



Missouri Department of Natural Resources
Missouri Air Conservation Commission
Air Pollution Control Program

**PERMIT
TO
CONSTRUCT**
PERMIT BY RULE

PERMIT BOOK

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct and operate the air contaminant source(s) described below, in accordance with the laws, rules, and conditions set forth here in.

082015-011

Construction Permit Number:
Project Number: 2015-07-044
Installation ID: 213-0060

Installation Name and Address

Cremations of the Ozarks, LLC
130 Industrial Park Dr., Ste. E
Hollister, Missouri 65672
Taney County

Parent Company's Name and Address

Cremations of the Ozarks, LLC
130 Industrial Park Dr., Ste. E
Hollister, Missouri 65672

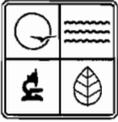
Installation Description:

Cremations of the Ozarks, LLC is installing a new incinerator for the purposes of human cremation in lieu of earthen burial. The cremation unit being installed is a US Cremation Equipment, Model: The Classic.

AUG 19 2015

Effective Date


Director or Designee
Department of Natural Resources



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 AIR POLLUTION CONTROL PROGRAM
 P.O. BOX 176, JEFFERSON CITY, MO 65102-0176
**APPLICATION FOR AUTHORITY TO CONSTRUCT
 PERMIT BY RULE NOTIFICATION
 CREMATORIES AND ANIMAL INCINERATORS**

APCP USE ONLY	
CHECK NO. 3926	CHECK RECEIVED (MM/DD/YY) 7-29-15
CHECK AMOUNT \$700. ⁰⁰ ^{2100.⁰⁰ Review}	CHECK DATE (MM/DD/YY) 7-27-15
PROJECT NO. 2015-07-044	PERMIT NO.

SECTION A: GENERAL NOTIFICATION INFORMATION - ALL NOTIFICATIONS MUST BE ACCOMPANIED BY A \$700 FEE.

SECTION A-1: GENERAL INSTALLATION INFORMATION

1. INSTALLATION NAME Cremations of the Ozarks, LLC		2. FIPS 29213	3. PLANT NO.
4. INSTALLATION STREET ADDRESS 130 Industrial Park, Suite E			
5. INSTALLATION MAILING ADDRESS Same as above			
6. CITY Hollister		STATE MO	ZIP CODE 65672
7. COUNTY NAME Taney	8. 1/4, of 1/4, of SECTION K17 TOWNSHIP 22N RANGE 21W		
9. PARENT COMPANY Same as above			
10. PARENT COMPANY MAILING ADDRESS Same as above			
11. CITY		STATE	ZIP CODE
12. INSTALLATION CONTACT PERSON Jason Bradley		13. CONTACT PERSON'S TITLE Owner	
14. CONTACT PERSON'S MAILING ADDRESS 130 Industrial Park, Suite E			
15. INSTALLATION CONTACT TELEPHONE NO. (417) 544-0218		16. INSTALLATION CONTACT FAX NO. (417) 544-0219	
17. INSTALLATION CONTACT E-MAIL ADDRESS jason@cremationsoftheozarks.com			
18. PROJECTED DATE TO COMMENCE CONSTRUCTION September 2015		19. PROJECT DATE OF OPERATION STARTUP September 2015	

SECTION A-2: INSTALLATION DESCRIPTION

20. See Attachment 1

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 AIR POLLUTION CONTROL PROGRAM

SECTION A-3: CERTIFICATION STATEMENT

I certify that I have personally examined and am familiar with the information in this application and believe that the information submitted is accurate and complete. I am aware that making a false statement or misrepresentation in this application is grounds for denying or revoking this permit.

21. SIGNATURE OF RESPONSIBLE OFFICIAL 		22. DATE 7/22/15
23. TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL Jason Bradley		24. RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER (417) 544-0218
25. TITLE OF RESPONSIBLE OFFICIAL Owner		

SECTION B: SPECIAL CONDITIONS FOR CREMATORIES AND ANIMAL INCINERATORS

Construction and operation of this new air pollution source is subject to the special conditions listed below. These special conditions are based on the authority granted to the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically RSMo. 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.062 "Construction Permits by Rule").

Please indicate by marking the appropriate box as to whether or not the emission source complies with the rule listed in the applicable emission limit or standard. If any of the applicable emission source boxes are checked no, your source is not eligible for a crematories and animal incinerators permit by rule.

This Permit By Rule applies only to Crematories and Animal Incinerators constructed after October 31, 2003.

SPECIAL CONDITION	EMISSION SOURCE COMPLY?	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-6.062(3)(B)2.A.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The materials to be disposed of shall be limited to noninfectious human materials removed during surgery, labor and delivery, autopsy, or biopsy including body parts, tissues and fetuses, organs, bulk blood and body fluids, blood or tissue laboratory specimens, and other noninfectious anatomical remains or animal carcasses in whole or in part. The owner or operator shall minimize the amount of packaging fed to the incinerator, particularly plastic containing chlorine. The incinerators shall not be used to dispose of other non-biological medical wastes including, but not limited to, sharps, rubber gloves, intravenous bags, tubing, and metal parts.	Proper work practice.
10 CSR 10-6.062(3)(B)2.B.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The manufacturer's rated capacity (burn rate) shall be two hundred (200) pounds per hour or less.	Proper work practice.
10 CSR 10-6.062(3)(B)2.C.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The incinerator shall be a dual-chamber design.	Proper work practice.
10 CSR 10-6.062(3)(B)2.D.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Burners shall be located in each chamber, sized to manufacturer's specifications, and operated as necessary to maintain the minimum temperature requirements of subparagraph 10 CSR 10-6.062(3)(B)2.E. at all times when the unit is burning waste.	Proper work practice.
10 CSR 10-6.062(3)(B)2.E.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Excluding crematories, the second chamber must be designed to maintain a temperature of one thousand six hundred degrees Fahrenheit (1,600°F) or more with a gas residence time of one-half (1/2) second or more. The temperature shall be monitored with equipment that is accurate to plus or minus two percent (±2%) and continuously recorded. The thermocouples or radiation pyrometers shall be fitted to the incinerator and wired into a manual reset noise alarm such that if the temperature of either of the two (2) chambers falls below the minimum temperature above, the alarm will sound at which time plant personnel shall take immediate measures to either correct the problem or cease operation of the incinerator until the problem is corrected	Proper work practice and maintenance of proper alarm records. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request.
10 CSR 10-6.062(3)(B)2.F.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	There shall be no obstruction to stack flow, such as by rain caps, unless such devices are designed to automatically open when the incinerator is operated. Properly installed and maintained spark arresters are not considered obstructions.	Proper work practice.

SECTION B: SPECIAL CONDITIONS FOR CREMATORIES AND ANIMAL INCINERATORS (CONTINUED)

SPECIAL CONDITION	EMISSION SOURCE COMPLY?	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-6.062(3)(B)2.G.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Each incinerator operator shall be trained in the incinerator operating procedures as developed by the American Society of Mechanical Engineers (ASME), by the incinerator manufacturer, or by a trained individual with more than one (1) year experience in the operation of the incinerator that the trainee will be operating. Minimum training shall include basic combustion control parameters of the incinerator and all emergency procedures to be followed should the incinerator malfunction or exceed operating parameters. An operator who meets the training requirements of this condition shall be on duty and immediately accessible during all periods of operation. The manufacturer's operating instructions and guidelines shall be posted at the unit and the unit shall be operated in accordance with these instructions.	Proper work practice and maintenance of proper operator training records. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request.
10 CSR 10-6.062(3)(B)2.H.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The incinerator shall have an opacity of less than ten percent (10%) at all times.	Proper work practice such that no opacity violations are noted.
10 CSR 10-6.062(3)(B)2.I.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Heat shall be provided by the combustion of natural gas, liquid petroleum gas, or Number 2 fuel oil with less than three-tenths percent (0.3%) sulfur by weight, or by electric power.	Proper work practice.
10 CSR 10-6.062(3)(B)2.J.	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	The operator shall maintain a log of all alarm trips and the resulting action taken. A written certification of the appropriate training received by the operator, with the date of training, that includes a list of the instructor's qualifications or ASME certification school shall be maintained for each operator. The operator shall maintain an accurate record of the monthly amount and type of waste combusted.	Determined through proper alarm and operator training record keeping. These records shall be maintained for not less than five (5) years, and they shall be immediately available to any Missouri Department of Natural Resources personnel upon request.

SECTION C: OTHER POTENTIALLY APPLICABLE REQUIREMENTS

This section is intended to identify regulations that may apply to this installation. There may be others not listed that apply. To determine rule applicability and specific standards please consult the appropriate sections in the Code of Federal Regulations (CFR) and Code of State Regulations (CSR) for the full text of the applicable requirements.

Please note: this permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources, and other applicable federal, state, and local laws and ordinances.

REGULATION OR CONSTRUCTION PERMIT REFERENCE	APPLICABLE EMISSION LIMIT OR STANDARD	METHOD OF COMPLIANCE
10 CSR 10-2.100, 10-3.030, or 10-4.090, 10-5.070 Open Burning Restrictions	Shall not conduct, cause, permit or allow a salvage operation, the disposal of trade wastes or burning of refuse by open burning.	Any person intending to engage in open burning shall submit a request to the Director.
10 CSR 10-2.070, 10-3.090 or 10-4.070, Restriction of Emission of Odors	No person may cause, permit or allow the emission of odorous matter in concentrations and frequencies or for durations that odor can be perceived when air is diluted to 1:7 volumes of odorous to odor-free air for 2 separate trails not less than 15 minutes apart within 1 hour.	No odor violations noted, if and when scintometer readings are taken.
10 CSR 10-5.160 Control of Odors in the Ambient Air	No person shall emit odorous matter as to cause an objectionable odors unless within the limits established by this rule.	No odor violations noted, if and when scintometer readings are taken.
10 CSR 10-5.170 Control of Odors From Processing Animal Matter	No person shall operate or use any device, machine, equipment, or other contrivance for the reduction of animal matter unless all gases, vapors, and gas-entrained effluents from the facility are incinerated at a temperature of not less than 1,200°F for a period of not less than 0.3 seconds and otherwise in compliance with this rule.	Proper work practice.
10 CSR 10-6.050, Start-up, Shutdown and Malfunction Conditions	Shall not commence construction or modification of any installation subject to this rule; begin operation after construction or modification; or begin operation of any installation which has been shut down longer than 5 years without first obtaining a permit.	In the event of a malfunction, which results in excess emissions that exceed 1 hour, the permittee shall implement corrective action and submit reports.
10 CSR 10-6.065, Operating Permits	The permittee shall comply with all applicable requirements identified in the operating permit (OP); file for timely renewal of this OP; and retain a copy of the OP on-site and make available to any MDNR personnel upon request.	The permittee shall submit an annual compliance certification in accordance with the regulation. The permittee shall maintain a current equipment list on-site with the date of installation of the equipment.
10 CSR 10-6.110, Submission of Emission Data, Emission Fees and Process Information	Submittal of Emission Inventory Questionnaire (EIQ) and emission fees by frequency noted in 10 CSR 10-6.110.	The permittee shall complete and submit an EIQ in accordance with 10 CSR 10-6.110.
10 CSR 10-6.200 Hospital, Medical, Infectious Waste Incinerators	No owner or operator shall cause to be discharged into the atmosphere any gases that contain stack emissions in excess of those listed in 10 CSR 10-6.200(3)(A).	Proper work practice and maintenance of appropriate performance test results.
10 CSR 10-6.070 New Source Performance Regulations	The following federal NSPS standards may apply: (Ec) Medical Waste Incinerators. Standards of Performance for Incinerators.	As required by regulations.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
AIR POLLUTION CONTROL PROGRAM
**APPLICATION FOR AUTHORITY TO CONSTRUCT
PERMIT BY RULE NOTIFICATION
CREMATORIES AND ANIMAL INCINERATORS**

INSTRUCTIONS

By submitting your notification, you are accepting all conditions and terms stated in this form. If you find the special conditions listed in Section B unacceptable, you may choose to submit a construction permit application and undergo a case-by-case review.

Please refer to the following line-by-line instructions to complete the notification. The notification, along with the \$700.00 fee, should be mailed to:

Air Pollution Control Program
Permit-By-Rule
P.O. Box 176
Jefferson City, Missouri 65102

You must also retain a copy of the notification at the installation and make it immediately available to any inspector.

Once the fee and notifications have been mailed or hand-delivered, you are free to begin construction of your project under the special conditions that you have accepted.

The Air Pollution Control Program will send you a letter acknowledging receipt of your notification with a permit number and a project number for agency tracking purposes.

A copy of this electronic package may be obtained from the Department of Natural Resources Air and Land Protection Division's web site at: <http://www.dnr.mo.gov/alpd/apcp/PermitInfo.htm>.

If you have any questions about the notification form or the permit-by-rule notification procedure, please feel free to contact the Permit Section at (573) 751-4817.

