F & A Receipt #1770375
2012 FEB 9

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FEB 10 2012
DIVISION OF AIR
RESOURCE MANAGEMENT

ANIMAL CREMATORY AIR GENERAL PERMIT RE-REGISTRATION

Facility Identification Number (If known)

Current Permit No. 0710207-007-AG. This 2012 Re-Registration is for the Fort Myers facility, which has two (2) existing animal crematory units. This is to add one (1) Crawford Model CB1200 animal crematory unit.

0710207-008

Registration Type

Check one:

INITIAL REGISTRATION - Notification of intent to:

- ☐ Construct and operate a proposed new facility.
- ☐ Operate an existing permitted facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit). If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. (See "Surrender of Existing Air Operation Permit(s)" below.)
- ☐ Operates an existing facility not currently permitted or using an air general permit.

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

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

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

All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s):

N/A

General Facility Information

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

Pet Angel World Services (Florida), LLC

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

Pet Angel World Services (Florida)

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

Street Address: **1941 Park Meadows Drive, Suite #8**

City: **Fort Myers** County: **Lee** Zip Code: **33907**-3703

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

N/A

0710207: 2012
Facility Contact

Name and Position Title (Plant manager or person to be contacted regarding day-to-day operations at the facility.) Print Name and Title: **Sharon Martinache, Regional Manager**
Facility Contact Telephone Numbers Telephone: **(727) 548-1456** Fax: **(727) 545-3141** Cell phone: **(727) 612-1445** E-mail: **sharon.martinache@petangelworldservices.com**
Facility Contact Mailing Address Organization/Firm: **Pet Angel World Services (Florida) LLC** Street Address: **6225 72nd Ave. North** City: **Pinellas Park** County: **Pinellas** Zip Code: **33781**

Other Contact/Representative (to serve as additional Department contact)

Name and Position Title Print Name and Title: **Mr. Lynn Robinson, P.E., Permitting Manager**
Other Contact/Representative Telephone Numbers Telephone: **(813) 752-5014** Fax: **(813) 752-2475** Cell phone: **(813) 957-8804** E-mail: **lrobinson@sesfla.com**
Other Contact/Representative Representative Mailing Address Organization/Firm: **Southern Environmental Sciences, Inc.** Street Address: **1204 North Wheeler Street** City: **Plant City** County: **FL** Zip Code: **33563**

0710207: 2012
Emission Unit Details – January

MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	RATED CAPACITY
***Unit to be added*:**			
Crawford Equipment & Engineering Co.*	**CB1200***	**S/0503/0133/00**	**300 lb/hr (1,200 lb/charge)**
Existing units to remain:			
Crawford Equipment & Engineering Co.	**C1000S**	**1CS92180992ULS**	**250 lb/hr (1,000 lb/charge)**
B&L Cremation Systems, Inc.	**BLI-400/75 M**	**1399-1182-12**	**75 lb/hr (400 lb/charge)**

* **Animal Crematory Unit to Be Added: This animal crematory unit is to be added, resulting in a total of three (3) units at the facility under Air General (AG) Permit ID No. 0710207. The Crawford Model CB1200 batch load animal crematory unit is designed to incinerate animal remains and associated material at an average rate of 300 pounds per hour (the average rate is the total weight loaded into the unit divided by the duration of the burn), with a maximum batch charge weight of 1,200 pounds. The incinerator consists of primary and secondary (afterburner) chambers each fired on propane or natural gas, with a total design heat input rate of 2.0 MMBtu/hour (one primary burner at 0.5 MMBtu/hr and one secondary burner at 1.5 MMBtu/hr). Emissions are controlled by an afterburner (secondary chamber) which maintains a minimum secondary chamber combustion zone temperature of 1,600°F prior to and during combustion of material in the primary chamber. The secondary (afterburner) chamber volume is designed to provide at least a one (1) second residence time at a gas temperature of 1,800°F. The secondary chamber temperature is continuously monitored and recorded and the unit is equipped with a stack opacity monitoring system. See attached Crawford design calculations, sketches and specifications.**

Design Calculations

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

☒ Design calculations attached.

