

F&A DATE RECEIPT  
06/11/2010 # 706819

**ANIMAL CREMATORY  
AIR GENERAL PERMIT REGISTRATION FORM**

**Part II. Notification to Permitting Office**

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

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

0950192-005

**Registration Type**

Check one:

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

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

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

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

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

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

- All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s):  
Facility I.D. No.: 0950192
- No air operation permits currently exist for this facility.

**General Facility Information**

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

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a registration form must be completed for each.)  
Orange County Animal Services

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

Street Address: 2769 Conroy Road

City: Orlando

County: Orange

Zip Code: 32839 - 2162

Facility Start-Up Date (Estimated start-up date of proposed **new** facility.) (N/A for existing facilities)  
July, 2010

**Owner/Authorized Representative**

Name and Position Title: (Person who, by signing this form below, certifies that the facility is eligible to use this air general permit.)

Print Name and Title: Katherine Lockett, Facility Manager

Owner/Authorized Representative Mailing Address

Organization/Firm: Orange County Animal Services

Street Address: 2769 Conroy Road

City: Orlando

County: Orange

Zip Code: 32839 - 2162

Owner/Authorized Representative Telephone Numbers

Telephone: ~~407-254-9140~~ 407-254-9144 Fax: 407-355-4179

Cell phone (optional):

**Facility Contact (If different from Owner/Authorized Representative)**

Name and Position Title (Plant manager or person to be contacted regarding day-to-day operations at the facility.)

Print Name and Title:

Facility Contact Mailing Address

Organization/Firm:

Street Address:

City:

County:

Zip Code:

Facility Contact Telephone Numbers

Telephone:

Fax:

Cell phone (optional):

**Owner/Authorized Representative Statement**

This statement must be signed and dated by the person named above as owner or authorized representative

*I, the undersigned, am the owner or authorized representative of the owner or operator of the facility addressed in this Air General Permit Registration Form. I hereby certify, based on information and belief formed after reasonable inquiry, that the facility addressed in this registration form is eligible for use of this air general permit and that the statements made in this registration form are true, accurate and complete. Further, I agree to operate and maintain the facility described in this registration form so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof.*

*I will promptly notify the Department of any changes to the information contained in this registration form.*

Katherine M. Lockett  
Signature

06/04/10  
Date

### Design Calculations

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

- Manufacturer's design calculations attached.
- Registration is not for proposed new animal crematory unit(s).

### Description of Facility

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

This General Permit Application is for the replacement of an existing 250 lb/hr, model C1000S, ram charged animal crematory, manufactured by Crawford Equipment & engineering, ref. facility I.D. No. 0950192, with a new ram charged, 400 lb/hr model EPAT-2.2 manufactured by EPA Technologies LLC. The new system will be installed on the same site pad as the existing unit.

The new system shall comply with the requirements of Rule 62-296.401(6), F.A.C. to include:

(b) Emissions Limiting Standards

1. Visible Emissions: <5% opacity, 6 min. ave.
2. Particulate matter emissions: <.08 gr/dscf corrected to 7% O<sub>2</sub>
3. Carbon Monoxide (CO) emissions: <100PPMV, corrected to 7% O<sub>2</sub>

(c) Operating temperatures and secondary combustion chamber residence time

Attached please find the following pertinent technical and performance data on the proposed model EPAT-2.2 system:

1. System Specifications
2. General Arrangement drawings
3. Heat & Mass Balance Calculations
4. Process Flow Diagram
5. P&ID drawing
6. Representative emissions test data from a similar, but smaller 250 lb/hr model EPAT-1.5



**EPA TECHNOLOGIES, LLC**

311 West Maple Street  
Nicholasville, KY 40356  
TEL: 859-552-5689 FAX: 859-881-9859

RECEIVED

JUN 14 2010

Bureau of Air Monitoring  
& Mobile Sources

**SYSTEM TECHNICAL DESCRIPTION & SPECIFICATIONS  
MODEL: EPAT-2.2 for Orange County Animal Services**

**System Overview:** The EPAT-2.2 is a modular, multiple chambered, controlled air, solid waste thermal oxidizer system (incinerator), engineered for mixed solid waste disposal. An advanced cyclonic secondary combustion chamber provides superior, turbulent thermal oxidation of combustion gases with over 1 second retention std., for environmentally safe stack exhaust to atmosphere. Utilizing weight saving refractory materials and modular construction enhances ease of erection and installation while also providing for improved ongoing maintenance of the system, critical for remote installations.

**System Capacity:** 2.2 MMBtu/hr waste combustion, providing 400 lb/hr processing capacity for animal waste streams with an average gross HHV of 4500 Btu/lb representative of animal carcasses with 20-25% body fat.

**Intermittent Feed (w/optional loader):** 1.26-2 yd<sup>3</sup>/hr up to 3200 lbs/8 hrs/day

**Electrical required:** Single point - 230V, 3Ø, 60 Hz, 50 amp w/optional loader

**Dimensions:**  
Length overall - 21'-0" (5639mm) w/optional loader system  
Width overall - 9'-3" (2820mm)  
Height (w/o stack) - 11'-0" (3048mm)  
Approx. weight - 26,000 lbs. (w/loader)

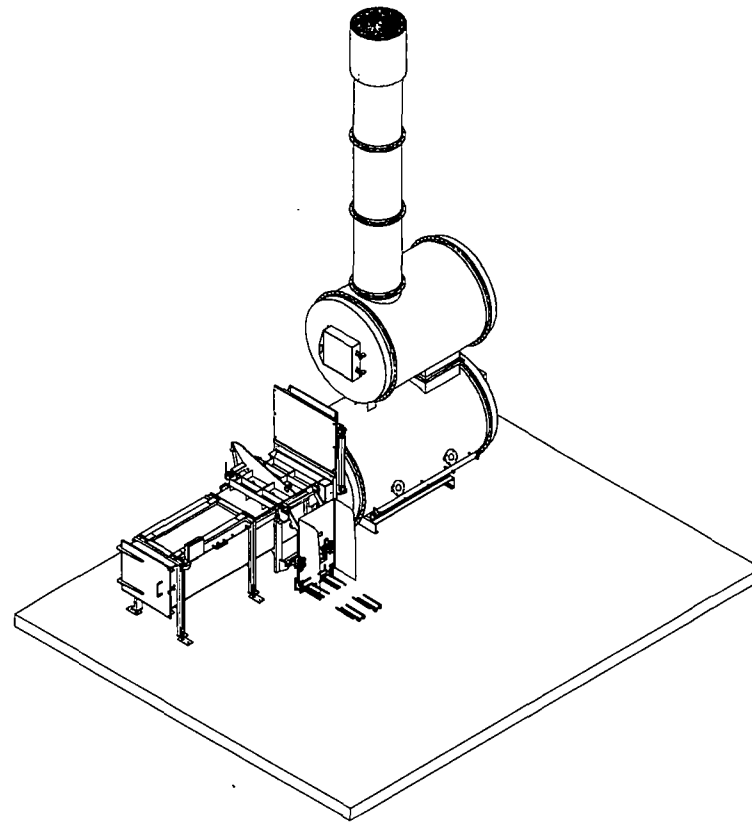
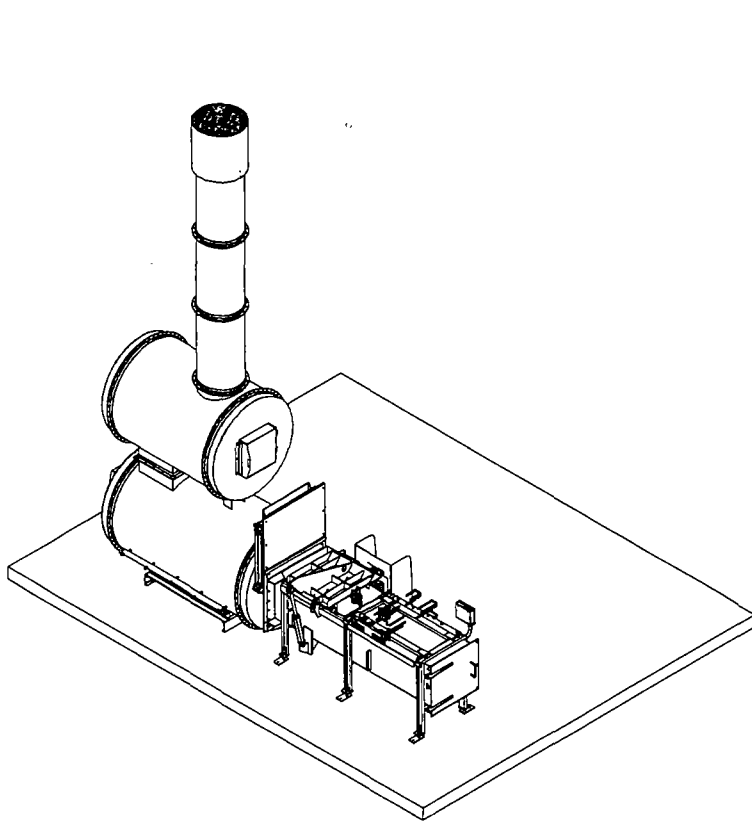
**Primary chamber:**  
Type: fixed hearth, with controlled under-fir air injection  
Chamber volume: 115 cu. ft.  
Hearth Area: 17.5 sq. ft.  
Burners capacity: 2 x .4 MMBtu/hr. nom. (Hi-Lo-Off control)  
Construction: skid - 6", 10.5#/ft., A36 channel  
shell - .250" thick, A36 plate  
lining - 4.25", 2800°F 750 psi, (Plicast 3000KK)  
insulation - 1"1900°F Fiber (ASTM C612093, type V)