NOTIFICATION FORM INSTRUCTIONS

- 1.) **Installation Name:** Enter the official company name and/or plant designation for the installation that is making the permit-by-rule notification.
- 2.) **FIPS Number:** Enter the official FIPS Number (3 digit code) which corresponds to the county name for the county in which the installation is located. Please refer to <http://www.itl.nist.gov/fipsub/co-codes/mo.txt> for a listing. The FIPS number in combination with the Plant Number provides the identification/tracking information for the installation in the State/Federal databases.
- 3.) **Plant Number:** Enter the official Plant Number that has been assigned to the installation by the respective State or Local Agencies. If you do not know your plant number, please leave blank.
- 4.) **Installation Street Address:** Enter the street address of the physical location of installation.
- 5.) **Installation Mailing Address:** Enter the mailing address if that address is different from the street address.
- 6.) **City, State and Zip Code:** Enter the City, State and Zip Code of the physical location of the installation.
- 7.) **County:** Enter the county in which the installation is located.
- 8.) **Section, Township, Range:** Enter the appropriate information on the Section, Township and Range in which the installation is located.
- 9.) **Parent Company:** Complete this block if this installation is totally or partially owned by another company.
- 10.) **Parent Company Mailing Address:** Complete this block if this installation is totally or partially owned by another company.
- 11.) **Parent Company City, State and Zip Code:** Complete this block if this installation is totally or partially owned by another company.
- 12.) **Installation Contact Person:** Enter the name of the person who is most familiar with the operations of the installation and who can answer any questions regarding information about the installation.
- 13.) **Contact Person's Title:** Enter the title of the contact person.
- 14.) **Contact Person's Mailing Address:** Enter the mailing address for the Contact Person.
- 15.) **Installation Contact Person's Telephone Number:** Enter the Contact Person's telephone number.
- 16.) **Installation Contact Person's Fax Number:** Enter the Contact Person's fax number.

NOTIFICATION FORM INSTRUCTIONS (CONTINUED)

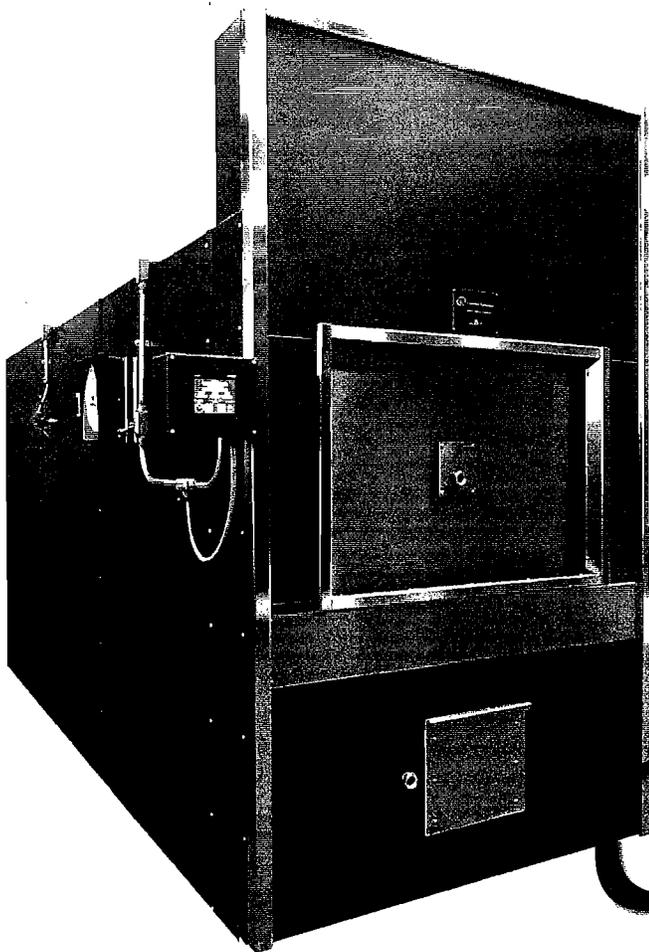
- 17.) **Installation Contact Person's E-Mail Address:** Enter the Contact Person's e-mail address.
- 18.) **Projected Date to Commence Construction:** Enter the date you intend to commence construction of your installation.
- 19.) **Projected Date of Operation Startup:** Enter the date you plan to begin operation with the installation.
- 20.) **Installation Description:** Enter the general product manufactured, the material handled by your installation and principal activity that is performed at this installation.
- 21.) **Signature of Responsible Official:** Enter the signature of the installation's official, certifying that the notification is accurate and complete. Notifications without a signed certification are not considered complete. A responsible official is:
 1. The president, secretary, treasurer or vice-president of a corporation in charge of a principal business function, or any other person who performs similar policy and decision-making functions for the corporation or a duly authorization representative of this person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either-
 - a) The facilities employ more than 250 person or have a gross annual sales or expenditures exceeding twenty-five million dollars (in second quarter 1980 dollars); or
 - b) The delegation of authority to his representative is approved in advance by the permitting authority.
 2. A general partner in a partnership or the proprietor in a sole proprietorship.
 3. Either a principal executive officer or a ranking elected official in a municipality, state, federal, or other public agency. For the purpose of this part, a principal executive officer of a federal agency includes the chief executive officer having responsibility for the operations of a principal geographic unit of the agency; or
 4. The designated representative of an affected source insofar as actions, standards, requirements or prohibitions under Title IV of the Clean Air Act or the regulations promulgated under the Act are concerned or the designated representative for any purposes under Part 70.
- 22.) **Date:** Enter the date that the Signature of the Responsible Official was obtained.
- 23.) **Type or Print Name of Responsible Official:** Type or print the name of the Responsible Official signing in item 21.
- 24.) **Responsible Official's Telephone Number:** Enter the telephone number where the Responsible Official may be contacted who signed in item 21.
- 25.) **Title of Responsible Official:** Enter the official title of the Responsible Official from item 21.

Attachment 1
Additional Information for Registration Applications

Additional Information for Registration Applications

- A. Process Description –Cremations of the Ozarks, LLC provides cremation services for the local area. They propose to install a gas fired U.S. Cremation Equipment Model “CLASSIC” human crematory. Technical literature and engineering drawings for the “CLASSIC” are included in Attachment 2 of this application and in Attachment 3 we have included an area map. The “CLASSIC” is a multi-chamber unit having an average of 200 lbs/hr human remains (approximately 1,000 Btu/lb) cremation rate. The primary chamber burner is rated at 500,000 Btu/hr, and the secondary chamber burner is rated at 1,500,000 Btu/hr, for a total of 2,000,000 Btu/hr. The equipment is fired with natural gas.
- B. Control of air pollution is achieved through the design of the “CLASSIC” crematory, including its ability to operate the secondary chamber between 1600 - 1850 degrees Fahrenheit at a residence time in excess of 1.0 second. The design also includes fully automatic PLC based controls, independent fuel/air systems, preheated combustion air, secondary chamber temperature monitor an recorder, primary burner temperature interlock (prevents primary burner from firing prior to the secondary chamber reaching it’s set point temperature), UV continuous scanning flame detectors on burners, and an opacity sensor which can temporarily suspends operation of the primary chamber burner.
- Air pollution control is demonstrated through similar source stack testing results (please see Attachment 4 for emission calculations and Attachment 5 for identical source stack test).
- C. Regulatory Discussion - This source complies with the requirements of the permit by rule conditions of the application, Section C.
- D. Toxic and HAP emissions (concentrations) from human cremation are very small and are typically considered negligible.
- E. Emission Summary and Calculations –. See Attachment 4 for tabular summary of emissions. Criteria pollutant emissions values, except CO and PM, are based on emission factors from AP-42, Table 2.1-12, and “Uncontrolled Emission Factors for Refuse Combustors Other Than Municipal Waste”. CO and PM are based on 100 PPM CO and 0.08 gr/dscfm.

Attachment 2
U.S. Cremation Equipment Model "CLASSIC" Specifications and Engineering Drawings



THE
classic

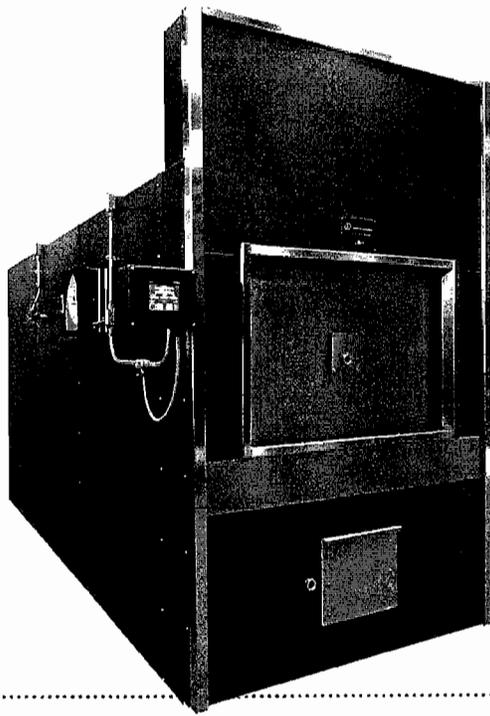
ISN'T WHAT YOU EXPECT.



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The standard-size cremator with more features than any unit in its price range



Since the Classic was introduced to the cremation industry, it's been turning heads. Cremation professionals have asked, "Does this machine have the technology and design to deliver notable fuel efficiency and significantly increased production – and be a cost-effective investment?" We, of course, answer with a hands-down "Yes." But we're not the ones to ask. It's our customers whose opinions matter.

"I have operated equipment for 15 years before buying your unit and I must say that nothing can cremate a sizable person better or give me a cheaper gas/electric bill"

G. David Keller • High Point Funeral Home, Memphis, TN

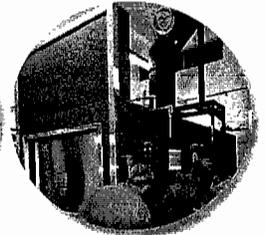
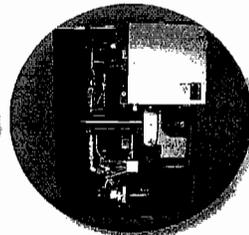
"They encouraged me to check the competition. I did, but no one came close in expertise, support and customer service."

Danny Losee, President • Perry Mount Park Cemetery, Pontiac, Michigan

"I shopped all the major manufacturers and was immediately impressed with U.S. Cremation Equipment's personnel and product."

David Krohn, CEO • Everglades Crematorium, Hollywood, Florida

STANDARD FEATURES OF THE CLASSIC



- **Continuous Operation:** Heavy-duty insulation and state-of-the-art drafting allows for continuous operation, no cool-downs between cremation cycles.
- **Increased Productivity:** The Classic can complete a cremation every 75 to 90 minutes, for up to six cremations in ten hours.
- **Complete Automation:** A PLC controls the entire cremation from start to finish.
- **Fuel Efficiency:** Faster cremation cycles and "Hot Hearth" design can save up to 50% in fuel usage when performing more than one cremation in a day.
- **Environmental Safety:** Complete combustion is achieved in the Pollution Control Chamber, eliminating smoke and odor.
- **Special Case Conditions:** A large primary chamber and an operating system that controls the rate of combustion enable safe cremation of obese cases up to 800 pounds.
- **User-Friendly System with One-Touch Screens:** Operating conditions are displayed on various screens for monitoring and control during each stage of the cremation cycle.
- **Safety Compliance:** The "Classic" complies with nationally recognized safety standards and has been tested and listed by Underwriters Laboratories, Inc. (UL) – file MH 47704.

The Classic is the standard-size cremator of choice. Give us a call and we'll put you in touch with the people who use our product every day. Contact the cremation professionals, 321.282.7357.

Assistance is always a phone call away.





HUMAN CREMATION CHAMBER SPECIFICATION

Model US 100 "Classic"

EQUIPMENT:

U.S. Cremation Equipment, a division of American Incinerators Corporation -
Multiple Chambered Human Cremator; Natural Gas, Propane (LP) or Oil fired.

MANUFACTURER:

U.S. Cremation Equipment a division of American Incinerators Corporation.

CONSTRUCTION STANDARDS:

The cremator shall be constructed of U.L. /CSA listed components and will meet or exceed nationally accepted incinerator construction standards as originally established per the Incinerator Institute of America (IIA) publication guidelines; i.e.:

- A. Primary chamber will not exceed 60% of total furnace volumes. Flue connection shall not be considered part of furnace volume.
- B. Flame supervision through continuous ultraviolet scanning flame detectors on all burners.
- C. High temperature refractory construction with air-cooled walls to prevent excessive heat radiation.
- D. Exhaust gas temperature reduction.

SAFETY CERTIFICATIONS

Underwriters Laboratories (UL) listed appliance File number MH47704.

CREMATOR DIMENSIONS:

Chamber volumes:	Primary - 73 CF (2.07 CM) Secondary - 71 CF (2.01 CM)
Primary Chamber:	94" L x 38" W x 31" H (2388 mm x 965 mm x 788 mm)
Structural footprint:	156" L x 62" W (3962 mm x 1575mm)
Over-all dimensions:	164½" L x 72" W (incl. Touch Screen Panel) x 104½" H (4178 mm L x 1829 mm W (W/Touch Screen Panel) x 2654 mm H

POWER CHARGING DOOR:

Door Height:	34½" (876 mm)
Door Width:	40" (1016 mm)

PRIMARY CHAMBER OPENING:

Width: 38" (965 mm)
Roof Arch Height: 30" (762 mm) @ High Point – 27" (686 mm) @ Low point

OPERATING TEMPERATURE:

Temperatures are determined as a result of federal, state or local permitting authority operating standards.

