

RECEIVED

OCT 05 2009

**ANIMAL CREMATORY  
AIR GENERAL PERMIT REGISTRATION FORM**

Bureau of Air Monitoring  
& Mobile Sources

**Part II. Notification to Permitting Office**

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

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

0950149-011

**Registration Type**

Check one:

**INITIAL REGISTRATION** - Notification of intent to:

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

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

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

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

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

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

**General Facility Information**

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

*Greenbrier of Central Florida*

**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.)

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

Street Address: *3703 W. Kelly Park Rd.*

City: *Apopka*

County: *Orange*

Zip Code: *32712*

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

*NOVEMBER 2009*

**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: *BARRY GRIMM, President*

Owner/Authorized Representative Mailing Address

Organization/Firm: *Greenbrier of Central Florida*  
Street Address: *3703 W. Kelly Park Rd.*

City: *Apopka* County: *Orange* Zip Code: *32712*

Owner/Authorized Representative Telephone Numbers

Telephone: *407 886-2620* Fax: *407 880-3072*  
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.*

*[Handwritten Signature]*  
Signature

*9-25-09*  
Date

**Design Calculations**

If this is an initial registration for a proposed new animal 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 animal crematory unit(s).

**Description of Facility**

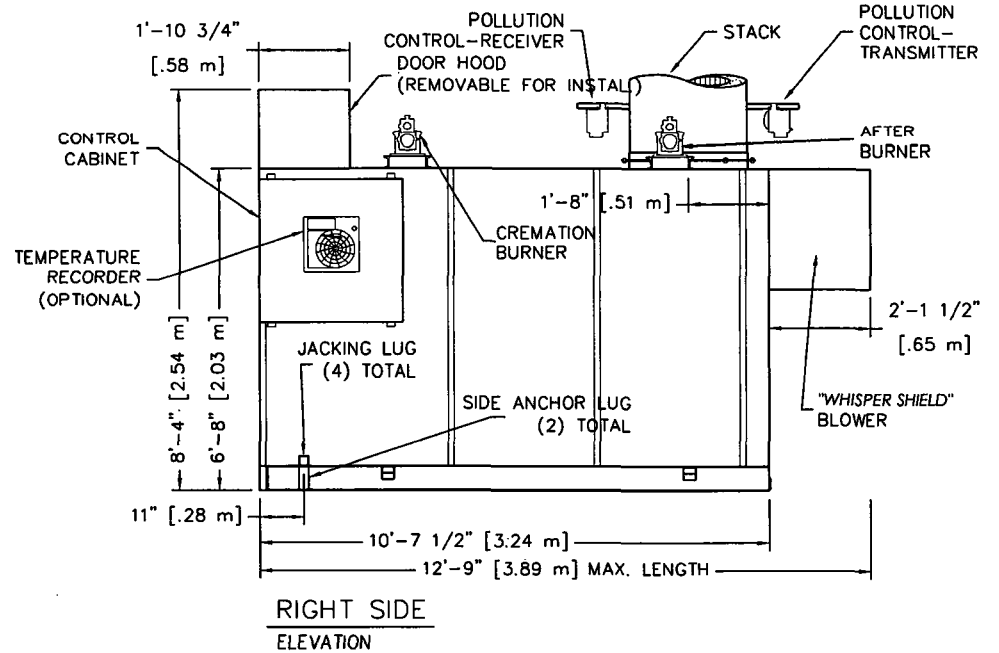
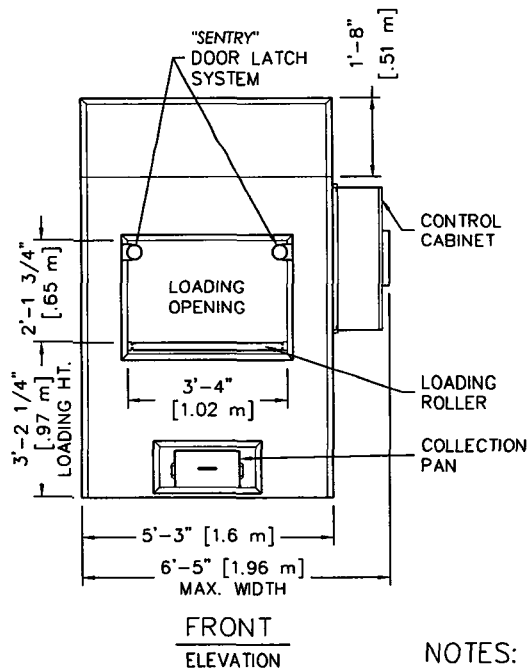
Below, or as an attachment to this form, provide a description of all crematory operations at the facility in sufficient detail to demonstrate the facility's eligibility for use of this air general permit and to provide a basis for tracking any future equipment or process changes at the facility. Describe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

Installation of a Matthews Cremation Division animal cremation unit replacing an existing unit.