**Secondary chamber:**  
Type: cyclonic thermal oxidizer with 1+ sec. r/t  
Chamber volume: 82 cu. ft. (std.)  
Burner capacity: 1.5 MMBtu/hr. (full modulating, excess air control)  
Construction: shell - .250" thick, A36 plate  
lining - 4.25", 2800°F 750 psi, (Plicast 3100KK)  
insulation - 1"1900°F Fiber (ASTM C612093, type V)

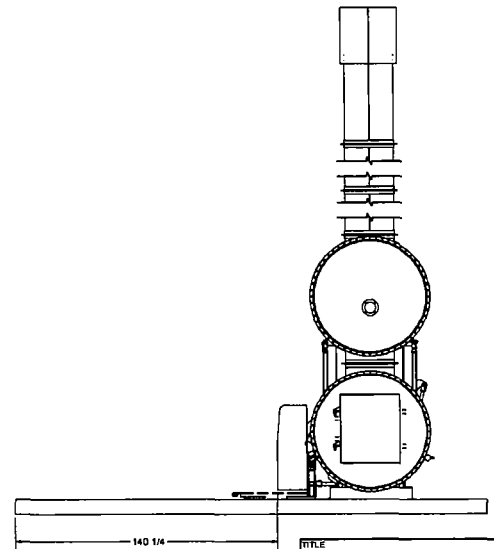
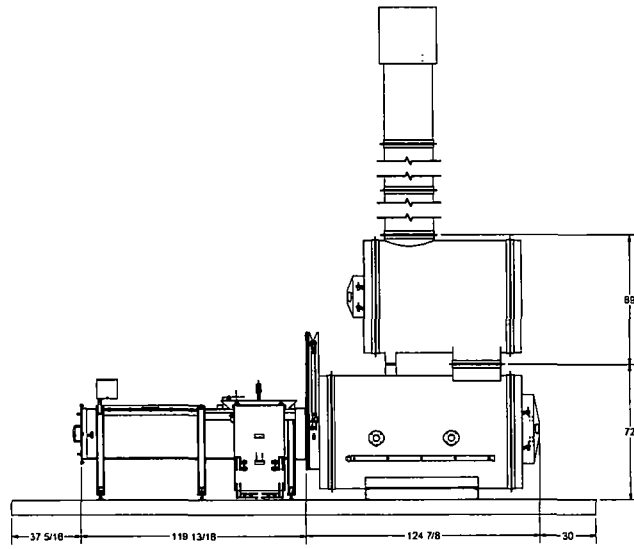
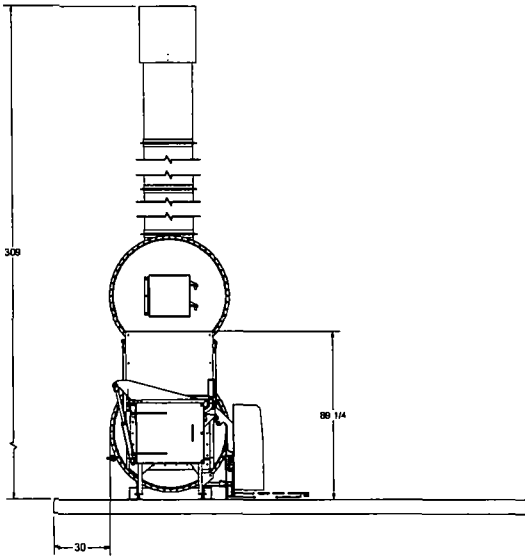
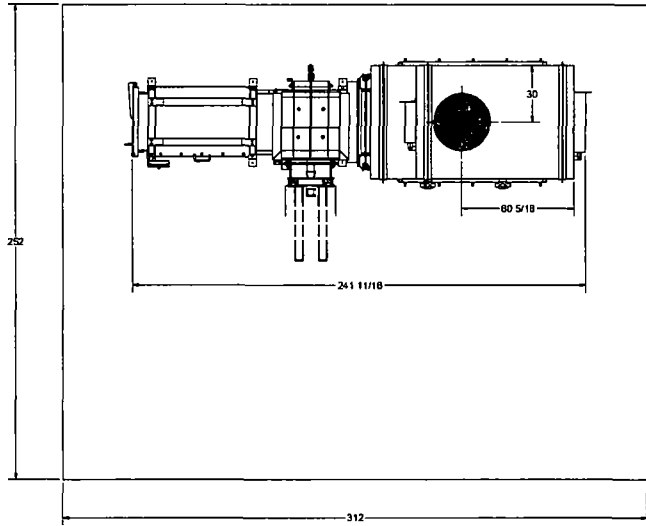
**Combustion air:** Supply to under-fire and secondary air injection  
5 hp, 230/460 V, 3Ø, 60Hz  
1350 cfm @ 16" W.C. pressure

Florida Office:  
**EPA Technologies LLC**  
557 Quail Woods Court  
Debary, FL 32713  
Tel: 386-479-7106

