

MARYLAND DEPARTMENT OF THE ENVIRONMENT

**AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT**

DOCKET #03-21

COMPANY: Final Journey Crematory, LLC

LOCATION: 519 Mabe Drive
Woodbine, Maryland 21797

APPLICATION: One (1) animal crematory

<u>ITEM</u>	<u>DESCRIPTION</u>
1	Notice of Application and Opportunity to Request an Informational Meeting
2	Permit to Construct Application Forms – Forms 5, 5T, 5EP, 6 and 10, Site Location Map and Site Plan, manufacturer specifications and emissions calculations, zoning approval documentation and process flow diagram.

**DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION**

**NOTICE OF APPLICATION AND
OPPORTUNITY TO REQUEST AN INFORMATIONAL MEETING**

The Maryland Department of the Environment, Air and Radiation Administration (ARA) received a permit-to-construct application from Final Journey Crematory, LLC on January 26, 2021 for the installation of one (1) animal crematory. The proposed installation will be located at Final Journey's existing crematory facility, 519 Mabe Drive, Woodbine, MD 21797.

The application and other supporting documents are available for public inspection on the Department's website. Look for Docket No. 03-21 at the following link:

<https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx>

Pursuant to the Environment Article, Section 1-603, Annotated Code of Maryland, the Department will hold an informational meeting to discuss the application and the permit review process if the Department receives a written request for a meeting within 10 working days from the date of the second publication of this notice. All requests for an informational meeting should be directed to the attention of Ms. Shannon Heafey, Air Quality Permits Program, Air and Radiation Administration, 1800 Washington Boulevard, Baltimore, Maryland 21230.

Further information may be obtained by calling Ms. Shannon Heafey at 410-537-4433.

George S. Aburn, Jr., Director
Air and Radiation Administration



Cremation Systems, Inc.

7205 - 114th Avenue North Largo, Florida 33773 USA
1-800-622-5411 727-541-4666 Facsimile 727-547-0669
email: sales@blcremationsystems.com www.blcremationsystems.com

October 19, 2020

Final Journey Crematory LLC
519 Mabe Drive
Woodbine, MD 21797

Dear Mr. Simons,

Please find enclosed four (4) copies of your completed environmental application and supporting documentation.

Please sign all copies where indicated and forward three (3) of the applications to the address listed below along with a site map pinpointing the exact stack location, property boundaries and all buildings (including height, length and width). Show north orientation and general wind direction. You will also need to include a copy of your Workers Compensation Policy.

Please keep the fourth copy of the application for your own records.

We look forward to installing your equipment in the very near future. Thank you for choosing B & L Cremation Systems, Inc.

Maryland Department of the Environment
1800 Washington Blvd
Baltimore, MD 21230
Phone: 410-537-3230

Sincerely,


Dr. Steve Looker,
President

On behalf of **Forever Faithful Pet Cremation & Funeral Care by Value Choice LLC**, the Screen3 computer model was used to estimate the maximum ground level concentration (GLC) for the two B&L Cremation Systems Model BLP 500 M4 animal crematorium units proposed for installation as part of the Maryland Department of the Environment air quality permit to construct application. The air impact analysis is required by the Air Quality Permits Program to show that the operation of the source will not result in a violation of the National Ambient Air Quality Standards (NAAQS) and will comply with the Toxic Air Pollutants limits.

The facility has two existing human cremation units in a North-South line along the eastern edge of the building. The two new units will be located in-line and between the existing units, as shown in the attached google earth site map.

The Screen3 model does not consider multiple source stacks, and the existing units are model Phoenix II-1, which have slightly higher exhaust velocities and temperatures than the Model BLP 500 M4 units. As a result, the Screen3 model predicted a slightly lower GLC than for the Model 500 M4.

To provide a conservative estimate of the “four sources” scenario, all units were assumed to be Model BLP 500 M4 and the operating data (obtained from the application) for that model was used in the Screen3 model, as shown in Table 1, Screen3 Input Parameters and Results, following.

Building dimensions, distances and identification of land use were obtained from the air permit application, from google earth mapping, and from information provided by the client. A value of 1 lb/hr (0.126 gm/sec) was used as the source emission rate. Rural coefficients for the model were assumed to be appropriate based on a review of the land use in a surrounding 3 km radius.

The closest property boundary was determined to be the two-lane roadway to the east of the building, at a distance of 100 meters from the center of the row of stacks. Roadways are not generally considered “points of closest approach” for ambient modeling. The Screen3 model predicts that at a distance of 105 meters, located on the opposite side of the road from the source, the 1 hour MAC has dropped to 54.38 ug/cubic meter. Maps showing the source building including the stack location, the property boundary distance, and the 3 km radius are attached.

Table 2 presents the results of the “Toxytool” program which compares the MDE Screening Level concentration of the listed toxic species to the value predicted by the Screen3 model. The maximum number of cremations (human plus animal) for the site, combined operations all units, is shown at the top.

Table 3 presents the calculated Criteria Pollutant emission rates by species at the identified maximum cremation rate.

The Screen3 model predicts a MAC of 58.65 at 100 meters, as shown in Table 1. The model assumes continuous (24 hours/day, 8760 hours/yr) emissions from the source, although the source will be limited to 12 hours/day, 3744 hours/yr of operation.

The Screen3 model 1 hr result can be adjusted to estimate the 3 hour, 8 hour, 24 hour, and Annual averaging periods for use in the Toxytool table using the factors as shown in Table 1. There are two sets of factors, one for continuous source operations and one for non-continuous operations, as is the case here. The source will be limited to 12 hours per day, 6 days per week, with 12 hours of zero emissions during each 24 hour averaging period and one full day of zero emissions during each week. The introduction of these values of zero will substantially reduce the calculated 24 hour and annual average by approximately 25%. Toxytools uses the “continuous” emissions factors, although the “non-continuous” factors would be more appropriate for this analysis and would allow a higher number of cremations.

Finally, for each unit, there are non-emitting periods of loading/heatup and unloading/cooldown. Even if all units operated “continuously” it is unlikely that all units would remain “in phase” and emitting, as is assumed by the Screen3 model.

We believe that the information provided provides reasonable assurance that the source will not exceed the toxic limits when operated as discussed.

The Screen3 model output file (screen.out) and a text version of the output file (screen.txt) are also attached.

Tom John

Tom John, P.E.

Table 1

Screen3 Input Parameters and Results

Forever Faithful Pet Cremation & Funeral Care by Value Choice LLC

Woodbine, MD

Proposed Unit: BLP 500M4

22-Oct-20

Building Parameters	ft	m
Height	20.00	6.10
Width	50.00	15.24
Length	100.00	30.48

stack exit height	ft	m
	24.00	7.32

stack diam, in	24
stack diam, ft	2.00
stack diam, m	0.61
flow, acfm	3219
flow, ft/sec	17.09
flow, m/sec	5.21
temp, F	1000
temp, K	811
ambient - stack, K	-518

Screen3 model results, 1 hr		
	concentration	distance
rural coefficients	ug/m ³	m
at Prop boundary	58.65	100.58

Screen 3 convesion to other than 1 hr averaging periods					
	1 hr	3 hr	8 hr	24 hr	annual
continuous factor	1	0.9	0.7	0.4	0.08
predicted	58.65	52.785	41.055	23.46	4.692
noncontinuous factor	1	0.8	0.5	0.2	0.06
predicted	58.65	46.92	29.325	11.73	3.519

source limited to 3744 hrs/yr operation

Emission Rate for Model	lbs/hr	g/sec
	1.00	0.126

min distance to property line:	ft	m
road east of building	330	100.58

model parameters obtained from client, application and google earth

10/22/20
09:20:06

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 13043 ***

Final Journey

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.126000
STACK HEIGHT (M) = 7.3200
STK INSIDE DIAM (M) = 0.6100
STK EXIT VELOCITY (M/S) = 5.2100
STK GAS EXIT TEMP (K) = 811.0000
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = 0.0000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 6.1000
MIN HORIZ BLDG DIM (M) = 15.2400
MAX HORIZ BLDG DIM (M) = 30.4800

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 3.036 M**4/S**3; MOM. FLUX = 0.912 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
100.	58.65	5	5.0	5.0	10000.0	10.68	6.12	7.02	SS
200.	30.22	4	4.5	4.5	1440.0	11.48	15.56	11.10	SS
300.	21.41	4	3.5	3.5	1120.0	14.35	22.61	13.99	SS
400.	16.50	4	3.0	3.0	960.0	16.68	29.45	16.95	SS
500.	13.40	4	2.5	2.5	800.0	20.08	36.15	19.75	SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

19.	287.0	6	4.0	4.0	10000.0	7.71	0.91	3.52	SS
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DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED

DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SCREEN DISCRETE DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
90.	68.75	5	5.0	5.0	10000.0	10.19	5.55	6.77	SS
95.	63.42	5	5.0	5.0	10000.0	10.43	5.84	6.89	SS
100.	58.65	5	5.0	5.0	10000.0	10.68	6.12	7.02	SS
105.	54.38	5	5.0	5.0	10000.0	10.93	6.41	7.14	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** REGULATORY (Default) ***
 PERFORMING CAVITY CALCULATIONS
 WITH ORIGINAL SCREEN CAVITY MODEL
 (BRODE, 1988)

*** CAVITY CALCULATION - 1 ***	*** CAVITY CALCULATION - 2 ***
CONC (UG/M**3) = 86.98	CONC (UG/M**3) = 113.3
CRIT WS @10M (M/S) = 10.39	CRIT WS @10M (M/S) = 15.96
CRIT WS @ HS (M/S) = 10.39	CRIT WS @ HS (M/S) = 15.96
DILUTION WS (M/S) = 5.19	DILUTION WS (M/S) = 7.98
CAVITY HT (M) = 6.48	CAVITY HT (M) = 6.11
CAVITY LENGTH (M) = 23.72	CAVITY LENGTH (M) = 16.42
ALONGWIND DIM (M) = 15.24	ALONGWIND DIM (M) = 30.48

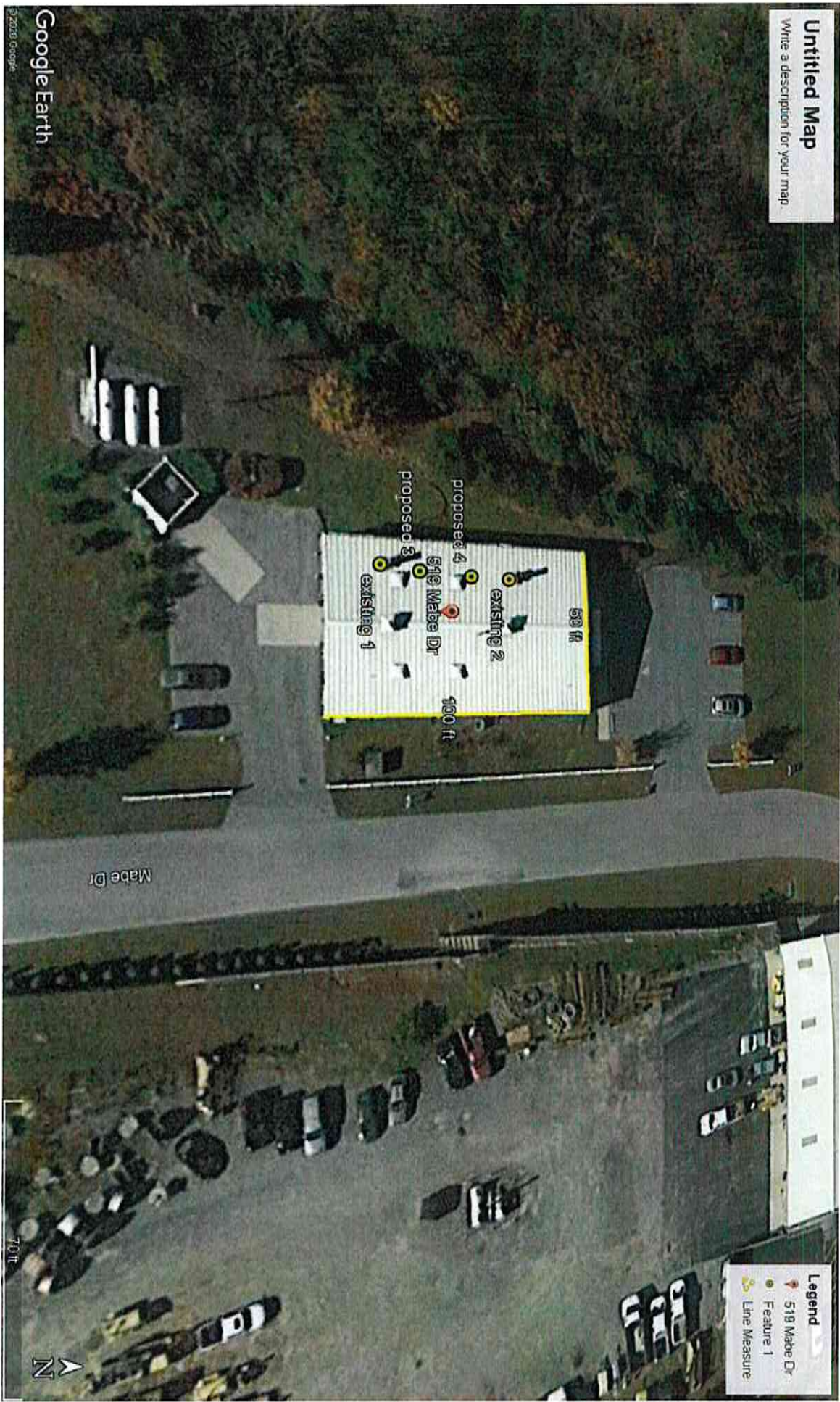
 END OF CAVITY CALCULATIONS

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	287.0	19.	0.
BLDG. CAVITY-1	86.98	24.	-- (DIST = CAVITY LENGTH)
BLDG. CAVITY-2	113.3	16.	-- (DIST = CAVITY LENGTH)

 ** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

Untitled Map
Write a description for your map.



Google Earth

©2020 Google

- Legend**
- 519 Mabe Dr
 - Feature 1
 - Line Measure



701

Forever Faithful Pet Cremation & Funeral Care by Value Choice LLC

Tom John
22-Oct-20

Facility Name
Your Name
Date

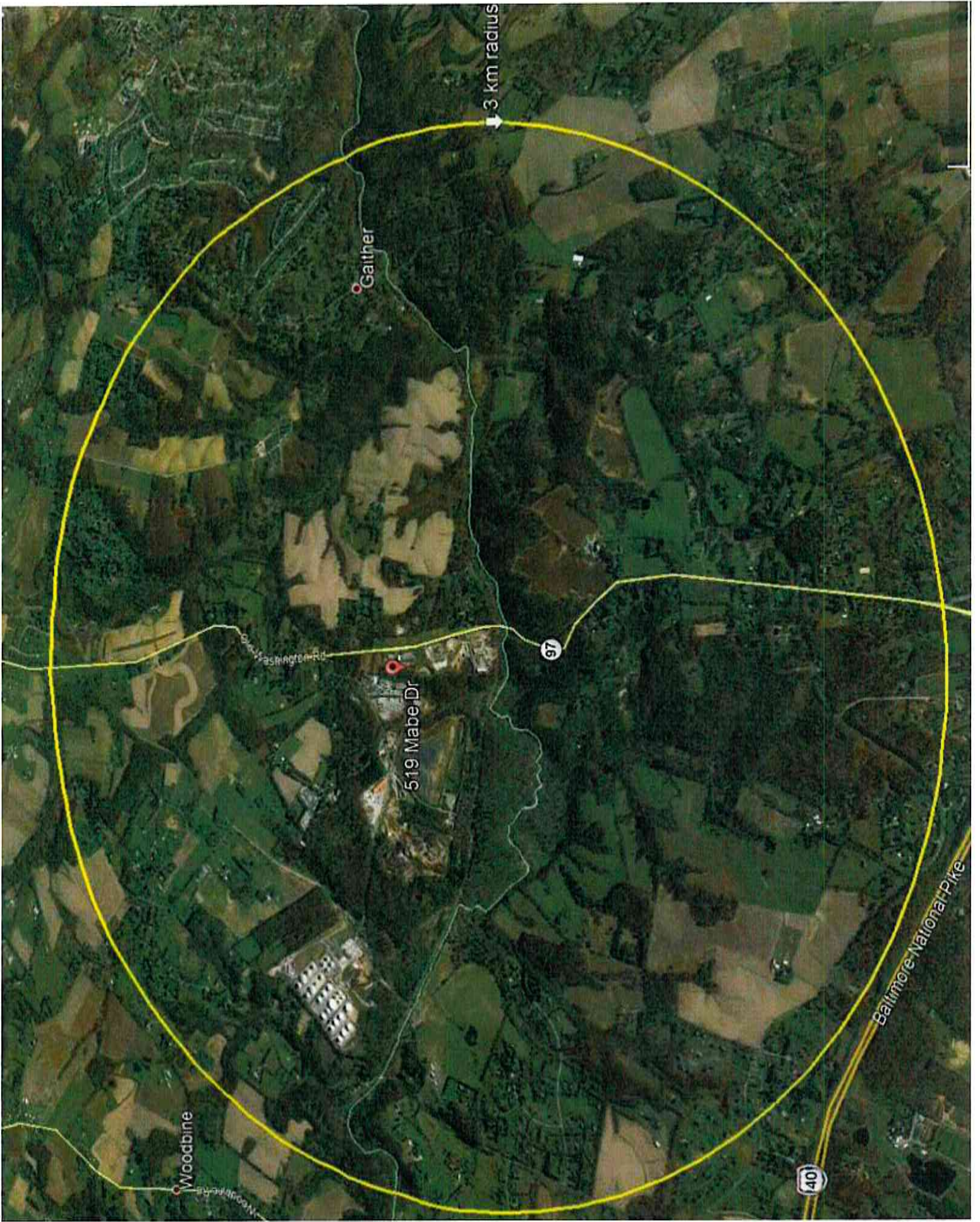
Table 2
Toxytool

HUMAN (number)	Animal (lbs)	Equivalent Cremations per Hour	Human Equivalent	Total Pounds
1,4	22	232	1,547	232
5	135	885	5,9	885
5242	82368	868668	5791,1	868668

58.65
Toxytool 2015-R3

Screen3 maximum concentration (1 lb/hr emission rate)

CAS	POLLUTANT	Emission Factor (EPA FIRE) (Pounds)	Emission Factor (gas number) (Pounds)	MDE Screening Level 1-HOUR (ug/m3)	MDE Screening Level 8-HOUR (ug/m3)	MDE Screening Annual (ug/m3)	Screen3 Concentration 1-hour (ug/m3)	Screen3 Concentration 8-hour (ug/m3)	Screen3 Annual Concentration (ug/m3)	Screen3 Concentration 1-hour as % of MDE Screening Level	Screen3 Concentration 8-hour as % of MDE Screening Level	Screen3 Concentration Annual as % of MDE Screening Level	Screen3 Concentration
83329	Acenaphthene	1.11E-07	1.11E-07	2.03E+01	8.00E-02	1.01E-05	1.11E-05	3.36E-06	3.44E-07	0.00	0.00	0.00	0.00
208668	Acenaphthylene	1.22E-07	1.22E-07	2.46E+01	2.00E+01	1.11E-05	1.11E-05	3.69E-06	3.78E-07	0.00	0.00	0.00	0.00
120127	Anthracene	3.24E-07	3.24E-07	2.00E+01	5.00E+00	2.94E-05	2.94E-05	9.81E-06	1.00E-06	0.00	0.00	0.00	0.00
7440360	Anthraquinone	< 3.020E-5	3.02E-05	5.00E+00	1.00E-01	2.74E-03	9.14E-04	9.14E-04	9.37E-05	0.02	0.02	0.02	46.53
7440382	Arsenic	< 3.000E-5	3.00E-05	1.00E-01	5.00E+00	2.00E-04	9.08E-04	9.08E-04	9.31E-05	0.91	0.01	0.01	0.01
7440393	Barium	2.40E-05	2.40E-05	5.00E+00	2.00E-01	7.27E-04	7.27E-04	7.44E-05	7.44E-05	0.03	0.03	0.03	0.03
56553	Benzo (a) anthracene	< 9.760E-9	9.76E-09	2.00E-01	2.00E+01	8.85E-07	2.96E-07	2.96E-07	3.03E-08	0.00	0.00	0.00	0.00
50328	Benzo (a) pyrene	< 2.910E-8	2.91E-08	1.59E-08	2.00E+01	2.64E-06	8.81E-07	8.81E-07	9.03E-08	0.00	0.00	0.00	0.00
205992	Benzo (b) fluoranthene	< 1.590E-8	1.59E-08	1.59E-08	2.00E+01	4.81E-06	4.81E-06	4.93E-08	4.93E-08	0.00	0.00	0.00	0.00
191242	Benzo (g,h,i) perylene	< 2.910E-8	2.91E-08	2.00E+01	2.00E+01	1.24E-04	1.24E-04	4.15E-05	4.25E-06	8.30	1.68	1.32	1.06
207089	Benzo (k) fluoranthene	< 1.420E-8	1.42E-08	2.00E+01	5.00E+00	2.71E-03	9.05E-04	9.05E-04	9.27E-05	0.02	0.02	0.02	5.74
7440417	Beryllium	1.37E-06	1.37E-06	5.00E-04	6.00E-04	1.24E-04	1.01E-03	3.36E-04	3.44E-05	0.02	0.02	0.02	5.74
7440439	Cadmium	1.11E-05	1.11E-05	2.00E-02	5.00E+00	2.71E-03	9.05E-04	9.05E-04	9.27E-05	0.02	0.02	0.02	5.74
7440473	Chromium	2.99E-05	2.99E-05	5.00E+00	1.00E-01	1.22E-03	4.09E-04	4.09E-04	4.19E-05	0.41	0.41	0.41	52.34
18540299	Chromium (VI)	1.35E-05	1.35E-05	1.00E-01	8.00E-05	1.22E-03	4.09E-04	4.09E-04	4.19E-05	0.41	0.41	0.41	52.34
218019	Chrysene	< 5.400E-8	5.40E-08	2.00E-01	2.00E+00	4.90E-06	1.64E-06	1.64E-06	1.67E-07	0.03	0.03	0.03	0.03
7440484	Cobalt	< 1.750E-6	1.75E-06	2.00E+00	2.00E+00	1.59E-04	1.59E-04	8.30E-04	8.50E-05	0.04	0.04	0.04	0.04
7440508	Copper	2.74E-05	2.74E-05	2.00E+01	2.00E+00	2.49E-03	8.30E-04	8.30E-04	8.50E-05	0.04	0.04	0.04	0.04
53703	Dibenzo(a,h) anthracene	< 1.270E-8	1.27E-08	8.20E+01	2.00E-01	1.86E-05	6.21E-06	6.21E-06	6.36E-07	0.00	0.00	0.00	0.00
206440	Fluoranthene	2.05E-07	2.05E-07	2.00E+01	2.00E+01	3.78E-05	1.26E-05	1.26E-05	1.29E-06	0.00	0.00	0.00	0.00
86737	Fluorene	4.17E-07	4.17E-07	2.00E+01	2.00E+01	6.53E+00	2.18E+00	2.18E+00	2.23E-01	21.89	1.32	1.32	31.90
7647010	Hydrogen chloride	7.20E-02	7.20E-02	1.65E+02	7.00E-01	5.94E-02	1.98E-02	1.98E-02	2.03E-03	0.36	0.36	0.36	0.36
7664393	Hydrogen fluoride	6.55E-04	6.55E-04	4.09E+00	5.00E-01	1.40E-06	4.66E-07	4.66E-07	4.78E-08	0.00	0.00	0.00	0.00
193395	Indeno(1,2,3-cd)pyrene	< 1.540E-8	1.54E-08	5.00E-01	5.00E-01	6.01E-03	2.00E-03	2.00E-03	2.05E-04	0.40	0.40	0.40	0.40
7439921	Lead	6.62E-05	6.62E-05	3.29E-03	1.00E-01	2.98E-01	9.96E-02	9.96E-02	1.02E-02	99.48	99.48	99.48	99.48
7439976	Mercury	3.29E-03	3.29E-03	5.00E+00	1.00E+00	1.51E-03	5.06E-04	5.06E-04	5.18E-05	0.01	0.01	0.01	0.01
7439987	Molybdenum	1.67E-05	1.67E-05	1.00E+00	1.00E+00	3.47E-03	1.16E-03	1.16E-03	1.18E-04	0.12	0.12	0.12	0.12
7440020	Nickel	3.82E-05	3.82E-05	9.80E+00	2.00E+01	2.08E-04	6.93E-05	6.93E-05	7.10E-06	0.00	0.00	0.00	0.00
85018	Phenanthrene	2.29E-06	2.29E-06	2.00E+00	2.00E+00	1.47E-06	4.91E-06	4.91E-06	5.02E-07	0.00	0.00	0.00	0.00
129000	Pyrene	1.62E-07	1.62E-07	2.00E+01	2.00E+00	3.96E-03	1.32E-03	1.32E-03	1.35E-04	0.07	0.07	0.07	0.07
7782492	Selenium	< 4.360E-5	4.36E-05	1.00E-01	1.00E-01	6.62E-04	2.21E-04	2.21E-04	2.26E-05	0.22	0.22	0.22	0.22
7440224	Silver	7.30E-06	7.30E-06	2.00E-01	5.00E-01	7.73E-03	2.58E-03	2.58E-03	2.64E-04	1.29	1.29	1.29	1.29
7440280	Thallium	< 8.520E-5	8.52E-05	5.00E-01	5.00E-01	3.20E-02	1.07E-02	1.07E-02	1.09E-03	0.00	0.00	0.00	0.00
7440622	Vanadium	5.79E-05	5.79E-05	1.00E+03	5.00E+02	7.71E+00	2.57E+00	2.57E+00	2.64E-01	0.00	0.00	0.00	0.00
7440666	Zinc	8.50E-02	8.50E-02	3.76E-06	1.41E-09	3.41E-04	1.14E-04	1.14E-04	1.17E-05	0.00	0.00	0.00	0.00
1746016	Total Dioxins & Furans - TEQ balanced	1.41E-09	1.41E-09	8.20E-04	3.00E-08	1.16E-07	3.61E-08	3.61E-08	3.95E-09	0.00	0.00	0.00	13.17



Woodbine

Gaither

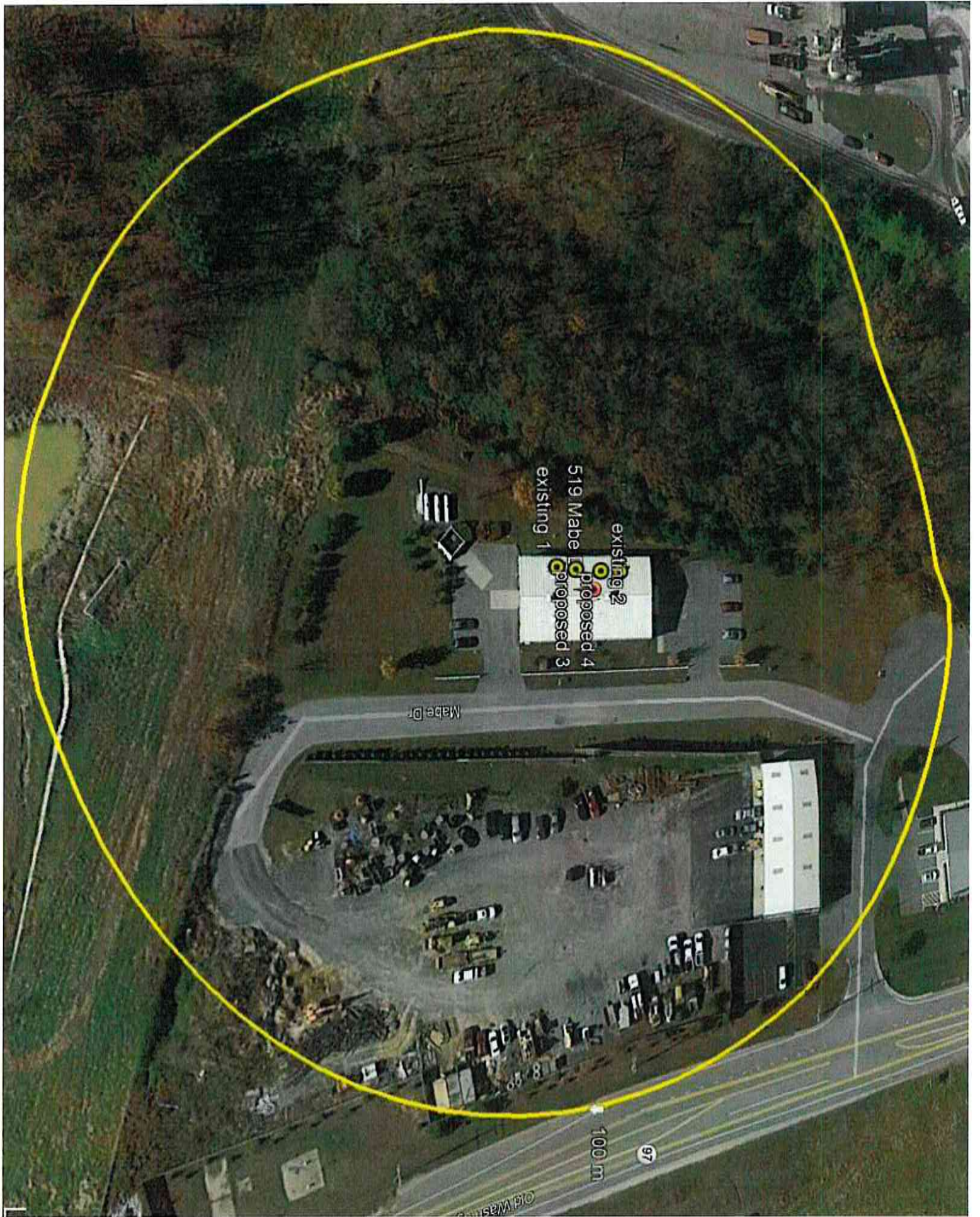
519 Mabe Dr

Baltimore National Pike

3 km radius

97

40



existing 2
519 Mabe Dr
proposed 4
proposed 3
existing 1

Mabe Dr

97

100 m

© M&S PLO



AIR QUALITY PERMIT TO CONSTRUCT APPLICATION CHECKLIST

OWNER OF EQUIPMENT/PROCESS	
COMPANY NAME:	Forever Faithful Pet Cremation & Funeral Care by Value Choice LLC
COMPANY ADDRESS:	519 Mabe Drive Woodbine, MD 21797
LOCATION OF EQUIPMENT/PROCESS	
PREMISES NAME:	Forever Faithful Pet Cremation & Funeral Care by Value Choice LLC
PREMISES ADDRESS:	519 Mabe Drive Woodbine, MD 21797
CONTACT INFORMATION FOR THIS PERMIT APPLICATION	
CONTACT NAME:	Daniel Simons
JOB TITLE:	General Manager
PHONE NUMBER:	443-202-5720
EMAIL ADDRESS:	dan@finaljourneycrematory.com
DESCRIPTION OF EQUIPMENT OR PROCESS	
Animal Crematory	

Application is hereby made to the Department of the Environment for a Permit to Construct for the following equipment or process as required by the State of Maryland Air Quality Regulation, COMAR 26.11.02.09.