(1) IEB Series 20 replacing (1) Power Pak Jr

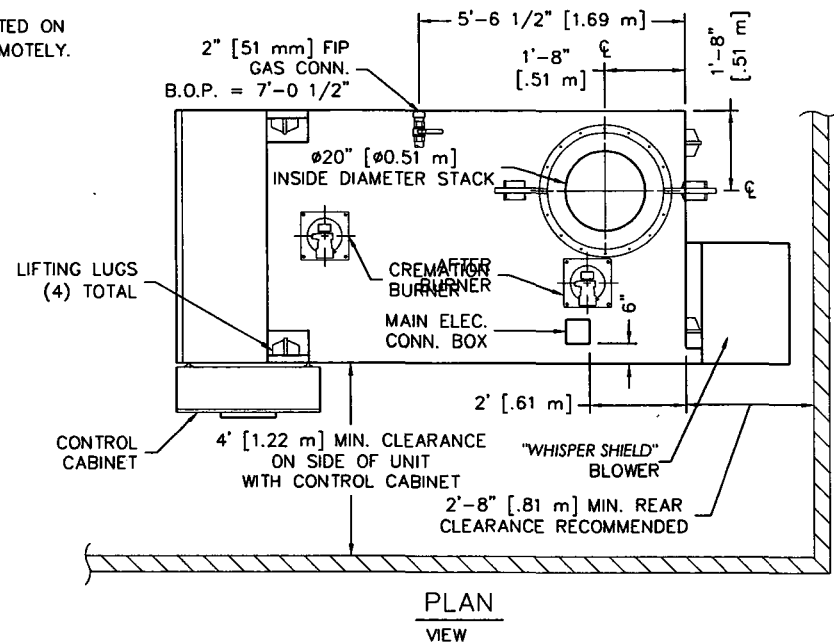
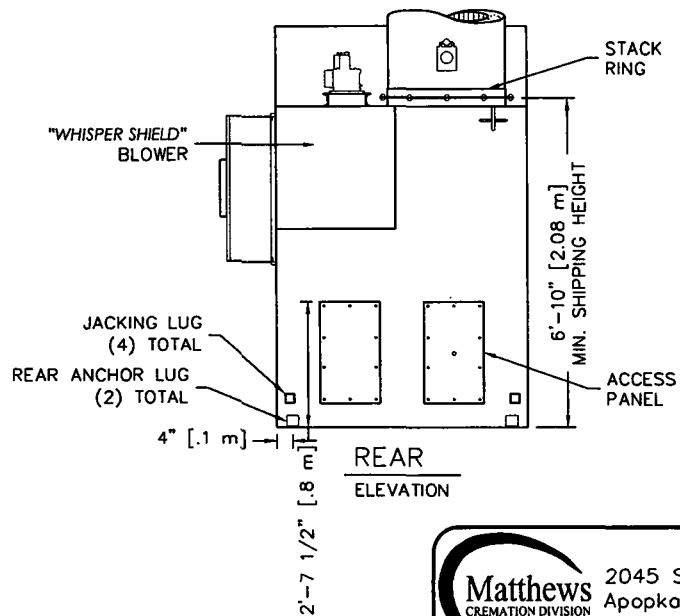
NG FIRED      E0002 - Unit #1  
IE43-PPJ

10/6/09- PER TELECON W/SECRETARY  
DEBORAH  
D. Dibble



**NOTES:**

- 1) CONTROL CABINET CAN BE MOUNTED ON THE LEFT OR RIGHT SIDE, OR REMOTELY.
- 2) CHAMBER WIDTH IS 39" [0.99m].