<b>Systems Control:</b>	Siemens S-7 series PLC with Touch-screen operator interface
To include:	Primary & secondary chamber temperature control Temperature actuated fuel and air control Burner interface, status and reset access** System status and alarm display Hydraulic systems control (applicable with optional loader) <i>** Discrete, UL, CSA, FM &amp; IRI burner monitoring/control w/U.V. or CAD flame supervision provided for each burner</i>
<b>Exhaust Stack:</b>	Std. refractory lined (2-4' sections with no-loss cap & s.s. spark screen)
Construction:	Shell - 10 gage, A36 carbon steel Lining - 3" 2400°F, 175 psi, (Plicast AL-Tuff LWI-24 or equal) Wt. - 155 lb/ft (70.45 kg/ft.)
<b>Optional loader:</b>	Type: Hydraulic ram feed (optional cart tip hopper load available)
Hopper volume:	14 cu. ft. (.4 m <sup>3</sup> )
Power unit:	5hp, 230/460 V, 3Ø, 1800 psi
Hydraulic cylinders:	2500 psi: Charge door - two 2" bore, 30" stroke Charging ram- two 2" bore, 36" stroke Hopper lid - one 2.5" bore, 16" stroke Hopper loader - two 2.5" bore, 18" stroke
Charging frequency:	10-15 minutes, up to 4-5 times per hour
Approx. weight:	5,000 lbs. (2273 kg)

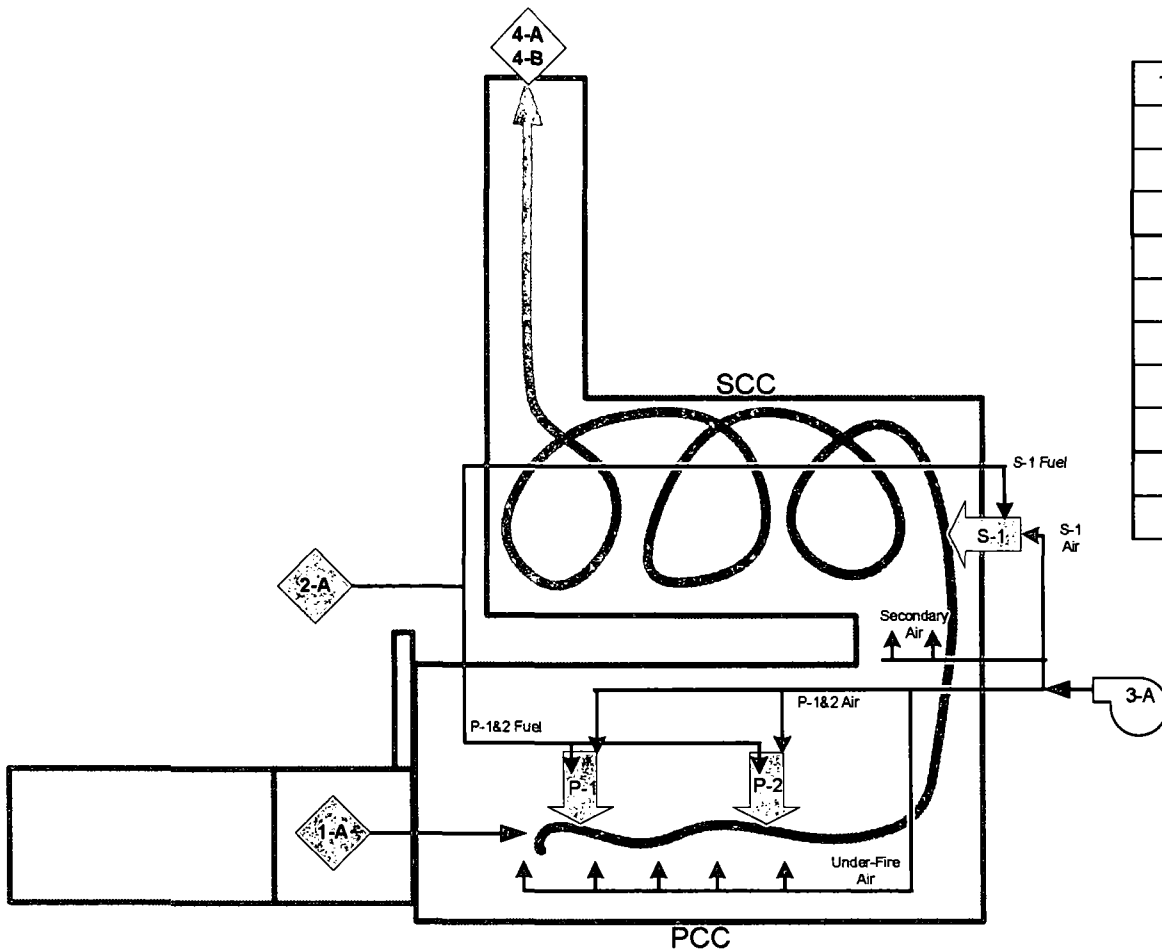


WHERE USED	NEXT ASSEMBLY	THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF EPA TECHNOLOGIES, LLC AND IS FURNISHED SUBJECT TO THE FOLLOWING CONDITIONS: THE INFORMATION ON IT WILL BE KEPT IN CONFIDENCE. IT WILL NOT BE COPIED OR REPRODUCED IN WHOLE OR IN PART AND IT WILL NOT BE USED OR REPRODUCED IN ANY MANNER EXCEPT UNDER AN AGREEMENT WRITTEN AND AGREED TO BY EPA TECHNOLOGIES, LLC	DRAWN J. BODJACK 18-May-10	CHECKED T. MURPHY 18-May-10	APPROVED R. GOLDBERG 18-May-10	DO NOT SCALE DRAWING DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED FINISHING TOLERANCES A. ALL S.D. A. SOLID # 002 A. SCALE # 1:1	 EPA Technologies, LLC 557 Ousel Woods Court Ocala, Florida 32713-4578 388-478-7108 <a href="http://www.epatechnologies.com">http://www.epatechnologies.com</a>	TITLE THERMAL OXIDIZER SYSTEM MODEL NUMBER EPAT-2.2 WL	SIZE D	DWG NO EPAT-2.2 WL	REV 0



TITLE			
THERMAL OXIDIZER SYSTEM MODEL			
NUMBER EPAT-2.2 WL			
SIZE	DRWG NO	REV	
D		0	
SCALE	N/A		
			SHEET 2 OF 2





Tag No.	Description	Flow/Capacity
PCC	Primary Combustion Chamber	115 ft <sup>3</sup>
P-1	Primary Burner	.4 MMBtu/hr
P-2	Primary Burner	.4 MMBtu/hr
SCC	Secondary Combustion Chamber	82 ft <sup>3</sup>
S-1	Secondary Burner	2 MMBtu/hr
1-A	Charge/Burn Rate	400 lb/hr
2-A	NG Fuel	3 MMBtu/hr
3-A	Combustion Air	1350 CFM
4-A	Flue Exhaust @ 1600°F	4256 ACFM* * MB+20%
4-B	Flue Exhaust @ 1800°F	4669 ACFM* * MB+20%

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D/B: MN    C/B:MK    Date: 5/20/2010

Project: Orange County An. Svcs.: EPAT-2.2

**Title: EPAT-2.2 Process Flow Diagram**

**EPA TECHNOLOGIES**  
GUARDIAN  
Systems

**EPA TECHNOLOGIES, LLC**  
311 West Maple Street  
Nicholasville, KY 40356  
TEL: 859-552-5689 FAX: 859-881-9859

SIZE	FSCM NO	DWG NO	REV
C		PFD-2.2-400-3500	O
Scale	NTS	Attachment 1	Sheet 1 OF 1

\* APPENDUM TO #0950192-005  
PAGE 9 ATTACHMENT

Dibble, Dickson

---

**From:** Mike Nadelkov [mnadelkov@epatechnologies.com]  
**Sent:** Friday, June 18, 2010 10:09 AM  
**To:** Dibble, Dickson  
**Subject:** FW: Revised P&ID  
**Attachments:** OCAS-2.2-NG- PID rev1.pdf

