

**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, F.A.C. (\$100 as of the effective date of this form)

0690035-005

**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): 0690035-004-AG  
The facility currently operates under permit: 0690035-004-AG
- 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.)

Beyers Funeral Home, 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.)

Beyer Funeral Home Crematory

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

Street Address: 1123 W. Main Street

City: Leesburg

County: Lake

Zip Code: 34748-4926

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: Roger Beyers Jr., Owner

Owner/Authorized Representative Mailing Address

Organization/Firm: Beyers Funeral Home, Inc.

Street Address: 1123 W. Main Street

City: Leesburg

County: Lake

Zip Code: 34748-4926

Owner/Authorized Representative Telephone Numbers

Telephone: 352-787-4343

Fax: 352-787-4674

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:

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.*

Roger A. Beyers  
Signature

Sept. 4, 2012  
Date

**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.

**Equipment Description**

The scope of this application is to add a second crematory model "Classic" Plus to the existing facility. The serial number for this crematory is not available at the time of the application. The "Classic" Plus is a multi-chamber unit having an average 150 - 200 lbs/hr fired with LPG. The primary chamber burner is rated at 1,000,000 Btu/hr, and the secondary chamber burner is rated at 1,500,000 Btu/hr, for a total of 2,500,000 Btu/hr. Control of air pollution is achieved through the design of the "Classic" Plus 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 and recorder, primary burner temperature interlock (prevents primary burner from firing prior to the secondary chamber reaching its set point temperature), UV continuous scanning flame detectors on burners, and an opacity sensor which can temporarily suspend operation of the primary chamber burner. In attachment 2 we have include a copy of the crematory spec.

**Emissions Summary**

Emission Summary and Calculations – In Attachment 1 we have included our retention time calculations. See Attachment 3 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. The emission for CO and PM are derived from result of as similar series but not identical crematory (flow rate).

*Attachment 1*  
*Retention Time Calculation*

The following are our calculations for the retention time for the "Classic" Plus crematory manufactured by U.S. Cremations Equipment:

Secondary Chamber Volume: 88 cubic ft  
ACFM from "Classic Cremator: 2827

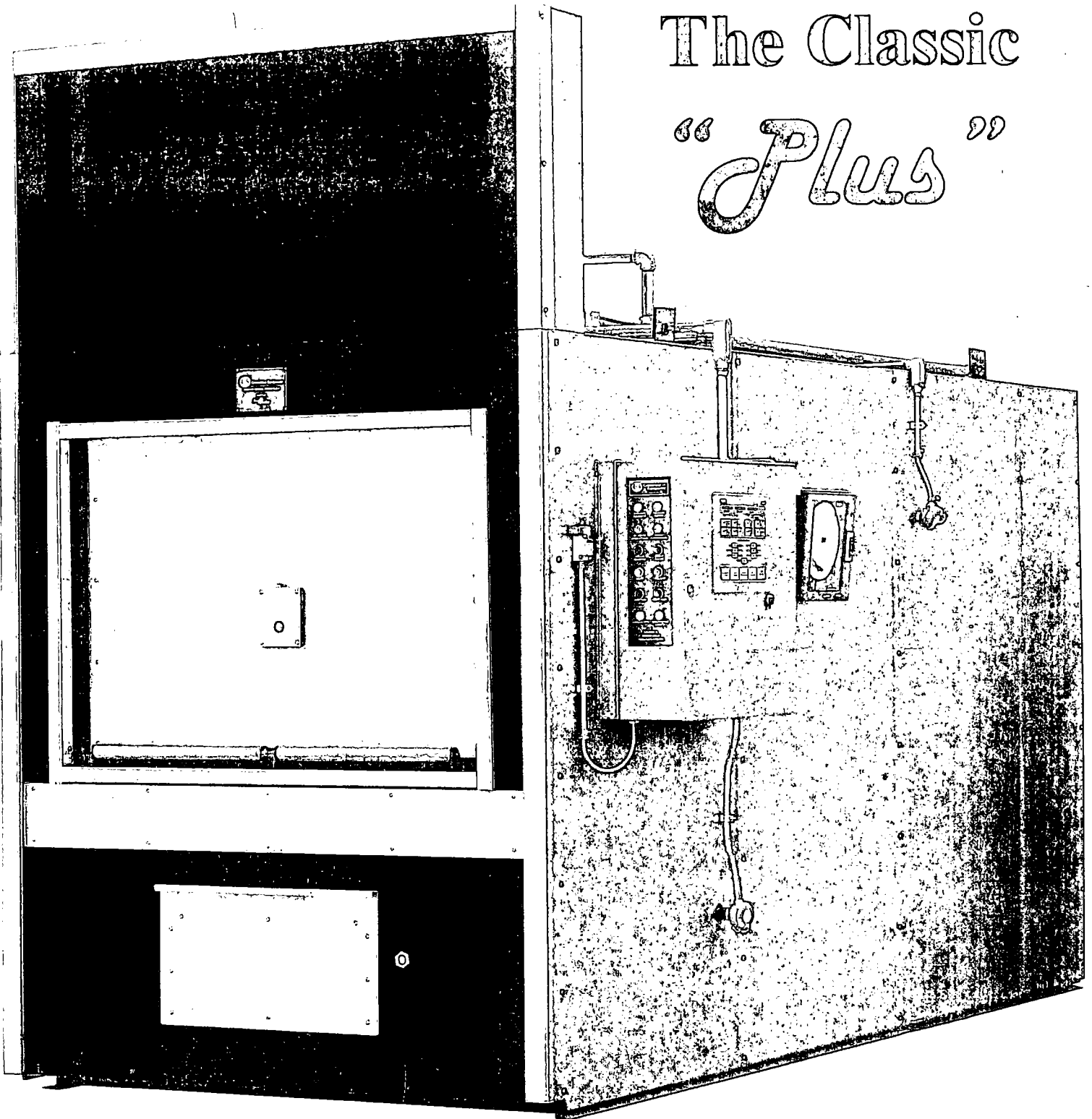
Therefore:

