

DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR MOBILE SECTOR

REV 2 1 2008

REC'D

HUMAN CREMATORY AIR GENERAL PERMIT REGISTRATION FORM

Part II. Notification to Permitting Office

(Detach and submit to appropriate permitting office; keep copy onsite)

Instructions: To give notice to the Department of an eligible facility's intent to use this air general permit, the owner or operator of the facility must detach and complete this part of the Air General Permit Registration Form and submit it to the appropriate Department of Environmental Protection or local air pollution control program office which has permitting authority. Please type or print clearly all information, and enclose the appropriate air general permit registration processing fee pursuant to Rule 62-4.050(4)(o), F.A.C. (\$100 as of the effective date of this form)

0830030-003

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

- Construct and operate a proposed new facility.
- Operate an existing facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit).

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

- Continue operating the facility after expiration of the current term of air general permit use.
- Continue operating the facility after a change of ownership.
- Make an equipment change requiring re-registration pursuant to Rule 62-210.310(2)(e), F.A.C., or any other change not considered an administrative correction under Rule 62-210.310(2)(d), F.A.C.

Surrender of Existing Air Operation Permit(s) - For Initial Registrations Only

If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. In such case, check the first box, and indicate the operation permits being surrendered. If no air operation permits are held by the facility, check the second box.

- All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s): _____
- No air operation permits currently exist for this facility.

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)

ROBERTS FUNERAL HOME OF DUNNELLON, INC.

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a registration form must be completed for each.)

ROBERTS FUNERAL HOME OF DUNNELLON, INC.

Facility Location (Provide the physical location of the facility, not necessarily the mailing address.)

Street Address: **19936 EAST PENNSYLVANIA AVE.**

City: **DUNNELLON**

County: **MARION**

Zip Code: **34432**

Facility Start-Up Date (Estimated start-up date of proposed new facility.) (N/A for existing facility)

NA

Owner/Authorized Representative

Name and Position Title (Person who, by signing this form below, certifies that the facility is eligible to use this air general permit.)

Print Name and Title: **KENNETH E. ROBERTS. OWNER**

Owner/Authorized Representative Mailing Address

Organization/Firm: **ROBERTS FUNERAL HOME OF DUNNELLON, INC.**

Street Address: **P.O. BOX 2073**

City: **DUNNELLON**

County: **MARION**

Zip Code: **34432**

Owner/Authorized Representative Telephone Numbers

Telephone: **(352) 489-2429**

Fax: **(352) 489-2427**

Cell phone (optional):

Facility Contact (If different from Owner/Authorized Representative)

Name and Position Title (Plant manager or person to be contacted regarding day-to-day operations at the facility.)

Print Name and Title: **SAME AS ABOVE**

Facility Contact Mailing Address

Organization/Firm:

Street Address:

City:

County:

Zip Code:

Facility Contact Telephone Numbers

Telephone:

Fax:

Cell phone (optional):

Owner/Authorized Representative Statement

This statement must be signed and dated by the person named above as owner or authorized representative

I, the undersigned, am the owner or authorized representative of the owner or operator of the facility addressed in this Air General Permit Registration Form. I hereby certify, based on information and belief formed after reasonable inquiry, that the facility addressed in this registration form is eligible for use of this air general permit and that the statements made in this registration form are true, accurate and complete. Further, I agree to operate and maintain the facility described in this registration form so as to comply with all applicable standards 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 registration form.

Signature

Kenneth E. Roberts

Date

11-17-08

Design Calculations

If this is an initial registration for a proposed new human crematory unit, provide design calculations to confirm a sufficient volume in the secondary chamber combustion zone to provide for at least a 1.0 second gas residence time at 1800 degrees F.

- Manufacturer's' design calculations attached.
- Registration is not for proposed new human crematory unit(s).

Description of Facility

Below, or as an attachment to this form, provide a description of all crematory operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe all air pollutant-emitting processes and equipment at the facility, and identify any air pollution control measures or equipment used.

B&L SYSTEMS N-20 SERIES HUMAN CREMATORY

The incinerator consists of primary and secondary (afterburner) chambers, each fired exclusively on propane gas with a maximum total design heat input rate of 1.3 mmbtu/hr (0.3 mmbtu/hr - primary chamber, 1.0 mmbtu/hr - Secondary chamber).

Emissions are controlled by the afterburner that maintains a minimum secondary chamber combustion zone temperature of 1600°F prior to and during combustion of material in the primary chamber. The secondary chamber is designed to insure one-second residence time at a gas temperature of 1800 °F, and is equipped with a continuous temperature monitor and recorder.

The unit is equipped with an opacity monitor that will adjust the cremation process if excess opacity is measured. Opacity monitor information is attached.

**OPACITY
MONITOR INFORMATION**

B&L CREMATION SYSTEMS, INC.

GENERAL PURPOSE OPACITY MONITOR

SPECIFICATIONS

LIGHT SOURCE: Pulsed visible LED

SPECTRAL RESPONSE: Between 400nm and 500 nm

ANGLE OF VIEW: Less than 4 degrees from axis

AMBIENT LIGHT: No measurable effect

MAXIMUM DISTANCE BETWEEN MONITOR AND REFLECTOR: 6 feet

MONITOR TYPE: Retro reflective using a 3" reflector

ADJUSTMENT RANGE: 0 TO 100% opacity

ACCURACY: +/- 3% of full scale

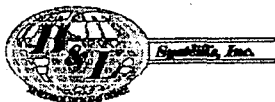
POWER: 24 VAC, less than 10 VA

OUTPUT: Relay, DPDT, 5.0 A @ 102 VAC
LED Indicator for sensitivity adjustment

TEMPERATURE: Storage, -7 degrees to 32 degrees C
Operating: -29 degrees to 66 degrees C

PHYSICAL: 8.000"H x 5.750"W x 3.375"D

ENCLOSURE: Meets NEMA 3, 4 and 12 specs



OPACITY MONITOR ADJUSTMENT PROCEDURE

The following procedure may be necessary to be performed from time to time due to vibration on the top of the retort. This procedure is designed to be both simple and quick, and to insure the proper operation of your retort.

It is suggested that before starting, this procedure be carefully read, and if you have any questions, call the service department at B&L Cremation Systems. A service technician will be happy to answer any questions or assist you with the alignment/adjustment of your opacity monitor.

The best time to perform this procedure is on a cool retort.

Please check the cleanliness of the opacity monitor lens and reflector. Inspect the reflector for any damage, replacing it as necessary.

You will need the following tools.

6" adjustable wrench

7/16" wrench

A Phillips screwdriver

A small straight slot screwdriver

6' to 8' stepladder

Step 1: Open the electrical cabinet located on your retort. Inside, locate the "C1 BLOWER" contactor. At the bottom of the contactor, from left to right, you will see a red "STOP" button. To the right of this is a blue "RESET" button. Above this is a "TEST" slot (see fig. 1).

Step 2: Turn on the retort with the main timer set to zero. The "Cool Down" lamp should be illuminated.

Step 4: Next, it will be necessary to get on top of the retort. Inspect the opacity monitor, locating the red alignment L.E.D. and the sensitivity adjustment (see fig. 2). The red L.E.D. should be lit, and by passing your hand in front of the lens you should be able to hear the opacity monitor click. If you are experiencing minor nuisance tripping of the opacity system, turn the sensitivity adjustment CLOCKWISE approximately 1/8 turn. This should correct the problem. Now press the round blue "RESET" button located on the "C1 BLOWER" contactor in the electrical cabinet. Your retort is now ready to operate. If, however, the red L.E.D. is not illuminated or you do not hear the clicking when you pass your hand in front of the monitor, proceed to step 5.

Step 5: Turn the sensitivity adjustment FULLY CLOCKWISE. Loosen the two mounting bolts hold the opacity monitor. By slowly moving the opacity monitor (left or right, forward or backward), obtain the maximum brightness possible for the L.E.D. Carefully tighten one of the mounting bolts, using shims as necessary, then snug the remaining bolt. Do NOT tighten this bolt. Turn the sensitivity adjustment COUNTERCLOCKWISE until the monitor clicks. Turn the sensitivity adjustment CLOCKWISE until you hear the monitor click again, then continue CLOCKWISE an additional 1/8 turn. The opacity monitor is now correctly set. Press the round blue "RESET" button on the C1 BLOWER contactor, completing the alignment procedure. Please note: if the circuit board is black, counterclockwise and clockwise are reversed. Counterclockwise will be clockwise and clockwise will be counterclockwise.

If the L.E.D. does not illuminate, or if the monitor does not click, please contact the service department at B&L Cremations Systems to further assist you.



OPACITY MONITOR ADJUSTMENT PROCEDURE

FIGURE 1 "CI BLOWER"

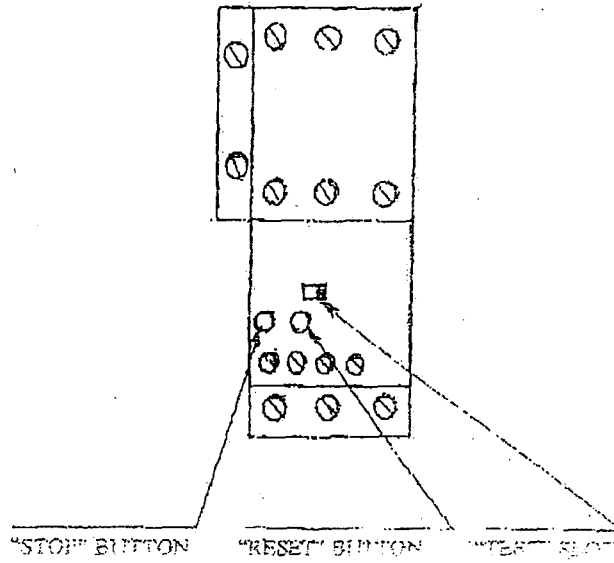
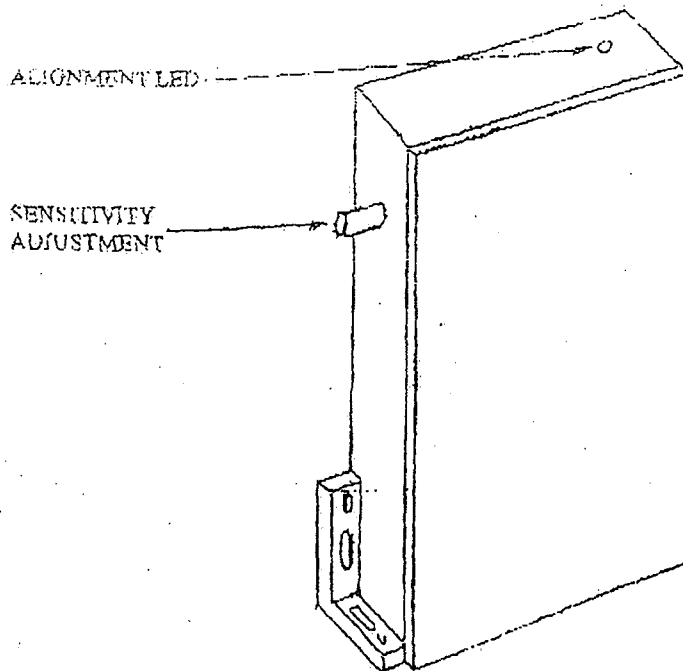
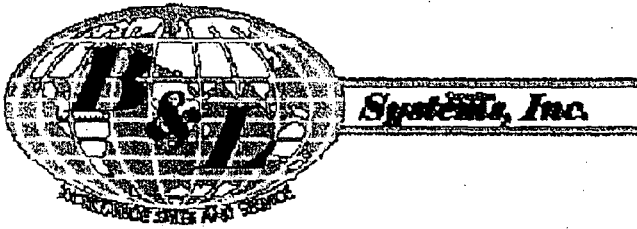


FIGURE 2, OPACITY MONITOR





7205 114TH Avenue North • Largo, Florida 33773
1-800-622-5411 • 727-541-4666 • Facsimile 727-547-0669

TEMPERATURE CONTROL SEQUENCE

A type "K" thermocouple is placed 19 – 20 ft³ downstream of the afterburner flame tip to measure temperature. The downstream distance is determined based on residence time calculations. The temperature signal is sent to the main control panel where it is received by a FUJI PYZ series temperature controller with a digital readout and a Honeywell DR4200 temperature recorder. The temperature controller controls the temperature via a motorized butterfly valve located on the afterburner inlet gas assembly. Gas demand is controlled to maintain a steady temperature. The ignition/cremation burner is interlocked to the afterburner temperature by the temperature controller set point. Combustion cannot start until temperature set point is reached. Alarm contacts in the temperature controller are utilized for over (high) temperature conditions. 100° F over set point the afterburner will be in maximum low fire and the ignition/cremation burner will shut off. The butterfly valve located on the secondary air inlet is controlled by a separate temperature output to add air to cool the system. At set point the unit will return to normal operation. An optimonitor smoke detector is placed on the stack and set at 10% opacity. If emissions occur the alarm will sound, a visual red warning lamp located on the control panel will illuminate and the primary burners will shut off. The excess air butterfly valve will open to add air to the secondary chamber to oxidize the emissions. After a five (5) minute period the unit will revert to normal operations.

Southern Environmental Sciences, Inc.

1204 North Wheeler Street □ Plant City, Florida 33563 □ (813) 752-5014 Fax (813) 752-2475

December 15, 2004

Mr. Louis Fernandez
FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
Southwest District Air Section
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Roberts Funeral Home of Dunnellon
Facility ID: No. 0830030
General Permit Notification

Dear Mr. Fernandez:

Attached please find the general permit notification for the above referenced facility along with the application fee of \$100.

Should you have any questions regarding the notification please feel free to contact me at 813-752-5014.

Very truly yours,

SOUTHERN ENVIRONMENTAL
SCIENCES, INC.



Kenneth M. Roberts, QEP
Vice President

D.E.P
SOUTHWEST DISTRICT
JAN 16 2004
TAMPA

cc: Ken Roberts, Roberts Funeral Home of Dunnellon

**AIR GENERAL
PERMIT NOTIFICATION**

**ROBERTS FUNERAL HOME
OF DUNNELLON, INC.**

HUMAN CREMATORY

SES Reference No. 04P39

**D.E.P
SOUTHWEST DISTRICT
JAN 16 2004
TAMPA**

Prepared For:

**ROBERTS FUNERAL HOME OF DUNNELLON, INC.
19936 East Pennsylvania Ave.
Dunnellon, FL 34432**

Prepared By:

**SOUTHERN ENVIRONMENTAL SCIENCES, INC.
1204 North Wheeler Street
Plant City, Florida 33566**

**PROCEDURES FOR
USE OF AIR GENERAL PERMIT**

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.

Facility Name and Location

Facility Owner/Company Name (Name of corporation, agency, or individual owner): ROBERTS FUNERAL HOME OF DUNNELLON, INC.		
Site Name (For example, plant name or number): ROBERTS FUNERAL HOME OF DUNNELLON		
Facility Location: Street Address: 19936 EAST PENNSYLVANIA AVE. City: DUNNELLON State: FL Zip Code: 34432		

Owner/Authorized Representative

Name and Title: KENNETH E. ROBERTS. OWNER		
Owner/Authorized Representative Mailing Address: Organization/Firm: ROBERTS FUNERAL HOME OF DUNNELLON, INC. Street Address: P.O. BOX 2073 City: DUNNELLON County: MARION Zip Code: 34432		
Owner/Authorized Representative Telephone Number: Telephone: (352) 489-2429 Fax: (352) 489-2427		

Facility Contact (If different from Owner/Authorized Representative)

Name and Title: SAME AS ABOVE		
Facility Contact Mailing Address: Organization/Firm: SAME AS ABOVE Street Address: City: County: Zip Code:		
Facility Contact Telephone Number: Telephone: () - Fax: () -		

Facility Comments

Process Description:

B&L SYSTEMS N-20 SERIES HUMAN CREMATORY

THE INCINERATOR CONSISTS OF PRIMARY AND SECONDARY (AFTERBURNER) CHAMBERS, EACH FIRED EXCLUSIVELY ON PROPANE GAS WITH A MAXIMUM TOTAL DESIGN HEAT INPUT RATE OF 1.3 MMBTU/HR (0.3 MMBTU/HR, PRIMARY CHAMBER, 1.0 MMBTU/HR. SECONDARY CHAMBER).