---

**From:** Mike Nadelkov [mailto:mnadelkov@epatechnologies.com]  
**Sent:** Wednesday, June 16, 2010 4:58 PM  
**To:** 'Dickson.Dibble@dep.state.fl.org'  
**Cc:** 'Michael Kautz'; 'Jeff Varnon'; 'Anthony M. Mamone'  
**Subject:** Revised P&ID

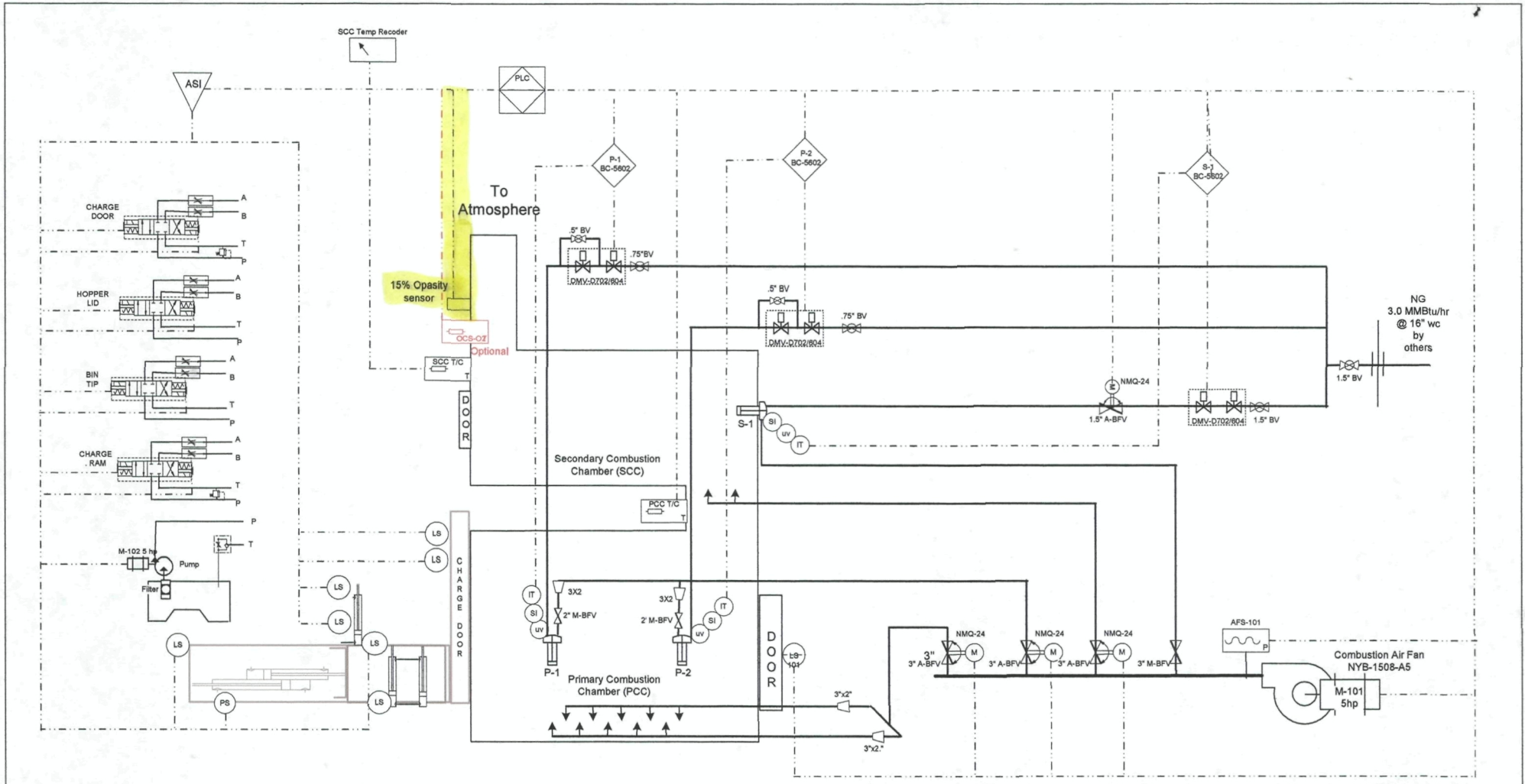
Dear Mr. Dibble,

In follow up to our telephone conversation this afternoon, attached please find the revised P&ID showing the required Opacity Monitor which will be calibrated to alarm at >15% opacity. Should a visual emission event occur to trigger the alarm, the system will be programmed to increase the secondary combustion air to a preset minimum and shut off fuel to the primary burner and under-fire air to the primary combustion chamber.

I trust this will be sufficient for your needs. If you have any questions or further requirements, please do not hesitate to contact me.

Sincerely,

Mike Nadelkov  
EPA Technologies LLC  
386-479-7106



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Title: **EPAT 2.2-WL-NG: P&ID**



**EPA TECHNOLOGIES, LLC**  
 311 West Maple Street  
 Nicholasville, KY 40356  
 TEL: 859-552-5689 FAX: 859-881-9859

D/B: MN	C/B: MK	Date: 06/17/10	SIZE: B	FSCM NO:	DWG NO: PID-2.2-WL-NG	REV: 1
Project: Orange Cnty. Animal Svcs.			Scale: NTS	Sheet: 1 OF 1		

400pph@3500 Btu.xls

Heat and Mass Balance		Basis one Hour		Waste Type and Description - Generalities				
Enter the following:		This Run	0-Trash	1-Rubbish	3-Garbage	4-Path	MSW	
Percent Carbon Combustion		95	95	95	95	95	95	
Feed Compos. %	Carbon	30	47	33	12	7	25	
	Hydrogen	3	6	5	3	2	4	
	Oxygen	8	30	26	10	6	20	
	Water	55	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	3.5	4.70	9.70	4.30	2.5	19.4	
Stated HHV of waste feed, Btu/lb		4500	8500	6500	2500	1000	5000	
Calculated LHV by Dulong's eq, Btu/lb & subtracting heat to vaporize water		4312	7147	4909	1644	630	3679	
Density of Waste, lb/cu ft		50	10	10	35	55	25	
Heat value of waste, Btu/cu ft		225000						
				Paper, carboard, wood-10%plastics	paper, rags, cartons floor sweepings	Food wastes, paper resta/hotels/clubs	All animal & human tissue; labs; hosp.	Municipal Solid
		<-Typical Ranges->						
Percent carbon combustion		95	95-98%					
Percent Excess Air		125	40-150% Excess Air (=140-250% total air) for solid waste					
Percent of Total Air		225						
Combustion rate Lbs per hour		400						
Target Comb gas temp. deg F		1600						
Target stack gas temp. deg F		1800						
True heat loss, %		5	<----- Losses (2-6%) due to rad./ cond./conv. Does not reflect HHV-LHV differences or delta H H2O vapz.					
O2 Req. for	11.51 lbmol/hr							
Dry air req	1580 lb/hr							
Moles from combustion		CO2	HCl	SO2	H2O			
		9.50	0.00	0.01	6.00			
Moles from evap						12.22		
Actual O2 in inlet air	lbmol/hr	25.90					Humidity Input	
Water vapor in Air		0.008	lbs water/ lbs dry air		0.70	lbmol/hr		
Tot. dry air, lbmol/hr	123.35					13	lb/hr	
	lb/hr					3557		
		CO2	HCl	SO2	N2	O2	H2O	
Total moles before aux fuel		9.50	0.00	0.01	97.45	14.39	18.92	
Total flue gas, wet		140.28	lbmol/hr		3949 lb/hr			
Total flue gas, dry		121.36	lbmol/hr		3608 lb/hr			
Mole Weight, wet/dry		28.15	29.73					
Temperature with no heat added, deg F		1,579						
Heat needed BTUs/Hour		2.32E+04						