Typical primary chamber setting: 1,000°F-1,200°F (538°C - 648°C)
Typical secondary chamber setting: 1,600°F-1,800°F (871°C - 982°C)

RETENTION TIME:

In excess of 1 second.

CAPACITY:

Single load capacity of 800 lbs (363 kg) per cremation cycle. Burn Rate of 200 lbs/hr (91 kg)

DRAFT:

Induced via refractory lined draft inducer.

SHIPPING WEIGHT:

24,000 lbs. (10,886kg)

EMISSIONS:

The U. S. Cremation Equipment cremator shall meet or exceed federal, state/province and local environmental regulations.

EMISSION CONTROL:

Secondary chamber equipped with one, 1,500,000 BTU/HR burner. Also equipped with an electronic exhaust gas scanner system which temporarily suspends operation of the primary chamber burner if the opacity of the exhaust gases reaches the maximum locally authorized level.

STEEL CONSTRUCTION SPECIFICATIONS:

- A. The structure to be heavy 3" steel angle, square tube; 3/8" steel plate, seal welded construction.
- B. Subfloor to be 3/16" steel plate, seal welded construction.
- C. The exterior shell to be 12 gauge steel removable panels.
- D. Interior shell to be 10 gauge steel, seal welded construction.

INSULATION & REFRACTORY SPECIFICATIONS:

- A. Hot Hearth: 3000°F (1650°C) abrasion resistant cast refractory monolithic cast 7" - 13" thick, 1 -1/2" recessed top and rounded, stressed arched bottom.
- B. Chamber Floors: 3000°F (1650°C) abrasion resistant cast refractory, 5" thick on top of 2" 2400°F (1316°C) light weight insulating castable.
- C. Chamber Ceilings: 3000°F(1650°C) cast refractory, monolithic cast, rounded, stressed arched, 5"-9" thick, topped by 2", 2400°F (1360°C) light weight insulating castable.
- D. Interior Walls: 2800°F (1538°C) alumina-silicate firebrick, 2 1/2" x 4 1/2" x 9", all chambers are backed by 4" of 1900°F (1038°C) ceramic fiber insulation.
- E. Stack: Lined with 2-3" of 2200°F (1205°C) insulating refractory.

SKIN TEMPERATURE CONTROL:

Integral dual casing, completely air-cooled design to prevent excessive heat radiation.

COMBUSTION EQUIPMENT:

- A. Combustion Air - One (1) Single or 3 phase, 208-230/460V, 17-15.5/7.6 amp, 7.5 hp air blower motor (1,700 CFM (158 CMM)
- B. Primary Chamber - One 500,000 BTU/hr nozzle mix, gas-fired burner; Eclipse, North American, or equal.
- C. Secondary Chamber - One, 1,500,000 BTU/HR modulating, nozzle mix, gas-fired Burner; Eclipse, North American, or equal.
- D. Burner Flame Safeguard - Control supervision on each burner via a flame safeguard relay and ultra-violet light detector.
- E. Low Air Pressure Safety Switch - Interlocked to all burners.

EXHAUST GAS TEMPERATURE REDUCTION:

Exhaust duct operating exit temperature: 900°F (482°C)

HOT AIR DUCT:

10 gauge carbon steel, high temperature 2-3" refractory lining (51 -76 mm), pre-drilled flanges, 24"
Outside Diameter, 28" (711 mm) at flanges.

UTILITY REQUIREMENTS:

A. GAS:

1. Pressure:
 - a) Natural Gas: 7-9" W.C. (178-228 mm)
 - b) Propane: 11-14" W.C. (288-355 mm)
2. Flow Rate: 2,000,000 BTU/hr

B. ELECTRICAL:

- Voltage: 220 Volts
Phase: Single or 3 Phase
Frequency: 50/60Hz
Amperage: 70Amp for Single Phase - 40Amp for 3 Phase

CREMATION CHAMBER LOADING/CLEAN-OUT DOOR:

Hydraulically operated, refractory lined, upward movement guillotine style door with view port. It is a front loading-front cleanout design with cremated remains collection cooling hopper and removal system. The hydraulic system pump is a 1 HP with a capacity of 15 liters per minute or equivalent system.

CREMATION PROCESS CONTROL:

The cremation cycle is controlled by a programmable logic control (PLC) system. Visual confirmation of the system status is provided through a Color Touch Screen Panel which displays temperatures, elapsed time, burner operation and other functions. Continuous fuel and air modulation is automatically controlled by a time/temperature actuated system. Operator interface performed through the Color Touch Screen. The Temperature Chart Recorder (if applicable) is a single or dual pen.

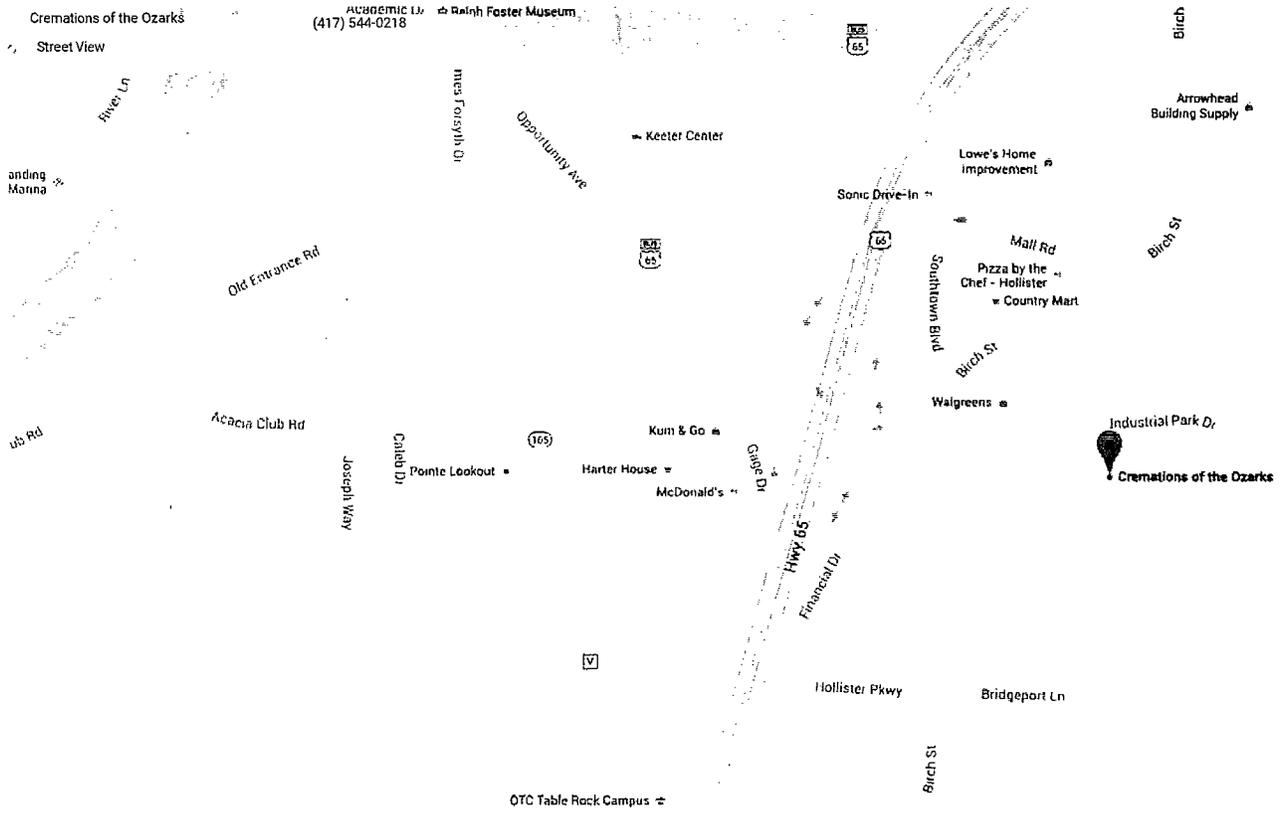
EXTERIOR FINISH:

The top and rear compartments are finished with two coats of high-temperature, textured, black polyurethane. The front and side panels are powder coated in a dark grey color. The cremator is trimmed in stainless steel.

TOOLS:

The tools consist of a steel wire brush and rake with long handles, and a short handle rake. A trigger Hand Magnet for removal of metal is also included.

Attachment 3
Area Map



Google

J16

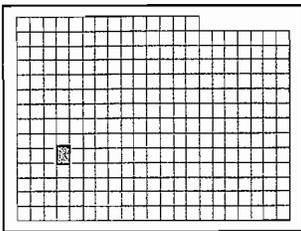
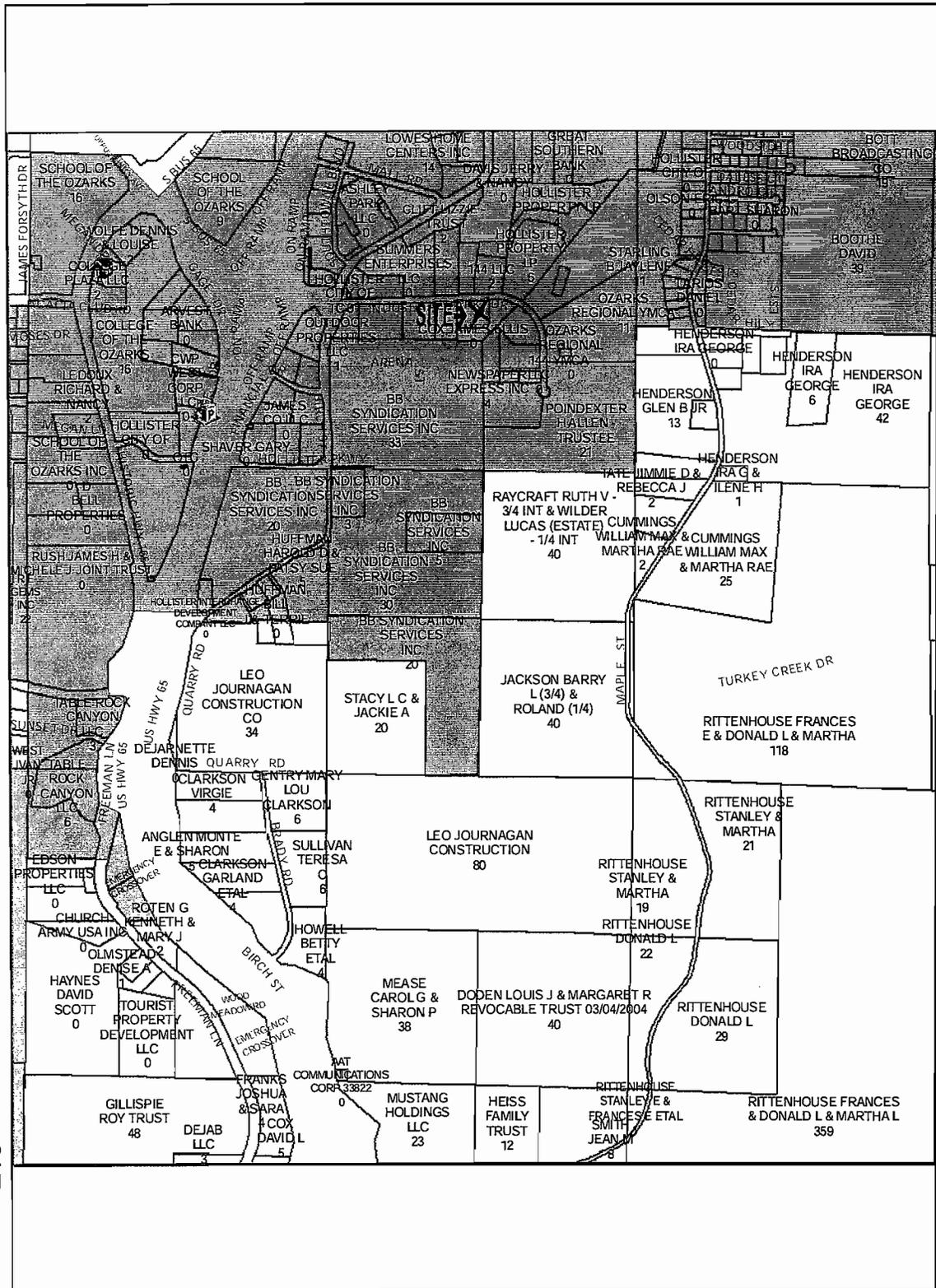
J18

K16

K18

L16

L18



TANEY COUNTY, MISSOURI
by
GIS DEPARTMENT



K17

Jan 10, 2013



Attachment 4
Emission Calculations Spreadsheet

US Cremation Equipment
Model "Classic"

Pounds Incinerated Per Hour (Average)	Hours Per Year	SO2 lb/ton	SO2 lb/hr	SO2 TPY	Nox lb/ton	Nox lb/hr	Nox TPY	TOC lb/ton	TOC lb/hr	TOC TPY
200	8760	2.5	0.25	1.095	3	0.3	1.314	3	0.3	1.314

CO=100 PPM @ 7% O2 MAX, Actual CO Emissions Measured at 0.75 PPM @50% Excess Air
 CO = 100 PPM X 28 MW X 1700 DSCFM X 2.595E-09 X 60 min/hr = 0.74 lb/hr CO
 0.74 lb/hr CO X 8760 hrs/yr X 1 ton/2000 lb = 3.24 TPY CO

Actual Emissions were measured at 0.0159 gr/dscf at 7% O2, 0.0208gr/dscf @12%CO2, 0.0150 gr/dscf at 50% Excess Air
 PM = 0.08 gr/dscf X 1 pound/7000 gr X 1700 DSCFM X 60 min/hr = 1.17 lb/hr PM
 1.17 lb/hr PM X 8760 hrs/yr X 1 ton/2000 lb = 5.12 TPY PM

Attachment 5
Results from Identical Source Stack Test



Arlington Environmental Services, Inc.

