ward III
Street, Ap or PO Box: Service Corporation International
City, State: 7620 South U.S. Highway 41
Dunnellon, Florida 34432

PS Form 3800, June 2002 — See Reverse for Instructions

Joel Smolen
Acting District Air Program Administrator
Southwest District

CERTIFICATE OF SERVICE
The undersigned duly designated deputy agency clerk hereby certifies that this order was sent to the addressee by certified mail and all copies were sent by regular mail before the close of business on 8/18/05 to the persons, unless otherwise noted.

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency Clerk, receipt of which is hereby acknowledged.

Carol J. Moore (Clerk) 8/18/05 (Date)

8/15/05 Phone conversation with Marco Salgado (Mathews)
Jason Waters/Louis Fernandez

PP II and PP II Ultra are identical.

PP and M-94 are not identical to PP II
The M-94 is a modification of the PP
(In 1994 they added additional controls)

Marco said that a M-94 was tested last year.
1600/1800

* I asked him to call me and let me know the location of the tested unit.

SCI (old Fers) is bound by the AC date 2/22/89 to operate/test at 1400°F/1600°F.

Ineligible to use GP submitted on 8-1-05.
Test was PP II tested at 1600/1800.

* Marco Salgado called Jason Waters back today and advised that the unit is actually a PP II and has been since 1990. He had previously thought that the SCI (Fers) unit was an M-94 with wrong id plates put on at time of modification.

8-9-05
with Bob Soich

SCI bought ECI
9 9 OF 2001

Bill Ward - G.M.

Building built in 1997

Power Pak II Cremation System

Baldwin-Fairchild
is a PPII Ultra (new)

Upgraded from 1600 → 1800

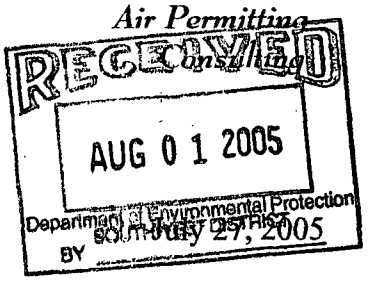
Power Pak II
1E43-P11

SN 414398

Nat gas Fuel input 1600 cu. ft/hr
LPG 1,600,000 BTU/hr

Beatty Environmental Services, Inc.
315 SE 20th Place
Cape Coral, FL 33990
Office and Fax 239 458-2894
Email beattyenvironmental@iline.com
Cellular 239 464-3767

Specializing in EPA Method 9
Air Permitting
Consulting



July 27, 2005

Louis Fernandez
FDEP-SW
Air Permitting
3804 Coconut Palm Dr.
Tampa, FL 33619

Re: SCI, Dunnellon Crematory General Air Permit Renewal, Id# 0830080

Dear Louis,

Greetings! Enclosed please find the following:

1. A signed air permit application for the above facility.
2. VE test and temp. chart for the emissions test.
3. A like-test for the stack test requirement.
4. A check for $100.00 for the application fee.

Please feel free to call me if you have any questions or concerns.

Sincerely,

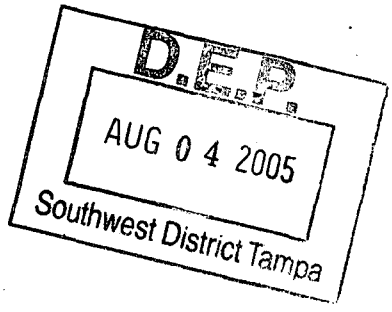
Daniel R. Beatty
Beatty Environmental Services, Inc.

Beatty Environmental Services, Inc.
315 SE 20th Place
Cape Coral, FL 33990
Office and Fax 239 458-2894
Email beattyenvironmental@iline.com
Cellular 239 464-3767

Specializing in EPA Method 9
Air Permitting
Consulting

August 2, 2005

Louis Fernandez
FDEP-SW
Permitting
3804 Coconut Palm Dr.
Tampa, FL 33619



Re: SCI, Dunnellon Crematory

Dear Louis,

Greetings! Please find the complete stack test report requested. Please feel free to call me if you have any questions or concerns.

Sincerely,

Daniel R. Beatty
Beatty Environmental Services, Inc.

HUMAN CREMATORY
AIR GENERAL PERMIT NOTIFICATION FORM

Part III. Notification of Intent to Use General Permit

(Submit this Part to the appropriate permitting office and keep copy of completed form onsite. Instructions follow.)

Instructions to Owner or Operator: To give notice to the Department of an eligible facility's intent to use the human crematory air general permit, the owner or operator of the facility must detach and complete Part III of this Human Crematory Air General Permit Notification Form and submit it to the appropriate Department of Environmental Protection district office or local air pollution control program office which has been delegated permitting authority. Please type or print clearly all information and enclose the appropriate general permit processing fee pursuant to Rule 62-4.050(4)(o), F.A.C. Please note, the form will not be considered complete unless: 1) the processing fee is attached; and 2) appropriate emissions testing was conducted within 60 days of submitting the form and the test results have already been submitted to the appropriate permitting authority or accompany the form. Also, please refer to the instructions for completing Part III of the notification form at the end of the form.

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner):
Service Corporation International

Site Name (For example, plant name or number):
Dunnellon Crematory

Facility Location:
Street Address: **7620 S. US 41**
City: **Dunnellon** County: **Marion** Zip Code: **34432**

Facility Start-Up Date: **N/A**

Notification Type

Check one:

☐ **NEW FACILITY WITH AIR CONSTRUCTION PERMIT:**
Provide the air construction permit number: _____

☐ **EXISTING FACILITY WITH AIR OPERATION PERMIT:**
Provide the air operation permit number: _____

☒ **EXISTING FACILITY WITH AIR GENERAL PERMIT**

Owner/Authorized Representative

Name and Title:
William C. Ward III, Funeral Director in Charge

Owner/Authorized Representative Mailing Address: **Same as above**
Organization/Firm:
Street Address:
City: County: Zip Code:

Owner/Authorized Representative Telephone Number:
Telephone: **(352) 489-5363** Fax: **(352) [redacted] 465-0072**

Facility Contact (If different from Owner/Authorized Representative)

Name and Title: **Same as above**
Facility Contact Mailing Address: Organization/Firm: Street Address: City: County: Zip Code:
Facility Contact Telephone Number: Telephone: ( ) - Fax: ( ) - .

Facility Comments

Process Description:

Operate a human crematory with a process rate of 100 pounds of human remains per hour.

The unit is an IEE Model IE43-PPII, Power-Pak II crematory. Emissions are controlled by an afterburner with a maintained temperature of 1,600 degrees Fahrenheit in the secondary chamber. The secondary chamber is designed to ensure a one second residence time of 1,800 degrees Fahrenheit. Temperature is monitored with a continuous temperature recorder.

Surrender of Existing Air Permit(s) except Air General Permits (do not complete for renewal notifications)

Check one:

☐ I hereby surrender all existing air permits authorizing operation of the facility indicated on this form; specifically permit number(s)_____.

☐ No air permits currently exist for the operation of the facility indicated on this form.

Owner/Authorized Representative Statement

I, the undersigned, am the owner or authorized representative of the owner or operator of the facility addressed in this Air General Permit Notification Form. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this notification are true, accurate and complete. Further, I agree to operate and maintain the facility and any air pollution control equipment described in this notification so as to comply with all applicable standards and requirements for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof.

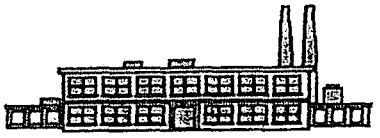
I will promptly notify the Department of any changes to the information contained in this notification.

Signature

7-5-05

Date

ATC



AIR TESTING & CONSULTING, INC.

333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

To the best of my knowledge, all field and analytical procedures comply with Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

Kenneth E. Given

Kenneth E. Given, P.E.

5-18-05

Date

AIR COMPLIANCE TEST REPORT

PERMIT NO. 0950126-005-AG

IE43-PPII, POWER-PAK II CREMATORY INCINERATOR

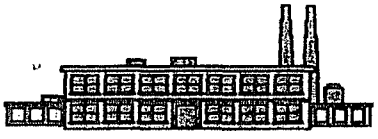
PREPARED FOR:

BALDWIN FAIRCHILD

ORLANDO, FLORIDA
MAY 5, 2005

PREPARED BY:

ATC



AIR TESTING & CONSULTING, INC.

333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

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APPENDICES

1.0 INTRODUCTION

On May 5, 2005, Air Testing & Consulting, Inc., conducted the following tests on Baldwin Fairchild's Human Crematory Incinerator located at 301 N. Ivanhoe Blvd. in Orlando, Florida:

*(1) **Particulate Emission (EPA Methods 1 – 5)***

*(2) **Carbon Monoxide (EPA Method 10)***

*(3) **Visible Emissions (EPA Method 9)***

*(4) **Oxygen (EPA Method 3A)***

These tests were performed at the request of Mathews Cremation Division to prove compliance on the Power Pak II crematory incinerator. Orange County, Environmental Protection Division, representatives, Gregory Bryant, Ilka Bundy and John Casper audited the test.

2.0 SUMMARY OF RESULTS

The results of the emission testing are presented in the Test Summary. The Particulate emissions averaged 0.0549 grains per dry standard cubic foot (gr/dscf) and CO emissions averaged 2.2 parts per million (ppmv), each corrected to 7% O_2. Opacity, highest six-minute average, on the stack, was 0%.

REGULATORY SUMMARY
BALDWIN FAIRCHILD
HUMAN CREMATORY
MAY 5, 2005

PERMIT NO. NEDS NO. ID #	EPA METHOD	METHOD DESCRIPTION	ACTUAL EMISSION RATE	ALLOWABLE EMISSION RATE	PROCESS RATE POUNDS PER HOUR	
					ACTUAL	PERMIT
0950126-005-AG	5	PARTICULATE			68	100
0126		gr/dscf @ 7% O2	0.055	0.080		
	10	CARBON MONOXIDE				
		ppmv @ 7% O_2	2	100		
	9	VISIBLE EMISSIONS				
		% Opacity	0	5% except for 20% up to 3 min/hr		

TABLE I
TEST SUMMARY
BALDWIN FAIRCHILD
HUMAN CREMATORY
MAY 5, 2005

RUN #	% O_2	PARTICULATE GR/DSCF @ 7% O_2	CO ppmv @ 7% O_2	PROCESS RATE POUNDS
1	16	0.0359	1.4	150
2	14	0.1122	2.0	130
3	14.5	0.0165	3.3	130
AVG	14.8	0.0549	2.2	137

3.0 SUMMARY OF TEST DATA

PLANT : BALDWIN UNIT : POWER-PACK II RUN NUMBERS :1, 2, 3

TEST DATE : 5/5/05	#1	#2	#3	AVERAGES
DATE	5/5/05	5/5/05	5/5/05	
START TIME	10:32	13:05	15:27	
END TIME	11:50	14:09	16:29	
STACK DIAMETER (INCHES)	19.5	19.5	19.5	
NOZZLE DIAMETER (INCHES)	0.550	0.550	0.550	
TEST TIME (MINUTES)	60	60	60	
NUMBER OF TEST POINTS PER RUN	24	24	24	
STACK GAS TEMPERATURE (^{o}F)	850.0	991.8	1128	989.9
STACK GAS MOISTURE (%)	12.51	9.76	6.56	
STACK GAS MOLECULAR WEIGHT	28.50	28.83	29.21	
STACK GAS VOLUME SAMPLED (CUBIC FEET)	34.375	36.840	40.110	37.108
VOLUME SAMPLED (SCF @ 68^{o}F)	34.585	37.020	40.270	37.292
STACK GAS VELOCITY (FEET PER SECOND)	18.14	17.30	19.75	18.39
STACK GAS FLOW RATE (ACFM)	2257.0	2152.2	2457.7	2288.9
STACK GAS FLOW RATE (DSCFM @ 68^{o}F)	801.7	711.5	769.2	760.8
OXYGEN, %	16.0	14.0	14.5	
PARTICULATE CONC (GR/DSCF) @7% O_2	0.0359	0.1122	0.0165	**0.0549**
PARTICULATE MASS RATE (LBS/HOUR)	0.0871	0.3396	0.0500	**0.1589**
CO CONC @ 7% O_2, ppmv	1.42	2.01	3.26	**2.23**
CO MASS RATE (LBS/HOUR)	0.00175	0.00310	0.00503	**0.0033**
ISOKINETIC SAMPLING RATE, %I	90.4	109.0	109.7	

FIELD DATA AND SAMPLES UNDER THE CONTROL OF: TIM CAPELLE

LABORATORY ANALYSIS UNDER THE CONTROL OF: ATC

4.0 PROCESS DESCRIPTION

The facility operates a Matthews Power Pak II crematory for the purpose of disposing of human remains. The unit is rated at 100 lbs/hr and operates on a two hour cycle. See attached flow diagram. The design firing rate to the primary chamber is 0.7 MMBtu/hr and the rate to the afterburner is 1.2 MMBtu/hr.

After the secondary chamber has been heated sufficiently, the cremator burner ignites and the cremation process is initiated. A typical cremation takes from 1 to 2 hours, but the time may vary depending on the body weights and various other factors. (See "Crematory Process Flow Diagram").

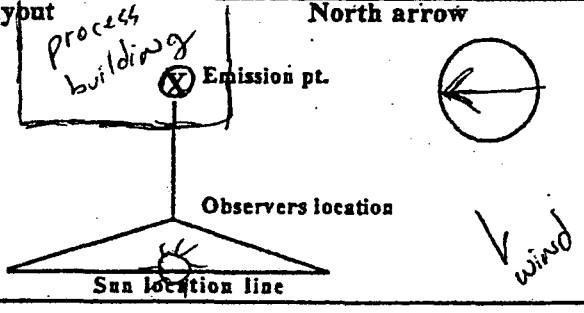
Fero

Beatty Environmental Services

VISIBLE EMISSION OBSERVATION FORM

Source Name SCI (Service Corp. Int'l)	**Observation Date** 6/16/05
Facility Name Dunnellon Crematory - Fero	**Start Time** 2:15 p.m.
Facility Address 7620 S.US 41	**End Time** 3:15 p.m.
City Dunnellon **State** FL	
Phone (352) 489-5363 **DEP Id. Number** 0830088 EU-01	
Process Equipment human cremation **Operating Mode** 100 lbs/hr	
Control Equipment afterburner **Operating Mode** ≥1400° F	
Describe Emission Pt Start stack Stop same	
Distance from observer Start ~50' Stop same **Direction from observer** Start 090° Stop same	
Height above ground Start ~25' Stop same **Height relative to observer** Start ~22' Stop same	
Describe emissions Start None Stop same	
Emission color Start None Stop same **Plume type:** Continuous ☑ Fugitive ☐ Intermittent ☐	
Point in plume at which opacity was determined Start ~3' above stack exit Stop same	
Describe background Start sky Stop same	
Background color Start blue Stop same **Sky conditions** Start scattered Stop same	
Wind speed Start ~1-4 mph Stop same **Wind direction** Start NE Stop same	
Ambient temp Start 80° Stop same **Wet bulb temp.** NA **R.H.%** 50%	
Slant angle Start 24° Stop same	

Source layout



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

Average opacity for highest period 0 %	**Number of readings above** 0 % **were** 0
Range of opacity readings 0 % min 0 % max	
Comments Appx 160 lbs of human remains Cremated	**Observer's name** Ryan Peterson
	Observer's signature Ryan Peterson
	Organization Beatty Environmental Services
Verified by	**Certified by** Eastern Technical Associates **Date** 2/05

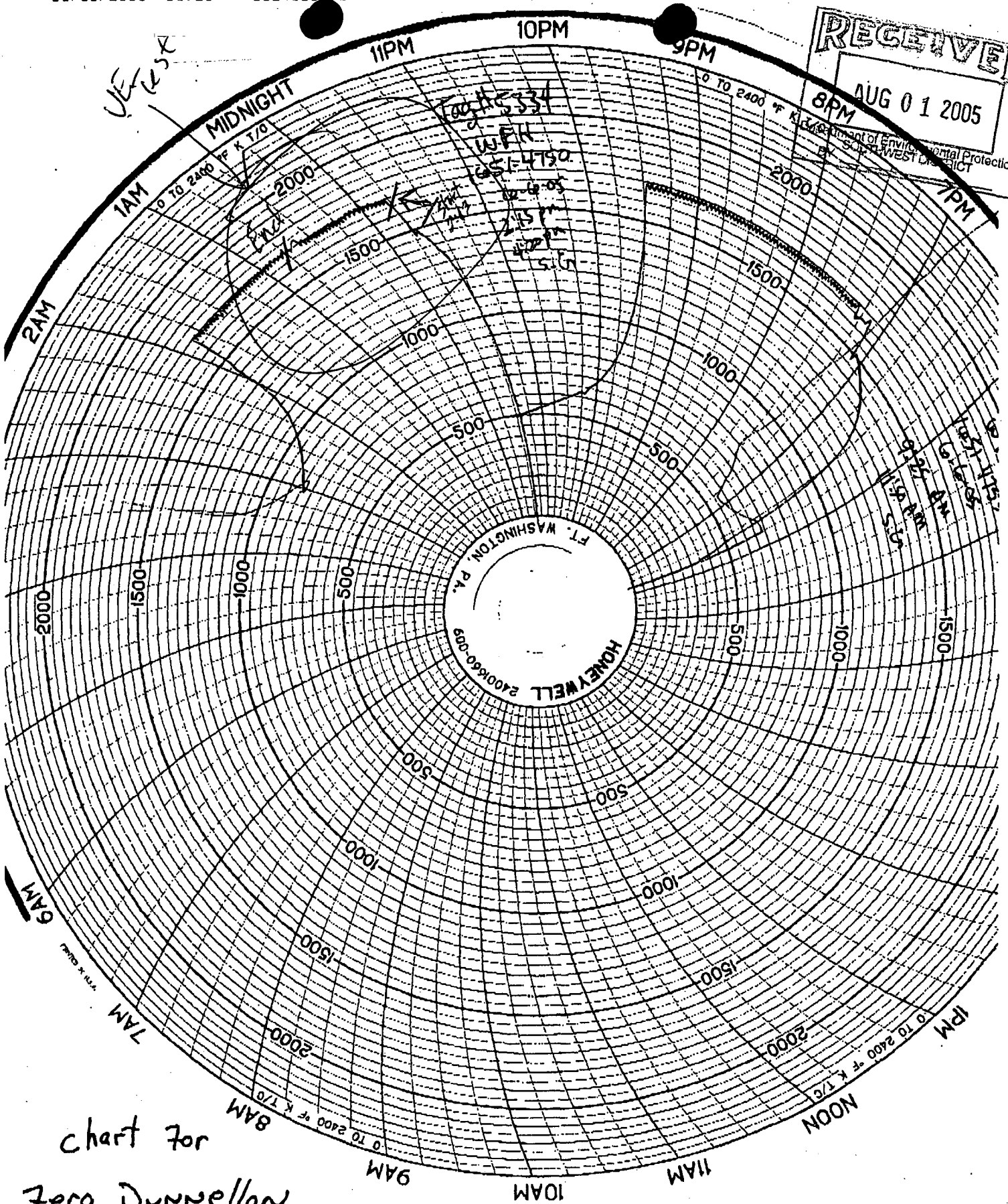


chart for
Fero Dunnellon
2:00 pm oppt on 6-6-05
Tag # 5334

Fero

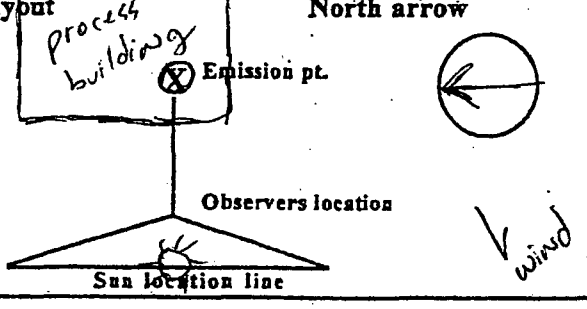
Beatty Environmental Services

VISIBLE EMISSION OBSERVATION FORM

BEST AVAILABLE COPY

Source Name	SCI (Service Corp. Int'l)
Facility Name	Dunnellon Crematory - Fero
Facility Address	7620 S. US 41
City	Dunnellon
State	FL
Phone	(352) 489-5363
DEP Id. Number	0830088 EU-01
Process Equipment	human cremation
Operating Mode	100 lbs/hr
Control Equipment	afterburner
Operating Mode	≥1400° F
Describe Emission Pt Start	stack
Stop	same
Distance from observer Start	~50'
Stop	same
Direction from observer Start	090°
Stop	same
Height above ground Start	~75'
Stop	same
Height relative to observer Start	~29'
Stop	same
Describe emissions Start	None
Stop	same
Emission color Start	None
Stop	same
Plume type: Continuous ☑ Fugitive ☐ Intermittent ☐	
Point in plume at which opacity was determined Start	~3' above stack exit
Stop	same
Describe background Start	sky
Stop	same
Background color Start	blue
Stop	same
Sky conditions Start	scattered
Stop	same
Wind speed Start	~1-4 mph
Stop	same
Wind direction Start	NE
Stop	same
Ambient temp Start	80°
Stop	same
Wet bulb temp.	NA
R.H.%	50%
Slant angle Start	24°
Stop	same

Source layout



Observation Date	Start Time	End Time
6/16/05	2:15 p.m.	3:15 p.m.

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

Average opacity for highest period	0 %
Number of readings above	0 % were 0
Range of opacity readings	0 % min 0 % max

Comments

Appx 160 lbs of human remains Cremated

Observer's name	Ryan Peterson
Observer's signature	Ryan Peterson
Organization	Beatty Environmental Services
Verified by	
Certified by	Eastern Technical Associates
Date	7/05

BEST AVAILABLE COPY

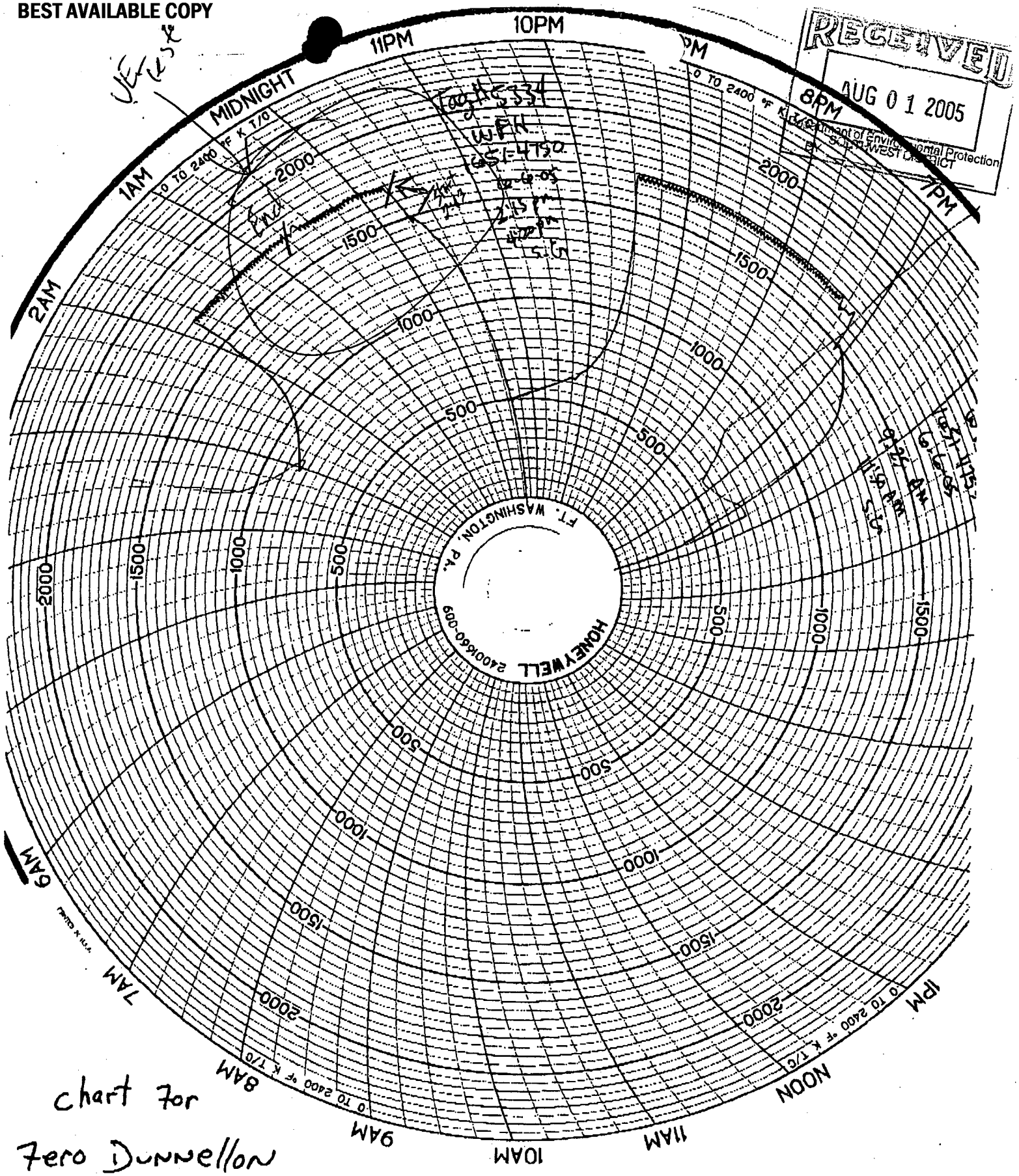


Chart for
Zero Dunnellon
2:00 pm oppt on 6-6-05
Tag # 5334

Submitted for
SCI (Marion Co.)
0830080

AIR COMPLIANCE TEST REPORT

PERMIT NO. 0950126-005-AG

IE43-PPII, POWER-PAK II CREMATORY INCINERATOR

Identical Unit Test

PREPARED FOR:

BALDWIN FAIRCHILD

ORLANDO, FLORIDA

MAY 5, 2005

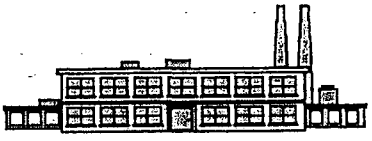
PREPARED BY:

ATC

AIR TESTING & CONSULTING, INC.

333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

ATC



AIR TESTING & CONSULTING, INC.