**Matthews**  
CREMATION DIVISION

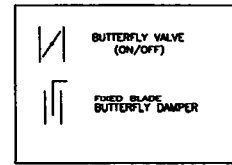
2045 Sprint Boulevard  
Apopka, Florida 32703  
USA

IEB SERIES 20

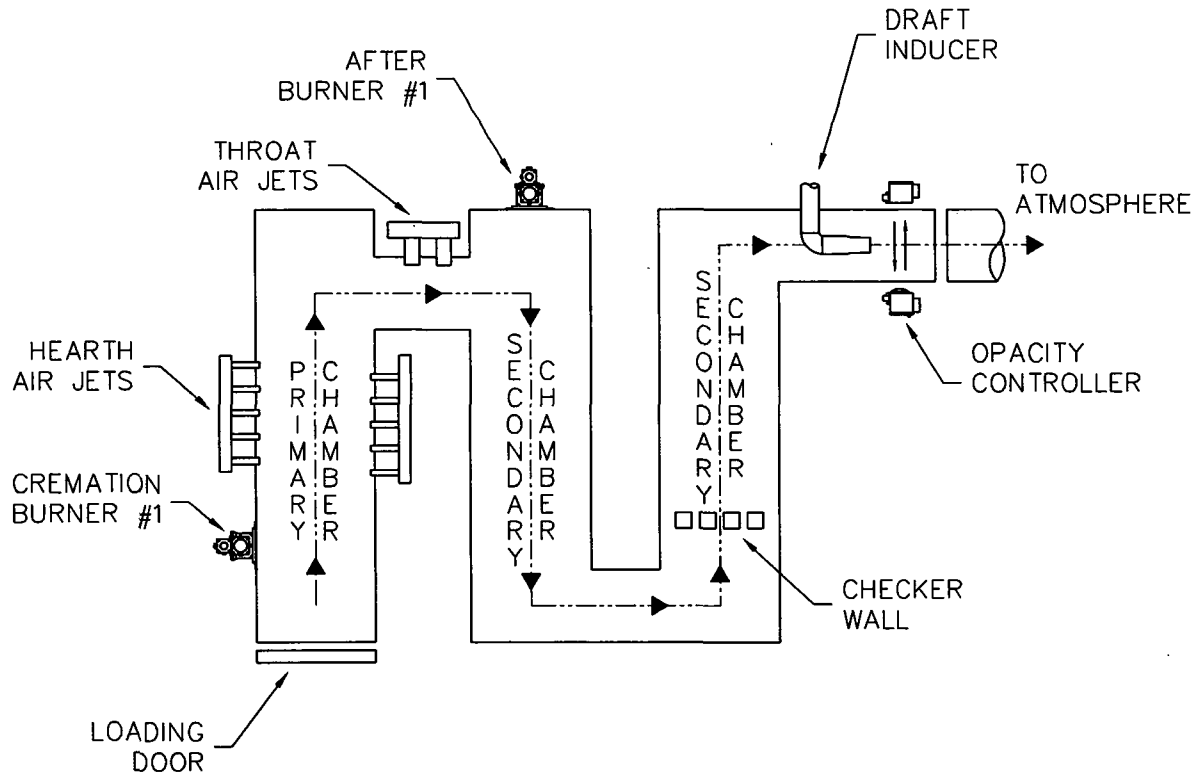
PLAN & ELEVATIONS INCL: CLEARANCES,  
REQUIREMENTS & RECOMMENDATIONS

DATE:	08-03-09	SCALE:	1/4"=1'
DRAWN:	JG/CR	PLOT SCALE:	1:48
APRVD:		SHEET:	1 OF: 2
DWG FILE:	IEB-20-MarketingPlanElevS1		
DWG #:	0000903		

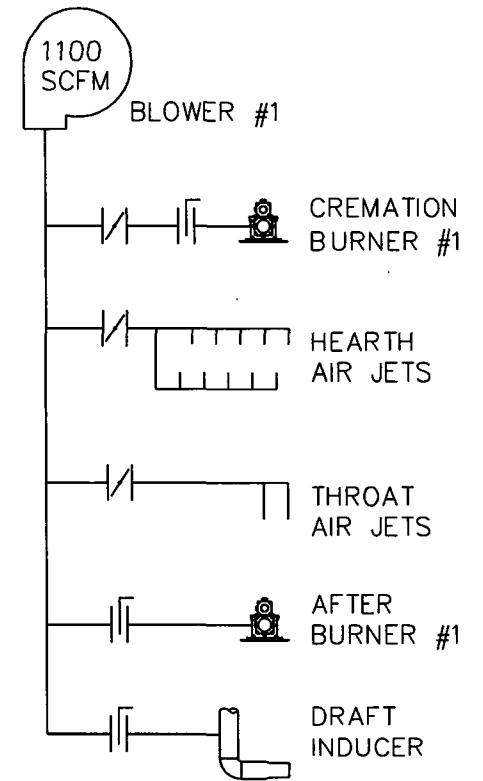
LEGEND OF SYMBOLS



FLOW DIAGRAM



AIR SCHEMATIC



**Matthews**  
CREMATION DIVISION  
2045 Sprint Boulevard  
Apopka, Florida 32703  
USA

IEB SERIES 20

FLOW DIAGRAM  
& AIR SCHEMATIC

DATE:	08-05-05	SCALE:	1/4"=1'
DRAWN:	JG/CR	PLOT SCALE:	1:48
APRVD:		SHEET:	1 OF: 1
DWG FILE:	IEB-20-FlowDiaAirSchem		
DWG #:	0000904		