$88 \text{ CF} / 2827 \text{ ACFM} \times 60 \text{ Sec/min} = 1.87 \text{ Seconds}$

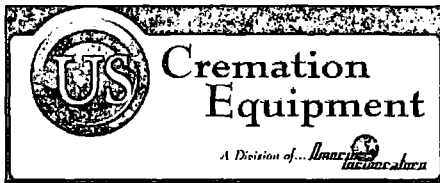
*Attachment 2*  
*Crematory Spec*

The Classic

“Plus”







DRAFT SPEC FOR NEW PRODUCT

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## HUMAN CREMATION CHAMBER SPECIFICATION

### Model US 150 "Classic-Plus"

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#### 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.

#### CREMATOR DIMENSIONS:

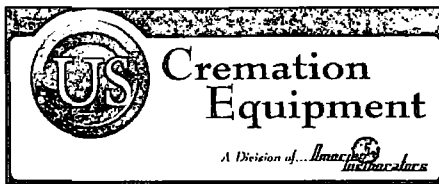
Chamber volumes: Primary - 92 CF (2.6 CM)  
Secondary - 88 CF (2.5 CM)  
Primary Chamber: 96" L x 46" W x 36" H (2438 mm x 1168 mm x 914 mm)  
Structural footprint: 156½" L x 70" W (3975 mm x 1778 mm)  
Over-all dimensions: 156½" L x 81" W (incl. Control Panel) x 114½" H  
(3975 mm x 2057 mm x 2908 mm)

#### POWER CHARGING DOOR:

Door Height: 38" (965 mm)  
Door Width: 49¾" (1264 mm)

#### PRIMARY CHAMBER OPENING:

Width: 46" (1168 mm)  
Height: 36" (914 mm)



DRAFT SPEC FOR NEW PRODUCT

**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: 1,400°F-1,800°F (760°C - 982°C)

**RETENTION TIME:**

In excess of 2 second.

**CAPACITY:**

Single load capacity of 1000 lbs per cremation cycle. Burn Rate of 150 - 300 lbs/hr

**DRAFT:**

Induced via a refractory lined draft inducer.

**SHIPPING WEIGHT:**

30,000 lbs (1360 kg)

**EMISSIONS:**

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

**EMISSION CONTROL:**

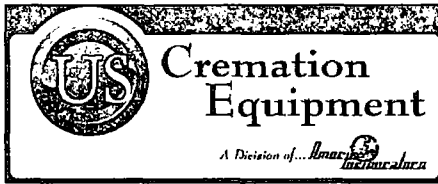
Secondary chamber equipped with one, 2,000,000 BTU/HR burner. Also equipped with an electronic exhaust gas scanner system which temporarily suspends operation of the primary chamber burner if the opacity of the exhaust gases reaches the maximum locally authorized level.