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	1579	deg F									
Ht need	23188	Btu/hr									
NAH	208671	Btu/lbmol Net Avail heat of methane at T= target temp									
Fuel need	0.11	lbmol/hr									
Mol O2	0.23	lbmol/hr (includes 10% excess air at burner)									
Air added	32	lb/hr									
If heat needed shows negative, then add cooling air:											
Heat in actual flue gas	1629339	btu/hr									
Mass cooling air	-57	lb/hr									
Moles of air added (to cool or burn gas) 1.11											
Inlet air MWwet 28.70											
Inlet air Moles O2 0.23											
Inlet air Moles N2 0.88											
Fr Humid Mol H2O 0.01											
Fr Comb Mol CO2 0.11											
Fr Comb Mol H2O 0.22											
Fr Comb Mol O2 -0.22											
Stack gas lb mol/hr, wet	141.52										
Stack gas lb mol/hr, dry	122.36										
CO2 HCl SO2 N2 O2 H2O Total											
Total Moles out stack	9.61	0.00	0.01	98.33	14.40	19.16	141.52				
Pounds	422.89	0.00	0.80	2,753.26	460.86	344.90	3983				
Vol % dry	7.86	0.00	0.01	80.36	11.77						
Mole wt of flue gas, wet	28.14										
Retention time = scc volume / acfm/60 sec.											
Actual flu gas, acfm	3,547	at	1600	deg F scc = 60 c.f. = 1.2 sec. retention time capability @ 1650 deg F							
Actual flue gas acfm	3,891	at	1800	deg F scc = 60 c.f. = 1.07 sec. retention time capability @ 1800 deg F							
scfm	912	For this cell, Std Temp == 70									
Mass Balance: Pounds per hour											
In Out											
Feed	400	ash out 20									
Air	3602	flue gas 3983									
Fuel	2										
Total	4004	Total 4003									
Error in Mass Balance, %	-0.04%										
Heat Balance: BTUs per hour											
In Out											
Feed	1.74E+06	Ash 9.24E+03									
Fuel	3.85E+04	Flue Gas 1.67E+06									
Air(h2o)	3.01E+04	Loss 8.89E+04									
Total	1.81E+06	Total 1.76E+06									
Error in heat balance, %	-2.45%										
Maximum Heat available in flue gas BTUs/Hour -2.16E+05											



245 West Ohio Ave. • Suite A • Lake Helen, FL 32744  
Phone (386) 451-0169 • coastal@cacon.com

COMPLETE EMISSIONS TESTING SERVICES • PERMITTING ASSISTANCE • CEMS CERTIFICATION • AMBIENT AIR MONITORING

## **Emissions Test Report**

No. 159-001

**EPA TECHNOLOGIES, LLC**

**PATHOLOGICAL INCINERATION UNIT**

**EPAT-1.5**

**PARTICULATE EMISSIONS**

*Prepared for:*

EPA Technologies, LLP  
557 Quail Woods Court  
Debary, FL 32713

*Prepared by:*

Coastal Air Consulting, Inc.  
245 West Ohio Ave.  
Lake Helen, FL 32744  
(386) 451-0169

October 3, 2009



**EPA TECHNOLOGIES, LLC**

311 West Maple Street  
Nicholasville, KY 40356  
TEL: 859-552-5689 FAX: 859-881-9859

October 3, 2009

To: Coastal Air Consulting, Inc.  
245 West Ohio Ave.  
Lake Helen, FL 32744

Attn: Steve Webb

Re.: EPAT-1.5 Stack Test

Charge Weight Verification:

For the stack test of the EPA Technologies, LLC, Model EPAT-1.5 for Pathological Waste conducted at 33 First Street Winter Garden, Florida, a total of 998.5 lbs. of frozen and semi-frozen canine and feline small animal carcasses were charged into the incinerator's primary combustion chamber at approximately 8:45 AM, Saturday morning, October 3, 2009.

The carcasses were received from the following:

Pine Castle Pet Crematory: 134 lbs. canine carcass (frozen)

Sandlake Animal Hospital: 224 lbs. canine & feline carcasses (frozen)

Orange County Animal Control: 640.5 lbs. canine & feline carcasses (semi-frozen)

The animal carcasses were delivered by Kent Hillard of Action trapper, a State of Florida licensed animal carcass/refuse transporter.

Submitted by: Mike Nadelkov  
Mike Nadelkov  
EPA Technologies LLC

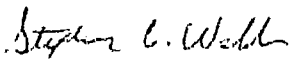
Florida Office:  
**EPA Technologies LLC**  
557 Quail Woods Court  
DeBary, FL 32713  
Tel: 386-479-7106  
Fax: 386-775-2876

STATEMENT OF VALIDITY

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All testing activities and results represented herein were conducted and obtained in accordance with the approved EPA protocols listed in 40 CFR Part 60. The contents have been reviewed and verified to be true and correct.

Stephen C. Webb



President

Coastal Air Consulting, Inc.



## PROJECT STATISTICS

---

Client: EPA Technologies, LLP

Facility: Fabrication Plant

Location: 33 First St.  
Winter Garden, FL 34787

Type of Process Tested: Pathological Incineration Unit

Test Protocols Performed: Particulate-EPA Method 5  
Opacity-EPA Method 9  
Carbon Monoxide- EPA Method 10

Testing Firm: Coastal Air Consulting, Inc.  
245 West Ohio Ave.  
Lake Helen, FL 32744

Test Personnel: Steve Webb  
Mike Nadelkov  
Jeff Vaman

Test Date: October 3, 2009

Client Representative: Mike Nadelkov

Observers: None

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LETTER OF TRANSMITTAL

TITLE PAGE

STATEMENT OF VALIDITY

PROJECT STATISTICS

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- 2 Test Program Summary
- 3 Results of Testing
- 4 Description of Source
- 5 Sampling Procedures
- 6 Operating Conditions
- 7 Quality Assurance

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- 1 Reference Data
- 2 Quality Assurance
- 3 Sample Calculations
- 4 Figures

## 1.0 Introduction

---

Coastal Air Consulting, Inc. (Coastal) was contracted by EPA Technologies to perform the initial compliance testing for particulate emissions, visible emissions and carbon monoxide on the EPAT-1.5 Pathological waste Incineration Unit.

The sampling program was conducted October 3, 2009. The testing was performed by Coastal personnel, with the assistance of personnel assigned by EPA Technologies. Mr. Mike Nadelkov and Jeff Varnan coordinated operation during the testing.

## 2.0 Test Program Summary

---

A summary of test results developed by this source sampling program is presented in TABLES 1, 2 and 3 as follows;

**TABLE 1**  
**Summary of Particulate Emissions**

Source	Particulate Grains/dscf @ 7% O <sub>2</sub>	Allowable Grains/dscf @ 7% O <sub>2</sub>
EPAT-1.5	0.0305	0.08

**TABLE 2**  
**Summary of Visible Emissions**

Source	Average VE %	Highest 6 min. Avg. %	Allowable %
EPAT-1.5	0.0	0.0	5

**TABLE 3**  
**Summary of CO Emissions**

Source	CO ppm @ 7% O <sub>2</sub>	Permit ppm @ 7 % O <sub>2</sub>
EPAT-1.5	0.67	100

## 3.0 Results of Testing

---

Individual test run results are tabulated and shown in Appendix 1. These results indicate that the Pathological Incineration Unit EPAT-1.5 was in compliance at the time of testing under normal operating conditions.

## 4.0 Description of Source

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The EPAT-1.5 is a modular, multiple chambered, controlled air, solid waste thermal oxidizer system incinerator, engineered for the unique demands of mixed composition and solid waste disposal. The EPAT-1.5 is fired with propane.