Post Office Box 657 ~ Okeechobee, Florida 34973
605 SW Park Street, Suite 209 ~ Okeechobee, Florida 34974
Telephone (863) 467-0555 ~ Facsimile (863) 357-0810
www.arlingtonenvironmental.com

U.S. Cremation Equipment
598 South Northlake Boulevard, Suite 1016
Altamonte Springs, FL 32701

**RE: FID 0112701 – Guiding Light Cremations, LLC
Emission Testing Report
Make: US Cremation Equipment
Model: Classic**

To Whom It May Concern:

Emission testing for Particulate, Visible, Carbon Monoxide, and Hydrogen Chloride, EPA Methods 1-5, 9, 10, and 26A, was conducted on March 3 & 4, 2010 at the above referenced facility. Upon request of the manufacturer the results from Methods 1-5, 10, and 26A have been corrected to twelve percent (12%) Carbon Dioxide and fifty percent (50%) Excess Air. The allowable standards referenced are representative of Illinois Environmental Protection Agency Standards. In addition the results were corrected to seven percent (7%) Oxygen. These results are presented in the attached Emissions Report.

Sincerely,

Noah A. Handley, P.E.
Vice President, Principal Engineer,
Arlington Environmental Services, Inc.

**Source Test Report
for
Particulate, Visible, CO and HCl Emissions**

EPA Methods 1-5, 9, 10 and 26A

Report 2985-S

March 03 and 04, 2010

prepared for

**Guiding Light Cremations, LLC
Unit #2
Facility ID 0112701**



Arlington Environmental Services, Inc.

Post Office Box 657 ~ Okeechobee, Florida 34973 ~ Telephone 863.467.0555

Table of Contents

	<u>Page</u>
1.0 Introduction	1
2.0 Certification of Test Results.....	2
3.0 Allowable Emission Determination	3
4.0 Cyclonic Flow Determination.....	3
5.0 Summary of Results.....	4
6.0 Visible Emission Results.....	5
7.0 Particulate Emission Results.....	6
8.0 Carbon Monoxide Emission Results.....	7
9.0 Hydrochloric Acid Emission Results.....	8
10.0 Overview of Field and Analytical Procedures.....	9
10.1 EPA Method 1	9
10.2 EPA Method 2	9
10.3 EPA Method 3	9
10.4 EPA Method 4	10
10.5 EPA Method 5	10
10.6 EPA Method 9	11
10.7 EPA Method 10	11
10.8 EPA Method 26A	11
11.0 Sampling Point Determination.....	12
11.1 Number of Sampling Points per Traverse	13
12.0 Summary of Field and Laboratory Data.....	14
Attachment A - Field Data	
Attachment B - Laboratory Data	
Attachment C - Process Data	
Attachment D - Calculations for Run 1	
Attachment E - Calibration Data	
Attachment F - Project Participants	

1.0 Introduction

Guiding Light Cremations LLC operates a human crematory located at 2431 SW 56th Terrace in West Park, FL. On March 03 and 04, 2010, source tests for particulate, visible, carbon monoxide and HCl emissions (EPA Methods 1-5, 9, 10 and 26A) were conducted on Unit #2 exhaust stack servicing the Model: Classic Crematory, Manufactured by U.S. Cremations Equipment.

The tests were performed in order to comply with the Broward County Department of Planning and Environmental Protection, Air Quality Division, Chapter 27 Article IV, Air Quality, Section 27-179(c)(2). The results comply with Florida's Human Crematory Rule 62-296.401(5), FAC.

Courtney Pitters of the Broward County Division of Environmental Protection, Air Quality Division was present for a portion of the tests.

The retention time for this unit during the test was 1.75 seconds. The substantiating calculations are presented in Appendix D.

The results of this test verify compliance with the Code of Federal Regulations and Florida Department of Environmental Protection Human Crematory Rule 62-296.401(5), Florida Administrative Code.

2.0 Certification of Test Results

Facility Tested: Guiding Light Cremations LLC Report 2985-S
2431 SW 56th Terrace
West Park, FL 33325

Type Process - Human Crematory

Abatement Device - Afterburner

March 03 and 04, 2010

Run Numbers 1, 2 and 3

Visible Emissions - 0.0%

Allowable Visible Emissions - 5% with up to 15% allowed in a one hour period

Particulate Emissions - 0.0159gr/dscf (corrected to 7% O₂)

Particulate Emissions - 0.0150 gr/dscf (corrected to 50% Excess Air)

Particulate Emissions - 0.0208 gr/dscf (corrected to 12% CO₂)

Allowable Particulate Emissions - 0.1 gr./dscf (corrected to 12% CO₂)

Carbon Monoxide Emissions - 0.86 ppm (corrected to 7% O₂)

Carbon Monoxide Emissions - 0.81 ppm (corrected to 50% Excess Air)

Allowable Carbon Monoxide Emissions - 500 ppm (corrected to 50% Excess Air)

Carbon Monoxide Emissions - 1.14 ppm (corrected to 12% CO₂)

HCl Emissions - 27.37 ppm (corrected to 7% O₂)

HCl Emissions - 25.99 ppm (corrected to 50% Excess Air)

HCl Emissions - 36.29 ppm (corrected to 12% CO₂)

All testing and analysis were performed in accordance with the Florida Department of Environmental Protection Human Crematory Rule 62-296.401(5), Florida Administrative Code.

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



William D. Arlington

3.0 Allowable Emission Determination

The allowable emissions were determined in accordance with 62.296.401(5) F.A.C. Substantiating data and calculations are presented in the Appendix D.

4.0 Cyclonic Flow Determination

Due to the configuration of the system, cyclonic flow was considered to be non-existent at the sampling site.

5.0 Summary of Results
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

	Run 1	Run 2	Run 3	Average
Date	3/3/2010	3/4/2010	3/4/2010	
Start Time	16:20	9:30	11:00	
Stop Time	17:23	10:33	12:05	
Process Rate (lbs.)	175	180	—	178
Visible Emission Rate (%) (highest six minute average)				0.00
Allowable Visible Emission Rate (%) (with up to 20% for 3 min. per hour)				5
Particulate Emission Rate (gr./ dscf @ 7% O ₂)	0.0188	0.0099	0.0189	0.0159
Particulate Emission Rate (gr./ dscf @ 50% Excess Air)	0.0178	0.0094	0.0179	0.0150
Particulate Emission Rate (gr./ dscf @ 12% CO ₂)	0.0238	0.0136	0.0251	0.0208
Allowable Particulate Emission Rate (gr./ dscf @12% CO ₂)	0.10	0.10	0.10	0.10
Carbon Monoxide Emission Rate (ppm @7% O ₂)	0.79	1.05	0.74	0.86
Carbon Monoxide Emissions (PPM) @ 50% Excess Air	0.75	0.99	0.70	0.81
Allowable Carbon Monoxide Emissions (PPM) @ 50% Excess Air	500	500	500	500
Carbon Monoxide Emissions (PPM) @ 12% CO ₂	1.00	1.43	0.98	1.14
Hydrogen Chloride Emission Rate(PPM)@7% O ₂	25.26	24.88	31.96	27.37
Hydrogen Chloride Emission Rate (PPM) @ 50% Excess Air	24.09	23.52	30.36	25.99
Hydrogen Chloride Emission Rate (PPM) @ 12% CO ₂	32.18	34.04	42.64	36.29

6.0 Visible Emission Results

Guiding Light Cremations, LLC

Unit #2

Report 2985-S

Emission Point	Allowable Emission Rate (highest six minute average)	Emission Rate (highest six minute average)	Average Opacity
Exhaust Stack	5	0.00	0.00

7.0 Particulate Emission Results
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

	Run 1	Run 2	Run 3
Area (square feet)	3.08	3.08	3.08
Stack Pressure (inches Hg)	29.88	30.07	30.07
Meter Pressure (inches Hg)	30.06	30.26	30.29
Sample Volume (Std. Cu. Ft.)	52.965	54.952	57.861
Water Vapor (Cubic Feet)	5.52	5.85	6.03
Sample Moisture (percent)	9.44	9.62	9.43
Saturation Moisture (percent)	100.00	100.00	100.00
Molecular Weight (lbs/lb Mole wet)	28.29	28.18	28.27
Velocity (fpm)	887	879	985
Volumetric Flow Rate (acfm)	2734	2710	3036
Volumetric Flow Rate (scfm)	891	933	963
Percent Carbon Dioxide (Measured)	5.1	4.5	5.0
Percent Oxygen (Measured)	13.4	13.8	13.2
Carbon Monoxide (PPM) (Measured)	0.42	0.53	0.41
Percent Excess Air (Calculated)	165.11	177.63	157.23
PM Concentration (gr/dscf)	0.0101	0.0051	0.0104
PM Concentration (gr/dscf) @7% O2	0.0188	0.0099	0.0189
PM Concentration (gr/dscf) @ 50% Excess Air	0.0178	0.0094	0.0179
PM Concentration (gr/dscf) @ 12% CO2	0.0238	0.0136	0.0251
Mass Emission Rate (lbs./hr.)	0.08	0.04	0.09
Percent Isokinetic	99.51	98.54	100.56

8.0 Carbon Monoxide Emission Results

Guiding Light Cremations, LLC

Unit #2

Report 2985-S

	Run1	Run 2	Run 3	Average
Date	3/3/2010	3/4/2010	3/4/2010	
Start Time	16:20	9:30	11:00	
Stop Time	17:23	10:33	12:05	
Percent Carbon Dioxide (Measured)	5.1	4.5	5.0	
Percent Oxygen (Measured)	13.4	13.8	13.2	
Carbon Monoxide (PPM) (Measured)	0.42	0.53	0.41	
Percent Excess Air (Calculated)	165.11	177.63	157.23	166.66
Carbon Monoxide Emissions (PPM @ 7% O ₂)	0.79	1.05	0.74	0.86
Carbon Monoxide Emissions (PPM) @ 50% Excess Air	0.75	0.99	0.70	0.81
Carbon Monoxide Emissions (PPM) @ 12% CO ₂	1.00	1.43	0.98	1.14

9.0 HCl Emission Results
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

	Run 1	Run 2	Run 3	Average
Date	3/3/2010	3/4/2010	3/4/2010	
Sample Volume (Std. Cu. Ft.)	52.965	54.952	57.861	
Percent Carbon Dioxide (Measured)	5.1	4.5	5.0	
Percent Oxygen (Measured)	13.4	13.8	13.2	
Carbon Monoxide (PPM) (Measured)	0.42	0.53	0.41	
Percent Excess Air (Calculated)	165.11	177.63	157.23	166.66
Volume of Solution (mls)	400	400	400	
HCl (ug collected)	31,000	30,000	44,000	35,000
HCl (ug/DSCF)	585.29	545.93	760.45	630.56
HCl PPM (volume)	13.63	12.71	17.70	14.68
HCl PPM (volume) @ 7% O2	25.26	24.88	31.96	27.37
HCL PPM (volume) @ 50% Excess Air	24.09	23.52	30.36	25.99
HCl PPM (volume) @ 12% CO2	32.18	34.04	42.64	36.29

10.0 Overview of Field and Analytical Procedures

10.1 EPA Method 1 - Sample and Velocity Traverses for Stationary Sources

Principle - To aid in the representative measurement of pollutant emissions and/or total volumetric flow rate from a stationary source, a measurement site where the effluent stream is flowing in a known direction is selected and the cross-section of the stack is divided into a number of equal areas. A traverse point is then located within each of these equal areas. See Sampling Point Determination.

Applicability - This method is applicable to flowing gas streams in ducts, stacks and flues. This method cannot be used when: 1) flow is cyclonic or swirling 2) a stack is smaller than about 12 inches in diameter, or 0.071 cross-sectional area or 3) the measurement site is less than two stack or duct diameters downstream or less than a half diameters upstream from a flow disturbance. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

10.2 EPA Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate

Principle - Type S Pitot Tube - The average gas velocity in a stack is determined from the gas density and from measurement of the average velocity head with a Type S pitot tube.

Applicability - This method is applicable for measurement of the average velocity of a gas stream and for quantifying gas flow.

