

Permit Amendment Source Analysis & Technical Review

Company	Pine Hill Pet, Inc.	Permit Number	78045
City	Bowie	Project Number	220110
County	Montague	Account Number	MP-0050-T
Project Type	Amend	Regulated Entity Number	RN104882659
Project Reviewer	Benjamin Hansen, Ph.D., P.E.	Customer Reference Number	CN602982233
Site Name	Animal Crematory		

Project Overview

Pine Hill Pet, Inc. wishes to replace one 100 lb/hr animal carcass incinerator (EPN 1) with two new 65 lb/hr incinerators (EPNs 3 and 4). The project will result in a decrease in annual CO and PM emissions, but a slight increase in NO_x, VOC and SO₂ emissions, resulting in an overall decrease of 0.48 tons per year.

Emission Summary

Air Contaminant	Current Allowable Emission Rates (tpy)	Proposed Allowable Emission Rates (tpy)	Change in Allowable Emission Rates (tpy)
PM	1.42	1.12	-0.30
PM ₁₀	--	1.12	*
PM _{2.5}	--	1.12	*
VOC	0.61	0.68	0.07
NO _x	0.61	0.68	0.07
CO	0.73	0.35	-0.38
SO ₂	0.51	0.57	0.06

*PM₁₀ and PM_{2.5} are being speciated for the first time with this permit action but have always been represented and emitted.

Compliance History Evaluation - 30 TAC Chapter 60 Rules

A compliance history report was reviewed on:	November 19, 2014
Compliance period:	September 1, 2009 to August 31, 2014
Site rating & classification:	HIGH 0.00
Company rating & classification:	HIGH 0.00
If the rating is 50<RATING<55, what was the outcome, if any, based on the findings in the formal report:	N/A
Has the permit changed on the basis of the compliance history or rating?	No

Public Notice Information - 30 TAC Chapter 39 Rules

Rule Citation	Requirement
39.403	Is Public Notice Required? No
	If no, give reason: The proposed emissions increases are less than public notice <i>de minimis</i> levels specified in 30 TAC §39.402

Construction Permit & Amendment Requirements - 30 TAC Chapter 116 Rules

Rule Citation	Requirement
116.111(a)(2)(G)	Is the facility expected to perform as represented in the application? Yes
116.111(a)(2)(A)(i)	Are emissions from this facility expected to comply with all TCEQ air quality Rules & Regulations, and the intent of the Texas Clean Air Act? Yes
116.111(a)(2)(B)	Emissions will be measured using the following method: Calculations

Permit Amendment Source Analysis & Technical Review

Permit No. 78045
Page 2

Regulated Entity No. RN104882659

	Comments on emission verification:	Engineering calculations based on fuel specifications and operation recordkeeping
116.111(a)(2)(D)	Subject to NSPS? Subparts N/A	No
116.111(a)(2)(E)	Subject to NESHAP? Subparts N/A	No
116.111(a)(2)(F)	Subject to NESHAP (MACT) for source categories? Subparts N/A	No
116.111(a)(2)(H)	Nonattainment review applicability: Project is not in a nonattainment county	
116.111(a)(2)(I)	PSD review applicability: Project does not trigger PSD review for any pollutant: emissions are less than 250 tpy, not a named source	
116.111(a)(2)(L)	Is Mass Emissions Cap and Trade applicable to the new or modified facilities? If yes, did the proposed facility, group of facilities, or account obtain allowances to operate:	No N/A
116.140 - 141	Permit Fee: \$ 900.00	Fee certification: M504609

Title V Applicability - 30 TAC Chapter 122 Rules

Rule Citation	Requirement
122.10(14)	Title V applicability: Not a major source.
122.602	Periodic Monitoring (PM) applicability: While not subject to Title V, periodic monitoring in the form of fuel usage records and operation and maintenance recordkeeping are required.
122.604	Compliance Assurance Monitoring (CAM) applicability: While not subject to Title V, the 225 lb/hr Crawford Model CB1600 (EPN 2) is equipped with a CEMS for measuring O ₂ concentration.

Request for Comments

Received From	Program/Area Name	Reviewed By/Date	Comments
Region:	3	Evan Goldstrohm April 28, 2015	1. SC No. 2o Add CEMS to EPNs 3 and 4 2. SC No. 21(C) Correct Beaumont Office 3. SC No. 23(A) Remove error message
City:	Bowie		
County:	Montague		
ADMT:	N/A		
EB&T:	N/A		
Toxicology:	N/A		
Compliance:	N/A		
Legal:	N/A		
Comment resolution and/or unresolved issues:	1. CEMS not required because incinerators <100 lb/hr (per 30 TAC §111.127(a)) 2. Corrected to Abilene Office 3. Cross-reference corrected		

Process/Project Description

The facility consists of three animal carcass incinerators: one Crawford Model CB1600 (EPN 2) with a capacity of 225 lb/hr and two Therm-Tec Models S-27-G (EPNs 3 and 4) with capacities of 65 lb/hr each. The applicant proposes to use

Permit Amendment Source Analysis & Technical Review

Permit No. 78045
Page 3

Regulated Entity No. RN104882659

the incinerators solely for the disposal of animal carcasses (pets) that have not intentionally been exposed to pathogens. The dual-chamber incinerators will be fired with natural gas and are required to maintain a 1600°F secondary chamber temperature for a gas residence time greater than 0.5 seconds. Former EPN 1 is being removed from the permit.