EMISSIONS ARE CONTROLLED BY THE AFTERBURNER WHICH WILL MAINTAIN A MINIMUM SECONDARY CHAMBER COMBUSTION ZONE TEMPERATURE OF 1600°F PRIOR TO AND DURING COMBUSTION OF MATERIAL IN THE PRIMARY CHAMBER. THE SECONDARY CHAMBER IS DESIGNED TO INSURE ONE SECOND RESIDENCE TIME AT A GAS TEMPERATURE OF 1800 °F, AND IS EQUIPPED WITH A CONTINUOUS TEMPERATURE MONITOR AND RECORDER.

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:

X EXISTING FACILITY WITH AIR GENERAL PERMIT

Surrender of Existing Air Permit(s)

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 air pollutant emissions units and air pollution control equipment described in this notification so as to comply with all applicable standards 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.

Kenneth Roberts
Signature

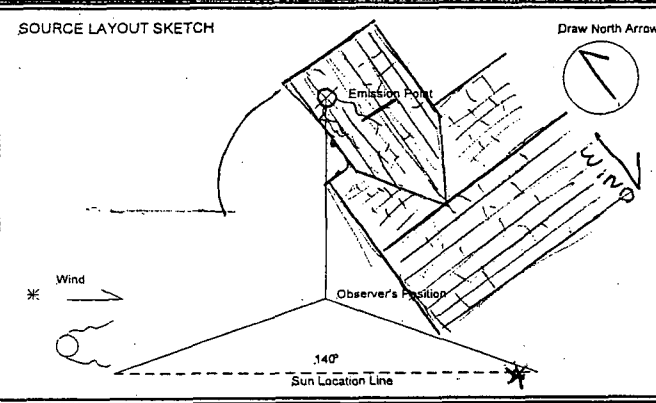
1-16-04
Date

**VISIBLE EMISSIONS
TEST REPORT**

Southern Environmental Sciences, Inc.

1204 North Wheeler Street ☐ Plant City, Florida 33563 ☐ (813) 752-5014 Fax (813) 752-2475

VISIBLE EMISSIONS EVALUATION

COMPANY: <u>Roberts Funeral Home</u>	
UNIT: <u>Human Crematory</u>	
ADDRESS: <u>19939 E. Pennsylvania Ave.</u> <u>Bunnellon, FL</u>	
PERMIT NO. <u>0830030-001-AG</u>	COMPLIANCE? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
AIRS NO. <u>0830030</u>	EU NO. <u>001</u>
PROCESS RATE <u>170 lb body</u>	PERMITTED RATE <u>Adult size body</u>
PROCESS EQUIPMENT <u>B&L Systems N20 AA Crematory</u>	
CONTROL EQUIPMENT <u>Afterburner</u>	
OPERATING MODE <u>LPG Fired</u>	AMBIENT TEMP. (°F) START <u>253°</u> STOP <u>254°</u>
HEIGHT ABOVE GROUND LEVEL START <u>220'</u> STOP <input checked="" type="checkbox"/>	HEIGHT RELATIVE TO OBSERVER START <u>220'</u> STOP <input checked="" type="checkbox"/>
DISTANCE FROM OBSERVER START <u>275'</u> STOP <input checked="" type="checkbox"/>	DIRECTION FROM OBSERVER START <u>30°</u> STOP <input checked="" type="checkbox"/>
EMISSION COLOR <u>None</u>	PLUME TYPE <u>NA</u> CONTIN. <input type="checkbox"/> INTERMITTENT <input type="checkbox"/>
WATER DROPLETS PRESENT? NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>	IS WATER DROPLET PLUME ATTACHED <input type="checkbox"/> DETACHED <input checked="" type="checkbox"/> <u>NA</u>
POINT IN PLUME AT WHICH OPACITY WAS DETERMINED START <u>Stack exit</u> STOP <input checked="" type="checkbox"/>	
DESCRIBE BACKGROUND START <u>Trees</u> STOP <input checked="" type="checkbox"/>	
BACKGROUND COLOR START <u>Green</u> STOP <input checked="" type="checkbox"/>	SKY CONDITIONS START: <u>Clear</u> STOP: <u>Clear</u>
WIND SPEED (MPH) START <u>2-5</u> STOP <input checked="" type="checkbox"/>	WIND DIRECTION START <u>N</u> STOP <input checked="" type="checkbox"/>
AVERAGE OPACITY FOR HIGHEST PERIOD <u>0%</u>	RANGE OF OPACITY READINGS MIN. <u>0%</u> MAX. <u>0%</u>
SOURCE LAYOUT SKETCH 	
Comments <u>Unit Serial # 215-47-93</u>	

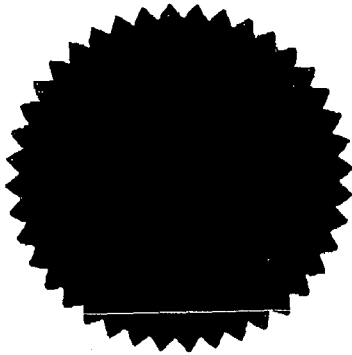
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MIN	SEC				MIN	SEC								
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0	0	0	0	0	30	0	0	0	0					
1	0	0	0	0	31	0	0	0	0					
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6	0	0	0	0	36	0	0	0	0					
7	0	0	0	0	37	0	0	0	0					
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9	0	0	0	0	39	0	0	0	0					
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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					
OBSERVER: KENNETH ROBERTS														
Certified by: FDEP at: TAMPA Certification # 309495														
Date Certified: 8/19/03					Exp. Date: 2/18/04									
I certify that all data provided to the person conducting the test was true and correct to the best of my knowledge:														
Signature: <u>Jerry A. Kreeger</u>														
Title: <u>Funeral Director/manager</u>														

**OPERATOR
TRAINING CERTIFICATES**

**CERTIFICATE
OF**

**INCINERATOR OPERATOR TRAINING
F.D.E.P. APPROVED TRAINING PROGRAM**

**KENNETH E. ROBERTS HAS SUCCESSFULLY
COMPLETED THE TRAINING PROGRAM PERFORMED
BY STEVE LOOKER ON THE N-20AA CREMATION
RETORT ON NOVEMBER 8, 1993.**



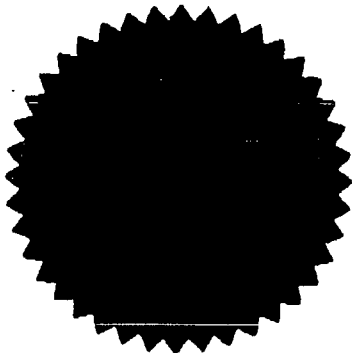
STEVE LOOKER, PRESIDENT

NOVEMBER 8, 1993
DATE

**CERTIFICATE
OF**

**INCINERATOR OPERATOR TRAINING
F.D.E.P. APPROVED TRAINING PROGRAM**

**JERRY KREAGER HAS SUCCESSFULLY
COMPLETED THE TRAINING PROGRAM PERFORMED
BY STEVE LOOKER ON THE N-20AA CREMATION
RETORT ON NOVEMBER 8, 1993.**





STEVE LOOKER, PRESIDENT

NOVEMBER 8, 1993
DATE

Certificate of Completion

Presented to

ROBERTS FUNERAL HOME

Recognizing

E. RUSSELL FORD

Crematory Operator

Having successfully completed the Crematory Operator Training as required by the State of Florida on the B&L N-20AA Cremation Retort.

B & L Cremation Systems, Inc., a State-approved training organization administered the course. Instructor: Jim Durkin



Presented this
16th day of July, 1998

STEVE LOOKER
PRESIDENT - B&L SYSTEMS

Certificate of Completion

Presented to

ROBERTS FUNERAL HOME

Recognizing

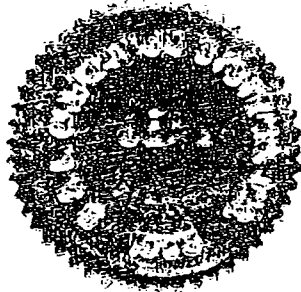
WILLIAM D. BIRDSALL

Crematory Operator

*Having successfully completed the Crematory Operator Training
on the N-20AA Cremation Retort. B & L Cremation Systems, Inc.,
a State-approved training organization administered the course.*

Instructor: Jim Durkin

Presented this
16th day of July, 1998



STEVE LOOKER
PRESIDENT - B&L SYSTEMS

OPERATING LOGS

CINERATOR FACILITY

Name of Cinerator Facility: Florida Cremation Center			Address: 19939 E. Pennsylvania Ave. Dunnellon, Florida 34432			MONTH: Nov.	PAGE: 1		
License #: FC						YEAR: 2003	of 2		
Name, location, and registration # of Removal Service: A.T.S., INC. 3287 S. SUNCOAST BLVD., HOMOSASSA, FL.			Phone Number: (352) 489 2429						
Name of Deceased	County of Death	Date of Death	Date of Cremation	Container Type			Name of Cremator	License # of FH / KB	Burial Transit Permitt No.
				Cdbd	Wd	Mil			
Henry F. Adams	Marion	10/29/03	11/01/03	X			Jerry A. Kreager	358	1573
William H. Barsel	Marion	11/03	11/06	X			Kreager	358	1574
Kappy Jean Mote	Marion	11/05	11/07	X			Kreager	358	1575
Marjorie Combs	Citrus	10/31	11/08	X			E. Russell Ford	2036	3525
Michael Combs	Citrus	11/03	11/08	X			Ford	2036	3527
Arnold E. Gorham	Marion	11/06	11/09	X			Ford	358	1576
Francis Speziali	Marion	11/07	11/11	X			Kreager	358	1577
William G. Phillips	Marion	11/09	11/12	X			Kreager	358	1579
Gwendolyn Platt	Marion	11/03	11/12	X			Kreager	2036	3528
Gertrude M. Masiello	Marion	11/09	11/12	X			Kreager	358	1578
Thomas C. Panel	Marion	11/10	11/13	X			Kenneth Roberts	358	1580
Harriet Godwin	Marion	11/10	11/13	X			Roberts	358	1581
Zilly S. Williams	Marion	11/10	11/14	X			Kreager	358	1582
Warren G. Counsellor	Marion	11/07	11/14	X			Kreager	2036	3530
Richard A. Lown	Marion	11/11	11/15	X			Kreager	2036	3534
Carol E. VanBuskirk	Citrus	11/12	11/15	X			Kreager	2036	3533
Gordon T. Winskey	Alachua	11/11	11/15	X			Kreager	358	1583
Eric Daniel Brown	Marion	11/11	11/16	X			Kreager	358	1584
<small>(It is to certify that the following remains were cremated at the above crematory. Said remains were received and cremated in a container approved by the Rules and Regulations of the State Board of Funeral Directors and Embalmers for Florida governing crematories. The 48 hour time period had elapsed before said deceased was cremated.</small>									
Subscribed and sworn before me		Signature of Cremator:		License Number:		Lic. # of Reg. Direct Disposer / Funeral Director in Charge:			
Month & Day: 10						KA: FE: 1667			
Signature of Notary:		Signature of Cremator:		License Number:		Signature of Reg. Direct Disposer / Lic. Funeral Dir. in Charge:			
						Jerry A. Kreager			
Notary Commission Expires:		Signature of Cremator:		License Number:		Date Signed:			
		Jerry A. Kreager		FE: 1667		Dec. 9, 2003			

DPR Form 401-FC: Rev. 05-22-95

11/16/03

CINERATOR FACILITY

Name of Cinerator Facility: Florida Cremation Center Address: 19939 E. Pennsylvania Ave. Dunnellon, Florida 34432 MONTH: Nov. PAGE: 2
 License #: FC YEAR: 2003 of 2
 Name, location, and registration # of Removal Service: A.T.S., INC. 3287 S. SUNCOAST BLVD., HOMOSASSA, FL. Phone Number: (352) 489 2429

Name of Deceased	County of Death	Date of Death	Date of Cremation	Container Type			Name of Cremator	License # of FH / KB	Burial Transit Permit No.
				Cdbd	Wd	Mil			
Catherine Rushing	Marion	11/12	11/16/03	X			Jerry A. Kreager	358	1584
Harry Speak Jr	Marion	11/14	11/16	X			Kreager	358	1586
Lois L. Lessman	Marion	11/13	11/19	X			Kreager	358	1587
Raymond Clarkson	Marion	11/17	11/19	X			Kreager	358	1588
Samuel Holt	Marion	11/16	11/21	X			E. Russell Ford	358	1590
Carol Lewis Dixon	Marion	11/17	11/22	X			Ford	358	1589
Loreate Jean Martin	Marion	11/19	11/23	X			Ford	358	1591
Arthur Leonard Livingston	Alachua	11/14	11/24	X			Kreager	2003	2099056
Charles John Smith	Marion	11/20	11/25	X			Ford	358	1592
Etta W. Burch	Marion	11/23	11/25	X			Kreager	358	1594
William F. Carpenter	Marion	11/22	11/26	X			Ford	358	1593

I do so to certify that the following remains were cremated at the above crematory. Said remains were received and cremated in a container approved by the Rules and Regulations of the State Board of Funeral Directors and Embalmers for Florida governing crematories. The 48 hour time period had elapsed before said deceased was cremated.

Subscribed and sworn before me
 Month & Day: _____ IP _____ Signature of Cremator: _____ License Number: _____ Lic. # of Reg. Direct Disposer / Funeral Director in Charge: _____
 Signature of Notary: _____ Signature of Cremator: _____ License Number: _____ KA: _____ FE: 1667
 Notary Commission Expires: _____ Signature of Cremator: Jerry A. Kreager License Number: _____ Date Signed: Dec. 9, 2003

FILE NO. 0882 01/14 04 10:52 DU: RUBERT'S FUNERAL HOME FAX: 352 489 2427 PAGE 9/ 9

CINERATOR FACILITY

FILE No. 682 01/14 '04 16:30 ID:ROBERTS FUNERAL HOME FAX:352 489 2427

Name of Cinerator Facility: Florida Cremation Center		Location: P.O. Bnx 2073 Dunnellon, FL 34430			MONTH: December		PAGE: 1		
License #: FC 0000193		Phone Number: (352) 489-2429			YEAR: 2003		OF 2		
Name and BPR registration number of all Removal Services used (this month): Alternative Transportation Services, Inc. 3287 S. Suncoast Blvd. Homosassa, FL									
Name of Deceased	County of Death	Date of Death	Date of Cremation	Container Type			Name of Cremator	License # of FH / KB	Burial Transit Permit No.
				Cdbd	Wd	MB			
Noel Holt	Marion	11/25/2003	12/01/2003	XX			Kreager	358	358-1596
Florence Bayreuther	Marion	11/25/2003	12/01/2003	XX			Kreager	358	358-1597
Glen Bernis	Marion	11/25/2003	12/02/2003	XX			Kreager	358	358-1598
Eugene Charles Cram	Marion	11/28/2003	12/03/2003	XX			Jerry A. Kreager	2036	2036-3542
Stephen Robertson	Levy	11/18/2003	12/03/2003	XX			K.E. Roberts	358	358-1595
Harold Bowling	Marion	11/26/2003	12/04/2003	XX			Kreager	358	358-1599
Joseph Oakley Kleiber	Marion	11/27/2003	12/05/2003	XX			Jerry A. Kreager	2036	2036-3541
Gertrude Maloney	Marion	12/02/2003	12/05/2003	XX			Kreager	358	358-1600
Debra Sue Hodge	Alachua	11/29/2003	12/06/2003	XX			Ford	2099/2003	20022099062
James Schmucker	Marion	12/03/2003	12/06/2003	XX			Ford	358	358-1603
Dorothy Aylward	Levy	11/30/2003	12/07/2003	XX			Ford	2099/2003	200320099063
Mary Shedlock	Sumter	12/03/2003	12/07/2003	XX			Ford	358	358-1602
Christian W. Singer	Citrus	11/25/2003	12/08/2003	XX			E. Russell Ford	2036	2036-3538
Annette Lebenstein	Marion	12/03/2003	12/09/2003	XX			Kreager	358	358-1601
Pamela Tukey	Marion	12/04/2003	12/09/2003	XX			Kreager	358	358-1607
Leonard Bates	Marion	12/06/2003	12/09/2003	XX			Kreager	358	358-1608
Dorothy Fugate	Marion	12/05/2003	12/10/2003	XX			Ford	358	358-1606
Alexander Abbett	Marion	12/07/2003	12/10/2003	XX			Ford	358	358-1609
Robert Nichols	Marion	12/04/2003	12/11/2003	XX			Ford	358	358-1605
Virgil Heinlen	Marion	12/08/2003	12/11/2003	XX			Ford	358	358-1610
Christopher Paul Thompson	Marion	12/09/2003	12/12/2003	XX			Jerry A. Kreager	2036	2036-3546
Virginia May Parker	Marion	12/09/2003	12/12/2003	XX			Kreager	358	358-1612
Lorraine D. Valeska	Marion	12/11/2003	12/13/2003	XX			Kreager	358	358-1611

This is to certify that the following remains were cremated at the above cremator. Said remains were received and cremated in a container approved by the Rules and Regulations of the State Board of Funeral Directors and Embalmers for Florida operating crematories. The 48 hour time period had elapsed before said deceased was cremated.