333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

To the best of my knowledge, all field and analytical procedures comply with Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

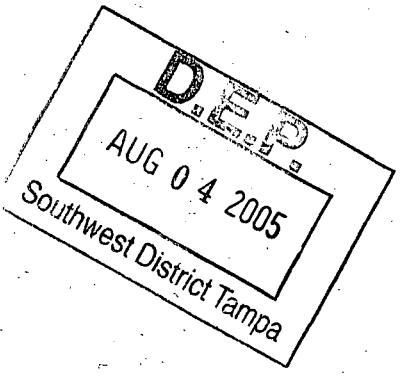
Kenneth E. Given

Kenneth E. Given, P.E.

5-10-05

Date

TABLE OF CONTENTS



APPENDICES

1.0 INTRODUCTION

On May 5, 2005, Air Testing & Consulting, Inc., conducted the following tests on Baldwin Fairchild's Human Crematory Incinerator located at 301 N. Ivanhoe Blvd. in Orlando, Florida:

(1) Particulate Emission (EPA Methods 1 – 5)

(2) Carbon Monoxide (EPA Method 10)

(3) Visible Emissions (EPA Method 9)

(4) Oxygen (EPA Method 3A)

These tests were performed at the request of Mathews Cremation Division to prove compliance on the Power Pak II crematory incinerator. Orange County, Environmental Protection Division, representatives, Gregory Bryant, Ilka Bundy and John Casper audited the test.

2.0 SUMMARY OF RESULTS

The results of the emission testing are presented in the Test Summary. The Particulate emissions averaged 0.0549 grains per dry standard cubic foot (gr/dscf) and CO emissions averaged 2.2 parts per million (ppmv), each corrected to 7% O_2. Opacity, highest six-minute average, on the stack, was 0%.

REGULATORY SUMMARY
BALDWIN FAIRCHILD
HUMAN CREMATORY
MAY 5, 2005

PERMIT NO. NEDS NO. ID #	EPA METHOD	METHOD DESCRIPTION	ACTUAL EMISSION RATE	ALLOWABLE EMISSION RATE	PROCESS RATE POUNDS PER HOUR	
					ACTUAL	PERMIT
0950126-005-AG	5	PARTICULATE			68	100
0126		gr/dscf @ 7% O2	0.055	0.080		
	10	CARBON MONOXIDE				
		ppmv @ 7% O_2	2	100		
	9	VISIBLE EMISSIONS				
		% Opacity	0	5% except for 20% up to 3 min/hr		

TABLE I
TEST SUMMARY
BALDWIN FAIRCHILD
HUMAN CREMATORY
MAY 5, 2005

RUN #	% O_2	PARTICULATE GR/DSCF @ 7% O_2	CO ppmv @ 7% O_2	PROCESS RATE POUNDS
1	16	0.0359	1.4	150
2	14	0.1122	2.0	130
3	14.5	0.0165	3.3	130
AVG	14.8	0.0549	2.2	137

3.0 SUMMARY OF TEST DATA

PLANT : BALDWIN UNIT : POWER-PACK II RUN NUMBERS :1, 2, 3

TEST DATE : 5/5/05	#1	#2	#3	AVERAGES
DATE	5/5/05	5/5/05	5/5/05	
START TIME	10:32	13:05	15:27	
END TIME	11:50	14:09	16:29	
STACK DIAMETER (INCHES)	19.5	19.5	19.5	
NOZZLE DIAMETER (INCHES)	0.550	0.550	0.550	
TEST TIME (MINUTES)	60	60	60	
NUMBER OF TEST POINTS PER RUN	24	24	24	
STACK GAS TEMPERATURE (°F)	850.0	991.8	1128	989.9
STACK GAS MOISTURE (%)	12.51	9.76	6.56	
STACK GAS MOLECULAR WEIGHT	28.50	28.83	29.21	
STACK GAS VOLUME SAMPLED (CUBIC FEET)	34.375	36.840	40.110	37.108
VOLUME SAMPLED (SCF @ 68°F)	34.585	37.020	40.270	37.292
STACK GAS VELOCITY (FEET PER SECOND)	18.14	17.30	19.75	18.39
STACK GAS FLOW RATE (ACFM)	2257.0	2152.2	2457.7	2288.9
STACK GAS FLOW RATE (DSCFM @ 68°F)	801.7	711.5	769.2	760.8
OXYGEN, %	16.0	14.0	14.5	
PARTICULATE CONC (GR/DSCF) @7% O_2	0.0359	0.1122	0.0165	**0.0549**
PARTICULATE MASS RATE (LBS/HOUR)	0.0871	0.3396	0.0500	**0.1589**
CO CONC @ 7% O_2, ppmv	1.42	2.01	3.26	**2.23**
CO MASS RATE (LBS/HOUR)	0.00175	0.00310	0.00503	**0.0033**
ISOKINETIC SAMPLING RATE, %I	90.4	109.0	109.7	

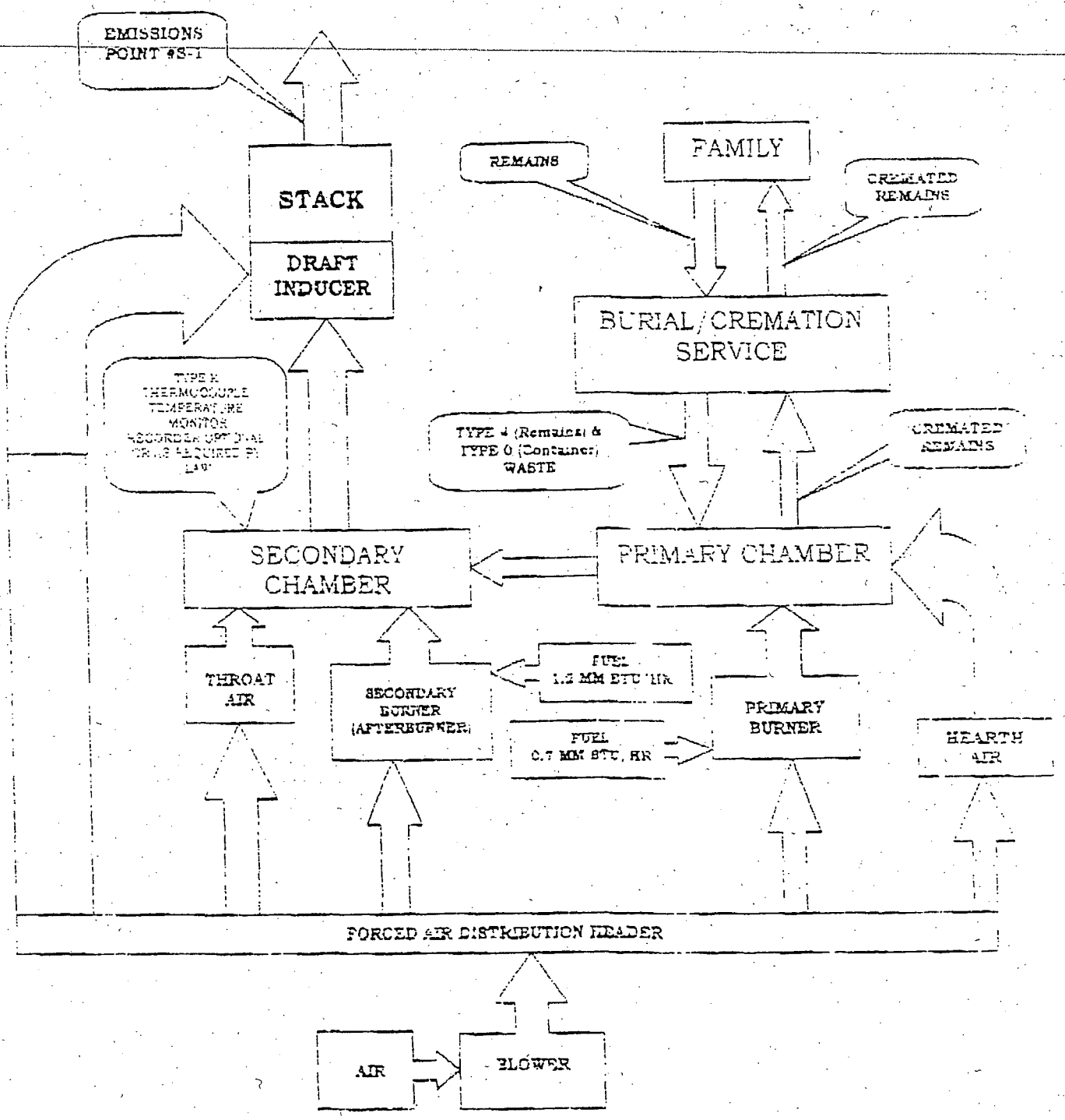
FIELD DATA AND SAMPLES UNDER THE CONTROL OF: TIM CAPELLE

LABORATORY ANALYSIS UNDER THE CONTROL OF: ATC

4.0 PROCESS DESCRIPTION

The facility operates a Matthews Power Pak II crematory for the purpose of disposing of human remains. The unit is rated at 100 lbs/hr and operates on a two hour cycle. See attached flow diagram. The design firing rate to the primary chamber is 0.7 MMBtu/hr and the rate to the afterburner is 1.2 MMBtu/hr.

After the secondary chamber has been heated sufficiently, the cremator burner ignites and the cremation process is initiated. A typical cremation takes from 1 to 2 hours, but the time may vary depending on the body weights and various other factors. (See "Crematory Process Flow Diagram").



CREMATOR PROCESS FLOW DIAGRAM

5.0 SAMPLING PROCEDURES

5.1 Description of Sampling Equipment

The sampling equipment consisted of the following:

(1) **Pitot Assembly**

a. Nozzle – Stainless steel coupled to the probe liner using a SS union.

b. Probe – Stainless steel with a $^{5}/_{8}$ inch OD SS insert, wrapped with nichrome wire. Probe heater is Rheostat controlled and capable of maintaining a minimum temperature of 250°F.

c. Pitot - Type "S", constructed and attached to the probe according to specifications outlined in Part 60 of Chapter 1, Title 40 of the Code of Federal Regulations (CFR) Appendix A, Method 2, as amended August 18, 1977.

d. Thermocouple - Type "K", attached to the pitot tube such that the tip has no contact with metal and does not interfere with the pitot tube face openings.

(2) **Filter Holder**

Pyrex glass with fritted teflon filter support.

(3) **Filter Heating Assembly**

Controlled heating element in aluminum module attached to the end of probe; capable of maintaining 250°F.

(4) Impingers

Four impingers connected in series with glass ball joint fittings and placed in an ice bath. The second and fourth impingers are the modified Greenburg-Smith design. The first and third impingers are the Greenburg-Smith design with a standard tip. Final gas exit temperature is measured to within 5°F with a dial thermometer immersed in the gas stream.

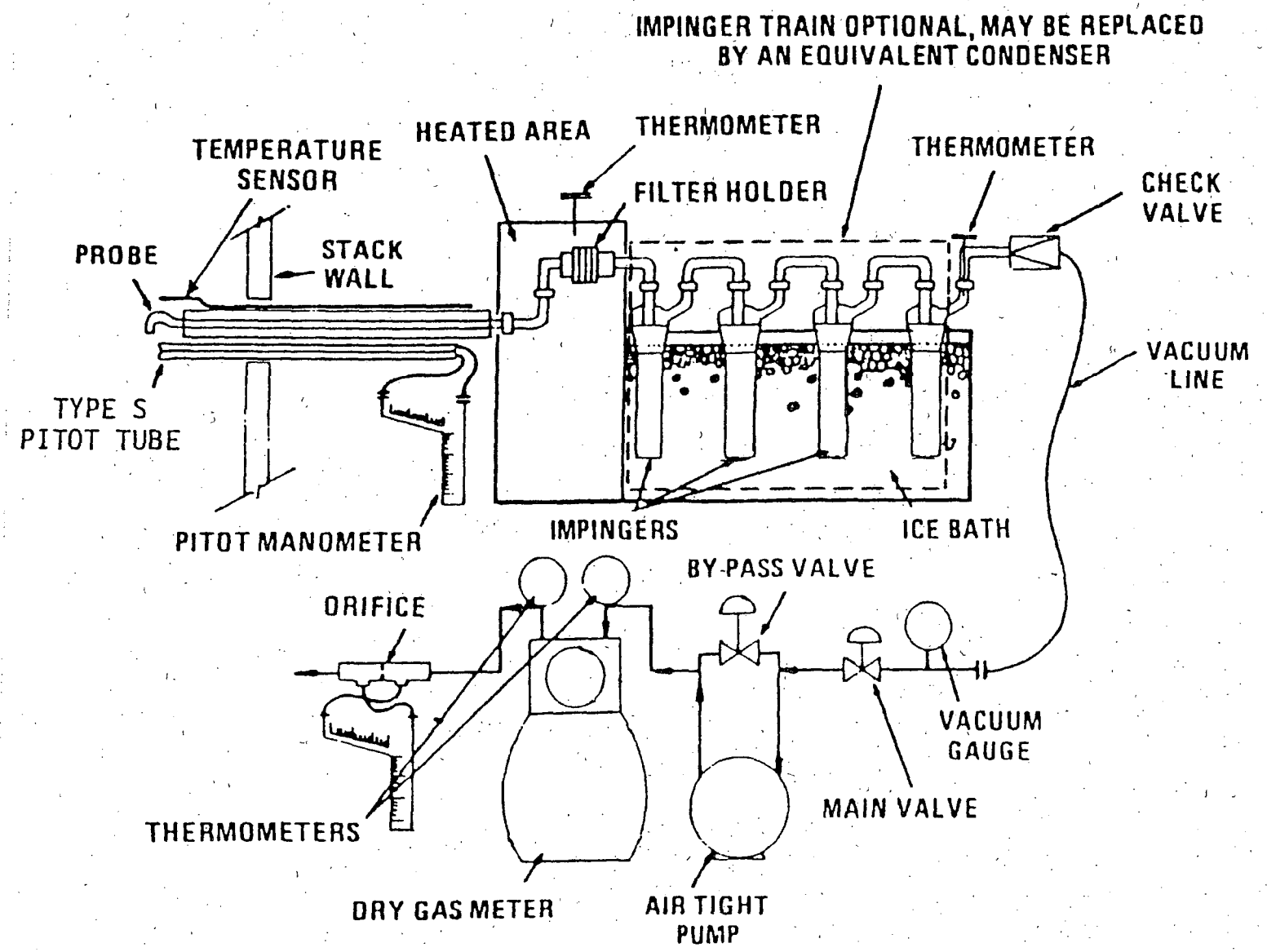
(5) Control Box

Module containing vacuum gauge, leak-free pump, thermometers capable of measuring temperature to within 5°F, dry gas meter with a minimum of 2 percent accuracy, valves and related equipment, as required to maintain an isokinetic sampling rate and to determine sample volume.

(6) Calculator

To determine isokinetic sampling rate.

A schematic of the sampling train is included.



EPA METHOD 5 - PARTICULATE SAMPLING TRAIN

5.2 *Oxygen (O_2) (EPA METHOD 3A)*

Oxygen was measured using a Teledyne 320 oxygen analyzer (Method 3A) so a continuous reading could be determined. The calibration was determined using pure Nitrogen (0% O_2), a 12.06% EPA Protocol Standard and atmospheric air (20.9% O_2).

5.2 *Particulate (EPA METHOD 5)*

The sample train was prepared in the following manner:

100 ml of DI water was added to each of the first two impingers. The third impinger was left empty to act as a moisture trap, and pre-weighed silica gel was added to the fourth impinger. After assembling the train with the heated glass liner as shown in the schematic, the system was leak-checked by plugging the inlet to the probe and pulling a 15" Hg vacuum. A leakage rate not in excess of 0.02 acfm was considered acceptable. The pump was also leak-checked at 5 to 7 inches of water, and any leaks found were corrected.

The inside dimensions of the stack was measured and recorded. The number of sampling points and the location of these points on a traverse were determined by the guidelines set forth in the Federal Register, Vol. 36, No. 247, Section 60.85, Method 1. These points were marked on the probe for easy visibility.

The probe was attached and the heater was adjusted to provide a gas temperature of approximately 250°F. The filter heating system was turned on, and crushed ice was placed around the impingers. After a suitable warm-up period, the probe was placed into the stack in the gas stream. The pump was started immediately; the flow was adjusted to isokinetic conditions. Readings of stack conditions were taken at least

every five minutes. At the end of the one hour sampling time, the probe was removed from the stack. At the conclusion of each run, the pump was turned off and the final readings were recorded.

A final leak-check of the system was performed as previously described at the highest vacuum encountered during testing and a leak-check of the pitot system was repeated.

Sample Recovery

Particulate

Care was exercised in moving the collection train to the sample recovery area to minimize the loss of collected sample or the gain of extraneous particulate matter. The volume of liquid in the first three impingers was measured and recorded on the field data sheet. The probe, nozzle, and all sample-exposed surfaces were washed with reagent grade acetone and put into a clean sample bottle marked "prefilter". A brush was used to loosen any adhering particulate matter, and subsequent washings were put into the "prefilter" container. The filter was carefully removed from the fritted teflon support and placed in its original container. (When practical, samples are changed out upon return to the laboratory.) The silica gel was removed from the fourth impinger and transferred to its original container. A sample of the acetone used in washing the probe was saved for a blank laboratory analysis.

5.3 CO (EPA METHOD 10)

The sampling system is shown in the following figure. A sample was drawn from the stack at a rate of approximately 2 SCFH. A three-way stainless steel valve followed a stainless steel probe assembly. The sample was pumped through an ice-cooled condensate trap followed by a 1/4" OD Teflon sampling line. Calibration gases were introduced at the sampling interface (the three-way valve) through another 1/4" OD Teflon line. The sample pump delivered gases to a Thermo-Electron Model 48 CO analyzer (NDIR with gas filter correlation). Excess flow is dumped to ambient. All instrument responses were recorded on strip chart recorders. The sampling system yields CO concentrations on a dry gas basis.

Calibration gases consisted of CO standards in nitrogen. All calibration gases were certified NBS traceable, Protocol 1.

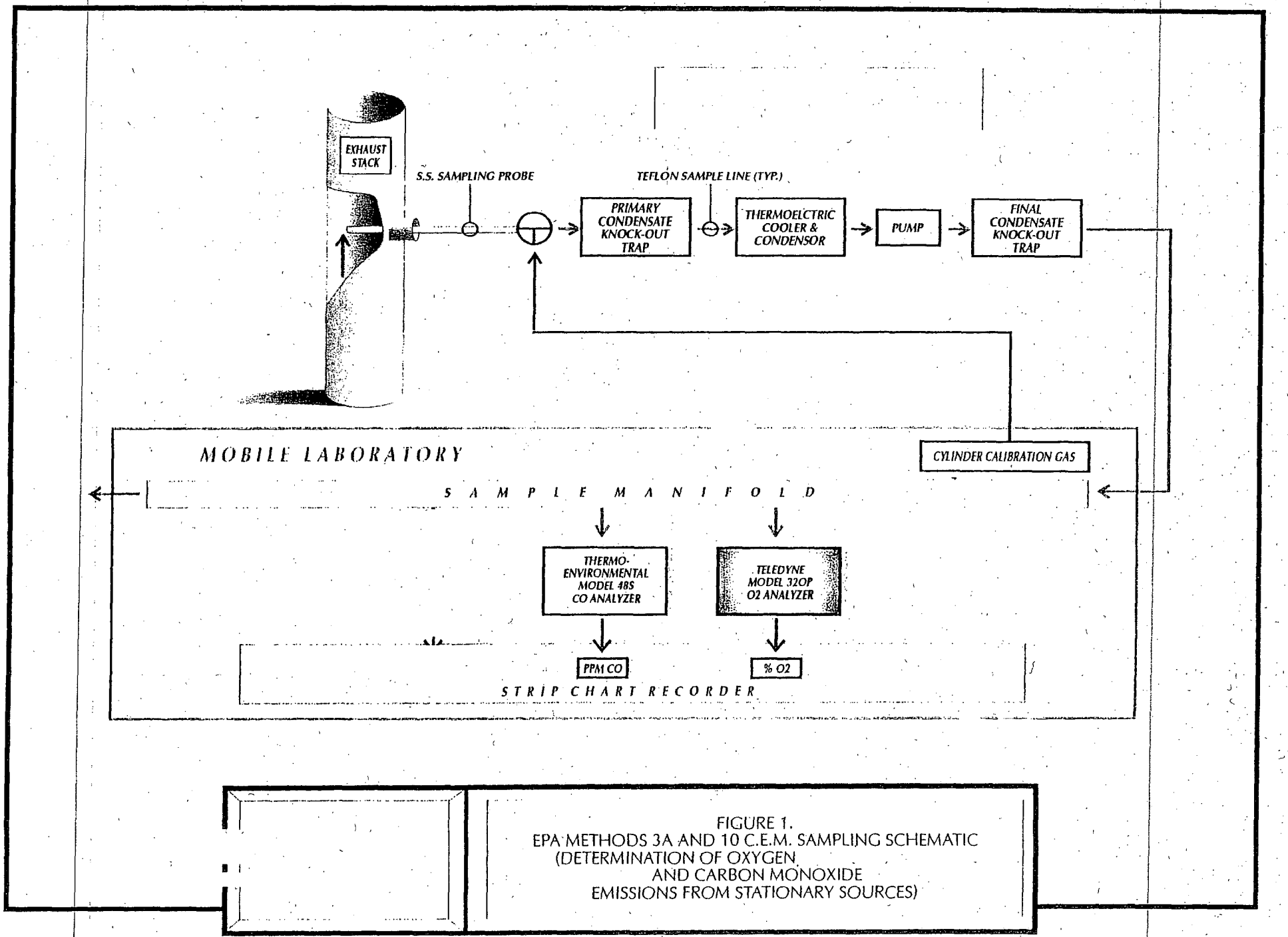


FIGURE 1.
EPA METHODS 3A AND 10 C.E.M. SAMPLING SCHEMATIC
(DETERMINATION OF OXYGEN
AND CARBON MONOXIDE
EMISSIONS FROM STATIONARY SOURCES)

5.4 Traverse Point Locations

The sampling probe was placed in the 19.5" diameter scrubber stack. The sampling nozzle was located 1.6 stack diameters upstream the stack exit and 2.8 stack diameters downstream the nearest disturbance (see attached sketch).

AIR TESTING & CONSULTING, INC.
STACK TRAVERSE

DATE: 5/5/05

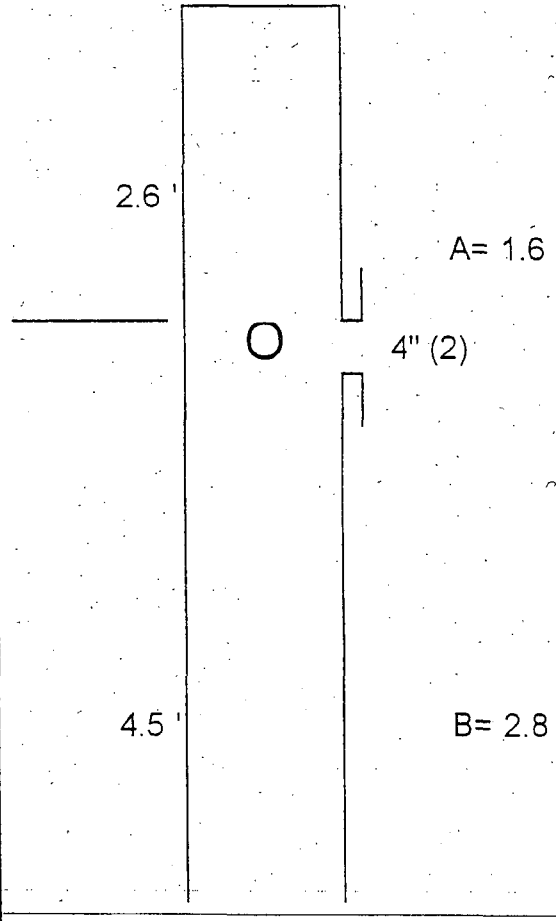
BY: CAPELLE

COMPANY: BALDWIN FAIRCHILD

SOURCE: CREMATORY

DUCT DIA, IN : 19.5

Nozzle ID	D1	D2	D3	Da
0.550	✓	✓	✓	.550



Point No.	Distance from Duct Wall (in)
1	0.4
2	1.3
3	2.3
4	3.5
5	4.9
6	6.9
7	12.6
8	14.6
9	16.0
10	17.2
11	18.2
12	19.1

6.0 ANALYTICAL PROCEDURES

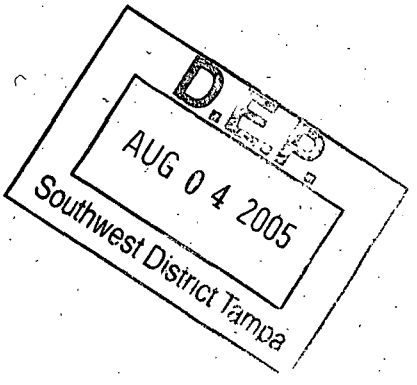
6.1 Particulate

The filter and any loose particulate matter were transferred from the sample bottle to a clean and tared glass weigh dish. The filter was placed in an oven at 105° Centigrade for two hours, desiccated for two hours, and then weighed. The original weight of the filter was deducted, and the weight gain was recorded to the nearest 0.1 mg.

The "prefilter" and blank solutions were transferred to clean, tared beakers, evaporated to dryness and desiccated to a constant weight. The blank correction was made, and the weight gain was recorded to the nearest 0.1 mg. The silica gel was weighed, and the weight gain was recorded to the nearest 0.1 gram.

