



CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS, AIR PERMITTING, AND REGULATORY COMPLIANCE SERVICES

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DIVISION OF AIR RESOURCE MANAGEMENT

Ed's project

TITLE V AIR OPERATING PERMIT RENEWAL APPLICATION

0930104-021-AV



Module AB 163

For the:

OKEECHOBEE LANDFILL, INC.
OKEECHOBEE, FLORIDA
TITLE V PERMIT NO. 0930104-016-AV
AIR CONSTRUCTION PERMIT NO. 0930104-018-AC/PSD-FL-382A

Presented to:

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Southeast District Office
400 N. Congress Avenue, Suite 200
West Palm Beach, Florida 33401

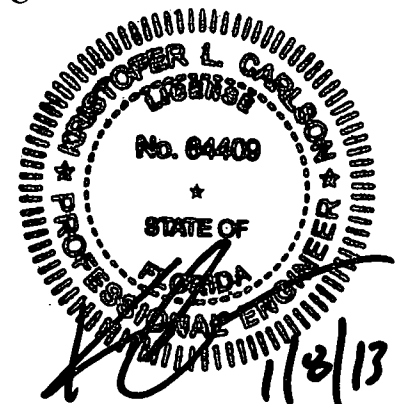
On Behalf of:

OKEECHOBEE LANDFILL, INC.
Okeechobee Landfill
10800 NE 128th Avenue
Okeechobee, Florida 34972

Prepared by:

CARLSON ENVIRONMENTAL CONSULTANTS, PC
305 South Main Street
Monroe, NC 28112
(704) 283-9765

January 2013





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DIVISION OF AIR
RESOURCE MANAGEMENT

CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS, AIR PERMITTING, AND REGULATORY COMPLIANCE SERVICES

**TITLE V AIR OPERATING PERMIT RENEWAL
APPLICATION**



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JAN 23 2013
FL DEP
WEST PALM BEACH

For the:

OKEECHOBEE LANDFILL, INC.
OKEECHOBEE, FLORIDA
TITLE V PERMIT NO. 0930104-016-AV
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(704) 283-9765

January 2013



CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS, AIR PERMITTING, AND REGULATORY COMPLIANCE SERVICES

January 8, 2013

Mr. Manuel Delosantos
Florida Department of Environmental Protection
Southeast District Office, Air Program
400 North Congress Street, Suite 200
West Palm Beach, Florida 33401

RECEIVED

JAN 23 2013

FL DEP
WEST PALM BEACH

Subject: Title V Permit Renewal Application
Okeechobee Landfill, Inc. -- Berman Road Landfill
Facility ID No. 0930104

Dear Mr. Delosantos:

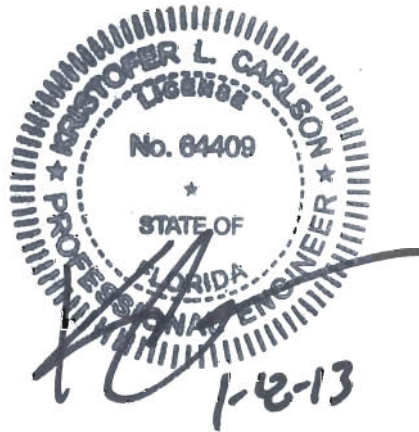
On behalf of Okeechobee Landfill, Inc. (OLI), Carlson Environmental Consultants, PC (CEC) is submitting this Title V renewal permit application to the Florida Department of Environmental Protection (FDEP) for the Berman Road Landfill, located in Okeechobee, Florida. Please find attached four hard copies of this application for your review.

Please feel free to contact the undersigned at (704) 506-7312 or Mr. Jim Christiansen of Okeechobee Landfill, Inc. at ((321) 704-4162 if you have any questions concerning this upcoming testing event.