**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.



DRAFT SPEC FOR NEW PRODUCT

D. Interior Walls: 2800°F (1538°C) alumina-silicate firebrick, 2½" x 4½" 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) 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 1,000,000 BTU/HR nozzle mix, gas-fired burner. Eclipse, North American, or equal.

C. Secondary Chamber - One, 2,000,000 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:**

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

**HOT AIR DUCT:**

10 gauge carbon steel, high temperature 2-3" refractory lining, pre-drilled flanges, 24" Outside Diameter, 28" 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)

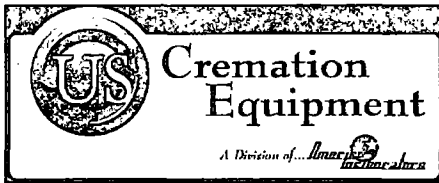
2. Flow Rate: 3,000,000 BTU/hr

**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.



DRAFT SPEC FOR NEW PRODUCT

**CREMATION PROCESS CONTROL:**

The cremation cycle is controlled by a programmable logic control (PLC) system. A 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 pen Partlow model MRC 5000 Series.

**EXTERIOR FINISH:**

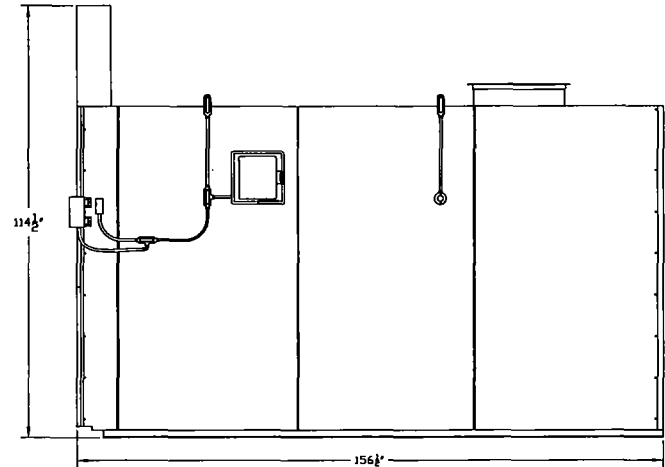
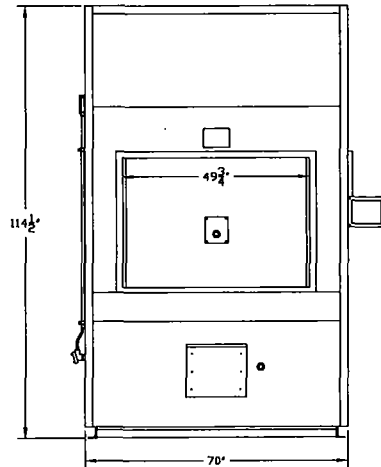
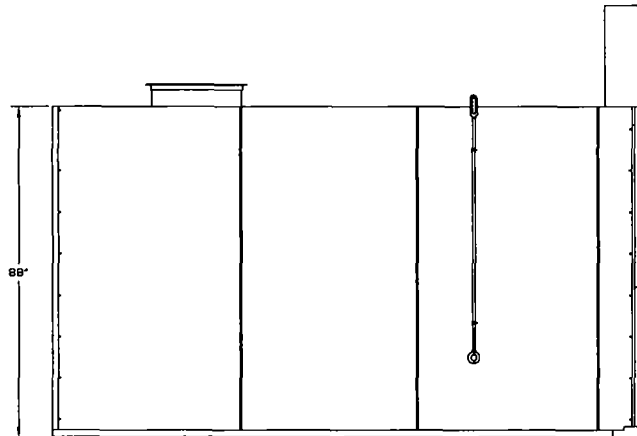
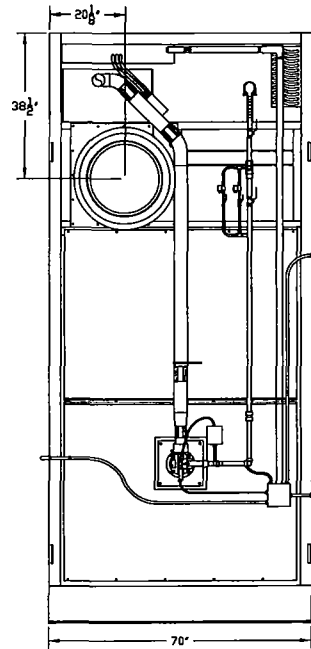
The top and rear compartments are finished with two coats of high-temperature, textured, black polyurethane. The front and side panels are powder coated in a dark grey color. The cremator is trimmed in stainless steel.