APPENDICES

A. FIELD DATA



PLANT :	BALDWIN	OPERATOR :	CAPELLE/GIVEN	DATE :	5/5/05	RUN # :	1
UNIT :	POWER-PACK II	PROBE HTR, °F :	250	BAROM PRESS, "Hg :	30.15	STACK DIA, "	19.5
PROBE # :	3'G	HTR BOX, °F :	250	"Y" FACTOR :	0.999	NOZZLE DIA, "	0.550
AS MSTR :	10%	PITOT CORR :	0.84	METER BOX DHa :	1.75	STATIC PRESS	0.04
FILTER # :	0.2575	# POINTS :	24	C" FACTOR :	22.55	WATER, ML	105

- PITOT TUBE -

STRT TME :	10:32	IMPACT :	2"	15 SEC :
END TIME :	11:50	STATIC :	2"	15 SEC :

- METER BOX -

BEFORE:	0	cfm @	10	"Hg
AFTER:	0	cfm @	5	"Hg

TRAVERSE POINT #	SAMPLING TIME (THETA)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	$(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft^3	GAS METER TEMPERATURE (Tm) INLET	OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPING	PUMP VACUUM (INCHES OF Hg)
1	0	969	0.045	0.21	1.01	535.065	68	68	250	65	2
2	2.5	960	0.050	0.22	1.13		68	66	250	52	2
3	5	958	0.050	0.22	1.13		69	66	250	52	2
4	7.5	951	0.050	0.22	1.13		70	66	251	53	2
5	10	962	0.055	0.23	1.24		71	66	251	54	2
6	12.5	971	0.055	0.23	1.24		72	66	250	54	2
7	15	1047	0.055	0.23	1.24		74	66	250	54	2
8	17.5	1066	0.050	0.22	1.13		74	66	250	54	2
9	20	1026	0.050	0.22	1.13		75	66	251	54	2
10	22.5	668	0.050	0.22	1.13		75	66	249	55	2
11	25	555	0.050	0.22	1.13		76	66	250	55	2
12	27.5	228	0.035	0.19	0.79		76	66	250	55	2
13	30	982	0.065	0.25	1.47		70	66	249	66	2
14	32.5	1009	0.070	0.26	1.58		74	66	249	55	2
15	35	1011	0.040	0.04	0.90		75	66	250	55	2
16	37.5	934	0.035	0.19	0.79		71	67	250	58	2
17	40	897	0.035	0.19	0.79		70	67	250	59	2
18	42.5	893	0.040	0.20	0.90		70	67	250	60	2
19	45	855	0.040	0.20	0.90		71	67	250	60	2
20	47.5	815	0.030	0.17	0.68		72	67	250	57	2
21	50	824	0.035	0.19	0.79		73	67	250	55	2
22	52.5	660	0.035	0.19	0.79		74	67	249	54	2
23	55	580	0.035	0.19	0.79		74	67	250	53	2
24	57.5	580	0.030	0.17	0.68		74	67	250	52	2
	60					569.440					
	60	850.04	AV SQ RT =	0.205	1.019	34.375	AV TEMP =	69.40	250.0	66	2

AIR TESTING & CONSULTING - FIELD DATA SHEET

PLANT: BALDWIN FAIRCHILD | STACK DIAMETER: 19.5 | BAROM PRESS, "Hg: 30.15 | RUN #: 1
UNIT: INCINERATOR | NO. OF POINTS: 24 | PROBE NO.: 3'SS | NOZZLE DIA, ": .550
OPERATOR: CAPELLE/GIVEN | ASSUMED MOISTURE: 10% | PROBE SETTING: 250 °F | METER BOX DHA: 1.750
PITOT CORR. FACTOR: 0.84 | BOX SETTING: 250 °F | Y" FACTOR: 0.999

PM, CO

DATE: 5-5-05 | PITOT TUBE: | METER BOX:
START TIME: 10:32 | IMPACT: 2 "for 15 SEC: ✓ | BEFORE: 0 cfm @ 10 " of Hg | FILTER NUMBER.: .2575
END TIME: 11:50 | STATIC: 7 "for 15 SEC: ✓ | AFTER: 0 cfm @ 5 " of Hg | STATIC PRESSURE: .04

TRAVERSE POINT #	SAMPLING TIME (θ)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	VELOCITY HEAD (Dp)^0.5	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft³	GAS METER TEMPERATURE (Tm) INLET	GAS METER TEMPERATURE (Tm) OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPINGER	PUMP VACUUM (INCHES of Hg)	F=	F = 1570 x (A x C)/B A = (F.D.A. x Dn²)² B = (F.D.A. + 1.6) x Ts C = (Tm x DHa)
1	0	969	.0450	.21	1.01	535.065	68	66	250	65	2	22.55	
2	2.5	960	.050	.22	1.13	536.51	68	66	250	52	2		Ts = 860
3	5	958	.050	.22	1.13	538.02	69	66	250	52	2		Tm = 75
4	7.5	951	.050	.22	1.13	539.55	70	66	251	53	2		
5	10	962	.055	.23	1.24	541.11	71	66	251	54	2		F =
6	12.5	971	.055	.23	1.24	542.61	72	66	250	54	2		
7	15	1047	.055	.23	1.24	544.16	74	66	250	54	2		
8	17.5	1066	.050	.22	1.13	545.69	74	66	250	54	2		
9	20	1026	.050	.22	1.13	547.18	75	66	251	54	2		
10	22.5	668	.050	.22	1.13	548.68	75	66	249	55	2		
11	25	555	.050	.22	1.13	550.19	74	66	250	55	2		
12	27.5	228	.035	.19	.79	551.71	76	66	250	55	2		
1	13	882	.065	.25	1.47	552.96	70	66	244	66	2		
2	14	1009	.070	.26	1.58	554.68	74	66	249	55	2		
3	15	1003	.040	.20	.90	556.56	75	66	250	55	2		
4	16	934	.035	.19	.79	557.92	71	67	250	58	2		
5	17	897	.035	.19	.79	559.18	70	67	250	57	2		
6	18	873	.040	.20	.90	560.44	70	67	250	60	2		
7	19	855	.040	.20	.90	561.81	71	67	250	60	2		
8	20	815	.030	.17	.68	563.18	72	67	250	57	2		
9	21	824	.035	.19	.79	564.37	73	67	250	55	2		
10	22	660	.035	.19	.79	565.65	74	67	249	54	2		
11	23	580	.035	.19	.79	566.94	74	67	250	53	2		V.W.C. = 100
12	24	588	.030	.17	.68	568.24	74	67	250	52	2		5.6 · 5
	60					569.440							10.5
	60	(849.71)	AV SQ RT = .205		1.019	34.375	AV TEMP = 69.40						

PLANT :	BALDWIN	OPERATOR :	CAPELLE/GIVEN	DATE :	5/5/05	RUN # :	2
UNIT :	POWER-PACK II	PROBE HTR, °F :	250	BAROM PRESS, "Hg :	30.15	STACK DIA, " :	19.5
PROBE # :	3'G	HTR BOX, °F :	250	"Y" FACTOR :	0.999	NOZZLE DIA, " :	0.550
AS MSTR :	10%	PITOT CORR :	0.84	METER BOX DHa :	1.75	STATIC PRESS :	0.04
FILTER # :	0.2588	# POINTS :	24	C" FACTOR :	33.02	WATER, ML :	85

- PITOT TUBE -

STRT TME :	13:05	IMPACT :	2"	15 SEC :
END TIME :	14:09	STATIC :	2"	15 SEC :

- METER BOX -

BEFORE:	0	cfm @	10	"Hg
AFTER:	0	cfm @	10	"Hg

TRAVERSE POINT #	SAMPLING TIME (THETA)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	VELOCITY HEAD $(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft^3	GAS METER TEMPERATURE (Tm) INLET	GAS METER TEMPERATURE (Tm) OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPING	PUMP VACUUM (INCHES OF Hg)
1	0	1080	0.040	0.20	1.32	570.020	68	67	250	68	2
2	2.5	1132	0.040	0.20	1.32		68	67	249	50	2
3	5	1124	0.040	0.20	1.32		69	67	250	48	2
4	7.5	1126	0.050	0.22	1.65		70	67	251	49	2
5	10	1116	0.040	0.20	1.32		71	67	255	48	3
6	12.5	1121	0.040	0.20	1.32		72	67	257	52	3
7	15	1065	0.030	0.17	0.99		74	67	260	52	3
8	17.5	1017	0.020	0.14	0.66		75	66	260	55	5
9	20	873	0.025	0.16	0.83		75	66	260	58	5
10	22.5	800	0.025	0.16	0.83		74	66	260	54	5
11	25	596	0.020	0.14	0.66		75	66	260	55	5
12	27.5	596	0.020	0.14	0.66		75	66	260	49	5
13	30	1022	0.040	0.20	1.32		71	66	260	52	7
14	32.5	1093	0.040	0.20	1.32		74	66	259	47	7
15	35	1104	0.040	0.20	1.32		75	66	260	48	7
16	37.5	1107	0.035	0.19	1.16		75	66	260	48	7
17	40	1118	0.035	0.19	1.16		76	66	260	49	7
18	42.5	1106	0.040	0.20	1.32		76	66	260	49	7
19	45	1106	0.040	0.20	1.32		77	66	260	49	7
20	47.5	1086	0.040	0.20	1.32		78	66	260	49	7
21	50	1003	0.040	0.20	1.32		78	66	260	49	7
22	52.5	800	0.035	0.19	1.16		78	66	260	49	7
23	55	808	0.035	0.19	1.16		78	66	260	49	7
24	57.5	804	0.035	0.19	1.16		78	66	260	49	7
	60					606.860					
	60	991.8	AV SQ RT =	0.186	1.163	36.840	AV TEMP =	70.23	258.0	68	7

AIR TESTING & CONSULTING - FIELD DATA SHEET

PM, CO

PLANT: BALDWIN FAIRCHILD	STACK DIAMETER: 19.5	BAROM PRESS, "Hg: 30.15	RUN #: 2
UNIT: INCINERATOR	NO. OF POINTS: 24	PROBE NO.: 3'SS	NOZZLE DIA, ": .650
OPERATOR: CAPELLE/GIVEN	ASSUMED MOISTURE: 10%	PROBE SETTING: 250 °F	METER BOX DHA: 1.750
	PITOT CORR. FACTOR: 0.84	BOX SETTING: 250 °F	Y" FACTOR: 0.999

DATE: 5-5-05
START TIME: 1:05
END TIME: 2:09

PITOT TUBE:
IMPACT 2 "for 15 SEC: ✓
STATIC 2 "for 15 SEC: ✓

METER BOX:
BEFORE: 0 cfm @ 10 " of Hg
AFTER: 0 cfm @ 10 " of Hg

FILTER NUMBER: .2588
STATIC PRESSURE: .0 ✓

TRAVERSE POINT #	SAMPLING TIME (θ)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	VELOCITY HEAD $(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft³	GAS METER TEMPERATURE (Tm) INLET	GAS METER TEMPERATURE (Tm) OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPINGER	PUMP VACUUM (INCHES of Hg)	F=
1	0	1080	.040	.20	1.32	570.020	68	67	250	68	2	33.02
2	2.5	1132	.040	.20	1.32	571.67	68	67	249	50	2	
3	5	1124	.040	.20	1.32	573.17	69	67	250	48	2	
4	7.5	1126	.050	.22	1.65	574.81	70	67	251	49	2	
5	10	1116	.040	.20	1.32	576.59	71	67	255	48	3	
6	12.5	1121	.040	.20	1.32	578.25	72	67	259	53	3	
7	15	1065	.030	.17	.99	579.87	74	66	260	52	5	
8	17.5	1017	.020	.14	.66	581.34	75	66	260	55	5	
9	20	893	.025	.16	.83	582.62	75	66	260	58	5	
10	22.5	800	.025	.16	.83	583.71	75	66	260	54	5	
11	25	596	.020	.14	.66	585.05	75	66	260	53	5	
12	27.5	596	.020	.14	.66	586.23	75	66	260	49	5	
1	13	1022	.040	.20	1.32	587.43	71	66	260	52	7	
2	14	1093	.040	.20	1.32	589.06	74	66	259	49	7	
3	15	1109	.040	.20	1.32	590.69	75	66	260	48	7	
4	16	1107	.035	.19	1.16	592.37	75	66	260	48	7	
5	17	1118	.035	.19	1.16	593.92	76	66	260	49	7	
6	18	1106	.040	.20	1.32	595.48	76	66	260	49	7	
7	19	1106	.040	.20	1.32	597.11	77	66	260	49	7	
8	20	1086	.040	.20	1.32	598.81	78	66	260	49	7	
9	21	1003	.040	.20	1.32	600.44	78	66	260	49	7	
10	22	808	.035	.19	1.16	602.12	78	66	260	49	7	
11	23	879	.035	.19	1.16	603.76	78	66	260	49	7	
12	24	804	.035	.19	1.16	605.31	78	66	260	49	7	
	60	(991.81)	AV SQ RT = (.186)		(1.163)	(606.960)	AV TEMP = 7023					
	60					(36.840)						

F = 1570 x (A x C)/B
A = (F.D.A. x Dn^2)²
B = (F.D.A. + 1.6) x Ts
C = (Tm x DHa)

Ts = 860
Tm = 675
F =

V.W.C. = 81
56 = 4
85

PLANT :	BALDWIN	OPERATOR :	CAPELLE/GIVEN		DATE :	5/5/05	RUN # :	3
UNIT :	POWER-PACK II	PROBE HTR, °F :	250		BAROM PRESS, "Hg :	30.15	STACK DIA, " :	19.5
PROBE # :	3'G	HTR BOX, °F :	250		"Y" FACTOR :	0.999	NOZZLE DIA, " :	0.550
AS MSTR :	10%	PITOT CORR :	0.84		METER BOX DHa :	1.75	STATIC PRESS :	0.03
FILTER # :	0.2632	# POINTS :	24		C" FACTOR :	33.02	WATER, ML :	60

- PITOT TUBE -				- METER BOX -				
STRT TME :	15:27	IMPACT :	2" 15 SEC :	BEFORE:	0	cfm @	10	"Hg
END TIME :	16:29	STATIC :	2" 15 SEC :	AFTER:	0	cfm @	8	"Hg

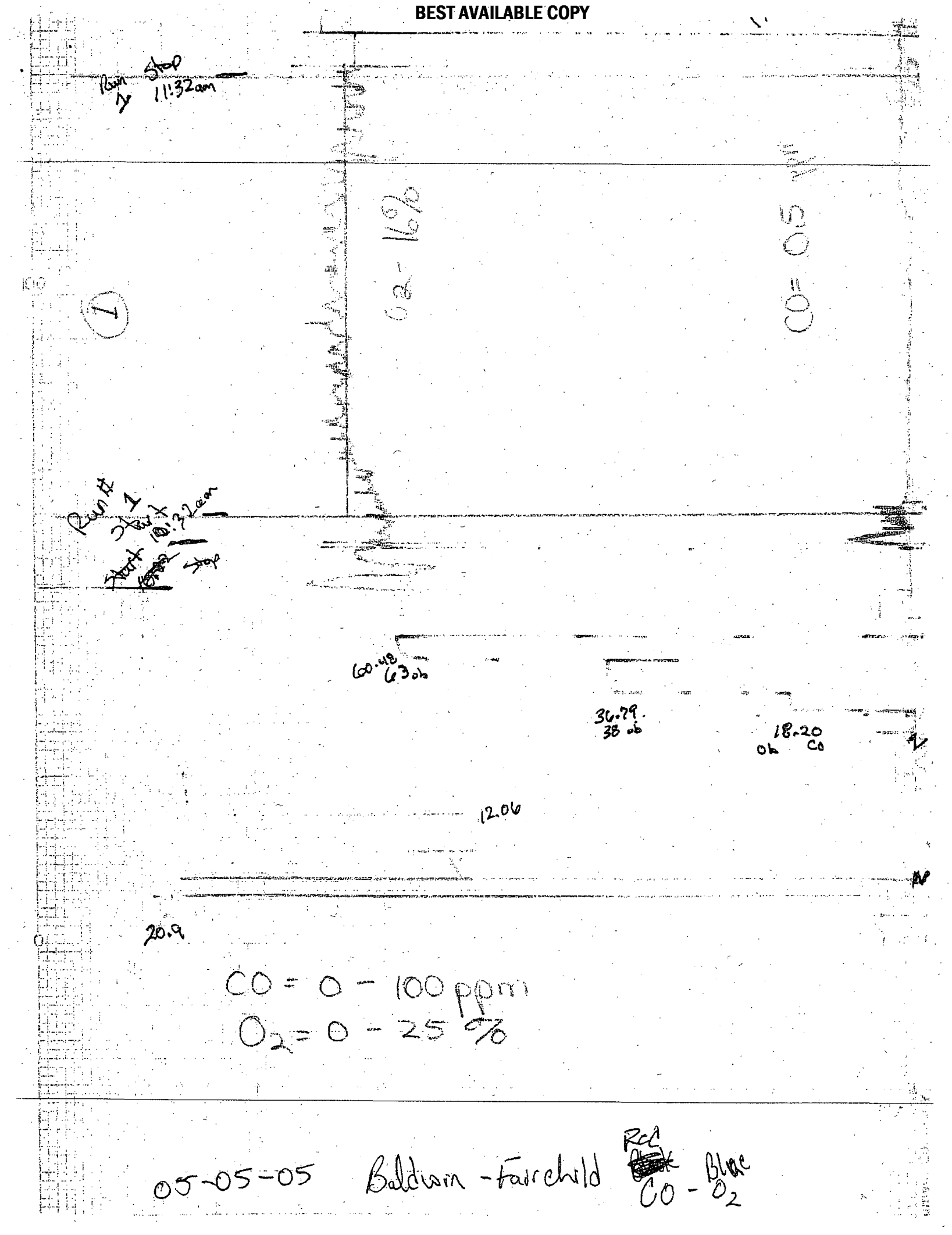
TRAVERSE POINT #	SAMPLING TIME (THETA)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	$(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft^3	GAS METER TEMPERATURE (Tm) INLET	OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPINGER	PUMP VACUUM (INCHES OF Hg)
1	0	1127	0.050	0.22	1.65	607.210	68	67	250	68	2
2	2.5	1158	0.050	0.22	1.65		68	67	260	50	2
3	5	1154	0.055	0.23	1.82		69	67	261	54	2
4	7.5	1147	0.055	0.23	1.82		70	67	260	55	2
5	10	1163	0.050	0.22	1.65		71	67	260	55	2
6	12.5	1164	0.055	0.23	1.82		73	67	260	55	2
7	15	1153	0.055	0.23	1.82		75	67	261	55	2
8	17.5	1160	0.050	0.22	1.65		75	67	260	56	2
9	20	1116	0.050	0.22	1.65		76	67	260	56	2
10	22.5	1031	0.045	0.21	1.49		77	67	260	57	2
11	25	1028	0.045	0.21	1.49		77	67	261	57	2
12	27.5	1124	0.035	0.19	1.16		77	67	260	57	2
13	30	1121	0.050	0.22	1.65		77	67	260	56	2
14	32.5	1134	0.050	0.22	1.65		77	67	259	56	2
15	35	1133	0.035	0.19	1.16		77	67	260	55	3
16	37.5	1130	0.035	0.19	1.16		78	67	260	55	3
17	40	1119	0.030	0.17	0.99		77	67	260	55	3
18	42.5	1126	0.035	0.19	1.16		77	67	260	55	3
19	45	1128	0.030	0.17	0.99		77	67	260	55	3
20	47.5	1130	0.035	0.19	1.16		77	67	260	55	3
21	50	1133	0.035	0.19	1.16		77	67	259	55	3
22	52.5	1132	0.030	0.17	0.99		77	67	260	55	3
23	55	1129	0.030	0.17	0.99		77	67	260	55	3
24	57.5	1132	0.030	0.17	0.99		77	67	260	55	3
	60					647.320					
	60	1128.0	AV SQ RT =	0.205	1.403	40.110	AV TEMP =	71.02	259.6	68	3

AIR TESTING & CONSULTING - FIELD DATA SHEET

PLANT: BALDWIN FAIRCHILD | STACK DIAMETER: 19.5 | BAROM PRESS, "Hg: 30.15 | RUN #: 3
UNIT: INCINERATOR | NO. OF POINTS: 24 | PROBE NO.: 3'SS | NOZZLE DIA, ": .550
OPERATOR: CAPELLE/GIVEN | ASSUMED MOISTURE: 10% | PROBE SETTING: 250 °F | METER BOX DHA: 1.750
PM, CO | PITOT CORR. FACTOR: 0.84 | BOX SETTING: 250 °F | Y" FACTOR: 0.999

DATE: 5-5-05 | PITOT TUBE: | METER BOX:
START TIME: 3:27 | IMPACT 2 "for 15 SEC: ✓ | BEFORE: 0 cfm @ 10 " of Hg | FILTER NUMBER: 12632
END TIME: 4:29 | STATIC 2 "for 15 SEC: ✓ | AFTER: 0 cfm @ 8 " of Hg | STATIC PRESSURE: .03

	TRAVERSE POINT #	SAMPLING TIME Θ	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	VELOCITY HEAD $(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft^3	GAS METER TEMPERATURE (Tm) INLET	GAS METER TEMPERATURE (Tm) OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPINGER	PUMP VACUUM (INCHES of Hg)	F=	F = 1570 x (A x C)/B A = (F.D.A. x Dn^2)^2 B = (F.D.A. + 1.6) x Ts C = (Tm x DHa)
	1	0	1127	.050	.22	1.65	607,210	68	67	250	68	2	33.20	
	2	2.5	1158	.050	.22	1.65	609.02	68	67	260	50	2		Ts = 860
	3	5	1155	.055	.23	1.82	610.82	69	67	261	52	2		Tm = 75
	4	7.5	1159	.055	.23	1.82	612.71	70	67	260	54	2		
	5	10	1163	.050	.22	1.65	614.61	71	67	260	55	2		F =
	6	12.5	1164	.055	.23	1.82	616.47	73	67	260	55	2		
	7	15	1153	.055	.23	1.82	618.33	75	67	261	55	2		
	8	17.5	1160	.050	.22	1.65	620.24	75	67	260	56	2		
	9	20	1116	.056	.22	1.65	622,06	76	67	260	56	2		
	10	22.5	1031	.045	.21	1.49	623.91	77	67	260	57	2		
	11	25	1028	.045	.21	1.48	625.64	77	67	261	57	2		
	12	27.5	1124	.035	.19	1.16	627.35	77	67	260	57	2		
1	13	30	1121	.050	.22	1.65	628.91	77	67	260	56	2		
2	14	32.5	1134	.050	.22	1.65	630.71	77	67	259	56	2		
3	15	35	1133	.035	.19	1.16	632.54	77	67	260	55	3		
4	16	37.5	1130	.035	.19	1.16	634.07	78	67	260	55	3		
5	17	40	1129	.030	.17	.99	635.61	77	67	260	55	3		
6	18	42.5	1126	.035	.19	1.16	637.05	77	67	260	55	3		
7	19	45	1128	.030	.17	.99	638.56	77	67	260	55	3		
8	20	47.5	1130	.035	.19	1.16	640.01	77	67	260	55	3		
9	21	50	1133	.035	.19	1.16	641.53	77	67	259	55	3		
10	22	52.5	1132	.030	.17	.99	643.07	77	67	260	55	3		
11	23	55	1129	.030	.17	.99	644.54	77	67	260	55	3		V.W.C. = 57
12	24	57.5	1132	.030	.17	.99	645.—	77	67	260	55	3		SG 3
		60					647,320							60
		60	(1128)	AV SQ RT = (205)		(1.103)	(40.110)	AV TEMP = (71.02)						