Sincerely,

Kristofer L. Carlson, PE
Principal
Carlson Environmental Consultants, PC

cc: Tony Bishop, OLI
Jim Christiansen, OLI
Lindsey Kennelly, CEC



EXECUTIVE SUMMARY

TITLE V PERMIT RENEWAL APPLICATION OKEECHOBEE LANDFILL OKEECHOBEE, FLORIDA

INTRODUCTION

The Okeechobee Landfill (Landfill) is an active municipal solid waste (MSW) landfill located in Okeechobee, Florida in Okeechobee County. Okeechobee Landfill, Inc. (OLI) has owned and operated the site since 1981. The facility, comprised of the Berman Road Landfill as well as the Clay Farms Landfill, operates under Title V Air Operating Permit No. 0930104-016-AV dated August 22, 2008. The current Title V Permit expires on August 22, 2013; therefore, this Application is being submitted to renew the Landfill's Title V Air Operating Permit.

The Okeechobee Landfill has an active gas collection and control system (GCCS) that complies with the requirements of Title 40 of the Code of Federal Regulations (CFR) Subpart WWW. The Landfill's NSPS Gas Collection and Control System Design Plan and the Title V and New Source Performance Standards (NSPS) Semi-Annual Reports submitted to FDEP (various dates) provide additional information on the compliance of the facility with the requirements of 40 CFR 60 Subpart WWW.

The Okeechobee Landfill also has an active air construction permit (0930104-018-AC (PSD-FL-382A)) that was reviewed in accordance with the preconstruction review requirements for major stationary sources per 62-212.400 of the Florida Administrative Code (F.A.C.) for the Prevention of Significant Deterioration (PSD) for Air Quality, which also included a Best Available Control Technology (BACT) review. This air construction permit was submitted for the installation of a landfill gas desulfurization plant (GDP) and landfill gas to energy (LFGTE) plant using the desulfurized landfill gas (LFG) as fuel in the combustion turbine generators (CTG), with open flares operating as backup control devices. At this time, the GDP has been constructed and is currently in the startup period, the LFGTE has not been constructed.

SUMMARY OF REQUESTED ITEMS

1. The current Title V Permit (0930104-016-AV) incorporates the enforcement actions addressed in the March 10, 2005 settlement, followed by the June 28, 2006 and January 22, 2007 amendments. OLI is requesting that the enforcement actions be deemed completed and closed as the terms of the settlement have been met and the site currently has a PSD permit (0930104-018-AC (PSD-FL-382A)).
2. The Landfill is requesting no additional changes to the existing Air Construction Permit 0930104-018-AC (PSD-FL-382A) at this time. This Title V Operating Renewal application addresses the emissions units that have been constructed per Air Construction Permit 0930104-018-AC (PSD-FL-382A) and are currently operational. The facility reserves the right to review the draft modified Title V Permit and to make corrections and updates at that time, as needed.

3. The Landfill is requesting minor changes to the existing emissions sources and emission equipment listed in the Title V Air Operating Permit. OLI requests to remove the following emissions sources from the renewed Title V Permit as they have been decommissioned or not constructed:

- EU 003 - 3,000 scfm enclosed flare with leachate evaporation unit. Decommissioned in March 2011
- EU 004 – 2,800 scfm enclosed flare with leachate evaporation unit. Decommissioned in April 2011
- EU 005 - 3,000 scfm enclosed flare with leachate evaporation unit. Decommissioned in April 2011
- EU 006/CD-04 – 3,300 scfm open flare. Decommissioned.
- EU 007/CD-05 – 3,300 scfm open flare. Not constructed.

In addition, OLI is requesting to incorporate emission unit EU 016, which is a portable concrete crusher owned and used periodically at the site by a third party.

4. The facility is requesting minor changes to the existing Insignificant Activities listing under Appendix D of the existing Title V Permit.

CLARIFICATION

The diesel powered wood waste grinder is a mobile source as defined in 40 CFR §1068.30 as it is designed to be portable and has not been at a single location for 12 consecutive months. Since 40 CFR Part 60, Subpart IIII and 40 CFR Part 63, Subpart ZZZZ apply only to stationary sources, the wood waste grinder equipment is not subject to these provisions. See Appendix I for EPA's determination for mobile sources.

AIR EMISSION SOURCES

The following table lists the Landfill's permitted emission sources listed in the Air Construction and Title V Permit.