Signature of Operator: <i>[Signature]</i>	License #: 4170	Signature of Cremator: <i>[Signature]</i>	License Number: 1491	License number of Direct Disposer or Funeral Director in Charge: 1661
Signature of Cremator: <i>[Signature]</i>	License #: 1491	Signature of Cremator: <i>[Signature]</i>	License Number: 1491	Signature of Direct Disposer or Funeral Director in Charge: <i>[Signature]</i>
Signature of Cremator: <i>[Signature]</i>	License #: 1491	Signature of Cremator: <i>[Signature]</i>	License Number: 1491	Date Signed: Jan. 2, 2004

CINERATOR FACILITY

Name of Cinerator Facility: Florida Cremation Center		Location: P.O. Box 2073 Dunnellon, FL 34430		MONTH: December		PAGE: 2			
License #: FC 0000193		Phone Number: (352) 489-2429		YEAR: 2003		OF 2			
Name and BPR registration number of all Removal Services used (this month): Alternative Transportation Services, Inc. 3287 S. Suncoast Blvd. Homosassa, FL									
Name of Deceased	County of Death	Date of Death	Date of Cremation	Container Type			Name of Cremator	License # of FH / KB	Burial Transit Permit No.
				Cdbd	Wd	Mll			
Ellen D. Brewen	Marion	12/11/2003	12/16/2003	XX			Kreager	358	358-1613
Michael J. Kananack	Marion	12/12/2003	12/16/2003	XX			Kreager	358	358-1614
Clara Marie McEntyre	Marion	12/02/2003	12/18/2003	XX			Kreager	358	358-1604
Francis William Migan	Marion	12/15/2003	12/18/2003	XX			Kreager	358	358-1615
Kathryn M. Lord	Marion	12/17/2003	12/19/2003	XX			Kreager	358	358-1616
Raymond H. Cline	Marion	12/18/2003	12/21/2003	XX			Ford	358	358-1617
Karon Lee Levenson		12/20/2003	12/23/2003	XX			E. Russell Ford	2036	2036-3552
Clifton J. Baird	Citrus	12/21/2003	12/24/2003	XX			Jerry A. Kreager	2036	2036-3551
Lena Beaven		12/20/2003	12/24/2003	XX			E. Russell Ford	2036	2036-3553
Jacob Harder	Marion	12/19/2003	12/24/2003	XX			Kreager	358	358-1618
Muriel D. Corby	Marion	12/21/2003	12/24/2003	XX			Ford	358	358-1620
Elda M. Spallone	Marion	12/22/2003	12/26/2003	XX			Jerry A. Kreager	2036	20363554
Marie M. Merkel	Marion	12/20/2003	12/26/2003	XX			Kreager	358	358-1619
Betty Rineheimer	Marion	12/23/2003	12/26/2003	XX			Kreager	358	358-1622
Raymond Butler	Marion	12/19/2003	12/27/2003	XX			Jerry A. Kreager	2036	2036-3549
Anthony Head	Marion	12/19/2003	12/27/2003	XX			Jerry A. Kreager	2036	2036-3550
Louise Adams	Marion	12/22/2003	12/27/2003	XX			Kreager	358	358-1621
Mark D. Kennedy	Marion	12/25/2003	12/28/2003	XX			Kreager	358	358-1624
Alice Dodd Jones	Marion	12/24/2003	12/30/2003	XX			Jerry A. Kreager	2036	2036-3555
Ruth Virginia Teed	Marion	12/27/2003	12/30/2003	XX			Jerry A. Kreager	2036	2036-3557
Mark A. Messenger	Marion	12/27/2003	12/31/2003	XX			Jerry A. Kreager	2036	2036-3558
David A. Durivage	Marion	12/25/2003	12/31/2003	XX			Kreager	358	358-1625

This is to certify that the following remains were cremated at the above crematory. Said remains were received and cremated in a container approved by the Rules and Regulations of the State Board of Funeral Directors and Embalmers for Florida governing crematories. The 48 hour time period had elapsed before said deceased was cremated.

Signature of Cremator: <i>E. Russell Ford</i>	License #: 4170	Signature of Cremator: <i>Jerry A. Kreager</i>	License Number: 1491	License number of Direct Disposer or Funeral Director in Charge: FE: 1667
Signature of Cremator: <i>Jerry A. Kreager</i>	License #: FE: 1667	Signature of Cremator: <i>Jerry A. Kreager</i>	License Number: FE: 1667	Signature of Direct Disposer or Funeral Director in Charge: <i>Jerry A. Kreager</i>
Signature of Cremator: <i>Jerry A. Kreager</i>	License #: FE: 1667	Signature of Cremator: <i>Jerry A. Kreager</i>	License Number: FE: 1667	Date Signed: Jan. 2, 2004

**IDENTICAL UNIT
TEST SUMMARIES**

TABLE 1. EMISSIONS TEST SUMMARY

Company: DIRECTORS SERVICE, INC.
 Source: B & L Systems, Inc.
 N2O Series Human Crematory

	Run 1	Run 2	Run 3	
Date of Run	3/5/03	3/5/03	3/5/03	
Weight of Human Remains (lbs.)	160	155	140	
Start Time (24-hr. clock)	1030	1355	1610	
End Time (24-hr. clock)	1133	1455	1712	
Vol. Dry Gas Sampled Meter Cond. (DCF)	46.971	43.084	42.977	
Gas Meter Calibration Factor	0.997	0.997	0.997	
Barometric Pressure at Barom. (in. Hg.)	30.01	30.02	30.00	
Elev. Diff. Manom. to Barom. (ft.)	0	0	0	
Vol. Gas Sampled Std. Cond. (DSCF)	44.572	40.839	40.702	
Vol. Liquid Collected Std. Cond. (SCF)	4.894	4.701	4.272	
Moisture in Stack Gas (% Vol.)	9.9	10.3	9.5	
Molecular Weight Dry Stack Gas	29.29	29.32	29.26	
Molecular Weight Wet Stack Gas	28.17	28.15	28.19	
Stack Gas Static Press. (in. H ₂ O gauge)	-0.05	-0.05	-0.04	
Stack Gas Static Press. (in. Hg. abs.)	30.01	30.02	30.00	
Average Square Root Velocity Head	0.204	0.191	0.194	
Average Orifice Differential (in. H ₂ O)	1.928	1.621	1.623	
Average Gas Meter Temperature (°F)	99.0	99.4	99.5	
Average Stack Gas Temperature (°F)	922.6	983.8	963.8	
Pitot Tube Coefficient	0.84	0.84	0.84	
Stack Gas Vel. Stack Cond. (ft./sec.)	18.78	17.95	18.04	
Effective Stack Area (sq. ft.)	1.82	1.82	1.82	
Stack Gas Flow Rate Std. Cond. (DSCFM)	706	644	662	
Stack Gas Flow Rate Stack Cond. (ACFM)	2,046	1,957	1,966	
Net Time of Run (min.)	60	60	60	
Nozzle Diameter (in.)	0.598	0.598	0.598	
Percent Isokinetic	98.0	98.5	95.6	
Oxygen (%)	15.0	15.0	15.5	
Particulate Collected (mg.)	58.1	87.6	48.5	
				<u>Average</u>
Particulate Emissions (gr./DSCF)	0.020	0.033	0.018	0.024
Particulate Emissions (gr./DSCF @ 7% O ₂)	0.047	0.077	0.047	0.057
Particulate Emissions (lb./hr.)	0.12	0.18	0.10	0.14
CO Emissions (ppm)	2.92	1.75	7.25	4.0
CO Emissions (ppm @ 7% O ₂)	6.8	4.1	18.5	9.8
CO Emissions (lb./hr.)	0.009	0.005	0.021	0.012

Note: Standard conditions 68°F, 29.92 in. Hg

ORIGINAL DOCUMENT, PRINTED ON CHEMICAL REACTIVE PAPER WITH MICROPRINTED BORDER. SEE REVERSE SIDE FOR COMPLETE SECURITY FEATURES.

Roberts Funeral Home of Dunnellon, Inc.
EAST PENNSYLVANIA AVENUE
POST OFFICE BOX 2073
DUNNELLO, FLORIDA 34430

DATE	INVOICE	AMOUNT

63-72/631

28683

ROBERTS FUNERAL HOME **100 DOLS 00 CTS**

PAY _____ DOLLARS

DATE	TO THE ORDER OF	DESCRIPTION	CHECK NO.	SUB	GEN	CHECK AMOUNT
1-14-04	Fla Dept of Environmental Protection	Florida Dept of Environmental Protection	28683		910	100.00

Roberts Funeral Home of Dunnellon, Inc.

Patty Lohr
SUNTRUST BANK, NORTH CENTRAL FLORIDA
DUNNELLO, FLORIDA

SUNTRUST SUNTRUST BANK, NORTH CENTRAL FLORIDA
DUNNELLO, FLORIDA

THIS DOCUMENT CONTAINS HEAT SENSITIVE INK. TOUCH OR PRESS HERE AND IMAGE DISAPPEARS WITHIN 30 SECONDS.

⑈028683⑈ ⑆063100727⑆0810000000561⑈

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perMits | Events | Payment | Site | Facility | Party | Reports | >
-----
Permitting Application
-----
ARMS Facility
-----
Facility Name: ROBERTS FUNERAL HOME OF DUNNELLO, I AIRS ID: 0830030
County: MARION Owner: ROBERTS FUNERAL HOME OF DUNNELLO, INC.
Office: SW: TAMPA Category: POINT
-----
Project
-----
AIR Permit #: 0830030-001-AG Project #: 001 CRA Reference #: 38636
Permit Office: SWD (DISTRICT) Agency Action: Effective
Project Name: HUMAN CREMATORY GP Desc:
Type/Sub/Req: AG /06 Non Title V General Permit - Existi Logged: 04-FEB-1999
Received: 21-JAN-1999 Issued: 21-FEB-1999 Expires: 21-FEB-2004 OGC:
Fee: 100.00 Fee Recd: 100.00 Dele: Override: NONE
-----
Related Party
-----
Role: APPLICANT Begin: 04-FEB-1999 End:
Name: ROBERTS, KENNETH E. Company: ROBERTS FUNERAL HOME OF DUNELL
Addr: 19939 E. PENNSYLVANIA AVE
City: DUNELLO State: FL Zip: 34432- Country:
Phone: 904-489-2429 Fax:
-----
Processors
-----
Processor: FERNANDEZ_L Y Active: 04-FEB-1999 Inactive:
-----

```

Enter Project Name.
Count: *1

<Replace>

CREMATORY CHECKLIST

FACILITY Roberts Funeral Home
 AIRS # 0830030
 COUNTY Marion

	YES	NO	NA	DATE
Notification	✓			1-21-99
Fee	✓			\$100 check
VE	✓			
Temp Chart	✓			
Stack test/identical unit	✓			
Tests entered in ARMS				
AC if NEW unit			✓	
Issue	✓			
Deny				

Surrendered Permit(s): A042-243618

Notes:

Submit notice at least 30 days prior to the expiration date of the AC, AO, AG permit.

Existing facility VE shall demonstrate compliance within 60 days prior to submitting the GP notice, and within 60 days prior to each anniversary date.

AREA: SWD

Cash Receiving Application

CRAF006A

Collection Point Log Remittance

Tot:

\$100.00

```

SYS$REMT: 304960   Type: CP           Recvd Date: 21-JAN-1999   Status: RECEIVED
SYS$RCPT: 250581   PNR:                Check #: 20584           Amount: 100.00
SSN/FEI#:                               Name: ROBERTS FUNERAL HOME OF DUNNEL
First:                               Middle:                Title:                  Suf:
Address1: P.O. BOX 2073                Short Comments:
Address2:                               L-AIR/0830030-001
City: DUNNELLON                        ST: FL   Zip: 34430-    Country:

```

> P A Y M E N T (S) <

Distr	CL	Object	Payment	Reference#	Applic/ Fund	S T A CO
SYS\$PAYT	Area..	Code/Description.....	Amount.....			
320986	SWD	002272 NON-TITLE V GEN	\$100.00	0830030-01	ARM PFTF	CO

COMMIT FREQUENTLY

\$100.00 Payment total

Press <TAB> to accept Collection Point or enter F&A.

Count: *1

<Replace>