Check each item that you have submitted as part of your application package.

- Application package cover letter describing the proposed project
- Complete application forms (Note the number of forms included or NA if not applicable.)

No. <u> X </u> Form 5	No. <u> </u> Form 11
No. <u> X </u> Form 5T	No. <u> </u> Form 41
No. <u> X </u> Form 5EP	No. <u> </u> Form 42
No. <u> X </u> Form 6	No. <u> </u> Form 44
No. <u> X </u> Form 10	
- Vendor/manufacturer specifications/guarantees
- Evidence of Workman's Compensation Insurance
- Process flow diagrams with emission points
- Site plan including the location of the proposed source and property boundary
- Material balance data and all emissions calculations
- Material Safety Data Sheets (MSDS) or equivalent information for materials processed and manufactured.
- Certificate of Public Convenience and Necessity (CPCN) waiver documentation from the Public Service Commission ⁽¹⁾
- Documentation that the proposed installation complies with local zoning and land use requirements ⁽²⁾

⁽¹⁾ Required for emergency and non-emergency generators installed on or after October 1, 2001 and rated at 2001 kW or more.

⁽²⁾ Required for applications subject to Expanded Public Participation Requirements.

APPLICATION FOR FUEL BURNING EQUIPMENT

Information Regarding Public Outreach

For Air Quality Permit to Construct applications subject to public review, applicants should consider the following information in the initial stages of preparing a permit application.

If you are not sure at the time you are applying for a permit whether public review of your application is required or for information on steps you can take to engage the surrounding community where your planned project will be located, please contact the Air Quality Permits Program at 410-537-3225 and seek their advice.

Communicating and engaging the local community as early as possible in your planning and development process is an important aspect of your project and should be considered a priority. Environmental Justice or "EJ" is a movement to inform, involve, and engage communities impacted by potential and planned environmental projects by affording citizens opportunities to learn about projects and discuss any concerns regarding impacts.

Although some permit applications are subject to a formal public review process prescribed by statute, the Department strongly encourages you to engage neighboring communities separate from and well ahead of the formal permitting process. Sharing your plans by way of community meetings, informational outreach at local gatherings or through local faith-based organizations can initiate a rewarding and productive dialogue that will reduce anxiety and establish a permanent link with your neighbors in the community.

All parties benefit when there is good communication. The Department can assist applicants in developing an outreach plan that fits the needs of both the company and the public.

MARYLAND DEPARTMENT OF THE ENVIRONMENT

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Air and Radiation Management Administration ▪ Air Quality Permits Program

APPLICATION FOR PROCESSING/MANUFACTURING EQUIPMENT

Permit to Construct

Registration Update

Initial Registration

1A. Owner of Equipment/Company Name

Forever Faithful Pet Cremation & Funeral Care by Value Choice LLC

Mailing Address

519 Mabe Drive

Street Address

Woodbine MD 21797

Telephone Number

(443) 202-5720

Signature

Daniel Simons / General Manager

Print Name and Title

Date

DO NOT WRITE IN THIS BLOCK
2. REGISTRATION NUMBER

County No.

Premises No.

1-2

3-6

Registration Class

Equipment No.

7

8-11

Data Year

12-13

Application Date

1B. Equipment Location and Telephone Number (if different from above)

Street Number and Street Name

City/Town State Zip Telephone Number

Premises Name (if different from above)

3. Status (A= New, B= Modification to Existing Equipment, C= Existing Equipment)

Status	New Construction Begun (MM/YY)	New Construction Completed (MM/YY)	Existing Initial Operation (MM/YY)
A 15	16-19	20-23	0 1 2 1 20-23

4. Describe this Equipment: Make, Model, Features, Manufacturer (include Maximum Hourly Input Rate, etc.)

B&L Cremation Systems Inc BLP500M4 150 Lbs/Hr

5. Workmen's Compensation Coverage EIG266770801

07/31/21

Company Employers Preferred Insurance Company Binder/Policy Number

Expiration Date

NOTE: Before a Permit to Construct may be issued by the Department, the applicant must provide the Department with proof of worker's compensation coverage as required under Section 1-202 of the Worker's Compensation Act.

6A. Number of Pieces of Identical Equipment Units to be Registered/Permitted at this Time 1

6B. Number of Stack/Emission Points Associated with this Equipment 1

7. Person Installing this Equipment (if different from Number 1 on Page 1)

Name _____ Title _____
 Company _____
 Mailing Address/Street _____
 City/Town _____ State _____ Telephone (____) _____

8. Major Activity, Product or Service of Company at this Location

Crematory

9. Control Devices Associated with this Equipment

None

 24-0

Simple/Multiple Cyclone	Spray/Adsorb Tower	Venturi Scrubber	Carbon Adsorber	Electrostatic Precipitator	Baghouse	Thermal/Catalytic Afterburner	Dry Scrubber
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
24-1	24-2	24-3	24-4	24-5	24-6	24-7	24-8

Other

Describe _____
 24-9

10. Annual Fuel Consumption for this Equipment

OIL-1000 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 26-31	SULFUR % <input type="text"/> <input type="text"/> 32-33	GRADE <input type="text"/> 34	NATURAL GAS-1000 FT ³ <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 35-41	LP GAS-100 GALLONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 42-45	GRADE <input type="text"/> 43-45
COAL- TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 46-52	SULFUR % <input type="text"/> <input type="text"/> 53-55	ASH% <input type="text"/> <input type="text"/> 56-58	WOOD-TONS <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 59-63	MOISTURE % <input type="text"/> <input type="text"/> 64-65	
OTHER FUELS (Specify Type) <input type="text"/> ANNUAL AMOUNT CONSUMED (Specify Units of Measure) 66-1	OTHER FUEL (Specify Type) <input type="text"/> ANNUAL AMOUNT CONSUMED (Specify Units of Measure) 66-2				

1=Coke 2= COG 3=BFG 4=Other

11. Operating Schedule (for this Equipment)

Continuous Operation <input checked="" type="checkbox"/>	Batch Process <input type="checkbox"/>	Hours per Batch <input type="text"/> <input type="text"/>	Batch per Week <input type="text"/>	Hours per Day <input type="text"/> <input type="text"/>	Days Per Week <input type="text"/>	Days per Year <input type="text"/> <input type="text"/> <input type="text"/>
67-1	67-2	68-69	70-71	72	73-75	
Seasonal Variation in Operation: No Variation <input checked="" type="checkbox"/> Winter Percent <input type="text"/> <input type="text"/> Spring Percent <input type="text"/> <input type="text"/> Summer Percent <input type="text"/> <input type="text"/> Fall Percent <input type="text"/> <input type="text"/> (Total Seasons= 100%)						
76	77-78	79-80	81-82	83-84		

12. Equivalent Stack Information- is Exhaust through Doors, Windows, etc. Only? (Y/N) N

85

If not, then

Height Above Ground (FT)

--	--	--

86-88

Inside Diameter at Top

2	.	0
---	---	---

89-91

Exit Temperature (°F)

1	0	0	0
---	---	---	---

92-95

Exit Velocity (FT/SEC)

	2	0
--	---	---

96-98

NOTE:

Attach a block diagram of process/process line, indicating new equipment as reported on this form and all existing equipment, including control devices and emission points.

13. Input Materials (for this equipment only)

Is any of this data to be considered confidential? N (Y or N)

	NAME	CAS NO. (IF APPLICABLE)	PER HOUR	INPUT RATE		UNITS
				UNITS	PER YEAR	
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

TOTAL

14. Output Materials (for this equipment)

Process/Product Stream

	NAME	CAS NO. (IF APPLICABLE)	PER HOUR	OUTPUT RATE		UNITS
				UNITS	PER YEAR	
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

TOTAL

15. Waste Streams- Solid and Liquid

	NAME	CAS NO. (IF APPLICABLE)	PER HOUR	OUTPUT RATE		UNITS
				UNITS	PER YEAR	
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

TOTAL

16. Total Stack Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter
 4 . 2
 99-104

Oxides of Sulfur
 1 . 9 6
 105-110

Oxides of Nitrogen
 3 . 2 4
 111-116

Carbon Monoxide
 2 . 6 5
 177-122

Volatile Organic Compounds
 . 2 4
 123-128

PM-10
 4 . 2
 129-134

17. Total Fugitive Emissions (for this equipment only) in Pounds Per Operating Day

Particulate Matter

 135-139

Oxides of Sulfur

 140-144

Oxides of Nitrogen

 145-149

Carbon Monoxide

 150-154

Volatile Organic Compounds

 155-159

PM-10

 160-164

Method Used to Determine Emissions (1= Estimate 2= Emission Factor 3= Stack Test 4= Other)

TSP
 2
 165

SOX
 2
 166

NOX
 2
 167

CO
 2
 168

VOC
 2
 169

PM10
 2
 170

AIR AND RADIATION MANAGEMENT ADMINISTRATION USE ONLY

18. Date Rec'd. Local _____ Date Rec'd. State _____ Return to Local Jurisdiction
 Date _____ By _____

Reviewed by Local Jurisdiction _____ Reviewed by State _____
 Date _____ By _____ Date _____ By _____

19. Inventory Date _____ Month/Year _____ Equipment Code _____ SCC Code _____
 171-174 175-177 178-185

20. Annual _____ Maximum Design _____ Permit to Operate _____ Transaction Date _____
 Operating Rate _____ Hourly Rate _____ Month _____ (MM/DD/YR)
 186-192 193-199 200-201 202-207

Staff Code _____ VOC Code _____ SIP Code _____ Regulation Code _____ Confidentiality _____
 208-210 211 212 213 214 215-218 219

Point Description _____ Action _____
 220-238 239

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Applicant Name: _____

Step 1: Quantify premises-wide emissions of Toxic Air Pollutants (TAP) from new and existing installations in accordance with COMAR 26.11.15.04. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Class I or Class II?	Screening Levels ($\mu\text{g}/\text{m}^3$)			Estimated Premises Wide Emissions of TAP			
			1-hour	8-hour	Annual	Actual Total Existing TAP Emissions (lb/hr)	Projected TAP Emissions from Proposed Installation (lb/hr)	Premises Wide Total TAP Emissions (lb/yr)	
ex. ethanol	64175	II	18843	3769	N/A	0.60	0.15	0.75	1500
ex. benzene	71432	I	80	16	0.13	0.5	0.75	1.00	400
SEE ENCLOSED TOXY TOOL									

(attach additional sheets as necessary.)

Note: Screening levels can be obtained from the Department's website (<http://www.mde.maryland.gov>) or by calling the Department.

Step 2: Determine which TAPs are exempt from further review. A TAP that meets either of the following Class I or Class II small quantity emitter exemptions is exempt from further TAP compliance demonstration requirements under Step 3 and Step 4.

Class II TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(a))

A Class II TAP is exempt from Step 3 and Step 4 if the Class II TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour, and any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 $\mu\text{g}/\text{m}^3$.

Class I TAP Small Quantity Emitter Exemption Requirements (COMAR 26.11.15.03B(3)(b))

A Class I TAP is exempt from Step 3 and Step 4 if the Class I TAP meets the following requirements: Premises wide emissions of the TAP shall not exceed 0.5 pounds per hour and 350 pounds per year, any applicable 1-hour or 8-hour screening level for the TAP must be greater than 200 $\mu\text{g}/\text{m}^3$, and any applicable annual screening level for the TAP must be greater than 1 $\mu\text{g}/\text{m}^3$.

If a TAP meets either the Class I or Class II TAP Small Quantity Emitter Exemption Requirements, no further review under Step 3 and Step 4 are required for that specific TAP.

FORM 5T: Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration

Step 3: Best Available Control Technology for Toxics Requirement (T-BACT, COMAR 26.11.15.05)

In the following table, list all TAP emission reduction options considered when determining T-BACT for the proposed installation. The options should be listed in order beginning with the most effective control strategy to the least effective strategy. Attach supporting documentation as necessary.

Target Pollutants	Emission Control Option	% Emission Reduction	Costs		T-BACT Option Selected? (yes/no)
			Capital	Annual Operating	
ex. ethanol and benzene	Thermal Oxidizer	99	\$50,000	\$100,000	no
ex. ethanol and benzene	Low VOC materials	80	0	\$100,000	yes

(attach additional sheets as necessary)

Step 4: Demonstrating Compliance with the Ambient Impact Requirement (COMAR 26.11.15.06)

Each TAP not exempt in Step 2 must be individually evaluated to determine that the emissions of the TAP will not adversely impact public health. The evaluation consists of a series of increasingly non-conservative (and increasingly rigorous) tests. Once a TAP passes a test in the evaluation, no further analysis is required for that TAP. "Demonstrating Compliance with the Ambient Impact Requirement under the Toxic Air Pollutant (TAP) Regulations (COMAR 26.11.15.06)" provides guidance on conducting the evaluation. Summarize your results in the following table. Attach supporting documentation as necessary.

Toxic Air Pollutant (TAP)	CAS Number	Screening Levels (µg/m ³)			Premises Wide Total TAP Emissions (lb/yr)	Allowable Emissions Rate (AER) per COMAR 26.11.16.02A (lb/hr)	Off-site Concentrations per Screening Analysis (µg/m ³)			Compliance Method Used? AER or Screen	
		1-hour	8-hour	Annual			1-hour	8-hour	Annual		
											(lb/hr)
ex. ethanol	64175	18843	3769	N/A	0.75	0.89	N/A	N/A	N/A	N/A	AER
ex. benzene	71432	80	16	0.13	1.00	0.04	36.52	1.5	1.05	0.12	Screen

(attach additional sheets as necessary)

If compliance with the ambient impact requirement cannot be met using the allowable emissions rate method or the screening analysis method, refined dispersion modeling techniques may be required. Please consult with the Department's Air Quality Permit Program prior to conducting dispersion modeling methods to demonstrate compliance.

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FORM 5EP: Emission Point Data

Complete one (1) Form 5EP for EACH emission point (stack or fugitive emissions) related to the proposed installation.

Applicant Name: Forever Faithful Pet Cremation & Funeral Care

1. Emission Point Identification Name/Number

List the applicant assigned name/number for this emission point and use this value on the attached required plot plan:
BL-01

2. Emission Point Description

Describe the emission point including all associated equipment and control devices:
Pet Crematory Stack

3. Emissions Schedule for the Emission Point

Continuous or Intermittent (C/I)?	I	Seasonal Variation Check box if none: <input type="checkbox"/> Otherwise estimate seasonal variation:	
Minutes per hour:	60	Winter Percent	
Hours per day:	12	Spring Percent	
Days per week:	6	Summer Percent	
Weeks per year:	52	Fall Percent	

4. Emission Point Information

Height above ground (ft):	24	Length and width dimensions at top of rectangular stack (ft):	Length:	Width:	
Height above structures (ft):	4				
Exit temperature (°F):	1000	Inside diameter at top of round stack (ft):		2.0	
Exit velocity (ft/min):	1200	Distance from emission point to nearest property line (ft):			
Exhaust gas volumetric flow rate (acfm):	3219	Building dimensions if emission point is located on building (ft)	Height 20	Length 96	Width 50

5. Control Devices Associated with the Emission Point

Identify each control device associated with the emission point and indicate the number of devices. **A Form 6 is also required for each control device.** If none check none:

- | | | | |
|---|-----------|--|--|
| <input checked="" type="checkbox"/> None | | <input type="checkbox"/> Thermal Oxidizer | No. _____ |
| <input type="checkbox"/> Baghouse | No. _____ | <input type="checkbox"/> Regenerative | |
| <input type="checkbox"/> Cyclone | No. _____ | <input type="checkbox"/> Catalytic Oxidizer | No. _____ |
| <input type="checkbox"/> Elec. Precipitator (ESP) | No. _____ | <input type="checkbox"/> Nitrogen Oxides Reduction | No. _____ |
| <input type="checkbox"/> Dust Suppression System | No. _____ | <input type="checkbox"/> Selective | <input type="checkbox"/> Non-Selective |
| <input type="checkbox"/> Venturi Scrubber | No. _____ | <input type="checkbox"/> Catalytic | <input type="checkbox"/> Non-Catalytic |
| <input type="checkbox"/> Spray Tower/Packed Bed | No. _____ | <input type="checkbox"/> Other | No. _____ |
| <input type="checkbox"/> Carbon Adsorber | No. _____ | Specify: | |
| <input type="checkbox"/> Cartridge/Canister | | | |
| <input type="checkbox"/> Regenerative | | | |

FORM 5EP: Emission Point Data

6. Estimated Emissions from the Emission Point

Criteria Pollutants	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)
Particulate Matter (filterable as PM10)	0.35			.65
Particulate Matter (filterable as PM2.5)	0.35			.65
Particulate Matter (condensables)	0.35			.65
Volatile Organic Compounds (VOC)	0.02			.042
Oxides of Sulfur (SO _x)	0.163			0.30
Oxides of Nitrogen (NO _x)	0.27			.50
Carbon Monoxide (CO)	0.22			.41
Lead (Pb)	0.0003			.0006
Greenhouse Gases (GHG)	At Design Capacity (lb/hr)	At Projected Operations		
Carbon Dioxide (CO ₂)				
Methane (CH ₄)				
Nitrous Oxide (N ₂ O)				
Hydrofluorocarbons (HFCs)				
Perfluorocarbons (PFCs)				
Sulfur Hexafluoride (SF ₆)				
Total GHG (as CO ₂ e)				
List individual federal Hazardous Air Pollutants (HAP) below:	At Design Capacity (lb/hr)	At Projected Operations		
		(lb/hr)	(lb/day)	(ton/yr)

(Attach additional sheets as necessary.)

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**APPLICATION FOR PERMIT TO CONSTRUCT
GAS CLEANING OR EMISSION CONTROL EQUIPMENT**

1. Owner of Installation Forever Faithful Pet Cremation & Funeral Care	Telephone No. 443-202-5720	Date of Application	
2. Mailing Address 519 Mabe Drive Woodbine, MD 21797	City	Zip Code	County Carroll
3. Equipment Location 519 Mabe Drive Woodbine, MD 21797	City/Town or P.O.	County Carroll	
4. Signature of Owner or Operator	Title General Manager	Print or Type Name Daniel Simons	
5. Application Type:	Alteration <input type="checkbox"/>	New Construction <input checked="" type="checkbox"/>	
6. Date Construction is to Start:	Completion Date (Estimate):		
7. Type of Gas Cleaning or Emission Control Equipment:			
Simple Cyclone <input type="checkbox"/>	Multiple Cyclone <input type="checkbox"/>	Afterburner <input checked="" type="checkbox"/>	Electrostatic Precipitator <input type="checkbox"/>
Scrubber <input type="checkbox"/>	_____ (type)	Other <input type="checkbox"/>	_____ (type)
8. Gas Cleaning Equipment Manufacturer	Model No.	Collection Efficiency (Design Criteria)	
9. Type of Equipment which Control Equipment is to Service:			
10. Stack Test to be Conducted:			
Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Identical Stack Test Provided	_____ (Date)
(Stack Test to be Conducted By)			
11. Cost of Equipment \$105,785.00			
Estimated Erection Cost \$7,000.00			

12. The Following Shall Be Design Criteria:

	<u>INLET</u>	<u>OUTLET</u>
Gas Flow Rate	_____ ACFM*	2000 _____ ACFM*
Gas Temperature	_____ °F	1600 _____ °F
Gas Pressure	_____ INCHES W.G.	_____ INCHES W.G.
PRESSURE DROP _____		
Dust Loading	_____ GRAINS/ACFD**	_____ GRAINS/ACFD**
Moisture Content	_____ %	10 _____ %
OR		
Wet Bulb Temperature	_____ °F	_____ °F
Liquid Flow Rate (Wet Scrubber)	_____ GALLONS/MINUTE	
(WHEN SCRUBBER LIQUID OTHER THAN WATER INDICATE COMPOSITION OF SCRUBBING MEDIUM IN WEIGHT %)		
* = ACTUAL CUBIC FEET PER MINUTE		** = ACTUAL CUBIC FEET DRY

WHEN APPLICATION INVOLVES THE REDUCTION OF GASEOUS POLLUTANTS, PROVIDE THE CONCENTRATION OF EACH POLLUTANT IN THE GAS STREAM IN VOLUME PERCENT. INCLUDE THE COMPOSITION OF THE GASES ENTERING THE CLEANING DEVICE AND THE COMPOSITION OF EXHAUSTED GASES BEING DISCHARGED INTO THE ATMOSPHERE. USE AVAILABLE SPACE IN ITEM 15 ON PAGE 3.

13. Particle Size Analysis

<u>Size of Dust Particles Entering Cleaning Unit</u>	<u>% of Total Dust</u>	<u>% to be Collected</u>
0 to 10 Microns	_____	_____
10 to 44 Microns	_____	_____
Larger than 44 Microns	_____	_____

14. For Afterburner Construction Only:

Volume of Contaminated Air _____ CFM (DO NOT INCLUDE COMBUSTION AIR)

Gas Inlet Temperature 1000 _____ °F

Capacity of Afterburner 1.0MM _____ BTU/HR

Diameter (or area) of Afterburner Throat 1.875² Ft _____

Combustion Chamber _____ (diameter) 300" (length) Operating Temperature at Afterburner 1600 °F

Retention Time of Gases 1 Sec _____

15. Show Location of Dust Cleaning Equipment in the System. Draw or Sketch Flow Diagram Showing Emission Path from Source to Exhaust Point to Atmosphere.
See enclosed

Date Received: Local _____ State _____

Acknowledgement Date: _____

By _____

Reviewed By:

Local _____

State _____

Returned to Local:

Date _____

By _____

Application Returned to Applicant:

Date _____

By _____

REGISTRATION NUMBER OF ASSOCIATED EQUIPMENT:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------	----------------------

PREMISES NUMBER:

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Emission Calculations Revised By _____ Date _____

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APPLICATION FOR INCINERATORS

Permit to Construct Registration

		DO NOT WRITE IN THIS SPACE
1. Owner of Installation or Company Name Forever Faithful Pet Cremation & Funeral Care		Date Rec. Local _____ Date Red. State _____
Date of Application _____		Acknowledgement Sent Date _____ By _____
Mailing Address 519 Mabe Drive	Telephone _____	
City Woodbine	State MD	Reviewed Name _____ Date _____
	Zip Code 21797	
2A. Premises Name if Different from Above _____		Local State _____
2B. Incinerator Location if Different From Above (give Street Address, City, County and Zip Code): _____		
3. Owner, Agent or Authorized Company Official Daniel Simons / General Manager (Print/Type Name) _____ (Signature) _____ (Mailing Address, City/Town, State, Zip Code)		
4A. New Construction Only Begin _____ Date Construction Completed _____	4B. Existing Installation Initial Operation Date _____ (14-15)	Application Returned to Applicant Date _____ By _____
		Premises Number [][] [][][][] 1 2 3 4 5 6 Registration Number [] [][][][] [][] 7 8 9 10 11 12 13
5. Installation or Contractor (New or Replacement Only) _____ (Name or Company Title) _____ (Mailing Address, City/Town, State, Zip Code, Telephone Number)		
6. Equipment Manufacturer B&L Cremation Systems Inc	Manufacturer's Serial or Catalog No. 2013-1796-20	7. Total Number of Incinerators of Identical Design and Capacity at this Location: <u>1</u>
8. Major Activity at this Location-Auto Dealer, Hospital, Apartment House, etc. Crematory		9. Rated Capacity of Incinerator in lb/hr: <u>150</u> 16-19
10. Incinerator Type (Mark only one with X) Single Chamber <input type="checkbox"/> 20-1 Multiple Chamber <input checked="" type="checkbox"/> 20-2 Auxiliary Burner <input type="checkbox"/> 21 Other <input type="checkbox"/> 22 _____ Specify _____		
11. Frequency of Burning Hours/Day [1][2] Days/Year [3][1][2] 23 24 25 26 27	12. Amount of Waste Burned Per Operating Day: _____ Units: tons [] 32-1 lbs. [] 32-2 gal. [] 32-3	
13. Method of Charging Waste into Unit: Manual <input checked="" type="checkbox"/> Automatic <input type="checkbox"/>		



14. Type of Waste/Refuse Incinerated. Mark major type with X -- all others with Check ✓.

Trash 100% Dry 33 Refuse 20% Garbage 34 Refuse 50% Garbage 35 Garbage 36 Animal or Animal Parts 37 Municipal Refuse 38 Infectious/ Pathological 39

Does this waste contain Carcinogenic or Toxic Material? Y/N Industrial Process Waste 40 _____ Other 41 _____

15. Total Annual Auxiliary Fuels Used

Oil _____ (gallons) _____ Natural Gas _____ (ft³) _____
 LP Gas _____ (gallons) _____ Other _____ specify fuel & units required
 42-47 (Grade) 48 49-55 56-59 90-92

16. Stack Information: Height Above Ground (ft) ²⁴ _____ Inside Diameter at Top (in) _____
 Exit Temperature (°F) _____ Gas Exit Velocity (ft/min) _____
 94-96 97-99 100-103 104-107

17. Emission Control Devices

Gas Cleaning Form AMA-6 Must be Completed for Each Device Used and Attached to this Application.