Maintenance, start-up and shutdown (MSS) emissions for the incinerators is no greater than emissions under normal operations. A footnote was added to the MAERT to indicate this.

Pollution Prevention, Sources, Controls and BACT- [30 TAC 116.111(a)(2)(C)]

The three incinerators (EPNs 2, 3 and 4) are the only permitted sources of air emissions from this facility.

Emission rates were calculated using either EPA's Ap-42 Emission Factors for Natural Gas Firing Incinerators, or stack test results from previous test of similar units, where available. These incinerators meet current BACT criteria: 0.5 second gas residence time and 1600°F secondary chamber temperature.

Impacts Evaluation - 30 TAC 116.111(a)(2)(J)

Was modeling conducted?	Yes	Type of Modeling:	Screen3	
Will GLC of any air contaminant cause violation of NAAQS?				No
Is this a sensitive location with respect to nuisance?				No
[§116.111(a)(2)(A)(ii)] Is the site within 3000 feet of any school?				No
Additional site/land use information:				
Site is rural, surrounded by applicant's pet cemetery and undeveloped land. Nearest residence at 775 feet.				

Summary of Modeling Results

Site-wide modeling was performed for all criteria pollutants that increased due to this amendment. These included NO_x and SO₂.

SCREEN3 modeling was performed using a unitized emission rate of 1 lb/hr to predict a generic short-term impact for each emission point number (EPN). The generic impact for each EPN was then multiplied by the proposed pollutant specific emission rates to calculate a maximum predicted off-property concentration (maximum concentration) for each pollutant from each EPN. The maximum concentration for each pollutant from each EPN was then summed to get a total maximum concentration for each pollutant.

The impacts for NO_x 1-hr and annual, and SO₂ 1-hr, 3-hr, 24-hr and annual averaging periods are above the SIL; therefore, a more comprehensive cumulative modeling analysis for NO_x and SO₂ is required. For NO_x and SO₂, site-wide sources were evaluated in a modeling analysis. A representative background monitor was found and added to the total predicted concentration for each applicable pollutant and compared to the NAAQS. The background concentrations for NO_x were obtained from the EPA AIRS monitor 481210034 which is located at Denton Airport South, Denton, Denton County. The background concentrations for SO₂ were obtained from the EPA AIRS monitor 481130069 which is located at 1415 Hinton Road, Dallas, Dallas County. The use of these monitors is reasonable based on an analysis of county populations and the heavily urbanized areas in the vicinity of the monitor sites relative to the project site. The results are shown in the table below:

Permit Amendment Source Analysis & Technical Review

Permit No. 78045
Page 4

Regulated Entity No. RN104882659

Pollutant	Averaging Time	GLCmax (µg/m³)	Background (µg/m³)	Total Conc. = [Background + GLCmax] (µg/m³)	Standard (µg/m³)
NO ₂	1-hr	67.09	90.2	157.3	188
NO ₂	annual	5.37	13.6	19.0	100
SO ₂	1-hr	54.18	18.5	72.7	196
SO ₂	3-hr	48.76	0.4	49.2	1300
SO ₂	24-hr	21.67	2.6	24.3	365
SO ₂	annual	4.33	0.5	4.8	80

All criteria pollutants evaluated are predicted not to cause or contribute to an exceedance of the NAAQS. All criteria pollutants are predicted not to cause an adverse impact on human health or welfare.

This amendment will also result in an annual increase of VOC emissions. Annual VOC emission rates will increase from 0.61 tpy to 0.68 tpy. Per Appendix B of the Modeling and Effects Review Applicability (MERA) guidance the VOC emissions associated with combustion units firing natural gas do not require evaluation.

Permit Concurrence and Related Authorization Actions

Is the applicant in agreement with special conditions?	Yes
Company representative(s):	Steve Rohleder
Contacted Via:	email
Date of contact:	April 28, 2015
Other permit(s) or permits by rule affected by this action:	No
List permit and/or PBR number(s) and actions required or taken:	N/A

Project Reviewer	Date	Team Leader/Section Manager/Backup	Date
------------------	------	------------------------------------	------