```

perMits | Events | Payment | Site | Facility | Party | Reports | >
-----
Permitting Application
-----
ARMS Facility
-----
| Facility Name: ROBERTS FUNERAL HOME OF DUNNELLON, I   AIRS ID: 0830030 |
| County: MARION                                     Owner: ROBERTS FUNERAL HOME OF DUNNELLON, INC. |
| Office: SW: TAMPA                                 Category: POINT |
-----
Project
-----
| AIR Permit #: - - Project #: 001 CRA Reference #: 38636 |
| Permit Office: SWD (DISTRICT)                      Agency Action: Effective |
| Project Name: HUMAN CREMATORY GP                    Desc: |
| Type/Sub/Req: AG /06 Non Title V General Permit - Existi Logged: 04-FEB-1999 |
| Received: 21-JAN-1999 Issued:                      Expires: OGC: |
| Fee: 100.00 Fee Recd: 100.00 Dele: Override: NONE |
-----
Related Party
-----
| Role: APPLICANT Begin: 04-FEB-1999 End: |
| Name: ROBERTS, KENNETH E. Company: ROBERTS FUNERAL HOME OF DUNELL |
| Addr: 19939 E. PENNSYLVANIA AVE |
| City: DUNELLON State: FL Zip: 34432- Country: |
| Phone: 904-489-2429 Fax: |
-----
Processors
-----
| Processor: FERNANDEZ_L Y Active: 04-FEB-1999 Inactive: |
-----
Enter Project Name.
Count: *1 <Replace>

```

AIRS ID: 0830030 Facility: ROBERTS FUNERAL HOME OF DUNNELLON, INC.
 Permit #: Type/Subtype: AG/06 Received: 21-JAN-1999
 Project #: 001 Name: (HUMAN CREMATORY GP)

> Receive Request: Done

Event	Begin Date	Prd	Due Date	Rmn	Status	End Date
Receive Request	21-JAN-1999	1	22-JAN-1999		Done	21-JAN-1999
Entitlement Review	21-JAN-1999	30	20-FEB-1999		Done	04-FEB-1999
Determine Agency A	21-JAN-1999	30	20-FEB-1999		Effective	04-FEB-1999
Entitlement Date	21-JAN-1999	30	20-FEB-1999	15	Pending	

Count: *4

<List><Replace>

Roberts Funeral Home of Dunnellon, Inc.
 EAST PENNSYLVANIA AVENUE
 POST OFFICE BOX 2073
 DUNNELLON, FLORIDA 34430

DATE	INVOICE	AMOUNT

63-72/631
20584

THE ROBERTS FUNERAL HOME **100 DOLS 00 CTS**

PAY _____ DOLLARS

DATE	TO THE ORDER OF	DESCRIPTION	CHECK NO.	SUB	GEN	CHECK AMOUNT
1-15-99	Fla Dept. of Env. Prot	Permit	20584			100.00

Roberts Funeral Home of Dunnellon, Inc.

Patricia Roberts

SUNTRUST SUNTRUST BANK, NORTH CENTRAL FLORIDA
 DUNNELLON, FLORIDA

⑈020584⑈ ⑆063100727⑆0810000000561⑈

1-21-99

Roberts Funeral
 0830030-001
 #100 OK
 1/6/06

Facility Comments

Process Description:

B&L SYSTEMS N-20 SERIES HUMAN CREMATORY

THE INCINERATOR CONSISTS OF PRIMARY AND SECONDARY (AFTERBURNER) CHAMBERS, EACH FIRED EXCLUSIVELY ON PROPANE GAS WITH A MAXIMUM TOTAL DESIGN HEAT INPUT RATE OF 1.3 MMBTU/HR (0.3 MMBTU/HR. PRIMARY CHAMBER, 1.0 MMBTU/HR. SECONDARY CHAMBER).

EMISSIONS ARE CONTROLLED BY THE AFTERBURNER WHICH WILL MAINTAIN A MINIMUM SECONDARY CHAMBER COMBUSTION ZONE TEMPERATURE OF 1600°F PRIOR TO AND DURING COMBUSTION OF MATERIAL IN THE PRIMARY CHAMBER. THE SECONDARY CHAMBER IS DESIGNED TO INSURE ONE SECOND RESIDENCE TIME AT A GAS TEMPERATURE OF 1800°F, AND IS EQUIPPED WITH A CONTINUOUS TEMPERATURE MONITOR AND RECORDER.

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: AO42-243618
- EXISTING FACILITY WITH AIR GENERAL PERMIT

Surrender of Existing Air Permit(s)

Check one:

- I hereby surrender all existing air permits authorizing operation of the facility indicated on this form; specifically permit number(s) AO42-243618
- No air permits currently exist for the operation of the facility indicated on this form.

Owner/Authorized Representa 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 air pollutant emissions units and air pollution control equipment described in this notification so as to comply with all applicable standards 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.

Kurt Rebert

1-14-99

Signature

Date

**VISIBLE EMISSIONS
EVALUATIONS**

TEMPERATURE CHARTS

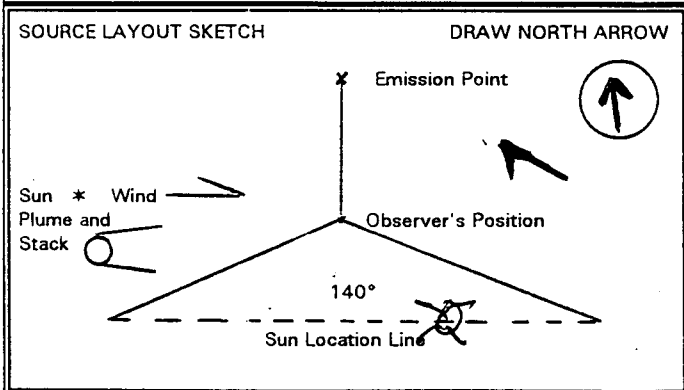
SOUTHER ENVIRONMENTAL SCIENCES, INC.

1204 North Wheeler Street, Plant City, Florida 33566 (813)752-5014

VISIBLE EMISSIONS EVALUATION

COMPANY <u>Roberts Funeral Home</u>	
UNIT <u>Human Crematory Incinerator</u>	
ADDRESS <u>19939 East Pennsylvania Ave.</u>	
<u>Dunnellon, Florida 34432</u>	

PERMIT NO. <u>A042-243618</u>	COMPLIANCE? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
AIRS NO. <u>0830030</u>	EU NO. <u>001</u>
PROCESS RATE <u>Human</u> <u>Approx 130 lb Body</u>	PERMITTED RATE <u>150 lbs/hr</u>
PROCESS EQUIPMENT <u>B+L Model N-200AA Human</u> <u>Crematory Incinerator Serial # 215-47-93</u>	
CONTROL EQUIPMENT <u>Afterburner</u>	
OPERATING MODE <u>Propane Gas Fired</u>	AMBIENT TEMP. (°F) START <u>74</u> STOP <u>78</u>
HEIGHT ABOVE GROUND LEVEL START <u>20'</u> STOP <u>same</u>	HEIGHT REL. TO OBSERVER START <u>20'</u> STOP <u>same</u>
DISTANCE FROM OBSERVER START <u>230'</u> STOP <u>same</u>	DIRECTION FROM OBSERVER START <u>N</u> STOP <u>N</u>
EMISSION COLOR <u>Black</u>	PLUME TYPE CONTIN. <input type="checkbox"/> INTERMITTENT <input checked="" type="checkbox"/>
WATER DROPLETS PRESENT NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>	IS WATER DROPLET PLUME ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START <u>Stack Exit</u> STOP <u>same</u>	
DESCRIBE BACKGROUND START <u>sky trees</u> STOP <u>same</u>	
BACKGROUND COLOR START <u>blue</u> STOP <u>same</u>	SKY CONDITIONS <u>broken</u> START <u>clear</u> STOP <u>same</u>
WIND SPEED (MPH) START <u>0-5</u> STOP <u>same</u>	WIND DIRECTION START <u>SE</u> STOP <u>SE</u>
AVERAGE OPACITY FOR HIGHEST PERIOD <u>0.63%</u>	RANGE OF OPAC. READINGS MIN. <u>0</u> MAX. <u>5</u>



COMMENTS * Eclipse Temp. Recorder

Serial # 93071097290004 / Model # Dr42006P1-00-00 EC

OBSERVATION DATE		START TIME				STOP TIME			
<u>11/23/98</u>		<u>1119</u>				<u>1219</u>			
SEC	0	15	30	45	SEC	0	15	30	45
MIN					MIN				
0	5	5	0	0	30	0	0	0	0
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	5	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

Observer: Mark Gierke

Certified by: FDEP Certified at: Tampa, FL

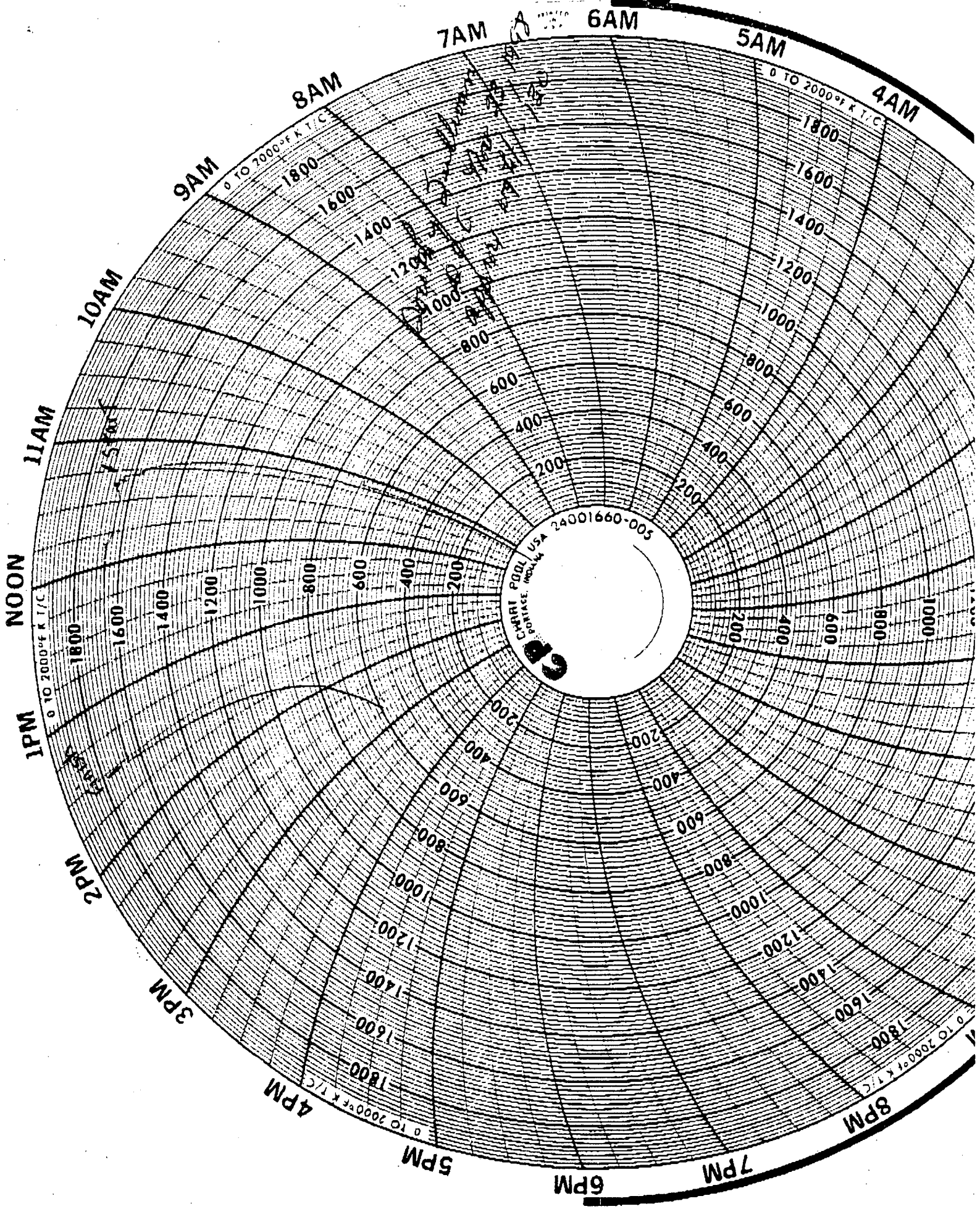
Date Certified: 8/98 Exp. Date: 2/99

I certify that all data provided to the person conducting the test was true and correct to the best of my knowledge:

Signature: [Signature]

Title: _____

Best Available Copy

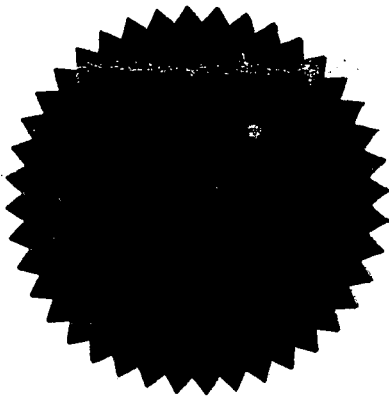


**OPERATOR
TRAINING CERTIFICATES**

CERTIFICATE
OF

**INCINERATOR OPERATOR TRAINING
F.D.E.P. APPROVED TRAINING PROGRAM**

**KENNETH E. ROBERTS HAS SUCCESSFULLY
COMPLETED THE TRAINING PROGRAM PERFORMED
BY STEVE LOOKER ON THE N-20AA CREMATION
RETORT ON NOVEMBER 8, 1993.**



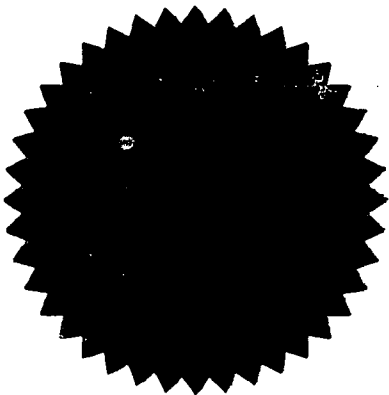
STEVE LOOKER, PRESIDENT

NOVEMBER 8, 1993
DATE

CERTIFICATE
OF

**INCINERATOR OPERATOR TRAINING
F.D.E.P. APPROVED TRAINING PROGRAM**

**JERRY KREAGER HAS SUCCESSFULLY
COMPLETED THE TRAINING PROGRAM PERFORMED
BY STEVE LOOKER ON THE N-20AA CREMATION
RETORT ON NOVEMBER 8, 1993.**



STEVE LOOKER, PRESIDENT

NOVEMBER 8, 1993
DATE

OPERATING LOGS

STATE BOARD OF FUNERAL DIRECTORS & EMBALMERS

RECORD OF CREMATIONS FOR MONTH OF _____ 19 _____

NAME OF CREMATORY - ROBERTS CREMATORY

PAGE _____ OF _____

This is to certify that the following remains were cremated at the above crematory. Said remains were received and cremated in a container approved by the Rules and Regulations of the State Board of Funeral Directors and Embalmers for Florida governing crematories. The 48 hour period had elapsed before said deceased was cremated.

	NAME OF DECEASED	CASE #	DATE OF DEATH	TIME OF DEATH	COUNTY OF DEATH	MEDICAL EXAMINER	FUNERAL DIRECTOR	Type Container			NAME OF CREMATOR	DATE OF CREM.	CREMATION START/STOP	RECEPTACLE	DISPOSITION OF CREMAINS
								Cardboard	Wood	Other					
180	CATHERINE DARM	1173	11/12	8:35A	MARION	Pillow	D. R.	X			J. B.	11/14	9:30 AM 12:30 P	PLASTIC	Ret to FCS
200	ELLSWORTH ZIMMERLI	1174	11/11	1:30 A	LEVY	HAMILTON	J. Kreager	X			J. B.	11/14	1:30 PM 4:30 P	PLASTIC	Ret to DMG
180	HAROLD J. STEES	1175	11/13	6:50P	CITRUS	Pillow	J. B.	X			J. B.	11/17	9:30 A 11:30 AM	PLASTIC	Ret to Family
	RUTH K. ELDERKIN	1176	11/12	6:25P	LEVY	HAMILTON	D. Ridenour	X			J. B.	11/17	3:30 AM 6:30 AM	PLASTIC	Ret to FCS
130	DOROTHY LUKLIAN	1177	11/17	9:40 A	ALACHUA	HAMILTON	K. Roberts	X			KREAGER	11/23	11:00 A 2:00 P	PLASTIC	Ret to F.C.S.
	PAUL KRATOCHVIL	1178	11/20	3:50A	MARION	Pillow	D. Ridenour	X			J. B.	11/24	10:00 AM 1:00 PM	PLASTIC	Ret to FCS
80	JOHN GREER	1179	11/22	5:45 P	LEVY	HAMILTON	K. Roberts	X			KREAGER	11/25	12:00 P 3:00 P	PLASTIC	Ret to F.C.S.
10	TILGHMAN KEIPER	1180	11/24	4:58 A	MARION	Pillow	KREAGER	X			KREAGER	11/26	8:00 A 11:00 A	Doagwood Beange Urn	Ret to wif
80	BOYA E. COX	1181	11/28	2:00 A	MARION	Pillow	D. Ridenour	X			J. B.	11/30	1:30 P 4:30 P	PLASTIC	Ret to FCS
10	WILBUR ROBINSON	1182	11/27	3:54 A	MARION	Pillow	D. Ridenour	X			KREAGER	11/30	5:00 P 8:00 P	PLASTIC	Ret to F.C.S.
75	RICHARD FOWLER	1183	11/21		MARION	Pillow	Billings	X			KREAGER	11/30	9:00 P 12:00 A	PLASTIC	
75	HENRY H. GREEN	1184	11/24	5:35 P	MARION		Kreager	X			Kreager	12/1	9:00 A 12:00 P	green Pillboxite urn	

STATE BOARD OF FUNERAL DIRECTORS & EMBALMERS

RECORD OF CREMATIONS FOR MONTH OF _____ 19 _____

NAME OF CREMATORY - ROBERTS CREMATORY

PAGE _____ OF _____

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							Card Board	Wood	Other					
130 MARGARET LANCASTER	1185	11/26	8:20A	MARION	Pillow	J. Kreuger	X			J. B	12/1	12:30 PM 3:30 PM	PLASTIC	Ret to Family
130 ANGELINA STANDRIDGE	1186	11/27	5:37A	MARION	Pillow	D. Ridenour	X			J. B	12/1	2:30 PM 6:30 PM	PLASTIC	Ret to F.
130 OCTAVIA EASTMAN	1187	11/27	10:00 AM	MARION	Pillow	D. Ridenour	X			J. B.	12/2	9:00 AM 12:00 PM	PLASTIC	Ret to FCS
110 ESTELLE JENKINS	1188	11/29	1:45 P	MARION	Pillow	D. Ridenour	X			J. B	12/2	12:30 P 3:30 P	PLASTIC	Ret to FCS
190 ARTHUR DICKSON	1189	11/29	4:15A	MARION	Pillow	K. Roberts	X			J. B	12/3	9:00 AM 12:00 PM	PLASTIC	Bury at Forest Ln
130 JOHN A. KOPIL, JR.	1190	11/29	5:00 PM	MARION	Pillow	J. B	X			J. B	12/3	3:00 PM 6:00 PM	Cashmere grey marble	SERVICE TO FNC