None 108 Settling Chamber or Baffles 109 Simple Cyclone 110 Multiple Cyclone 111 Scrubber 112 Venturi Scrubber 113 Electrostatic Precipitator 114 Bag-house 115 After-burner 116
 Other _____ 117-118 Specify Type

DO NOT WRITE BELOW THIS LINE

18. Actual Stack Emissions in Pounds per Operating Day

Particulate Matter 119 124 Oxides of Sulfur 125 130 Oxides of Nitrogen 131 136
 Carbon Monoxide 137 142 Volatile Organic Compounds 143 148

Other Pollutants Specify _____ Type/Amount

19. Inventory Date 180 183

20. Method Used to Determine Emissions

	Estimate	Emission Factor	Stack Test	Other		Estimate	Emission Factor	Stack Test	Other
Particulate matter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Oxides of Sulfur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	184-1	-2	-3	-4		185-1	-2	-3	-4
Oxides of Nitrogen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Carbon Monoxide	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	186-1	-2	-3	-4		187-1	-2	-3	-4
Volatile Organics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	188-1	-2	-3	-4					

21. Premises Information

Premises Name _____
 Census Tract 243 248 SIC No. 249 252 MD Grid East 253 256 MD Grid North 257 259

Owner Private 260-0 Local 260-1 State 260-2 Federal 260-3

Date Completed _____
 Completed By _____



Calculation of Emissions

Potential to Emit

B&L Cremation Systems, Inc.

Total Incinerator Burn Capacity 150 lbs/hr our of remains (type 4) and associated containers (type 0)

Flue Gas Flow Rate = 485 dscfm 12 Hours/Day X 6 Days/W X 52 Weeks/Year
 (100% Excess Air) = 3744 Hours/Year

Total Emission Rate = Incinerator Burn Rate X Emission Factor

Sulfur Dioxide (SO₂)

150 lb/hr X 2.17 lb/ton X 1 ton = 0.163 lbs/hr
 2000 lbs = 0.30 TPY

0.16 lb/hr X 454000 mg/lb X 1 ppmv = 34.38 ppmv
 485 dscfm X 60 min/hr X 0.028 m³/r³ X 2.61 mg/m³

Nitrogen Oxide (NO_x - as Nitrogen Dioxide)

150 lb/hr X 3.56 lb/ton X 1 ton = 0.27 lbs/hr
 2000 lbs = 0.500 TPY

0.27 lb/hr X 454000 mg/lb X 1 ppmv = 79.13 ppmv
 485 dscfm X 60 min/hr 0.028 m³/r³ X 1.88 mg/m³

Hydrocarbons (TOC/VOC - methane)

150 lb/hr X 0.299 lb/ton X 1 ton = 0.02 lbs/hr
 2000 lbs = 0.042 TPY

0.02 lb/hr X 454000 mg/lb X 1 ppmv = 19.02 ppmv
 485 dscfm X 60 min/hr 0.028 m³/r³ X 0.65 mg/m³

Lead (Pb) (0.0002 % of body weight)

150 lb/hr X 0.0002 lb/ton = 0.0003 lbs/hr
 100 lbs = 0.0006 TPY

Particulates (PM & PM₁₀)

150 lb/hr X 4.67 lb/ton X 1 ton = 0.35 lbs/hr
 2000 lbs = 0.656 TPY

0.35 lb/hr X 7000 mg/lb = 0.08 gr/dscf
 485 dscfm X 60 min/hr

Carbon Monoxide (CO)

150 lb/hr X 2.95 lb/ton X 1 ton = 0.22125 lbs/hr
 2000 lbs = 0.41 TPY

0.22 lb/hr X 454000 mg/lb X 1 ppmv = 108.14 ppmv
 485 dscfm X 60 min/hr 0.028 m³/r³ X 1.14 mg/m³

Notes:

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

**CALCULATIONS FOR PRODUCTS OF COMBUSTION
AND RESIDENCE TIME FOR 150 LB/hr
TYPE IV WASTE. B&L ANIMAL CREMATORY**

PROPANE

A. BASIS: 1 LB WASTE

- | | |
|---|-----------------------------------|
| 1. $\frac{1 \text{ lb waste} \times 1000 \text{ Btu/lb waste} \times 15 \text{ lbs air}}{10,000 \text{ Btu}}$ | = 1.5 lbs air |
| 2. $\frac{1 \text{ lb waste} \times 0.10 \text{ lb combustible}}{1 \text{ lb waste}}$ | = 0.10 lbs of combustibles |
| 3. $\frac{1 \text{ lb waste} \times 0.85 \text{ lb H}_2\text{O} \times 1.6^*}{1 \text{ lb waste}}$ | = 1.36 lbs of water |
| 4. $\frac{6,500 \text{ Btu aux fuel}^{**} \times 23.8 \text{ cu ft air/cu ft fuel}}{2500 \text{ Btu/cu ft fuel} \times 13.35 \text{ cu ft air/lb air @ } 70^{\circ}\text{f}}$ | = 4.64 lbs of air for aux fuel |
| 5. $\frac{6,500 \text{ Btu aux fuel} \times 0.044 \text{ lb fuel/cu ft fuel}}{2500 \text{ Btu/cu ft fuel}}$ | = 0.11 lb of aux fuel |
| 6. Sum = PRODUCTS OF COMBUSTION (POC) | = 7.71 lbs POC per lb waste @ 70f |

B. RESIDENCE TIME @ 1600 F

1. $\frac{7.71 \text{ lbs POC/lbs waste} \times 51.89 \text{ cu ft / lb POC @ } 1600^{\circ}\text{f} \times 150 \text{ lbs waste / hr}}{3600 \text{ sec/hr}}$
- = 16.66 cu ft / sec @ 1600 f = 17.00 cu ft for 1 second residence time

RESIDENCE TIME @ 1800 F

2. $\frac{7.71 \text{ lbs POC/lbs waste} \times 56.93 \text{ cu ft / lb POC @ } 1800^{\circ}\text{f} \times 150 \text{ lbs waste / hr}}{3600 \text{ sec/hr}}$
- = 18.28 cu ft / sec @ 1800f = 19.00 cu ft for 1 second residence time

* Correction multiplier for dry air and water vapor

** Fuel is propane

Referances: Incinerator institute of America.
North American Combustion Handbook
Eclipse Combustion Engineering guide

C. THERMOCOUPLE PLACEMENT.

Secondary chamber operating temperature at > or = to 1600f = 17.00 cu ft from flame tip.
1800f = 19.00 cu ft from flame tip.



Cremation
Systems, Inc.

7205 - 114th Avenue North • Largo, Florida 33773
1-800-622-5411 • 727-541-4666 • Facsimile 727-547-0669
e-mail: blcremsys@aol.com • www.blcremationsystems.com

PROCESS DESCRIPTION

This project consists of the construction of one new cremation retort. This crematorium will consist of one B & L Systems Model BLP 500/150 Animal Cremator. The cremation unit will be fired on propane.

Deceased animal remains are manually placed into the primary chamber of the cremator. The door of the cremator is then closed. After a preheat of the afterburning chambers by the auxiliary burner, initial and supplementary combustion is provided by propane fired burner located in the primary chamber of the cremator. Once material combustion is initiated, the rate of the combustion is controlled by limiting both the combustion air and fuel supplied to the primary chamber through the primary burner. This process generates a highly combustible gas mixture that flows into a secondary chamber where more air is admitted to insure further oxidation of the gases. The auxiliary burner is installed in the secondary chamber of the cremator to facilitate complete combustion of all gaseous materials entering this chamber.

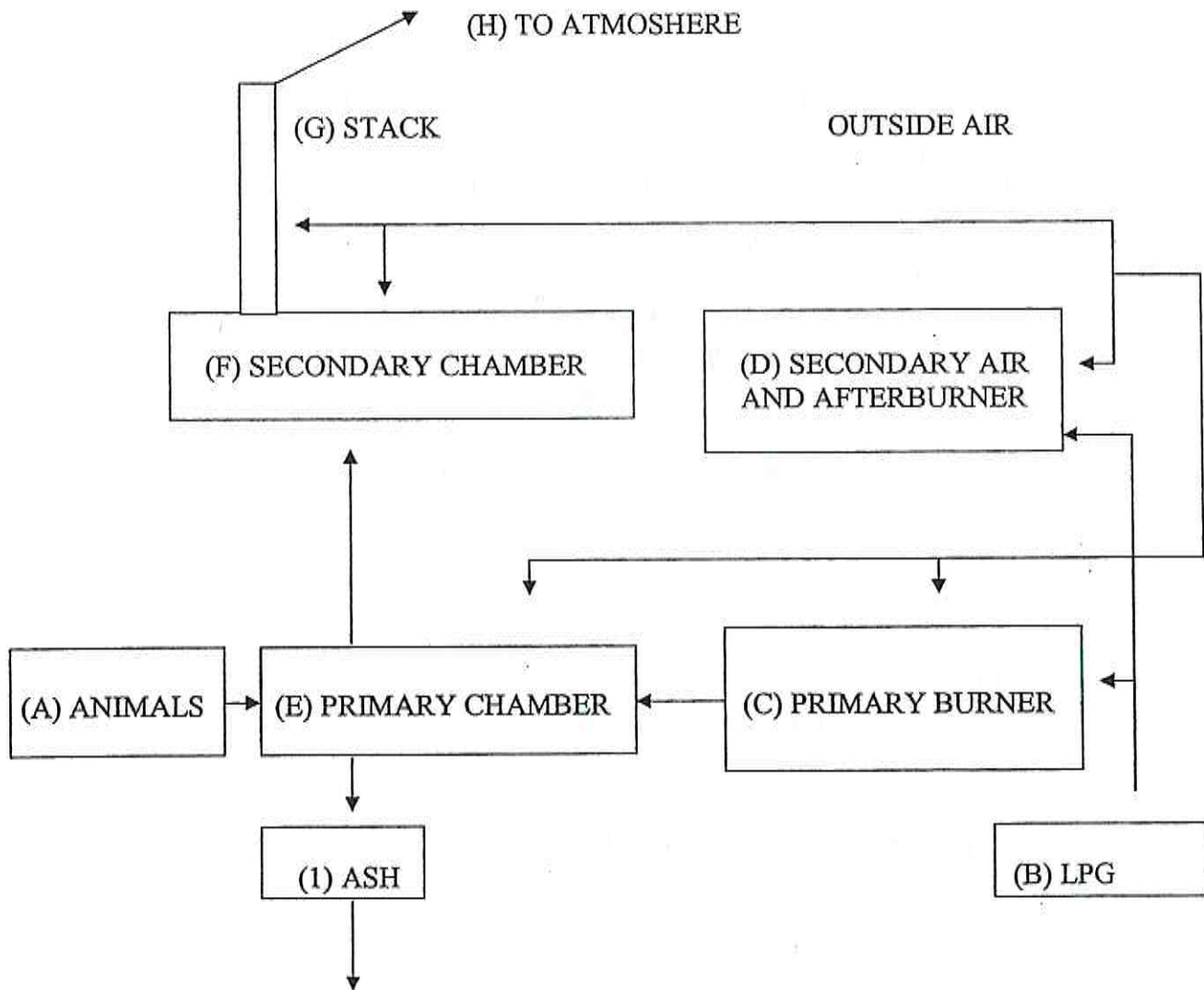
Once the cremation process is complete, the remains are removed from the primary chamber of the cremator. These remains are placed in urns and returned to the family for interment or disposal.



^{Cremation}
Systems, Inc.

7205 - 114th Avenue North • Largo, Florida 33773
1-800-622-5411 • 727-541-4666 • Facsimile 727-547-0669
e-mail: blcremsys@aol.com • www.blcremationsystems.com

PROCESS FLOW DIAGRAM



World's Largest Independent Cremation Equipment Manufacturer



Cremation
Systems, Inc.

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e-mail: blcremsys@aol.com • www.blcremationsystems.com

TEMPERATURE CONTROL SEQUENCE

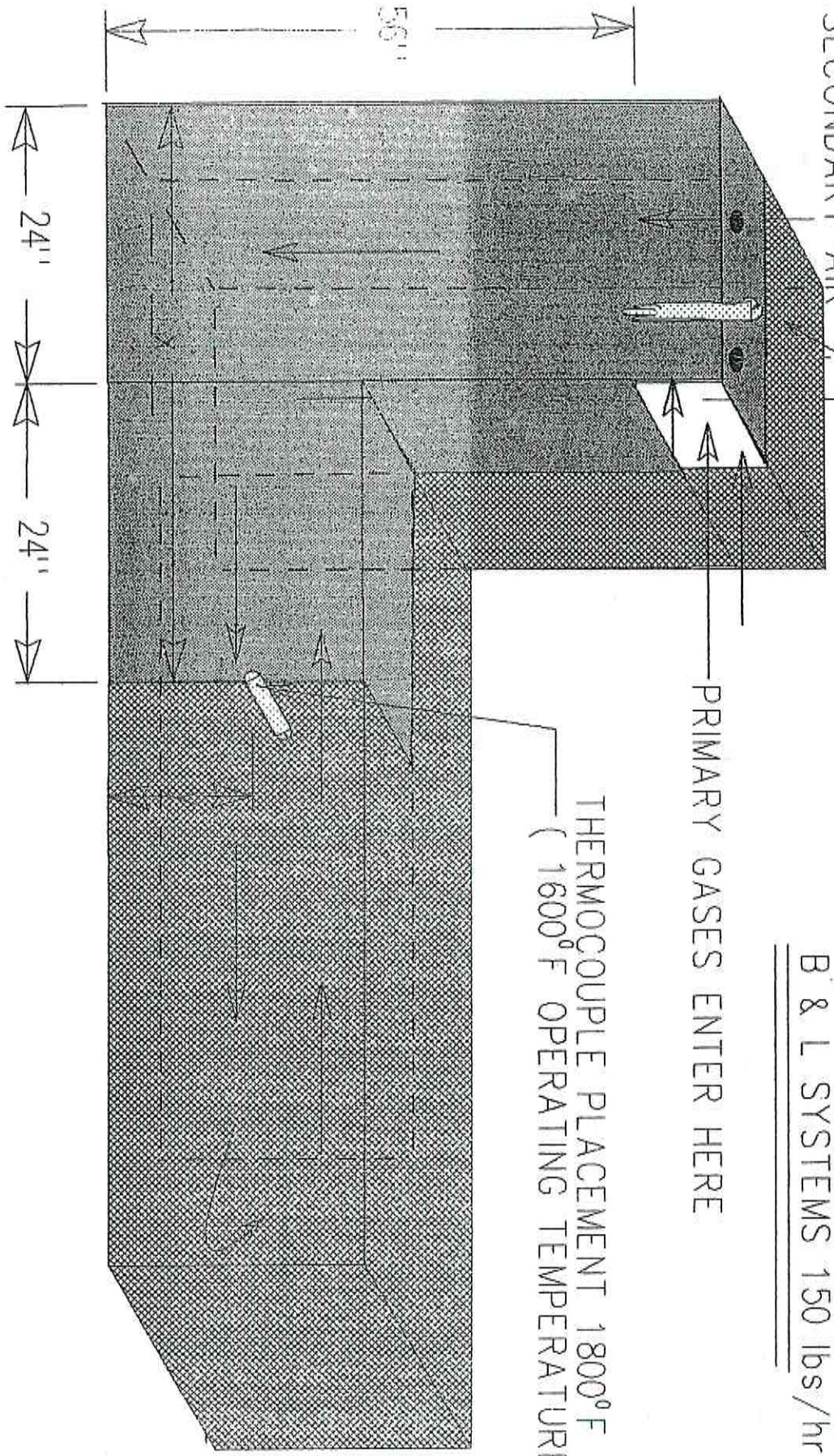
A type "K" thermocouple is placed 19 ft. down stream of the flame tip to measure temperature, the signal is sent to the *main control panel* where it is received by a FUJI PYZ series temperature controller with digital readout and a DR4200 *temperature recorder*. The FUJI PYZ series temperature controller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

World's Largest Independent Cremation Equipment Manufacturer

AFTERBURNER
 SECONDARY AIR
 TO STACK

PRIMARY GASES ENTER HERE

THERMOCOUPLE PLACEMENT 1800°F @ 1 SEC
 (1600°F OPERATING TEMPERATURE)



B & L SYSTEMS 150 lbs/hr SERIES

x=48" (outside dim)
 y=11.5" (outside dim)

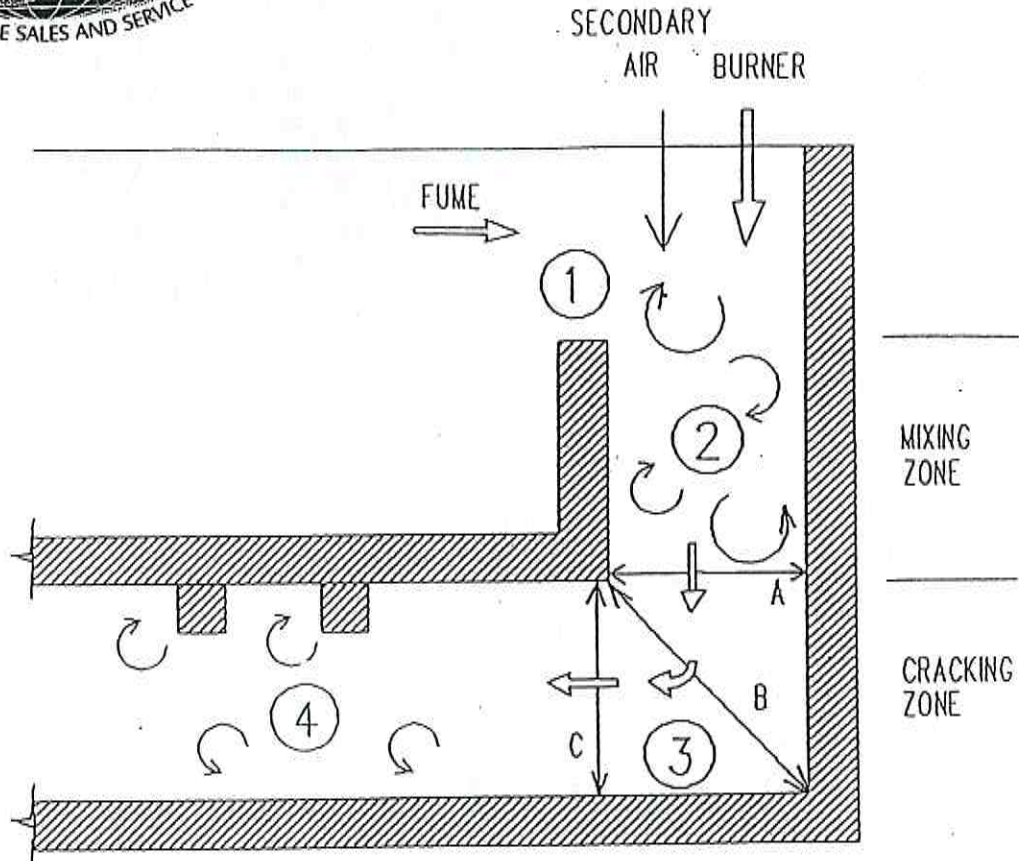
CHAMBER SIZE VERTICAL 18"x24"x56" = 14 FT³

HORIZONTAL 18"x20"x24" = $\frac{05 \text{ FT}^3}{19 \text{ FT}^3}$



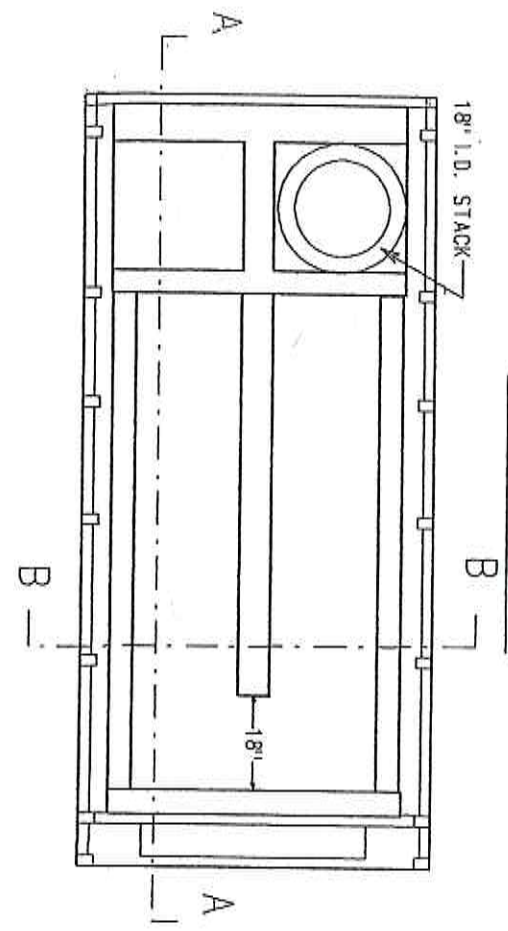
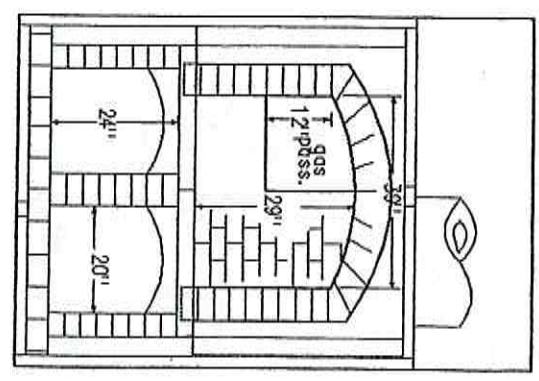
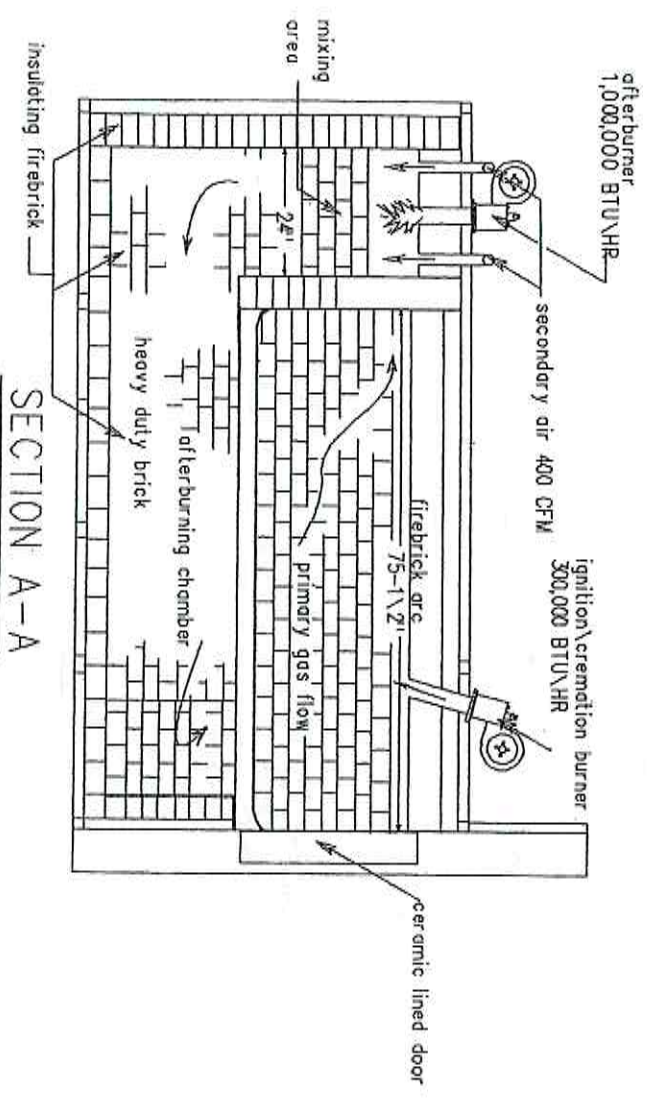
Cremation
Systems, Inc.

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



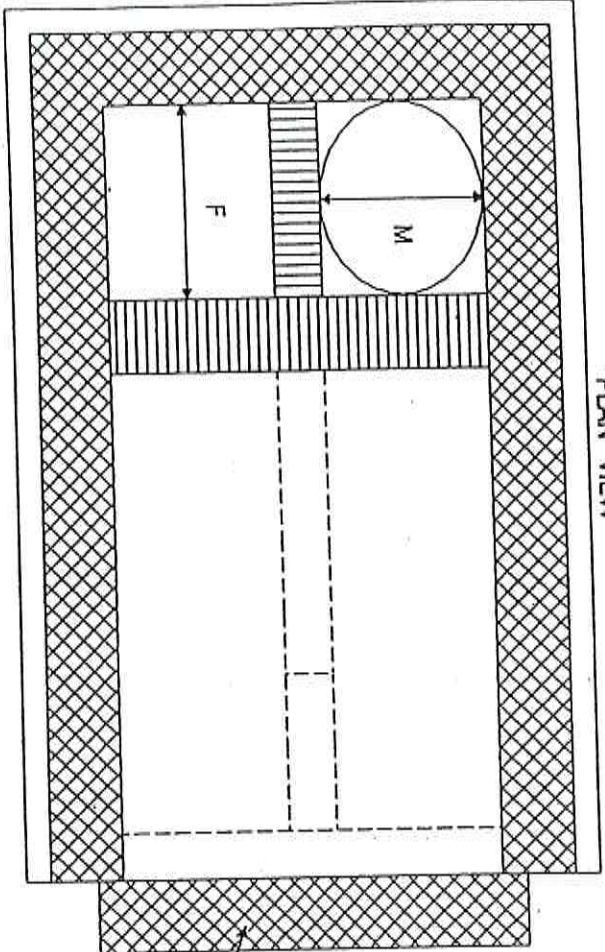
1. At the back of primary chamber, waste fume, air and burner flame all meet with different viscosities, volumes, velocities and flow directions which causes turbulence in the mixing zone of the secondary chamber.
2. Turbulence continues in the mixing zone as flows are traversing the flame tip.
3. Changing velocity at flame front zone and cornering cause additional turbulence at the base of the unit. $V_A > V_B < V_C$.
4. Uneven cross sectional area due to arches in the ceiling to support the primary chamber floor and additional changes in directional flow causes further turbulence downstream in the secondary chamber.

World's Largest Independent Cremation Equipment Manufacturer

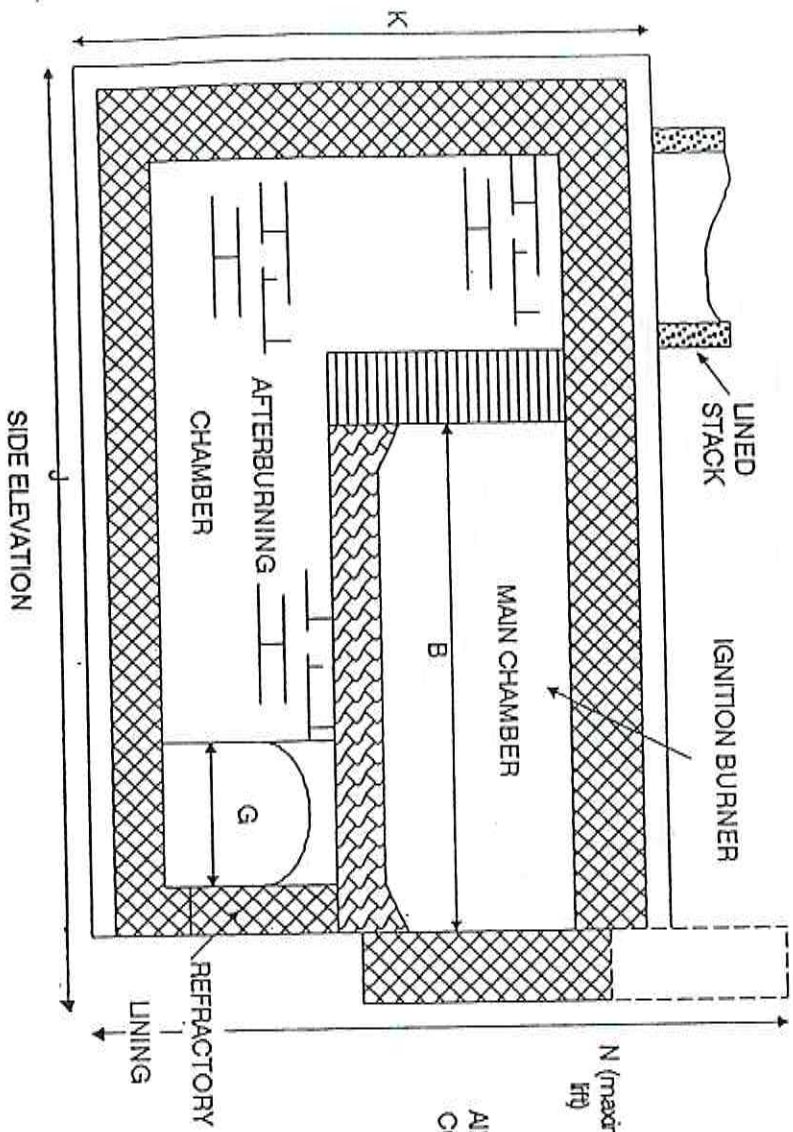


BLP 500\150 ANIMAL CREMATOC?