The flue gas is exhausted through the EPAT-1.5 stack. A schematic of the process and stack sampling location is included in Appendix 4 "Figures".

## 5.0 Sampling Procedures

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EPA testing protocols utilized during this test program include the following;

EPA Method 1	Sample and Velocity Traverse for Stationary Sources
EPA Method 2	Determination of Stack Gas Velocity and Volumetric Flow Rate
EPA Method 3	Gas Analysis for CO <sub>2</sub> , O <sub>2</sub> , Excess Air and Dry Molecular Weight
EPA Method 4	Determination of Moisture Content in Stack Gas
EPA Method 5	Determination of Particulate Emissions from Stationary Sources
EPA Method 9	Visual Determination of The Opacity of Emissions From Stationary Sources
EPA Method 10	Determination of Carbon Monoxide Emissions From Stationary Sources

The test runs were conducted in triplicate for all parameters with each being at least 60 minutes in duration.

## 6.0 Operating Conditions

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EPA Technologies personnel monitored operating conditions throughout the duration of the sampling program. The unit was operating under normal conditions at approximately 250 lb/hr.

## 7.0 Quality Assurance Procedures

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Quality assurance procedures followed during these activities were applied consistent with the requirements outlined by the EPA methods referenced in 40 CFR Part 60. Analyzer calibrations, system bias and drift checks were completed before and after each sample run utilizing EPA Protocol 1 calibration gases.

## PARTICULATE EMISSION TEST SUMMARY

CLIENT: EPA Tech.  
 UNIT: EPAT-1.5  
 TEST: Compliance  
 METHOD: 5

	<u>RUN 1</u>	<u>RUN 2</u>	<u>RUN 3</u>
DATE OF RUN	10/3/09	10/3/09	10/3/09
START TIME (24-HR CLOCK)	1210	1343	1510
END TIME (24-HR CLOCK)	1315	1445	1613
VOL DRY GAS SAMPLED METER COND (DCF)	42.552	42.340	38.895
BAROMETRIC PRESSURE (IN. HG)	29.98	29.98	29.98
AVG ORIFICE PRESSURE DROP (IN. H2O)	1.250	1.425	1.079
AVG GAS METER TEMP (F)	94.4	100.8	102.7
GAS METER CALIBRATION FACTOR	0.9850	0.9850	0.9850
VOL GAS SAMPLED STD COND (DSCF)	40.103	39.467	36.101
TOTAL WATER COLLECTED (G)	172.4	275.1	194.9
VOL WATER COLLECTED STD COND (SCF)	8.13	12.97	9.19
MOISTURE IN STACK GAS (% VOL)	16.85	24.74	20.29
MOLE FRACTION DRY GAS	0.831	0.753	0.797
CO2 VOL PERCENT DRY	11.1	10.4	7.1
O2 VOL PERCENT DRY	6.0	7.2	11.1
N2 VOL PERCENT DRY	82.90	82.40	81.80
MOL. WT. DRY STACK GAS (LB/LB-MOLE)	30.02	29.95	29.58
MOL. WT. WET STACK GAS (LB/LB-MOLE)	27.99	27.00	27.23
ELEV. DIFF. FROM MANOM. TO BAROM. (FT)	0.00	0.00	0.00
STACK GAS STATIC PRESSURE (IN. H2O GAGE)	0.00	0.00	0.00
STACK GAS STATIC PRESSURE (IN. HG ABS.)	29.98	29.98	29.98
AVERAGE SQUARE ROOT VELOCITY HEAD	0.248	0.266	0.234
PITOT TUBE COEFFICIENT	0.84	0.84	0.84
AVG STACK TEMP (F)	1619.2	1772.7	1608.1
STACK GAS VELOCITY STACK COND (FT/SEC)	28.03	31.72	26.78
CROSS SECTION STACK AREA (SQ FT)	1.80	1.80	1.80
STACK GAS FLOW RATE STD COND (DSCFM)	640.4	611.1	589.7
STACK GAS FLOW RATE STACK COND (ACFM)	3026.9	3426.4	2892.1
NET TIME OF RUN (MIN)	60	60	60
NOZZLE DIAMETER (IN)	0.575	0.575	0.575
PERCENT ISOKINETIC	104.25	107.51	101.91
PARTICULATE COLLECTED (MG)	48.6	113.2	48.3
PARTICULATE EMISSIONS (GRAINS/DSCF)	0.0187	0.0443	0.0206
PARTICULATE EMISSIONS (GRAINS/DSCF) @ 7%O2	0.0174	0.0449	0.0293
PARTICULATE EMISSIONS (LBS/HR)	0.103	0.232	0.104
AVERAGE PARTICULATE EMISSIONS (GRAINS/DSCF)		0.0279	
<b>AVERAGE PARTICULATE EMISSIONS (GRAINS/DSCF) @ 7%O2</b>		<b>0.0305</b>	
AVERAGE PARTICULATE EMISSIONS (LBS/HR)		0.1462	

NOTE: STANDARD CONDITIONS -- 68F, 29.92 in. Hg

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Method Used (Circle One)  
 Method 9 200A 200B Other \_\_\_\_\_

Company Name EPA Technologies, LLP  
 Facility Name \_\_\_\_\_  
 Street Address 33 First St  
 City Winterset Garden State FL Zip 34787

Process Pathological Incub Unit # EPA-16 Operating Mode 250lbs/hr  
 Control Equipment Secondary chamber Operating Mode NC-mal

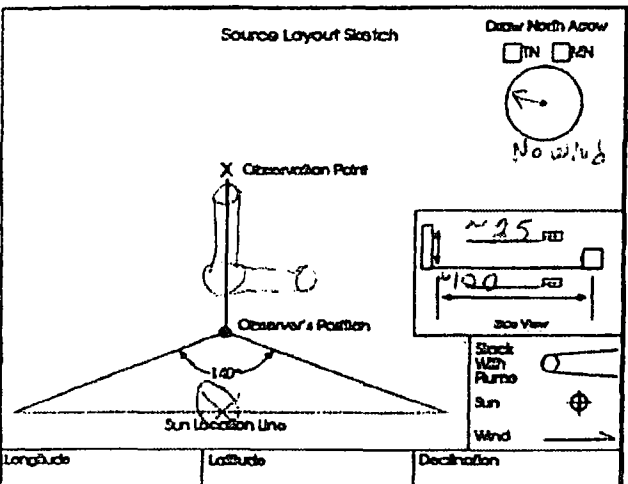
Describe Emission Point  
Round stack

Height of Emis. Pt. Start ~25' End 11' Height of Emis. Pt. Rel. to Observer Start ~25' End 11'  
 Distance to Emis. Pt. Start ~100' End 11' Direction to Emis. Pt. (Degrees) Start ~720° End 11'

Vertical Angle to Obs. Pt. Start <18° End 11' Direction to Obs. Pt. (Degrees) Start ~720° End 11'  
 Distance and Direction to Observation Point from Emission Point Start ~11 above End 11'

Describe Emission  
 Start None End 11' Water Droplet Plume Attached  Detached  None   
 Emission Color Start NA End 11'

Describe Plume Background  
 Start SKY End 11' Sky Conditions Start Clear End 11'  
 Background Color Start Blue End 11' Wind Direction Start 0-2 mph End 0-2 mph  
 Wind Speed Start 0-2 mph End 0-2 mph Wind Direction Start Var End 11'  
 Ambient Temp. Start ~96°f End 11' Wet Bulb Temp. \_\_\_\_\_ RH Percent \_\_\_\_\_