180 Robert Orlando	1191	12/2	2:55 A	MARION	Pillow	Kevin Roberts	X			Kreuger	12/4	5:10 P 8:00 P	PLASTIC	Ret to F.C.S.
160 Dolores Detente	1192	12/1	9:09 A	MARION	Pillow	Kevin Roberts	X			Kreuger	12/5	8:30 A 11:30 A	Plastic	Ret to F.C.S.
120 Elizabeth Nordstrom	1193	12/4	6:48 A	MARION	Pillow	Kevin Roberts	X			Kreuger	12/6	9:00 A 12:00 P	Plastic	Ret to F.C.S.
75 William Ash	1194	11/29	8:40 A	MARION	Pillow	Ken Roberts	X			Kreuger	12/5	2:30 P 5:30 P	Plastic	Ret to Family
145 Frank D. Hanlon	1195	12/4	4:30 A	MARION	Pillow	Kevin Roberts	X			Kreuger	12/6	12:00 P 3:00 P	Plastic	Ret to F.C.S.
160 Robin J. Blair	1196	12/8		CITRUS	Pillow	J. B	X			J. B	12/8	8:30 AM 12:30 P	Plastic	Ret to Mother

CINERATOR FACILITY

Name of Cinerator Facility: Florida Cremation Center	Location: P.O. Box 2073 Dunnellon, FL 34430	MONTH: November	PAGE: 1
License #: FC 0000193	Phone Number: (352) 489-2429	YEAR: 1998	OF 1
Name and BPR registration number of all Removal Services used (this month): Taylor Removal Service 10299 Sunshine Grove Road, Brooksville, FL 34613 #FR12			

Name of Deceased	County of Death	Date of Death	Date of Cremation	Container Type			Name of Cremator	License # of FH / KB	Burial Transit Permit No.
				Cdbd	Wd	Mlt			
Jane Grimmo Kessler	Marion	10/26/1998	11/02/1998	XX			James Billings	309	309-165
Mark Lee Barnes	Marion	10/29/1998	11/03/1998	XX			James Billings	309	309-168
Vernon O. Jennings	Marion	10/29/1998	11/04/1998	XX			Jerry Kreager	309	309-167
Mary Helen Hartley	Marion	11/06/1998	11/09/1998	XX			James Billings	309	309-169
Dorothy Youngblood Nelson	Marion	11/08/1998	11/11/1998	XX			James A. Billings	2036	2036-2433
Jessie Bodek Seever	Citrus	11/09/1998	11/12/1998	XX			Jerry A. Kreager	2036	2036-2434
Doris E. Gleichmann	Lake	11/10/1998	11/13/1998	XX			James A. Billings	2036	2036-2437
Eleanor D. Switts	Marion	11/06/1998	11/13/1998	XX			James Billings	309	309-170
Marie Denny	Marion	11/08/1998	11/13/1998	XX			James Billings	309	309-171
Ellsworth William Zimmerli	Levy	11/11/1998	11/14/1998	XX			James A. Billings	2036	2036-2436
Catherine Darm	Marion	11/12/1998	11/14/1998	XX			James Billings	309	309-172
Harold J. Stees	Citrus	11/13/1998	11/17/1998	XX			James A. Billings	2036	2036-2439
Ruth K. Elderkin	Levy	11/12/1998	11/17/1998	XX			James Billings	309	309-173
Dorothy Sullivan	Alachua	11/17/1998	11/23/1998	XX			Jerry Kreager	309	309-174
Paul Kratochvil	Marion	11/20/1998	11/24/1998	XX			James Billings	309	309-175
Richard C. Fowler	Marion	11/21/1998	11/25/1998	XX			Jerry A. Kreager	2036	2036-2441
John Greer	Levy	11/22/1998	11/25/1998	XX			Jerry Kreager	309	309-177
Tilghman H. Keiper, Jr.	Marion	11/24/1998	11/27/1998	XX			Jerry A. Kreager	2036	2036-2443
Wilbur N. Robinson	Marion	11/27/1998	11/30/1998	XX			Jerry Kreager	309	309-178
Boyd E. Cox	Marion	11/28/1998	11/30/1998	XX			James Billings	309	309-181

This is to certify that the following remains were cremated at the above crematory. Said remains were received and cremated in a container approved by the Rules and Regulations of the State Board of Funeral Directors and Embalmers for Florida covering crematories. The 48 hour time period had elapsed before said deceased was cremated.

Signature of Cremator:	License #:	Signature of Cremator:	License Number:	License number of Direct Disposer or Funeral Director in Charge KA: FE: 2222
Signature of Cremator:	License #:	Signature of Cremator:	License Number:	Signature of Direct Disposer or Funeral Director in Charge: <i>James C. Billings</i>
Signature of Cremator:	License #:	Signature of Cremator: <i>Jerry A. Kreager</i>	License Number: <i>10-1661</i>	Date Signed: <i>12/1/98</i>

**IDENTICAL
STACK TEST
REPORT**

**EMISSIONS TESTING
of the
FOSTER CREMATORY
HUMAN CREMATORY INCINERATOR
Brooksville, Florida**

April 22, 1998

FDEP Permit No. 0530038-002-AO

SES Reference No. 98S84

Project Participants

Byron E. Nelson
Mark S. Gierke
John R. McEwen

**EMISSIONS TESTING
of the
FOSTER CREMATORY
HUMAN CREMATORY INCINERATOR
Brooksville, Florida**

April 22, 1998

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1.0 INTRODUCTION

Southern Environmental Sciences, Inc. conducted emissions testing of the Foster Crematory human crematory incinerator on April 22, 1998. This plant is located on the southeast corner of Jacqueline and Mariner streets in Brooksville, Florida. Testing was conducted for particulates, carbon monoxide, and visible emissions. Oxygen concentrations were measured in order to correct results to 7% O₂. Testing was performed to determine if the plant was operating in compliance with requirements of the Florida Department of Environmental Protection (FDEP). Mr. Bob Soich and Andrew Nguyen of the Florida Department of Environmental Protection were present as observers during portions of the testing.

2.0 SUMMARY OF RESULTS

The plant was found to be in compliance with all applicable emission limiting standards. Results of the particulate and carbon monoxide testing are summarized in Table 1. In accordance with the operating permit, particulate emissions from this source are limited to a maximum of 0.080 grains per dry standard cubic foot, corrected to 7% O₂. The average measured particulate emission rate was 0.029 grains per dry standard cubic foot, well within the allowable limit.

As specified in the permit conditions carbon monoxide emissions from this source are limited to a maximum of 100 parts per million by volume, dry basis, corrected to 7% O₂ on an hourly average basis. The average measured carbon monoxide emission rate was 49.5 parts per million, corrected to 7% O₂, well within the limits.

TABLE 1. PARTICULATE EMISSIONS TEST SUMMARY

Company: FOSTER CREMATORY
Source: B & L Systems, Inc., Model N20
Human Crematory Incinerator

	Run 1	Run 2	Run 3
Date of Run	04/22/98	04/22/98	04/22/98
Body Weight (lbs.)	225	145	145
Process Rate (lbs./hr.)	150	145	145
Start Time (24-hr. clock)	0958	1250	1524
End Time (24-hr. clock)	1102	1353	1625
Vol. Dry Gas Sampled Meter Cond. (DCF)	41.250	41.184	39.480
Gas Meter Calibration Factor	0.998	0.998	0.998
Barometric Pressure at Barom. (in. Hg.)	29.96	29.96	29.97
Elev. Diff. Manom. to Barom. (ft.)	0	0	0
Vol. Gas Sampled Std. Cond. (DSCF)	39.828	39.172	37.172
Vol. Liquid Collected Std. Cond. (SCF)	4.088	4.946	3.532
Moisture in Stack Gas (% Vol.)	9.3	11.2	8.7
Molecular Weight Dry Stack Gas	29.84	29.53	29.69
Molecular Weight Wet Stack Gas	28.74	28.24	28.68
Stack Gas Static Press. (in. H ₂ O gauge)	-0.05	-0.05	-0.05
Stack Gas Static Press. (in. Hg. abs.)	29.96	29.96	29.97
Average Square Root Velocity Head	0.179	0.180	0.180
Average Orifice Differential (in. H ₂ O)	1.536	1.401	1.313
Average Gas Meter Temperature (°F)	88.6	96.7	102.4
Average Stack Gas Temperature (°F)	1099.2	1183.8	1251.0
Pitot Tube Coefficient	0.84	0.84	0.84
Stack Gas Vel. Stack Cond. (ft./sec.)	17.29	17.98	18.28
Effective Stack Area (sq. ft.)	1.97	1.97	1.97
Stack Gas Flow Rate Std. Cond. (DSCFM)	628	606	610
Stack Gas Flow Rate Stack Cond. (ACFM)	2,042	2,124	2,160
Net Time of Run (min.)	60.0	60.0	60.0
Nozzle Diameter (in.)	0.605	0.605	0.605
Percent Isokinetic	104.3	106.3	100.3
Oxygen (%)	7.9	11.9	10.4
Particulate Collected (mg.)	67.1	30.8	73.4
Particulate Emissions (grains/DSCF)	0.026	0.012	0.031
Particulate Emissions (gr./DSCF @ 7% O₂)	0.028	0.019	0.040
Avg. Particulate Emissions (gr./DSCF @ 7% O₂)	0.029		
Allowable Particulate Emissions (gr./DSCF @ 7% O₂)	0.080		
Particulate Emissions (lb./hr.)	0.140	0.063	0.159
Avg. Particulate Emissions (lb./hr.)	0.121		
CO Emissions (ppm)	80.3	28.0	14.8
CO Emissions (ppm @ 7% O₂)	85.8	43.1	19.5
Avg. CO Emissions (ppm @ 7% O₂)		49.5	
Allowable CO Emissions (ppm @ 7% O₂)		100	
CO Emissions (lb./hr.)	0.220	0.074	0.039
Avg. CO Emissions (lb./hr.)	0.111		

Note: Standard conditions 68°F, 29.92 in. Hg

Visual emissions are limited to a maximum six minute average of 5 percent opacity except that visible emissions not exceeding 20 percent are allowed for up to three minutes in any one hour period. A visible emissions evaluation was performed over a one hour period. The maximum six minute average opacity observed was zero percent with a maximum three minute average of zero percent, well within the allowable limits.

3.0 PROCESS DESCRIPTION

The B & L Systems, Inc. Model N20 series crematory incinerator cremates biological waste in an environmentally acceptable manner. The primary chamber is refractory lined with a natural gas burner and designed to operate at a temperature of 1800°F. Emissions are controlled by an afterburner. The afterburner is preheated and maintained at a minimum operating temperature of 1600°F prior to ignition of the primary chamber. The unit is designed to incinerate at a maximum rate of 150 pounds per hour of types I and IV wastes with a maximum heat input of 1.3 MMBTU per hour (primary chamber 0.3 MMBTU per hour, secondary chamber 1.0 MMBTU per hour). The time required for complete incineration depends upon the total weight of the waste. Process rates were determined by facility personnel and are included in the appendix.

4.0 SAMPLING PROCEDURES

4.1 Methods

All sampling was performed using methods currently acceptable to the FDEP. Particulate sampling and analyses were conducted in accordance with EPA Method 5 - Determination of Particulate Emissions from Stationary Sources, 40 CFR 60, Appendix

A. Carbon monoxide emissions were determined in accordance with EPA Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources, 40 CFR 60, Appendix A. The oxygen content of the stack was determined in accordance with EPA Method 3 - Gas Analysis for Carbon Dioxide, Oxygen, Excess Air, and Dry Molecular Weight, 40 CFR 60, Appendix A. The visible emissions evaluation was performed using procedures described in EPA Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources, 40 CFR 60, Appendix A.

4.2 Sampling Locations