PLAN VIEW



LOADING DOOR



SIDE ELEVATION

A	B	C	D	E	F	G	H	I	J	K	L	M	N
39	70	30	20	20	24	20	24	18	109	69	60	18	87

Burn Rate: 150 lbs/hr

Model Number: BLP - 500/150

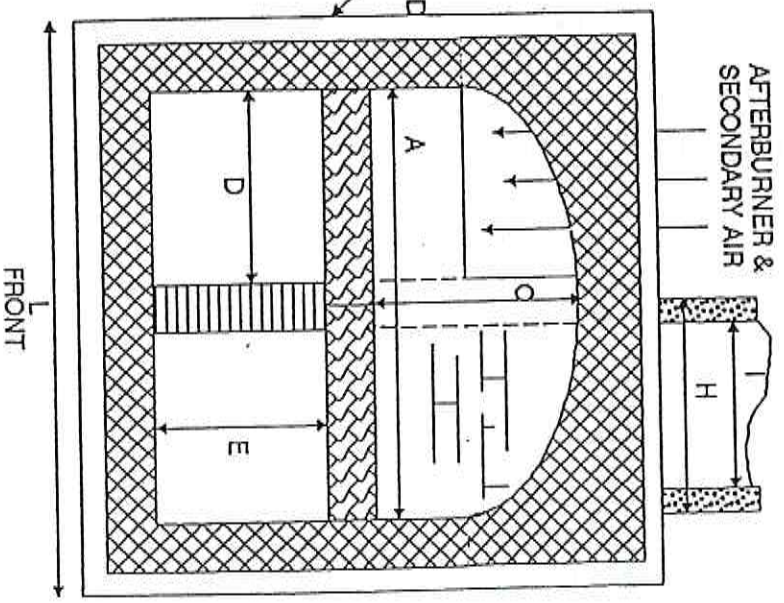
B & L Cremation Systems

Pet

Cremator

Specifications

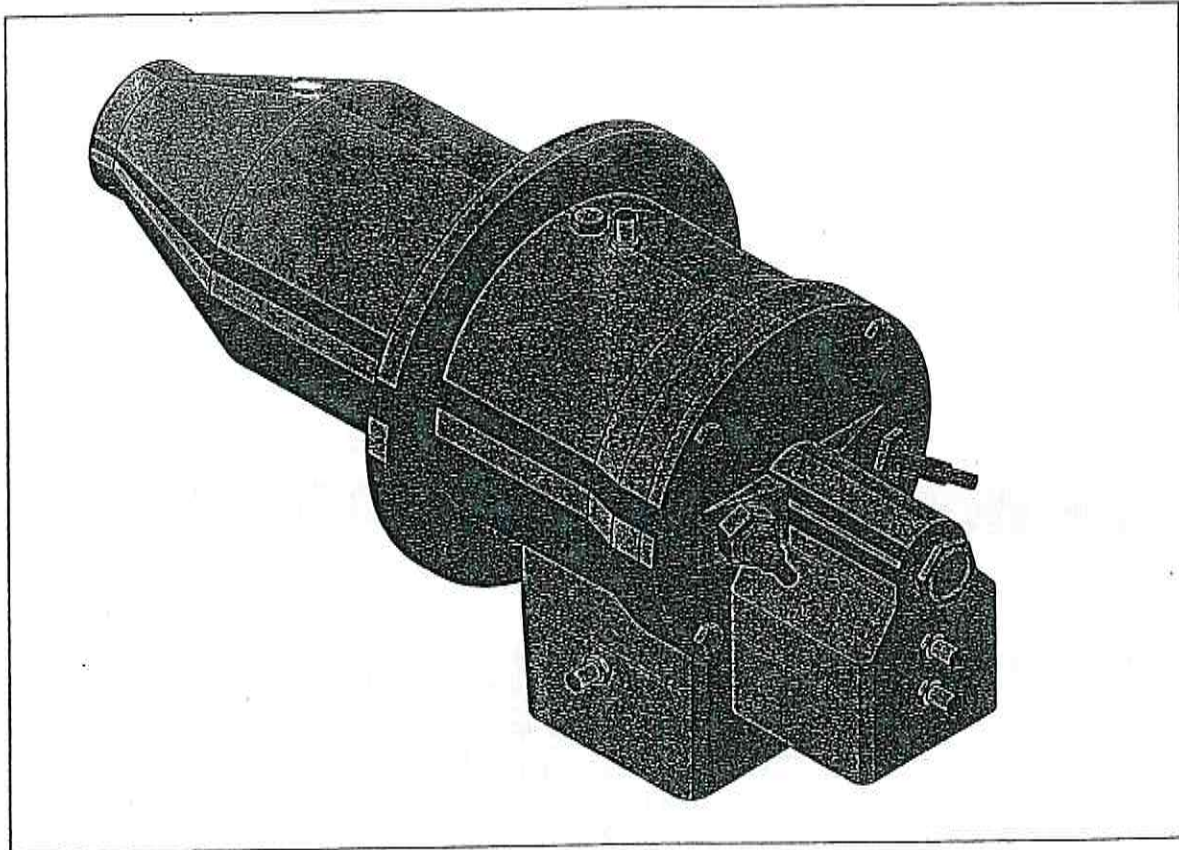
1-800-622-5411



FRONT

Eclipse Velocity Burners

ThermJet Series (version 1.0)



Eclipse Combustion

Eclipse

Specifications

3

INTRODUCTION

This section gives a detailed overview of the burner specifications. It also lists several options that are available for the ThermJet.

Figure 3.1 The ThermJet burner

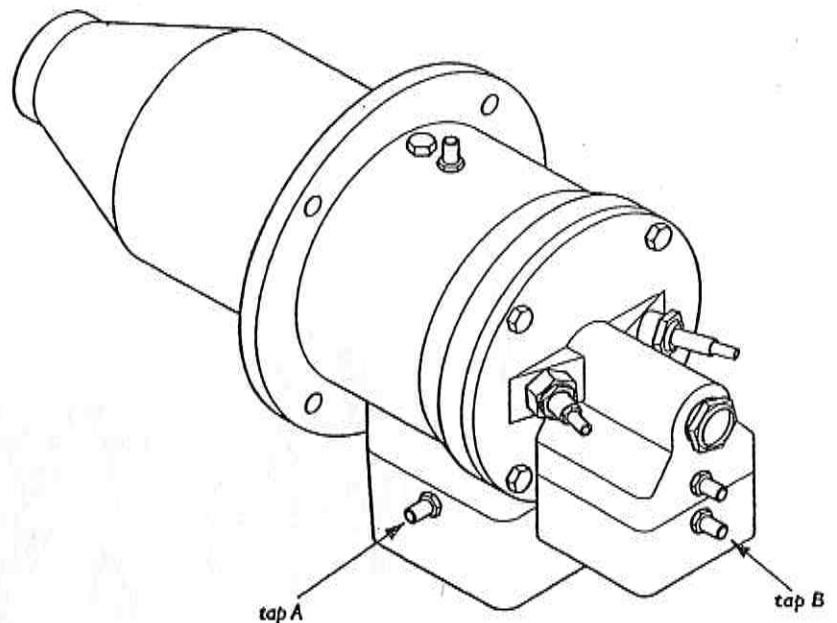


Table 3.1 Options

PARAMETER	OPTIONS	
Fuel	<ul style="list-style-type: none"> • natural gas • propane • butane. 	<i>For any other mixed gas, contact Eclipse for orifice sizing.</i>
Flame detection	<ul style="list-style-type: none"> • U.V. scanner • flame rod, for use with alloy or silicon carbide firing tubes only. 	
Ignition	<ul style="list-style-type: none"> • direct spark ignition (6 kV AC). 	
Combustor	<ul style="list-style-type: none"> • alloy firing tube • silicon carbide firing tube • refractory block. 	

SPECIFICATIONS

Main specifications

Table 3.2 ThermJet performance data

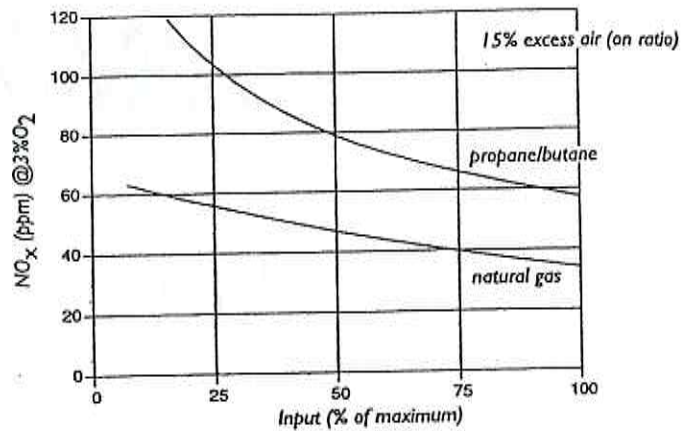
PARAMETER	BURNER TYPE (VELOCITY)		BURNER SIZE			
			50	75	100	150
High fire input (Btu/hr)	Medium & High velocity		500,000	750,000	1,000,000	1,500,000
Low firing rate, on-ratio (Btu/hr)	Medium & High velocity		50,000	75,000	100,000	150,000
Low firing rate, fixed air (Btu/hr)	Medium & High velocity		10,000	15,000	20,000	30,000
Static air pressure ("w.c.) • 15% excess air, at maximum input with standard orifice plate installed, measured at tap A (See Figure 3.1)	High velocity		12.0	16.0	14.5	18.5
	Medium velocity		7.5	8.0	7.5	9.5
Static gas pressure ("w.c.) • at maximum input with standard orifice plate installed, measured at tap B (See Figure 3.1)	High velocity		11.0	15.5	16.0	16.5
	Medium velocity		6.0	6.5	7.5	8.0
Flame length (In) (from end of firing tube)	High velocity	Nat. gas	25	30.4	33	38
		Propane	33	34	34	42
		Butane	30	30	35	43
	Medium velocity	Nat. gas	28	28	38	43
		Propane	36	38	37	42
		Butane	39	30	42	40
Maximum flame velocity (ft/s) • 15% excess air, at maximum input	High velocity		500	500	500	500
	Medium velocity		250	250	250	250

- all information is given for general sizing purposes only
- refer to data sheet for burner specific information
- all inputs based on gross calorific values

Performance graphs

The graphs that follow give you an approximate picture of the performance. Should you want more exact information, contact Eclipse Combustion.

Figure 3.2 **NO_x emissions**

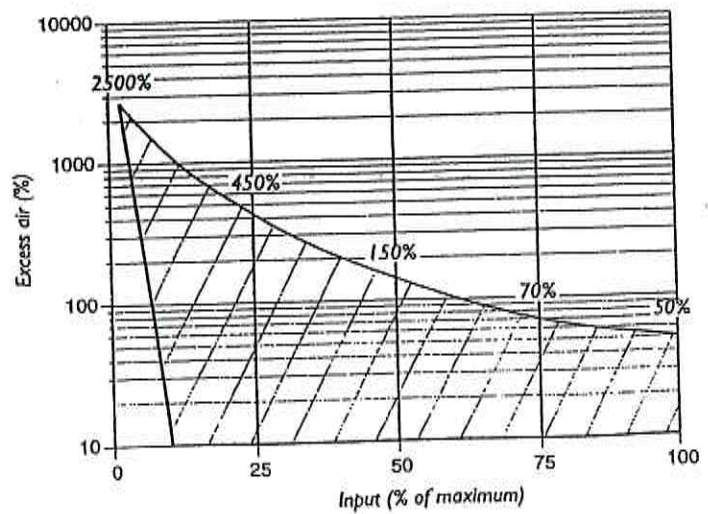


The emissions from the burner are influenced by:

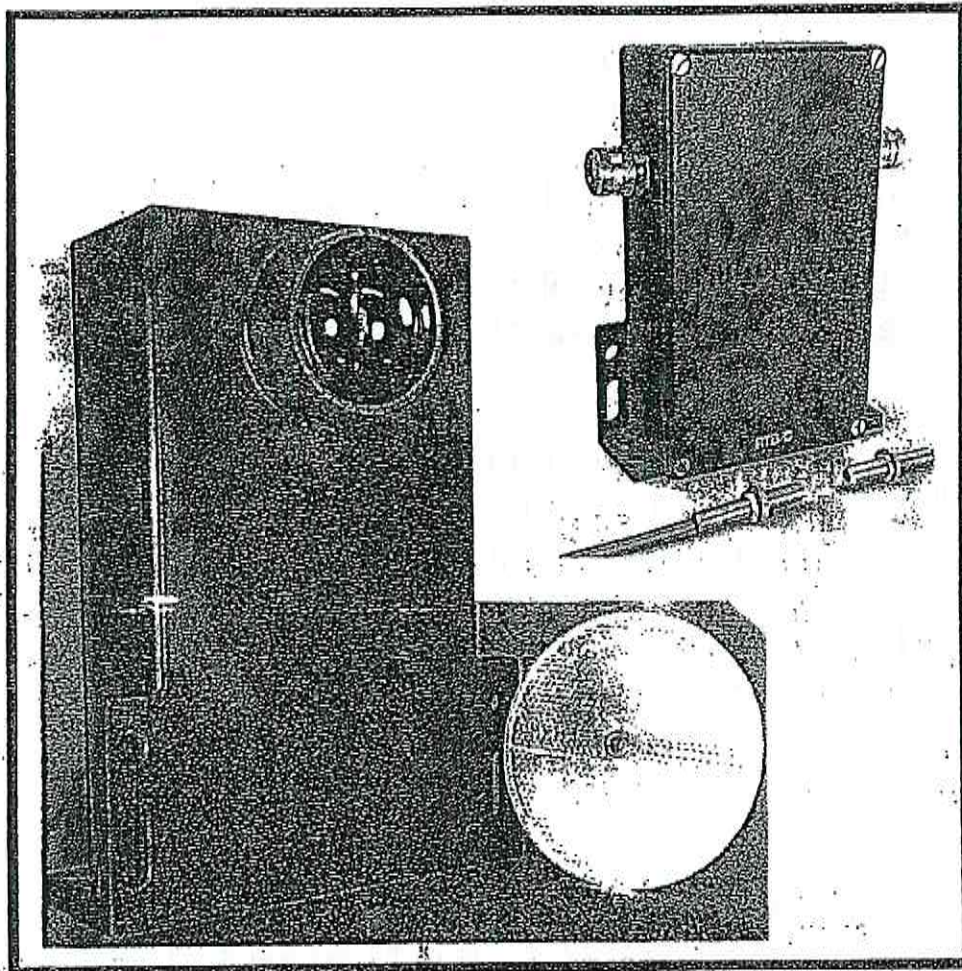
- the fuel type
- the combustion air temperature
- the firing rate
- the chamber conditions
- the percent of excess air.

For estimates of other emissions, contact Eclipse Combustion.

Figure 3.3 **Operational zone**



VISIBLE EMISSIONS ALARM (VEA)



APPLICATION: Alarm and control for Opacity used on small and large sources for warning operators and shutting down systems based on opacity, haze or clarity.

- Proven Rugged Design
- Unaffected by Ambient Light
- Spans up to 6 Feet
- Visible LED Light Source
- Dual Beam or Single Beam
- Adjustable Delay up to 3 min.
- Easy to Install & Support
- External Adjustment

GENERAL PURPOSE OPACITY ALARMS



APPLICATION: These units are specifically designed to provide an operator with a reliable alarm system when Opacity or Smoke has exceeded a predefined limit. The alarm limit is easily set by using an opacity filter. The pulsed visible LED is unaffected by ambient light which makes for easy to install and calibrate.

FEATURES: The unit comes in either a single beam and dual beam design and an almost permanent LED light source. The electronics are housed in a rugged die-cast housing and powered by either 120 VAC or 230 VAC.

These designs meet all common installation requirements.

SPECIFICATIONS:

LIGHT SOURCE: Pulsed Visible LED.
SPECTRAL RESPONSE: Between 400nm & 500nm.
ANGLE OF VIEW: Less the 4 degrees from axis.
AMBIENT LIGHT: No measurable effect.

RANGE: 0 TO 100% Opacity.
ACCURACY: +/- 3% of full scale.
ALARMS: DPDT 5.0 A @ 120 VAC; 100% adj. LED indicator for alarm setting.

OTHER OUTPUTS: ON-OFF operation (no time delay).
OFF time delay (reverse of normal).
Adjustable One-shot.

POWER: 100-130 Volts AC, 50/60 Hz, 10 VA.

TEMPERATURE: Ambient: -20 to +150 degrees F.
Storage: +20 to +90 degrees F.

ENCLOSURES: Meet NEMA 3,4,5,12.

PHYSICAL: ELECTRONICS 8.0" x 5.75" x 3.31" (HWD).

VEA-S SINGLE BEAM - 3/8"-24 inch. Straight Thread.

VEA-D DUAL BEAM SENSOR - 3" Diameter.

RESPONSE TIME: Selectable & Adjustable up to 3 minutes.

OPTOMONITOR, Inc.
270 Polaris Avenue
Mountain View, CA 94043
Phone: 415/967-8992
Fax: 415/967-0286

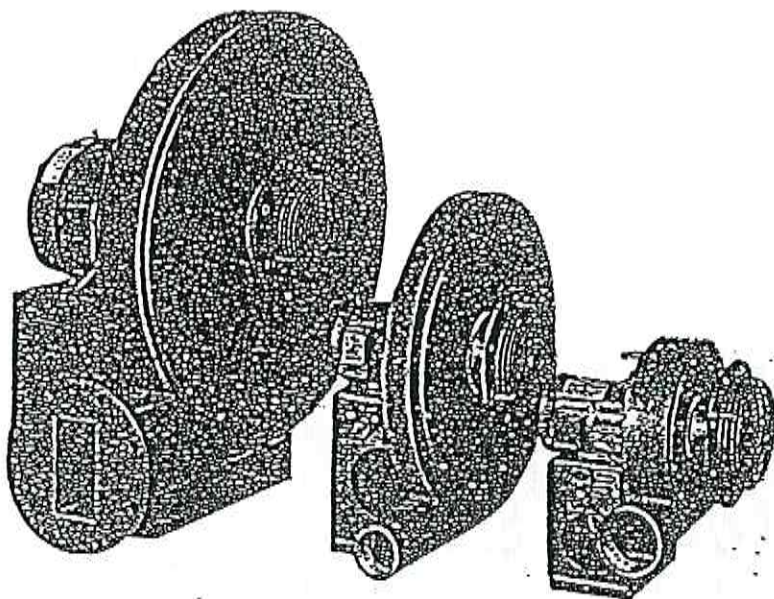
PLACE

STAMP

HERE

ECLIPSE TURBO BLOWERS

SERIES "SMJ"



- High efficiency
- Heavy gauge steel base and housing
- Aluminum impellers balanced statically and dynamically
- Matching air filters available
- Changeable outlet positions

Eclipse "SMJ" Blowers are centrifugal blowers that provide low pressure air for industrial combustion systems. They are also used for cooling, conveying, drying, liquid agitation, smoke abatement, vacuum cleaning, fume and dust exhausting, and other applications where air temperatures are under 220°F.

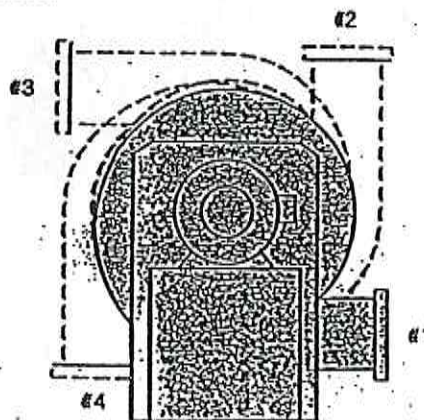
All "SMJ" Blowers are constructed of continuous welded, heavy gauge steel. The impellers are made of lightweight, high strength, riveted aluminum. Outlets on 3" and 4" models are threaded, while all others are flanged for a standard 125# ANSI companion flange. Discharge ports are sized to keep pressure losses within reasonable limits.

Blower inlet flanges are equipped with a grill that complies with OSHA regulations. If desired, the grill may be removed and the inlet bolted to a standard ANSI companion flange. Eclipse-supplied motors are standard shaft and starting torque, ball bearing, 3600 rpm units. On any blower requiring 3/4 HP or more, Eclipse recommends that polyphase motors be used.

There are four possible outlet positions. Any existing position is easily changed by removing the housing from the

blower base and remounting it in the desired position. Positions 1 through 3 can be specified for any blower. Position 4, however, requires factory approval before ordering. Position 1 is the standard assembly (bottom, horizontal) unless otherwise specified.

"SMJ" Blowers can be supplied with counterclockwise (CCW) or clockwise (CW) rotation as viewed from the motor side. CCW rotation is furnished standard unless otherwise specified.

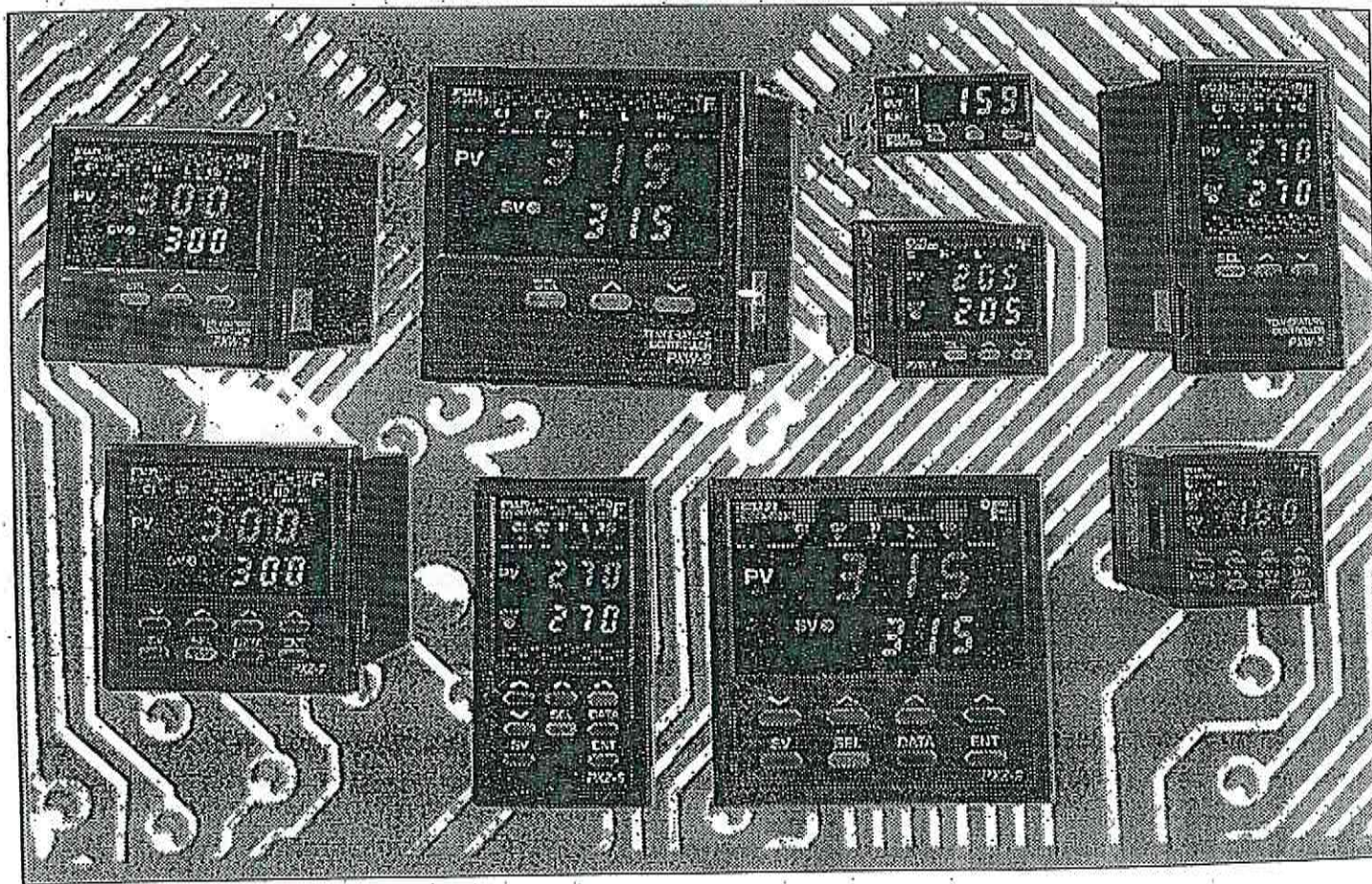


Outlet Positions

FUJI
ELECTRIC

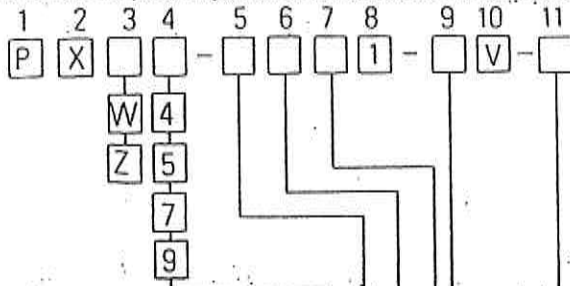
PX SERIES

**PID Autotune
Controllers
Featuring Fuzzy Logic**



Operation Manual

MODEL CONFIGURATION



Front panel size	Code
48 x 48 (1/16 DIN)	4
48 X 96 (1/8 DIN)	5
72 x 72 (72mm)	7
96 x 96 (1/4 DIN)	9

Kinds of input	Code
Thermocouple (°C)	T
Thermocouple (°F)	R
RTD/Pt100 (°C)	N
RTD/Pt100 (°F)	S
4-20mA DC, 1-5V DC	B
0-20mA DC, 0-5V DC	A

Control output 1	Code
Relay contact (reverse action)	A
Relay contact (direct action)	B
SSR driver (reverse action)	C
SSR driver (direct action)	D
4 to 20mA DC (reverse action)	E
4 to 20mA DC (direct action)	F

Control output 2*	Code
None	Y
Relay contact (reverse action)	A
Relay contact (direct action)	B
SSR driver (reverse action)	C
SSR driver (direct action)	D
4 to 20mA DC (reverse action)	E
4 to 20mA DC (direct action)	F

*not available on 48 x 48mm type

Additional function	Code
Heater break alarm*	2
Process alarm & Heater break alarm*	3
None	4
Process alarm	5

*not available on 48 x 48mm type

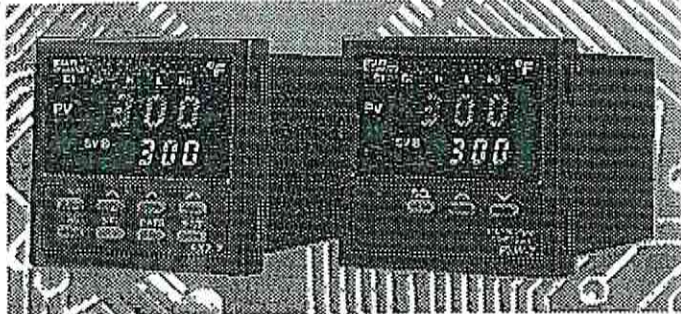
Power Supply Option	Code
24V AC/DC Supply	D

FEATURES:

- 1/4 DIN, 1/8 DIN, 72mm, 1/16 DIN and 1/32 DIN sizes available
- Choose between 3-button or 8-button operation
- Fuzzy logic control with PID Autotune
- Universal input-T/C, RTD, current, and voltage
- 24V DC/AC supply option available
- 8 segment ramp/soak programming
- Advanced security options to prevent unauthorized changes in parameters
- NEMA 4X faceplate

GENERAL SPECIFICATIONS

Rated voltage	85-264V AC or 24 AC/DC
Power consumption	10VA or less (100V AC, without option) 15VA or less (220V AC, without option)
Insulation resistance	50M Ω or more (500V DC)
Withstand voltage	Power source-Earth: 1500V AC, 1 min Power source-Other: 1500V AC, 1 min Earth-relay output: 1500V AC, 1 min Earth-Alarm output: 1500V AC, 1 min Other: 500V AC, 1 min
Input impedance	Thermocouple: 1M Ω or more Voltage: 450K Ω or more Current: 250 Ω (external resistor)
Allowable signal source resistance	Thermocouple: 100 Ω or more Voltage: 1K Ω or more
Allowable wiring resistance	RTD: 10 Ω or less per wire
Reference junction compensation accuracy	± 1 $^{\circ}$ C (at 23 $^{\circ}$ C)
Process variable offset	(PV shift) $\pm 10\%$ FS
Set variable offset	$\pm 50\%$ FS
Input filter	0-120.0 sec, setting in 0.1 sec steps (primary lagging filter)
Noise reduction ratio	Nominal mode noise (50/60Hz): 50dB or more Common mode noise (50/60Hz): 140dB or more



PXZ and PXW 7

POWER FAILURE PROCESSING

Memory protection:	Non-volatile memory hold After the recovery of power, control is started at the value before power failure
--------------------	---

SELF-CHECK

Method:	Watchdog timer monitors program error.
---------	--

OPERATION AND STORAGE CONDITIONS

Operating temperature	-10 to 50 $^{\circ}$ C
Operating humidity	90% RH or less (non-condensing)
Storage temperature	-20 to 60 $^{\circ}$ C

CONTROL FUNCTION

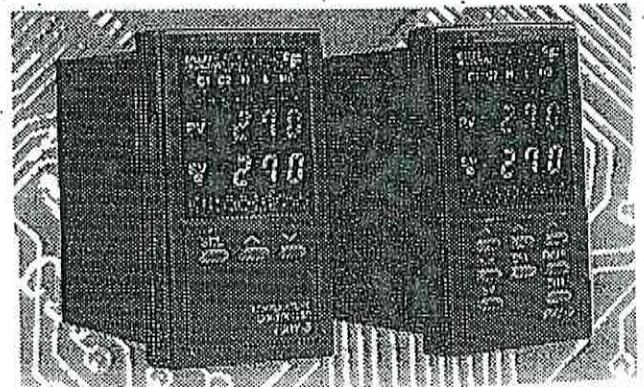
(STANDARD TYPE)

Control action	PID control with auto-tuning Fuzzy control with auto-tuning
Proportional band (P)	0-999.9%, setting in 0.1% steps
Integral time (I)	0-3200 sec, setting in 1 sec steps
Differential time (D)	0-999.9 sec, setting in 1 sec steps
P,I,D= 2-Pt. Position action when P,I,D=0	
Proportional action when I,D=0	
Proportional cycle	1-150 sec, setting in 1 sec steps, relay contact output, SSR/SSC drive output only
Hysteresis width	0-50%, setting in 1% steps, 2-position action only
Anti-reset wind up	0-100% FS, setting in 1% steps, auto-setting with auto-tuning
Input sampling cycle	0.5 sec
Control cycle	0.5 sec

CONTROL FUNCTION

(DUAL OUTPUT TYPE) (HEATING/COOLING TYPE)

Heating Proportional band	$P \times 1/2$ (P: 0-999.9%)
Cooling Proportional band	Heating proportional band \times cooling proportional band coefficient Cooling proportional band coefficient= 0-99.9 0.2-position action
Integral time	0-3200 sec for heating and cooling
Differential time	0-999.9 sec for heating and cooling
P,I,D= 0.2-position action (without dead band) for heating and cooling I,D= 0:Proportional action	
Proportional cycle	1-150 sec, relay contact output, SSR/SSC drive output only
Hysteresis width	2-position action for heating and cooling: 0.5% FS 2-position action for cooling: 0.5% FS
Anti-reset wind-up	0-100% FS, setting in 1% steps, auto-setting with auto-tuning
Overlap/dead band	$\pm 50\%$ of heating proportional band
Input sampling cycle	0.5 sec
Control cycle	0.5 sec



PXW and PXZ 5

**Source Test Report for Particulate, Visible
and Carbon Monoxide Emissions**

**EPA Method 1-5, 9 & 10
Report
16037-ST**

Conducted:

July 7th, 2016

Prepared for:

A Rainbow Crossing Pet Memorial Services, LLC

EU-002

Facility ID 0112719

By



**Beatty Environmental Services, LLC
315 SE 20th Pl
Cape Coral, FL 33990
(239) 246-3646**

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Attachment F - Project Participants	

1.0 Introduction

A Rainbow Crossing Pet Memorial Services, LLC, Facility ID 0112719, operates a animal crematory located at 4830 NE 12th Avenue in Oakland Park, Florida. On July 7th, 2016, tests for particulate (PM), Carbon Monoxide (CO), and visible emissions (VE) were performed on the cremation exhaust stack of **EU-002**.