This procedure is not applicable at measurement sites which fail to meet the criteria of Method 1. This method cannot be used for direct measurement in cyclonic or swirling gas streams. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

10.3 Method 3 - Gas Analysis for the EPA Determination of Dry Molecular Weight

Principle - A gas sample is extracted from a stack by one of the following methods 1) Single-point grab sampling 2) single-point, integrated sampling or 3) multi-point, integrated sampling, the gas sample is analyzed for percent CO₂, percent O₂, and if necessary for CO. For dry molecular weight determination, either an Orsat or a Fyrite analyzer may be used for the analysis.

Applicability - This method is applicable for determining carbon dioxide and oxygen concentrations and dry molecular weight of a sample from a gas stream of a fossil fuel combustion process. The method may also be applicable to other processes where it has been determined that compounds other than CO₂, O₂, CO, and nitrogen are not present in concentrations sufficient to affect the results. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

10.4 EPA Method 4 - Determination of Moisture Content in Stack Gases

Principle - A gas sample is extracted at a constant rate from the source; moisture is removed from the sample stream and determined either volumetrically or gravimetrically.

Applicability - This method is applicable for determining the moisture content of stack gas. There are two procedures given to determine the moisture. The procedure for the reference method to determine the moisture content was used to calculate the emission data. The reference method was conducted simultaneously with the pollutant emission measurement run, calculation of percent isokinetic, pollutant emission rate, etc. for the run is based upon the results of the reference method or its equivalent. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

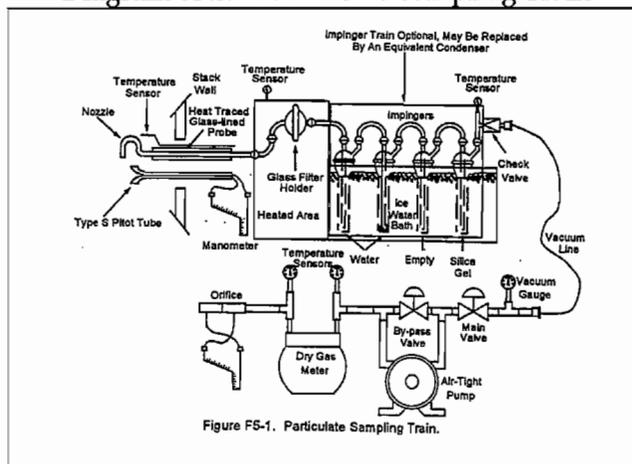
10.5 EPA Method 5 - Determination of Particulate Emissions from Stationary Sources

Principle - Particulate matter is withdrawn isokinetically from the source and collected on a glass fiber filter maintained at a temperature in the range of 120 - 248° For such other temperature as specified by an applicable subpart of the standards or approved by the Administrator, U.S. Environmental Protection Agency, for a particular application.

The particulate mass which includes any material that condenses at or above the filtration temperature, is determined gravimetrically after removal of uncombined water.

Applicability - This method is applicable for the determination of particulate emissions from stationary sources. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

Diagram of EPA Method 5 Sampling Train



10.6 EPA Method 9 - Visual Determination of the Opacity of Emissions from Stationary Sources

Principle - The opacity of emissions from stationary sources is determined visually by a qualified observer.

Applicability - This method is applicable for the determination of the opacity of emissions from stationary sources pursuant to 60.11(b) and for qualifying observers for visually determining the opacity of emissions.

10.7 EPA Method 10 - Determination of Carbon Monoxide Emissions from Stationary Sources

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

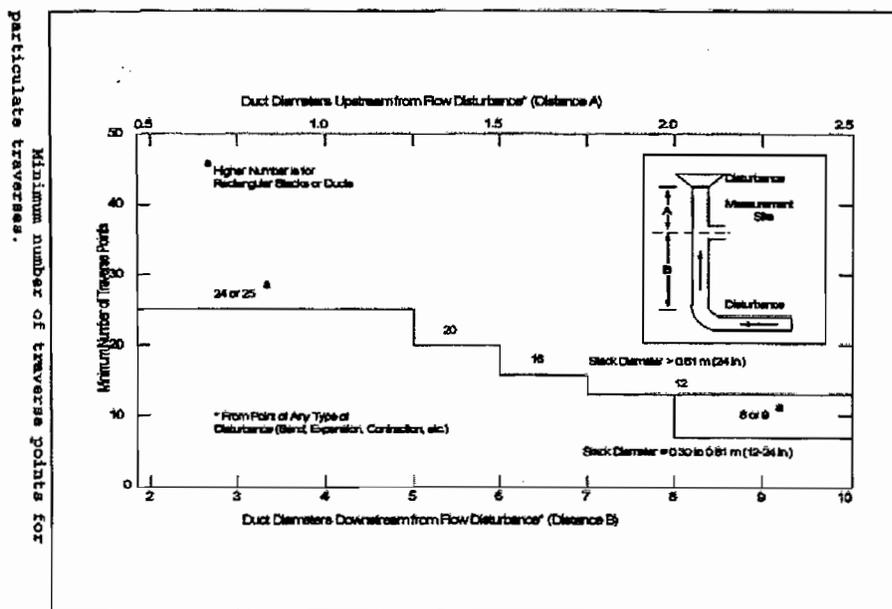
Applicability - This method is applicable for the determination of carbon monoxide emissions from stationary sources only when specified by the test procedures for determining compliance with new source performance standards. The procedures in this method were utilized in its entirety according to the procedures outlined in 40 CFR Part 60, Appendix A.

10.8 EPA Method 26A - Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources - Isokinetic Method

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

Note: During this test we were sampling for HCl so the fifth and sixth impingers, intended for the collection of halogen samples were not used.

11.0 Minimum Number of Sampling Points Minimum Number of Sampling Points Per Particulate Traverse



Circular Stacks

The number of sampling points is selected according to the above diagram, with the number of points equaling the next higher multiple of four.

Rectangular Stacks

The number of sampling points is determined using the matrix below.

Number of Traverse Points	Subarea Layout Matrix
9	3 x 3
12	4 x 3
16	4 x 4
20	5 x 4
25	5 x 5
30	6 x 5
36	6 x 6
42	7 x 6
49	7 x 7

11.1 Sampling Point Determination

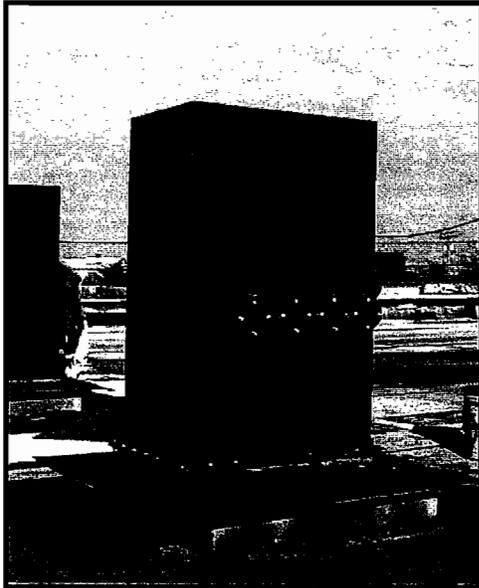
Guiding Light Cremations, LLC

Unit #2

Report 2985-S

Stack Configuration	Rectangular
Side 1 - with ports (inches)	24
Side 2 - (inches)	18.5
Equivalent Diameter	20.89
Distance A - Ports to Downstream Disturbance (inches)	24
Distance A - Ports to Downstream Disturbance (diameters)	1.15
Distance B - Ports to Upstream Disturbance (inches)	48
Distance B - Ports to Upstream Disturbance (diameters)	2.30
Number of Test Ports	6
Number of Sampling points per Traverse	5
Number of Points Sampled	25

Photograph of Stack



Traverse Point Location	
Traverse Point No.	Inches to Stack Wall
1	1.9
2	5.6
3	9.3
4	13.0
5	16.7

12.0 Summary of Field and Laboratory Data
 Guiding Light Cremations, LLC
 Unit #2
 Report 2985-S

	Run 1	Run 2	Run 3
Date	3/3/2010	3/4/2010	3/4/2010
Start Time	16:20	9:30	11:00
Stop Time	17:23	10:33	12:05
CP	0.84	0.84	0.84
Y	0.9947	0.9947	0.9947
ΔH_a (inches H ₂ O)	1.7304	1.7304	1.7304
Diameter of Nozzle (inches)	0.7503	0.7503	0.7503
Stack Diameter or Equivlant (inches)	20.89	20.89	20.89
Static Pressure (inches H ₂ O)	-0.02	-0.02	-0.02
Barometric Pressure (inches Hg)	29.88	30.07	30.07
Test Time (minutes)	60	60	60
Meter Volume (cubic feet)	53.623	54.165	57.845
Square Root ΔP (inches H ₂ O)	0.156	0.159	0.171
Orifice Pressure ΔH (inches H ₂ O)	2.458	2.583	3.000
Average Meter Temperature (Deg. F)	74.0	63.4	71.4
Average Stack Temperature (Deg. F)	1004.4	931.5	1054.1
Particulate Sample Weight (grms)	0.0347	0.0181	0.0391
Water Collected (grms)	117.1	124.1	127.8
Percent CO ₂	5.1	4.5	5.0
Percent O ₂	13.4	13.8	13.2
Molecular Weight (lbs/lb Mole)	29.36	29.27	29.33
Nozzle Area (square feet)	0.00307	0.00307	0.00307

Attachment A - Field Data



Arlington Environmental Services, Inc.

(863) 467-0555

VISIBLE EMISSION TEST

Method Used (Circle One) Method 9 203A 203B Report 2985-S

Company Name Everglades Crematorium
 Facility Name AIRS 0112701
 Street Address 2431 SW 56 Terrace
 City West Park FL Zip 33023
 Phone No. (954) 381-8888

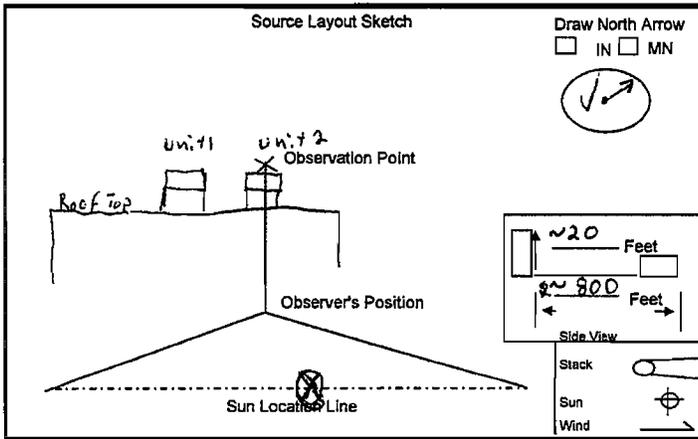
Process Human Crematory Unit # 2 Operating Mode N1801b5
 Control Equipment After burner Operating Mode N1625of

Describe Emission Point Rectangular Stack
 Ht of Emis. Point ~20' Ht Rel to Observer ~15'
 Distance to Emis. Pt. ~800' Direction to Emis. Pt (Degrees) ~338°

Verticle Angle to Obs. <18° Direction to Obs. Pt. (Degrees) ~338°
 Distance and Direction to Obs. Pt from Emission Pt ~11 above

Describe Emissions None
 Emission Color Clear Water Droplet Plume Attached Detached None X

Describe Plume Background SKY
 Background Color Blue & White Sky Conditions Clear Scattered
 Wind Speed ~12-15 MPH Wind Direction NW
 Ambient Temp. ~58°F Wet Bulb Temp. % RH



Latitude Longitude Declination

Comments

Observation Date					Start Time					Stop Time				
3-4-10					0930					1030				
Min Sec					Min Sec					Min Sec				
	0	15	30	45		0	15	30	45		0	15	30	45
1	0	0	0	0	31	0	0	0	0					
2	0	0	0	0	32	0	0	0	0					
3	0	0	0	0	33	0	0	0	0					
4	0	0	0	0	34	0	0	0	0					
5	0	0	0	0	35	0	0	0	0					
6	0	0	0	0	36	0	0	0	0					
7	0	0	0	0	37	0	0	0	0					
8	0	0	0	0	38	0	0	0	0					
9	0	0	0	0	39	0	0	0	0					
10	0	0	0	0	40	0	0	0	0					
11	0	0	0	0	41	0	0	0	0					
12	0	0	0	0	42	0	0	0	0					
13	0	0	0	0	43	0	0	0	0					
14	0	0	0	0	44	0	0	0	0					
15	0	0	0	0	45	0	0	0	0					
16	0	0	0	0	46	0	0	0	0					
17	0	0	0	0	47	0	0	0	0					
18	0	0	0	0	48	0	0	0	0					
19	0	0	0	0	49	0	0	0	0					
20	0	0	0	0	50	0	0	0	0					
21	0	0	0	0	51	0	0	0	0					
22	0	0	0	0	52	0	0	0	0					
23	0	0	0	0	53	0	0	0	0					
24	0	0	0	0	54	0	0	0	0					
25	0	0	0	0	55	0	0	0	0					
26	0	0	0	0	56	0	0	0	0					
27	0	0	0	0	57	0	0	0	0					
28	0	0	0	0	58	0	0	0	0					
29	0	0	0	0	59	0	0	0	0					
30	0	0	0	0	60	0	0	0	0					

Number of Readings Above % were Average Opacity for Highest 6 Min Period 0

Range of opacity Readings Min 0 Max 0 Average Opacity for 2nd Highest 6 Min Period 0

Observers Name (Print) Steve Webb

Observers Signature Stephen L. Webb Date 3-4-10

Organization Arlington Environmental Services, Inc.