Locations of the sample ports and stack dimensions are shown in Figure 1. Particulate sampling was accomplished by conducting horizontal traverses through each of two ports located on the stack at a ninety degree angle from one another. Twenty sample points were chosen in accordance with EPA Method 1 - Sample and Velocity Traverses for Stationary Sources, 40 CFR 60, Appendix A. Carbon monoxide and oxygen sampling were performed from the same sampling ports as the particulate sampling.

4.3 Sampling Trains

The Method 5 sampling train consisted of a Nutech Corporation 3 foot inconel probe utilizing a one piece quartz glass nozzle and probe liner, a heated glass fiber filter and four impingers arranged as shown in Figure 2. Flexible tubing was used between the heated filter and the impingers. The first two impingers were each charged with 100 milliliters of water, the third served as a dry trap and the fourth impinger was charged with indicating silica gel desiccant. The impingers were cooled in an ice and water bath during

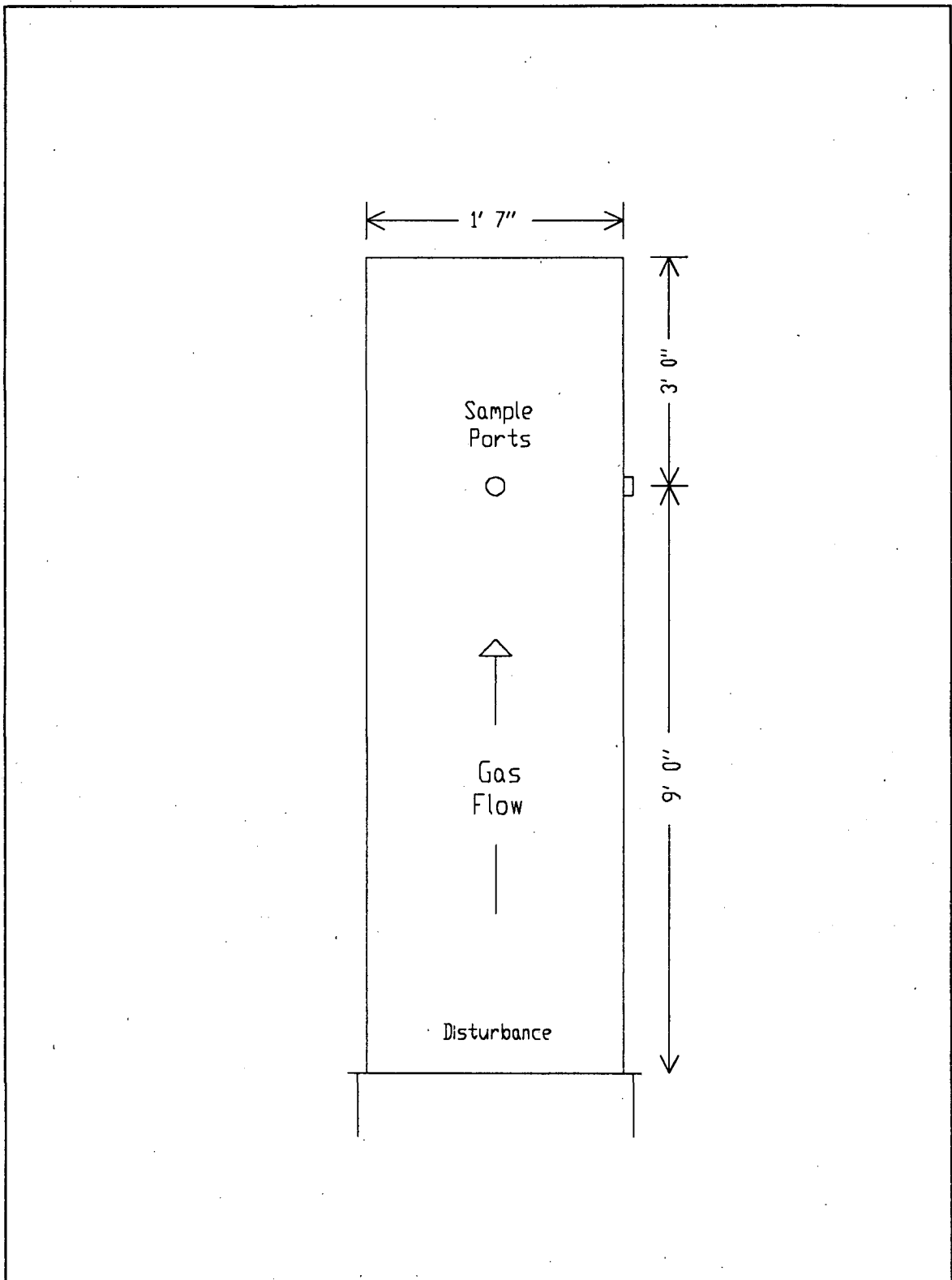


Figure 1. Stack Dimensions and Sample Port Locations Foster Crematory, Human Crematory Incinerator, Brooksville, Florida.

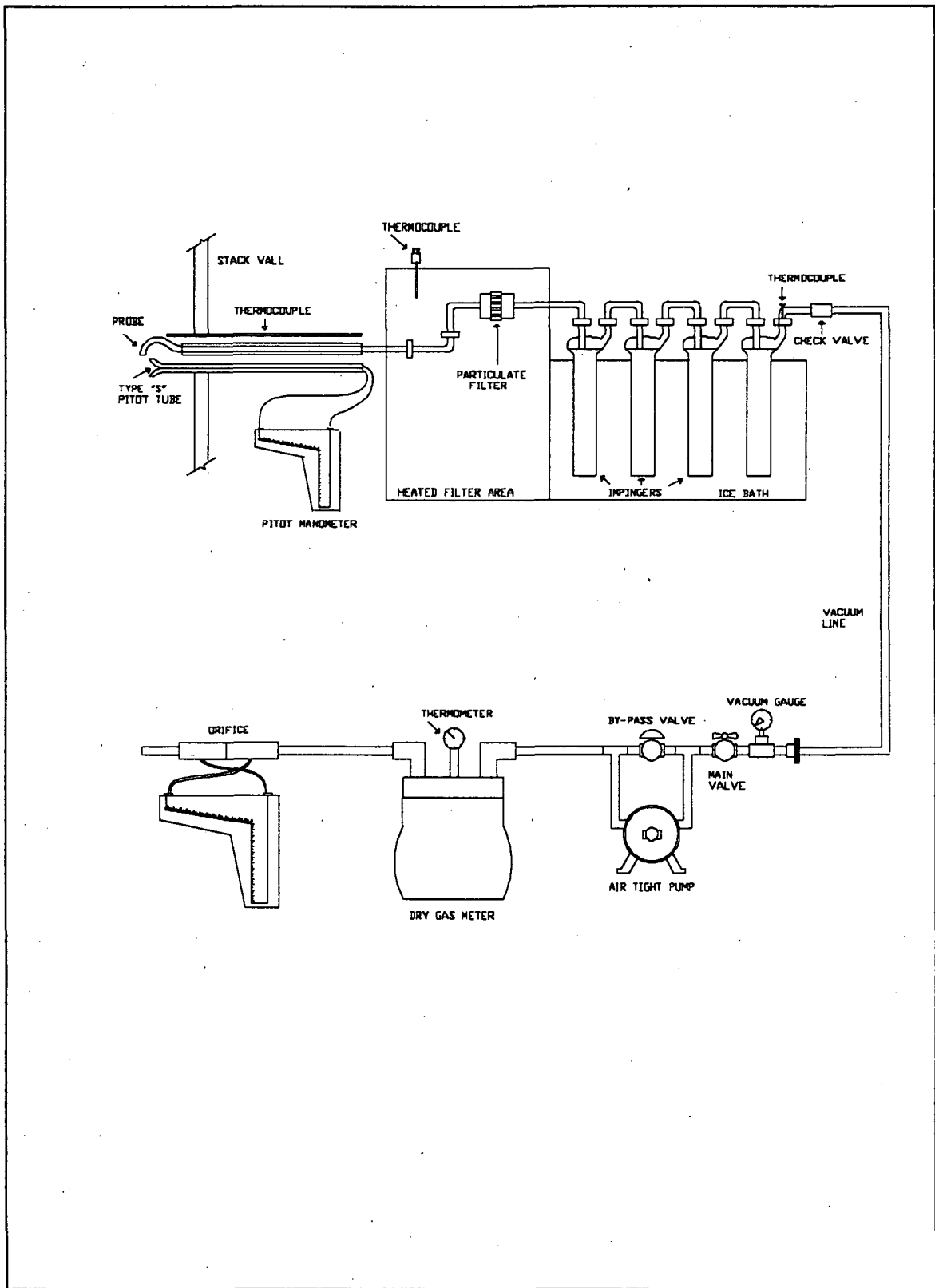


Figure 2. EPA Method 5 Sampling Train.

sampling. A Nutech Corporation control console was used to monitor the gas flow rates and stack conditions during sampling.

The carbon monoxide sampling train consisted of a stainless steel probe, condenser, silica gel and ascarite tubes, teflon sample line, and a Thermo Environmental Instruments, Inc. Model 48 Gas Filter Correlation CO analyzer.

The oxygen sampling train consisted of a probe, sample line, tedlar bag in a rigid container, valve, vacuum pump, and flow meter.

4.4 Sample Collection

Prior to particulate sampling, the pitot tubes were checked for leaks and the manometers were zeroed. A pretest leak check of the particulate sampling train was conducted by sealing the nozzle and applying a 15" Hg vacuum. A leak rate of less than 0.02 cubic feet per minute (CFM) was considered acceptable. Particulate sample was collected isokinetically for three minutes at each of the points sampled.

The carbon monoxide analyzer was calibrated immediately before the beginning of the test and after each run by introducing known gases into the instrument through the sampling train.

The tedlar bag used for obtaining an integrated oxygen sample was leak checked prior to the test by pressurizing it to 2 to 4 in. H₂O and allowing it to stand overnight. A

deflated bag indicated a leak. A one hour integrated sample was obtained by sampling at a rate of approximately 0.5 liters per minute for each run.

Carbon monoxide and oxygen sampling were conducted simultaneously with particulate sampling.

4.5 Sample Recovery

A post test leak check of the particulate sampling train was performed at the completion of each run by sealing the nozzle and applying a vacuum equal to or greater than the maximum value reached during the sample period. A leak rate of less than 0.02 CFM or 4 percent of the average sampling rate (whichever was less) was considered acceptable. The nozzle and probe were then brushed and rinsed with reagent grade acetone and the washings were placed in clean polyethylene containers and sealed. The glass fiber filter was removed from the holder with forceps and placed in a covered petri dish for return to the laboratory. The front half of the filter holder was rinsed with acetone and the washings were added to the nozzle and probe wash. The contents of the first three impingers were measured volumetrically and the silica gel in the fourth impinger was weighed to the nearest 0.1 gram for determination of moisture content.

Two calculations of the moisture content of the stack gas were made for each run, one from the impinger analysis and one from the assumption of saturated conditions based upon the average stack gas temperature and a psychrometric chart as described in EPA Method 4 - Determination of Moisture Content in Stack Gases, 40 CFR 60, Appendix A.

The lower of the two values of moisture content was considered correct and used in the emissions computations.

5.0 ANALYTICAL PROCEDURE

5.1 Pretest Preparation

The glass fiber filters for the particulate train were numbered, oven dried at 105°C for two to three hours, desiccated and weighed to a constant weight in preparation for the test. Results were recorded to the nearest 0.1 milligram. Filters were loaded into holders and a filter was set aside as a control blank. The impingers were charged as described in section 4.3 and the silica gel in the fourth impinger was weighed to the nearest 0.1 gram.

5.2 Analysis

Upon return to the laboratory, the particulate filters were removed from the containers with forceps, dried at 105°C for two to three hours, desiccated and weighed to a constant weight. Results were recorded to the nearest 0.1 milligram. The probe and nozzle washes and an acetone blank were measured volumetrically and transferred to clean, tared evaporating dishes and evaporated to dryness over low heat. The evaporating dishes were then oven dried at 105°C for two to three hours, desiccated and weighed to a constant weight. Results were recorded to the nearest 0.1 milligram. The total particulate reported is the sum of the filter weight gain and the weight gain of the evaporating dishes, corrected for the acetone blank.

APPENDIX

Project Participants

Certification

Visible Emissions Evaluation

Process Weight Statement

Laboratory Data

Gas Analysis Data

Field Data Sheets

Strip Charts

Calibration Data

Calculations and Symbols

PROJECT PARTICIPANTS AND CERTIFICATION

FOSTER CREMATORY HUMAN CREMATORY INCINERATOR Brooksville, Florida

April 22, 1998

Project Participants:

Byron E. Nelson Mark S. Gierke John R. McEwen	Conducted the field testing.
Mark S. Gierke	Performed visible emissions evaluation.
Jeff Anderson (Foster Crematory)	Provided process rates.
Beverly S. McConnell	Performed laboratory analyses.
Byron E. Nelson Mark S. Gierke	Computed test results.
Byron E. Nelson	Prepared the final test report.

Certification:

I certify that to my knowledge all data submitted in this report is true and correct.


Byron E. Nelson, CIH

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

1204 North Wheeler Street, Plant City, Florida 33566 (813) 752-5014

VISIBLE EMISSIONS EVALUATION

COMPANY Foster Crematory	
UNIT Human crematory	
ADDRESS SE Corner of Jacqueline + Marmer Streets Brooksville, Florida	
PERMIT NO. 0530038-002-AD	COMPLIANCE? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
AIRS NO.	EU NO. 002
PROCESS RATE Human Body 145 lbs	PERMITTED RATE 150 lbs/hr
PROCESS EQUIPMENT Afterburner	
CONTROL EQUIPMENT Human Crematory Incinerator	
OPERATING MODE Propane Fired	AMBIENT TEMP. (°F) START 81° STOP 78°
HEIGHT ABOVE GROUND LEVEL START N 15' STOP same	HEIGHT REL. TO OBSERVER START N 15' STOP same
DISTANCE FROM OBSERVER START N 75' STOP same	DIRECTION FROM OBSERVER START ENE STOP ENE
EMISSION COLOR N/A	PLUME TYPE CONTIN. <input type="checkbox"/> INTERMITTENT <input type="checkbox"/>
WATER DROPLETS PRESENT NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>	IS WATER DROPLET PLUME N/A ATTACHED <input type="checkbox"/> DETACHED <input type="checkbox"/>
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Stack Exit STOP same	
DESCRIBE BACKGROUND START SKY STOP same	
BACKGROUND COLOR START B⁺ / W⁺ STOP same	SKY CONDITIONS START Broken STOP same
WIND SPEED (MPH) START 5-15 STOP same	WIND DIRECTION START NE STOP NE
AVERAGE OPACITY FOR HIGHEST PERIOD 0	RANGE OF OPAC. READINGS MIN. 0 MAX. 0
SOURCE LAYOUT SKETCH DRAW NORTH ARROW	
<p>The sketch shows an 'Emission Point' at the top, an 'Observer's Position' at the bottom, and a 'Sun Location Line' at a 140-degree angle from the observer. A north arrow points up, and a wind direction arrow points right.</p>	
COMMENTS	

OBSERVATION DATE 4/22/98		START TIME 1528				STOP TIME 1628				
SEC	0	15	30	45	SEC	0	15	30	45	
MIN					MIN					
0	0	0	0	0	30	0	0	0	0	
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	

Observer: **Mark Gierke**

Certified by: **FDEP ^{THW} ETC** Certified at: **Tampa, FL**

Date Certified: **2/98** Exp. Date: **8/98**

I certify that all data provided to the person conducting the test was true and correct to the best of my knowledge:

Signature: **J. Anderson**

Title: **OPERATOR (B&L SYSTEMS)**

PROCESS WEIGHT STATEMENT

DATE 4/22/98 SAMPLING TIME : FROM 9:58 A.M. TO 4:25 P.M.

STATEMENT OF PROCESS WEIGHT

COMPANY:	Foster Crematory
MAILING ADDRESS	18706 Gracie St.
	Spring Hill, FL 34610
SOURCE IDENTIFICATION	Human Crematory
SOURCE LOCATION	Brooksville, Florida

DATA ON OPERATING CYCLE TIME

START OF OPERATION, TIME	
END OF OPERATION, TIME	
ELAPSED TIME	
IDLE TIME DURING CYCLE	
DESIGN PROCESS RATING	PROCESS WEIGHT RATE (INPUT)
	PRODUCT (OUTPUT)

DATA ON ACTUAL PROCESS RATE DURING OPERATION CYCLE

MATERIAL	Human remains	RATE	225 lbs	Run 1
MATERIAL	Human remains	RATE	145 lbs	Run 2
MATERIAL	Human remains	RATE	145 lbs	Run 3
AVERAGE PROCESS WEIGHT		RATE		
PRODUCT		RATE		
PRODUCT		RATE		
PRODUCT		RATE		

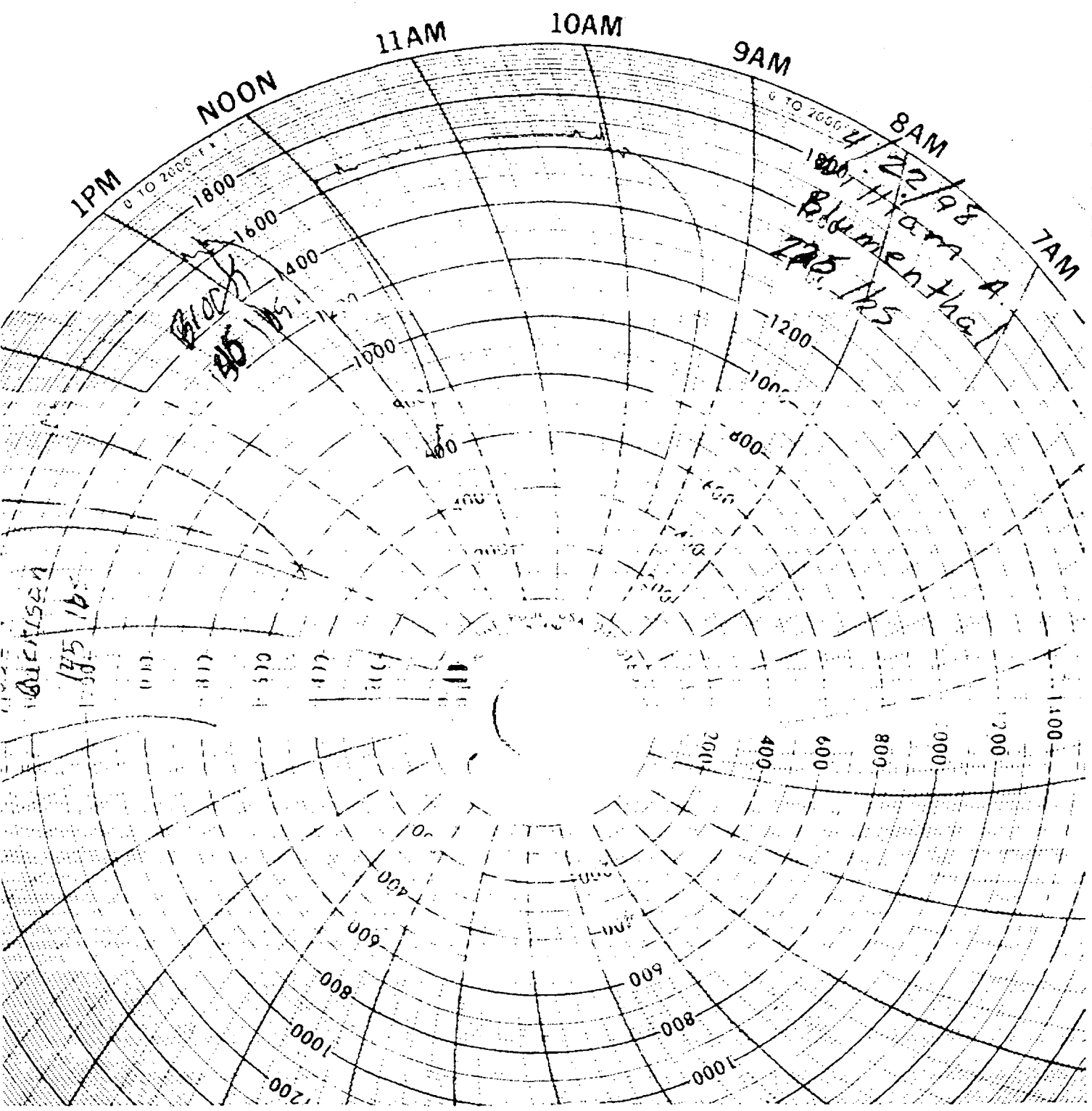
I certify that the above information is true and correct to the best of my knowledge.

Name (PLEASE PRINT) JEFF ANDERSON

Signature J. Anderson

Title OPERATOR (B&L SYSTEMS)

MAY-05-98 10:52 PM



F-01

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

PARTICULATE MATTER COLLECTED

Plant: FOSTER CREMATORY
 Unit No. Human Crematory
 Test Date: 04/22/98

Analyzed by: B. McConnell

Acetone blank container no. 1
 Acetone blank volume, ml.,(Va) 150
 Acetone blank final weight, g. 102.6898
 Acetone blank tare weight, g. 102.6896
 Acetone blank weight diff.,g.,(ma) 0.0002

Filter blank no.
 Filter blank tare weight, g.
 Filter blank final weight, g.
 Filter weight diff., g.

Run No. 1
 Filter No. 4058