The tests were performed in order to comply with the air general permit conditions and Broward County Department of Planning and Environmental Protection, Air Quality Division, Chapter 27 Article IV, Air Quality, Section 27-179(c)(2).

During the testing period, Mr. Robert Johnson crematory operator and owner for A Rainbow Crossing Pet Memorial Services, LLC, maintained a log containing the emission control device and process data. This information is presented, along with the temperature charts, in Attachment C.

The results of this test verify compliance with the Florida Department of Environmental Protection Rule 62-296.401(6) F.A.C.

2.0 Certification of Test Results

Facility Tested: A Rainbow Crossing and Pet Memorial Services, LLC
4830 NE 12th Avenue
Oakland Park, FL

Type Process: Animal Crematory

Abatement Device: Afterburner

Report: 16037-ST

Date: July 7th, 2016

Actual Particulate Emissions - **0.036** gr/dscf. @ 7% Oxygen
Allowable Particulate Emissions - 0.08 gr/dscf. @ 7% Oxygen

Actual Carbon Monoxide Emissions - **10.63 ppm** @ 7% Oxygen
Allowable Carbon Monoxide Emissions - 100ppm @ 7% Oxygen

Actual Visible Emission - **0.00%**
Allowable Visible Emissions - 5%

All testing and analysis was performed in accordance with the 40 CFR Part 60.

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



Daniel Beatty
Project Director

3.0 Allowable Emission Determination

The allowable emissions were determined in accordance with the Notice of Air Pollution Permit, 0112719-AG-003, conditions set forth by the Florida Department of Environmental Protection.

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
 A Rainbow Crossing Pet Memorial Services
 FID # 0112719
 16037-ST

	Run 1	Run 2	Run 3	Average
Date	7/7/2016	7/7/2016	7/7/2016	
Start Time	12:50	14:16	15:35	
Stop Time	13:54	15:19	16:41	
Process Rate (lbs/hr.)	154	150	151	152
Particulate Emission Rate (gr./dscf @ 7% O ₂)	0.0371	0.0343	0.0371	0.036
Allowable Particulate Emission Rate (gr./dscf @ 7% O ₂)	0.080	0.080	0.080	0.080
Visible Emission Rate (%) (highest six minute average)	0.00			0.00
Allowable Visible Emission Rate (%) (with up to 20% for 3 min. per hour)	5			5
Carbon Monoxide Emission Rate (ppm @ 7% O ₂)	10.83	6.78	14.30	10.63
Allowable Carbon Monoxide Emission Rate (ppm @ 7% O ₂)	100	100	100	100

6.0 Visible Emission Results

A Rainbow Crossing Pet Memorial Services

FID # 0112719

16037-ST

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
A Rainbow Crossing Pet Memorial Services
FID # 0112719
16037-ST

	Run 1	Run 2	Run 3
Area (square feet)	1.77	1.77	1.77
Stack Pressure (inches Hg)	30.01	30.01	30.01
Meter Pressure (inches Hg)	30.16	30.13	30.13
Sample Volume (Std. Cu. Ft.)	48.978	43.202	43.551
Water Vapor (Cubic Feet)	5.26	4.41	5.25
Sample Moisture (percent)	9.70	9.26	10.76
Saturation Moisture (percent)	100.00	100.00	100.00
Molecular Weight (lbs/lb Mole wet)	28.24	28.29	28.12
Velocity (fpm)	1494	1381	1359
Volumetric Flow Rate (acfm)	2641	2441	2402
Volumetric Flow Rate (scfm)	1066	947	937
Concentration (gr/dscf)	0.0144	0.0133	0.0144
Mass Emission Rate (lbs./hr.)	0.13	0.11	0.12
Percent Isokinetic	99.22	98.59	100.38

8.0 Carbon Monoxide Emission Results
 A Rainbow Crossing Pet Memorial Services
 FID # 0112719
 16037-ST

	Run1	Run 2	Run 3	Average
Date	7/7/2016	7/7/2016	7/7/2016	
Start Time	12:50	14:16	15:35	
Stop Time	13:54	15:19	16:41	
Percent Oxygen	15.43	16.34	16.05	
Carbon Monoxide (PPM)	4.26	2.71	4.99	
Carbon Monoxide Emissions (PPM @ 7% O ₂)	10.83	6.78	14.30	10.63
Carbon Monoxide Allowable (PPM@ 7% O ₂)	100	100	100	100

9.0. Overview of Field and Analytical Procedures

9.1. 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.

9.2. 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.

9.3. EPA 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) A multi-point grab sampling method using an Orsat analyzer to analyze the individual grab sample obtained at each point; (2) a method for measuring either CO₂ or O₂ and using stoichiometric calculations to determine dry molecular weight; and (3) assigning a value of 30.0 for dry molecular weight, in lieu of actual measurements, for processes burning natural gas, coal, or oil.

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.

9.4. 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, 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.

9.5 EPA Method 5 – Determination of Particulate Emissions from Stationary Sources

Principle – Particulate matter is withdrawn isokinetically from the source collected on a glass fiber filter maintained at a temperature in the range of 223-273 degrees F or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator, US 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

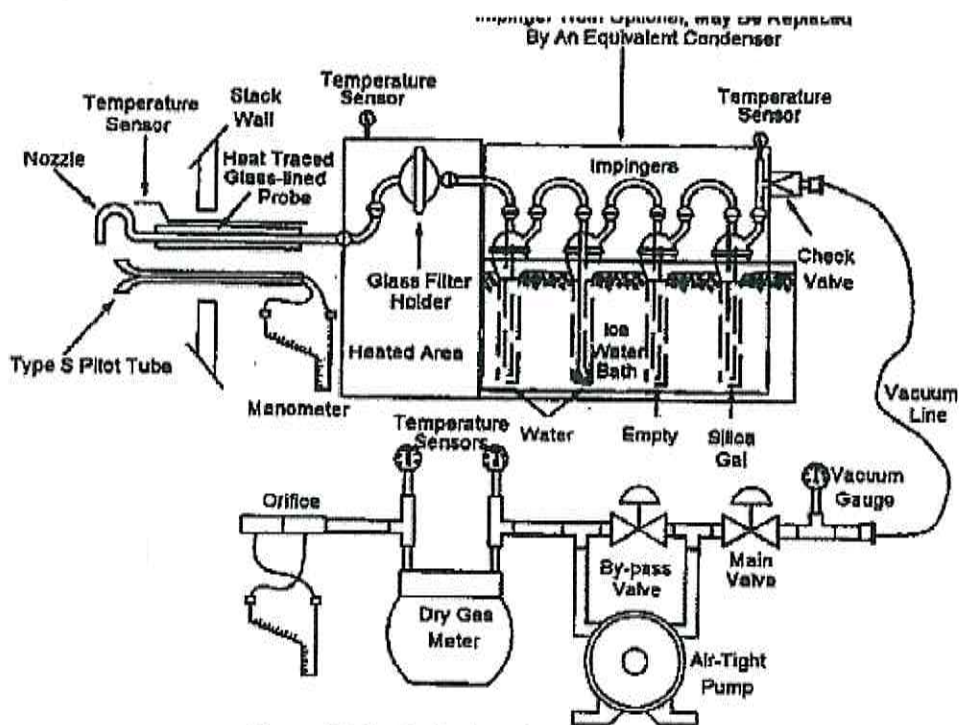


Figure F5-1. Particulate Sampling Train.

9.6 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 or visually determining the opacity of emissions.

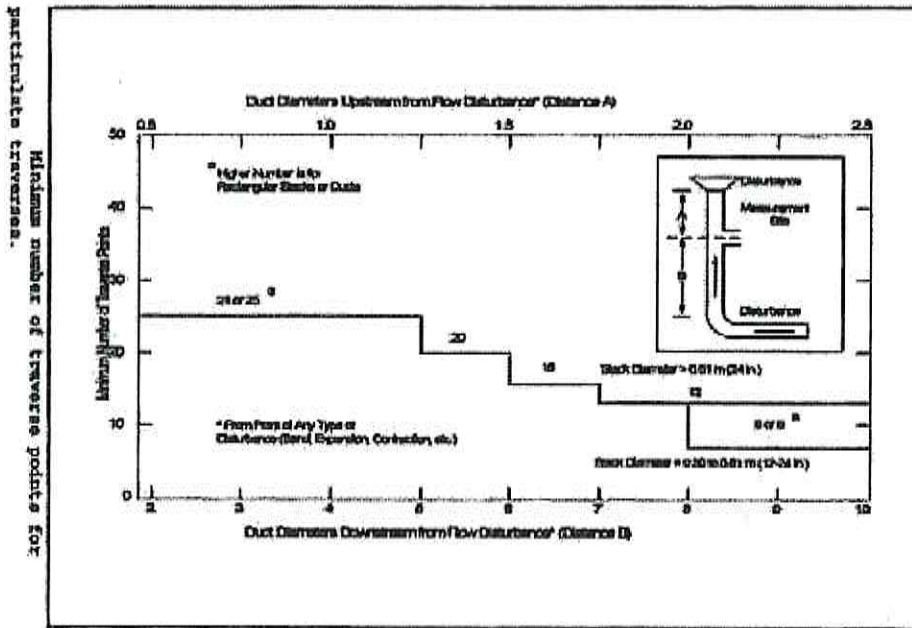
9.7 EPA Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources

Principle - An integrated or continuous gas sample is extracted from a sampling point and analyzed for carbon monoxide (CO) content. Performance specifications and test procedures are provided to ensure reliable data.

Applicability - This method is applicable for the determination of carbon monoxide emissions from stationary sources. The process will dictate whether a continuous or an integrated sample is required. If the process produces CO spikes that would exceed the span (as determined from the allowable), then an integrated procedure is required.

10.0 Sampling Point Determination Procedure

Minimum Number of Sampling Points Per 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	3x3
12	4x3
16	4x4
20	5x4
25	5x5
30	6x5
36	6x6
42	7x6
49	7x7

10.1 Sampling Point Determination
 A Rainbow Crossing Pet Memorial Services
 FID # 0112719
 16037-ST

Stack Configuration	Circular
Diameter (inches)	18
Distance A - Ports to Downstream Disturbance (inches)	24
Distance A - Ports to Downstream Disturbance (diameters)	1.3
Distance B - Ports to Upstream Disturbance (inches)	110
Distance B - Ports to Upstream Disturbance (diameters)	6.1
Number of Test Ports	2
Wall or Port length	9
Number of Sampling Points per Traverse	10
Number of Points Sampled	20

Photograph of Stack



Traverse Point Location	
Traverse Point No.	Inches to Sample Point offset
1	9.5
2	10.5
3	11.6
4	13.1
5	15.2
6	20.8
7	22.9
8	24.4
9	25.5
10	26.5

11.0 Summary of Field and Laboratory Data
A Rainbow Crossing Pet Memorial Services
FID # 0112719
16037-ST

	Run 1	Run 2	Run 3
Date	7/7/2016	7/7/2016	7/7/2016
Start Time	12:50	14:16	15:35
Stop Time	13:54	15:19	16:41
CP	0.84	0.84	0.84
Y	1.0073	1.0073	1.0073
ΔH_a (inches H ₂ O)	1.6588	1.6588	1.6588
Diameter of Nozzle (inches)	0.5000	0.5000	0.5000
Stack Diameter or Equivalent (inches)	18.00	18.00	18.00
Static Pressure (inches H ₂ O)	-0.05	-0.05	-0.05
Barometric Pressure (inches Hg)	30.01	30.01	30.01
Test Time (minutes)	60	60	60
Meter Volume (cubic feet)	49.822	44.312	44.759
Square Root ΔP (inches H ₂ O)	0.293	0.265	0.263
Orifice Pressure ΔH (inches H ₂ O)	2.013	1.584	1.584
Average Meter Temperature (Deg. F)	85.1	89.1	90.2
Average Stack Temperature (Deg. F)	723.7	778.3	750.6
Particulate Sample Weight (grms)	0.0458	0.0373	0.0407
Water Collected (grms)	111.5	93.6	111.3
Molecular Weight (lbs/lb Mole)	29.34	29.34	29.34
Nozzle Area (square feet)	0.00136	0.00136	0.00136

Attachment A - Field Data

A RAINBOW CROSSING PET CREMATIONS

DATE: 7/7/2016
 RUN: 1

AVG. ADJUSTED CO ppmvd @ 7% O2	10.83
CORRECTED O2 %	15.43
CORRECTED CO2 %	4.31
CORRECTED CO ppmvd	4.26

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	0.10	0.44	0.44	01420B153
		12.14	12.10	-0.04	-0.18	12.10	0.00	12.20	0.44	0.44	
		22.55	22.60	0.05	0.22						
20	% CO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01410B139
		8.55	8.60	0.05	0.30	8.50	-0.60	8.60	0.00	0.60	
		16.74	16.70	-0.04	-0.24						
110	PPM CO	0.00	0.10	0.10	0.5	0.00	-0.5	0.00	-0.5	0.0	48C-68845-361
		9.23	9.2	-0.03	-0.2	9.00	-1.0	8.90	-1.5	-0.5	
		19.30	19.40	0.10	0.5						
		48.10	48.10	0.00	0.0						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
7/7/2016 12:50	15.14	4.41	33.20
7/7/2016 12:51	14.53	4.95	5.97
7/7/2016 12:52	15.24	4.72	1.45
7/7/2016 12:53	14.54	5.19	7.82
7/7/2016 12:54	15.23	4.74	6.40
7/7/2016 12:55	15.09	4.81	3.25
7/7/2016 12:56	15.18	4.74	43.93
7/7/2016 12:56	15.73	4.34	6.13
7/7/2016 12:57	15.10	4.76	6.88
7/7/2016 12:58	15.40	4.54	3.63
7/7/2016 12:59	15.39	4.53	2.68
7/7/2016 13:00	15.75	4.30	9.03
7/7/2016 13:02	15.46	4.47	3.73
7/7/2016 13:03	15.29	4.57	3.03
7/7/2016 13:04	15.31	4.57	4.40
7/7/2016 13:05	15.38	4.53	5.53
7/7/2016 13:06	15.45	4.46	6.30
7/7/2016 13:07	15.44	4.44	6.50
7/7/2016 13:08	15.46	4.42	5.72
7/7/2016 13:09	15.44	4.41	4.45
7/7/2016 13:10	15.46	4.39	3.53
7/7/2016 13:11	15.54	4.34	2.70
7/7/2016 13:12	15.52	4.35	2.15
7/7/2016 13:13	15.31	4.50	1.58
7/7/2016 13:14	15.20	4.54	1.45
7/7/2016 13:15	15.55	4.31	1.35
7/7/2016 13:16	15.64	4.28	1.43
7/7/2016 13:17	15.21	4.50	1.58
7/7/2016 13:18	15.23	4.44	1.78
7/7/2016 13:19	15.46	4.29	1.88
7/7/2016 13:20	15.51	4.29	2.08
7/7/2016 13:21	15.33	4.39	2.13
7/7/2016 13:22	15.20	4.44	2.55
7/7/2016 13:23	15.20	4.42	2.70
7/7/2016 13:24	15.24	4.38	2.40
7/7/2016 13:25	15.39	4.26	2.65
7/7/2016 13:26	15.46	4.22	2.93
7/7/2016 13:27	15.41	4.24	3.30
7/7/2016 13:28	15.34	4.27	3.58
7/7/2016 13:29	15.31	4.28	4.35
7/7/2016 13:30	15.33	4.24	4.18
7/7/2016 13:31	15.22	4.31	3.68
7/7/2016 13:32	15.26	4.27	3.95
7/7/2016 13:33	15.20	4.32	2.23
7/7/2016 13:34	15.33	4.25	0.35
7/7/2016 13:35	15.34	4.23	0.28
7/7/2016 13:36	15.43	4.17	0.35
7/7/2016 13:37	15.34	4.22	0.40
7/7/2016 13:38	15.40	4.15	0.80
7/7/2016 13:39	15.31	4.18	3.60
7/7/2016 13:40	15.33	4.17	2.70
7/7/2016 13:41	15.36	4.14	1.28
7/7/2016 13:42	15.56	3.36	1.88
7/7/2016 13:43	15.63	3.98	1.00
7/7/2016 13:44	15.29	3.51	0.80
7/7/2016 13:45	15.99	3.69	0.58
7/7/2016 13:46	16.06	3.61	0.43
7/7/2016 13:47	16.30	3.48	0.50
7/7/2016 13:48	15.64	3.83	0.33
7/7/2016 13:49	16.64	3.24	0.53

MEAN ANALYZER VALUES

Avg. % O2	15.43
Avg. % CO2	4.31
Avg. CO ppmvd	4.13

A RAINBOW CROSSING PET CREMATATIONS

DATE: 7/7/2016
 RUN: 2

AVG. ADJUSTED CO ppmvd @ 7% O2	6.76
CORRECTED O2 %	15.34
CORRECTED CO2 %	4.34
CORRECTED CO ppmvd	2.71

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	0.10	0.44	0.10	0.44	0.00	01420B153
		12.14	12.10	-0.04	-0.18	12.20	0.44	12.10	0.00	-0.44	
		22.55	22.60	0.05	0.22						
20	% CO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01410/B139
		8.55	8.60	0.05	0.30	8.60	0.00	8.50	-0.60	-0.60	
		16.74	16.70	-0.04	-0.24						
110	PPM CO	0.00	0.10	0.10	0.5	0.00	-0.5	0.00	-0.5	0.0	48C-68845-361
		9.23	9.20	-0.03	-0.2	8.90	-1.5	9.10	-0.5	1.0	
		19.30	19.40	0.10	0.5						
		48.10	48.10	0.00	0.0						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
7/7/2016 14:15	14.35	4.92	0.80
7/7/2016 14:16	13.92	5.57	1.35
7/7/2016 14:17	13.45	5.93	0.73
7/7/2016 14:18	13.81	5.67	0.50
7/7/2016 14:19	14.02	5.53	0.60
7/7/2016 14:20	14.32	5.32	1.05
7/7/2016 14:21	14.56	5.14	1.20
7/7/2016 14:22	14.66	5.07	0.98
7/7/2016 14:23	14.83	4.95	0.53
7/7/2016 14:24	15.08	4.76	0.73
7/7/2016 14:25	15.29	4.59	0.73
7/7/2016 14:26	15.49	4.45	0.50
7/7/2016 14:27	15.57	4.38	0.58
7/7/2016 14:28	15.66	4.33	0.73
7/7/2016 14:29	15.08	4.69	5.83
7/7/2016 14:30	15.81	4.14	37.85
7/7/2016 14:31	14.94	4.74	18.13
7/7/2016 14:32	15.74	4.22	15.88
7/7/2016 14:33	15.32	4.44	8.47
7/7/2016 14:34	15.01	4.67	5.45
7/7/2016 14:35	15.34	4.46	4.75
7/7/2016 14:36	15.85	4.09	2.68
7/7/2016 14:37	15.22	4.47	2.05
7/7/2016 14:38	15.23	4.47	1.88
7/7/2016 14:39	15.28	4.44	1.40
7/7/2016 14:40	15.28	4.45	1.35
7/7/2016 14:41	15.39	4.36	1.10
7/7/2016 14:42	15.37	4.36	0.98
7/7/2016 14:43	15.44	4.31	0.82
7/7/2016 14:44	15.52	4.25	0.80
7/7/2016 14:45	15.27	4.42	0.78
7/7/2016 14:46	15.17	4.44	0.95
7/7/2016 14:47	15.51	4.21	0.98
7/7/2016 14:48	15.47	4.24	1.15
7/7/2016 14:49	15.18	4.39	1.38
7/7/2016 14:50	15.31	4.27	1.48
7/7/2016 14:51	15.62	4.07	1.53
7/7/2016 14:52	15.52	4.14	1.93
7/7/2016 14:53	15.38	4.19	2.03
7/7/2016 14:54	15.31	4.22	2.68
7/7/2016 14:55	15.34	4.17	2.78
7/7/2016 14:56	15.42	4.11	2.33
7/7/2016 14:57	15.51	4.06	1.83
7/7/2016 14:58	15.51	4.07	2.10
7/7/2016 14:59	15.39	4.13	2.00
7/7/2016 15:00	15.33	4.14	1.65
7/7/2016 15:01	15.15	4.25	1.20
7/7/2016 15:02	15.36	4.08	0.60
7/7/2016 15:03	16.26	3.51	1.70
7/7/2016 15:04	15.41	4.03	0.93
7/7/2016 15:05	16.40	3.38	1.05
7/7/2016 15:06	15.49	3.95	0.70
7/7/2016 15:07	16.21	3.48	0.78
7/7/2016 15:08	15.71	3.81	0.62
7/7/2016 15:09	15.99	3.61	0.75
7/7/2016 15:10	16.14	3.53	1.18
7/7/2016 15:11	15.68	3.77	0.85
7/7/2016 15:12	16.50	3.29	0.78
7/7/2016 15:13	15.51	3.86	0.58
7/7/2016 15:14	16.53	3.24	0.80

MEAN ANALYZER VALUES

Avg. % O2	15.32
Avg. % CO2	4.34
Avg. CO ppmvd	2.64

A RAINBOW CROSSING PET CREMATIONS

DATE: 7/7/2016
 RUN: 3

AVG. ADJUSTED CO ppmvd @ 7% O2	14.29
CORRECTED O2 %	16.05
CORRECTED CO2 %	3.76
CORRECTED CO ppmvd	4.99

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	0.10	0.44	0.10	0.44	0.00	01420B153
		12.14	12.10	-0.04	-0.18	12.10	0.00	12.10	0.00	0.00	
		22.55	22.80	0.05	0.22						
20	% CO2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	01410/B139
		8.55	8.60	0.05	0.30	8.50	-0.60	8.50	-0.60	0.00	
		16.74	16.70	-0.04	-0.24						
110	PPM CO	0.00	0.10	0.10	0.5	0.00	-0.5	0.10	0.0	0.5	48C-68845-361
		9.23	9.20	-0.03	-0.2	9.10	-0.5	9.10	-0.5	0.0	
		19.30	19.40	0.10	0.5						
		48.10	48.10	0.00	0.0						

UNCORRECTED RAW DATA

DATE & TIME	O2 %	CO2 %	CO PPM
7/7/2016 15:35	16.83	2.96	0.62
7/7/2016 15:36	16.01	3.44	0.55
7/7/2016 15:37	12.47	6.39	40.55
7/7/2016 15:38	14.83	5.07	45.77
7/7/2016 15:39	14.73	5.01	13.23
7/7/2016 15:40	14.79	4.98	11.55
7/7/2016 15:41	15.29	4.57	10.75
7/7/2016 15:42	15.69	4.26	9.25
7/7/2016 15:43	15.70	4.25	10.65
7/7/2016 15:44	15.43	4.36	27.15
7/7/2016 15:45	15.16	4.57	18.45
7/7/2016 15:46	15.55	4.31	19.33
7/7/2016 15:47	15.99	4.01	31.25
7/7/2016 15:48	15.53	4.27	14.20
7/7/2016 15:49	15.35	4.40	4.15
7/7/2016 15:50	15.47	4.31	2.43
7/7/2016 15:51	15.46	4.31	2.58
7/7/2016 15:52	15.56	4.24	1.95
7/7/2016 15:53	15.72	4.11	1.38
7/7/2016 15:54	15.75	4.07	1.10
7/7/2016 15:55	15.46	4.22	1.18
7/7/2016 15:56	15.45	4.17	1.18
7/7/2016 15:57	16.48	3.49	1.08
7/7/2016 15:58	16.56	3.41	0.88
7/7/2016 15:59	16.48	3.43	0.98
7/7/2016 16:00	15.52	4.10	0.48
7/7/2016 16:01	15.14	4.31	0.30
7/7/2016 16:02	15.29	4.17	0.30
7/7/2016 16:03	16.52	3.38	2.00
7/7/2016 16:04	16.57	3.28	2.93
7/7/2016 16:05	16.56	3.27	0.87
7/7/2016 16:06	16.48	3.34	0.58
7/7/2016 16:07	16.28	3.46	1.13
7/7/2016 16:08	16.44	3.29	2.53
7/7/2016 16:09	16.48	3.33	0.50
7/7/2016 16:10	16.17	3.48	0.98
7/7/2016 16:11	16.51	3.24	2.10
7/7/2016 16:12	16.45	3.31	0.50
7/7/2016 16:13	16.21	3.43	0.58
7/7/2016 16:14	16.58	3.17	0.95
7/7/2016 16:15	16.10	3.51	0.35
7/7/2016 16:16	16.55	3.19	0.95
7/7/2016 16:17	16.64	3.13	0.70
7/7/2016 16:18	15.78	3.66	0.33
7/7/2016 16:19	16.83	2.99	0.68
7/7/2016 16:20	16.25	3.37	0.35
7/7/2016 16:21	16.38	3.24	0.30
7/7/2016 16:22	16.63	3.11	0.35
7/7/2016 16:23	15.86	3.55	0.28
7/7/2016 16:24	16.78	2.99	0.43
7/7/2016 16:25	15.93	3.54	0.30
7/7/2016 16:26	16.75	3.00	0.43
7/7/2016 16:27	16.41	3.25	0.38
7/7/2016 16:28	16.23	3.29	0.30
7/7/2016 16:29	16.71	3.04	0.55
7/7/2016 16:30	15.89	3.48	0.40
7/7/2016 16:31	16.93	2.88	0.30
7/7/2016 16:32	15.83	3.53	0.25
7/7/2016 16:33	16.91	2.86	0.28
7/7/2016 16:34	16.07	3.39	0.25

MEAN ANALYZER VALUES

Avg. % O2	15.97
Avg. % CO2	3.74
Avg. CO ppmvd	4.94



Beatty Environmental Services, LLC

315 SE 20th Pl
Cape Coral, Florida 33990
(239) 246-3646

beattyenvironmental12@gmail.com

VISIBLE EMISSION OBSERVATION FORM

Method Used (Circle One)
 Method 9 203A 203B Report

Company Name
H Rainbow Crossing AIRS **0112719**

Street Address
4868-12th AVE 4830 NE 12th Ave.