☐ Registration is not for proposed new animal crematory unit(s).

INFORMATION FOR
CRAWFORD MODEL CB1200

CRAWFORD MODEL CB1200 SPECIFICATIONS

Model:	CB1200 (gas fired - std. / oil fire option - available)
Type:	Modular, multiple chambered, controlled air
Capacity ratings:	@ 5,500 Btu/lb. waste - 300 lb./hr.
Batch load capacity:	50 cu. ft. (1200 lbs. @ 25 lb./cu. ft. density)
Overall dimensions:	11'-0" L x 6'-10" W x 12'-0" H (to top of SCC)
Stack:	Std. 8' (mounted on top of SCC = 20' el. from grade)
Approx. system weight:	21,100 lbs.
Required fuel (NG/LPG):	2 MMBtu/hr @ 11-14" w.c. @ 1.5" header
Required electrical supply:	230/460 V, 3Ø, 60 Hz (50 Hz & alt. voltage available) 24/16 amp @ single point connection (40/24 amp with loader option)
Primary chamber volume:	97.95 cu. ft.
Hearth Area:	24 sq. ft.
Secondary chamber volume:	68.3 cu. ft.
Primary burner capacity:	500,000 Btu/hr. (modulated control)
Secondary burner capacity:	1,500,000 Btu/hr. (modulated control)
Charging/cleanout door:	49.5 in. i.d. opening (manual hinged type)
Combustion air supply:	1250 scfm (std.- 5hp, 230/460 V, 3Ø)
Construction:	.250" A36 CS plate shells .250" x 3" FB reinforcement 6", 10.5# A36 channel skid frame 4" 3000°F cast refractory lining 1" 1900°F insulation
Stack:	28"od x 22"id x 48"L sections (qty. 2 std.) 10 ga. A36 CS shell 3" 2400°F LWI castable approx. weight - 200 lb./ft.

CRAWFORD MODEL CB1200 BATCH CREMATORY

CRAWFORD

NCE CRAWFORD EMCOTEK
A service company with enabling technology

6250 Hazeltine National Drive Orlando, Florida 32822
Suite 116
voice: 936.756.1688 facsimile: 407.851.2406
sales and service: 1.800.228.0884
www.animal-cremation.com
www.nce-crawford.com

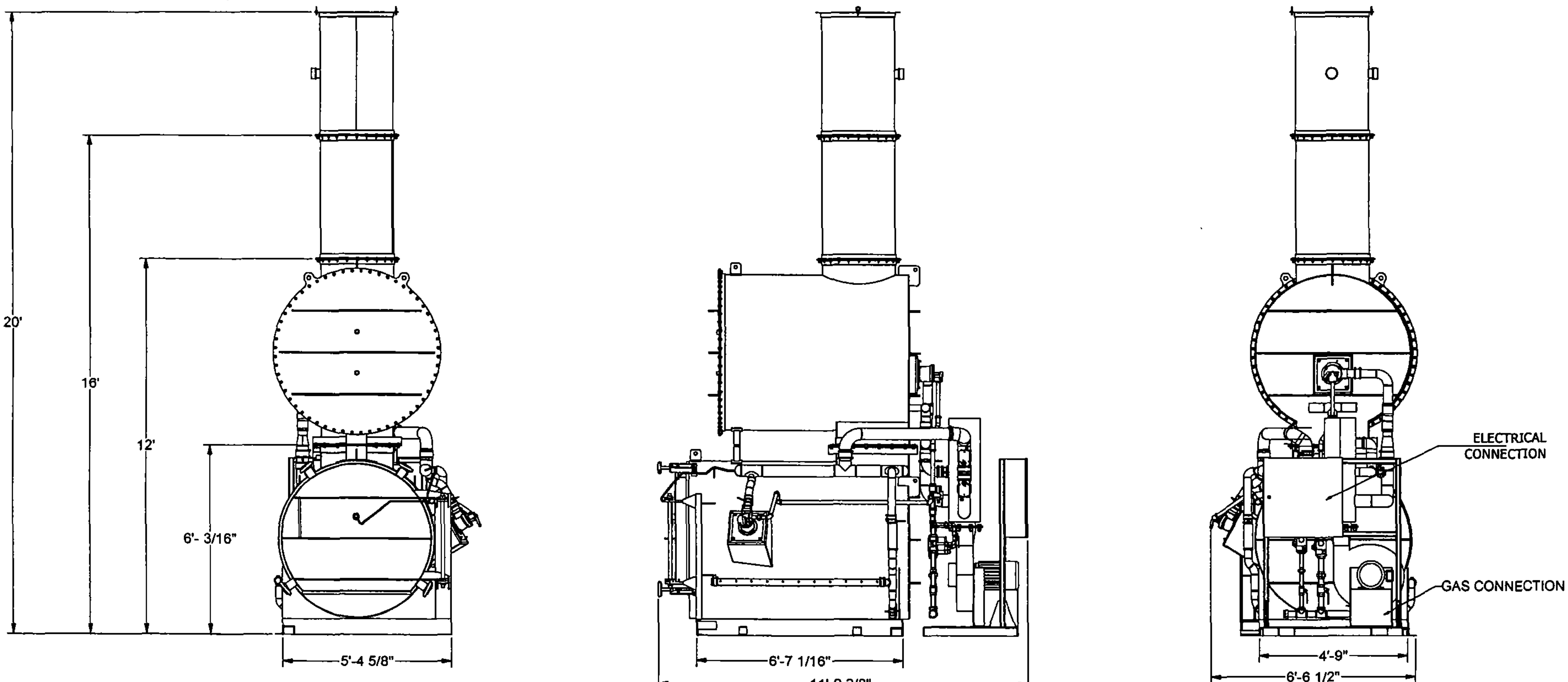
ELECTRICAL:

SINGLE POINT CONNECTION
230/460V, 3 PHASE, 60HZ, 24/16 AMP.
1 PHASE AND/OR 50HZ (OPTIONAL)

GAS REQUIREMENTS:

FUEL SUPPLY MUST BE CAPABLE OF FLOWING
MAIN 2 MMBTU/ HR @ 11-14" WC @ 2" HEADER

NOTE: WHAT IS SHOWN IS A MANUFACTURER'S REFERENCE HEIGHT. INSTALLED HEIGHT SUBJECT TO SITE, BUILDING, PERMIT CONDITIONS/RESTRICTIONS.



FRONT VIEW RIGHT VIEW BACK VIEW

NOTE:
ALL ILLUSTRATIONS COVER THE GENERAL APPEARANCE OF NCE/CRAWFORD/EMCOTEK PRODUCTS AT THE TIME OF PUBLICATION AND WE RESERVE THE RIGHT TO MAKE CHANGES IN DESIGN AND CONSTRUCTION AT ANY TIME WITHOUT NOTICE.

REV.	DESCRIPTION	DATE	NAME
2	CHANGED TO NYB, ADDED TP	6/24/2008	WM
1	TITLE BLOCK UPDATE	5/16/2005	JA
0	INITIAL RELEASE	11/30/2004	Jim L

APPROVALS		DATE
DRAFTER	Jim L	11/30/2004
DESIGNER	Jim L	
PRODUCT MANAGER		
ENGINEER		

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES TOLERANCES:
FRACTIONS ± 1/16 DECIMALS .X ± .03 .XX ± .02 .XXX ± .01 ANGLES ± 1°