Certified By Whitlow Enterprises Date 1/15/10



Whitlow Enterprises, LLC

www.smokeschool.net

Certifies that

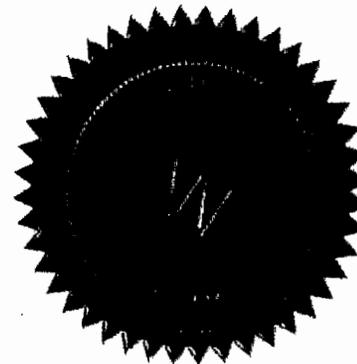
Stephen Webb of Coastal Air Consulting

**Has passed the certification test required by EPA Method 9
40 CFR 60 Appendix A and is qualified as a visible emissions evaluator.**

Certification Date: 1/15/2010 Location: Tampa/Mulberry, FL

George Whitlow

President



TMFL011510-32

Attachment B - Laboratory Data

Particulate Laboratory Data
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Run 1

Filter Number	1484	
	Final Weight	0.3891 grams
	Tare Weight	0.3713 grams
	Difference	0.0178 grams
Beaker Number	1C	
	Final Weight	114.0708 grams
	Tare Weight	114.0533 grams
	Difference	0.0175 grams
Filter Blank Number	1483	
	Final Weight	0.3700 grams
	Tare Weight	0.3699 grams
	Difference	0.0001 grams
Wash Down Blank		
	Volume of Rinse	70 mls
	Solution of Residue	0.00000784 grams/mls
	Total Residue	0.0005488 grams/mls
Total Particulate Weight		0.0347 grams
Water Collected		
	Final Impinger Water	309 MLS
	Initial Impinger Water	200 MLS
	Final Silica Weight	208.3 GRAMS
	Silica Tare Weight	200.0 GRAMS
Total Water Collected		117.1 GRAMS
Analyst	_____	

Particulate Laboratory Data
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Run 2

Filter Number	1485	
	Final Weight	0.3827 grams
	Tare Weight	0.3704 grams
	Difference	0.0123 grams
Beaker Number	2C	
	Final Weight	117.5130 grams
	Tare Weight	117.5064 grams
	Difference	0.0066 grams
Filter Blank Number	1483	
	Final Weight	0.3700 grams
	Tare Weight	0.3699 grams
	Difference	0.0001 grams
Wash Down Blank		
	Volume of Rinse	95 mls
	Solution Residue	0.00000784 grams/ml
	Total Residue	0.0007448 grams/ml
Total Particulate Weight		0.0181 grams
Water Collected		
	Final Impinger Water	315 MLS
	Initial Impinger Water	200 MLS
	Final Silica Weight	209.3 GRAMS
	Silica Tare Weight	200.0 GRAMS
Total Water Collected		124.1 grams

Analyst _____

Particulate Laboratory Data
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Run 3 _____

Filter Number	1486	
	Final Weight	0.4004 grams
	Tare Weight	0.3677 grams
	Difference	0.0327 grams
Beaker Number	3C	
	Final Weight	114.4563 grams
	Tare Weight	114.4492 grams
	Difference	0.0071 grams
Filter Blank Number	1483	
	Final Weight	0.3700 grams
	Tare Weight	0.3699 grams
	Difference	0.0001 grams
Wash Down Blank		
	Volume of Rinse	75 mls.
	Solution Residue	0.00000784 grams/ml.
	Total Residue	0.000588 grams
Total Particulate Weight		0.0391 grams
Water Collected		
	Final Impinger Water	317 mls.
	Initial Impinger Water	200 mls.
	Final Silica Weight	211.0 grams
	Silica Tare Weight	200.0 grams
Total Water Collected		127.8 grams

Analyst _____

Attention: William D. Arlington
Arlington Environmental Services Inc
605 Park Street, Suite 209
Okeechobee, FL
USA 34974

Report Date: 2010/03/30

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B032474
Received: 2010/03/18, 23:30

Sample Matrix: Impinger Solution
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hydrogen Halides in H2SO4 Imp. @	8	2010/03/26	2010/03/26	BRL SOP-00108	EPA Method 26A
Volume of Sulfuric Acid Impinger	8	N/A	2010/03/26		

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed in Maxxam Mississauga under Maxxam Burlington SCC Accreditation

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

LINA BARRETO, Project Manager Assistant
Email: Lina.Barreto@maxxamanalytics.com
Phone# (905) 817-5700

=====

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Total cover pages: 1

Page 1 of 7

Maxxam Job #: B032474
 Report Date: 2010/03/30

RESULTS OF ANALYSES OF IMPINGER SOLUTION

Maxxam ID		FJ1059	FJ1060		FJ1061	FJ1062	FJ1065		FJ1066		
Sampling Date		2010/03/15	2010/03/02		2010/03/04	2010/03/04	2010/03/04		2010/03/11		
	Units	BLANK M26A-H2SO4	2983-S-1-HCL 3/02	RDL	2985-S-1-HCL 3/04	2985-S-2-HCL 3/04	2985-S-3-HCL 3/04	RDL	2996-S-1-HCL 3/11	RDL	QC Batch

Volume	ml	400	400	1	400	400	400	1	400	1	2110433
Hydrochloric Acid	ug	<200	3700	200	31000	30000	44000	400	8300	200	2110447

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam ID		FJ1067	FJ1068		
Sampling Date		2010/03/11	2010/03/11		
	Units	2996-S-2-HCL 3/11	2996-S-3-HCL 3/11	RDL	QC Batch

Volume	ml	400	400	1	2110433
Hydrochloric Acid	ug	9800	10000	200	2110447

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: B032474
Report Date: 2010/03/30

Test Summary

Maxxam ID FJ1059 **Collected** 2010/03/15
Sample ID BLANK M26A-H2SO4 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam ID FJ1060 **Collected** 2010/03/02
Sample ID 2983-S-1-HCL 3/02 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam ID FJ1060 Dup **Collected** 2010/03/02
Sample ID 2983-S-1-HCL 3/02 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S

Maxxam ID FJ1061 **Collected** 2010/03/04
Sample ID 2985-S-1-HCL 3/04 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam ID FJ1062 **Collected** 2010/03/04
Sample ID 2985-S-2-HCL 3/04 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam ID FJ1065 **Collected** 2010/03/04
Sample ID 2985-S-3-HCL 3/04 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam Job #: B032474
Report Date: 2010/03/30

Test Summary

Maxxam ID FJ1066 **Collected** 2010/03/11
Sample ID 2996-S-1-HCL 3/11 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam ID FJ1067 **Collected** 2010/03/11
Sample ID 2996-S-2-HCL 3/11 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam ID FJ1068 **Collected** 2010/03/11
Sample ID 2996-S-3-HCL 3/11 **Shipped**
Matrix Impinger Solution **Received** 2010/03/18

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hydrogen Halides in H2SO4 Imp.	IC/SPEC	2110447	2010/03/26	2010/03/26	A S
Volume of Sulfuric Acid Impinger		2110433	N/A	2010/03/26	A S

Maxxam Job #: B032474
Report Date: 2010/03/30

GENERAL COMMENTS

Results relate only to the items tested.

Arlington Environmental Services Inc
 Attention: William D. Arlington
 Client Project #:
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: GB032474

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
2110447 A_S	Matrix Spike (FJ1060)	Hydrochloric Acid	2010/03/26		94	%	80 - 120
	Spiked Blank	Hydrochloric Acid	2010/03/26		101	%	90 - 110
	Method Blank	Hydrochloric Acid	2010/03/26	<200		ug	
	RPD - Sample/Sample						
	Dup	Hydrochloric Acid	2010/03/26	1.3		%	20

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
 Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
 Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Validation Signature Page

Maxxam Job #: B032474

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



FRANK MO, B.Sc., Inorganic Lab. Manager

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Attachment C - Process Data

Emission Control Device and Process Data

Company Guiding Light Cremations

Installation Unit #2

Date 3-4-10 Report No. 2985-S

Type of Installation Crematory

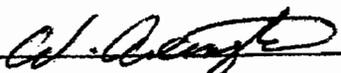
Type of Material Processed Human Remains

Type(s) of Fuel Used Natural Gas

Type of Pollution Control System AFTER burner

General Condition of Control Equipment Normal

Run No.	3-3-10 ¹	3-4-10 ²	3-4-10 ³
Start Time	16:20	9:30	11:00
Stop Time	17:23	10:33	12:05
Fuel Used	NG	NG	NG
Scrubber Water Flow Rate (GPM)	NA	NA	NA
Pressure Drop (in. H ₂ O)	NA	NA	NA
Total Operating temp °F	1680	1630	1720
Process Rate (lbs/Hr.)	175	- 180 -	
Percent Recycle	NA	NA	NA

Signature  Title _____

Name _____
(Please Print)

Attachment D - Calculations for Run 1

STACK AREA			
(SIDE 1) X (SIDE 2) / 144			
24.00	X	18.50	/ 144
		3.08	SQ.FT.

STACK PRESSURE			
BAROMETRIC PRESSURE + (STATIC PRESSURE/ 13.6)			
29.88	+	(-0.02	/13.6)
		29.88	IN.HG

METER PRESSURE			
BAROMETRIC PRESSURE + (ORIFICE PRESURE/13.6)			
29.88	+	(2.46	/ 13.6)
		30.06	IN.Hg

SAMPLE VOLUME					
17.64 X (Y) X METER VOLUME X METER PRESSURE / (METER TEMP. + 460)					
17.64	X	0.9947	X	53.623	X
					30.06 / (74.0 + 460)
				52.965	STD.CU.FT.

WATER VAPOR VOLUME		
.04715 X WATER COLLECTED		
0.04715	X	117.1
		5.52
		STD.CU.FT.

SAMPLE MOISTURE					
100 X WATER VAPOR VOLUME / (WATER VAPOR VOLUME + SAMPLE VOLUME)					
100	X	5.52	/ (5.52	+ 52.965)
				9.44	%

SATURATION MOISTURE			
100 X (VAPOR PRESSURE @ STACK TEMP. / STACK PRESSURE)			
100	X (47,255.20	/ 29.88)
			100.00 %

STACK MOISTURE FRACTION	
(THE LESSER OF SAMPLE MOISTURE OR SATURATION MOISTURE) / 100	
	0.094

DRY MOLECULAR WEIGHT OF STACK GAS					
(.28 X (100-%N2)) + (.44 X %CO2) + (.32 X %O2)					
(.28	X (100 - (5.14	+	13.43) + (.44
					5.1 + (.32
					13.43)
					29.36

MOLECULAR WEIGHT OF STACK GAS
 MOLECULAR WEIGHT X (1 - MOISTURE) + (18 X MOISTURE)

$$29.36 \times (1 - 0.094) + (18 \times 0.094)$$

$$28.29$$

STACK VELOCITY

$$85.49 \times \text{CP} \times 60 \times \text{SQ.}(\text{^P}) \times \text{SQ.}(\text{STACK TEMP} + 460) / \text{SQ.}(\text{STACK PRESSURE} \times \text{MOLECULAR WT.})$$

$$85.49 \times 0.840 \times 60 \times 0.156 \times \text{SQ.}(1004.4 + 460) / \text{SQ.}(29.88 \times 28.29)$$

$$887 \text{ FPM}$$

VOLUMETRIC FLOW RATE (ACFM)
 STACK AREA X STACK VELOCITY

$$3.08 \times 887$$

$$2734 \text{ ACFM}$$

VOLUMETRIC FLOW RATE (SCFM) DRY

$$17.64 \times (\text{ACFM}) \times \text{STACK PRESSURE} \times (1 - \text{MOISTURE}) / (\text{STACK TEMP.} + 460)$$

$$17.64 \times 2734 \times 29.88 \times (1 - 0.094) / (1004.4 + 460)$$

$$891 \text{ SCFM (DRY)}$$

CONCENTRATION (gr/dscf)
 Total Particulate Weight X 15.43 / Sample Volume

$$0.0347 \times 15.43 / 52.96$$

$$0.0101$$

CONCENTRATION@7% O2 (gr/dscf)
 Concentration X 13.9 / (20.9 - %o2)

$$0.0101 \times 13.9 / (20.9 - 13.43)$$

$$0.0188$$

MASS EMISSION RATE (LBS./HR.)
 CONCENTRATION X (SCFM- DRY) X 60 / 7000

$$0.0101 \times 891 \times 60 / 7000$$

$$0.08 \text{ LBS/HR}$$

PERCENT ISOKINETIC

$$\frac{.0945 \times (\text{STACK TEMP.} + 460) \times \text{SAMPLE VOLUME} \times 60}{(\text{STACK PRES.} \times \text{VELOCITY} \times \text{NOZZLE AREA} \times \text{TEST TIME} \times (1 - \text{MOISTURE}))}$$

$$\frac{0.0945 \times (1004.38 + 460) \times 52.96 \times 60}{29.88 \times 887 \times 0.00307 \times 60.00 \times (1 - 0.094)}$$

$$99.51 \%$$

CALCULATIONS FOR RUN 1
Guiding Light Cremations, LLC
Unit #2
Report 2985-S

Page 3 of 3

Note Emissions Calculation for Correcting Pollutant Emission to 7% O2, 50% Excess Air, and 12% CO2 are provided for HCl but are the same for the rest of the pollutants (PM and Carbon Monoxide)