City Zip Code
Oakland Park, FL

Phone No.

Process Unit # Operating Mode
Per Cremation **North** **154 lbs**

Control Equipment Operating Mode
After burners **on**

Describe Emission Point
Round Stack Northern Most of 2

Ht of Emiss. Point Ht Rel to Observer
~20' **~20'**

Distance to Emiss. Pt Direction to Emiss. Pt (Degrees)
~100' **~283°**

Vertical Angle to Obs. Direction to Obs. Pt. (Degrees)
<18° **~283°**

Distance and Direction to Obs. Pt from Emission Pt
~1' above

Describe Emissions
None

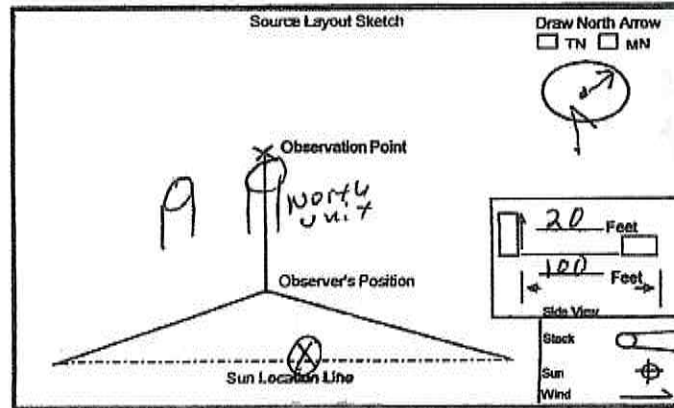
Emission Color Water Droplet Plasma
NA Attached Detached None

Describe Plume Background
Sky

Background Color Sky Conditions
Blue & White **Scattered**

Wind Speed Wind Direction
10-12 MPH **SE**

Ambient Temp. Wet Bulb Temp. % RH
~95°F _____ _____



Latitude **26° 11' 13"** Longitude **80° 7' 52"** Declination

Comments
Concurrent with Run 1 of Stack Test 16037-ST

START **1250** STOP **1350**

Observation Date	Start Time	Stop Time	Sec				Min				
7-7-16	1250	1350	0	15	30	45	0	15	30	45	
1	0	0	0	0	0	0	31	0	0	0	0
2	0	0	0	0	0	0	32	0	0	0	0
3	0	0	0	0	0	0	33	0	0	0	0
4	0	0	0	0	0	0	34	0	0	0	0
5	0	0	0	0	0	0	35	0	0	0	0
6	0	0	0	0	0	0	36	0	0	0	0
7	0	0	0	0	0	0	37	0	0	0	0
8	0	0	0	0	0	0	38	0	0	0	0
9	0	0	0	0	0	0	39	0	0	0	0
10	0	0	0	0	0	0	40	0	0	0	0
11	0	0	0	0	0	0	41	0	0	0	0
12	0	0	0	0	0	0	42	0	0	0	0
13	0	0	0	0	0	0	43	0	0	0	0
14	0	0	0	0	0	0	44	0	0	0	0
15	0	0	0	0	0	0	45	0	0	0	0
16	0	0	0	0	0	0	46	0	0	0	0
17	0	0	0	0	0	0	47	0	0	0	0
18	0	0	0	0	0	0	48	0	0	0	0
19	0	0	0	0	0	0	49	0	0	0	0
20	0	0	0	0	0	0	50	0	0	0	0
21	0	0	0	0	0	0	51	0	0	0	0
22	0	0	0	0	0	0	52	0	0	0	0
23	0	0	0	0	0	0	53	0	0	0	0
24	0	0	0	0	0	0	54	0	0	0	0
25	0	0	0	0	0	0	55	0	0	0	0
26	0	0	0	0	0	0	56	0	0	0	0
27	0	0	0	0	0	0	57	0	0	0	0
28	0	0	0	0	0	0	58	0	0	0	0
29	0	0	0	0	0	0	59	0	0	0	0
30	0	0	0	0	0	0	60	0	0	0	0

Number of Readings Above _____ Average Opacity for Highest 6 Min Period **0**

Range of opacity Readings
 Min **0** Max **0**

Observer Name (Print)
Stephen Webb

Observer Signature
Stephen E. Webb Date **7-7-16**

Organization
Beatty Environmental Services, LLC

Certified By
Whitlow Date **7-7-16**

www.smokeshool.net

Certifies that

Steve Webb-Coastal Air

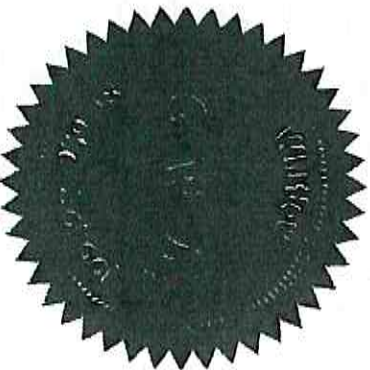
Has passed the certification test required by EPA Method 9

40 CFR 60 Appendix A and is qualified as a visible emissions evaluator.

Certification Date: January 7, 2016 Location: Lakeland, FL

George Whitlow

President



LFL010716-28

Attachment B - Laboratory Data

Particulate Laboratory Data
A Rainbow Crossing Pet Memorial Services
FID # 0112719
16037-ST

Run 1

Filter Number	2255	
	Final Weight	0.3955 grams
	Tare Weight	0.3573 grams
	Difference	0.0382 grams
Beaker Number	1B	
	Final Weight	107.8366 grams
	Tare Weight	107.8288 grams
	Difference	0.0078 grams
Filter Blank Number	2258	
	Final Weight	0.3516 grams
	Tare Weight	0.3516 grams
	Difference	0.0000 grams
Acetone Wash Down		
	Volume of Rinse	120 mL
	Residue in Rinse (calculated)	2.53197E-06 mg/mg
	Total Residue in Rinse	0.00024 grams
Total Particulate Weight		0.0458 grams
Water Collected		
	Final Impinger Water	299 mL
	Initial Impinger Water	200 mL
	Final Silica Weight	212.7 grams
	Silica Tare Weight	200.0 grams
Total Water Collected		111.5 grams

Analyst



Particulate Laboratory Data
A Rainbow Crossing Pet Memorial Services
FID # 0112719
16037-ST

Run 2

Filter Number	2256	
	Final Weight	0.3886 grams
	Tare Weight	0.3548 grams
	Difference	0.0338 grams

Beaker Number	2B	
	Final Weight	114.2904 grams
	Tare Weight	114.2866 grams
	Difference	0.0038 grams

Filter Blank Number	2258	
	Final Weight	0.3516 grams
	Tare Weight	0.3516 grams
	Difference	0.0000 grams

Acetone Wash Down	Volume of Rinse	135 mL
	Residue in Rinse (calculated)	2.53197E-06 mg/mg
	Total Residue in Rinse	0.00027 grams


Total Particulate Weight	0.0373 grams
--------------------------	--------------

Water Collected

Final Impinger Water	282 mL
Initial Impinger Water	200 mL
Final Silica Weight	211.7 grams
Silica Tare Weight	200.0 grams

Total Water Collected	93.6 grams
-----------------------	------------

Analyst



Particulate Laboratory Data
A Rainbow Crossing Pet Memorial Services
FID # 0112719
16037-ST

Run 3

Filter Number	2257	
	Final Weight	0.3878 grams
	Tare Weight	0.3510 grams
	Difference	0.0368 grams
Beaker Number	3B	
	Final Weight	115.9606 grams
	Tare Weight	115.9565 grams
	Difference	0.0041 grams
Filter Blank Number	2258	
	Final Weight	0.3516 grams
	Tare Weight	0.3516 grams
	Difference	0.0000 grams
Acetone Wash Down	Volume of Rinse	100 mL
	Residue in Rinse (calculated)	2.53197E-06 mg/mg
	Total Residue in Rinse	0.0002 grams
Total Particulate Weight		0.0407 grams
Water Collected		
	Final Impinger Water	301 mL
	Initial Impinger Water	200 mL
	Final Silica Weight	210.5 grams
	Silica Tare Weight	200.0 grams
Total Water Collected		111.3 grams

Analyst



Attachment C - Process Data



Beatty Environmental Services, LLC

Emission Control Device and Process Data Form

Company: A Rainbow Crossing

Installation: BLP500/150 Serial # 1664-1447-16

Type of Installation: B+L Cremation Systems

Type of Material Processed: Animal Remains

Type of Fuel Used: Natural Gas

Type of Pollution Control System: Afterburner

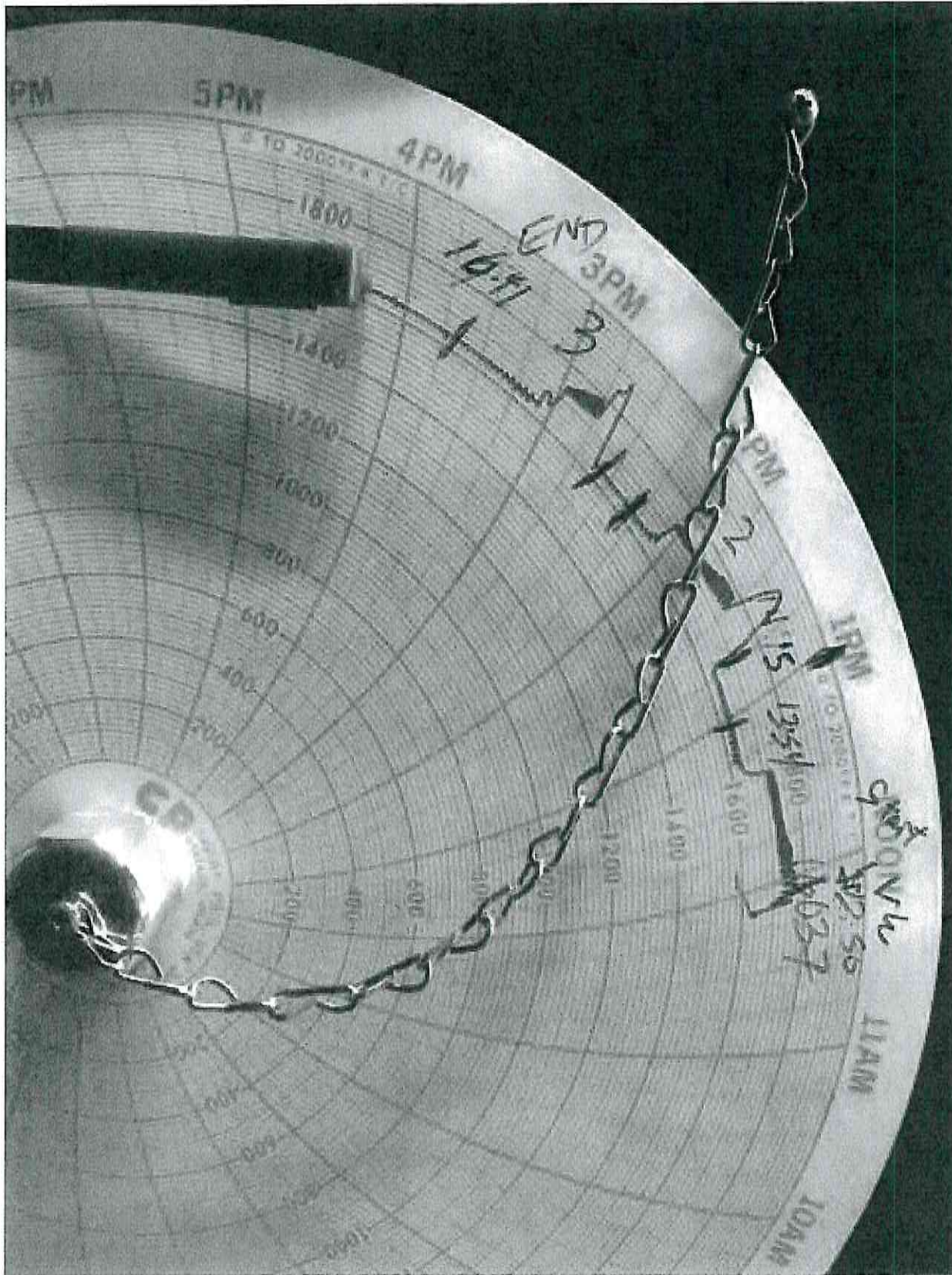
General Condition of Control Equipment: Normal

Run No.	1	2	3
Start Time	12:48	02:15	03:35
Stop Time	01:54	3:19	04:41
Fuel GPH	GAS	GAS	GAS
Date	7/7/2016	7/7/2016	7/7/2016
Pressure Drop (in. H ₂ O)	N/A	N/A	N/A
Process Rate	154 lb/hr	150 lb/hr	151 lb/hr
Percent Recycle	N/A	N/A	N/A

Signature: Robert Johnson Title: OWNER

Printed Name: Robert Johnson Report No. 16037-ST

*By signing above facility designee agrees that all information on this form is true and correct to the best of his/her knowledge.



Attachment D - Calculations for Run 1

CALCULATIONS FOR RUN 1

A Rainbow Crossing Pet Memorial Services

FID # 0112719

16037-ST

Page 1 of 2

STACK AREA

$$3.1416 \times (\text{Diameter} / 24)^2$$
$$3.1416 \times 18.00 / 24^2$$
$$1.77 \text{ SQ.FT.}$$

STACK PRESSURE

$$\text{BAROMETRIC PRESSURE} + (\text{STATIC PRESSURE} / 13.6)$$
$$30.01 + (-0.05 / 13.6)$$
$$30.01 \text{ IN.HG}$$

METER PRESSURE

$$\text{BAROMETRIC PRESSURE} + (\text{ORIFICE PRESSURE} / 13.6)$$
$$30.01 + (2.01 / 13.6)$$
$$30.16 \text{ IN.Hg}$$

SAMPLE VOLUME

$$17.64 \times (Y) \times \text{METER VOLUME} \times \text{METER PRESSURE} / (\text{METER TEMP.} + 460)$$
$$17.64 \times 1.0073 \times 49.822 \times 30.16 / (85.1 + 460)$$
$$48.978 \text{ STD.CU.FT.}$$

WATER VAPOR VOLUME

$$0.04715 \times \text{WATER COLLECTED}$$
$$0.04715 \times 111.5$$
$$5.26 \text{ STD.CU.FT.}$$

SAMPLE MOISTURE

$$100 \times \text{WATER VAPOR VOLUME} / (\text{WATER VAPOR VOLUME} + \text{SAMPLE VOLUME})$$
$$100 \times 5.26 / (5.26 + 48.978)$$
$$9.70 \%$$

SATURATION MOISTURE

$$100 \times (\text{VAPOR PRESSURE @ STACK TEMP.} / \text{STACK PRESSURE})$$
$$100 \times (8155.4280 / 30.01)$$
$$100.00 \%$$

CALCULATIONS FOR RUN 1
 A Rainbow Crossing Pet Memorial Services
 FID # 0112719
 16037-ST

STACK MOISTURE FRACTION
 (THE LESSER OF SAMPLE MOISTURE OR SATURATION MOISTURE) / 100
 0.097

MOLECULAR WEIGHT OF STACK GAS
 29.00 (DRYERS) OR 30.00 (BOILERS) X (1 - MOISTURE) + (18 X MOISTURE)
 29.34 X (1 - 0.097) + (18 X 0.097)
 28.24

STACK VELOCITY
 85.49 X CP X 60 X SQ.(^P) X SQ.(STACK TEMP + 460)/SQ.(STACK PRESSURE X MOLECULAR WT.)
 85.49 X 0.840 X 60 X 0.293 X SQ.(723.7 + 460) / SQR(30.01 X 28.241)
 1494 FPM

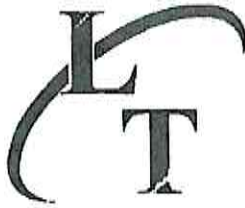
VOLUMETRIC FLOW RATE (ACFM)
 STACK AREA X STACK VELOCITY
 1.77 X 1494
 2641 ACFM

VOLUMETRIC FLOW RATE (SCFM) DRY
 17.64 X (ACFM) X STACK PRESSURE X (1-MOISTURE) / (STACK TEMP. + 460)
 17.64 X 2641 X 30.01 X (1 - 0.097) / (723.7 + 460)
 1066 SCFM (DRY)

MASS EMISSION RATE (LBS./HR.)
 CONCENTRATION X (SCFM- DRY) X 60 / 7000
 0.0144 X 1066 X 60 / 7000
 0.13 LBS/HR

PERCENT ISOKINETIC
 0.0945 X (STACK TEMP. + 460) X SAMPLE VOLUME X 60
 . STACK PRES. X VELOCITY X NOZZLE AREA X TEST TIME X (1-MOISTURE)
 0.0945 X (723.70 + 460) X 48.98 X 60
 30.01 X 1494 X 0.00136 X 60.00 X (1 - 0.097)
 99.22 %

Attachment E - Calibration Data



Certificate of Analysis

Customer Coastal Air Consulting (Deland, FL)
Date April 08, 2016
Delivery Receipt DR-61102
Product: Nitrogen, CEMS Grade
Lot Number: LTC286-PG

Mixture Specifications

Cylinder Number EB-0052847

<u>Components</u>	<u>Requested</u>	<u>Actual</u>
Moisture	2.0 ppm	< 2.0 ppm
Hydrocarbons	0.1 ppm	< 0.1 ppm
Oxygen	1.0 ppm	< 1.0 ppm
Carbon Monoxide	1.0 ppm	< 1.0 ppm
Carbon Dioxide	1.0 ppm	< 1.0 ppm
Nitrogen	99.9995%	99.9995%

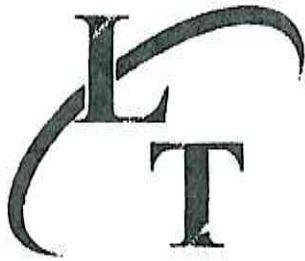
Cylinder Data

Cylinder Valve: CGA 580
Cylinder Volume: 140 Cubic Feet
Cylinder Pressure: 2000 psig, 70F
Expiration Date: April 08, 2019

Certified by:

Cole Dylewski

"UNMATCHED EXCELLENCE"



LIQUID TECHNOLOGY
 "INDUSTRY LEADER IN"

Certificate of Analysis
- EPA PROTOCOL G

<u>Customer</u>	<u>Coastal Air Consulting (Deland, FL)</u>
<u>Date</u>	<u>October 30, 2015</u>
<u>Delivery Receipt</u>	<u>DR-58750</u>
<u>Gas Standard</u>	<u>9.00 ppm Nitric Oxide, 9.00 ppm Carbon</u>
<u>Final Analysis Date</u>	<u>October 28, 2015</u>
<u>Expiration Date</u>	<u>October 29, 2018</u>

I

Analytical Data:

EPA Protocol, Section No. 2.2, Procedure G-1.

Reported Concentrations
Nitric Oxide: 8.65 ppm +/- 0.1
Carbon Monoxide: 9.23 ppm +/-
Nitrogen: Balance
Total NOx: 9.01 ppm
 ** Total NOx for Reference Use

Reference Standards

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	ND-57318	CC-11599
Concentration:	9.372 ppm NO (+/- 0.08 ppm)	10.312 pp
Expiration Date:	04/26/23	03/07/20

Certification Instrumentation

Component:	Nitric Oxide	Carbon M
Make/Model:	Nicolet 6700	Nicolet 67
Serial Number:	APW1100563	APW1100
Principal of Measurement:	FTIR	FTIR
Last Calibration:	October 01, 2015	October 1

Cylinder Data

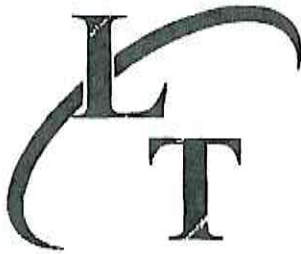
Cylinder Number:	CC-504216	(
Cylinder Outlet:	CGA 660	(
Expiration Date:	October 29, 2018	

Analytical Uncertainty and NIST Traceability are in compliance with

Certified by: *Cole Dylewski*
 Cole Dylewski

<u>GMIS Traceability</u>	<u>Nitric Oxide</u>	<u>Carbon M</u>
SRM Number:	SRM-2628a	SRM-167
Cylinder Number:	CAL-016517	FF-2304
Cylinder Concentration:	10.07 ppm NO (+/- 0.10 ppm)	9.893 ppm
Expiration Date:	07/23/16	05/27/18
NIST Sample Number:	49-H-73	5-K-58

"UNMATCHED EXCELLENCE"



LIQUID TECHNOLOG
 "INDUSTRY LEADER IN S

Certificate of Analysis
- EPA PROTOCOL G.

Customer Coastal Air Consulting (Deland, FL)
Date March 10, 2015
Delivery Receipt DR-55632
Gas Standard 19.0 ppm Nitric Oxide, 19.0 ppm Sulfur Di
Final Analysis Date February 24, 2015
Expiration Date February 25, 2018 **D**

Analytical Data:
 EPA Protocol, Section No. 2.2, Procedure G-1.

Reported Concentration
Nitric Oxide: 18.8 ppm +/- 0.1
Sulfur Dioxide: 17.8 ppm +/- 0.1
Carbon Monoxide: 19.3 ppm +/- 0.1
Nitrogen: Balance
Total NOx: 18.9 ppm
 ** Total NOx for Reference Use

Reference Standards

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-231360	EB-0026731
Concentration:	24.24 ppm NO (+/- 0.08 ppm)	25.556 ppm SO2 (+/- 0.08 ppm)
Expiration Date:	09/22/202	08/23/20

Certification Instrumentation

Component:	Nitric Oxide	Sulfur Dioxide
Make/Model:	Nicolet 6700	Nicolet 6700
Serial Number:	APW1100563	APW1100563
Principal of Measurement:	FTIR	FTIR
Last Calibration:	February 22, 2015	February 27, 2015

Cylinder Data

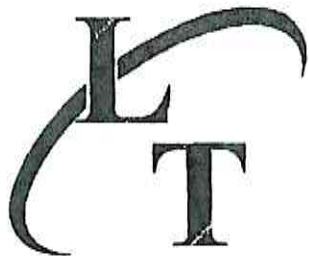
Cylinder Number: CA-05882 Cylinder 1
 Cylinder Outlet: CGA 660 C
 Expiration Date: February 25, 2018

Analytical Uncertainty and NIST Traceability are in compliance with

Certified by: *Cole Dylewski*
 Cole Dylewski

<u>GMIS Traceability</u>	<u>Nitric Oxide</u>	<u>Sulfur Dioxide</u>
SRM Number:	SRM-1683b	SRM-1693a
Cylinder Number:	CAL-018172	CAL-015255
Cylinder Concentration:	48.79 ppm NO (+/- 0.34 ppm)	49.66 ppm SO2 (+/- 0.34 ppm)
Expiration Date:	03/25/19	06/01/16
NIST Sample Number:	45-V-08	96-K-026

"UNMATCHED EXCELLENCE"



LIQUID TECHNOLOGY
"INDUSTRY LEADER"

Certificate of Analysis
- EPA PROTOCOL

Customer Coastal Air Consulting (Deland, FL)
Date March 04, 2015
Delivery Receipt DR-55575
Gas Standard 47.0 ppm Nitric Oxide, 47.0 ppm Sulfur Dioxide
Final Analysis Date February 27, 2015
Expiration Date February 28, 2018

Analytical Data:
EPA Protocol, Section No. 2.2, Procedure G-1.