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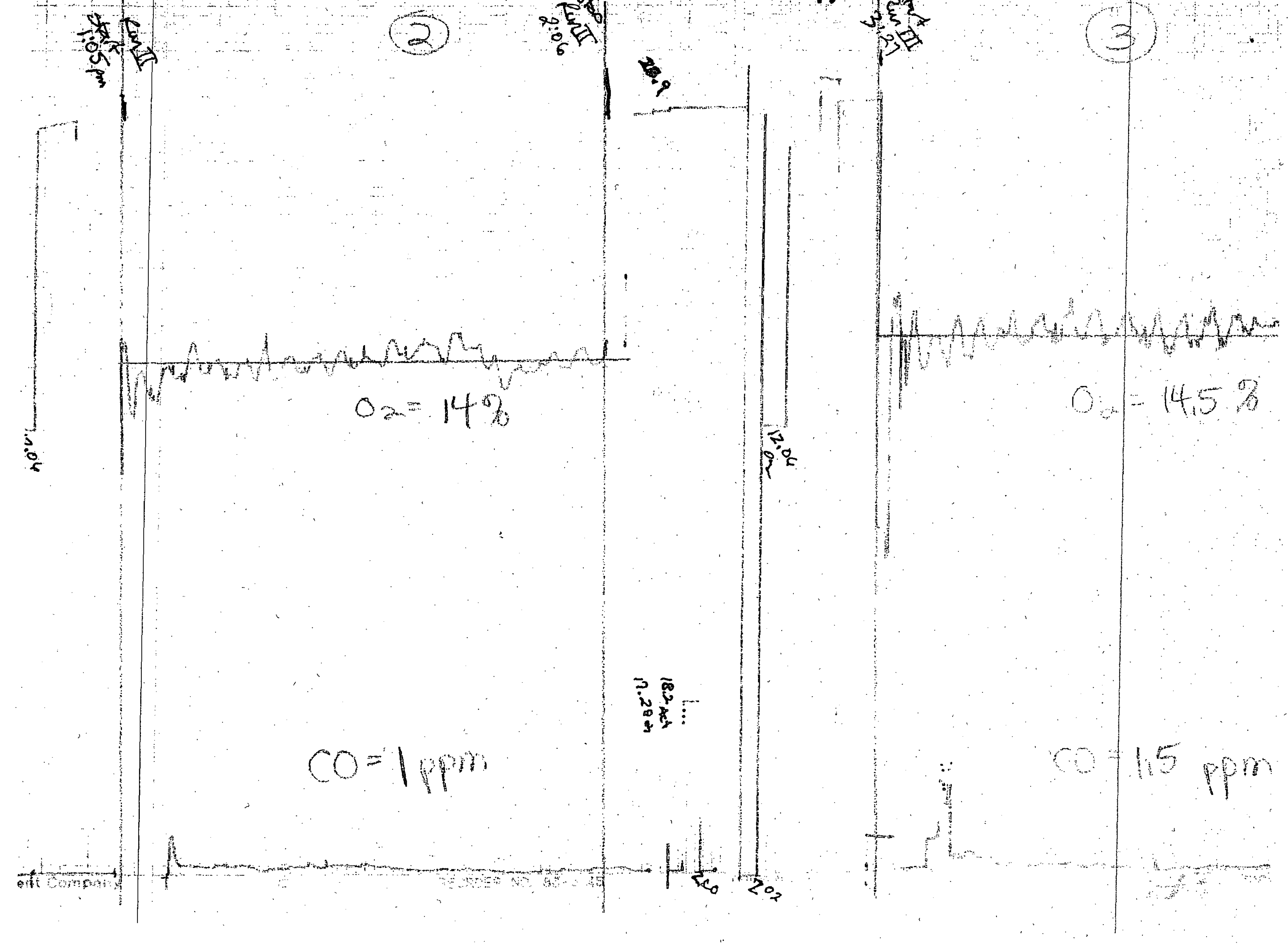
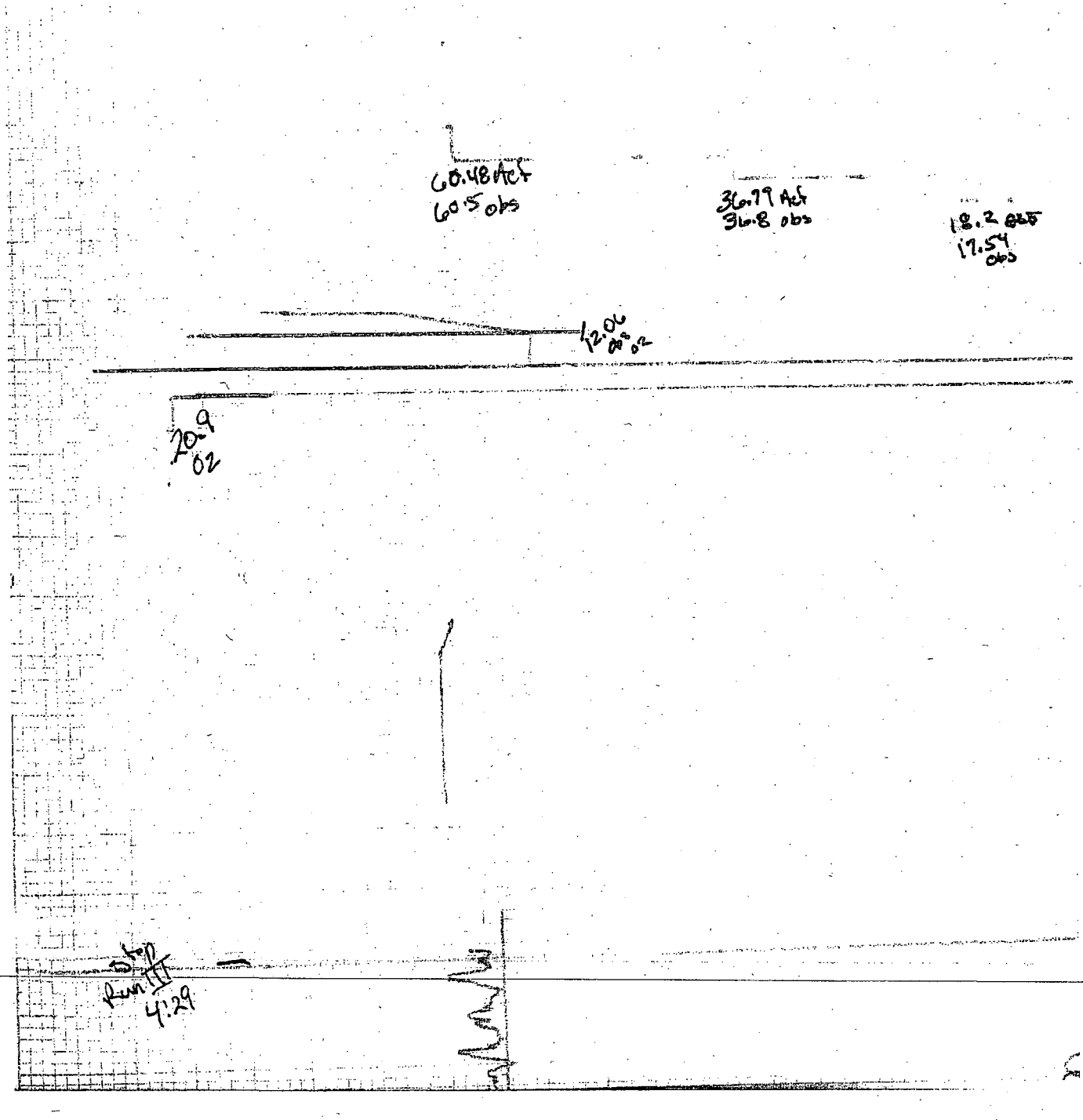




B. LABORATORY DATA

AIR TESTING & CONSULTING

SOURCE IDENTIFICATION - BALDWIN FAIRCHILD
HUMAN CRAMATORY INCINERATOR

TEST DATE	LABORATORY RECEIVED	ANALYZED
5/05/05	5/05/05	5/06/05

PARTICULATE COLLECTED - GRAMS					
RUN #	SAMPLE	FINAL	TARE	GAIN	TOTAL WEIGHT
1	PROBE WASH	103.0394	103.0249	0.0145	
	FILTER PAPER	0.2714	0.2575	0.0139	0.0284
2	PROBE WASH	100.2252	100.1895	0.0357	
	FILTER PAPER	0.3567	0.2588	0.0979	0.1336
3	PROBE WASH	103.4767	103.4707	0.0060	
	FILTER PAPER	0.2770	0.2632	0.0138	0.0198
			ANALYST: KENNETH GIVEN		

SAMPLE CHAIN OF CUSTODY

Plant: BALDWIN FAIRCHILD

Source ID CREMATORY INCINERATOR

Date Sampled: MAY 5, 2005 Sampling Time 1:32 to 16:29

Test For: PM

SAMPLE RECOVERY

Container Code		Analysis
1 - Filters	RUNS 1, 2, 3	PM
2 - Probe Wash:	RUNS 1, 2, 3	PM
3 - Impingers		

Sampler: TIM CAPELLE
Title: ENVIRONMENTAL FIELD SUPERVISOR

Laboratory Personnel Receiving Samples:
Name: KENNETH GIVEN
Title: PRESIDENT
Date of Receipt: MAY 5, 2005

SAMPLE ANALYSIS

Container Code	Method of Analysis	Date	Analyst
RUNS 1, 2, 3	Titrametric	MAY 6, 2005	
RUNS 1, 2, 3	Titrametric	MAY 6, 2005	

REPORT PREPARATION

Name: Kenneth E. Given, P.E.

Title: President Date: 5/10/05

C. CALCULATIONS

TERMS USED FOR CALCULATIONS

Dh - average pressure on the limiting orifice, inches H_2O

Dp - average pressure on pitot tube, inches H_2O

Ts - average temperature of stack, °R

Tm - average temperature of meter, °R

Vm - volume of dry gas meter, actual cubic feet

Vm_{std} - volume of dry gas meter, dry standard cubic feet

Vwc - volume of water collected from impingers and silica gel, standard cubic feet

theta - total time of test run, minutes

An - area of nozzle tip, ft^2

As - cross sectional area of stack, ft^2

Pb - barometric pressure, inches Hg

Pm - pressure at meter, inches Hg

Ps - pressure at stack, inches Hg

Bwo - moisture in flue gas

Md - molecular weight of dry flue gas, lbs/lb-mole

Md - molecular weight of flue gas, lbs/lb-mole

Vs - velocity of flue gas, feet per second

Qs - volumetric flow of flue gas, cubic feet per minute

Qs_{std} - volumetric flow of flue gas, dry standard cubic feet per minute

Cp - pitot tube coefficient, 0.84

Kp - pitot tube constant, 85.49 ft/sec [(lb/lb-mole) (in Hg) / (°R) (in H_2O)] $^{1/2}$

%I - percent of theoretical ideal sampling rate, % ioskinetics

DERIVATION OF CALCULATIONS

A) Volume of water vapor collected, cubic feet

$Vwc = (0.0471)\ ft^3/gm \times$ gms, mls water collected

B) Volume of air metered at $68^{O}F$, 29.92 inches Hg, dry standard cubic feet

$Vm_{std} = (17.64) \times Y \times Vm \times Pm / Tm$

C) Moisture content of flue gas, % H_2O

$Bwo = Vwc / (Vwc + Vm_{std})$

D) Dry gas molecular weight

$Md = 0.44 \times \%CO_2 + 0.32 \times \%O_2 + 0.28 \times (\%N_2 + \%CO)$

Assume 29 for ambient sources, 30 for combustion sources

E) Stack gas molecular weight, lbs/lb-mole

$Ms = Md \times (1\text{-}Bwo) + 18\ (Bwo)$

F) Stack gas velocity, feet per second

$Vs = Kp \times Cp \times Dp^{1/2} \times [\ Ts / Ps \times Ms\ ]^{1/2}$

G) Stack gas flow rate, cubic feet per minute

$Qs = Vs \times As \times (60\ sec/min)$

H) Stack gas flow rate, dry standard cubic feet per minute

$Qs_{std} = [17.64 \times Qs \times Ps \times (1\text{-}Bwo)] / Ts$

I) Isokinetic sampling rate

$\%I = 0.0945 \times [Ts \times Vm_{std} / Ps \times Vs \times An \times theta \times (1\text{-}Bwo)]$

J) Concentration, grains per dry standard cubic foot

$= [(15.43\ grains/gram) \times (Wt\ collected)] / Vm_{std}$

K) Emission rate, pounds per hour

$= (0.00857) \times (grains/dscf) \times Qs_{std}$

L) Pm - Pressure at meter, inches Hg = Pb + Dh/13.6

M) Ps - Pressure at stack, inches Hg = Pb + static pressure/13.6

CALCULATIONS

PM, CO

	RUN #1	RUN #2	RUN #3
$('Dp)^{0.5}$ =	0.205	0.186	0.205
Dh, "H_2O =	1.019	1.163	1.403
Ts, ^oF =	850.04	991.8	1128.0
Tm, ^oF =	69.40	70.23	71.02
Vm, ft^3 =	34.375	36.840	40.110
Y =	0.999	0.999	0.999
θ, min =	60	60	60
Nozzle, in. =	0.550	0.550	0.550
An, ft^2 =	0.001650	0.001650	0.001650
Stack, in. =	19.5	19.5	19.5
As, ft^2 =	2.074	2.074	2.074
Pb, "Hg =	30.15	30.15	30.15
Cp =	0.84	0.84	0.84
wc, ml =	105	85	60
SP,"H_2O =	0.04	0.04	0.03
Md, lbs/mole =	30	30	30
Pm, "Hg =	30.22	30.24	30.25
Ps, "Hg =	30.15	30.15	30.15
O_2, % =	16.0	14.0	14.5
PM =	0.0284	0.1336	0.0198
CO =	0.5	1	1.5

	RUN #1	RUN #2	RUN #3
A) Volume of water vapor, ft^3 Vwc = (0.0471)(wc)ml,gm	4.946	4.004	2.826
B) Volume of air metered to 68°F, 29.92" Hg, dry Vmstd = $\frac{(17.64)(Y)(Vm)(Pm)}{Tm}$	34.585	37.020	40.270
C) Moisture content of flue gas Bwo = Vwc/(Vwc+Vmstd)	0.125	0.098	0.066
D) Dry Gas Molecular Weight Md = 29 for ambient air, 30 for combustion gases	30	30	30
E) Stack gas molecular weight, lbs/lb-mole Ms = Md(1 - Bwo) + (18)(Bwo)	28.50	28.83	29.21

F) Stack gas velocity, ft/sec $Vs = KpCp(Dp)^{0.5}(Ts/PsMs)^{0.5}$	18.14	17.30	19.75
G) Stack gas flowrate, ACFM Qs = (60 sec/min)(As)(Vs)	2257.0	2152.2	2457.7
H) Stack gas flowrate,SCFM $Qsstd = \frac{(17.64)(Qs)(Ps)}{(Ts)}$	916.4	788.5	823.2
I) Stack gas flowrate,DSCFM $Qsstd = \frac{(17.64)(Qs)(Ps)(1-Bwo)}{(Ts)}$	801.7	711.5	769.2
J) Isokinetic sampling rate, %I $\%I = \frac{(0.0945)(Ts)(Vmstd)}{(Ps)(Vs)(An)(theta)(1 - Bwo)}$	90.4	109.0	109.7
K) O_2 Factor, $\frac{(20.9 - 7)}{(20.9 - \%O_2)}$	2.84	2.01	2.17
L) Concentration, gr/dscf = (15.43 grs/gm)(Wt./Vmstd) Concentration, gr/dscf, PM	0.0127	0.0557	0.0076
M) Concentration @ & 7% O_2 = Concentration x Factor = Concentration, gr/dscf, PM	0.0359	0.1122	0.0165
K) Emission rate, lbs/hr = (0.00857)(grs/dcsf)(Qsstd) Emission rate, lbs/hr, PM	0.087	0.340	0.050
N) Concentration @ & 7% O_2 = Concentration x Factor = Concentration, CO, ppmv	1.42	2.01	3.26
P) Emission rate, lbs/hr = CO (ppmv) x 10^{-6} x MW (CO) x $\frac{DSCFM \times 60 \text{ min/hr} \times \text{lb-mole}}{385 \text{ scf}}$	0.0017	0.0031	0.0050

D. CALIBRATION INFORMATION

TABLE 297.310-1
CALIBRATION SCHEDULE

ITEM	MINIMUM CALIBRATION FREQUENCY	REFERENCE INSTRUMENT	TOLERANCE
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent, or thermometric points	+/-2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass thermometer	5 degrees F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5 degrees F
Barometer	Monthly	Hg barometer or NOAA station	+/-1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	+/-0.001"mean of at least three readings Max. deviation between readings .004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, When 5% change observed, Annually 2. One Point: Semiannually 3. Check after each test series	Spirometer or calibrated wet test or dry gas test meter Comparison check	2% 5%

AIR TESTING & CONSULTING

ANNUAL METER CALIBRATION DATA FORM (English units)

Name : TC / DC Date : 5/28/04 Meter Box : 2835296 - NUTECH II

Barometric Pressure, Pb, in Hg : 30.01 Standard Meter Number : S-275

Ys: 1.001

Orifice manometer setting, ΔH in. H_2O	Gas Volume		Temperature				Time Θ min.	Yi	dHa
	Standard Gas Meter (Vs), ft^3	Dry gas meter (Vd) ft^3	Standard Gas Meter (Ts) °F	Dry gas meter Inlet (Ti) °F	Outlet (To) °F	Average (Td) °F			
0.5									
1.0	5.000	5.021	71	77	72	75	8.84	1.000	1.7500
1.5	5.000	5.016	71	77	72	75	7.20	1.000	1.7414
2.0	5.000	5.012	71	77	73	75	6.25	1.000	1.7462
3.0	5.000	5.010	72	78	73	76	5.10	0.997	1.7507
4.0	5.000	5.008	72	78	74	76	4.44	0.996	1.7619
								0.999	1.750

$$Yi = \frac{Vs\ Pb\ (Td + 460)}{Vd\ (Pb + dH/13.6)\ (Ts + 460)}$$

$$\Delta H = \frac{0.0317 dH\ [(Ts + 460)N]^2}{Pb\ (To + 460)\ [\ Vs\ ]^2}$$

AIR TESTING & CONSULTING

POSTTEST DRY METER CALIBRATION DATA FORM (English units)

Name : Capelle Date : 5/6/05 Nutech II

Barometric Pressure, Pb, in Hg : 29.99 6847004

Pretest Y: 0.999

Orifice manometer setting, (dH) in. H_2O	Gas Volume		Temperature		Time (theta) min.	Vacuum Setting in. Hg	Yi
	Standard Gas Meter (Vs), ft^3	Dry gas meter (Vd) ft^3	Standard Gas Meter (Ts) °F	Dry gas meter (Td) °F			
1.0	10.015	9.992	72	71	16.5	10.0	0.9980
1.0	9.991	9.951	72	71	16.6	10.0	0.9997
1.0	9.972	9.997	71	70	16.2	10.0	0.9932
							0.9969

% Allowable Tolerance = 5.00

Allowable Range = 0.94905 to 1.0516

$$Yi = \frac{Vs\ Pb\ (Td + 460)}{Vd\ (Pb + dH/13.6)\ (Ts + 460)}$$

AIR TESTING & CONSULTING, INC.

STACK TEMPERATURE CALIBRATION

CALIBRATION DATE: June 11,2004

THERMOCOUPLE NUMBER: 3T

BAROMETRIC PRESSURE: 30.01

REFERENCE TEMPERATURE SENSOR: Fisher Scientific Hg in glass

AMBIENT TEMPERATURE: 76°F

CALIBRATOR: Tim Capelle / Donnie Capelle

REFERENCE POINT NO. (A)	CALIBRATION MEDIUM (B)	REFERENCE TEMPERATURE °F	THERMOCOUPLE TEMPERATURE °F	DIFFERENCE % DEGREES (C)
1	WATER BATH	211	206	0.75
2	WATER BATH	175	170	0.79
3	WATER BATH	129	126	0.51
4	WATER BATH	80	75	0.93

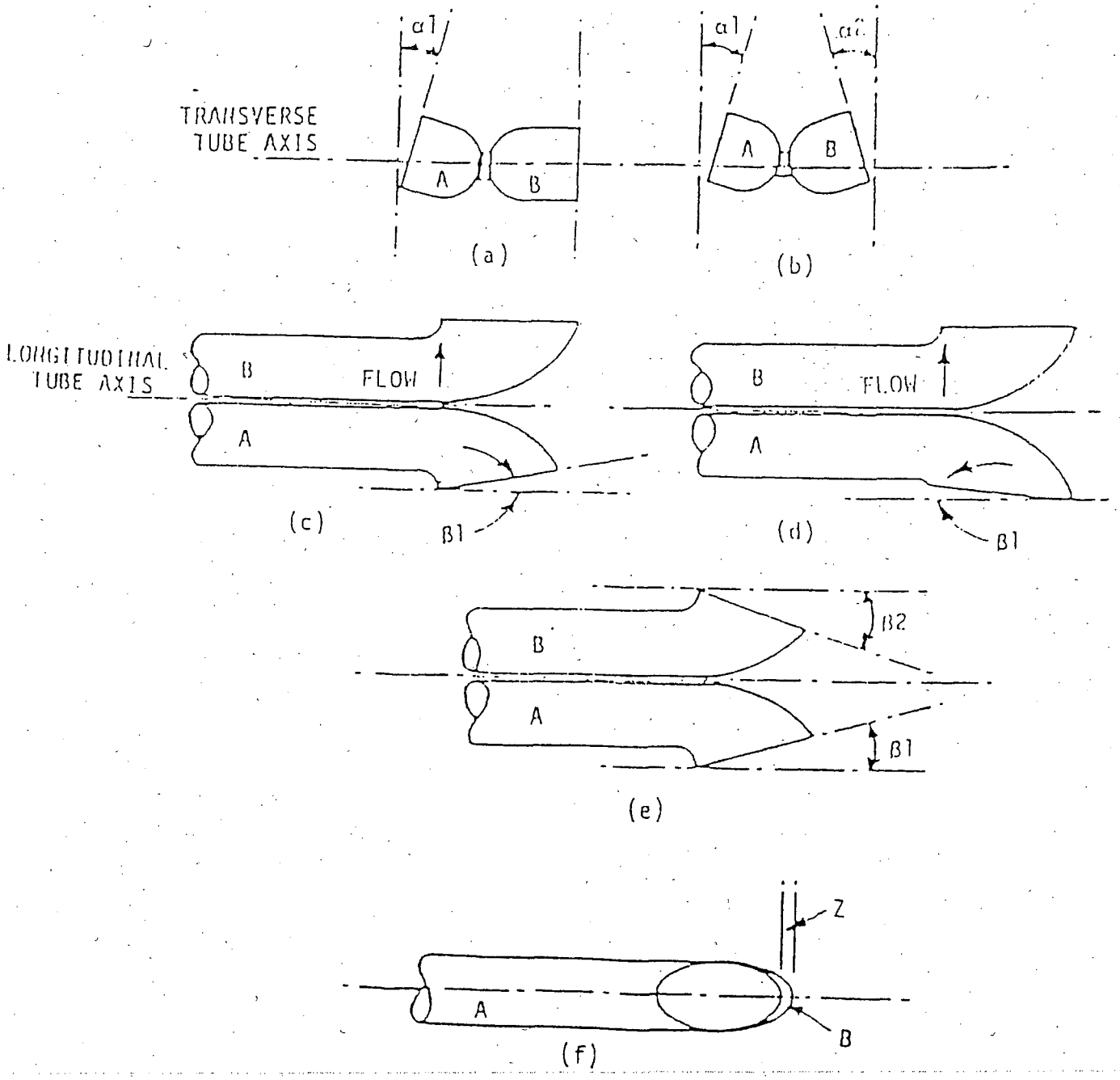
(A) Every 50°F.
(B) Type of calibration system used.
(C) Calculation of % difference. MUST BE LESS THAN OR EQUAL TO 1.5%.

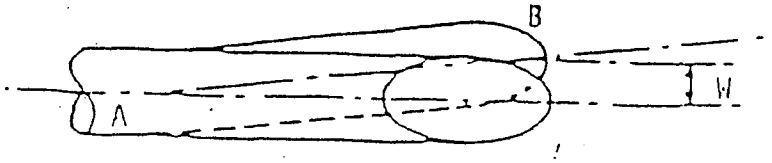
$$\frac{(\text{REF. TEMP } ^\circ\text{F} + 460) - (\text{TEST THERMOMETER TEMP } ^\circ\text{F} + 460)}{(\text{REF. TEMP } ^\circ\text{F} + 460)}$$

PITOT TUBE ALIGNMENT CHECK

PITOT TUBE # 3
DATE: 2-27-04
BY: TC

$\alpha_1 =$ 0° $\beta_1 =$ 1° $\alpha_2 =$ 3° $\beta_2 =$ 1° $z =$ .027 cm $w =$ .003 cm





Airgas

Airgas South, Inc.
1620 Tampa East Blvd.
Tampa, FL 33619
Phone: 813-626-6778
Fax: 813-664-1431
http://www.airgas.com

CERTIFICATE OF BATCH ANALYSIS

Date : 9-20-02

Reference Number: 210226301

Customer Name:
Address:

Purchase Order #:

Grade of Product: NITROGEN UHP 99.999%

Cylinder Number: (Analyzed Cylinder)	Component	Required Concentration	Actual Concentration
041555	OXYGEN	<1.0 PPM	0.9 PPM
	MOISTURE	<1.0 PPM	0.9 PP M
	THC	<0.5 PPM	<0.1 PPM

Cylinders in Batch:

746781	046867	580609	472439
459040	530335	53686	50117
523207	432517	523204	9905191
523221	12396	041442	523152
9808430	041555		

Delivery Ticket #:

Approval Signature

Airgas

Airgas Specialty Gases
5480 Hamilton Blvd.
Theodore, AL 36582
P.O. Box 190969
Mobile, AL 36619
(251) 653-2500 Fax: (251) 653-2530
http://www.airgas.com

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

Cylinder No :	CC156369	Order No.	557672
Cylinder Pressure:	2000 PSIG	Expiration Date:	11/27/05
Certification Date	11/27/02	Laboratory:	ASG-MOBILE
Part No:			

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM 00040303	OXYGEN	CC111799	20.01%

Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
SERVOMEX 244/701/742	PARAMAGNETIC

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
OXYGEN	12.06 %	+/-1%	G1
NITROGEN	Balance		

Analytical Results:

1st Component: OXYGEN

1st Analysis Date: 11/27/02

R	20.01	S	12.05	Z	0.00	Conc	12.05 %
S	12.06	Z	0.00	R	20.01	Conc	12.06 %
Z	0.00	R	20.01	S	12.06	Conc	12.06 %
						AVG:	12.06 %

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

Do not use cylinder below 150 psig.

Beverly Hart
Approved for Release

Airgas

Airgas Specialty Gases
5480 Hamilton Blvd.
Theodore, AL 36582

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

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

Cylinder No.:	CC44696	Order No.	110580771
Cylinder Pressure:	2000 PSIG	Expiration Date:	3/14/06
Certification Date	3/14/03	Laboratory:	ASG-MOBILE
Part Number:	E02NI99E15A0407		

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM 51013	CARBON MONOXIDE	SG9168780	25.50 ppm

Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
SIEMENS ULTRAMAT 5E J9-661	NDIR

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
CARBON MONOXIDE	18.20 PPM	+/-1%	G1
NITROGEN	Balance		

Analytical Results:

1st Component: CARBON MONOXIDE

1st Analysis Date: 3/7/03

R	25.50	S	18.20	Z	0.00	Conc	18.20 ppm
S	18.20	Z	0.00	R	25.50	Conc	18.20 ppm
Z	0.00	R	25.50	S	18.20	Conc	18.20 ppm
						AVG:	18.20 ppm

2nd Analysis Date: 3/14/03

R	25.50	S	18.20	Z	0.00	Conc	18.20 ppm
S	18.20	Z	0.00	R	25.50	Conc	18.20 ppm
Z	0.00	R	25.50	S	18.20	Conc	18.20 ppm
						AVG:	18.20 ppm

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

Do not use cylinder below 150 psig.

Carol D Stewart
Approved for Release

Airgas

Airgas Specialty Gases
5480 Hamilton Blvd.
Theodore, AL 36582
P.O. Box 190969
Mobile, AL 36619
(251) 653-2500 Fax: (251) 653-2530
http://www.airgas.com

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

Cylinder No :	SG9153732	Order No.	110580771
Cylinder Pressure:	2000 PSIG	Expiration Date:	3/14/06
Certification Date	3/14/03	Laboratory:	ASG-MOBILE
Part Number:	E02NI99E15A2046		

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM 81678	CARBON MONOXIDE	SG9174905	50.94 ppm

Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
SIEMENS ULTRAMAT 5E J9-661	NDIR

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
CARBON MONOXIDE	36.79 PPM	+/-1%	G1
NITROGEN	Balance		

Analytical Results:

1st Component: CARBON MONOXIDE

1st Analysis Date: 3/7/03

R	50.94	S	36.73	Z	0.00	Conc	36.73 ppm
S	36.73	Z	0.00	R	50.94	Conc	36.73 ppm
Z	0.00	R	50.94	S	36.73	Conc	36.73 ppm
						AVG:	36.73 ppm

2nd Analysis Date: 3/14/03

R	50.94	S	36.85	Z	0.00	Conc	36.85 ppm
S	36.85	Z	0.00	R	50.94	Conc	36.85 ppm
Z	0.00	R	50.94	S	36.85	Conc	36.85 ppm
						AVG:	36.85 ppm

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

Do not use cylinder below 150 psig.