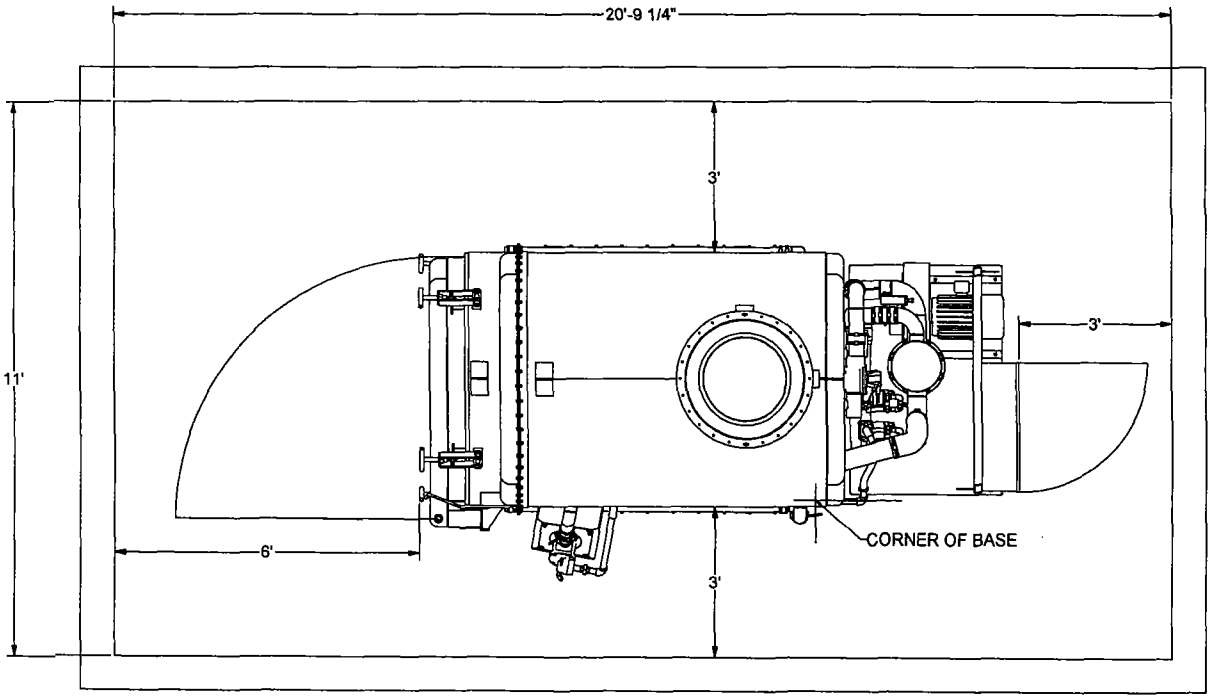
NCE Crawford Emcotek
6425 S Semoran Blvd Ste 108
Orlando, FL 32822
Phone (407) 851-0293
FAX (407) 851-2408

TITLE: CB1200 / CB98

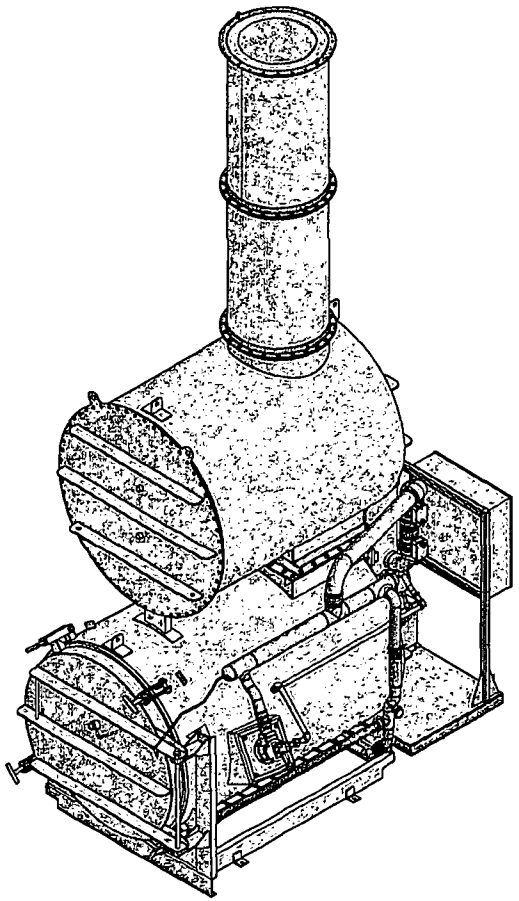
SIZE: D | PROJECT NO.: | DWG NO: CB1200 GA | REV: 2