## CREMATOR CLEARANCES

### RECOMMENDED

### MINIMUM

TOP: ②	2 FEET [610 mm]	6 INCHES [152 mm]
CABINET SIDE:	4 FEET [1.22 m]	4 FEET [1.22 m]
OTHER SIDE:	2 FEET [610 mm]	6 INCHES [152 mm]
FRONT:	9 FEET [2.74 m]	8 FEET [2.44 m]
REAR:	3 FEET [0.91 m]	32 INCHES [812 mm]
STACK:	6 INCHES [152 mm]	6 INCHES [152 mm]

- FOR CLEARANCES OTHER THAN THOSE SHOWN, OR FOR SPECIAL REQUIREMENTS, CONSULT YOUR MCD REP.
- FROM HIGHEST POINT ON UNIT.
- CONTROL CABINET MOUNTS ON UNIT'S LEFT OR RIGHT SIDES, OR REMOTELY. (SEE PLAN VIEW, SHEET 1).
- REAR OF UNIT REFERS TO THE "BACK PLATE", RATHER THAN THE BACK OF THE "WHISPER SHIELD". (SEE PLAN VIEW, SHEET 1).

## CREMATOR REQUIREMENTS

**FUEL:** A PRESSURE REGULATOR ADJUSTABLE TO 7" [178 mm] W.C. FOR NATURAL GAS, OR 11" [279 mm] W.C. FOR LP GAS.

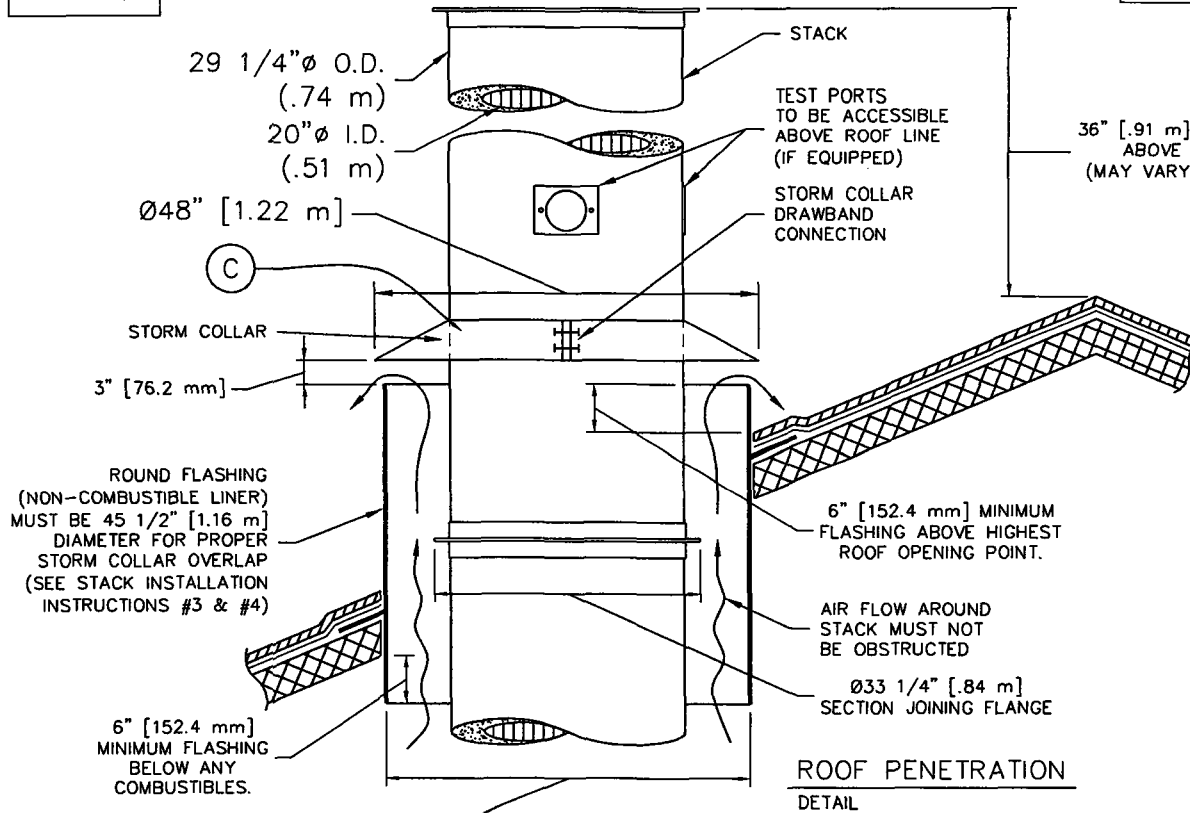
**CAPACITY:** RANGES FROM 2.0 TO 3.0 MILLION BTU/HR [2.1 TO 3.1 MILLION KILOJOULES/HR] DEPENDING UPON AMOUNT OF BURNERS.