Carol Stewart
Approved for Release

Airgas

Airgas Specialty Gases
5460 Hamilton Blvd.
Theodore, AL 36582
P.O. Box 190695
Mobile, AL 36619
(251) 653-2500 Fax: (251) 653-2530
http: www.airgas.com

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

Cylinder No :	SG9138853	Order No.	110580771
Cylinder Pressure:	2000 PSIG	Expiration Date:	3/14/06
Certification Date	3/14/03	Laboratory:	ASG-MOBILE
Part Number:	E02NI99E15A0590		

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM 81679	CARBON MONOXIDE	SG9161501	99.9 ppm

Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
SIEMENS ULTRAMAT 5E J9-661	NDIR

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
CARBON MONOXIDE	60.48 PPM	+/-1%	G1
NITROGEN	Balance		

Analytical Results:

1st Component: CARBON MONOXIDE

1st Analysis Date: 3/7/03

R	99.90	S	60.45	Z	0.00	Conc	60.45 ppm
S	60.45	Z	0.00	R	99.90	Conc	60.45 ppm
Z	0.00	R	99.90	S	60.45	Conc	60.45 ppm
						AVG.	60.45 ppm

2nd Analysis Date: 3/14/03

R	99.90	S	60.51	Z	0.00	Conc	60.51 ppm
S	60.51	Z	0.00	R	99.90	Conc	60.51 ppm
Z	0.00	R	99.90	S	60.51	Conc	60.51 ppm
						AVG:	60.51 ppm

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

Do not use cylinder below 150 psig.

Approved for Release

E. VISIBLE EMISSIONS

AIR TESTING & CONSULTING, INC.

(813) 651-0878

Facility Name	Permit Number
BALDWIN FAIRCHILD	0950126-005-AC

Source	I.D. No.
CREMATORY	

Address
301 N. IVANHOE BLVD.

City	County	Zip
ORLANDO	ORANGE	32804

Contact	Phone

Process Equipment	Operating Rate
CREMATORY - Power Pak II	150 lbs
Control Equipment	**Operating Mode**
AFTER BURNER	

Fuel Type/Rate	Material Type/Rate
NAT. GAS	HUMAN REMAINS

Describe Emission Point
Start STACK EXIT

Height Above Ground Level	Height Relative to Observer
Start ~15 Stop ✓	Start 10 Stop ✓
Distance from Observer	**Direction from Observer**
Start 65 Stop ✓	Start 310° Stop 310°

Describe Emissions
Start None Stop ✓

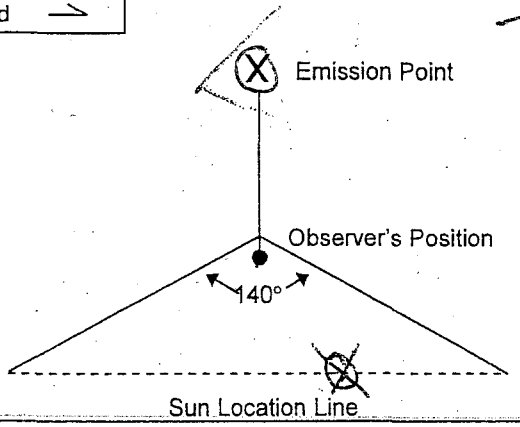
Emission Color	Plume Type
Start N/A Stop	o Continuous o Intermittent N/A
Water Droplets Present	**Water Droplet Plume**
oNo o Yes	o Attached o Detached

Point in the Plume at which Opacity was determined
Start Stop

Describe Background	Ambient Temp.
Start SKY Stop ✓	Start 75° Stop 82°
Background Color	**Sky Conditions**
Start lt. gray Stop ✓	Start cloudy Stop ✓
Wind Speed	**Wind Direction**
Start 1-3 Stop 4-7	Start S Stop ✓

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH Draw North Arrow



Observation Date	Start Time	Stop Time
5-5-05	10:29	11:29

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

Average Opacity for Highest 24 Consecutive Readings	Range of Opacity Readings Min.	Max.
0	0	0

Observer's Name (Print)	
Kenneth GIVEN	
Observer's Signature	Date 5-5-05
Certified by E.T.A.	Date 2/05
Comments	

I certify the above process rate data is true to the best of my knowledge.
SIGNATURE

Title Date

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Ken Given

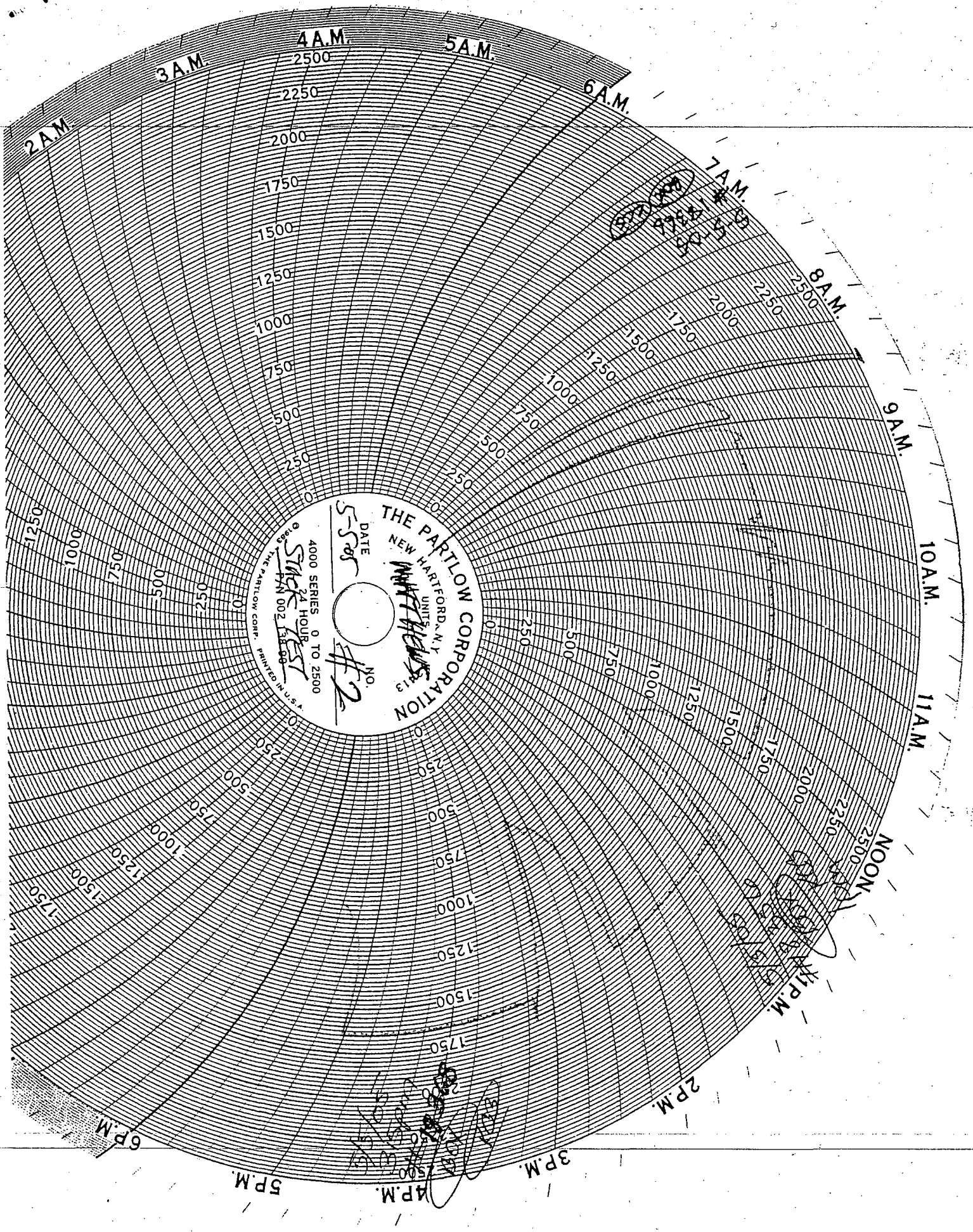
met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of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

326190	*Tampa, Florida*	*February 16, 2005*
Certificate Number	Location	Date of Issue

Thomas Hoel
President

Michael W. Lunsford
Director of Training

F. TEMPERATURE CHART



Best Available Copy

Mathews
CREMATION DIVISION

The Standard of Excellence in Cremation Solutions

Fax Transmittal

To:	Ken Olsen	**From:**	Marco A. Salgado
Phone:		**Date:**	May 18, 2005
Fax:	810-653-3083	**Pages:**	2 + 1 including cover sheet
Re:		**CC:**	

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

•Comments:

I will be sending a clear copy by Fedex today.

The weights per run where:

150lbs=1ST run

130lbs=2ST run

130lbs=3ST run

2045 Sprint Boulevard • Apopka, Florida 32703 • 800-127-2821 • 407-886-5533 • Fax: 407-886-5990

G. PROJECT PARTICIPANTS

PROJECT PARTICIPANTS

Kenneth Given, P.E.	Air Testing & Consulting, Inc. President/Project Manager	Report Preparation VE Determination
Tim Capelle	Air Testing & Consulting, Inc. Environmental Field Supervisor	PM Determination
Donnie Capelle	Air Testing & Consulting, Inc. Environmental Technician I	Probe Holder
Scott Given	Air Testing & Consulting, Inc. Environmental Technician I	CO/O_2 Determination Sample Recovery

AIR COMPLIANCE TEST REPORT

FERO 083-0080

PERMIT NO. 1110050-001-AG
UNIT ID: 001

CREMATORY INCINERATOR

PREPARED FOR:

HAISLEY-HOBBS FUNERAL HOME

FORT PIERCE, FLORIDA
MARCH 26, 2004

IE43-M94

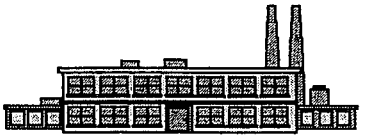
1400°F

PREPARED BY:

ATC

AIR TESTING & CONSULTING
333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

ATC



AIR TESTING & CONSULTING

333 FALKENBURG ROAD, SUITE B-214
TAMPA, FLORIDA 33619

To the best of my knowledge, all field and analytical procedures comply with Florida Department of Environmental Protection requirements and all test data and plant operating data are true and correct.

Kenneth E. Given

Kenneth E. Given, P.E.

3/30/04

Date

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

1.0 INTRODUCTION

On March 26, 2004, Air Testing & Consulting, Inc., conducted the following tests on the human crematory located at Haisley-Hobbs Funeral Home, Ft. Pierce, St. Lucie County:

(1) Particulate Emission (EPA Methods 1 – 5)

(2) Carbon Monoxide (EPA Method 10)

(3) Visible Emissions (EPA Method 9)

These tests were performed to determine if the incinerator was operating within the guidelines of Permit No. 1110050-001-AG, the Florida Department of Environmental Protection (FDEP).

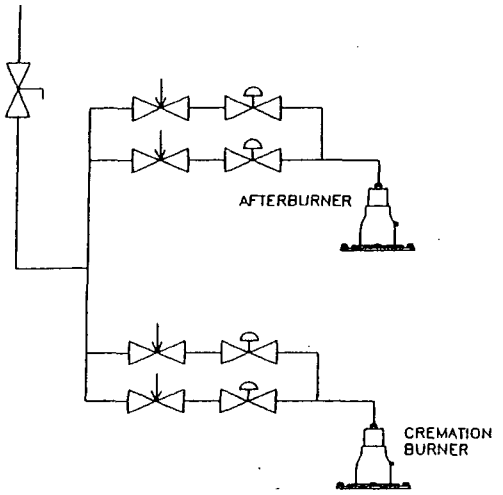
2.0 PROCESS DESCRIPTION

2.0 PROCESS DESCRIPTION

Haisley-Hobbs Funeral Home operates a natural gas fired Matthews, Model IE43-M-94 Cremation Unit designed to cremate human remains. The unit is a multiple chamber incinerator with a 100 pounds per hour capacity. The afterburner ignites and preheats the secondary chamber to an operating temperature of 1,400 ^{O}F. A human body enclosed within a container is loaded into the primary chamber onto the hearth. The control timers are set and the power switch is activated.

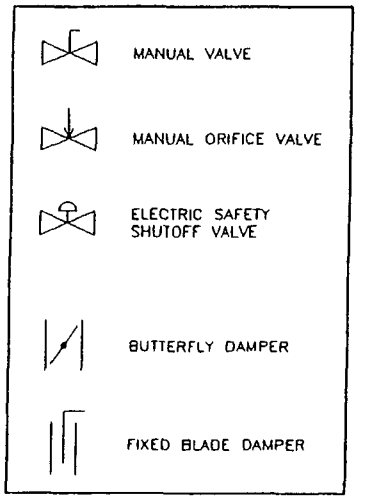
After loading the remains into the chamber, the low fire ignition burner in the primary chamber starts. Within 30 minutes the high fire cremation burner in the primary chamber begins a controlled cycling range of 1,750 to 1,800 ^{O}F. The cycling continues until the cremation process is complete.

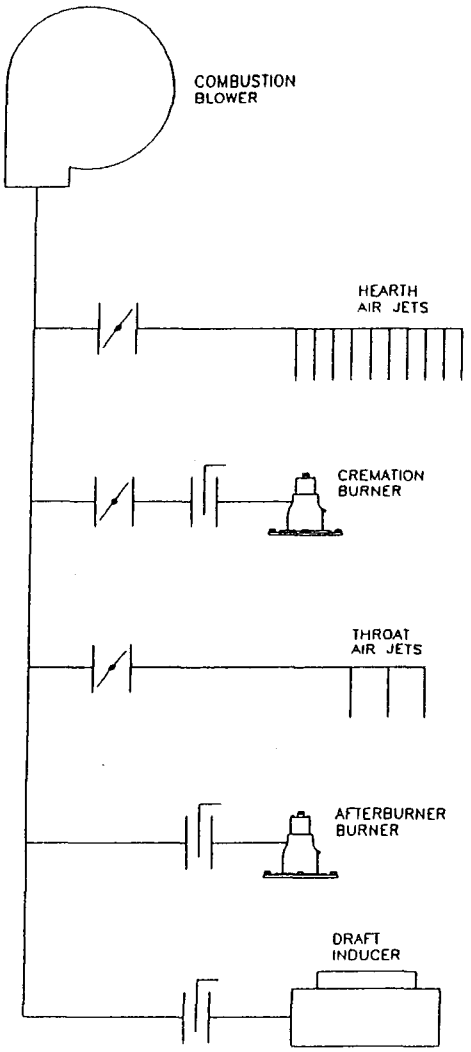
The approximate time for complete cremation is 2 hours, but may vary depending on body weight. A flow schematic is shown in Figure 1.



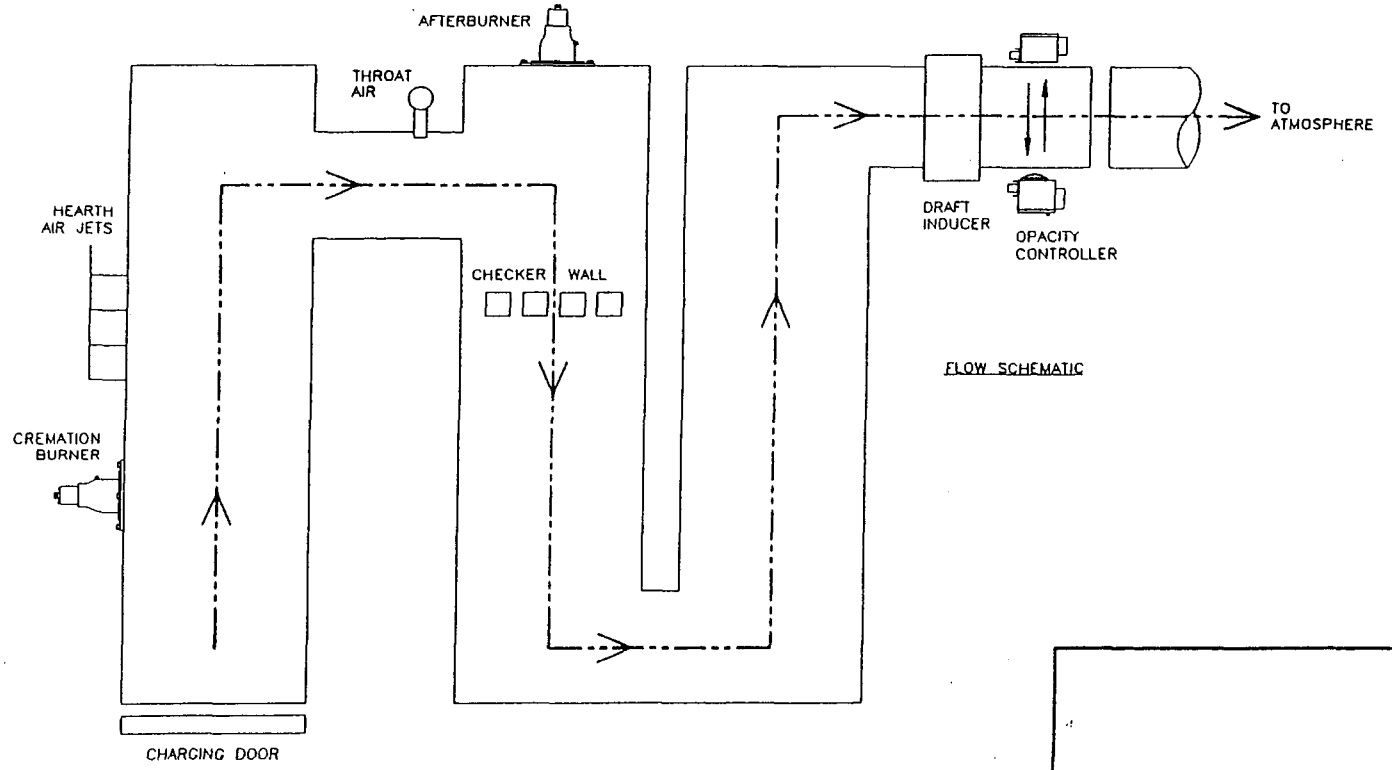
GAS SCHEMATIC

LEGEND OF SYMBOLS





AIR SCHEMATIC



FLOW SCHEMATIC

IE43-M94

SCHEMATICS & FLOWS

DRAWN	G. BRAGUE	FILE	MPP-EMI4
CHECKED	R. THOMAS	DATE	12-20-93
APPROVED	P. RAMILL	DRAWING NO.	MPP-EMI4
SCALE	N.T.S.	SHEET NO.	5 of 5

3.0 SUMMARY OF RESULTS

3.0 SUMMARY OF RESULTS

The results of the Particulate, Carbon Monoxide (CO) and Opacity (VE) emission testing are presented in the Regulatory Summary and Table I. The Particulate emissions averaged 0.0723 grains per dry standard cubic foot (gr/dscf) and the CO emissions averaged 8.3 parts per million (ppmv), each corrected to 7% O_2. Opacity, highest six- minute average, was 0%.

Process rates were determined by plant personnel and are included in the appendix.

REGULATORY SUMMARY
HAISLEY-HOBBS FUNERAL HOME
HUMAN CREMATORY
MARCH 26, 2004

PERMIT NO. NEDS NO. ID #	EPA METHOD	METHOD DESCRIPTION	ACTUAL EMISSION RATE	ALLOWABLE EMISSION RATE	PROCESS RATE POUNDS PER HOUR	
					ACTUAL	PERMIT
1110050-001-AG	5	PARTICULATE			80	100
001		gr/dscf @ 7% O2	0.072	0.080		
	10	CARBON MONOXIDE				
		ppmv @ 7% O2	8	100		
	9	VISIBLE EMISSIONS				
		% Opacity	0	5% except for 20% up to 3 min/hr		

TABLE I
TEST SUMMARY
HAISLEY-HOBBS FUNERAL HOME
HUMAN CREMATORY
MARCH 26, 2004

RUN #	% O_2	PARTICULATE GR/DSCF @ 7% O_2	CO ppmv @ 7% O_2	BODY WEIGHT	BURN RATE lbs/hr
1	12.0	0.1385	12.0	230	110
2	12.3	0.0190	10.0	160	58
3	11.8	0.0594	3.0	180	72
AVG	12.0	0.0723	8.3	190	80

4.0 SUMMARY OF TEST DATA

SUMMARY OF TEST DATA

PLANT : HAISLEY UNIT : CREAMATORY RUN NUMBERS :1, 2, 3

TEST DATE : 03/26/2004

	#1	#2	#3	AVERAGES
DATE	03/26/2004	03/26/2004	03/26/2004	
START TIME	9:14	12:45	16:05	
END TIME	10:24	13:51	17:14	
STACK DIAMETER (INCHES)	20	20	20	
NOZZLE DIAMETER (INCHES)	0.618	0.618	0.618	
TEST TIME (MINUTES)	60	60	60	
NUMBER OF TEST POINTS PER RUN	24	24	24	
STACK GAS TEMPERATURE (°F)	883.1	760.5	857	833.4
STACK GAS MOISTURE (%)	12.32	12.75	10.80	12.0
STACK GAS MOLECULAR WEIGHT	28.52	28.47	28.70	28.6
STACK GAS VOLUME SAMPLED (CUBIC FEET)	43.927	35.214	41.000	40.047
VOLUME SAMPLED (SCF @ 68°F)	43.500	34.784	42.000	40.095
STACK GAS VELOCITY (FEET PER SECOND)	15.09	11.39	14.49	13.65
STACK GAS FLOW RATE (ACFM)	1975.3	1490.4	1896.2	1787.3
STACK GAS FLOW RATE (DSCFM @ 68°F)	690.9	570.9	688.3	650.0
PARTICULATE CONC (GRAINS/DSCF)	0.0887	0.0118	0.0391	**0.0465**
PARTICULATE CONC @ 7% O2, (GRAINS/DSCF)	0.1385	0.0190	0.0594	**0.0723**
PARTICULATE MASS RATE (LBS/HOUR)	0.525	0.070	0.232	**0.276**
CO CONC , ppm	8	6	2	**5**
CO CONC @ 7% O2, ppm	12	10	3	**8**
ISOKINETIC SAMPLING RATE, %I	109.93	106.38	106.53	

FIELD DATA AND SAMPLES UNDER THE CONTROL OF: TIM O'DELL

LABORATORY ANALYSIS UNDER THE CONTROL OF: ATC

5.0 SAMPLING PROCEDURES

5.1 Description and Sketch of Sampling Equipment

The sampling equipment consisted of the following:

(1) Pitot Assembly

a. Nozzle – Stainless steel.

b. Probe - Glass with a $^{5}/_{8}$ inch OD glass insert, wrapped with nichrome wire. Rheostat controlled and capable of maintaining a minimum temperature of 250°F.

c. Pitot - Type "S", constructed and attached to the probe according to specifications outlined in Part 60 of Chapter 1, Title 40 of the Code of Federal Regulations (CFR) Appendix A, Method 2, as amended August 18, 1977.

d. Thermocouple - Type "K", attached to the pitot tube such that the tip has no contact with metal and does not interfere with the pitot tube face openings.

(2) Filter Holder

Pyrex glass with fritted teflon filter support.

(3) Filter Heating Assembly

Controlled heating element in aluminum module attached to the end of probe; capable of maintaining 250°F.

(4) Impingers

Four impingers connected in series with glass ball joint fittings and placed in an ice bath. The second and fourth impingers are the modified

Greenburg- Smith design. The first and third impingers are the Greenburg-Smith design with a standard tip. Final gas exit temperature is measured to within 5°F with a dial thermometer immersed in the gas stream.

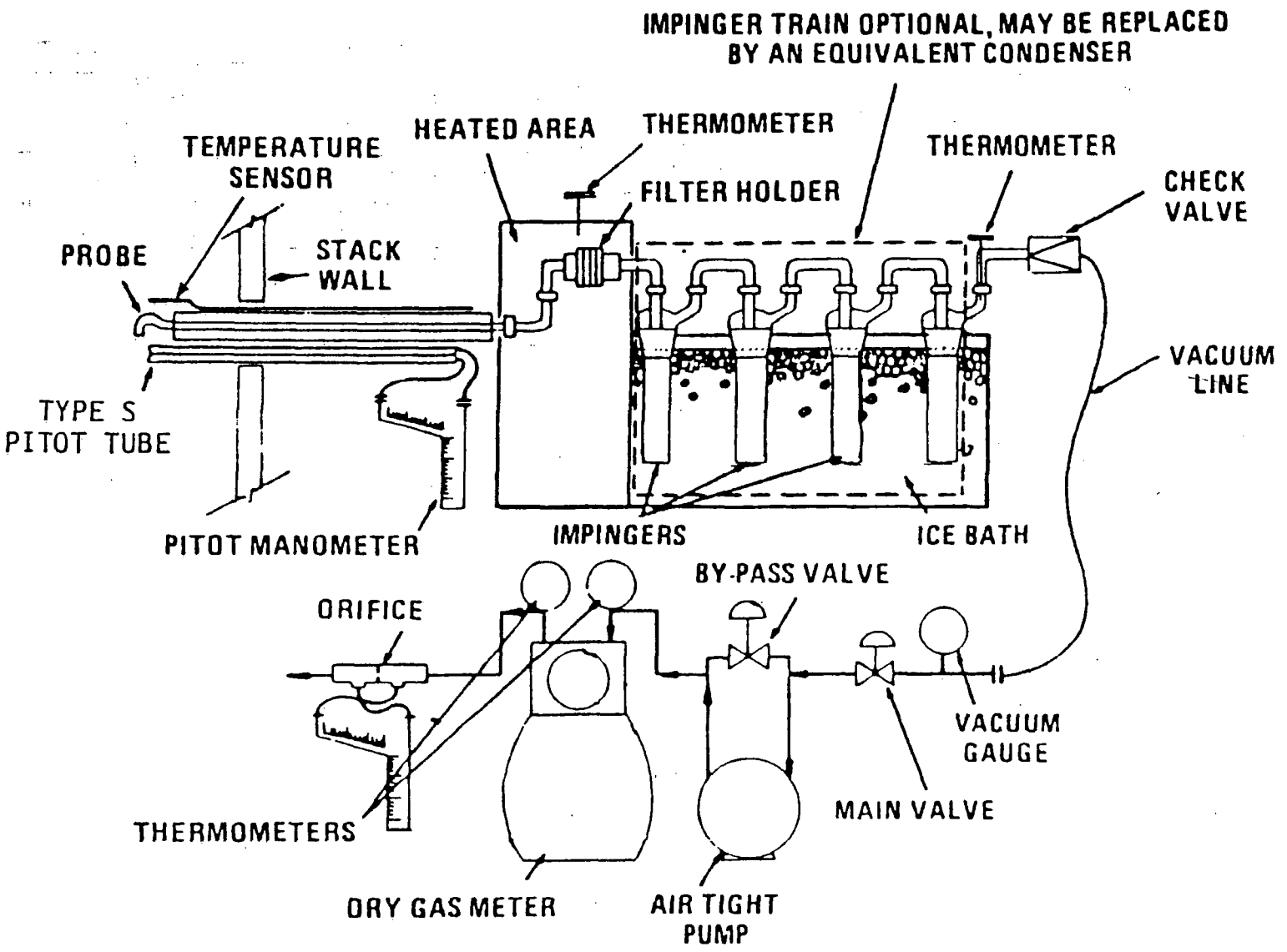
(5) Control Box

Module containing vacuum gauge, leak-free pump, thermometers capable of measuring temperature to within 5°F, dry gas meter with a minimum of 2 percent accuracy, valves and related equipment, as required to maintain an isokinetic sampling rate and to determine sample volume.