SCALE N/A | SUBJECT: GENERAL ARRANGEMENT | SHEET 1 OF 2

Q:\Engineering 2005\Solid Waste\Standard Units\CB098.1200\Inventor Files\CB98 SW\Workgroups\CB1200 GA.idw



RECOMMENDED CLEARANCES



ISOMETRIC VIEW

NOTE:
ALL ILLUSTRATIONS COVER THE GENERAL APPEARANCE OF NCE/CRAWFORD/EMCOTEK PRODUCTS AT THE TIME OF PUBLICATION AND WE RESERVE THE RIGHT TO MAKE CHANGES IN DESIGN AND CONSTRUCTION AT ANY TIME WITHOUT NOTICE.

DRAFTER	DESIGNER	PRODUCT MANAGER	ENGINEER	SIZE	PROJECT NO.	DWG NO	REV
Jim L				D		CB1200 GA	2
				SCALE N/A	SUBJECT: GENERAL ARRANGEMENT	SHEET 2 OF 2	

CB1200 Design Calculations

Heat and Mass Balance				Basis one Hour			Waste Type and Description - Generalities									
	Enter the following:			This Run		0-Trash		1-Rubbish		3-Garbage		4-Animal		MSW		
	Percent Carbon Combustion			95		95		95		95		95		95		
	Feed Compos. %		Carbon	7		47		33		12		7		25		
			Hydrogen	2		6		5		3		2		4		
			Oxygen	6		30		26		10		6		20		
			Water	82		10		25		70		82		30		
			Chlorine	0		2		1		0.4		0		1		
			Sulfur	0.1		0.1		0.1		0.1		0.1		0.1		
			Nitrogen	0.4		0.2		0.2		0.2		0.4		0.5		
			Ash	2.5		4.70		9.70		4.30		2.5		19.4		
Stated HHV of waste feed, Btu/lb				1000		8500		6500		2500		1000		5000		
Calculated LHV by Dulong's eq, Btu/lb				630		7147		4909		1644		630		3679		
& subtracting heat to vaporize water																
	Density of Waste, lb/cu ft			55		10		10		35		55		25		
	Heat value of waste, Btu/cu ft			55000												
						Paper, carboard,		paper, rags,cartons		Food wastes, paper		All animal & human		Municipal		
						wood-10%plastics		floor sweepings		resta/hotels/clubs		tissue; labs; hosp.		Waste		
							<-Typical Ranges->									
	Percent carbon combustion			95			95-98%									
	Percent Excess Air			200			40-150% Excess Air (=140-250% total air) for solid waste									
	Percent of Total Air			300												
	Feed rate Lbs per hour			300												
	Target Comb gas temp. deg F			1800			1700-2200									
	Target stack gas temp. deg F			1800			300-600									
	True heat loss, %			4		<-----	Losses (2-6%) due to rad./ cond./conv. Does not									
							reflect HHV-LHV differences or delta H H2O vapz.									
	O2 Req. for stoich comb	2.61	lbmol/hr													
	Dry air req	358	lb/hr													
				CO2	HCl	SO2	H2O									
	Moles from combustion			1.66	0.00	0.01	3.00									
	Moles from evap						13.67									
	Actual O2 in inlet air		lbmol/hr	7.83			Humidity Input									
	Water vapor in Air			0.008	lbs water/ lbs dry air		0.16	lbmol/hr								
	Tot. dry air, lbmol/hr		37.28				3	lb/hr								
		lb/hr	1075													
				CO2	HCl	SO2	N2	O2	H2O							
	Total moles before aux fuel			1.66	0.00	0.01	29.48	5.22	16.83							
	Total flue gas, wet			53.19	lbmol/hr		1369	lb/hr								
	Total flue gas, dry			36.37	lbmol/hr		1066	lb/hr								
	Mole Weight, wet/dry			25.74	29.31											
	Temperature with no heat added, deg F				483											
	Heat needed BTUs/Hour				5.73E+05											