**ELECTRICAL:** 230 VOLT, 3 $\phi$ , (40A BREAKER) AND 115v (10A BREAKER), OR 230 VOLT, 1 $\phi$ , (70A BREAKER) AND 115v (10A BREAKER) 50/60 HERTZ

**AIR:** LOUVER NEAR THE REAR OF THE UNIT CAPABLE OF PASSING 2,500 CU FT/MIN [70.8 CU M/MIN] OF FREE AIR (36" X 36") [914 mm X 914 mm].

## STACK INSTALLATION INSTRUCTIONS

- APPLY A 1/2" THICK MORTAR JOINT TO EXPOSED REFRACTORY SURFACE IN STACK RING. LOWER THE BASE STACK SECTION (B) ONTO STACK RING (A) AND FASTEN WITH HARDWARE PROVIDED (NO MORE THAN (2) STACK SECTIONS SHALL BE LIFTED TOGETHER). REPEAT PROCESS FOR REMAINING STACK SECTIONS. IF SECTIONS OF VARYING LENGTHS ARE SUPPLIED, ASSEMBLE AS TO AVOID FLANGES & LIFTING EYES INTERFERING WITH RAIN COLLAR LOCATION.
- INSTALL STORM COLLAR ON STACK, 3" [72 mm] ABOVE NON-COMBUSTIBLE LINER (FLASHING), ALLOWING FOR PROPER VENTILATION (SEE DETAIL).
- APPLY A 1/4" [6 mm] BEAD OF HIGH-TEMPERATURE SILICON SEALANT (PROVIDED BY MCD) TO THE JOINT BETWEEN THE STORM COLLAR (C) AND THE STACK (B).
- STORM COLLAR IS FURNISHED BY MCD. THE NON-COMBUSTIBLE LINER (FLASHING) TO BE PROVIDED BY THE OTHERS.
- IF FIFTY PERCENT OF THE STACK LENGTH IS ABOVE THE ROOF, GUY WIRES MAY BE REQUIRED. CONSULT WITH YOUR MCD REP.
- RAIN CAP NOT REQUIRED.



(2) LIFTING EYES PER STACK SECTION

36" [.91 m] MINIMUM STACK ABOVE ROOF PEAK (MAY VARY BY LOCATION).

29 1/4" O.D.

FASTEN FLANGES TOGETHER WITH HARDWARE PROVIDED.

STACK INSTALLATION  
DETAIL

STACK BASE SECTION

FASTEN FLANGES TOGETHER WITH HARDWARE PROVIDED.

STACK RING ATTACHED TO UNIT

**Matthews**  
CREMATION DIVISION  
2045 Sprint Boulevard  
Apopka, Florida 32703  
USA

IEB SERIES 20

STACK DETAILS, CLEARANCES &  
INSTALLATION INSTRUCTIONS.  
REFRACTORY STACK DETAIL

DATE:	10-26-06	SCALE:	1/2"=1'
DRAWN:	JG/CR	PLOT SCALE:	1:24
APRVD:		SHEET:	2 OF 2
DWG FILE:	IEB-20-MarketingStackRefS2		
DWG #:	000901		

## SPECIFICATIONS- Model IEB Series 20

1. Equipment Type ..... Model IEB Series 20
  - A. Model No. .... IEB 20
  - B. Underwriters Laboratories Listing and File No. ... N/A
  
2. Dimensions
  - A. Footprint ..... 10' - 7 1/2" x 6' - 8"
  - B. Maximum Length ..... 12' - 9" (3.89 m)
  - C. Maximum Width ..... 6' - 5" (1.96 m)
  - D. Maximum Height ..... 8' - 4" (2.54 m)
  - E. Chamber Loading Opening ..... 25 3/4" H x 39" W (655 mm x 990 mm)
  