(6) Calculator

To determine isokinetic sampling rate.

A schematic of the sampling train is included.



EPA METHOD 5 - PARTICULATE SAMPLING TRAIN

5.2 *Particulate (EPA METHOD 5)*

The sample train was prepared in the following manner:

100 ml of DI water was added to each of the first two impingers. The third impinger was left empty to act as a moisture trap, and preweighed silica gel was added to the fourth impinger. After assembling the train with the heated glass liner as shown in the schematic, the system was leak-checked by plugging the inlet to the probe and pulling a 15" Hg vacuum. A leakage rate not in excess of 0.02 cfm was considered acceptable. The pump was also leak-checked at 5 to 7 inches of water, and any leaks found were corrected.

The inside dimensions of the stack was measured and recorded. The number of sampling points and the location of these points on a traverse were determined by the guidelines set forth in the Federal Register, Vol. 36, No. 247, Section 60.85, Method 1. These points were marked on the probe for easy visibility.

The probe was attached and the heater was adjusted to provide a gas temperature of approximately 250°F. The filter heating system was turned on, and crushed ice was placed around the impingers. After a suitable warm-up period, the probe was placed into the stack in the gas stream. The pump was started immediately, the flow was adjusted to isokinetic conditions. Readings of stack conditions were taken at least every five minutes. At the end of the one hour sampling time, the probe was removed from the stack. At the conclusion of each run, the pump was turned off and the final readings were recorded.

A final leak-check of the system was performed as previously described at the highest vacuum encountered during testing and a leak-check of the pitot system was repeated.

Sample Recovery

Particulate

Care was exercised in moving the collection train to the sample recovery area to minimize the loss of collected sample or the gain of extraneous particulate matter. The volume of liquid in the first three impingers was measured and recorded on the field data sheet. The probe, nozzle, and all sample-exposed surfaces were washed with reagent grade acetone and put into a clean sample bottle marked "prefilter". A brush was used to loosen any adhering particulate matter, and subsequent washings were put into the "prefilter" container. The filter was carefully removed from the fritted teflon support and placed in its original container. (When practical, samples are changed out upon return to the laboratory.) The silica gel was removed from the fourth impinger and transferred to its original container. A sample of the acetone used in washing the probe was saved for a blank laboratory analysis.

5.3 O_2 (EPA METHOD 3A)

Oxygen was measured using a Teledyne 320 oxygen analyzer (Method 3A) so a continuous reading could be determined. The calibration was determined using pure Nitrogen (0% O_2), a 12.06% O_2 EPA Protocol Standard and atmospheric air (20.9% O_2).

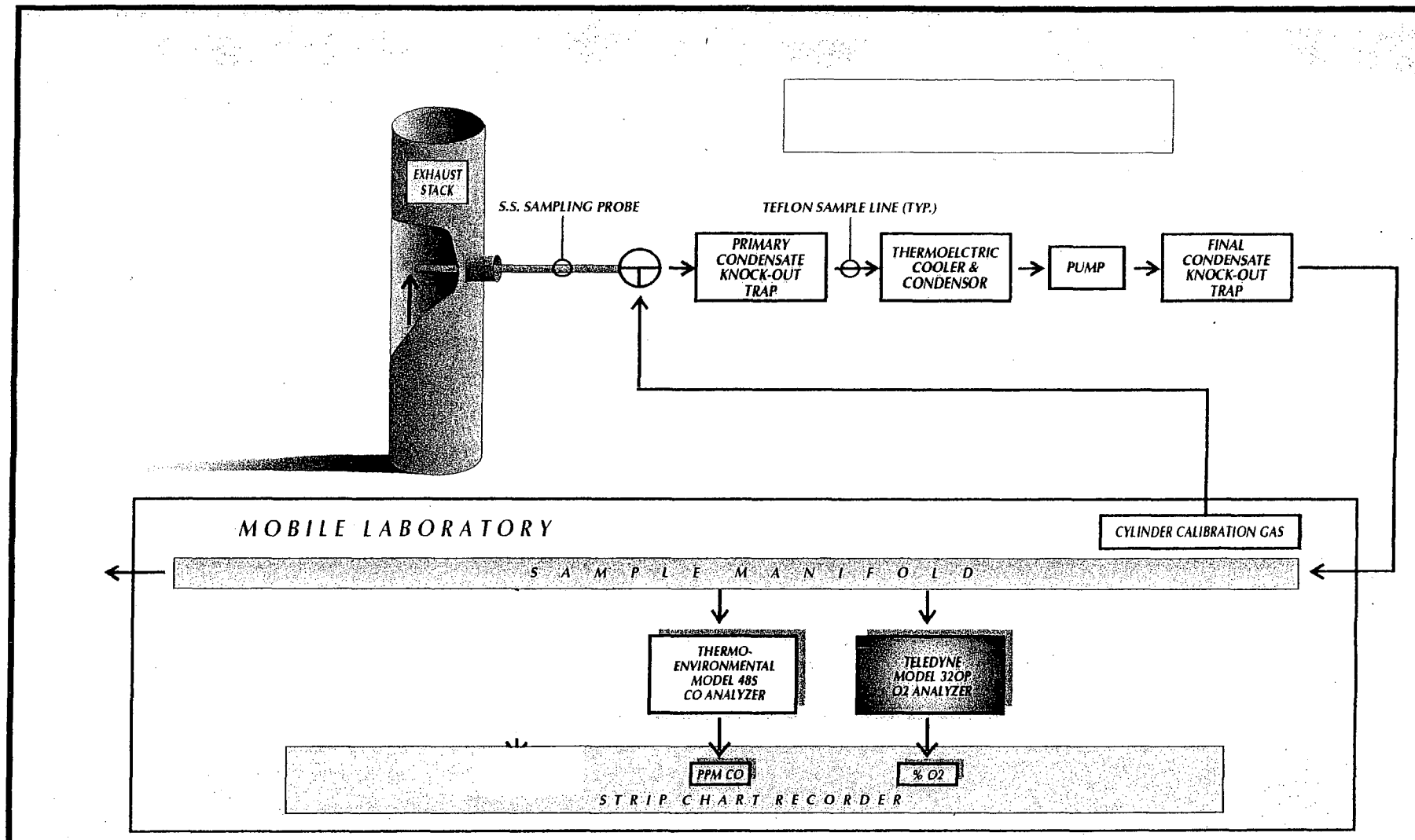


FIGURE 1.
EPA METHODS 3A AND 10 C.E.M. SAMPLING SCHEMATIC
(DETERMINATION OF OXYGEN
AND CARBON MONOXIDE
EMISSIONS FROM STATIONARY SOURCES)

5.4 CO (EPA METHOD 10)

The sampling system is shown in the following figure. A sample was drawn from the stack at a rate of approximately 2 SCFH. A stainless steel probe assembly was followed by a three-way stainless steel valve. The sample was pumped through an ice-cooled condensate trap followed by a $^1/_4$" OD Teflon sampling line. Calibration gases were introduced at the sampling interface (the three-way valve) through another $^1/_4$" OD Teflon line. The sample pump delivered gases to a Thermo Electron Model 48 CO analyzer (NDIR with gas filter correlation). Excess flow is dumped to ambient. All instrument responses were recorded on strip chart recorders. The sampling system yields CO concentrations on a dry gas basis.

Calibration gases consisted of CO standards in nitrogen. All calibration gases were certified NBS traceable, Protocol 1.

5.5 Traverse Point Locations

The sampling probe was placed in the 20" diameter scrubber stack. The sampling ports were located 2 foot (A= 1.2) upstream the stack exit and 7 feet (B= 4.2) downstream the nearest disturbance.

AIR TESTING & CONSULTING, INC.
STACK TRAVERSE

DATE: 3/26/04

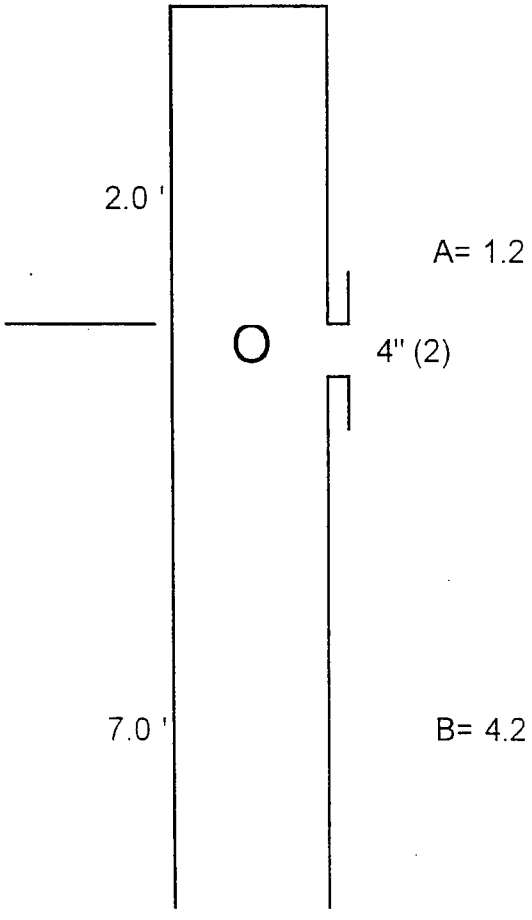
BY: O'DELL

COMPANY: HAISLEY-HOBBS

SOURCE: CREMATORY

DUCT DIA, IN : 20

Nozzle ID	D1	D2	D3	Da
0.618	✓	✓	✓	.618



Point No.	Distance from Duct Wall (in)
1	0.4
2	1.3
3	2.4
4	3.5
5	5.0
6	7.1
7	12.9
8	15.0
9	16.5
10	17.6
11	18.7
12	19.6

6.0 ANALYTICAL PROCEDURES

6.1 ANALYTICAL PROCEDURES

The glass fiber filter with any loose particulate matter were removed from their containers and placed in an oven at 105° Centigrade for two hours, desiccated for two hours, and then weighted to a constant weight. The original weight of the filter was deducted, and the weight gain was recorded to the nearest 0.1 mg. The probe and nozzle washes were transferred to clean, weighed evaporating dishes and evaporated to dryness over low heat. The evaporating dishes were oven dried at 105°C for three hours, desiccated and weighed to a constant weight. The total particulate reported is the sum of the filter weight gain and the weight gain of the evaporating dishes.

APPENDICES

A. FIELD DATA

PLANT :	HAISLEY	OPERATOR :	O'DELL	DATE :	3/26/04	RUN # :	1
UNIT :	CREAMATORY	PROBE HTR, °F :	250	BAROM PRESS, "Hg :	30.37	STACK DIA, " :	20
PROBE # :	3'G	HTR BOX, °F :	250	"Y" FACTOR :	1.004	NOZZLE DIA, " :	0.618
AS MSTR :	12%	PITOT CORR :	0.84	METER BOX DHa :	1.764	STATIC PRESS :	0.028
FILTER # :	0.6487	# POINTS :	24	C" FACTOR :		WATER, ML :	129.8

- PITOT TUBE -				- METER BOX -				
STRT TME :	9:14	IMPACT :	2"	15 SEC :	BEFORE:	0	cfm @	19 "Hg
END TIME :	10:24	STATIC :	2"	15 SEC :	AFTER:	0	cfm @	11 "Hg

TRAVERSE POINT #	SAMPLING TIME (THETA)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	VELOCITY HEAD $(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft^3	GAS METER TEMPERATURE (Tm) INLET	GAS METER TEMPERATURE (Tm) OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPINGER	PUMP VACUUM (INCHES OF Hg)
1	0	510	0.025	0.158	1.650	320.406	82	83	231	59	4
2	2.5	492	0.025	0.158	1.650		83	83	232	59	4
3	5	655	0.020	0.141	1.350		83	83	235	59	4
4	7.5	762	0.025	0.158	1.550		84	86	234	63	4
5	10	806	0.020	0.141	1.350		85	84	236	63	4
6	12.5	933	0.025	0.158	1.650		86	86	246	64	4
7	15	971	0.025	0.158	1.650		87	86	245	65	4
8	17.5	988	0.030	0.173	1.950		88	85	246	64	4.5
9	20	1008	0.030	0.173	1.950		88	85	247	63	4.5
10	22.5	987	0.030	0.173	2.250		88	86	248	63	4.5
11	25	990	0.035	0.187	2.250		88	86	249	66	5.5
12	27.5	1006	0.035	0.187	2.700		89	87	250	68	5.5
13	30	781	0.040	0.200	2.700		87	86	238	66	
14	32.5	633	0.040	0.200	2.250		87	85	242	61	
15	35	835	0.035	0.187	2.250		88	85	243	59	7.5
16	37.5	970	0.035	0.187	2.250		88	85	237	57	7
17	40	1006	0.035	0.187	1.550		89	85	236	58	7
18	42.5	1007	0.030	0.173	1.650		89	86	233	58	7
19	45	985	0.025	0.158	1.650		89	85	236	58	5.5
20	47.5	970	0.025	0.158	1.650		90	85	234	57	5
21	50	981	0.025	0.158	1.650		90	85	235	58	5
22	52.5	976	0.025	0.158	1.650		90	86	237	58	5
23	55	961	0.025	0.158	1.650		89	86	240	59	5
24	57.5	981	0.025	0.158	1.650		87	86	241	59	5
	60					364.333					
	60	883.08	AV SQ RT =	0.169	1.854	43.927	AV TEMP =	86.23	239.6	68	7.5

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EPA METHOD 5 FIELD DATA SHEET

Project	Hagsley	C Factor	0.87	Leak Check			
Sample Location	Incinerator	ΔP_s	0.028	Pretest	0.000	@ 19 Inches Hg	
Date	3/26/04	Nozzle (D_n)	0.618	Post- Test	0.000	@ 11 Inches Hg	
Run #	1	Operators	TMO/KG	Start Clock Time	09:14	Stop Time	10:24

Point	Time, ΔT (minutes)	Meter Volume, V_m (Cubic Feet)	Velocity Head, ΔP (Inch H_2O)	√T	Orifice, ΔH (Inch H_2O)	Vacuum, (In. Hg)	Stack and Sampling Train Temperatures, °F					
	Increments 12 ½	Initial 320.406					Stack	Filter	Probe	Exit	Meter In	Meter Out
1	2½		0.025	0.16	1.65	4	510	231	241	57	82	83
2	5	323.9	0.025	0.16	1.65	4	492	237	239	59	83	83
3	7½	325.6	0.02	0.14	1.35	4	655	235	237	59	83	83
4	10	327.4	0.025	0.16	1.65	4	762	234	241	63	84	84
5	12½	329.0	0.02	0.14	1.35	4	806	236	247	63	85	84
6	15	330.6	0.025	0.16	1.65	4	935	246	242	64	86	86
7	17½	332.4	0.025	0.16	1.65	4	971	245	247	65	87	86
8	20		0.03	0.17	1.85	4.5	988	246	251	64	88	86
9	22½	336.3	0.03	0.17	1.95	4.5	1008	247	259	63	88	85
10	25	338.2	0.03	0.17	1.95	4.5	987	248	261	63	88	85
11	27½	340.2	0.035	0.19	2.25	5.5	990	249	260	66	88	86
12	30	342.173	0.035	0.19	2.25	5.5	1006	250	290	68	89	86
13	32½	344.4	0.04	0.20	2.70	7.5	781	238	260	66	87	87
14	35	346.6	0.04	0.20	2.70	7.5	633	242	266	61	87	86
15	37½	348.9	0.035	0.19	2.25	7.0	835	243	270	59	88	85
16	40	350.9	0.035	0.19	2.25	7.0	970	237	278	57	88	85
17	42½	352.7	0.035	0.19	2.25	7.0	1006	236	282	58	89	85
18	45	354.7	0.03	0.17	1.85	5.5	1007	233	288	58	89	85
19	47½	356.4	0.025	0.16	1.65	5	985	236	290	58	89	86
20	50	358.2	0.025	0.16	1.65	5	970	234	291	57	90	85
21	52½		0.025	0.16	1.65	5	981	235	292	58	90	85
22	55	361.4	0.025	0.16	1.65	5	974	237	289	58	90	85
23	57½	363.0	0.025	0.16	1.65	5	961	240	283	59	89	86
24	60	364.333	0.025	0.16	1.65	5	981	241	294	59	87	86
	Θ	$43 V_m$ 9.27	0.169	ΔP_{avg}	1.89 ΔH_{avg} =		T_s 883				$T_{m\,avg}$ = 86	

MOISTURE RECOVERY DATA

Impinger No.	1	2	3	Desiccant	Total
Final Volume	195	123	2	286.1	
Initial Volume	100	100	0	276.9	
Difference	95	23	2	9.8	129.8

Filter Number	#100
Comments:	Micromanometer
	Filter Wt. = 0.6487

PLANT :	HAISLEY	OPERATOR :	O'DELL	DATE :	3/26/04	RUN # :	2
UNIT :	CREAMATORY	PROBE HTR, °F :	250	BAROM PRESS, "Hg :	30.37	STACK DIA, " :	20
PROBE # :	3'G	HTR BOX, °F :	250	"Y" FACTOR :	1.004	NOZZLE DIA, " :	0.618
AS MSTR :	10%	PITOT CORR :	0.84	METER BOX DHa :	1.764	STATIC PRESS :	0.04
FILTER # :	0.6464	# POINTS :	24	C" FACTOR :	60	WATER, ML :	107.9

- PITOT TUBE -

STRT TME :	12:45	IMPACT :	2"	15 SEC :
END TIME :	13:51	STATIC :	2"	15 SEC :

- METER BOX -

BEFORE:	0	cfm @	18	"Hg
AFTER:	0	cfm @	8	"Hg

TRAVERSE POINT #	SAMPLING TIME (THETA)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	VELOCITY HEAD $(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft^3	GAS METER TEMPERATURE (Tm) INLET	GAS METER TEMPERATURE (Tm) OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPINGER	PUMP VACUUM (INCHES OF Hg)
1	0	935	0.025	0.158	1.500	366.008	85	85	230	63	3.5
2	2.5	539	0.025	0.158	1.500		85	85	236	64	3.5
3	5	514	0.015	0.122	0.900		86	86	237	60	2.5
4	7.5	728	0.015	0.122	0.900		86	85	239	55	2.5
5	10	791	0.015	0.122	0.900		85	86	240	56	2.5
6	12.5	842	0.015	0.122	0.900		86	84	237	57	2.5
7	15	845	0.015	0.122	0.900		87	85	238	58	2.5
8	17.5	826	0.015	0.122	0.900		87	86	237	63	2.5
9	20	842	0.015	0.122	0.900		86	86	234	64	2.5
10	22.5	836	0.015	0.122	0.900		85	85	238	65	2.5
11	25	825	0.015	0.122	0.640		86	85	234	64	2
12	27.5	810	0.010	0.100	0.640		85	85	232	61	2
13	30	358	0.010	0.100	0.900		87	84	236	54	2.5
14	32.5	343	0.015	0.122	0.900		87	86	237	54	2.5
15	35	628	0.015	0.122	1.250		87	85	237	57	3.5
16	37.5	744	0.020	0.141	1.250		88	87	236	55	3.5
17	40	823	0.020	0.141	1.500		87	87	238	61	3.75
18	42.5	844	0.025	0.158	1.500		86	87	237	60	3.75
19	45	856	0.025	0.158	1.250		87	87	238	58	3.5
20	47.5	867	0.020	0.141	1.250		86	86	238	60	3.5
21	50	872	0.020	0.141	1.250		86	86	239	62	3.5
22	52.5	862	0.020	0.141	1.250		86	86	238	62	3.5
23	55	863	0.025	0.158	1.500		83	86	238	63	4
24	57.5	859	0.025	0.158	1.500		86	85	238	62	4
	60					401.222					
	60	760.5	AV SQ RT =	0.133	1.116	35.214	AV TEMP =	85.83	236.8	65	4

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EPA METHOD 5 FIELD DATA SHEET

Project		C Factor	0.87	Leak Check		
Sample Location	Incinerator	ΔP_R	0.031	Pretest	0.000	@ 15 Inches Hg
Date	3/26/04	Nozzle (D_n)	0.618	Post-Test	0.000	@ 8 Inches Hg
Run #	2	Operators	TMC/KG	Start Clock Time	1245	Stop Time 1351

Point	Time, ΔT (minutes)	Meter Volume, V_m (Cubic Feet)	Velocity Head, ΔP (Inch H_2O)	√P	Orifice, ΔH (Inch H_2O)	Vacuum, (In. Hg)	Stack and Sampling Train Temperatures, °F					
	Increments [ ]	Initial 366.008					Stack	Filter	Probe	Exit	Meter In	Meter Out
1	2½	367.8	0.025	0.16	1.50	3.5	435	232	247	63	85	85
2	5		0.025	0.16	1.50	3.5	539	238	231	64	85	85
3	7½	370.8	0.015	0.12	0.90	2.5	514	237	233	60	86	86
4	10	372.2	0.015	0.12	0.90	2.5	728	239	236	55	86	85
5	12½	373.5	0.015	0.12	0.90	2.5	791	240	233	56	86	85
6	15	374.9	0.015	0.12	0.90	2.5	842	237	233	57	85	84
7	17½	377.5	0.015	0.12	0.90	2.5	845	238	237	58	86	85
8	20	↳	0.015	0.12	0.90	2.5	826	236	234	63	87	86
9	22½	378.9	0.015	0.12	0.90	2.5	842	237	238	64	87	86
10	25	380.2	0.015	0.12	0.90	2.5	836	234	241	65	86	85
11	27½	381.3	0.01	0.10	0.64	2.0	825	238	243	64	85	85
12	30	382.515	0.01	0.10	0.64	2.0	810	234	238	61	86	85
13	32½	383.8	0.015	0.12	0.90	2.5	358	232	236	54	85	84
14	35	385.1	0.015	0.12	0.90	2.5	343	236	239	54	87	86
15	37½		0.02	0.14	1.25	3.5	628	237	233	57	87	85
16	40	388.2	0.02	0.14	1.25	3.5	744	237	238	55	87	87
17	42½	389.8	0.025	0.16	1.50	3.75	823	236	237	61	88	87
18	45	391.5	0.025	0.16	1.50	3.75	844	238	235	60	87	87
19	47½		0.02	0.14	1.25	3.5	856	237	237	58	86	87
20	50	394.7	0.02	0.14	1.25	3.5	867	238	234	60	87	86
21	52½		0.02	0.14	1.25	3.5	872	238	235	62	86	86
22	55	397.8	0.02	0.14	1.25	3.5	862	239	236	62	86	86
23	57½	399.5	0.025	0.16	1.50	4.0	863	238	243	63	86	86
24	60	401.222	0.025	0.16	1.50	4.0	859	238	249	62	86	85
	Θ	V_m = 35.214	0	$\overline{\sqrt{\Delta P}}$ = 0.134	$\overline{\Delta H}$ = 1.116		T_s = 740				$T_{m\,avg}$ =	86

MOISTURE RECOVERY DATA

Impinger No.	1	2	3	Desiccant	Total
Final Volume	255	43	2	291.3	
Initial Volume	100	100	0	283.4	
Difference	155	-57	2	7.9	107.9

Filter Number	101
Comments:	Micromanometer
	Filter wt = 0.6464

PLANT :	HAISLEY	OPERATOR :	O'DELL			DATE :	3/26/04	RUN # :	3
UNIT :	CREAMATORY	PROBE HTR, °F :	250			BAROM PRESS, "Hg :	30.37	STACK DIA, " :	20
PROBE # :	3'G	HTR BOX, °F :	250			"Y" FACTOR :	1.004	NOZZLE DIA, " :	0.618
AS MSTR :	10%	PITOT CORR :	0.84			METER BOX DHa :	1.764	STATIC PRESS :	0.031
FILTER # :	0.6441	# POINTS :	24			C" FACTOR :		WATER, ML :	108

- PITOT TUBE -				- METER BOX -			
STRT TME :	16:05	IMPACT :	2" 15 SEC :	BEFORE:	0	cfm @	14 "Hg
END TIME :	17:14	STATIC :	2" 15 SEC :	AFTER:	0	cfm @	9 "Hg

TRAVERSE POINT #	SAMPLING TIME (THETA)	STACK TEMP °F (Ts)	VELOCITY HEAD (Dp)	VELOCITY HEAD $(Dp)^{0.5}$	ORIFICE PRESS (Dh)	GAS VOLUME SAMPLED (Vm) ft^3	GAS METER TEMPERATURE (Tm) INLET	GAS METER TEMPERATURE (Tm) OUT	SAMPLE BOX TEMP, °F	TEMP OF LAST IMPINGER	PUMP VACUUM (INCHES OF Hg)
1	0	389	0.015	0.122	0.900	424.962	78	78	238	63	3
2	2.5	375	0.020	0.141	1.250		78	78	239	61	3
3	5	628	0.025	0.158	1.500		79	78	239	60	4
4	7.5	843	0.025	0.158	1.500		80	78	239	59	4
5	10	890	0.020	0.141	1.250		80	79	244	59	3.5
6	12.5	919	0.025	0.158	1.500		80	79	246	55	4
7	15	936	0.030	0.173	1.800		80	79	250	55	5
8	17.5	945	0.030	0.173	1.800		81	80	248	56	5
9	20	966	0.035	0.187	2.100		81	80	249	57	5
10	22.5	936	0.035	0.187	2.100		81	78	250	57	5
11	25	935	0.030	0.173	1.800		81	80	251	57	5
12	27.5	978	0.030	0.173	1.800		81	80	253	57	5
13	30	588	0.030	0.173	1.800		79	79	253	58	
14	32.5	639	0.030	0.173	1.800		79	79	256	58	
15	35	828	0.030	0.173	1.800		80	79	255	58	5
16	37.5	936	0.035	0.187	2.100		80	79	251	58	5.75
17	40	996	0.035	0.187	2.100		80	79	249	59	5.75
18	42.5	1004	0.035	0.187	2.100		80	79	247	60	5.75
19	45	1009	0.030	0.173	1.800		79	79	248	57	6
20	47.5	1006	0.030	0.173	1.800		80	79	251	58	6
21	50	982	0.020	0.141	1.250		79	78	254	58	4.5
22	52.5	965	0.020	0.141	1.250		81	79	251	59	4.5
23	55	932	0.020	0.141	1.250		81	79	252	59	4.5
24	57.5	931	0.020	0.141	1.250		80	79	256	60	4.5
	60					466.898					
	60	856.5	AV SQ RT =	0.164	1.650	41.936	AV TEMP =	79.42	248.7	63	6