Table A. Facility Emission Units

Emission Unit Number	Emission Unit Description	Status
EU 001	MSW Landfill with GCCS and GDP	GCCS operation is ongoing. GDP construction is complete and operation has commenced. In correspondence dated 6/28/12, FDEP extended the operational treatment requirements stipulated in Condition 7 of 0930104-018-AC (PSD-FL-382A) until 10/28/12. In correspondence dated 10/12/12, OLI requested a second extension through 3/31/13. The request is pending.
EU 003	3,000 scfm enclosed flare with leachate evaporation unit	Decommissioned March 2011 Requesting to remove from permit.
EU 004	2,800 scfm open flare	Decommissioned April 2011 Requesting to remove from permit.
EU 005	3,000 scfm enclosed flare with leachate evaporation unit	Decommissioned April 2011 Requesting to remove from permit.
EU 006/CD-04	3,300 scfm open flare	Decommissioned Requesting to remove from permit.
EU 007/CD-05	3,000 scfm open flare	Not Constructed Requesting to remove from permit.
EU 008	1,500 scfm open flare	Operations commenced on 3/23/11.
EU 009	3,000 scfm open flare	Operations commenced on 3/23/11.
EU 010	3,000 scfm open flare	Operations commenced on 3/23/11.
EU 011	3,000 scfm open flare	To be constructed
EU 012	3,000 scfm open flare	To be constructed
EU 013	15 MW Model Solar Titan 130 CTG	To be constructed
EU 014	3.5 MW Model Solar Centaur 40 CTG	To be constructed
EU 015	3.5 MW Model Solar Centaur 40 CTG	To be constructed
EU 016	Portable Concrete Crusher	Proposed

REGULATORY REVIEW

No changes have been made or are being requested by OLI concerning regulations currently listed in the Landfill's current Title V Permit (No. 0930104-016-AV) or Air Construction Permit 0930104-018-AC (PSD-FL-382A). A summary of the regulations that the facility is subject to is included in Appendix E. The Landfill has the following Regulatory Classification:

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility is an area source of HAPs.
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

New Source Review (NSR) Major Stationary Source Status

This facility is an existing landfill facility that is a major stationary source under the New Source Review (NSR) program. Landfills are not included among the list of 28 source categories that are regulated under a 100 ton per year (TPY) threshold for "regulated New Source Review (NSR) pollutants" to determine "major stationary source" status. 40 CFR 52.21(b)(1)(i)(a). Because this existing landfill facility does not fall within the 28 listed categories, it is subject to a 250 TPY threshold for "regulated NSR pollutants," excluding fugitive emissions, to determine NSR major stationary source status. 40 CFR 52.21(b)(1)(i)(b). This facility emits or has the potential to emit (PTE) 250 TPY or more of at least one regulated NSR pollutant, and it is therefore an existing major stationary source for NSR purposes.

"Regulated NSR pollutants" for this facility currently include: nitrogen oxides, sulfur dioxide, particulate matter (PM), PM₁₀, carbon monoxide, volatile organic compounds, and nonmethane organic compounds. See 40 CFR 52.21(b)(50) for definition of "regulated NSR pollutant." This facility's potential to emit at least one of these pollutants is more than 250 TPY, and it is therefore an NSR major stationary source.

Regardless of whether a facility has the potential to emit any other regulated NSR pollutants above 250 TPY, a facility's emissions of greenhouse gases (GHGs) (the aggregate group of carbon dioxide (CO₂), methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons emissions) are considered to be a "regulated NSR pollutant" only when the GHGs are "subject to regulation" for the facility. 40 CFR 52.21(b)(49). This facility's GHGs are not "subject to regulation" at this time, and therefore the facility's GHGs are not a "regulated NSR pollutant" at this time.

At an existing stationary source, such as this landfill facility, GHGs may be "subject to regulation" for NSR program purposes only when the facility proposes to undertake a physical change or a change in the method of operation. 40 CFR 52.21(b)(49)(v)(b) ("At an existing stationary source ... **when** such stationary source undertakes a physical change or change in the method of operation ..."); see also 75 Fed. Reg. 31514 (June 3, 2010). If no physical change or change in method of operation is proposed for an existing facility, then the facility's GHGs are

not “subject to regulation.” At the time an existing facility proposes a physical change or a change in the method of operation, the facility’s GHG emissions will be subject to evaluation to determine whether the GHGs would be “subject to regulation.” Each project increasing GHG emissions will be evaluated to determine if the GHGs are “subject to regulation” (and therefore a “regulated NSR pollutant”) – for purposes of only the project under evaluation.