PERCENT EXCESS AIR

$$0.264 \times \frac{100 \times (\%O_2(\text{MEASURED}) - 0.5 \times \text{PPM}_{CO} \div 10,000\%/\text{PPM})}{100 - (\%O_2 + \%CO_2 + \text{PPM}_{CO} \div 10,000\%/\text{PPM}) - (\%O_2 - 0.5 \times (\text{PPM}_{CO} \div 10,000\%/\text{PPM}))}$$

$$0.264 \times \frac{100 \times (13.4 - 0.5 \times (0.42 \div 10,000))}{100 - (13.4 + 5.1 + (0.42 / 10,000)) - (13.4 - 0.5 \times 0.42 / 10,000)}$$

Percent Excess Air = **165.11%**

CONCENTRATION HCl (VOLUME)

$$\text{PPM (volume @ 20 deg C)} = \text{HCl(ug/dscf)} \times 24040 / (28.32 \times M \times 10^3)$$

$$\text{PPM} = \text{HCl(ug/dscf)} \times 24040 / (28.32 \times 36.461 \times 10^3)$$

$$\text{PPM} = 585.29 \times 24.040 / (28.32 \times 36.461 \times 10^3)$$

HCl Concentration = **13.63 PPM**

EMISSIONS CORRECTED TO 7% O2

$$\text{Pollutant Concentration} \times (\%O_2 (\text{Air}) - \%O_2 (\text{Referenced})) / (\%O_2 (\text{Air}) - \%O_2 (\text{Measured}))$$

$$13.63 \times (20.9 - 7) / (20.9 - 13.4)$$

HCl @ 7% O2 = **25.26 PPM**

EMISSIONS CORRECTED TO 50% EXCESS AIR

$$\frac{\text{PPM}_{HCl} (100 + \text{EXCESS AIR})}{150}$$

$$\frac{13.63 (100 + 165.11)}{150}$$

HCl @ 50% Excess Air = **24.09 PPM**

EMISSIONS CORRECTED TO 12% CO2

$$\text{Pollutant Concentration} \times (\%CO_2 (\text{Air}) - \%CO_2 (\text{Referenced})) / (\%CO_2 (\text{Air}) - \%CO_2 (\text{Measured}))$$

$$13.63 \times (0.03 - 12) / (0.03 - 5.1)$$

HCl Concentration @ 12% CO2 = **32.18 PPM**

ResidenceTime Unit 2

CORRECTION FOR QUENCHED AIR AT OUTLET			
SCC DRY AIR			
$(M \times \text{ENTHALPY CHANGE})_{\text{scc}} = (M \times \text{ENTHALPY CHANGE})_{\text{amb}}$			
H(M _{scc}) =		152.5	BTU/lbm
H(M _{amb}) =		250.1	BTU/lbm
M(amb) =		0.610	x M(scc)
M(scc) + M(amb) =		69.660	lb/min
M(scc)AIR =		43.274	lb/min
SCC H2O			
$M(\text{scc})\text{H}_2\text{O} + M(\text{amb})\text{H}_2\text{O} = M(\text{outlet})\text{H}_2\text{O}$			
M(amb.) H2O =		0.02	lb/lb dry air
M(amb.) AIR =		26.39	lb/min
M(amb.) H2O =		0.53	lb/min
M(scc) H2O =		2.14	lb/min
SCC VOLUMETRIC FLOW			
V = MRT/PM	@	1624	F
		14.77	psi
AIR:	V =	2261.3	ACFM
H2O:	V =	179.9	ACFM
TOTAL SCC:	V =	2441.2	ACFM
SCC RESIDENCE TIME			
RESIDENCE TIME =		1.75	SECONDS

Attachment E - Calibration Data

ANNUAL METER CALIBRATION		METER NO. 002047		ORIFICE SET NO. JC40-73																
DATE	9/20/2009	Y=	0.9947	MAX % VARIATION	1.8562%	PASS														
BAROMETRIC PRESSURE	29.98	^Ha=	1.7304	MAX % VARIATION	1.2487%	PASS														
CRITICAL ORIFICE DATA																				
ORIFICE SERIAL NO.	ORIFICE K FACTOR	ACTUAL VACUUM	^H (IN H2O)	TIME (MIN.)	AMBIENT TEMP INITIAL	AMBIENT TEMP. FINAL	METER TEMP. INITIAL	METER TEMP. FINAL	METER READING INITIAL	METER READING FINAL	VM (CU.FT.)	VM CORRECTED	Vcr STD	Vcr NOMINAL	Y	VARIATION	^H (IN. H2O)	VARIATION		
40	0.2435	24.0	0.31	10	83	83	82	83	719.500	722.767	3.2670	3.1872	3.1328	3.2166	0.9829	0.0015	1.7327	0.0037		
40	0.2435	24.0	0.31	10	83	83	83	84	722.767	726.050	3.2830	3.1969	3.1328	3.2166	0.9799	-0.0015	1.7295	0.0005		
40	0.2435	24.0	0.31	10	83	83	85	85	726.050	729.337	3.2870	3.1920	3.1328	3.2166	0.9814	0.0000	1.7247	-0.0042		
AVERAGE															0.9814	0.0186	1.7290	0.0008		
48	0.3557	22.5	0.66	10	84	84	86	86	730.400	735.138	4.7380	4.5966	4.5721	4.7031	0.9947	-0.0030	1.7208	0.0005		
48	0.3557	22.5	0.66	10	84	84	86	87	735.138	739.858	4.7200	4.5749	4.5721	4.7031	0.9994	0.0017	1.7193	-0.0011		
48	0.3557	22.0	0.66	10	85	85	87	87	739.858	744.580	4.7220	4.5727	4.5679	4.7074	0.9980	0.0013	1.7208	0.0005		
AVERAGE															0.9977	0.0023	1.7203	0.0058		
55	0.4616	19.5	1.15	10	86	86	88	89	745.400	751.583	6.1830	5.9783	5.9224	6.1145	0.9907	-0.0057	1.7788	0.0268		
55	0.4616	18.0	1.15	10	87	87	90	90	751.583	757.678	6.0950	5.8771	5.9170	6.1201	1.0068	0.0105	1.7772	0.0252		
55	0.4616	18.0	1.10	10	88	88	91	91	757.678	763.873	6.1950	5.9620	5.9116	6.1257	0.9916	-0.0048	1.7000	-0.0520		
AVERAGE															0.9963	0.0037	1.7520	0.0125		
63	0.5916	20.5	1.85	10	88	88	91	92	765.300	773.178	7.8780	7.5887	7.5765	7.8509	0.9984	0.0020	1.7390	0.0021		
63	0.5916	20.5	1.85	10	88	88	92	92	773.178	781.096	7.9180	7.6203	7.5765	7.8509	0.9943	-0.0021	1.7375	0.0005		
63	0.5916	20.5	1.85	10	88	88	93	93	781.096	789.010	7.9140	7.6027	7.5765	7.8509	0.9966	0.0002	1.7343	-0.0026		
AVERAGE															0.9964	0.0036	1.7369	0.0038		
73	0.8234	17.5	3.55	10	88	88	93	94	790.000	800.963	10.9630	10.5659	10.5451	10.9270	0.9980	-0.0039	1.7164	0.0026		
73	0.8234	17.5	3.55	10	88	88	94	95	800.963	811.885	10.9220	10.5074	10.5451	10.9270	1.0036	0.0017	1.7133	-0.0005		
73	0.8234	17.5	3.55	10	88	88	95	95	811.885	822.812	10.9270	10.5028	10.5451	10.9270	1.0040	0.0021	1.7118	-0.0021		
AVERAGE															1.0019	0.0019	1.7139	0.0096		

SEMI ANNUAL CALIBRATION		DATE	3/21/2009															
		BAROMETRIC PRESSURE																
		30.12																
ORIFICE SERIAL NO.	ORIFICE K FACTOR	ACTUAL VACUUM	^H (IN H2O)	TIME (MIN.)	AMBIENT TEMP INITIAL	AMBIENT TEMP. FINAL	METER TEMP. INITIAL	METER TEMP. FINAL	METER READING INITIAL	METER READING FINAL	VM (CU.FT.)	VM CORRECTED	Vcr STD	Vcr NOMINAL	Y	VARIATION	^H (IN. H2O)	VARIATION
55	0.4616	21.0	1.15	10	76	75	82	81	679.000	685.182	6.1820	6.0828	6.0082	6.0555	0.9877	-0.0086	1.7590	-0.0011
55	0.4616	21.0	1.15	10	75	75	81	80	685.182	691.342	6.1600	6.0723	6.0110	6.0526	0.9899	-0.0064	1.7606	0.0005
55	0.4616	21.0	1.15	10	75	74	80	80	691.342	697.478	6.1360	6.0543	6.0138	6.0498	0.9933	-0.0030	1.7606	0.0005
AVERAGE															0.9903	-0.0060	1.7600	0.0171
																PASS	PASS	

METER COMPARISON CHECK (Yqa)		Y _{qa} = (O / Vm) X sqrt(.319 x Tm X 29 / (^Ha x (Pb + (Havg / 13.6) x Md))) X sqq ^H avg			
	Run 1	Run 2	Run 3	Average	
Y _{qa} =	0.9871	0.9884	1.0045	0.9934	

THERMOCOUPLE CALIBRATION		
DATE	9/20/2009	
	TC-1 (DEG F)	ASTM THERMOMETER (DEG F)
ICE	31	32
BOILING H2O	211	212
OIL	354	352

NOZZLE CALIBRATION			
DATE	3/4/2010		
READINGS IN (IN.)	AVERAGE		
#24	0.750	0.750	0.7503

PITOT TUBE CP=.84 ACCORDING TO DESIGN SPECIFICATIONS

Nozzle Calibration

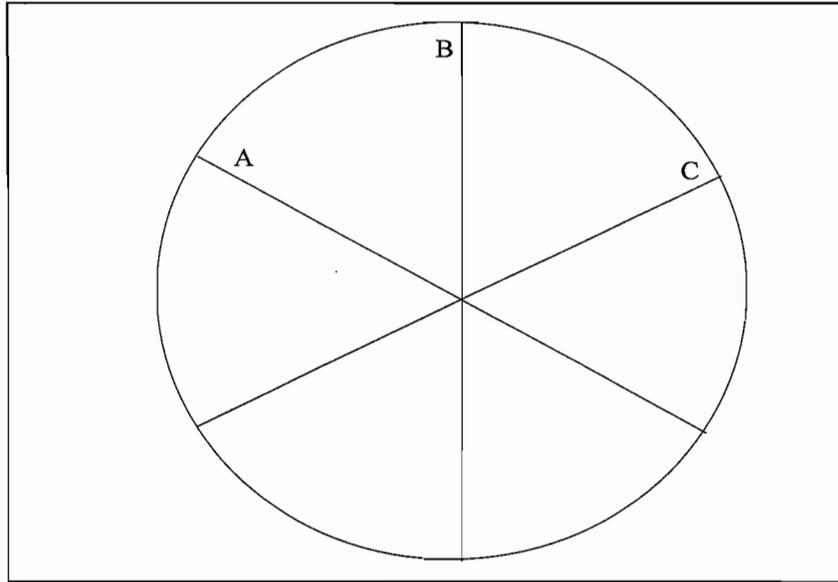
Nozzle ID #24

A = 0.750

B = 0.750

C = 0.751

Average 0.7503

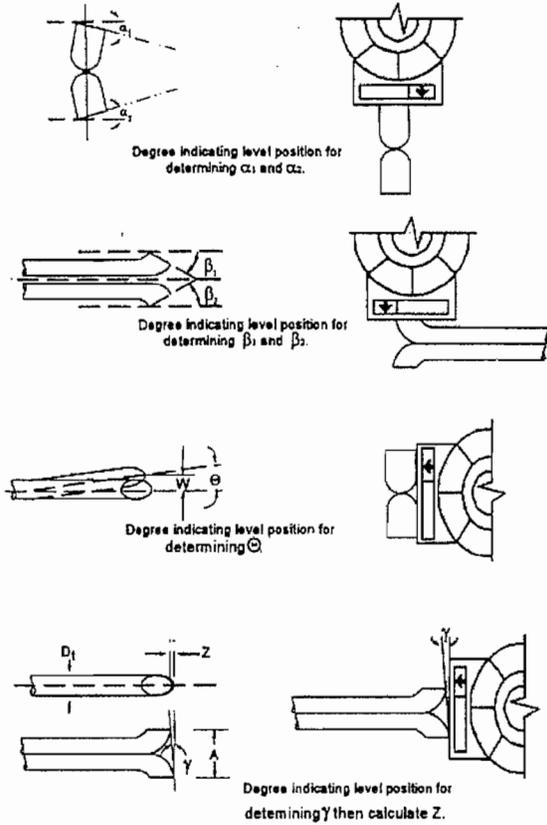


Calibration Date 3/4/2010

Calibrated by *NA*

PITOT CALIBRATION

(Type S Pitot Tube Inspection)



Level and Perpendicular?	Yes
Obstruction?	No
Damaged?	No
α_1 ($-10^\circ \leq \alpha_1 \leq +10^\circ$)	2
α_2 ($-10^\circ \leq \alpha_2 \leq +10^\circ$)	0
β_1 ($-5^\circ \leq \beta_1 \leq +5^\circ$)	1
β_2 ($-5^\circ \leq \beta_2 \leq +5^\circ$)	1
γ	1
θ	-2
$z = A \tan \gamma$ ($\leq 0.125^\circ$)	0.017
$w = A \tan \theta$ ($\leq 0.03125^\circ$)	-0.034
D_t ($3/16'' \leq D_t \leq +3/8''$)	0.375
A	0.961
$A/2 D_t$ ($1.05 \leq P_A / D_t \leq 1.51$)	1.281

Certification

I hereby certify that type S pitot tube ID# P-5AC meets or exceeds all specifications, criteria and applicable design features, and is hereby assigned a pitot tube calibration factor of 0.84.