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EPA METHOD 5 FIELD DATA SHEET

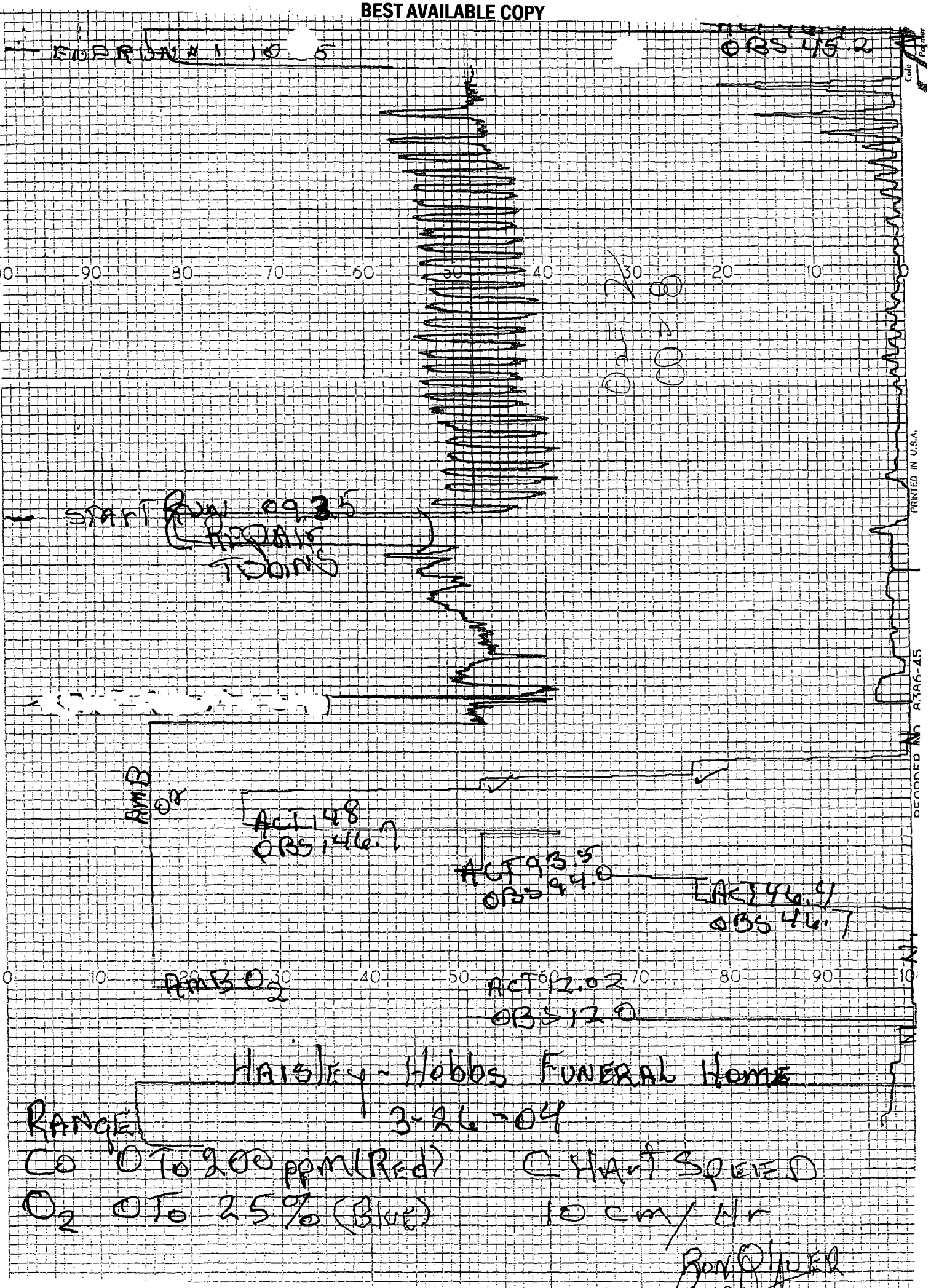
Project	Hawley	C Factor	0.87	Leak Check		4L	
Sample Location	Incinerator	ΔP_s	0.031	Pretest	0.000	@ 15 Inches Hg	
Date	3/26/04	Nozzle (D_n)	0.618	Post-Test	0.000	@ 9 Inches Hg	
Run #	3	Operators	TMC/KG	Start Clock Time	1605	Stop Time	1714

Point	Time, ΔT (minutes)	Meter Volume, V_m (Cubic Feet)	Velocity Head, ΔP (Inch H_2O)	√P	Orifice, ΔH (Inch H_2O)	Vacuum, (In. Hg)	Stack and Sampling Train Temperatures, °F					
	Increments [2½]	Initial [424.962]					Stack	Filter	Probe	Exit	Meter In	Meter Out
1	2½	426.4	0.015	0.12	0.90	3	387	238	234	65	78	78
2	5	428.0	0.02	0.14	1.25	3	379	239	232	61	78	78
3	7½		0.025	0.16	1.50	4	628	237	238	60	79	78
4	10		0.025	0.16	1.50	4	843	239	234	59	80	78
5	12½	432.7	0.02	0.14	1.25	3.5	890	244	238	59	80	79
6	15	434.4	0.025	0.16	1.50	4	919	246	241	55	80	79
7	17½	436.3	0.03	0.17	1.80	5	935	250	237	55	80	79
8	20	438.1	0.03	0.17	1.80	5	945	248	238	56	81	80
9	22½	440.0	0.035	0.19	2.10	5	966	249	240	57	81	80
10	25	442.0	0.035	0.19	2.10	5	976	250	246	57	81	78
11	27½	447.8	0.03	0.17	1.80	5	975	251	247	57	81	80
12	30	445.754	0.03	0.17	1.80	5	978	253	251	57	81	80
13	32½	447.7	0.03	0.17	1.80	5	588	253	241	58	79	79
14	35	449.8	0.03	0.17	1.80	5	639	254	265	58	79	79
15	37½	451.4	0.03	0.17	1.80	5	828	255	266	58	80	79
16	40	457.3	0.035	0.19	2.10	5.75	936	251	268	58	80	79
17	42½	455.4	0.035	0.19	2.10	5.75	996	249	271	59	80	79
18	45	457.3	0.035	0.19	2.10	5.75	1004	247	274	60	80	79
19	47½		0.03	0.17	1.80	6.0	1009	249	277	57	79	79
20	50	461.6	0.03	0.17	1.80	6.0	1006	251	279	58	80	79
21	52½	467.6	0.02	0.14	1.25	4.5	982	254	283	58	79	78
22	55	464.0	0.02	0.14	1.25	4.5	965	251	286	59	81	79
23	57½	465.5	0.02	0.14	1.25	4.5	932	252	287	59	81	79
24	60	466.898	0.02	0.14	1.25	4.5	931	254	286	60	80	79
	⊙	43.936 V_m=		0.164 ΔP_{avg}=	1.65 ΔH_{avg}=		860 $T_{s,m}$=				T_{avg} =	79

MOISTURE RECOVERY DATA

Impinger No.	1	2	3	Desiccant	Total
Final Volume	171	120	2	297.4	
Initial Volume	100	100	0	282.4	
Difference	71	20	2	15.0	108.0

Filter Number	102
Comments:	
Micromanometer	
Filter wt = 0.6441	



Haisley - Hobbs Funeral Home

3-26-04

RANGE:

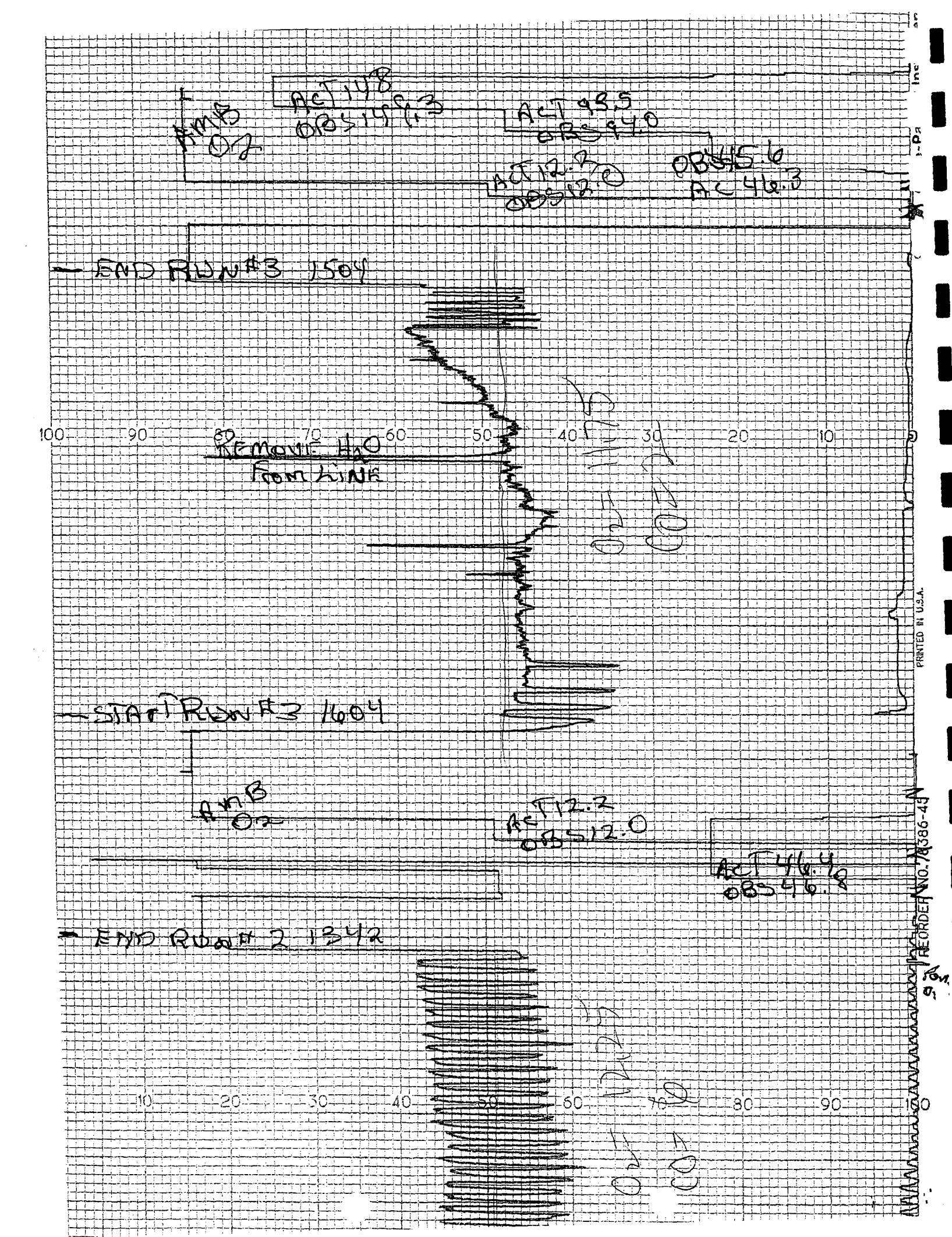
C_0 0 To 200 ppm (Red)

O_2 0 To 25% (Blue)

CHART SPEED

10 cm/Hr

Ron Hauer


ACT 14.8
OBS 14.3
RMB O2
ACT 9.5
OBS 9.0
ACT 12.2
OBS 12.0
OBS 45.6
ACT 46.3
END RUN #3 1504
100 90 80 70 60 50 40 30 20 10 0
REMOVE H2O FROM LINE
START RUN #3 1604
RMB O2
ACT 12.2
OBS 12.0
ACT 46.4
OBS 46.2
END RUN # 2 1342
10 20 30 40 50 60 70 80 90 100
PRINTED IN U.S.A.
RECORDER NO. 7386-45

B. LABORATORY DATA

AIR TESTING & CONSULTING

SOURCE IDENTIFICATION - HAISLEY-HOBBS FUNERAL HOME
HUMAN CREMATORY

TEST DATE	LABORATORY RECEIVED	ANALYZED
3/26/04	3/26/04	3/29/04

PARTICULATE COLLECTED - GRAMS					
RUN #	SAMPLE	FINAL WEIGHT	TARE WEIGHT	WEIGHT GAIN	TOTAL WEIGHT
1	PROBE WASH	103.0698	103.0517	0.0181	
	FILTER PAPER	0.8806	0.6487	0.2319	0.2500
2	PROBE WASH	100.2251	100.2180	0.0071	
	FILTER PAPER	0.6726	0.6464	0.0262	0.0333
3	PROBE WASH	103.5223	103.4931	0.0292	
	FILTER PAPER	0.7252	0.6441	0.0811	0.1103
			ANALYST: KENNETH GIVEN		

SAMPLE CHAIN OF CUSTODY

Plant: HAISLEY-HOBBS

Source ID CREMATORY

Date Sampled: MARCH 26, 2004 Sampling Time 9:14 to 17:14

Test For: PM

SAMPLE RECOVERY

Container Code	Analysis
1 - Filters RUNS I, II, III	PM
2 - Probe Wash RUNS I, II, III	PM
3 - Impingers	

Sampler: TIM CAPELLE
Title: ENVIRONMENTAL FIELD SUPERVISOR

Laboratory Personnel Receiving Samples:
Name: KENNETH GIVEN
Title: PRESIDENT
Date of Receipt: MARCH 26, 2004

SAMPLE ANALYSIS

Container Code	Method of Analysis	Date	Analyst
RUNS I, II, III	Gravimetric	MARCH. 29, 2004	
RUNS I, II, III	Gravimetric	MARCH. 29, 2004	

REPORT PREPARATION

Name: Kenneth E. Given, P.E.

Title: President Date: 3/30/04

C. CALCULATIONS

TERMS USED FOR CALCULATIONS

Dh - average pressure on the limiting orifice, inches H_2O

Dp - average pressure on pitot tube, inches H_2O

Ts - average temperature of stack, ^{o}R

Tm - average temperature of meter, ^{o}R

Vm - volume of dry gas meter, actual cubic feet

Vm_{std} - volume of dry gas meter, dry standard cubic feet

Vwc - volume of water collected from impingers and silica gel, standard cubic feet

Θ - total time of test run, minutes

An - area of nozzle tip, ft^2

As - cross sectional area of stack, ft^2

Pb - barometric pressure, inches Hg

Pm - pressure at meter, inches Hg

Ps - pressure at stack, inches Hg

Bwo - moisture in flue gas

Md - molecular weight of dry flue gas, lbs/lb-mole

Md - molecular weight of flue gas, lbs/lb-mole

Vs - velocity of flue gas, feet per second

Qs - volumetric flow of flue gas, cubic feet per minute

Qs_{std} - volumetric flow of flue gas, dry standard cubic feet per minute

Cp - pitot tube coefficient, 0.84

Kp - pitot tube constant, 85.49 ft/sec [(lb/lb-mole) (in Hg) / (^{o}R) (in H_2O)] $^{1/2}$

%I - percent of theoretical ideal sampling rate, % isokinetics

DERIVATION OF CALCULATIONS

A) Volume of water vapor collected, cubic feet

$Vwc = (0.0471)\ ft^3/gm \times$ gms, mls water collected

B) Volume of air metered at $68^{O}F$, 29.92 inches Hg, dry standard cubic feet

$Vm_{std} = (17.64) \times Y \times Vm \times Pm / Tm$

C) Moisture content of flue gas, % H_2O

$Bwo = Vwc / (Vwc + Vm_{std})$

D) Dry gas molecular weight

$Md = 0.44 \times \%CO_2 + 0.32 \times \%O_2 + 0.28 \times (\%N_2 + \%CO)$

Assume 29 for ambient sources, 30 for combustion sources

E) Stack gas molecular weight, lbs/lb-mole

$Ms = Md \times (1\text{-}Bwo) + 18\ (Bwo)$

F) Stack gas velocity, feet per second

$Vs = Kp \times Cp \times Dp^{1/2} \times [\ Ts / Ps \times Ms\ ]^{1/2}$

G) Stack gas flow rate, cubic feet per minute

$Qs = Vs \times As \times (60\ sec/min)$

H) Stack gas flow rate, dry standard cubic feet per minute

$Qs_{std} = [17.64 \times Qs \times Ps \times (1\text{-}Bwo)] / Ts$

I) Isokinetic sampling rate

$\%I = 0.0945 \times [Ts \times Vm_{std} / Ps \times Vs \times An \times theta \times (1\text{-}Bwo)]$

J) Concentration, grains per dry standard cubic foot

$= [(15.43\ grains/gram) \times (Wt\ collected)] / Vm_{std}$

K) Emission rate, pounds per hour

$= (0.00857) \times (grains/dscf) \times Qs_{std}$

L) Pm - Pressure at meter, inches Hg = Pb + Dh/13.6

M) Ps - Pressure at stack, inches Hg = Pb + static pressure/13.6

CALCULATIONS

PARTICULATE, CO

	RUN #1	RUN #2	RUN #3
$('Dp)^{0.5}$ =	0.169	0.133	0.164
Dh, "H_2O =	1.854	1.116	1.650
Ts, ^{o}F =	883.08	760.5	856.5
Tm, ^{o}F =	86.23	85.83	79.42
Vm, ft^3 =	43.927	35.214	41.000
Y =	1.004	1.004	1.004
time, min =	60	60	60
Nozzle, in. =	0.618	0.618	0.618
An, ft^2 =	0.002083	0.002083	0.002083
Stack, in. =	20	20	20
As, ft^2 =	2.1817	2.1817	2.1817
Pb, "Hg =	30.37	30.37	30.37
Cp =	0.84	0.84	0.84
wc, ml =	129.8	107.9	108
SP,"H_2O =	0.028	0.04	0.031
Md, lbs/mole =	30	30	30
Pm, "Hg =	30.51	30.45	30.49
Ps, "Hg =	30.37	30.37	30.37
PM, gm =	0.2500	0.0333	0.1103
$\%O_2$ =	12	12.25	11.75
CO, ppm =	8	6	2

	RUN #1	RUN #2	RUN #3
A) Volume of water vapor, ft^3 Vwc = (0.0471)(wc)ml,g	6.114	5.082	5.087
B) Volume of air metered to 68°F, 29.92" Hg, dry $Vmstd = \frac{(17.64)(Y)(Vm)(Pm)}{Tm}$	43.500	34.784	42.000
C) Moisture content of flue gas Bwo = Vwc/(Vwc+Vmstd)	0.123	0.127	0.108
D) Dry Gas Molecular Weight Md = 29 for ambient air, 30 for combustion gases	30	30	30

E) Stack gas molecular weight, lbs/lb-mole Ms = Md(1 - Bwo) + (18)(Bwo)	28.52	28.47	28.70
F) Stack gas velocity, ft/sec $Vs = KpCp(Dp)^{0.5}(Ts/PsMs)^{0.5}$	15.1	11.4	14.5
G) Stack gas flowrate, ACFM Qs = (60 sec/min)(As)(Vs)	1975.3	1490.4	1896.2
H) Stack gas flowrate,DSCFM $Qsstd = \frac{(17.64)(Qs)(Ps)(1-Bwo}{(Ts)}$	690.9	570.9	688.3
I) Isokinetic sampling rate, %I $\%I = \frac{(0.0945)(Ts)(Vmstd)}{(Ps)(Vs)(An)(theta)(1 - Bwo)}$	109.93	106.38	106.53
J) Concentration, gr/dscf = (15.43 grs/gm)(Wt./Vmstd) Concentration, gr/dscf, PM	0.0887	0.0118	0.0391
K) Emission rate, lbs/hr = (0.00857)(grs/dcsf)(Qsstd) Emission rate, lbs/hr, PM =	0.525	0.070	0.232
L) % O_2 Factor = $\frac{(20.9-7)}{(20.9-\%O2)}$	1.562	1.607	1.519
M) Concentration @ & 7% O_2, g Concentration x Factor = Concentration, gr/dscf, PM	0.1385	0.0190	0.0594
O) Concentration @ & 7% O_2, p Concentration x Factor Concentration, ppm, CO	12.5	9.6	3.0

D. CALIBRATION INFORMATION

TABLE 297.310-1
CALIBRATION SCHEDULE

ITEM	MINIMUM CALIBRATION FREQUENCY	REFERENCE INSTRUMENT	TOLERANCE
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent, or thermometric points	+/-2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass thermometer	5 degrees F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5 degrees F
Barometer	Monthly	Hg barometer or NOAA station	+/-1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	+/-0.001"mean of at least three readings Max. deviation between readings .004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, When 5% change observed, Annually 2. One Point: Semiannually	Spirometer or calibrated wet test or dry gas test meter	2%
	3. Check after each test series	Comparison check	5%

SUMMARY OF SAMPLING EQUIPMENT CALIBRATION				
Equipment Calibration	Date of Calibration	Place of Calibration	Method of Calibration	Calibration Date
Nozzle	3/26/04	On Site	Vernier Caliper (Avg)	See Following
Pitot Tube	10/29/03	ESG	FDER Alt. Method	$C_p = 0.84$
Dry Gas Meter and Orifice	10/16/03	ESG	Wet Test Meter JU	MCF = 1.004
Barometer	---	Tampa Airport	---	@ 12 Noon
Thermocouples	10/29/03	ESG	Calibrated at ambient and boiling water temperatures against ASTM mercury bulb thermometer	± 5°F

Environmental Sciences Group

Calibration Date: October 29, 2003
Calibrated By: Tim O'Dell

Description	Boiling Water			Ambient			Ice Bath			Largest Deviation Over Range
	True	Found	Difference	True	Found	Difference	True	Found	Difference	
3' Probe	99.9°C	99.6°C	-0.3°C	30.2°C	30.4°C	+0.2°C	0.0°C	-0.1°C	-0.1°C	0.3°C
5' Probe	99.9°C	99.5°C	-0.4°C	30.2°C	30.4°C	+0.2°C	0.0°C	-0.1°C	-0.1°C	0.3°C
7' Probe	99.9°C	99.8°C	-0.1°C	29.9°C	29.6°C	-0.3°C	0.0°C	-0.2°C	-0.2°C	0.2°C
Hot Box 1	99.9°C	99.5°C	-0.4°C	29.7°C	29.8°C	+0.1°C	0.0°C	0.4°C	0.4°C	0.4°C
Hot Box 2	99.9°C	99.6°C	-0.3°C	29.7°C	27.7°C	0.0°C	0.0°C	-0.2°C	-0.2°C	0.5°C
Probe Liner 1-3'	99.9°C	99.6°C	-0.3°C	29.5°C	29.8°C	+0.3°C	0.0°C	-0.1°C	-0.1°C	0.4°C
Probe Liner 2-3'	99.9°C	99.7°C	-0.2°C	29.5°C	29.2°C	-0.3°C	0.0°C	-0.3°C	-0.3°C	0.3°C
Probe Liner 1-5'	99.9°C	99.7°C	-0.2°C	29.3°C	29.1°C	-0.2°C	0.0°C	-0.3°C	-0.3°C	0.2°C
Probe Liner 2-5'	99.9°C	99.6°C	-0.3°C	29.3°C	29.4°C	0.1°C	0.0°C	0.2°C	0.2°C	0.2°C
Probe Liner 1-7'	99.9°C	99.5°C	-0.4°C	29.1°C	28.7°C	-0.4°C	0.0°C	-0.1°C	-0.1°C	0.3°C
Probe Liner 1-7'	99.9°C	99.6°C	-0.3°C	29.0°C	28.9°C	-0.1°C	0.0°C	-0.2°C	-0.2°C	0.3°C
Cold Box	99.9°C	100.0°C	+0.1°C	28.8°C	29.0°C	+0.2°C	0.0°C	0.2°C	0.2°C	0.2°C
Dry Gas Inlet	99.9°C	99.6°C	-0.3°C	28.7°C	28.5°C	-0.3°C	0.0°C	-0.4°C	-0.4°C	0.3°C
Dry Gas Outlet	99.9°C	99.5°C	-0.4°C	28.5°C	28.4°C	-0.1°C	0.0°C	-0.2°C	-0.2°C	0.3°C

Serial Number NIST Traceable Thermometer 58731

Environmental Sciences Group

DRY GAS METER CALIBRATION

Bar Pressure, in Hg	30.12
Bar Pressure, mm Hg	765
Critical Vacuum, in Hg	14.21
Date	10/16/2003