Reported Concentrations:
Nitric Oxide: 48.8 ppm
Sulfur Dioxide: 46.3 ppm
Carbon Monoxide: 48.1 ppm
Nitrogen: Balance
Total NOx: 49.8 ppm
** Total NOx for Reference

Reference Standards

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	ND-45700	EB-0014694
Concentration:	49.256 ppm NO (+/- 0.43 ppm)	50.82 ppm SO ₂
Expiration Date:	08/23/20	08/20/16

Certification Instrumentation

Component:	Nitric Oxide	Sulfur Dioxide
Make/Model:	Nicolet 6700	Nicolet 6700
Serial Number:	APW1200289	APW1200289
Principal of Measurement:	FTIR	FTIR
Last Calibration:	January 31, 2015	February 14, 2015

Cylinder Data

Cylinder Number: EB-0056549 Cylinder
Cylinder Outlet: CGA 660
Expiration Date: February 28, 2018

Analytical Uncertainty and NIST Traceability are in compliance

Certified by:

Cole Dylewski
Cole Dylewski

<u>GMIS Traceability</u>	<u>Nitric Oxide</u>	<u>Sulfur Dioxide</u>
SRM Number:	SRM-1683b	SRM-1693a
Cylinder Number:	CAL-018172	CAL-015255
Cylinder Concentration:	48.79 ppm NO (+/- 0.34 ppm)	49.66 ppm SO ₂
Expiration Date:	03/25/19	06/01/16
NIST Sample Number:	45-V-08	96-K-026

"UNMATCHED EXCELLENCE"

ANNUAL METER CALIBRATION METER NO. 002947 ORIFICE SET NO. JC48-73

DATE 9/9/2015 Y = 1.0073 MAX % VARIATION 1.8276% PASS
 BAROMETRIC PRESSURE 30.05 $\Delta H_a = 1.6588$ MAX % VARIATION 2.9948% PASS

CRITICAL ORIFICE DATA

ORIFICE SERIAL NO.	ORIFICE K FACTOR	ACTUAL VACUUM (IN H2O)	ΔH (IN H2O)	TIME (MIN.)	AMBIENT TEMP.		METER TEMP.		METER READING INITIAL	METER READING FINAL	VM (CU.FT.)	VM CORRECTED	VM STD	VM NOMINAL	Y	VARIATION (IN H2O)	ΔH (IN H2O)	VARIATION
					INITIAL	FINAL	INITIAL	FINAL										
40	0.2435	23.5	0.29	10	77	77	78	79	202.600	205.778	3.1780	3.1305	3.1576	3.1988	1.0086	-0.0038	1.6111	0.0010
40	0.2435	23.5	0.29	10	77	77	79	79	206.778	208.947	3.1690	3.1188	3.1576	3.1988	1.0124	0.0000	1.6096	-0.0005
40	0.2435	23.0	0.29	10	77	77	79	79	208.947	212.104	3.1570	3.1070	3.1576	3.1988	1.0163	0.0038	1.6096	-0.0005
AVERAGE															1.0125	0.0125	1.6101	0.0293
48	0.3557	22.0	0.62	10	77	77	79	79	212.300	216.893	4.5930	4.5239	4.6126	4.6727	1.0196	0.0013	1.6127	0.0000
48	0.3557	22.0	0.62	10	77	77	79	79	216.893	221.495	4.6020	4.5327	4.6126	4.6727	1.0176	-0.0007	1.6127	0.0000
48	0.3557	22.0	0.62	10	77	77	79	79	221.495	226.097	4.6020	4.5327	4.6126	4.6727	1.0176	-0.0007	1.6127	0.0000
AVERAGE															1.0183	0.0183	1.6127	0.0278
55	0.4616	20.5	1.10	10	77	77	80	80	226.200	232.254	6.0540	5.9688	5.9858	6.0639	1.0045	0.0010	1.6958	0.0000
55	0.4616	20.5	1.10	10	77	77	80	81	232.254	238.321	6.0670	5.9661	5.9830	6.0668	1.0028	-0.0007	1.6958	0.0000
55	0.4616	20.5	1.10	10	78	78	81	81	238.321	244.388	6.0670	5.9606	5.9802	6.0696	1.0033	-0.0003	1.6959	0.0000
AVERAGE															1.0056	0.0056	1.6958	0.0223
63	0.5916	19.0	1.80	10	79	79	82	82	244.700	252.595	7.8950	7.7554	7.8573	7.9862	0.9874	-0.0126	1.6895	0.0016
63	0.5916	19.0	1.80	10	79	79	82	83	252.595	260.292	7.8970	7.7539	7.8573	7.9862	1.0137	0.0137	1.6879	0.0000
63	0.5916	19.0	1.80	10	79	79	83	83	260.292	268.110	7.8180	7.6656	7.8573	7.9862	0.9989	-0.0011	1.6864	-0.0016
AVERAGE															1.0000	0.0000	1.6879	0.0173
73	0.8294	16.0	3.50	10	79	79	84	84	288.300	279.090	10.7900	10.6040	10.6576	10.8369	1.0051	0.0029	1.6896	0.0021
73	0.8294	16.0	3.50	10	79	79	84	85	279.090	289.948	10.8590	10.6620	10.6576	10.8369	0.9996	-0.0025	1.6890	0.0005
73	0.8294	16.0	3.50	10	79	79	85	86	289.949	300.805	10.8560	10.6935	10.6576	10.8369	1.0017	-0.0004	1.6849	-0.0026
AVERAGE															1.0021	0.0021	1.6875	0.0173

SEMI ANNUAL CALIBRATION DATE 3/6/2016 BAROMETRIC PRESSURE 30.14

ORIFICE SERIAL NO.	ORIFICE K FACTOR	ACTUAL VACUUM (IN H2O)	ΔH (IN H2O)	TIME (MIN.)	AMBIENT TEMP.		METER TEMP.		METER READING INITIAL	METER READING FINAL	VM (CU.FT.)	VM CORRECTED	VM STD	VM NOMINAL	Y	VARIATION (IN H2O)	ΔH (IN H2O)	VARIATION
					INITIAL	FINAL	INITIAL	FINAL										
55	0.4616	21.0	1.1	10	82	85	80	82	206.200	212.281	6.0810	5.9922	5.9877	6.1005	0.9959	-0.0076	1.7081	0.0026
35	0.4616	21.0	1.1	10	85	85	82	84	212.281	218.381	6.1000	5.9837	5.9995	6.1089	0.9951	-0.0084	1.7065	0.0010
55	0.4616	21.0	1.1	10	85	85	84	85	218.381	224.481	6.1100	5.9830	5.9995	6.1089	0.9962	-0.0073	1.7018	-0.0037
AVERAGE or Max															0.9958	0.11%	1.7054	0.69%

METER COMPARISON CHECK (V_{sp})
 $Y_{sp} = (O / V_m) \times \text{sq}(\text{319} \times T_m \times T_2 / (H_a \times (P_b + (H_{avg} / 13.6) \times \text{Mid}))) \times \text{sq}(\Delta H \text{ avg})$
 Run 1 Run 2 Run 3 Average
 $Y_{sp} = 1.0075$ 1.0090 1.0000 1.0055

THERMOCOUPLE CALIBRATION

DATE
 TC-1 THERMOMETER ASTM
 IDEG.F IDEG.F
 ICE 30 32
 BOILING H2O 212 212
 OIL 407 407

NOZZLE CALIBRATION
 DATE 7/7/2016
 READINGS IN (IN) AVERAGE
 #20 0.625 0.624 0.625 0.6247

PITOT TUBE CP-84 ACCORDING TO DESIGN SPECIFICATIONS


Beatty Environmental Stack Test Thermocouple Calibrations

Calibration Date : 7/7/2016

Calibration Device: ASTM Thermometer

Calibrated By: Nicholas Decker, Beatty Environmental Services, LLC

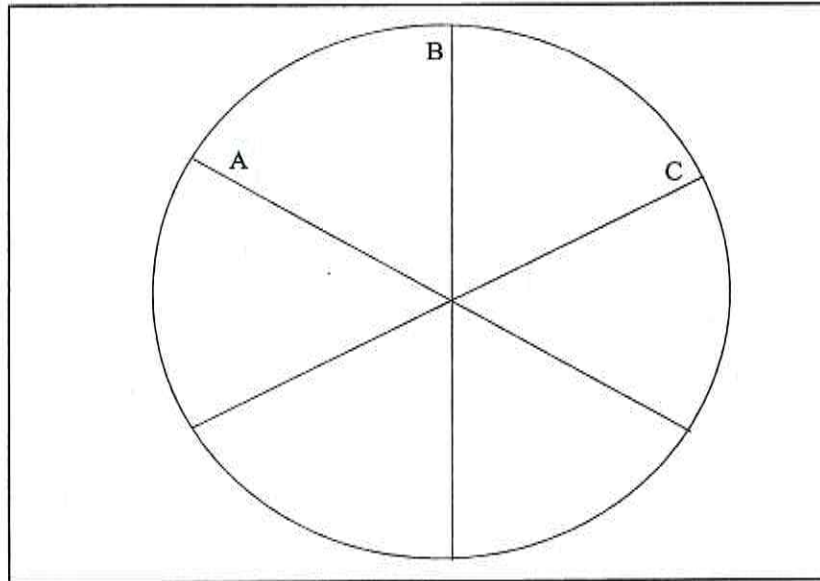
Device	Ambient Air
ASTM Thermometer	80
Dry Gas Meter Thermocouple	80
Filter Thermocouple	80
Filter Heater Thermocouple	81
Impinger Outlet Thermocouple	80
Stack Temp Thermocouple (5ft. Air Cooled)	81

Analyst: 

10.5 Temperature Sensors. Use the procedure in Section 10.3 of Method 2 to calibrate in-stack temperature sensors. Dial thermometers, such as are used for the DGM and condenser outlet, shall be calibrated against mercury-in-glass thermometers. An alternative mercury-free NISTtraceable thermometer may be used if the thermometer is, at a minimum, equivalent in terms of performance or suitably effective for the specific temperature measurement application. As an alternative, the following single-point calibration procedure may be used. After each test run series, check the accuracy (and, hence, the calibration) of each thermocouple system at ambient temperature, or any other temperature, within the range specified by the manufacturer, using a reference thermometer (either ASTM reference thermometer or a thermometer that has been calibrated against an ASTM reference thermometer). The temperatures of the thermocouple and reference thermometers shall agree to within ± 2 °F.

Nozzle Calibration

Nozzle ID	#20
A =	0.625
B =	0.624
C =	0.625
Average	0.6247



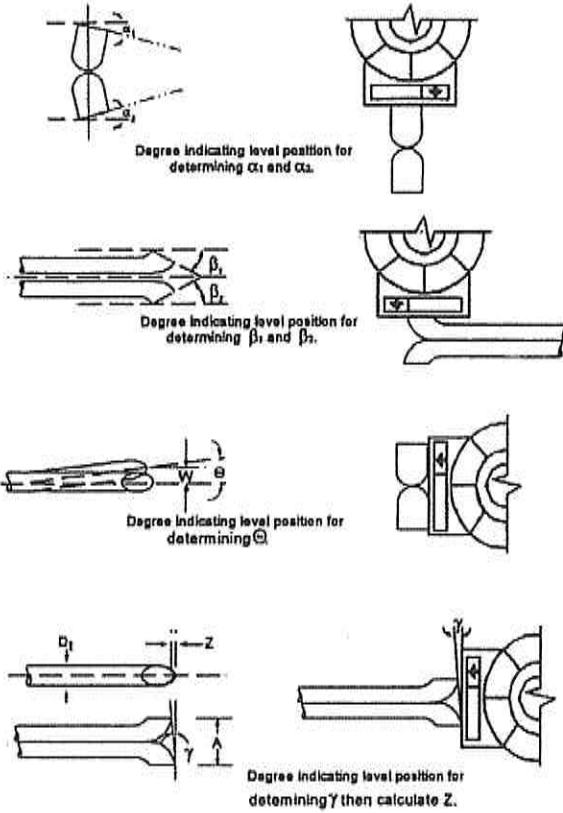
Calibration Date 7/7/2016

Calibrated by

A handwritten signature in black ink, appearing to be 'JD' or similar, is written over the 'Calibrated by' label.

PITOT CALIBRATION

(Type S Pitot Tube Inspection)



Level and Perpendicular?	Yes
Obstruction?	No
Damaged?	No
α_1 ($-10^\circ \leq \alpha_1 \leq +10^\circ$)	1
α_2 ($-10^\circ \leq \alpha_2 \leq +10^\circ$)	2
β_1 ($-5^\circ \leq \beta_1 \leq +5^\circ$)	2
β_2 ($-5^\circ \leq \beta_2 \leq +5^\circ$)	1
Y	-1
θ	1
$z = A \tan \gamma$ ($\leq 0.125^\circ$)	-0.017
$w = A \tan \theta$ ($\leq 0.03125^\circ$)	0.017
D_t ($3/16'' \leq D_t \leq +3/8''$)	0.375
A	0.964
$A/2 D_t$ ($1.05 \leq P_A / D_t \leq 1.51$)	1.285

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:

Date 09/09/2015

Attachment F - Project Participants

Project Participants

Beatty Environmental Services, LLC

Daniel R. Beatty
Project Director

Nick Decker
Field Technician

Zachary Beatty
Field/Lab Manager

Coastal Air Consulting
Steve Webb

A Rainbow Crossing Pet Memorial Services - FID # 0112719

Robert Johnson
Owner/Operator

Regulatory Agency

Arthur Pennetta
Broward County

EMPLOYERS®

EMPLOYERS PREFERRED INS. CO.
A Stock Company

Workers' Compensation and Employers Liability Insurance Policy

Policy Number	From	Policy Period	To
EIG 2667708 02	07/31/2020	07/31/2021	12:01A.M. Standard Time at the address of the Insured as stated herein

Transaction

RENEWAL DECLARATIONS				
NCCI Carrier # 31283		WCIRB CARRIER#	PRIOR POLICY NUMBER EIG266770801	
1. Named Insured and Address			Agent	
ESFD LLC DBA SAGEL BLOOMFIELD SAGEL BLOOMFIELD 1091 ROCKVILLE PIKE ROCKVILLE MD 20852-1403			THE JACOBS COMPANY INC 6455900 7075 SAMUEL MORSE DR STE 120 COLUMBIA, MD 21046 Telephone: 4109956611	
Customer #	Carrier # 31283	FEIN # 464943851	Risk ID # 190717747	Entity of Insured LIM LIABILITY CO

Additional Locations:

- The Policy Period is from 07/31/2020 to 07/31/2021 12:01 a.m. Standard Time at the Insured's mailing address.
- A. Workers Compensation Insurance: Part ONE of the policy applies to the Workers Compensation Law of the states listed here: MD
- B. Employers Liability Insurance: Part TWO of the policy applies to work in each state listed in Item 3A. The limits of our liability under Part TWO are:

Bodily Injury by Accident	\$	500,000	each accident
Bodily Injury by Disease	\$	500,000	policy limit
Bodily Injury by Disease	\$	500,000	each employee
- C. Other States Insurance: Part THREE of the policy applies to the states, if any, listed here: All states except ND, OH, WA, WY and states listed in item 3.A.
- D. This policy includes these endorsements and schedules: See attached schedule.
4. The premium for this policy will be determined by our Manuals of Rules, Classifications, Rates, and Rating Plans. All information required below is subject to verification and change by audit.

SEE EXTENSION OF INFORMATION PAGE

Minimum Premium	\$	750	Expense Constant	\$	160
			Premium Discount	\$	
Assessments and Taxes	\$		Total Estimated Annual Premium	\$	3,702


This is a Three Year Fixed Rate Policy

Premium Adjustment Period: Annual; Semiannual; Quarterly; Monthly

Countersigned this _____ Day of _____,

Issued Date: 06/22/2020

Issuing Office **EMPLOYERS PREFERRED INS. CO.**
14120 BALLANTYNE CORPORATE PLACE, SUITE 100
CHARLOTTE, NC 28277-2685



Authorized Representative

Issued Date 06/22/2020
WC990630 (5/98 Ed.)

INSURED COPY



EMPLOYERS PREFERRED INS. CO.
 A Stock Company
 14120 BALLANTYNE CORPORATE PLACE, SUITE 100
 CHARLOTTE, NC 28277-2685

WORKERS' COMPENSATION AND EMPLOYERS
 LIABILITY INSURANCE POLICY

Policy Number: EIG 2667708 02
Named Insured: ESFD LLC DBA SAGEL BLOOMFIELD
Agent: THE JACOBS COMPANY INC 6455900

EXTENSION OF INFORMATION PAGE

CLASSIFICATION OF OPERATIONS

Code No.	Classification Description	Premium Basis Total Est. Annual Remuneration	Rate Per \$100 of Remuneration	Estimated Annual Premium
Maryland				
Rating Period: 07/31/2020 through 07/31/2021				
Site 00001				
8810	CLERICAL OFFICE EMPLOYEES NOC	190,000	0.070000	133.00
9620	FUNERAL DIRECTOR & DRIVERS	544,000	0.740000	4,026.00
Site 00001 Total				\$ 4,159.00
Total of Sites for Rating Period				\$ 4,159.00
Rating Period Total				\$ 4,159.00
Rating Period: 07/31/2020 through 07/31/2021				
9807	INCREASED COVERAGE II	4,159	0.008000	33.00
9848	BALANCE TO MIN PREM-COVERAGE II			42.00
9887	SCHEDULE CREDIT	4,234	0.250000	-1,059.00
0900	EXPENSE CONSTANT			160.00
9740	TERRORISM PREMIUM	734,000	0.040000	294.00
9741	CATASTROPHE PREMIUM	734,000	0.010000	73.00
Rating Period Total				\$ 457.00-
State Total				\$ 3,702.00
Policy Total				\$ 3,702.00



EMPLOYERS PREFERRED INS. CO.
 A Stock Company
 14120 BALLANTYNE CORPORATE PLACE, SUITE 100
 CHARLOTTE, NC 28277-2685

WORKERS' COMPENSATION AND EMPLOYERS
 LIABILITY INSURANCE POLICY

Policy Number: EIG 2667708 02	
Named Insured: ESFD LLC DBA SAGEL BLOOMFIELD	
Agent: THE JACOBS COMPANY INC	6455900

SITE LOCATION SCHEDULE

State MD 1
 ESFD LLC DBA SAGEL BLOOMFIELD
 1091 ROCKVILLE PIKE
 ROCKVILLE MD 20852-1403



EMPLOYERS PREFERRED INS. CO.
 A Stock Company
 14120 BALLANTYNE CORPORATE PLACE, SUITE 100
 CHARLOTTE, NC 28277-2685

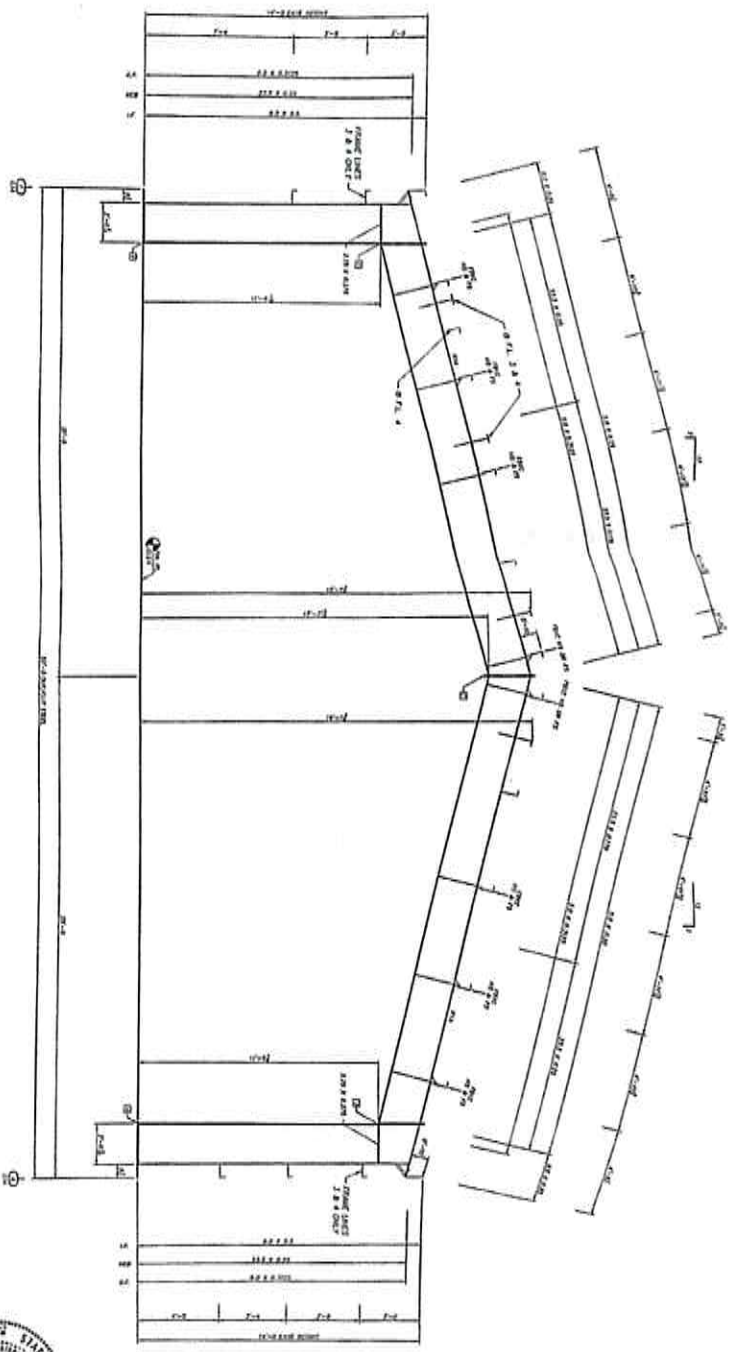
WORKERS' COMPENSATION AND EMPLOYERS
 LIABILITY INSURANCE POLICY

Policy Number:	EIG 2667708 02
Named Insured:	ESFD LLC DBA SAGEL BLOOMFIELD
Agent:	THE JACOBS COMPANY INC 6455900

ENDORSEMENT SCHEDULE

State	Form Nbr.	Ed. Date	Description
MD	WC000000C	(1/15)	WC/EL INS. POLICY FORM BOOKLET
MD	WC000115	(1/20)	ENDT OF PEND LAW CHG TO TRIPRA
MD	WC000403	(4/84)	EXPERIENCE RATING MOD FCTR
MD	WC000404	(4/84)	PENDING RATE CHANGE ENDT
MD	WC000406	(8/84)	PREMIUM DISCOUNT ENDORSEMENT
MD	WC000414A	(1/19)	NOTIFICATION OF CHG OWNERSHIP
MD	WC000419	(1/01)	PREMIUM DUE DATE ENDORSEMENT
MD	WC000421D	(1/15)	CATASTROPHE PREMIUM ENDORSE
MD	WC000422B	(1/15)	TERRORISM RISK INSURANCE PROG
MD	WC000424	(1/17)	AUDIT NONCOMPLIANCE CHARGE END
MD	WC190601G	(10/17)	MD CANCELLATION & NONRENEWAL
MD	WC190602	(1/14)	MD NOTIFICATION 45-DAY UW PERD
MD	WC990405A	(3/07)	INSTALLMENT PAYMENT ENDORSE

THIS DOCUMENT IS THE PROPERTY OF THE STATE OF MARYLAND. IT IS LOANED TO YOU BY THE STATE ARCHIVES AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.



CROSS SECTION AT FRAME LINES 2, 3, 4, & 5
SECTION 1



JOIST	SPAN	SPACING	TYPE	DEPTH	WEIGHT	SECTION
1	12'-0"	12'-0"	2X8	8 1/2"	15.0	2X8
2	12'-0"	12'-0"	2X8	8 1/2"	15.0	2X8
3	12'-0"	12'-0"	2X8	8 1/2"	15.0	2X8
4	12'-0"	12'-0"	2X8	8 1/2"	15.0	2X8
5	12'-0"	12'-0"	2X8	8 1/2"	15.0	2X8

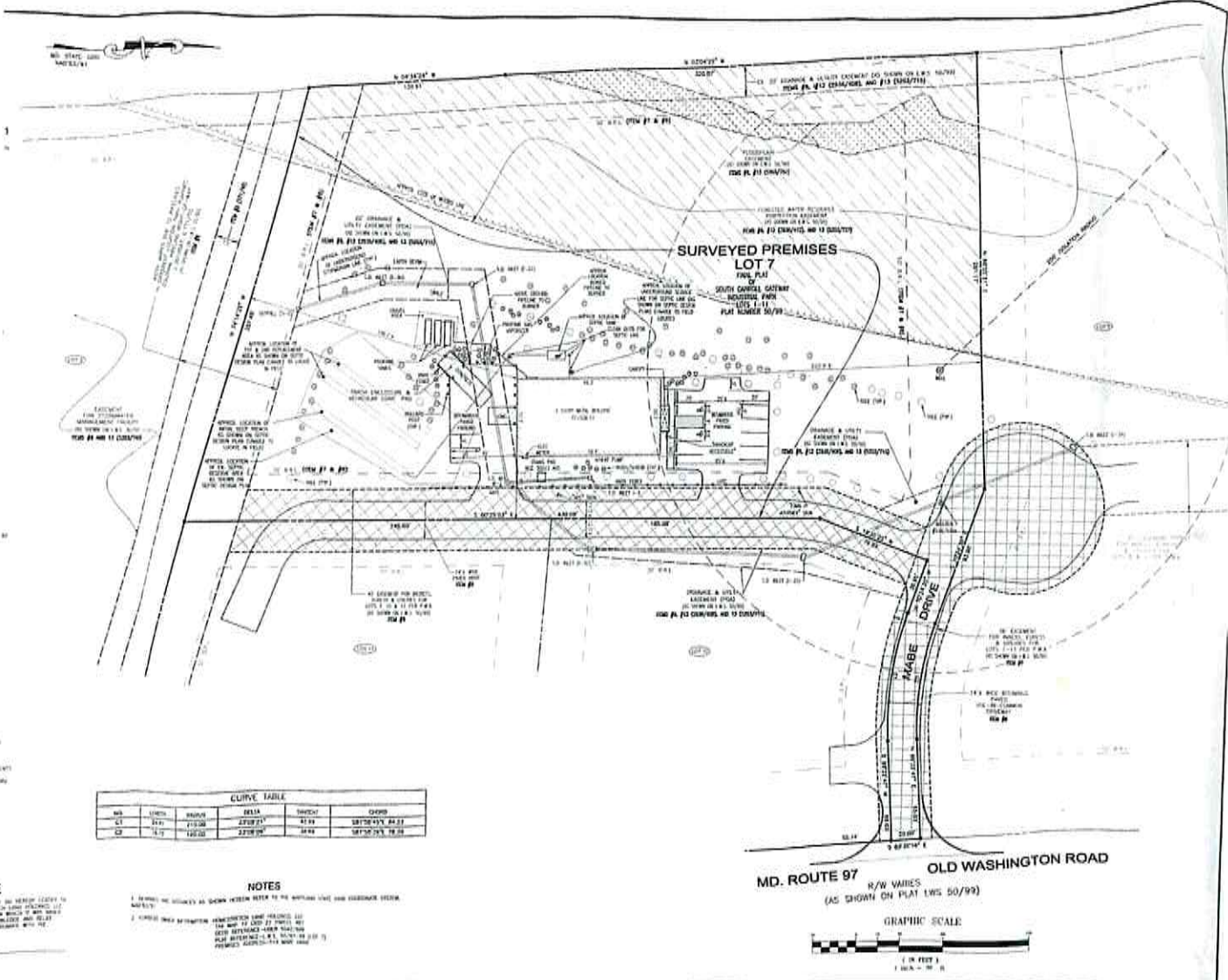
MEMBER	SECTION	TYPE	DEPTH	WEIGHT	SECTION
1	12'-0"	12'-0"	2X8	8 1/2"	15.0
2	12'-0"	12'-0"	2X8	8 1/2"	15.0
3	12'-0"	12'-0"	2X8	8 1/2"	15.0
4	12'-0"	12'-0"	2X8	8 1/2"	15.0
5	12'-0"	12'-0"	2X8	8 1/2"	15.0

FOR CONSTRUCTION

PROJECT NO. 14-8-6587-1
 DATE: 02/11/14
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]
 TITLE: [Title]
 FIRM: [Firm Name]

PROJECT NO. 14-8-6587-1
 DATE: 02/11/14
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]
 TITLE: [Title]
 FIRM: [Firm Name]

PROJECT NO. 14-8-6587-1
 DATE: 02/11/14
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]
 TITLE: [Title]
 FIRM: [Firm Name]



CURVE TABLE

NO.	LENGTH	ADIUS	DELTA	TANGENT	CHORD
1	115.00	115.00	90.00	115.00	115.00
2	115.00	115.00	90.00	115.00	115.00

NOTES

1. DIMENSIONS ARE SHOWN UNLESS NOTED TO THE CONTRARY AND UNLESS OTHERWISE SPECIFIED.
2. CURVES UNLESS OTHERWISE SPECIFIED ARE CIRCULAR.
3. THE MAP IS TO BE USED IN CONJUNCTION WITH THE SURVEYING INSTRUMENTS AND METHODS USED IN THE FIELD.
4. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
5. THE AREA OF THIS SITE IS APPROXIMATELY 1.5 ACRES.

MD. ROUTE 97
OLD WASHINGTON ROAD
 R/W VARIES
 (AS SHOWN ON PLAT 105 50/99)



Jay C. Voight, Zoning Administrator
Office of Zoning Administration
410-386-2980, fax 410-386-2451
Toll-free 1-888-302-8978
MD Relay service 7-1-1/1-800-735-2258



Thomas S. Devilbiss, Director
Department of
Land and Resource Management
Carroll County Government
225 North Center Street
Westminster, Maryland 21157

January 26, 2021

Daniel Simons
ESFD Land Holdings, LLC
519 Mabe Drive
Woodbine, MD 21797

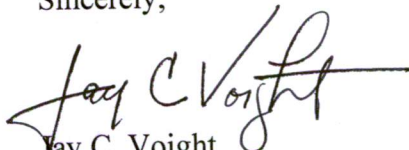
Re: Forever Faithful Pet Cremation and Funeral Care, LLC
519 Mabe Drive

To Whom It May Concern,

The property located at 519 Mabe Drive, also known as Map 77, Grid 22, Parcel 467, is zoned "I-2" Heavy Industrial. According to section 158.082 of the code, a crematory is a principal permitted use and is allowed by right in the I-2 zoning district.

If you have any questions, please feel free to call my office at 410.386.2980.

Sincerely,


Jay C. Voight
Zoning Administrator

JCV/ab

Carroll County
a great place to live, a great place to work, a great place to play

MARYLAND DEPARTMENT OF THE ENVIRONMENT

**AIR AND RADIATION ADMINISTRATION
APPLICATION FOR A PERMIT TO CONSTRUCT**

**SUPPLEMENT TO
DOCKET #03-21**

COMPANY: Final Journey Crematory, LLC

LOCATION: 519 Mabe Drive
Woodbine, MD 21797

APPLICATION: Installation of one (1) animal crematory rated at 150 lbs/hr

<u>ITEM</u>	<u>DESCRIPTION</u>
1	Notice of Tentative Determination, Opportunity to Request a Public Hearing, and Opportunity to Submit Written Comments
2	Fact Sheet and Tentative Determination
3	Draft Permit to Construct and Conditions
4	Email Appending Application
5	Supplemental Information
6	Privilege Log – Not Applicable

**MARYLAND DEPARTMENT OF THE ENVIRONMENT
AIR AND RADIATION ADMINISTRATION**

**NOTICE OF TENTATIVE DETERMINATION, OPPORTUNITY TO REQUEST
A PUBLIC HEARING, AND OPPORTUNITY TO SUBMIT WRITTEN COMMENTS**

FIRST NOTICE

The Department of the Environment, Air and Radiation Administration (ARA) has completed its review of an application for a Permit to Construct submitted by Final Journey Crematory, LLC on January 26, 2021 for the installation of one (1) animal crematory rated at 150 lbs/hr. The proposed installation will be located at 519 Mabe Drive, Woodbine, MD 21797.