Additional Information

Form Number \_\_\_\_\_ Page 1 of 1  
 Continued on VEO Form Number \_\_\_\_\_

OBSERVATION DATE				START TIME				STOP TIME			
10-3-09				1510				1610			
MIN	SEC			MIN	SEC			MIN	SEC		
	0	15	30		45	0	15		30	45	
1	0	0	0	0	31	0	0	0	0		
2	0	0	0	0	32	0	0	0	0		
3	0	0	0	0	33	0	0	0	0		
4	0	0	0	0	34	0	0	0	0		
5	0	0	0	0	35	0	0	0	0		
6	0	0	0	0	36	0	0	0	0		
7	0	0	0	0	37	0	0	0	0		
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26	0	0	0	0	56	0	0	0	0		
27	0	0	0	0	57	0	0	0	0		
28	0	0	0	0	58	0	0	0	0		
29	0	0	0	0	59	0	0	0	0		
30	0	0	0	0	60	0	0	0	0		

AVERAGE OPACITY FOR HIGHEST PERIOD 0 NUMBER OF READINGS ABOVE HIGHEST PERIOD 5% WERE 0

RANGE OF OPACITY READINGS MINIMUM 0 MAXIMUM 0

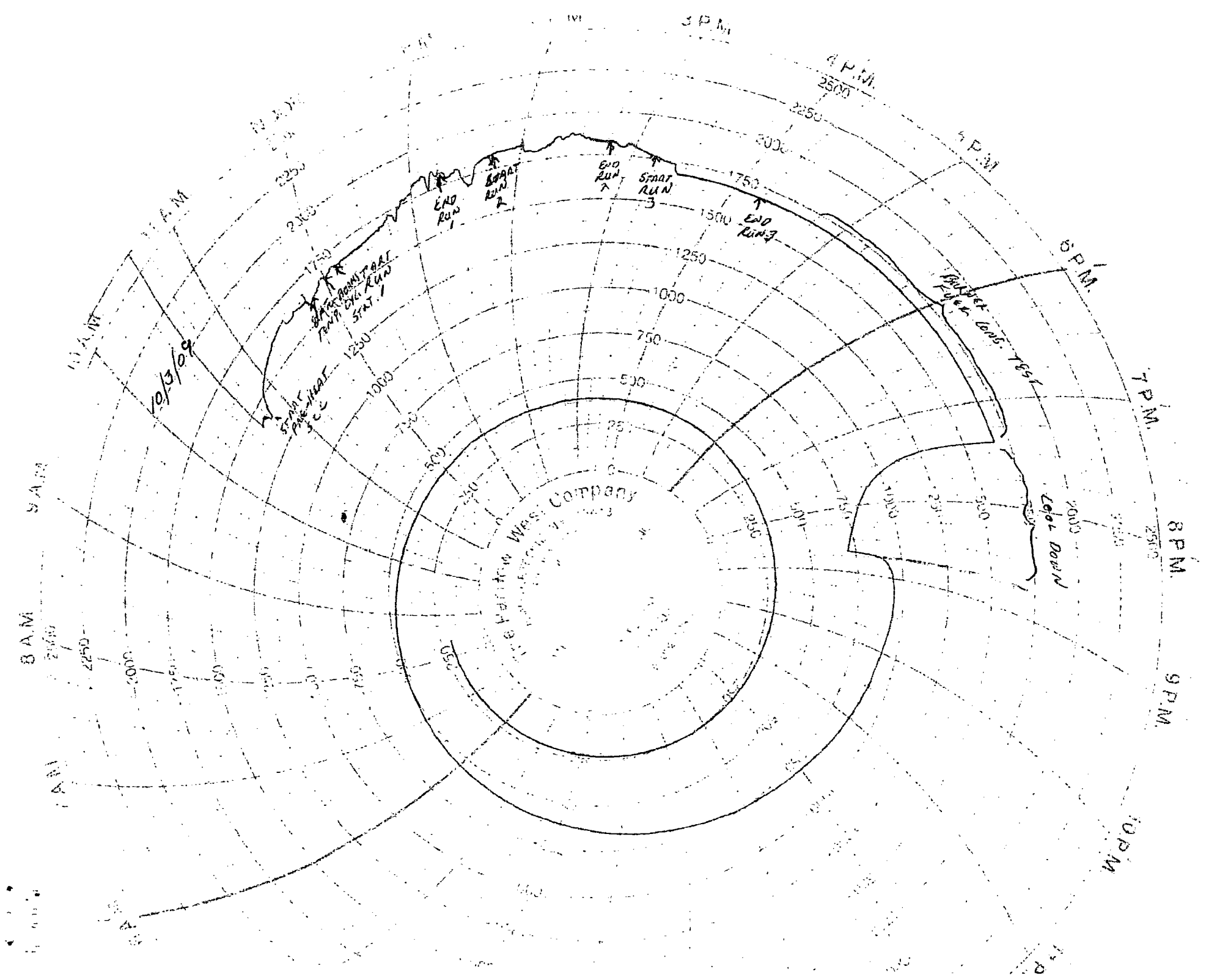
OBSERVER'S NAME (PRINT) Stephen C. Webb

OBSERVER'S SIGNATURE Stephen C. Webb DATE 10-3-09

ORGANIZATION Coastal Air Consulting, Inc.

CERTIFIED BY William Enterprises DATE 7-9-09

VERIFIED BY \_\_\_\_\_ DATE \_\_\_\_\_





Whitlow Enterprises, LLC

[www.smokeschool.net](http://www.smokeschool.net)

Certifies that

*Stephen C. Webb of Coastal Air Consulting*

Has passed the certification test required by EPA Method 9 and 22  
40 CFR 60 Appendix A and is qualified as a visible emissions evaluator.

Certification Date: 7/8/2009 Location: Keystone Heights, FL

*George Whitlow*

President

KHFL070809-40





## EPA TECHNOLOGIES, LLC

311 West Maple Street  
Nicholasville, KY 40356  
TEL: 859-552-5689 FAX: 859-881-9859

### Basic Operating Instructions EPAT-2.2 with Hydraulic Loader

1. Verify gas and electrical services are turned on to your unit.
2. Open the primary chamber door and visually inspect that the primary chamber is cleaned out.
3. Select the "burners" button and the screen will change displaying the burner status (highlighted). Assure Primary Chamber Burners (P1 & P2) & Secondary Chamber Burner (S1) are "ON". Push "MAIN" to return to the main screen.
4. To start the system, push the "START" button on the touch-screen.
  - a. The combustion air fan and boost pump will come on and a 60-second purge cycle will be initiated. The touch-screen will indicate "fresh air purge".
  - b. After the 45-second purge, secondary burner will fire to pre-heat and bring the secondary chamber up to the required temperature set-point and hold for a 10 minute (screen adjustable) "soak" time to assure thorough chamber heating. The touch-screen will indicate "pre-heat" while this is taking place.
5. When the system reaches temperature and the "soak" time condition has been met, the system will toggle into the burn stage automatically. The primary burners will be enabled. The initial fifteen (15) minutes into the cycle (screen adjustable), the primary burners will be in low fire allowing for an initial controlled ignition to start the process cycle. After the initial ignition period, the primary burner will go into full fire for the remainder of the burn cycle and will be automatically throttled between hi/lo/off based on temperature actuated control via the PLC. The touch screen will indicate the system is in the burn stage with a "Burn-Load Enabled" or "Burn-Load Disabled" during this process.
6. When the display reads "Burn-Load Enabled" the operator can load waste into the hydraulic loader system's charging hopper via the hopper feed.
  - a. Weigh charge and load onto hopper feed lift.
  - b. Press "CHARGE" button to initiate the automated loading sequence as follows:
    - Hopper lid will open
    - Loader will lift and dump waste into hopper
    - Loader will lower and hopper lid will close
    - The charging door will open and the charging ram will push the waste into the primary combustion chamber.
    - The ram will retract and the charging door will close.
    - After the load is complete the message "Burn-Load Disabled" will be displayed.
  - c. There is a minimum 10 minute wait period between loads after which "Burn-Load Enabled" will be displayed again and another charge may be made.