**TOOLS:**

A 700 lbs. capacity **Battery hydraulic Lift Table** and cleaning tools are provided. 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.

ITEM QTY

DESCRIPTION



NO.	QTY	DESCRIPTION	UNIT



DATE	BY	REV.	DESCRIPTION

**US CREMATION EQUIPMENT**  
 CLASSIC PLUS  
 PLAN, FRONT & SIDES  
 CLASSIC PLUS

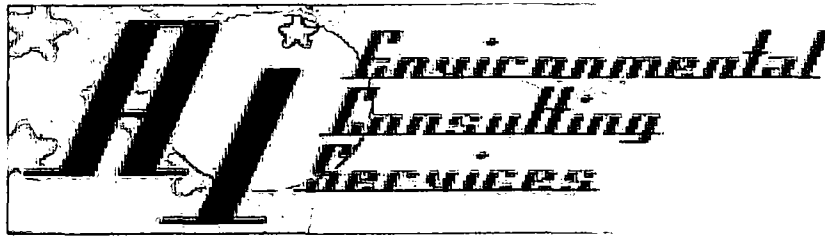
*Attachment 3*  
*Emission Calculations*

US Cremation Equipment  
Model "Classic" - Plus

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 3.49 PPM  
 $CO = 100 \text{ PPM} \times 28 \text{ MW} \times 1700 \text{ DSCFM} \times 2.595\text{E-}09 \times 60 \text{ min/hr} = 0.74 \text{ lb/hr CO}$   
 $0.74 \text{ lb/hr CO} \times 8760 \text{ hrs/yr} \times 1 \text{ ton/2000 lb} = 3.24 \text{ TPY CO}$

Actual Emissions were measured at 0.04 gr/dscfm at 7% O2  
 $PM = 0.08 \text{ gr/dscf} \times 1 \text{ pound/7000 gr} \times 1700 \text{ DSCFM} \times 60 \text{ min/hr} = 1.17 \text{ lb/hr PM}$   
 $1.17 \text{ lb/hr PM} \times 8760 \text{ hrs/yr} \times 1 \text{ ton/2000 lb} = 5.12 \text{ TPY PM}$



***General Permit Application***

***Prepared for:***

***Beyers Funeral Home Crematory  
1123 W. Main Street  
Leesburg, Florida 34748-4926  
Source ID: 0690035  
Lake County***

***Prepared By:***

***AI Environmental Consulting Services, Inc.  
598 Northlake Blvd, Ste. 1016  
Altamonte Springs, Florida 32701***

***Date: September 2012***



## *Application Contents*

- Form 62-210.920(2)(c) General Permit Application

### *Attachments*

Attachment 1	Retention Time Calculation
Attachment 2	Crematory Spec
Attachment 3	Emission Calculations



August 31, 2012

Florida Department of Environmental Protection  
FDEP Receipts  
PO Box 3070  
Tallahassee, FL 32315-3070

**Re: General Permit Application – Equipment Change/Addition  
Beyers Funeral Home  
Source ID:0690035  
Lake County**

To whom it may Concern:

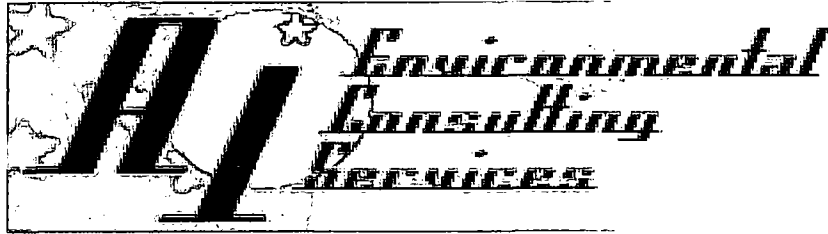
Enclosed are two (2) copies of the above referenced application along with a check made payable to the Florida Department of Environmental Protection in the amount of \$100.00 for the application fee.

I trust this application is complete; however, should you have any questions or need any additional information for issuing the general permit, please contact me at (407) 574-2021 or e-mail at AI@CFL.RR.COM.

Respectfully submitted,  
AI ENVIRONMENTAL CONSULTING SERVICES

Luis Llorens  
President/Project Manager

Enclosures: One (1) Application and check



***General Permit Application***

***Prepared for:***

***Beyers Funeral Home Crematory  
1123 W. Main Street  
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