Pursuant to Section 1-604, of the Environment Article, Annotated Code of Maryland, the Department has made a tentative determination that the Permit to Construct can be issued and is now ready to receive public comment on the application.

Copies of the Department's tentative determination, the application, the draft permit to construct with conditions, and other supporting documents are available for public inspection on the Department's website. Look for Docket #03-21 at the following link:

<https://mde.maryland.gov/programs/Permits/AirManagementPermits/Pages/index.aspx>

Interested persons may request a public hearing and/or submit written comments on the tentative determination. Requests for a public hearing must be submitted in writing and must be received by the Department no later than 20 days from the date of this notice. Written comments must be received by the Department no later than 30 days from the date of this notice.

Interested persons may request an extension to the public comment period. The extension request must be submitted in writing and must be received by the Department no later than 30 days from the date of this notice or within 5 days after the hearing (if a hearing is requested), whichever is later. The public comment period may only be extended one time for a 60-day period.

All requests for a public hearing, requests for an extension to the public comment period, and all written comments should be emailed to Ms. Shannon Heafey at shannon.heafey@maryland.gov.

Further information may be obtained by contacting Ms. Shannon Heafey by email at shannon.heafey@maryland.gov or by phone at (410) 537-4433.

George S. Aburn, Jr., Director
Air and Radiation Administration

**MARYLAND DEPARTMENT OF ENVIRONMENT
AIR AND RADIATION ADMINISTRATION**

**FACT SHEET AND TENTATIVE DETERMINATION
FINAL JOURNEY CREMATORY, LLC**

PROPOSED INSTALLATION OF ONE (1) ANIMAL CREMATORY RATED AT 150 LBS/HR

I. INTRODUCTION

The Maryland Department of the Environment (the "Department") received an application from Final Journey Crematory, LLC on January 26, 2021, with an amendment on September 30, 2021, for a Permit to Construct for the installation of one (1) animal crematory rated at 150 lbs/hr. The proposed installation will be located at 519 Mabe Drive, Woodbine, MD 21797.

A notice was placed in The Carroll County Times on May 11, 2021 and May 18, 2021 announcing an opportunity to request an informational meeting to discuss the application for a Permit to Construct. An informational meeting was not requested.

As required by law, all public notices were also provided to elected officials in all State, county, and municipality legislative districts located within a one mile radius of the facility's property boundary.

The Department has reviewed the application and has made a tentative determination that the proposed installation is expected to comply with all applicable air quality regulations. A notice will be published to provide the public with opportunities to request a public hearing and to comment on the application, the Department's tentative determination, the draft permit conditions, and other supporting documents. The Department will not schedule a public hearing unless a legitimate request is received.

If the Department does not receive any comments that are adverse to the tentative determination, the tentative determination will automatically become a final determination. If adverse comments are received, the Department will review the comments, and will then make a final determination with regard to issuance or denial of the permit. A notice of final determination will be published in a newspaper of general circulation in the affected area. The final determination may be subject to judicial review pursuant to Section 1-601 of the Environment Article, Annotated Code of Maryland.

II. CURRENT STATUS AND PROPOSED INSTALLATION

A. Current Status

Final Journey Crematory, LLC currently operates two (2) human crematories and one (1) animal crematory at their facility. The second human crematory was installed in 2020. They have a current State Permit to Operate that expires November 30, 2024.

B. Proposed Installation

On January 26, 2021, Final Journey applied for the installation of one (1) animal crematory at their existing facility. The crematory contains four (4) chambers, one (1) 200 lb, one (1) 75 lb, and two (2) 50 lb.

On September 30, 2021, Final Journey amended their application to include raising the stack height of their existing animal crematory to a minimum of 27 feet.

The permit will supersede all previous permits to construct issued to the facility and includes a temporary permit to operate.

The crematory will be required to have a stack height of at least 27 feet on each of the two (2) animal crematories.

The facility will be subject to the following operating limitations:

- (1) Shall not cremate more than 9 human remains during any rolling 8-hour period;
- (2) Shall not cremate more than 9,855 human remains during any rolling 12-month period;
- (3) Shall not cremate more than 1,400 pounds of animal remains in each animal crematory during any rolling 8-hour period;
- (4) Shall not cremate more than 400,000 pounds (200 tons) of animal remains during any rolling 12-month period;
- (5) Shall not combust any halogenated plastics, including polyvinyl chloride (PVC) body bags or PVC pipes; and,
- (6) Shall not combust any hazardous waste, or hospital, medical, and infectious waste as defined in COMAR 26.11.08.01B(18).

III. APPLICABLE REGULATIONS

The proposed installation is subject to all applicable Federal and State air quality control regulations, including, but not limited to the following:

- (a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.
- (b) COMAR 26.11.02.09A which requires the Permittee to obtain a Permit to Construct if an installation is modified in such a manner that there is a change in the quantity, nature, or characteristics of emissions from the source from those provided in this permit.
- (c) COMAR 26.11.02.13A(1) which requires the Permittee to obtain a Permit to Operate from the Department before operating the crematory.
- (d) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in the submittals.
- (e) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.
- (f) COMAR 26.11.08.04B which prohibits the discharge of emissions, other than water in an uncombined form, which is visible to human observers.
- (g) COMAR 26.11.08.04C which provides exceptions to the visible emissions regulations during start-up, adjustments or occasional cleaning of control equipment, but which limits the emissions to no more than 40 percent opacity for not more than 6 consecutive minutes in any 60 minute period.
- (h) COMAR 26.11.08.05 which limits particulate matter emissions to 0.10 grains per standard cubic foot of dry gas, corrected to 12 percent carbon dioxide.
- (i) COMAR 26.11.15.05, which requires that the Permittee implement “Best Available Control Technology for Toxics” (T – BACT) to control emissions of toxic air pollutants.
- (j) COMAR 26.11.15.06, which prohibits the discharge of toxic air pollutants to the extent that such emissions will unreasonably endanger human health.

IV. GENERAL AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has established primary and secondary National Ambient Air Quality Standards (NAAQS) for six (6) criteria pollutants, i.e., sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, ozone, and lead. The primary standards were established to protect public health, and the secondary standards were developed to protect against non-health effects such as damage to property and vegetation.

The Department utilizes a statewide air monitoring network, operated in accordance with EPA guidelines, to measure the concentrations of criteria pollutants in Maryland's ambient air. The measurements are used to project statewide ambient air quality, and currently indicate that Carroll complies with the NAAQS for sulfur dioxide, particulate matter, carbon monoxide, nitrogen dioxide, and lead.

Ground level ozone continues to present a problem for the entire Baltimore metropolitan area, which is classified as a non-attainment area for ozone. The primary contributors to the formation of ozone are emissions of oxides of nitrogen, primarily from combustion equipment, and emissions of Volatile Organic Compounds (VOC) such as paint solvents and gasoline vapors. Carroll County is included in the non-attainment area for ozone.

With regard to toxic air pollutants (TAPs), screening levels (i.e., acceptable ambient concentrations for toxic air pollutants) are generally established at 1/100 of allowed worker exposure levels (TLVs)¹. The Department has also developed additional screening levels for carcinogenic compounds. The additional screening levels are established such that continuous exposure to the subject TAP at the screening level for a period of 70 years is expected to cause an increase in lifetime cancer risk of no more than 1 in 100,000.

V. COMPLIANCE DEMONSTRATION AND ANALYSIS

The proposed installation must comply with all State imposed emissions limitations and screening levels, as well as the NAAQS. The Department has conducted an engineering and air quality review of the application. The emissions were projected based on crematory capacity, permit limits, and U.S. EPA approved emission factors (AP-42). The conservative U.S. EPA's SCREEN3 model was also used to project the maximum ground level concentrations from the proposed facility, which were then compared to the screening levels and the NAAQS.

A. Estimated Emissions - The maximum emissions of air pollutants of concern from the proposed installation are listed in Table I.

¹ TLVs are threshold limit values (exposure limits) established for toxic materials by the American Conference of Governmental Industrial Hygienists (ACGIH). Some TLVs are established for short-term exposure (TLV – STEL), and some are established for longer-term exposure (TLV – TWA), where TWA is an acronym for time-weight average.

- B. Compliance with National Ambient Air Quality Standards** - The maximum ground level concentrations for sulfur dioxide, particulate matter, carbon monoxide, and nitrogen dioxide based on the emissions from the proposed installation are listed in column 2 of Table II. The combined impact of the projected contribution from the proposed installation and the ambient background concentration for each pollutant shown in column 3 of Table II is less than the NAAQS for each pollutant shown in column 4.
- C. Compliance with Air Toxics Regulations** –The toxic air pollutants requiring screening analysis for the compliance demonstration that would be emitted from this installation are listed in column 1 of Table III. The predicted maximum off-site ambient concentrations of these toxic air pollutants are shown in column 4 of Table III, and in each case the maximum concentration is less than the corresponding screening level for the toxic air pollutant shown in column 2.

VI. TENTATIVE DETERMINATION

Based on the above information, the Department has concluded that the proposed installation will comply with all applicable Federal and State air quality control requirements. In accordance with the Administrative Procedure Act, Department has made a tentative determination to issue the Permit to Construct.

Enclosed with the tentative determination is a copy of the draft Permit to Construct.

**TABLE I
PROJECTED MAXIMUM EMISSIONS FROM THE PROPOSED INSTALLATION**

POLLUTANT	PROJECTED MAXIMUM EMISSIONS FROM PROPOSED INSTALLATION	
	(lbs/day)	(tons/year)
Nitrogen Dioxide (NO ₂)	4.9	0.76
Sulfur Dioxide (SO ₂)	2.1	0.32
Carbon Monoxide (CO)	4.1	0.64
Volatile Organic Compounds (VOC)	2.9	0.45
Particulate Matter (PM ₁₀)	1.2	0.19

**TABLE II
PROJECTED IMPACT OF EMISSIONS OF CRITERIA POLLUTANTS FROM THE PROPOSED INSTALLATION ON AMBIENT AIR QUALITY**

POLLUTANTS	MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS CAUSED BY EMISSIONS FROM PROPOSED PROCESS (µg/m ³)	BACKGROUND AMBIENT AIR CONCENTRATIONS (µg/m ³)*	NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS) (µg/m ³)
Nitrogen Dioxide (NO ₂)	annual avg. → 1.0	annual avg. → 27.0	annual avg. → 100
Carbon Monoxide (CO)	8-hour max → 10.7 1-hour max → 15.3	8-hr max. → 802 1-hr max. → 916	8-hr max. → 10,000 1-hr max. → 40,000
Sulfur Dioxide (SO ₂)	24-hour max. → 3.1 annual avg. → 0.4	24-hour max. → 5.8 annual avg. → 1.1	24-hour max. → 366 annual avg. → 78.5
Particulate Matter (PM ₁₀)	24-hr max → 1.8	24-hr max. → 36	24-hr max. → 150

*Background concentrations were obtained from Maryland air monitoring stations as follows:

NO₂, CO and SO₂ → HU-Beltsville Monitoring Station in Prince George's County
PM₁₀ → Glen Burnie Monitoring Station in Anne Arundel County

**TABLE III
 PREDICTED MAXIMUM OFF-SITE AMBIENT CONCENTRATIONS FOR
 TOXIC AIR POLLUTANTS EMITTED FROM THE PROPOSED INSTALLATION**

TOXIC AIR POLLUTANTS	SCREENING LEVELS ($\mu\text{g}/\text{m}^3$)	PROJECTED WORST-CASE FACILITY-WIDE EMISSIONS (lbs/hr)	PREDICTED MAXIMUM OFF-SITE GROUND LEVEL CONCENTRATIONS ($\mu\text{g}/\text{m}^3$)
Beryllium	1-hour→ None 8-hour→ 0.0005 Annual→ 0.0004	0.000006	1-hour→ None 8-hour→ 0.00037 Annual→ 0.000009
Hydrogen Chloride	1-hour→ 29.8 8-hour→ 165 Annual→ None	0.31	1-hour→ 22.8 8-hour→ 0.033 Annual→ None
Mercury	1-hour→ 0.3 8-hour→ 0.1 Annual→ None	0.014	1-hour→ 0.23 8-hour→ 0.09 Annual→ None

The values represent maximum facility-wide emissions of toxic air pollutants during any 1-hour period of facility operation.

The values are based on worst-case emissions from the proposed facility and were predicted by EPA's SCREEN3 model, which provides conservative estimations concerning the impact of pollutants on ambient air quality.

DRAFT PERMIT

Larry Hogan

Ben Grumbles

Air and Radiation Administration

1800 Washington Boulevard, Suite 720
Baltimore, MD 21230

Construction Permit

Operating Permit

PERMIT NO.:

As listed on Page 2

DATE ISSUED:

TBD

PERMIT FEE:

\$1,500 (paid)

EXPIRATION DATE:

In accordance with COMAR 26.11.02.04B

LEGAL OWNER & ADDRESS

Final Journey Crematory, LLC
519 Mabe Drive
Woodbine, MD 21797
Attention: Mr. Daniel Simons, General
Manager

SITE

Final Journey Crematory, LLC
519 Mabe Drive
Woodbine, MD 21797
AI # 32492

SOURCE DESCRIPTION

Two (2) human and two (2) animal crematories

This permit authorizes the installation of one (1) animal crematory.

This permit supersedes permits to construct 013-0363-1-0009, 0010, and 0015 issued on August 18, 2020

This source is subject to the conditions described on the attached pages.

Program Manager

Director, Air and Radiation Administration

**FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS**

Crematory	Permit Number
B&L Phoenix II-1 human crematory	013-0363-1-0015
B&L BLP-750 animal crematory	013-0363-1-0010
B&L Phoenix II-1 human crematory	013-0363-1-0009
B&L BLP-500M4 animal crematory	013-0363-1-0017

Index

- Part A - Construction Conditions
- Part B - Temporary Operating Conditions
- Part C - Operating Conditions
- Part D - Monitoring and Recording
- Part E - Record Keeping and Reporting
- Part F - General Provisions
- Part G - Applicable Regulations

Part A - Construction Conditions

- (1) Except as otherwise provided in this part, each crematory shall be constructed and installed in accordance with the application and specifications provided by the vendor and manufacturer.
- (2) Each crematory shall be designed to limit particulate matter emissions to no more than 0.10 grains per standard cubic foot dry, adjusted to 12 percent carbon dioxide.
- (3) Each crematory shall be equipped with a secondary combustion chamber having a retention time of at least 1.0 seconds, and an operating temperature of at least 1600 degrees Fahrenheit (F).
- (4) Each crematory shall be equipped with temperature sensors and recorders to continuously monitor and record the temperature of the secondary combustion chamber during operation.
- (5) In order to minimize odors and ground level air pollution, each crematory stack shall vent exhaust gasses straight up without restriction or obstruction. If a rain cap is installed, it shall be designed to automatically open when the unit is operating, so as to not obstruct the upward flow of the exhaust gasses in any manner.
- (6) Each crematory stack shall be installed according to the following requirements:

Crematory	Minimum stack height above roof peak (feet)	Minimum stack height above ground (feet)
B&L Phoenix II-1 human crematories	11	31
B&L BLP-750 and BLP 500M4 animal crematories	7	27

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

Part B - Temporary Operating Conditions

- (1) These temporary operating conditions apply only to the new B&L BLP-500M4 animal crematory.
- (2) This permit to construct shall also serve as a temporary permit to operate that grants the Permittee the right to operate the crematory for a period of up to 180 days after initial operation of the crematory.
- (3) During the period of the temporary permit to operate the Permittee shall operate the crematory in accordance with this permit to construct and in accordance with the operating instructions as provided by the equipment manufacturer and vendor.
- (4) At least 10 days prior to the initial operation of the crematory, the Permittee shall notify the Department in writing of the anticipated date of initial operation.
- (5) No later than 15 days after the initial operation of the crematory, the Permittee shall notify the Department in writing of the actual date of start-up.
- (6) The Permittee shall submit an application for a state permit to operate no later than 60 days prior to the expiration of this temporary permit to operate.

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

Part C - Operating Conditions

- (1) The Permittee shall abide by the following premises wide operational limitations:
 - (a) Shall not cremate more than 9 human remains during any rolling 8-hour period;
 - (b) Shall not cremate more than 9,855 human remains during any rolling 12-month period;
 - (c) Shall not cremate more than 1,400 pounds of animal remains in each animal crematory during any rolling 8-hour period;
 - (d) Shall not cremate more than 400,000 pounds (200 tons) of animal remains during any rolling 12-month period;
 - (e) Shall not combust any halogenated plastics, including polyvinyl chloride (PVC) body bags or PVC pipes; and,
 - (f) Shall not combust any hazardous waste, or hospital, medical, and infectious waste as defined in COMAR 26.11.08.01B(18).
- (2) The Permittee shall maintain and operate the crematory and all associated air pollution control equipment so as to assure full and continuous compliance with all applicable air pollution control regulations and permit conditions.
- (3) The Permittee shall maintain, calibrate, and operate all control panel instrumentation and equipment used to monitor the performance of the crematory and the secondary chamber.
- (4) Prior to the initiation of cremation in the primary chamber, the secondary chamber shall be preheated until the gases leaving the secondary chamber attain a temperature of at least 1600 degrees F.
- (5) While remains are being cremated, the secondary chamber temperature set point shall be at least 1600 degrees F or higher.

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

Part D - Monitoring and Recording

- (1) Prior to use, the chart recorder, or other temperature recording device, for each crematory shall be turned on and recording at the initiation of preheating the secondary chamber in order to document that the secondary chamber achieves a temperature of 1600 degrees F. prior to beginning each cremation.
- (2) While remains are being cremated, the temperature of the flue gases from the secondary chamber of the crematory shall be continuously recorded on its chart recorder, or other temperature recording device. Each chart shall be dated and annotated in such a manner that the date and time of any recorded temperature event may be easily determined.
- (3) The chart recorder paper, or other continuous record keeping method, for each crematory shall be replaced as necessary in order to ensure that there is no overlapping of any portion of the recording of cremation cycles.

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

Part E - Record Keeping and Reporting

- (1) The Permittee shall maintain for at least five (5) years, and shall make available to the Department upon request, records of the following information:
 - (a) Chart recordings, or other continuous recording keeping method, for each crematory that clearly show the following information:
 - (i) The identity of the crematory being recorded;
 - (ii) The flue gas temperature at the outlet of the secondary chamber; and,
 - (iii) The date and start time of each and every cremation shown on the chart.
 - (b) A daily log that clearly shows the following information:
 - (i) The date and start time of each and every cremation;
 - (ii) The identity of the crematory used for each and every cremation,
 - (iii) The approximate weight of the charge for each and every cremation; and,
 - (iv) The duration of each and every cremation.

- (2) The Permittee shall maintain at the facility for at least five (5) years records necessary to support annual certifications of emissions and demonstrations of compliance for toxic air pollutants. Such records shall include, if applicable, the following:
 - (a) Mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each registered source of emissions;
 - (b) Accounts of the methods and assumptions used to quantify emissions;
 - (c) All operating data, including operating schedules and production data, that were used in determinations of emissions;
 - (d) Amounts, types, and analyses of all fuels used;
 - (e) Any records, the maintenance of which is required by this permit or by State or federal regulations, that pertain to the operation and maintenance of continuous emissions monitors, including:
 - (i) All emissions data generated by such monitors;
 - (ii) All monitor calibration data;
 - (iii) Information regarding the percentage of time each monitor was available for proper service; and
 - (iv) Information concerning any equipment malfunctions.

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

- (f) Information concerning operation, maintenance, and performance of air pollution control equipment and compliance monitoring equipment, including:
 - (i) Identifications and descriptions of all such equipment;
 - (ii) Operating schedules for each item of such equipment;
 - (iii) Accounts of any significant maintenance performed;
 - (iv) Accounts of all malfunctions and outages; and
 - (v) Accounts of any episodes of reduced efficiency.
 - (g) Limitations on source operation or any work practice standards that significantly affect emissions; and
 - (h) Other relevant information as required by the Department.
- (3) The Permittee shall submit to the Department by April 1 of each year during the term of this permit a certification of emissions for the previous calendar year. The certifications shall be prepared in accordance with requirements adopted under COMAR 26.11.02.19D.
- (a) Certifications of emissions shall be submitted on forms obtained from the Department.
 - (b) A certification of emissions shall include mass emissions rates for each regulated pollutant, and the total mass emissions rate for all regulated pollutants for each of the Permittee's registered sources of emissions.
 - (c) The person responsible for a certification of emissions shall certify the submittal to the Department in the following manner:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”
- (4) The Permittee shall submit to the Department, by April 1 of each year during the term of this permit, a written certification of the results of an analysis of emissions of toxic air pollutants from the Permittee's facility during the previous calendar year. Such analysis shall include either:
- (a) A statement that previously submitted compliance demonstrations for emissions of toxic air pollutants remain valid; or

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

- (b) A revised compliance demonstration, developed in accordance with requirements included under COMAR 26.11.15 & 16, that accounts for changes in operations, analytical methods, emissions determinations, or other factors that have invalidated previous demonstrations.
- (5) The Permittee shall report, in accordance with requirements under COMAR 26.11.01.07C, occurrences of excess emissions to the Compliance Program of the Air and Radiation Administration.

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

Part F - General Provisions

- (1) The following applications are incorporated by reference into this permit:
- (a) Initial Application for Incinerators (AMA-10) received January 26, 2021;
 - (b) Application for Processing/Manufacturing Equipment (AMA-5) received January 26, 2021;
 - (c) Emission Point Data (AMA-5EP) received January 26, 2021;
 - (d) Toxic Air Pollutant (TAP) Emissions Summary and Compliance Demonstration (AMA-5T) received January 26, 2021;
 - (e) Application for Permit to Construct Gas Cleaning or Emission Control Equipment (AMA-6) received January 26, 2021;
 - (f) A Toxic Air Pollutant Analysis received January 26, 2021 and,
 - (g) Other documents as received including an email on September 30, 2021 requesting to raise the stack height on the B&L BLP-750 animal crematory (ARA Registration No. 013-0363-1-0010).

If there are any discrepancies between the permit and the application, the conditions on this permit will take precedence. In the application, estimates of dimensions, volumes, emission rates, operating rates, feed rates and hours of operation are not deemed to constitute enforceable numeric limits except to the extent that they are necessary to make a determination of compliance with applicable regulations.

- (2) Inspectors from the Department and the Carroll County Health Department shall be afforded access to the Permittee's property at any reasonable time for:
- (a) inspecting construction authorized under this permit;
 - (b) sampling any materials stored or processed on site, or any waste or discharge into the environment to determine compliance with the permit;
 - (c) inspecting any monitoring equipment required by the permit;
 - (d) having access to or copying any records relevant to the Department's determination of compliance with an air pollution control requirement including all documents required to be kept by this permit; and
 - (e) obtaining any photographic documentation and evidence to determine compliance with the permit.
- (3) This permit expires if substantial construction has not commenced within 18 months after the issue date of this permit, or if construction is substantially discontinued for a period of 18 months after the construction has commenced, or if construction is not completed within a reasonable period of time.
- (4) Prior to any increase in the quantities and/or change in the types of materials stated in the application or limited by the permit, notification shall be provided to the Department. If the Department determines that the change constitutes a modification, the Permittee shall obtain a Permit to Construct prior to the modification.
- (5) Nothing in this permit authorizes the violation of any rule or regulation nor the creation of a nuisance or air pollution.

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

- (6) If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect, and such invalid provisions shall be considered severed and deleted from the permit.
- (7) This permit supersedes permits to construct 013-0363-1-0009, 0010, & 0015 issued on August 18, 2020.
- (8) Subsequent to issuance of this permit, the Department may impose additional and modified requirements that are incorporated into a state permit to operate issued pursuant to COMAR 26.11.02.13

FINAL JOURNEY CREMATORY, INC.
DRAFT PERMIT TO CONSTRUCT CONDITIONS

Part G - Applicable Regulations

- (1) This source is subject to all applicable Federal and local requirements.
- (2) This source is subject to all applicable federally enforceable air pollution control requirements including, but not limited to, the following regulations:
 - (a) COMAR 26.11.01.07C, which requires that the Permittee report to the Department occurrences of excess emissions.
 - (b) COMAR 26.11.02.09A, which requires that the Permittee obtain a permit-to-construct if an installation is to be modified in manner that causes a change in the quantity, nature, or characteristics of emissions referenced in the permit-to-construct issued for that installation.
 - (c) COMAR 26.11.02.19C, which requires that the Permittee maintain records necessary to support the emission certification.
 - (d) COMAR 26.11.08.04B which prohibits emissions visible to human observers, other than water in an uncombined form.
 - (e) COMAR 26.11.08.04C which provides exceptions to the visible regulations during start-up, or adjustments or occasional cleaning of control equipment if the visible emissions are not greater than 40 percent opacity, and the visible emissions do not occur for more than 6 consecutive minutes in any 60 minute period.
 - (f) COMAR 26.11.08.05A&B which limits particulate matter emissions to 0.10 grains per standard cubic foot of dry gas, corrected to 12 percent carbon dioxide.
- (3) This source is subject to all applicable state-only air pollution control requirements including, but not limited to, the following regulations:
 - (a) COMAR 26.11.02.13A(1), which requires that the Permittee maintain and renew as required a valid State permit-to-operate issued by the Department.
 - (b) COMAR 26.11.02.19C & D, which require that the Permittee submit to the Department annual certifications of emissions, and that the Permittee maintain sufficient records to support the emissions information presented in the submittals.
 - (c) COMAR 26.11.06.08 and 26.11.06.09, which generally prohibit the discharge of emissions beyond the property line in such a manner that a nuisance or air pollution is created.
 - (d) COMAR 26.11.15.05, which requires that the Permittee implement “Best Available Control Technology for Toxics” (T – BACT) to control emissions of toxic air pollutants.
 - (e) COMAR 26.11.15.06 which prohibits the discharge of toxic air pollutants to the extent that the emissions endanger human health.



Matthew Hafner -MDE- <matthew.hafner@maryland.gov>

Additional Stack Height for B&L BLP-750 to 27 ft.

dan@goinghomecares.com <dan@goinghomecares.com>
To: Matthew Hafner -MDE- <matthew.hafner@maryland.gov>
Cc: Albert Bloomfield <al@sagelbloomfield.com>, Ed Sagel <ed@sagelbloomfield.com>

Thu, Sep 30, 2021 at 12:16 PM

Matt -

We are requesting to raise the stack height of the existing B&L BLP-750 animal crematory (ARA Registration No. 013-0363-1-0010) to 27 feet. Please add to the docket with the permit application for the B&L BLP-500M4 animal crematory.

If any additional information is needed please contact me anytime.

Regards,

Dan Simons

Daniel Simons

General Manager

Final Journey Crematory

[519 Mabe Drive](#)

[Woodbine, MD 21797](#)

[Ph. \(410\)795-0702](#)

[Cell \(443\)202-5720](#)

MARYLAND DEPARTMENT OF THE ENVIRONMENT

AIR AND RADIATION ADMINISTRATION

SUPPLEMENTAL INFORMATION REFERENCES

The Code of Maryland Regulations (COMAR) is searchable by COMAR citation at the following Division of State Documents website:

<http://www.dsd.state.md.us/COMAR/ComarHome.html>

The Code of Federal Regulations (CFR), including New Source Performance Standards (NSPS) at 40 CFR, Part 60 and National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR, Parts 61 and 63, is searchable by CFR citation at the following U.S. Government Publishing Office website:

<http://www.ecfr.gov>

Information on National Ambient Air Quality Standards (NAAQS) is located at the following U.S. Environmental Protection Agency (EPA) website:

<https://www.epa.gov/criteria-air-pollutants/naaqs-table>

Information on Maryland's Ambient Air Monitoring Program is located at the following Maryland Department of the Environment website:

<http://mde.maryland.gov/programs/Air/AirQualityMonitoring/Pages/index.aspx>

Information on the U.S. EPA's Screen3 computer model and other EPA-approved air dispersion models is located at the following U.S. EPA website:

http://www.epa.gov/scram001/dispersion_screening.htm

Information on the U.S. EPA TANKS Emission Estimation Software is located at the following U.S. EPA website:

<http://www.epa.gov/ttn/chief/software/tanks/index.html>

Information on the U.S. EPA Emission Factors and AP-42 is located at the following U.S. EPA website:

<https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emission-factors>