**Note:** When the charging door opens the primary burners will turn off. When the door closes the burners will re-light.

Florida Office:  
EPA Technologies LLC  
557 Quail Woods Court  
Debary, FL 32713  
Tel: 386-479-7106  
Fax: 386-775-2876

7. Once the last load is completed the **"Burn Down"** button is pushed. This will start the burn down stage and disable loading. The **"time left in burn stage"** display will count time the time remaining in the cycle as it progresses. The minimum four burn down cycle time is operator adjustable via the **"Time Adjust"** screen.
8. When the burn down cycle is complete, the screen will indicate **"cool-down"**, at which point the system enters into a programmed shut down cycle. The primary burners will shut off and the secondary burner will continue to operate for fifteen minutes. Once the secondary burner shuts down the combustion fan will continue to operate for the rest of the cool down period. When completed, the system will automatically turn off and the screen will indicate **"system off"**.

**Note:** A single push of the **"STOP"** button will immediately put the system into the programmed shut down cycle. The screen will indicate **"cool-down"**. Pressing the **"stop"** button twice, consecutively will "E-Stop" the system directly to **"system off"**.

## **GENERAL MAINTENANCE AND SERVICE PROCEDURES**

The Incinerator should need very little maintenance and service if operated according to factory recommendations. EPA Technologies LLC maintains a supply of replacement parts and is available by telephone for technical assistance and information.

- Weekly:**
1. Visually inspect actuators and valve connections & tighten as needed
  2. Visually inspect fuel lines for leaks tighten as needed
  3. Visually inspect hydraulic cylinders for signs of leakage. (if applicable)
  4. Clean normally extended hydraulic rods to remove dust & debris
  5. Clean floor air lines with Rod

- Monthly:**
1. Remove, visually inspect, clean and UV flame detectors.
  2. Visually inspect and lubricate loader bearings.
  3. Check hydraulic fluid level and running pressure.
  4. Inspect valve actuators and check rotation movement.
  5. Clean & gap burner spark igniters

- Yearly:**
1. Lubricate combustion air blower and hydraulic pump motors.
  2. Change hydraulic oil filter inspect oil and change if necessary (if applicable).
  3. Service burners and re-calibrate fuel & air settings

### **GENERAL PROCEDURES**

The following maintenance procedures must be followed by your personnel.

#### **A. COMBUSTION AIR FAN**

The blower motor should be greased once every year, depending on total hours of usage, (refer to the Locations Section, Part B, Rear Plenum).

#### **C. BURNERS**

General maintenance – By Owner is to clean UV detectors & clean & gap spark igniters.

The detectors must be cleaned weekly or as needed, as follows:

1. Unscrew the retaining nut by hand.
2. Clean the lens utilizing a soft cloth or a Q-tip with a small amount of alcohol.

#### **D. PRIMARY CHAMBER**

The primary chamber should be clean of all debris at the beginning of each day's operation.

The under-fire air ports should be cleaned at least weekly by removing the caps and rodding them through from the outside.

#### **E. THERMOCOUPLES**

There are two K-type thermocouples which sense and transmit temperatures at the exit of the primary and secondary combustion chambers. These are consumables which must be periodically replaced upon failure, which will be indicated on the operator interface screen. There is no maintenance required other than replacement.

#### **F. UNIT EXTERIOR**

The exterior of the unit and the general operating area should always be kept clean of all debris as the accumulation of materials around the unit may seriously affect the operations and/or create a fire hazard.

#### **D. HYDRAULICS**

Visually inspect hydraulic system components & piping for leakage weekly, tightening fittings as needed. Cylinder rods should be kept clean to minimize abrasion wear and replace seals as needed. Fluid level and operating pressure should be check monthly. Filter should be changed annually.



**EPA TECHNOLOGIES, LLC**

311 West Maple Street  
Nicholasville, KY 40356  
TEL: 859-552-5689 FAX: 859-881-9859

RECEIVED  
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Bureau of Air Monitoring  
& Mobile Sources  
3755  
2272

May 25, 2010

Florida Dept. of Environmental Protection  
Receipts  
P.O. Box 3070  
Tallahassee, FL 32315-3070

Attn: Dick Dibble

Re: Air General Permit Re-Registration for a new 400 lb/hr Animal Crematory  
Orange County Animal Services – Facility I.D. No.: 0950192

Dear Mr. Dibble,

Pursuant our recent telephone conversation regarding Orange County Animal Services – Facility I.D. No.: 0950192, replacement of their existing 250 lb/hr system with a new 400 lb/hr system, enclosed please find two copies of FL-DEP, Animal Crematory, Air General Permit Registration Form, 62-210.920(2)(d), to include the following:

1. Part II. Notification to Permitting Office: pages 7-9
2. Attachment 1: Technical description & system specifications
3. Attachment 2: System general arrangement drawings
4. Attachment 3: Process Flow Diagram
5. Attachment 4: System P&ID
6. Attachment 5: Heat & Mass Balance calculations with residence time calculations
7. Attachment 6: Representative emission data from stack test of similar system
8. Attachment 7: Basic system operation & maintenance

This is a replacement equipment change per Rule 62-210.310(2)(d). The existing crematory unit will be removed and the new system installed at the same location. The new system shall meet all compliance criteria per Rule 62-296.401(6). F.A.C.

Pursuant Rule 62-40050, F.A.C., a check for \$100.00 is enclosed. I trust this application package will be sufficient for your requirements. If you have any question or need additional information, please contact me at 386-479-7106.

Sincerely,

Mike Nadelkov

Mike Nadelkov

Florida Office:  
**EPA Technologies LLC**  
557 Quail Woods Court  
Debarry, FL 32713  
Tel: 386-479-7106  
Fax: 386-775-2876

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JENNIFER BUTCHER  
407-260-6710 13  
MERCON CONSTRUCTION  
816 EXECUTIVE DR.  
OVIEDO FL 32765

1 LBS

1 OF 1

SHIP TO:

DICK DIBBLE

FL DEP

RECEIPTS

P.O. BOX 3070

TALLAHASSEE FL 32315-3070

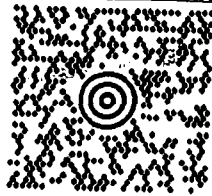
SHIP TO:

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DEPT OF ENVIORNMENTAL PROTECTION  
WAREHOUSE SUPPORT BLDG MS 92  
3900 COMMONWEALTH BLVD

TALLAHASSEE FL 32399 6515



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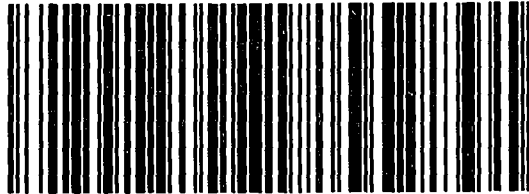
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UPS GROUND

TRACKING #: 1Z 87F 022 03 9393 2141



BILLING: P/P

Reference#1: Air General Permit Registration

UIS 12.0.28. WXP1E60 03.0A 04/2010



TM

DEPT OF ENVIORNMENTAL PROTECTION  
3900 COMMONWEALTH BLVD

TALLAHASSEE FL 32399-6515

P: PINK s: OUT I:

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