CB1200 Design Calculations

If heat needed is positive, then add methane fuel:														
	Heat balance calculations, based on LHVs and net available heat for methane													
	T (w/o) fuel	483	deg F											
	Ht need	573309	Btu/hr											
	NAH	190975	Btu/lbmol	Net Avail heat of methane at T= target temp										
	Fuel need	3.00	lbmol/hr											
	Mol O2	6.30	lbmol/hr	(includes 10% excess air at burner)										
	Air added	866	lb/hr											
If heat needed shows negative, then add cooling air:														
	Heat in actual flue gas			176867.5	btu/hr									
	Mass cooling air			-1265	lb/hr									
							Inlet air	Inlet air	Inlet air	Fr Humid	Fr Comb	Fr Comb	Fr Comb	
	Moles of air added (to cool or burn gas)				30.02		MWwet	Moles O2	Moles N2	Mol H2O	Mol CO2	Mol H2O	Mol O2	
							28.70	6.30	23.72	0.38	3.00	6.00	-6.00	
	Stack gas lb mol/hr, wet			86.60										
	Stack gas lb mol/hr, dry			63.39										
				CO2	HCl	SO2	N2	O2	H2O	Total				
	Total	Moles out stack		4.66	0.00	0.01	53.19	5.52	23.21	86.60				
		Pounds		205.24	0.00	0.60	1,489.41	176.61	417.86	2290				
		Vol % dry		7.36	0.00	0.01	83.92	8.71						
		Mole wt of flue gas, wet			26.44									
		Actual flu gas, acfm	2,381	at	1800	deg F	Actual Flue Gas / Second (2381/60)=					39.6875		
		Actual flue gas acfm	2,381	at	1800	deg F	Theoretical Residence Time (68/39.6875)					1.713386		
							Note: 68 ft3 is secondary chamber volume							
		scfm	558	For this cell, Std Temp == 70										
	Mass Balance: Pounds per hour													
		In				Out								
	Feed	300			ash out	9								
	Air	1951			flue gas	2290								
	Fuel	48												
	Total	2299			Total	2298								
	Error in Mass Balance, %			-0.02%										
	Heat Balance: BTUs per hour													
		In				Out								
	Feed	#######			Ash	4.46E+03								
	Fuel	#######			Flue Gas	1.18E+06								
	Air(h2o)	#######			Loss	4.93E+04								
	Total	#######			Total	1.23E+06								
	Error in heat balance, %			-0.82%										
		Maximum Heat available in flue gas BTUs/Hour					0.00E+00							

Southern Environmental Sciences, Inc.

1204 North Wheeler Street □ Plant City, Florida 33563-2354 □ (813) 752-5014 □ Fax (813) 752-2475

January 30, 2012

Ms. Sharon Martinache, Regional Manager
Pet Angel World Memorial Center
6225 72nd Ave. North
Pinellas Park, FL 33781

Re: Animal Crematory Air General Permit Re-Registration:
Adding One (1) Animal Crematory Unit to Facility with Two (2) Existing Units
Crawford Model CB1200 Animal Retort
FDEP ID No. 0710207 – Fort Myers Facility

Dear Ms. Martinache:

Attached for your use are two (2) "unbound" (stapled) copies and two (2) spiral-bound copies (with regulations) of the Air General (AG) Permit re-registration information for registering the planned addition of the Crawford Model CB1200 animal crematory unit to your Fort Myers facility.

Please send one (1) "unbound" (stapled) copy, along with a fee check payable to "Florida DEP" in the amount of $100.00, by overnight delivery, with delivery tracking, to:

Florida Department of Environmental Protection
Attn: Receipts
3800 Commonwealth Blvd.
Mail Station 77
Tallahassee, Florida 32399

The two (2) spiral-bound copies contain your air general permit conditions and procedures which are defined in the FDEP rules. One bound copy should be retained onsite with the crematory operators. The other bound copy is for your records.

The new registration will become effective 30 days after it is received by FDEP-Tallahassee and is valid for five (5) years.

If you have any questions concerning the permit registration or we can be of any further assistance to you please do not hesitate to call.

Very Truly Yours,

SOUTHERN ENVIRONMENTAL
SCIENCES, INC.

Lynn F. Robinson

Lynn Robinson, P.E.
Permitting Manager