Hypothetical Example of a GHG Emissions Analysis for NSR Applicability

At an existing source such as this landfill, which is currently an NSR major stationary source, if the owner/operator were to propose a physical change or change in the method of operation, it would be appropriate at that time to evaluate the facility’s GHG emissions for purposes of NSR program applicability. While no physical change or change in the method of operation of this facility is being proposed at this time, the following information is provided to demonstrate the type of emissions analysis that would be required to determine NSR applicability based on GHGs.

NSR Triggered “Anyway”

If there is a physical change or change in the method of operation at an existing major stationary source that results in a “significant increase” and a “significant net emissions increase” in one or more criteria pollutant emissions, the project is a “major modification” which triggers NSR. 40 CFR 52.21(a)(2)(iv)(a), (b)(2)(i), (b)(2)(ii). However, to determine NSR applicability to GHG emissions, there must first be a determination as to whether the GHGs are “subject to regulation.” 40 CFR 52.21(b)(49).

At an existing major stationary source implementing a major modification which triggers NSR for criteria pollutant emissions, the GHGs are “subject to regulation” if there is an “emissions increase” and a “net emissions increase” of at least 75,000 TPY carbon dioxide equivalent (CO₂e) emissions (sum of all six pollutants’ emissions, taking into account the global warming potential of each pollutant). 40 CFR 52.21(b)(49)(iii), (iv). Currently, biogenic CO₂ emissions are not included as part of this emissions calculation until July 21, 2014, although this exclusion could become permanent based on EPA’s final determination.¹ 76 Fed. Reg. 43490 (July 20, 2011). If the project results in an “emissions increase” and a “net emissions increase” of at least 75,000 TPY CO₂e, the GHGs are “subject to regulation.” Because the GHGs are “subject to regulation,” they are a “regulated NSR pollutant” and NSR applicability must be determined. NSR will be triggered by the GHGs as a regulated NSR pollutant if both of two additional criteria are met: the project must result in an “emissions increase” and a “net emissions increase” in mass GHGs above zero. A calculation of the mass GHGs includes the sum of the six GHG pollutants without regard to global warming potential, and excludes biogenic CO₂ until July 21, 2014, or later based on EPA’s final determination. 40 CFR 52.21(b)(2)(i), (b)(2)(ii), (b)(23)(ii). If all of the above-referenced criteria are met, then the GHGs associated with the project would be subject to NSR (PSD) permitting.

If the emissions increase or net emissions increase in GHGs is less than 75,000 TPY CO₂e, or if the project results in no emissions increase and no net emissions increase in mass GHGs above

¹ Depending on the outcome and timing of EPA’s determination, it is possible that EPA could undertake a new rulemaking with an earlier date that would supersede the current rule language.

zero, then the GHGs are not “subject to regulation,” and therefore not a “regulated NSR pollutant.” NSR would not be triggered for GHGs for the project.

NSR Not Otherwise Triggered

If there is a physical change or change in the method of operation at an existing major stationary source that does not otherwise trigger NSR (i.e., the criteria pollutants do not result in a “major modification”), the GHGs will be “subject to regulation” only if: (1) the project would result in an “emissions increase” and a “net emissions increase” of at least 75,000 TPY of CO₂e emissions and (2) either the existing facility emits or has the potential to emit at least 100,000 TPY CO₂e, or the project itself has the potential to emit at least 100,000 TPY CO₂e. 40 CFR 52.21(b)(49)(v), (b)(1)(i)(c). If these criteria are not met, then the GHGs are not subject to regulation and will not trigger NSR. If these criteria are met, then the facility’s GHGs are “subject to regulation” and are therefore a “regulated NSR pollutant.”

If the relevant criteria are met and GHGs are a “regulated NSR pollutant,” NSR applicability to the project must be determined. The GHGs will trigger NSR if two additional criteria are met: there must be an “emissions increase” and a “net emissions increase” in mass GHGs (without regard to global warming potential). If these criteria are met, then NSR is triggered for the project. If there is no “emissions increase” or no “net emissions increase” in mass GHGs, then NSR is not triggered for the project.