Run #	dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Meter Temperatures Initial Inlet (deg F)	Meter Temperatures Initial Outlet (deg F)	Meter Temperatures Final Inlet (deg F)	Meter Temperatures Final Outlet (deg F)	Orifice Serial #	K' Orifice Coefficient	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Ambient Temperature Final (deg F)	Ambient Temperature Average (deg F)	Volume Corrected Vm(std) (cu ft)	Volume Corrected Vcr(std) (cu ft)	Volume Actual Vcr (cu ft)	CAL B FACTOR Y Value (nounits)	Variation (nounits)	CALIBRATION FACTOR dH@ Value (in H20)	Variation (in H20)
1	0.3	7	32.425	34.592	2.167	87	84	69	68	HH-40	0.2408	23	72	74	73	2.188	2.189	2.209				
2	0.3	7	34.592	36.772	2.180	69	66	70	67	HH-40	0.2408	23	74	75	74.5	2.195	2.198	2.209	1.000	-0.002	1.731	0.001
3	0.3	9	36.772	39.573	2.806	70	68	73	70	HH-40	0.2408	23	73	75	76.5	2.814	2.818	2.846	1.002	-0.004	1.729	-0.001
																		Average	1.002		Average	1.731	
1	0.66	7	43.162	46.344	3.182	75	73	79	73	HH-49	0.3517	21.5	77	77	77	3.179	3.200	3.234				
2	0.66	7	46.344	49.545	3.201	76	74	77	75	HH-48	0.3517	21.5	77	78	77.5	3.181	3.198	3.236	1.005	-0.000	1.768	-0.002
3	0.66	7	49.545	52.752	3.207	78	75	79	76	HH-43	0.3517	21.5	78	81	79.5	3.178	3.192	3.242	1.005	-0.001	1.772	0.001
																		Average	1.005		Average	1.771	
1	1.15	7	67.115	71.419	4.304	85	85	84	85	HH-56	0.4661	20	84	84	84	4.209	4.213	4.314	1.001	-0.002	1.741	-0.001
2	1.15	8	71.419	76.335	4.916	85	85	85	85	HH-55	0.4661	20	84	84	84	4.808	4.815	4.930	1.002	-0.002	1.741	0.001
3	1.15	7	76.75	81.043	4.293	85	85	85	85	HH-55	0.4661	20	84	83	83.5	4.197	4.275	4.312	1.004	0.002	1.740	-0.001
																		Average	1.002		Average	1.741	
1	2	7	84.358	89.888	5.54	85	85	85	84	HH-63	0.6052	18.5	84	83	83.5	5.429	5.473	5.529	1.008	-0.002	1.798	0.003
2	2	7	89.888	95.418	5.52	85	85	85	85	HH-63	0.6052	18.5	83	83	83	5.407	5.478	5.586	1.013	0.002	1.793	0.000
3	2	7	95.416	100.955	5.539	85	85	85	85	HH-63	0.6052	18.5	82	82	82	5.426	5.481	5.591	1.010	-0.000	1.790	-0.003
																		Average	1.010		Average	1.793	
1	3.65	7	114.552	122.089	7.537	85	85	85	84	HH-73	0.8215	16.5	84	83	83.5	7.418	7.429	7.500	1.002	0.002	1.779	0.003
2	3.65	7	122.089	129.663	7.574	85	85	85	84	HH-73	0.8215	16.5	83	82	82.5	7.453	7.498	7.563	0.998	-0.001	1.770	-0.001
3	3.65	7	129.663	137.237	7.574	85	85	85	84	HH-73	0.8215	16.5	82	82	82	7.453	7.439	7.539	0.998	-0.001	1.774	-0.002
																		Average	0.999		Average	1.777	

Average Over Range	1.004	Average Over Range	1.782

Acceptance Criteria for Y Factor = Individual values variance from average +or - 0.02 **Accept**

Test Conducted by: _____

Environmental Sciences Group

DRY GAS METER POST TEST CALIBRATION

Bar Pressure, in Hg	30.20
Bar Pressure, mm Hg	767
Critical Vacuum, in Hg	14.24
Date	03/03/2004

Run #	ΔH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Meter Temperatures Initial Inlet (deg F)	Initial Outlet (deg F)	Final Inlet (deg F)	Final Outlet (deg F)	Orifice Serial #	K' Orifice Coefficient	Actual Vacuum (in Hg)	Ambient Temperature Initial (deg F)	Final (deg F)	Average (deg F)	Volume Corrected Vm(std) (cu ft)	Volume Corrected Vor(std) (cu ft)	Volume Actual Vor (cu ft)	CALIB. FACTOR Y Value (no units)	Variation (no units)	CALIBRATION FACTOR dH@ Value (in. H2O)	Variation (in. H2O)
1	0.68	7	471.721	474.933	3.212	78.4	77.8	79	78	HH-48	0.3517	21.25	77.8	80.4	79	3.184	3.202	3.240	1.006	0.005	1.758	-0.007
2	0.68	7	474.983	478.214	3.231	80.4	78.4	80.6	78.6	HH-48	0.3517	21.25	81.2	85.6	83.4	3.195	3.193	3.253	0.998	-0.003	1.770	0.005
3	0.68	10	478.214	492.823	4.614	80.8	79.4	81.2	79.8	HH-48	0.3517	21.25	85.6	81	83.3	4.558	4.556	4.647	1.000	-0.001	1.766	0.002
																		Average	1.001		Average	1.765	
1	2	7	525.855	531.394	5.539	83.8	83.8	83.8	83.8	HH-63	0.0052	18.5	82.2	82.8	82.5	5.462	5.492	5.594	1.007	-0.002	1.791	0.002
2	2	7	531.394	536.918	5.524	83.9	83.8	84	83.8	HH-63	0.0052	18.5	82.2	81.2	81.7	5.437	5.466	5.550	1.011	0.002	1.788	-0.000
3	2	7	536.918	542.451	5.533	83.9	83.8	83.8	83.8	HH-63	0.0052	18.5	81.2	81.2	81.2	5.447	5.480	5.567	1.010	0.000	1.787	-0.002
																		Average	1.009		Average	1.788	

Average Over Range	1.005	Average Over Range	1.778

Acceptance Criteria for Y Factor = Individual values variance from average +or - 0.02 — Accept

Average Value + or - 5% over Full Calibration

Last Calibration	10/16/2003	
Full Calibration Y Factor	1.004	
Variation	0.13%	Accept

Test Conducted by: _____

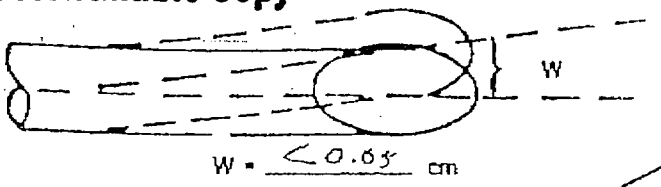
NOZZLE DIAMETER CALIBRATION DATA

Client: Haisley Funeral Home
Source I.D.: Incinerator
Test Date: March 26, 2004
Computed By: Timothy O'Dell

NOZZLE DIAMETER							
Date	1	2	3	4	5	6	Avg
3/26/04	0.618	0.618	0.619	0.618	0.618	0.619	0.618

SOURCE SAMPLING PITOT TUBE CALIBRATION
ALIGNMENT MEASUREMENT OF FACE-OPENINGS

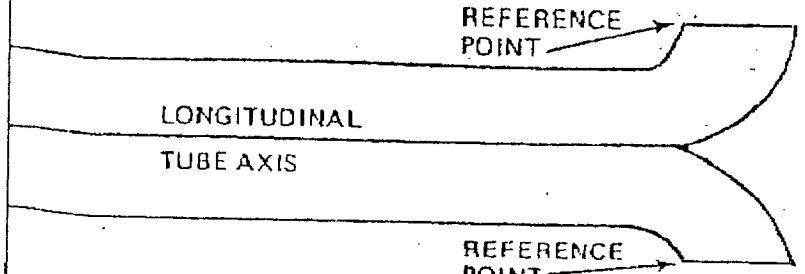
DATE: 10/28/05
S/N: 37 Probe



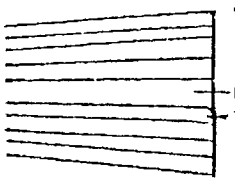
W = < 0.65 cm

W < 0.08cm

SIDE "B"



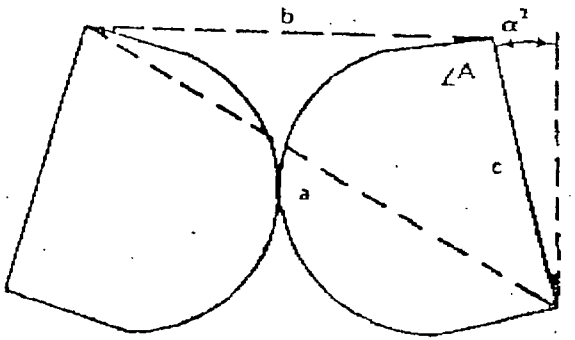
β^2 < 5"



β^2 1.1 °

β^1 1.3 °

SIDE "A"

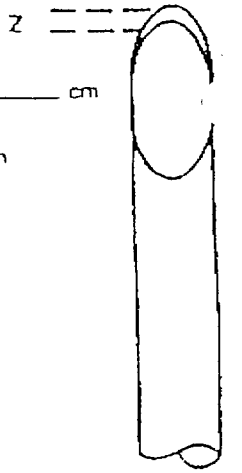


a = 0.952
b = 0.881
c = 0.377
∠A = 88.944 °

$\alpha^1 = 180° - (180° - \angle A) + 90°$

α^2 = −1.034 °

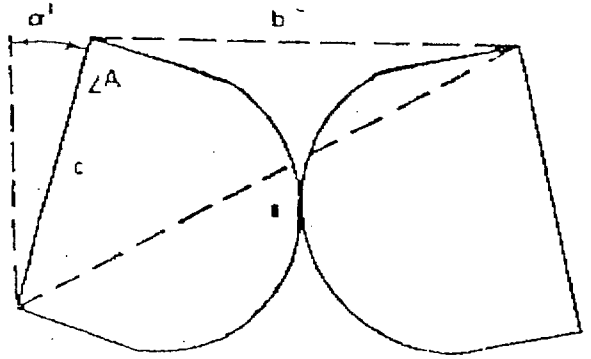
α^1 < 10°



Z = 0 cm

Z < 0.32cm

SIDE "B"



a = 0.951
b = 0.882
c = 0.377
∠A = 88.651 °

$\alpha^1 = 180° - (180° - \angle A) + 90°$

α^1 = −1.349 °

α^1 < 10°

PITOT CALIBRATION
3 Foot Probe

Date	Description	Side a, inches	Side b, inches	Side c, inches	sin A	Angle A	a2	Accept Criteria
17-Oct-2002	Side A	0.952	0.881	0.377	1.000	88.966	-1.034	a2< 10
	Side B	0.951	0.882	0.377	1.000	88.651	-1.349	a2< 10

Airgas

Airgas South, Inc.
1620 Tampa East Blvd.
Tampa, FL 33619
Phone: 813-626-6778
Fax: 813-664-1431
http://www.airgas.com

CERTIFICATE OF BATCH ANALYSIS

Date : 9-20-02

Reference Number: 210226301

Customer Name:
Address:

Purchase Order #:

Grade of Product: NITROGEN UHP 99.999%

Cylinder Number: (Analyzed Cylinder)	Component	Required Concentration	Actual Concentration
041555	OXYGEN	<1.0 PPM	0.9 PPM
	MOISTURE	<1.0 PPM	0.9 PP M
	THC	<0.5 PPM	<0.1 PPM

Cylinders in Batch:

746781	046867	580609	472439
459040	530335	53686	50117
523207	432517	523204	9905191
523221	12396	041442	523152
9808430	041555		

Delivery Ticket #:

Approval Signature

Airgas

Airgas Specialty Gases
5480 Hamilton Blvd.
Theodore, AL 36582

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

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

Cylinder No :	CC156369	Order No.	557672
Cylinder Pressure:	2000 PSIG	Expiration Date:	11/27/05
Certification Date	11/27/02	Laboratory:	ASG-MOBILE
Part No:			

Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM 00040303	OXYGEN	CC111799	20.01%

Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
SERVOMEX 244/701/742	PARAMAGNETIC

Analytical Methodology does not require correction for analytical interferences.

Certified Concentrations:

Component	Concentration	Accuracy	Procedure
OXYGEN	12.06 %	+/-1%	G1
NITROGEN	Balance		

Analytical Results:

1st Component: OXYGEN

1st Analysis Date: 11/27/02

R	20.01	S	12.05	Z	0.00	Conc	12.05 %
S	12.06	Z	0.00	R	20.01	Conc	12.06 %
Z	0.00	R	20.01	S	12.06	Conc	12.06 %
						AVG:	12.06 %

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

Do not use cylinder below 150 psig.

Approved for Release

For Technical Information Call
1-800-752-1597

AIR PRODUCTS

Air Products and Chemicals, Inc. * 12722 S. Wentworth 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: 851 -1
APCI-LARGO
7900 118TH AVENUE NORTH
LARGO FL 33773-

Order No: CSS683147-01
Batch No: 86180840
PO:
Release:

Cylinder No: SG902371ALB
Bar Code No: BHL346
Cylinder Pressure*: 2000 psig
Certification Date: 03/29/2001
Expiration Date: 03/29/2004

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
CARBON MONOXIDE	46.4±0.41 PPM	SG9197003BAL	NTRM	50.94 PPM	HORIBA VIA-510	405079	03/10/01	NON DISPERSIVE INFRARED

NITROGEN Balance Gas

*** STANDARD SHOULD NOT BE USED BELOW 150 PSIG**

EPA PROTOCOL GAS MIXTURE : CARBON MONOXIDE IN NITROGEN
To reorder this mixture please use Mix ID: 7498

Analyst: Abbasi Husain

Approved By: James Laas

(16921)

Pub. No. 320-9702

For Technical Information Call
1-800-752-1597

AIR PRODUCTS

Air Products and Chemicals, Inc. * 12722 S. Wentworth 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: 851 -1
APCI-LARGO
7900 118TH AVENUE NORTH
LARGO FL 33773-

Order No: CSS683145-01
Batch No: 86180842
PO:
Release:

Cylinder No: SG9110016BAL
Bar Code No: DUH814
Cylinder Pressure*: 2000 psig
Certification Date: 03/29/2001
Expiration Date: 03/29/2004

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
CARBON MONOXIDE	93.5±.58 PPM	SG9161497BAL	NTRM 81679	99.90 PPM	HORIBA VIA-510	405079	03/10/01	NON DISPERSIVE INFRARED

NITROGEN Balance Gas

*** STANDARD SHOULD NOT BE USED BELOW 150 PSIG**

EPA PROTOCOL GAS MIXTURE : CARBON MONOXIDE IN NITROGEN
To reorder this mixture please use Mix ID: 7477

Analyst: HOLLY HATTENDORF

Approved By: James Laas

(16921)

Pub. No. 320-9702

For Technical Information Call
1-800-752-1597

AIR PRODUCTS

Air Products and Chemicals, Inc. * 12722 S. Wentworth 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: 851 -1
APCI-LARGO
7900 118TH AVENUE NORTH
LARGO FL 33773-

Order No: CSS683146-01
Batch No: 86180876
PO:
Release:

Cylinder No: SG9120745BAL
Bar Code No: FFV651
Cylinder Pressure*: 2000 psig
Certification Date: 03/30/2001
Expiration Date: 03/30/2004

CERTIFIED CONCENTRATION		REFERENCE STANDARDS			ANALYTICAL INSTRUMENTATION			
Component	Certified Concentration	Cylinder Number	Standard Type	Standard Concentration	Instrument Make/Model	Serial Number	Last Calibration	Measurement Principal
CARBON MONOXIDE	148±1.3 PPM	SG9159530BAL	NTRM	244.7 PPM	HORIBA VIA-510	405079	03/10/01	NON DISPERSIVE INFRARED

NITROGEN Balance Gas

*** STANDARD SHOULD NOT BE USED BELOW 150 PSIG**

EPA PROTOCOL GAS MIXTURE : CARBON MONOXIDE IN NITROGEN
To reorder this mixture please use Mix ID: 16523

Analyst: Abbasi Husain

Approved By: James Laas

(16921)

Pub. No. 320-9702

E. VISIBLE EMISSIONS

(813) 651-0878

FACILITY NAME	PERMIT NUMBER
Harstad-Harris	

SOURCE	NEDS NO.	I.D. NO.
Funeral Home		001

ADDRESS		
3015 Okeechobee		
CITY: Ft. Pierce	COUNTY	ZIP
CONTACT: Rick Harstad	PHONE	

PROCESS EQUIPMENT	OPERATING RATE
Crematory	
CONTROL EQUIPMENT	OPERATING MODE
None	

FUEL TYPE/RATE	MATERIAL TYPE/RATE
Nat Gas	Human

DESCRIBE EMISSION POINT
START: Stack EXIT STOP: same

HEIGHT ABOVE GROUND LEVEL	HEIGHT RELATIVE TO OBSERVER
START: 20 STOP: ✓	START: −3 STOP: ✓
DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START: 5 STOP: ✓	START: N STOP: ✓

DESCRIBE EMISSIONS
START: None STOP: ✓

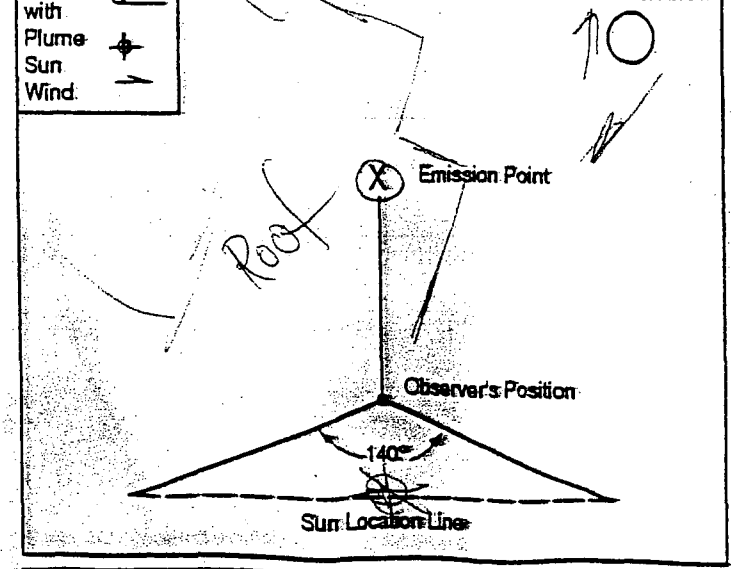
EMISSION COLOR	PLUME TYPE
START: N/A STOP: ✓	N/A CONTINUOUS ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT	WATER DROPLET PLUME
NO ☐ YES ☐	ATTACHED ☐ DETACHED ☐

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
START: STOP:

DESCRIBE BACKGROUND	AMBIENT TEMP.
START: Ground STOP: ✓	START: 75° STOP: ✓
BACKGROUND COLOR	SKY CONDITIONS
START: Green STOP: ✓	START: Scattered STOP: ✓
WIND SPEED	WIND DIRECTION
START: 3-10 STOP: ✓	START: NE STOP: ✓

Stack with Plume
Sun
Wind

SOURCE LAYOUT SKETCH



I CERTIFY THE ABOVE PROCESS RATE DATA IS TRUE TO THE BEST OF MY KNOWLEDGE.
SIGNATURE:
TITLE:
DATE:

OBSERVATION DATE	START TIME	STOP TIME
3-26-04	1250	1350

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

AVERAGE OPACITY FOR HIGHEST 24 CONSECUTIVE READINGS:	RANGE OF OPACITY READINGS MIN:	MAX:
0	0	0

OBSERVER'S NAME (PRINT): Kenneth Given

OBSERVER'S SIGNATURE	DATE
	3-26-04
CERTIFIED BY E.P.A. Kenneth Given	DATE 2-17-04

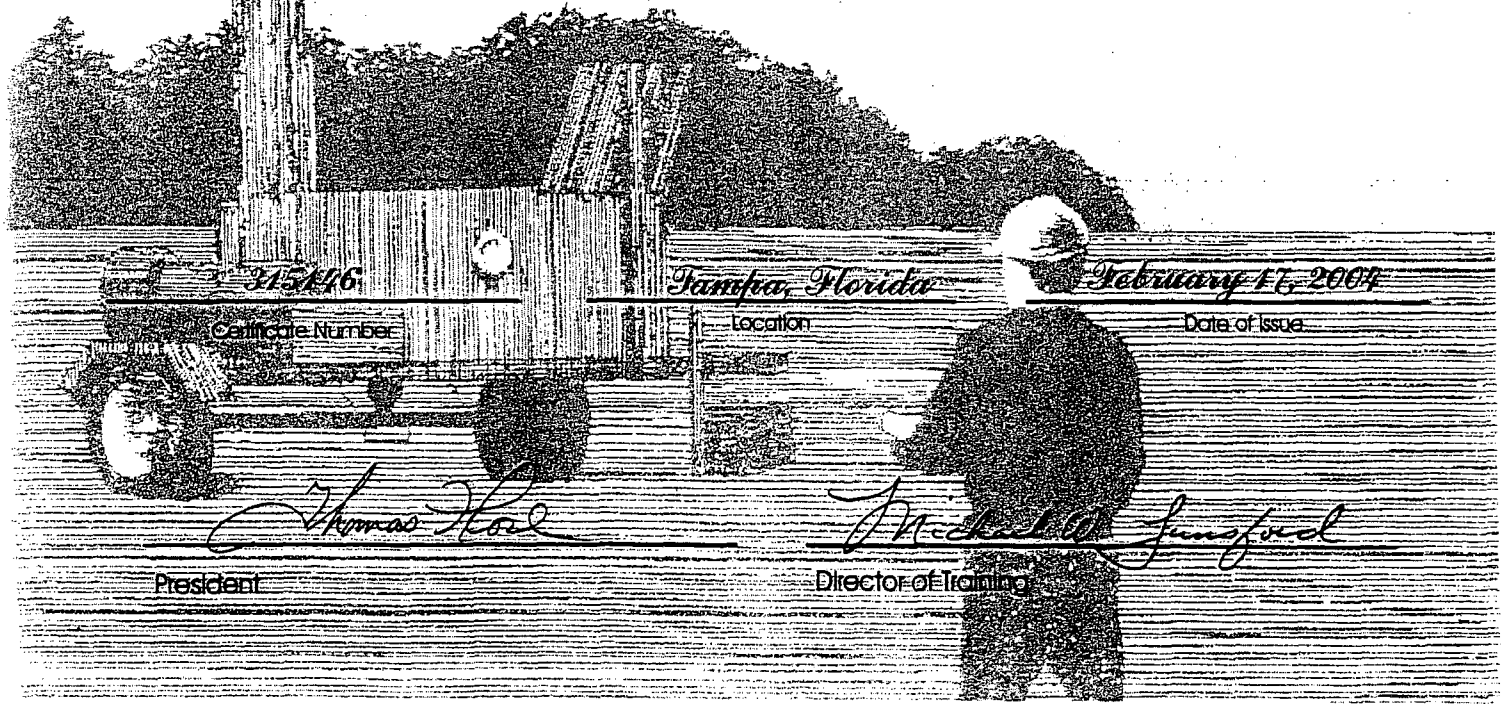
COMMENTS:

VISIBLE EMISSIONS EVALUATOR

This is to certify that

Ken Given

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



21546
Certificate Number

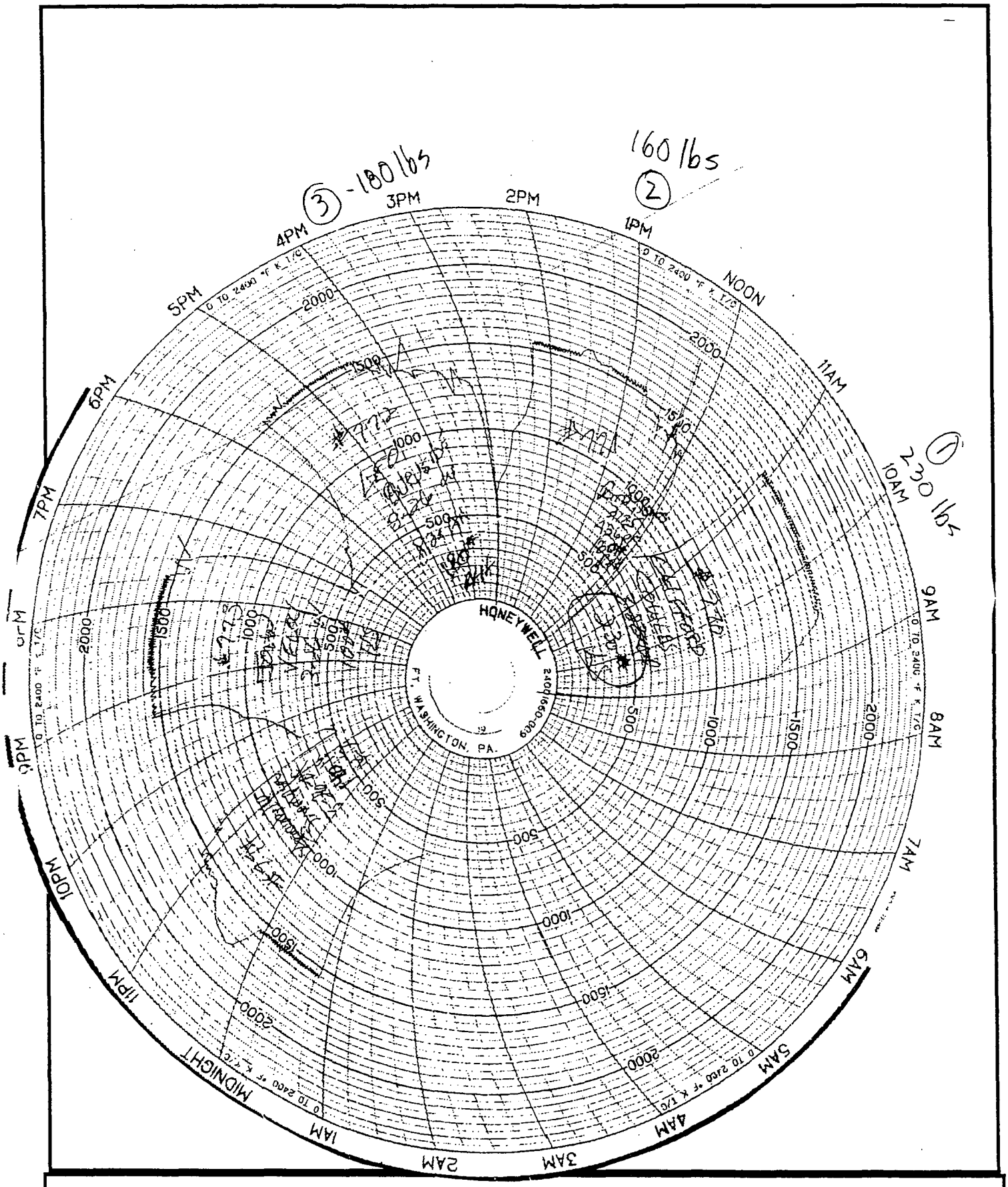
Tampa, Florida
Location

February 17, 2004
Date of Issue

Thomas Hall
President

Richard W. Sandford
Director of Training

F. PRODUCTION DATA



HAISLEY-HOBBS FUNERAL HOME – TEMPERATURE, ^{O}F

G. PROJECT PARTICIPANTS

PROJECT PARTICIPANTS

Kenneth Given, P.E.	Air Testing & Consulting, Inc. President/Project Manager
Ron Oliver	Air Testing & Consulting, Inc. Environmental Scientist
Tim O'Dell	Environmental Sciences Group Project Manager