3. Weight ..... 21,000 lbs. (9,525.44 kg)
  
4. Utility/Air Requirements
  - A. Gross Gas Input, Natural or LP Gas ..... 2,000,000 BTU/hr. (2,100,000 kJ/h)  
2,500,000 BTU/hr. (2,600,000 kJ/h) if operating  
temperature is greater than 1,600° F
    - Running Gas Pressure, Natural Gas ..... 7 inches (180 mm) water column or greater
    - Running Gas Pressure, LP Gas ..... 11 inches (280 mm) water column or greater
  - B. Electrical Supply ..... 230 volt, 3Ø or 1Ø, 50/60 hz (other available)
  - C. Air Supply ..... 2,500 cfm (70 standard m<sup>3</sup>/min)
  
5. Incineration Capacity ..... 125 lbs./hr. (56.7 kg/h)
  
6. Typical Loading Capacity of Waste Types ..... 500 lbs. (226.8 kg)
  
7. Construction Standards ..... Incineration Institute of America
  
8. Steel Structure Construction
  - A. Frame ..... 2" (51 mm) square tubing
  - B. Front/Rear Plates ..... 3/8" (10 mm) plate
  - C. Floor Plates ..... 3/16" (5 mm) plate
  - D. Outer Side Casing ..... 12 gauge (3 mm) plate
  - E. Inner Side Casing ..... 12 gauge (3 mm) plate
  
9. Stack Construction
  - A. Inner Wall ..... 4 1/2" (110 mm) insulating firebrick or castable
  - B. Outer Wall ..... 12 gauge (3 mm) sheet, 304 s.s., welded seams  
(unlined stack available)
  
10. Draft Nozzle Construction ..... Schedule 40 type 316 s.s. pipe, welded  
connections
  
11. Main Chamber Door Construction
  - A. Steel Shell ..... 3/16" (5 mm) steel, welded with reinforcement
  - B. Outer Refractory ..... 1" (25 mm) insulating block
  - C. Inner Refractory ..... 4 1/2" (110 mm) insulating firebrick
  
12. Primary Chamber Wall Construction
  - A. Outer Casing Wall ..... 12 gauge (3 mm) sheet
  - B. Inner Frame/Air Compartment ..... 2" (51 mm) air compartment
  - C. Inner Casing Wall ..... 12 gauge (3 mm) sheet
  - D. Outer Refractory Wall ..... 5" (127 mm) insulating block

**SPECIFICATIONS- Model IEB Series 20**

- E. Inner Refractory Wall ..... 4½" (110 mm) firebrick
  
- 13. Secondary Chamber Wall Construction
  - A. Outer Casing Wall..... 12 gauge (3 mm) sheet
  - B. Inner Frame/Air Compartment ..... 2" (51 mm) air compartment
  - C. Inner Casing Wall ..... 12 gauge (3 mm) sheet
  - D. Outer Refractory Wall ..... 6" (150 mm) insulating block
  - E. Inner Refractory Wall ..... 4½" (110 mm) firebrick
  
- 14. Refractory Temperature Ratings
  - A. Standard Firebrick..... 3,100° F. (1700° C)
  - B. Insulating Firebrick..... 2,600° F. (1430° C)
  - C. Castable Refractory (Hearth) ..... 2,550° F. (1370° C)
  - D. Castable Refractory ..... 2,550° F. (1370° C)
  - E. Insulating Block..... 1,900° F. (1040° C)
  - F. Bonding Mortar ..... 3,200° F. (1760° C)
  
- 15. Chamber Volumes (not including external flues, stacks or chimneys)
  - A. Primary Chamber..... 45 cubic feet (1.27 m<sup>3</sup>)
  - B. Secondary Chamber ..... 55 cubic feet (1.56 m<sup>3</sup>)
  
- 16. Emission Control Features
  - A. Secondary Chamber with Afterburner ..... Included
  - B. Opacity Monitor and Controller with Visual and Audible Alarms..... Optional
  - C. Auxiliary Air Control System..... Included
  - D. Microprocessor Temperature Control System..... Included
  
- 17. Operating Temperatures
  - A. Primary Chamber..... 1,200° F. - 1,800° F. (650° C - 1000° C)
  - B. Secondary Chamber ..... 1,400° F. - 1,800° F. (760° C - 1000° C) as required
  
- 18. Secondary Chamber Retention Time ..... > 1 second
  
- 19. Ash Removal ..... Door functions as a heat shield. Sweep out beneath front door into hopper that fills collection pan.
  