 Liquid lost during transport, ml. 0
 Acetone wash container no. 102
 Acetone wash volume, ml. (Vaw) 144
 Acetone wash residue, g. (Wa) 0.0002

Container Number	WEIGHT OF PARTICULATE COLLECTED		
	Final Weight	Tare Weight	Weight
1 (Filter)	0.3676	0.3397	
2 (Wash)	102.9432	102.9038	
TOTAL			
Less acetone blank, g. (Wa)			
Weight of particulate matter, g.			

Run No. 2
 Filter No. 4059
 Liquid lost during transport, ml. 0
 Acetone wash container no. 92
 Acetone wash volume, ml. (Vaw) 156
 Acetone wash residue, g. (Wa) 0.0002

Container Number	WEIGHT OF PARTICULATE COLLECTED		
	Final Weight	Tare Weight	Weight
1 (Filter)	0.3511	0.3368	
2 (Wash)	102.6235	102.6068	
TOTAL			
Less acetone blank, g. (Wa)			
Weight of particulate matter, g.			

Run No. 3
 Filter No. 4060
 Liquid lost during transport, ml. 0
 Acetone wash container no. 9
 Acetone wash volume, ml. (Vaw) 200
 Acetone wash residue, g. (Wa) 0.0003

Container Number	WEIGHT OF PARTICULATE COLLECTED		
	Final Weight	Tare Weight	Weight
1 (Filter)	0.3785	0.3318	
2 (Wash)	107.1994	107.1724	
TOTAL			
Less acetone blank, g. (Wa)			
Weight of particulate matter, g.			

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

MOISTURE COLLECTED

Plant Foster Crematory

Unit Human Crematory

Date 4/22/98

Run No. 1

Impinger Number	1	2	3	4	Weighed by:
Final Weight (grams):	<u>169.0</u>	<u>105.0</u>	<u>0</u>	<u>256.8</u>	<u>BN</u>
Initial Weight (grams):	<u>100.0</u>	<u>100.0</u>	<u>0</u>	<u>244.1</u>	<u>BN</u>
Difference (grams):	<u>69.0</u>	<u>5.0</u>	<u>0</u>	<u>12.7</u>	
Total Condensate (grams):				<u>86.7</u>	

Unit Human Crematory

Date 4/22/98

Run No. 2

Impinger Number	1	2	3	4	Weighed by:
Final Weight (grams):	<u>190.0</u>	<u>106.0</u>	<u>0</u>	<u>255.7</u>	<u>MG</u>
Initial Weight (grams):	<u>100.0</u>	<u>100.0</u>	<u>0</u>	<u>246.8</u>	<u>BN</u>
Difference (grams):	<u>90.0</u>	<u>6.0</u>	<u>0</u>	<u>8.9</u>	
Total Condensate (grams):				<u>104.9</u>	

Unit Human Crematory

Date 4/22/98

Run No. 3

Impinger Number	1	2	3	4	Weighed by:
Final Weight (grams):	<u>162.0</u>	<u>105.0</u>	<u>0</u>	<u>254.6</u>	<u>BN</u>
Initial Weight (grams):	<u>100.0</u>	<u>100.0</u>	<u>0</u>	<u>246.7</u>	<u>BN</u>
Difference (grams):	<u>62.0</u>	<u>5.0</u>	<u>0</u>	<u>7.9</u>	
Total Condensate (grams):				<u>74.9</u>	

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

GAS ANALYSIS DATA FORM

Plant <u>Foster Crematory</u>	
Unit <u>Human Crematory</u>	Test No. <u>1</u>
Date <u>4/22/98</u>	Sampling Location <u>Stack</u>
Sampling Time (24-hr Clock) <u>0958-1058</u>	
Sample Type: Continuous <input type="checkbox"/> Integrated Bag <input checked="" type="checkbox"/> Grab <input type="checkbox"/>	
Analytical Method <u>Orsol</u>	Ambient Temperature <u>~ 75°F</u>
Operator <u>B. J. [Signature]</u>	

RUN →	1		2		3		Average Net Volume	Multiplier	Molecular Weight of Stack Gas (Dry Basis) (Md)
GAS ↓	Actual Reading	Net	Actual Reading	Net	Actual Reading	Net			
CO ₂	9.5	9.5	9.5	9.5	9.5	9.5	9.5	.44	
O ₂ (NET IS ACTUAL O ₂ READING MINUS ACTUAL CO ₂ READING)	17.4	7.9	17.4	7.9	17.4	7.9	7.9	.32	
CO (NET IS ACTUAL CO READING MINUS ACTUAL O ₂ READING)								.28	
N ₂ (NET IS 100 MINUS ACTUAL CO READING)								.28	
								TOTAL	

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

GAS ANALYSIS DATA FORM

Plant <u>Foster Crematory</u>	
Unit <u>Human Crematory</u>	Test No. <u>Two</u>
Date <u>4/22/98</u>	Sampling Location <u>Stack</u>
Sampling Time (24-hr Clock) <u>1250-1350</u>	
Sample Type: Continuous <input type="checkbox"/> Integrated Bag <input checked="" type="checkbox"/> Grab <input type="checkbox"/>	
Analytical Method <u>Orsat</u>	Ambient Temperature <u>80°</u>
Operator <u>B. Nelson</u>	

RUN →	1		2		3		Average Net Volume	Multiplier	Molecular Weight of Stack Gas (Dry Basis) (Md)
GAS ↓	Actual Reading	Net	Actual Reading	Net	Actual Reading	Net			
CO ₂	6.6	6.6	6.6	6.6	6.6	6.6	6.6	.44	
O ₂ (NET IS ACTUAL O ₂ READING MINUS ACTUAL CO ₂ READING)	18.5	11.9	18.5	11.9	18.5	11.9	11.9	.32	
CO (NET IS ACTUAL CO READING MINUS ACTUAL O ₂ READING)								.28	
N ₂ (NET IS 100 MINUS ACTUAL CO READING)								.28	
								TOTAL	

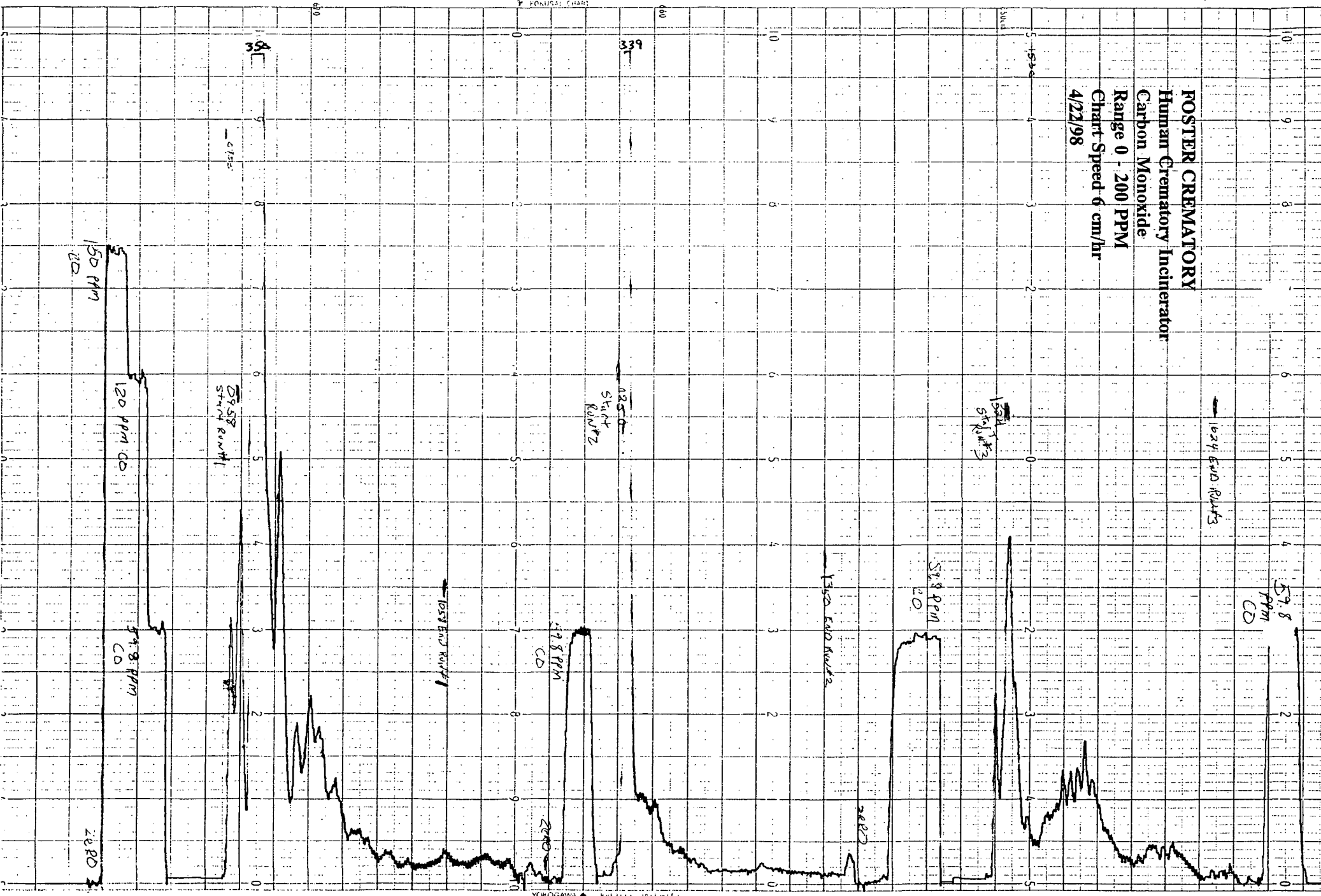
SOUTHERN ENVIRONMENTAL SCIENCES, INC.

GAS ANALYSIS DATA FORM

Plant <u>Foster Crematory</u>	
Unit <u>Human Crematory</u>	Test No. <u>3</u>
Date <u>4/22/88</u>	Sampling Location <u>Stack</u>
Sampling Time (24-hr Clock) <u>1524-1624</u>	
Sample Type: Continuous <input type="checkbox"/> Integrated Bag <input checked="" type="checkbox"/> Grab <input type="checkbox"/>	
Analytical Method <u>Orsat</u>	Ambient Temperature <u>85°F</u>
Operator <u>P. Nelson</u>	

RUN →	1		2		3		Average Net Volume	Multiplier	Molecular Weight of Stack Gas (Dry Basis) (Md)
GAS ↓	Actual Reading	Net	Actual Reading	Net	Actual Reading	Net			
CO ₂	8.0	8.0	8.0	8.0	8.0	8.0	8.0	.44	
O ₂ (NET IS ACTUAL O ₂ READING MINUS ACTUAL CO ₂ READING)	18.4	10.4	18.4	10.4	18.3	10.3	10.37	.32	
CO (NET IS ACTUAL CO READING MINUS ACTUAL O ₂ READING)								.28	
N ₂ (NET IS 100 MINUS ACTUAL CO READING)								.28	
								TOTAL	

FOSTER CREMATORY
Human Crematory Incinerator
Carbon Monoxide
Range 0 - 200 PPM
Chart Speed 6 cm/hr
4/22/98



Southe Environmental Science, Inc.

TYPE S PITOT TUBE INSPECTION FORM

PITOT TUBE ID NUMBER	003-Inc.
INSPECTION DATE	5/5/97
INSPECTED BY	<i>J. McEwen</i>

PITOT TUBE ASSEMBLY LEVEL?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
PITOT TUBE OPENINGS DAMAGED?	YES (explain below)	<input checked="" type="radio"/> NO

ANGLE	MEASUREMENT	LIMITS
α_1	2°	$<10^\circ$
α_2	2°	$<10^\circ$
β_1	2°	$<5^\circ$
β_2	3°	$<5^\circ$
γ	3°	
θ	1°	
A	.968 inches	
$z = A \sin \gamma$.051 inches	$< 1/8$ inch
$w = A \sin \theta$.017 inches	$< 1/32$ inch
P_A	.484 inches	
P_B	.484 inches	
D_T	.385 inches	

COMMENTS: _____

CALIBRATION REQUIRED?	YES	<input checked="" type="radio"/> NO
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SOUTHERN ENVIRONMENTAL SCIENCES, INC.

Dry Gas Meter Calibration

Meter Box Number : 001 Barometric Pressure: 30.24
 Date: 3/27/98 Wet Test Meter #: P-576

Orifice Manometer Setting (DELTA H) in. H2O	Gas Volume		Temperature		Time (Theta) min	Yi	Delta H@ in. H2O
	Wet Test Meter (Vw) ft.^3	Dry Gas Meter (Vd) ft.^3	Wet Test Meter (Tw) Deg F	Dry Gas Meter (Td) Deg F			
0.50	5.000	5.095	69.0	81.5	12.42	1.003	1.671
1.00	5.000	5.101	70.0	83.0	8.95	1.002	1.738
1.50	10.000	10.237	71.0	84.5	14.23	0.998	1.649
2.00	10.000	10.268	71.0	86.0	12.50	0.997	1.692
3.00	10.000	10.485	71.0	96.0	10.53	0.991	1.768
4.00	18.000	18.757	72.0	98.0	16.30	0.997	1.744
						0.998	1.710

Delta H@ Acceptable Range 1.910 to 1.510
 Yi Acceptable Range 1.018 to 0.978

$$Y_i = \frac{V_w P_b (t_d + 460)}{V_d (P_b + \Delta H / 13.6) (T_w + 460)}$$

$$\Delta H@ = \frac{.0317 (\Delta H)}{P_b (t_d + 460)} \left[\frac{(T_w + 460) (t_\theta)}{V_w} \right]^2$$

- where:
- Vw = Gas Volume passing through the std test meter, ft.^3.
 - Vd = Gas Volume passing through the dry gas meter, ft.^3
 - Tw = Temperature of the gas in the std test meter, deg. F.
 - Td = Average temperature of the gas in the dry gas meter, Deg F.
 - Delta H = Pressure differential across orifice, in. H2O.
 - Yi = Ratio of accuracy of std test meter to dry gas meter for each run.
 - Y = Average ratio of accuracy of std test meter to dry gas meter.
 - Pb = Barometric pressure, in. Hg.
 - Theta = Time of calibration run, min.

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

POSTTEST DRY GAS METER CALIBRATION FORM

Meter Box Number: 001 Wet Test Meter #: P-576
 Date: 5/5/98 Pretest Y: 0.998
 Barometric Pressure: 29.94

Orifice Manometer setting (Delta H) in. H2O	Gas volume		Temperature		Time (Theta) min	Vacuum Setting in. Hg	Yi
	Wet Test Meter (Vw) ft.^3	Dry Gas Meter (Vd) ft.^3	Wet Test Meter (Tw) Deg F	Dry Gas Meter (Td) Deg F			
1.50	10.000	10.283	66.50	90.00	14.20	10.00	1.012
1.50	10.000	10.332	67.00	92.00	14.25	10.00	1.010
1.50	10.000	10.371	67.50	94.00	14.28	10.00	1.009
Average							1.010

Acceptable Limits 0.948 to 1.05

$$Y_i = \frac{V_w P_b (t_d + 460)}{V_d (P_b + \Delta H/13.6) (T_w + 460)}$$

Where:

- Vw = Gas Volume passing through the wet test meter, ft.^3.
- Vd = Gas volume passing through the dry gas meter, ft.^3.
- Tw = Temperature of the gas in the wet test meter, deg F.
- Tdi = Temperature of the inlet gas of the dry gas meter, Deg F.
- Tdo = Temperature of the outlet gas of the dry gas meter, Deg F.
- Td = Average temperature of the gas in the dry gas meter, Deg F.
- Delta H = Pressure differential across orifice, in. H2O.
- Yi = Ratio of accuracy of wet test meter to dry gas meter for each run.
- Y = Average ratio of accuracy of wet test meter to dry gas meter for all three runs; tolerance = pretest Y +/- 0.05Y.
- Pb = Barometric pressure, in. Hg.
- Theta = Time of calibration run, min.

THERMOMETER CALIBRATIONS

Ref.	Wet Test Meter		Dry Gas Meter	
	Inlet deg F	Outlet deg F	Inlet deg F	Outlet deg F
60.0	n/a	58.0	n/a	59.0
Difference	n/a	-2.0	n/a	-1.0

Quality Control Limit +/- 5 deg F

SOUTHERN ENVIRONMENTAL SCIENCES, INC

THERMOMETER CALIBRATIONS

Calibrated By: S. RENSLow Date: 5/28/97

ALL TEMPERATURES ARE IN DEGREES RANKIN

ID No.	Type	Range	ICE BATH			TEPID WATER			BOILING WATER			HOT OIL		
			STD Temp.	Therm. Temp.	Deg. or % Diff.	STD Temp.	Therm. Temp.	Deg. or % Diff.	STD Temp.	Therm. Temp.	Deg. or % Diff.	STD Temp.	Therm. Temp.	Deg. or % Diff.
2.5' PA	PT	2000 F	492	492	0%	532	531	2%	670	669	2%	930	935	5%
2.5' PB	PT	2000 F	492	492	0%	532	531	2%	670	671	2%	952	964	1.3%
3' P	PT	2000 F	492	492	0%	532	531	2%	670	669	2%	950	956	6%
3' INC	PT	2000 F	492	492	0%	532	531	2%	670	671	2%	948	948	0%
5' PA	PT	2000 F	492	498	1.2%	534	536	4%	670	673	4%	912	924	1.3%
5' PB	PT	2000 F	492	492	0%	539	538	2%	671	672	2%	898	899	1°
5' PC	PT	2000 F	493	500	1.4%	534	536	4%	672	677	7%	914	928	1.5%
5' VP	PT	2000 F	492	497	1.0%	535	536	2%	672	677	7%	904	915	1.2%
8' PA	PT	2000 F	493	497	8%	535	537	4%	672	677	7%	920	928	9%