Certified by: *[Signature]*

Date: 9/20/09

EVERGLADES CREMATATIONS

DATE: 3/3/2010
 RUN: 1
 UNIT: 2

AVG. ADJUSTED CO ppmvd @ 7% O2	0.79
CORRECTED O2 %	13.43
CORRECTED CO2 %	5.14
CORRECTED CO ppmvd	0.42

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

RANGE SETTING	CAL GASES	CERTIFIED GAS VALUE	ANALYZER VALUE	DIFFERENCE PPM	% SPAN	ANALYZER PRETEST VALUE	% SPAN	ANALYZER POSTTEST VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
25	% O2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01420B153
		12.04	12.00	-0.04	-0.18	12.00	0.00	12.00	0.00	0.00	
		22.62	22.50	-0.12	-0.53						
20	% CO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01410/B139
		9.62	9.60	-0.02	-0.12	9.60	0.00	9.60	0.00	0.00	
		17.27	17.90	0.03	0.17						
100	PPM CO	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.0	0.0	48C-68845-361
		48.5	48.4	-0.10	-0.1	48.30	-0.1	48.20	-0.2	-0.1	
		102.00	102.90	0.90	0.9						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
16:20	12.78	6.17	0.70
16:21	12.53	5.92	0.60
16:22	13.07	5.18	0.60
16:23	13.48	5.00	0.65
16:24	13.45	5.04	0.50
16:25	13.34	5.10	0.60
16:26	13.28	5.12	0.45
16:27	13.28	5.05	0.55
16:28	13.39	4.93	0.50
16:29	13.61	4.76	0.45
16:30	13.86	4.65	0.45
16:31	13.96	4.67	0.30
16:32	13.78	4.82	0.35
16:33	13.51	4.95	0.30
16:34	13.43	4.95	0.55
16:35	13.63	4.84	0.85
16:36	13.91	4.72	0.80
16:37	13.96	4.80	0.50
16:38	13.68	5.00	0.45
16:39	13.46	5.04	0.50
16:40	13.52	4.94	0.60
16:41	13.82	4.78	0.60
16:42	13.91	4.84	0.75
16:43	13.66	4.93	0.75
16:44	13.63	4.91	0.90
16:45	13.78	4.77	1.00
16:46	13.97	4.73	0.90
16:47	13.92	4.88	0.55
16:48	13.23	5.44	0.60
16:49	12.81	5.31	0.65
16:50	13.48	4.94	0.70
16:51	13.68	5.10	0.75
16:52	13.10	5.17	1.00
16:53	13.49	5.07	0.80
16:54	13.46	4.97	0.20
16:55	13.78	4.89	0.10
16:56	13.49	5.19	0.10
16:57	12.91	5.39	0.15
16:58	13.13	5.02	0.20
16:59	13.91	4.69	0.05
17:00	13.82	5.05	0.15
17:01	13.01	5.39	0.15
17:02	12.96	5.31	0.20
17:03	13.01	5.49	0.20
17:04	13.25	5.39	0.25
17:05	13.14	5.61	0.20
17:06	12.69	5.69	0.30
17:07	12.75	5.51	0.30
17:08	13.31	5.19	0.20
17:09	13.48	5.32	0.15
17:10	12.92	5.57	0.25
17:11	12.84	5.42	0.25
17:12	13.41	5.06	0.05
17:13	13.63	5.18	0.00
17:14	13.03	5.52	0.05
17:15	12.77	5.48	0.25
17:16	13.20	5.13	0.15
17:17	13.73	4.95	0.00
17:18	13.40	5.34	0.05
17:19	12.73	5.55	0.15

MEAN ANALYZER VALUES

Avg. % O2	13.39
Avg. % CO2	5.13
Avg. CO ppmvd	0.42

EVERGLADES CREMATIONS

DATE: 3/4/2010
 RUN: 2
 UNIT: 2

AVG. ADJUSTED CO ppmvd @ 7% O2	1.04
CORRECTED O2 %	13.79
CORRECTED CO2 %	4.46
CORRECTED CO ppmvd	0.53

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

RANGE SETTING	CAL GASES	CERTIFIED GAS VALUE	ANALYZER VALUE	DIFFERENCE PPM	% SPAN	ANALYZER PRETEST VALUE	% SPAN	ANALYZER POSTTEST VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
25	% O2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01420B153
		12.04	12.00	-0.04	-0.18	12.00	0.00	11.90	-0.44	-0.44	
		22.62	22.50	-0.12	-0.53						
20	% CO2	0.00	0.00	0.00	0.00	0.10	0.58	0.00	0.00	-0.58	01410/B139
		9.62	9.60	-0.02	-0.12	9.60	0.00	9.60	0.00	0.00	
		17.27	17.30	0.03	0.17						
50	PPM CO	0.00	0.00	0.00	0.0	0.10	0.1	0.00	0.0	-0.1	48C-68845-361
		48.50	48.40	-0.10	-0.1	48.60	0.2	48.10	-0.3	-0.5	
		102.00	102.90	0.90	0.9						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
9:30	11.82	7.41	0.60
9:31	10.44	7.54	1.15
9:32	11.59	5.91	1.25
9:33	13.23	4.97	1.20
9:34	13.35	5.06	0.90
9:35	13.06	5.06	0.65
9:36	13.03	5.04	0.50
9:37	13.14	4.89	0.45
9:38	13.28	4.78	0.45
9:39	13.40	4.67	0.45
9:40	13.50	4.60	0.45
9:41	13.56	4.54	0.40
9:42	13.63	4.49	0.40
9:43	13.71	4.41	0.40
9:44	13.79	4.36	0.40
9:45	13.78	4.38	0.45
9:46	13.77	4.36	0.40
9:47	13.80	4.34	0.45
9:48	13.83	4.32	0.30
9:49	13.83	4.29	0.30
9:50	13.85	4.27	0.30
9:51	13.88	4.23	0.25
9:52	13.93	4.18	0.25
9:53	13.99	4.13	0.25
9:54	14.00	4.12	0.25
9:55	14.04	4.09	0.30
9:56	14.04	4.09	0.30
9:57	14.07	4.06	0.25
9:58	14.09	4.06	0.20
9:59	13.85	4.49	0.15
10:00	13.06	4.88	0.25
10:01	12.97	4.55	0.35
10:02	14.02	4.17	1.25
10:03	14.04	4.13	0.85
10:04	14.08	4.14	0.70
10:05	14.01	4.19	0.75
10:06	13.98	4.20	0.60
10:07	13.94	4.26	0.80
10:08	13.93	4.23	0.80
10:09	13.94	4.22	0.70
10:10	13.98	4.19	0.80
10:11	14.03	4.14	0.75
10:12	14.06	4.12	0.70
10:13	14.09	4.10	0.70
10:14	14.13	4.10	0.70
10:15	14.16	4.07	0.75
10:16	14.19	4.07	0.70
10:17	14.17	4.06	0.70
10:18	14.15	4.09	0.65
10:19	14.18	4.11	0.65
10:20	14.11	4.14	0.65
10:21	14.09	4.16	0.60
10:22	14.06	4.18	0.60
10:23	14.05	4.19	0.65
10:24	14.02	4.24	0.65
10:25	13.92	4.35	0.70
10:26	13.79	4.44	0.70
10:27	13.69	4.53	0.65
10:28	13.56	4.64	0.65
10:29	13.39	4.80	0.65

MEAN ANALYZER VALUES

Avg. % O2	13.68
Avg. % CO2	4.48
Avg. CO ppmvd	0.58

EVERGLADES CREMATIONS

DATE: 3/4/2010
 RUN: 3
 UNIT: 2

AVG. ADJUSTED CO ppmvd @ 7% O2	0.74
CORRECTED O2 %	13.23
CORRECTED CO2 %	5.03
CORRECTED CO ppmvd	0.41

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

RANGE SETTING	CAL GASES	CERTIFIED GAS VALUE	ANALYZER VALUE	DIFFERENCE PPM	% SPAN	ANALYZER PRETEST VALUE	% SPAN	ANALYZER POSTTEST VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
25	% O2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01420B153
		12.04	12.00	-0.04	-0.18	11.90	-0.44	11.90	-0.44	0.00	
		22.62	22.50	-0.12	-0.53						
20	% CO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01410/B139
		9.62	9.60	-0.02	-0.12	9.60	0.00	9.60	0.00	0.00	
		17.27	17.30	0.03	0.17						
50	PPM CO	0.00	0.00	0.00	0.0	0.00	0.0	0.00	0.0	0.0	48C-68845-361
		48.50	48.40	-0.10	-0.1	48.10	-0.3	47.80	-0.6	-0.3	
		102.00	102.90	0.90	0.9						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
11:00	16.14	3.07	1.30
11:01	15.99	3.06	0.60
11:02	16.01	3.16	0.50
11:03	15.08	3.89	0.35
11:04	14.37	4.14	0.40
11:05	14.06	4.44	0.45
11:06	13.64	4.76	0.45
11:07	13.22	5.12	0.55
11:08	12.91	5.26	0.65
11:09	12.80	5.34	0.75
11:10	12.73	5.37	0.80
11:11	12.68	5.41	0.75
11:12	12.64	5.40	0.85
11:13	12.64	5.41	0.85
11:14	12.59	5.44	0.95
11:15	12.58	5.44	0.95
11:16	12.68	5.33	1.00
11:17	12.91	5.13	0.90
11:18	13.41	4.83	0.75
11:19	13.66	4.86	0.65
11:20	13.33	5.10	0.75
11:21	13.09	5.13	0.70
11:22	13.13	5.03	0.65
11:23	13.24	4.98	0.65
11:24	13.26	4.99	0.60
11:25	13.28	4.94	0.65
11:26	13.36	4.89	0.60
11:27	13.41	4.88	0.65
11:28	13.41	4.84	1.30
11:29	13.71	4.84	0.85
11:30	12.43	5.59	0.15
11:31	12.17	5.56	0.05
11:32	12.19	5.57	0.05
11:33	12.20	5.52	0.05
11:34	12.26	5.48	0.05
11:35	12.29	5.47	0.05
11:36	12.30	5.44	0.10
11:37	12.35	5.41	0.05
11:38	12.38	5.38	0.05
11:39	12.42	5.36	0.05
11:40	12.43	5.36	0.20
11:41	12.46	5.31	0.10
11:42	12.54	5.28	0.10
11:43	12.54	5.28	0.10
11:44	12.58	5.24	0.10
11:45	12.58	5.28	0.10
11:46	12.59	5.23	0.10
11:47	12.63	5.22	0.10
11:48	12.65	5.17	0.15
11:49	12.74	5.13	0.15
11:50	12.78	5.10	0.05
11:51	12.83	5.08	0.05
11:52	12.85	5.06	0.05
11:53	12.90	5.03	0.05
11:54	12.96	4.98	0.05
11:55	13.02	4.93	0.05
11:56	13.08	4.92	0.10
11:57	13.09	4.90	0.10
11:58	13.12	4.88	0.05
11:59	13.21	4.77	0.00

MEAN ANALYZER VALUES

Avg. % O2	13.07
Avg. % CO2	5.02
Avg. CO ppmvd	0.40

Attachment F - Project Participants

Project Participants

Arlington Environmental Services, Inc.

William Arlington
Project Director

Rufus Rhoden
Field Technician

Kaye Arlington
Laboratory Analyst

Debra Carter
Computer Analysis

Coastal Air Consultants, Inc

Stephen Webb

Guiding Light Cremations, Unit 2

Geronimo Mena
Facility Manager

Broward County Environmental Management

Courtney Pitters
Inspector

Attachment 6
Process Flow Diagram

Process Flow Diagram