- 20. Safety Interlocks
  - A. High Gas Pressure..... Optional
  - B. Low Gas Pressure ..... Optional
  - C. Blower Air Pressure ..... Included
  - D. Door Position ..... Included
  - E. Opacity ..... Included
  - F. Motor Starter Function ..... Included
  - G. Chamber Temperature..... Included
  - H. Motor Overload ..... Included
  - I. Flame Quality..... Included
  - J. Burner Safe Start..... Included
  
- 22. Burner Description..... The nozzle mix burners used on this cremation equipment are industrial quality and designed for incinerator use.



SPECIFICATIONS- Model IEB Series 20

- 23. Ultraviolet Flame Detection..... Ultraviolet flame detection has proven to be the most reliable means of flame safety. The system is completely sealed in a quartz capsule to eliminate problems, caused by moisture and dust created in the cremation process, which effect flame rod detectors.
  
- 24. Operating Panel Indicating Lights
  - A. Safe Run..... Included
  - B. Door Closed..... Included
  - C. Pollution Alarm..... Included
  - D. Afterburner On (Secondary Burner) ..... Included
  - E. Cremation Burner On..... Included
  - F. Low Fire Cremation Burner On ..... Included
  - G. Afterburner (Secondary Burner) Reset..... Included
  - H. Cremation Burner Reset ..... Included
  - I. Hearth Air..... Included
  - J. Throat Air Off ..... Included
  
- 25. Automatic Timer Functions
  - A. Master Cycle..... Included
  - B. Afterburner (Secondary Burner)..... Included
  - C. Cremation Burner..... Included
  - D. Low Fire Cremation Burner ..... Included
  - E. Hearth Air..... Included
  - F. Throat Air..... Included
  - G. Pollution Monitoring ..... Included
  - H. Afterburner (Secondary Burner) Prepurge ..... Included
  - I. Cremation Burner Prepurge..... Included
  - J. Cool Down ..... Included
  
- 26. Exterior Finish
  - A. Primer..... 2 coats rust inhibiting
  - B. Finish..... 2 coats textured finish
  
- 27. Start-Up and Training ..... Startup of cremation equipment and training of operators to properly operate and maintain the equipment is performed on-site under actual operating conditions. Included is a comprehensive owner's manual, with details on the equipment, its components and proper operation.
  
- 28. Environmental Submittals ..... Complete technical portion of state environmental permits. Engineering calculations, technical data, existing stack test results and equipment blueprints provided.

## Calculation Of Emissions

### Expected Emissions

Matthews Cremation Division (MCD)  
(formerly Industrial Equipment and Engineering Company (IEE))  
Crematory Incinerator Model IEB Series 20

Total Incinerator Burn Capacity      125 lb/hr of remains (type 4) and associated containers (type 0)  
Flue gas flow rate =      1175 dscfm      12 Hours/Day X      6 Days/Week X      52 Weeks/Year  
(      100 % Excess Air)      =      3744 Hours/Year

**Total Emission Rate = Incinerator Burn Rate X Emission Factor**

#### Sulfur Dioxide (SO<sub>2</sub>)

$$\frac{125 \text{ lb/hr X } 2.5 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.156 \text{ lb/hr}$$

$$= 0.2925 \text{ TPY}$$

$$\frac{0.15625 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.0283 \text{ m}^3/\text{ft}^3 \text{ X } 2.61 \text{ mg/m}^3} = 13.62 \text{ ppmv}$$

#### Nitrogen Oxide (NOx - as Nitrogen Dioxide)

$$\frac{125 \text{ lb/hr X } 3 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.1875 \text{ lb/hr}$$

$$= 0.351 \text{ TPY}$$

$$\frac{0.1875 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.028 \text{ m}^3/\text{ft}^3 \text{ X } 1.88 \text{ mg/m}^3} = 22.94 \text{ ppmv}$$

#### Hydrocarbons (TOC/VOC - methane)

$$\frac{125 \text{ lb/hr X } 3 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.1875 \text{ lb/hr}$$

$$= 0.351 \text{ TPY}$$

$$\frac{0.1875 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.0283 \text{ m}^3/\text{ft}^3 \text{ X } 0.65 \text{ mg/m}^3} = 65.64 \text{ ppmv}$$