8' PB	PT	2000 F	493	497	8%	535	537	2%	672	678	9%	910	921	1.2%
10' P	PT	2000 F	493	497	8%	536	536	7%	672	672	2%	914	924	1.1%
15' PA	PT	2000 F	493	494	2%	540	539	2%	670	672	3%	907	910	3%
15' PB	PT	2000 F	492	495	6%	540	539	2%	670	668	3%	900	902	2%
T1	PT	2000 F	494	492	4%	542	539	6%	672	672	0%	888	890	2%
T2	PT	2000 F	492	492	0%	532	528	8%	670	667	4%	954	955	1%
T3	PT	2000 F	492	492	0%	532	529	6%	670	669	2%	962	973	1.1%
T4	PT	2000 F	492	492	0%	532	529	6%	670	669	2%	959	962	3%
T5	PT	2000 F	492	491	2%	532	528	8%	670	669	2%	960	964	4%
T6	PT	2000 F	492	492	0%	532	529	6%	670	668	3%	952	962	1.1%
SS300	PT	2000 F	492	492	0%	532	530	4%	670	669	2%	952	963	1.2
SS301	PT	2000 F	492	492	0%	532	530	4%	670	669	2%	950	958	8%
SS306	BM	220 F	492	488	4	532	528	4	670	669	1			
5' INC	PT	2000 F	492	491	2%	541	539	4%	672	671	2%	896	897	1%
SS110	BM	220 F	492	492	0	532	532	0	670	672	2			
I2	BM	220 F	493	492	1	542	540	2	672	668	4			
I3	BM	220 F	493	492	1	542	542	0	672	672	0			
LAB 14	BM	212 F	492	492	0	532	532	0	670	670	0			
I5	BM	250 F	492	490	2	532	528	4	670	670	0			

QUALITY CONTROL LIMITS; Impinger Thermometers +/- 2 DEG, Bimetallic Thermometers, +/- 5 DEG, Pyrometers/Thermocouples +/- 1.5%

SOUTHERN ENVIRONMENTAL SCIENCE, INC.

1204 North Wheeler Street Plant City, Florida 33566 (813) 752-5014

INSTRUMENT CALIBRATION

TEST DATA

Date	04/22/98
Company	FOSTER CREMATORY
Source	Human Crematory
Parameter	Carbon Monoxide

INSTRUMENT DATA

	MONITOR	RECORDER
Manufacture	Thermo Env. Instr.,	Kip & Zonan
Model No	48	BD111
Serial No	48-27158-228	BD111941740
Range (ppm)	200	6 CM/HR

CALIBRATION GAS DATA

Supplier	Liquid Carbonic	Air Products	Air Products
Cylinder #	SA6810	SG915182	SG9121007
Concentration	59.8	120	150
Expiration Date	07/21/98	07/21/98	07/21/98

CALIBRATION

Point	Observed Conc.	Actual Conc.	Percent Diff.
1	0	0	0.0
2	60.1	59.8	0.1
3	118.5	120	-0.8
4	149.5	150	-0.3

Regression Output:

Constant		0.1764
Std Err of Y Est		0.7618
R Squared		0.9999
No. of Observations		4
Degrees of Freedom		2
X Coefficient(s)	0.9927	
Std Err of Coef.	0.0066	

MARK GERKE
Technician



LIQUID CARBONIC

CYLINDER GAS PRODUCTS

5700 SOUTH ALAMEDA STREET • LOS ANGELES, CA 90058

213-585-2154
FAX# 213-585-0582

CERTIFICATE OF ANALYSIS

CUSTOMER S/T, ORLANDO

DATE 07/24/95

P.O NUMBER 0476 (Replacement)

REF. NUMBER 141959

REQUESTED COMPOSITION

GAS	CONCENTRATION
CARBON MONOXIDE	60 ppm
NITROGEN	BALANCE

ANALYTICAL METHOD

INSTRUMENT
Siemens Ultramat 5E S/N A12-729

ANALYTICAL PRINCIPLE
NDIR

THIS CYLINDER NO.	SA 6810	CERTIFIED CONCENTRATION	
CYLINDER PRESSURE	1650 PSIG	CARBON MONOXIDE	59.3 ppm
EXPIRATION DATE	07/21/98	NITROGEN	BALANCE
CLASSIFICATION	CERTIFIED STANDARD \pm 2%		
BATCH NUMBER	NA		
LOT NUMBER	EZG21500		
PART NUMBER	-		
CYLINDER SIZE	AH CGA 350	115	CFT

ANALYZED BY

Sahar R. Alamy
SAHAR R. ALAMY

CERTIFIED BY

Mark E. Johnson
MARK E. JOHNSON

For Technical Information Call
1-800-752-1597



Air Products and Chemicals, Inc. * Rural Route #1, Tamaqua, PA 18252

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:

APCI-LARGO
7900 118TH AVENUE NORTH
LARGO FL 34643-

Order No: CSS-738303-01
Batch No: 255-0765B
PO:
Release:

Cylinder No: SG9151826BAL
Bar Code No: DFQ300
Cylinder Pressure*: 2000 psig
Certification Date: 07/21/97
Expiration Date: 07/21/00

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	120±0.35 PPM	SG9121007	GMIS	250.2 PPM	Hewlett Packar	2518A052	06/24/97	GC-FID
NITROGEN	Balance Gas							

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst:

Michael Koval /KW

Michael Koval

Approved By:

Ken Roubik /KW

Ken Roubik

For Technical Information Call
1-800-752-1597



Air Products and Chemicals, Inc. * Rural Route #1, Tamaqua, PA 18252

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:

APCI-LARGO
7900 118TH AVENUE NORTH
LARGO FL 34643-

Order No: CSS-738247-01
Batch No: 255-0769B
PO:
Release:

Cylinder No: SG9136062BAL
Bar Code No: DHP197
Cylinder Pressure*: 2000 psig
Certification Date: 07/21/97
Expiration Date: 07/21/00

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	150±0.35 PPM	SG9121007	GMIS	250.2 PPM	Hewlett Packar	2518A052	06/24/97	GC-FID

NITROGEN Balance Gas

* STANDARD SHOULD NOT BE USED BELOW 150 PSIG

Analyst:

Michael Koval / KW

Michael Koval

Approved By:

Ken Roubik / KW

Ken Roubik

CO EMISSION TEST CALCULATIONS

COMPANY: FOSTER CREMATORY
SOURCE: Human Crematory Incinerator
TEST DATE: 04/22/98
Data analyst: B. Nelson

Run No.	Average			Stack Flowrate (dscfm)	Emissions		
	CO (ppm)	O2 (%)	CO @ 7% O2 (ppm)		mg/m3	lbs/ft3	lbs/hr
1	80.3	7.9	85.8	628	93.5	5.84E-06	0.2199
2	28.0	11.9	43.1	606	32.6	2.04E-06	0.0740
3	14.8	10.4	19.5	610	17.2	1.08E-06	0.0394
Averages	41.0	10.1	49.5	615	47.8	2.98E-06	0.1111

FORMULAS: CO @ 7% O2 = Actual CO x (14/(21-%O2))

mg/m3 = ppm x .041573 x molecular wt.

$$\text{lb/ft}^3 = \frac{\text{mg/m}^3}{35.31 \text{ ft}^3/\text{m}^3 \times 1000 \text{ mg/g} \times 453.59 \text{ g/lb}}$$

lb/hr = lb/ft3 x flowrate x 60 min/hr

where: Pstd = 29.92 "Hg
 Tstd = 528 deg R

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

EMISSIONS TEST CALCULATIONS

Plant: FOSTER CREMATORY
 Unit: Human Crematory
 Run No: 2

Test Date: 04/22/98
 Data Input By: B. McConnell

$$Pbar = (Pbar \text{ at barom.}) - (\text{Elev. diff. barom. to manom., ft.}) \times (.1/100)$$

$$= 29.96 - 0 \times (0.1/100) = \underline{29.96}$$

$$Pm = \frac{Pbar + \Delta H}{13.6} = \frac{29.96 + 1.401}{13.6} = \underline{30.06}$$

$$Vm(\text{std}) = (Vm) \times (Y) \times \frac{(Tstd, \text{deg R}) \times (Pm)}{(Tm, \text{deg R}) \times (Pstd)}$$

$$= 41.184 \times 0.998 \times \frac{528 \times 30.06}{556.7 \times 29.92} = \underline{39.172}$$

$$Vw(\text{std}) = Vlc \times (.04715) = 104.9 \times 0.04715 = \underline{4.946}$$

$$Bws = \frac{Vw(\text{std})}{Vw(\text{std}) + Vm(\text{std})} = \frac{4.946}{4.946 + 39.172} = \underline{0.112}$$

Bws @ saturation = 0.99
 1 - Bws = 0.888 USE LOWER BWS

$$Md = 0.44(\%CO_2) + .32(\%O_2) + .28(\%N_2 + \%CO)$$

$$= .44 \times 6.6 + .32 \times 11.9 + 0.28 \times 78$$

$$= \underline{\text{assume } 29.53}$$

$$Ms = Md(1-Bws) + 18(Bws) = 29.53 \times 0.888 + 18 \times 0.112$$

$$= \underline{28.24}$$

$$Ps = Pbar + \frac{(Pg, \text{ in. H}_2\text{O})}{13.6} = 29.96 + \frac{-0.05}{13.6} = \underline{29.96}$$

$$Vs = 85.49 \times (Cp) \times (\text{avg sqrt delta P}) \times \text{sqrt}[(Ts, \sim R)/(Ps)(Ms)]$$

$$= \frac{85.49 \times 0.84 \times 0.180 \times \text{sqrt } 1643.8}{29.96} = \underline{17.98}$$

$$An = \frac{[(\text{Nozzle diam, in.}/12)^2 \times 3.14159]}{4} = \frac{[(0.605/12)^2 \times 3.14159]}{4} = \underline{0.002}$$

$$\%I = \frac{(.09450) \times (Ts, \text{deg R}) \times (Vm(\text{std}))}{(Ps) \times (Vs) \times (An) \times (\text{Sample Time}) \times (1-Bws)}$$

$$= \frac{0.0945 \times 1643.8 \times 39.172}{29.96 \times 17.98 \times 0.001996 \times 60 \times 0.888}$$

$$= \underline{106.3}$$

$$As = \frac{(\text{Stack Diam., ft.})^2 \times 3.14}{4} = \frac{1.58333^2 \times 3.14}{4} = \underline{1.97}$$

SOUTHERN ENVIRONMENTAL SCIENCES, INC.

EMISSIONS TEST CALCULATIONS

Plant: FOSTER CREMATORY
 Unit: Human Crematory
 Run No: 2

Test Date: 04/22/98
 Data Input By: B. McConnell

$$\text{As,eff} = \frac{\text{As} \times (\text{total No. pts.} - \text{No. neg. pts.})}{(\text{Total No. pts.})} = \frac{1.96895 \times (20) - (0)}{(20)} = 1.97$$

$$Q = 60(\text{As,eff})(V_s) = 60 \times 1.97 \times 17.98 = 2,124$$

$$\text{Qstd} = \frac{(Q) \times (T_{\text{std}}) \times (P_s) \times (1 - B_{\text{ws}})}{(T_s, \text{degR}) \times (P_{\text{std}})} = \frac{2123.6 \times 528 \times 29.9563}{1643.8 \times 29.92} \times 0.8879$$

$$= 606$$

$$C_s = \frac{(.01543) \times (\text{mn, mg})}{V_m(\text{std})} = \frac{0.01543 \times 30.792}{39.1725} = 0.0121$$

$$\text{PMR} = \frac{(C_s)(Q_{\text{std}})(60)}{7000} = \frac{0.0121 \times 606.3808 \times 60}{7000} = 0.06$$

Emissions calculations in emissions test summary may differ slightly from example calculations due to rounding of some numbers in example.

**NOMENCLATURE USED IN
STACK SAMPLING CALCULATIONS**

- A_n = Cross-sectional area of nozzle, ft²
- A_s = Cross-sectional area of stack, ft²
- B_{ws} = Water vapor in gas stream, proportion by volume
- C_p = Pitot coefficient
- C_s = Pollutant concentration, gr/DSCF
- F_d = Ratio of gas generated to heat value of fuel, DSCF/mm BTU
- ΔH = Average pressure differential across orifice, in. H₂O
- %I = Isokinetic variation, %
- M_d = Molecular weight of dry gas
- M_n = Total amount of pollutant collected, mg
- M_s = Molecular weight of stack gas
- N = Normality of barium perchlorate titrant
- $\sqrt{\Delta P_{avg}}$ = Average of the square roots of the velocity heads
- P_{bar} = Barometric pressure at the sampling site, in. Hg
- P_g = Stack gas static pressure, in. H₂O
- P_m = Absolute pressure at the dry gas meter, in. Hg
- P_s = Absolute stack pressure, in. Hg
- PMR = Pollutant mass rate, lb/hr
- P_{std} = Standard absolute pressure, 29.92 in. Hg
- θ = Total sampling time, minutes

**NOMENCLATURE USED IN
STACK SAMPLING CALCULATIONS**
(Continued)

- Q = Stack gas flowrate, ACFM
- Q_{std} = Stack gas flowrate, DSCFM
- T_m = Absolute average meter temperature, °R
- T_s = Absolute average stack gas temperature, °R
- T_{std} = Standard absolute temperature, 528 °R
- V_a = Volume of sample aliquot titrated, ml
- V_{lc} = Liquid collected in impingers and silica gel, grams
- V_m = Sample volume at meter conditions, DCF
- $V_{m(std)}$ = Sample volume at standard conditions, DSCF
- V_s = Stack gas velocity, ft/sec
- V_{soln} = Total volume of solution, ml
- V_t = Volume of barium perchlorate titrant used for the sample, ml
- V_{tb} = Volume of barium perchlorate titrant used for the blank, ml
- $V_{w(std)}$ = Volume of water vapor in sample corrected to standard conditions, SCF
- Y = Dry gas meter calibration factor
- 13.6 = Specific gravity of mercury