#### Lead (Pb)      ( 6.62E-05 lbs/cremation)

$$\frac{125 \text{ lb/hr X } 0.0000662 \text{ lb Pb}}{100 \text{ lb}} = 8\text{E}-05 \text{ lb/hr}$$

$$= 0.0002 \text{ TPY}$$

#### Particulates (PM & PM<sub>10</sub>)      (Actual Levels lower as shown by test results)

$$\frac{125 \text{ lb/hr X } 7 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.4375 \text{ lb/hr}$$

$$= 0.819 \text{ TPY}$$

$$\frac{0.4375 \text{ lb/hr X } 7.00\text{E}+03 \text{ gr/lb X}}{1175 \text{ dscfm X } 60 \text{ min/hr}} = 0.04 \text{ gr/dscf}$$

#### Carbon Monoxide (CO)

$$\frac{125 \text{ lb/hr X } 10 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.625 \text{ lb/hr}$$

$$= 1.17 \text{ TPY}$$

$$\frac{0.625 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.028 \text{ m}^3/\text{ft}^3 \text{ X } 1.14 \text{ mg/m}^3} = 126.09 \text{ ppmv}$$

**Notes:**

1. Incinerator Emissions based on EPA emissions from Table 2.1-12 of AP-42 (5th Edition)
2. All conversion factors from AP-42 Appendix A.

## Calculation Of Emissions

### Potential to Emit

Matthews Cremation Division (MCD)  
(formerly Industrial Equipment and Engineering Company (IEE))  
Crematory Incinerator Model IEB Series 20

Total Incinerator Burn Capacity: 125 lb/hr of remains (type 4) and associated containers (type 0)  
Flue gas flow rate = 1175 dscfm 24 Hours/Day X 7 Days/Week X 52 Weeks/Year  
( 100 % Excess Air) = 8736 Hours/Year

### Total Emission Rate = Incinerator Burn Rate X Emission Factor

#### Sulfur Dioxide (SO<sub>2</sub>)

$$\frac{125 \text{ lb/hr X } 2.5 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.156 \text{ lb/hr}$$

$$= 0.6825 \text{ TPY}$$

$$\frac{0.15625 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.0283 \text{ m}^3/\text{F}^3 \text{ X } 2.61 \text{ mg/m}^3} = 13.62 \text{ ppmv}$$

#### Nitrogen Oxide (NO<sub>x</sub> - as Nitrogen Dioxide)

$$\frac{125 \text{ lb/hr X } 3 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.1875 \text{ lb/hr}$$

$$= 0.819 \text{ TPY}$$

$$\frac{0.1875 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.028 \text{ m}^3/\text{F}^3 \text{ X } 1.88 \text{ mg/m}^3} = 22.94 \text{ ppmv}$$

#### Hydrocarbons (TOC/VOC - methane)

$$\frac{125 \text{ lb/hr X } 3 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.1875 \text{ lb/hr}$$

$$= 0.819 \text{ TPY}$$

$$\frac{0.1875 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.0283 \text{ m}^3/\text{F}^3 \text{ X } 0.65 \text{ mg/m}^3} = 65.64 \text{ ppmv}$$

#### Lead (Pb) ( 6.62E-05 lbs/cremation)

$$\frac{125 \text{ lb/hr X } 0.0000662 \text{ lb Pb}}{100 \text{ lb}} = 8\text{E}-05 \text{ lb/hr}$$

$$= 0.0004 \text{ TPY}$$

#### Particulates (PM & PM<sub>10</sub>) (Actual Levels lower as shown by test results)

$$\frac{125 \text{ lb/hr X } 7 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.4375 \text{ lb/hr}$$

$$= 1.911 \text{ TPY}$$

$$\frac{0.4375 \text{ lb/hr X } 7.00\text{E}+03 \text{ gr/lb X}}{1175 \text{ dscfm X } 60 \text{ min/hr}} = 0.04 \text{ gr/dscf}$$

#### Carbon Monoxide (CO) (Actual Levels lower as shown by test results)

$$\frac{125 \text{ lb/hr X } 10 \text{ lb/ton X } 1 \text{ ton}}{2000 \text{ lbs}} = 0.625 \text{ lb/hr}$$

$$= 2.73 \text{ TPY}$$

$$\frac{0.625 \text{ lb/hr X } 4.54\text{E}+05 \text{ mg/lb X } 1 \text{ ppmv}}{1175 \text{ dscfm X } 60 \text{ min/hr X } 0.028 \text{ m}^3/\text{F}^3 \text{ X } 1.14 \text{ mg/m}^3} = 126.09 \text{ ppmv}$$

#### Notes:

1. Incinerator Emissions based on EPA emissions from Table 2.1-12 of AP-42 (5th Edition)
2. All conversion factors from AP-42 Appendix A.