Unlike other pollutants, GHGs are not “subject to regulation” under the NSR program unless the facility is new or there is a physical change or change in method of operation at an existing facility (and other emission-based criteria are met). Because GHGs at an existing facility where the owner/operator is not currently proposing a physical change in or change in method of operation cannot be “subject to regulation” and therefore cannot be a “regulated NSR pollutant,” the facility also cannot trigger NSR or be considered a major stationary source due to its GHGs. This explanation of NSR applicability for GHGs is confirmed through the attached question and answer document developed by EPA and entitled “Triggering PSD at Non-Anyways Sources and Modifications” (available on the EPA website at <http://www.epa.gov/nsr/ghgdocs/TriggeringPSDatnonAnywaysSourcesandMods.pdf>).

Under a permitting action to renew a Title V air operation permit for an existing stationary source, such as this one, where there is no associated physical change in or change in the method of operation, GHGs are not “subject to regulation.” Because the GHGs are not “subject to regulation,” the GHGs are not considered a “regulated NSR pollutant.” **This facility, at the time of this Title V renewal and without an associated physical or operational change, would not trigger applicability of the NSR program.** The analysis of whether the facility has the potential to emit “major source” levels as defined under the Title V rules is separate and not tied to whether the facility would be an NSR major stationary source.

Title V Major Source Emission Levels

The analysis of whether a facility is an NSR major stationary source for GHGs is completely separate from an analysis of whether the facility has the potential to emit GHGs at major source levels for purposes of the Title V program. This facility is subject to the Title V air operations permit program because of the applicability of a New Source Performance Standard (NSPS), and

there is no question of Title V applicability. The determination of whether the facility has the potential to emit GHGs at Title V major source emission levels should not be confused with an analysis of whether the facility is an NSR major stationary source.

The federal Title V air operation permit rules provide that the term “major source” includes stationary sources that emit or have the potential to emit at least 100 TPY of any air pollutant “subject to regulation.” Fugitive emissions are included in this amount only if the facility falls within one of 27 listed source categories. 40 CFR 70.2, “major source” (2). As a landfill, this facility does not fall within the listed source categories, and therefore fugitive emissions are not included in calculations to determine major source emission levels under the federal Title V rules.

Under the Title V program, the air pollutants subject to regulation for this facility currently include: nitrogen oxides, sulfur dioxide, particulate matter (PM), PM₁₀, carbon monoxide, volatile organic compounds, and nonmethane organic compounds. Excluding fugitive emissions, this facility has the potential to emit Title V major source emission levels for the following pollutants: carbon monoxide.

The federal Title V rules define “subject to regulation” for purposes of greenhouse gases (GHGs) to mean that a stationary source emits or has the potential to emit 100,000 TPY of carbon dioxide equivalent (CO₂e) emissions (sum of all six pollutants’ emissions, taking into account the global warming potential each pollutant). 40 CFR 70.2, “subject to regulation.” As stated above, fugitive emissions are not included in this total to determine major source emission levels, nor are they subject to consideration for inclusion. In addition, currently biogenic CO₂ emissions are not counted as part of this total until July 21, 2014, although this exclusion could become permanent based on EPA’s final determination.² 76 Fed. Reg. 43490 (July 20, 2011).

For purposes of the federal Title V rules, this facility’s GHGs (excluding fugitive emissions and biogenic CO₂ emissions) are estimated at 576 TPY of CO₂e, which is less than the 100,000 TPY CO₂e threshold for Title V applicability, and therefore this facility’s GHGs are not “subject to regulation.” Even if this facility’s GHGs were “subject to regulation,” the facility’s potential to emit mass GHGs (aggregate sum of six pollutants, without regard to global warming potential) is estimated at 8.4 TPY which is below the Title V major source level of 100 TPY. Therefore this facility does not emit or have the potential to emit GHGs at Title V major source levels.

APPLICATION

In accordance with FDEP requirements for concurrent revised Air Construction and Title V Air Operating Permits, CEC is submitting the following information for FDEP review:

Florida Title V Application Forms 62-210.900(1)

Appendix A: Plot Plan

Appendix B: Flow Chart

Appendix C: Precautions to Prevent Emission of Unconfined Particulate Matter

² Depending on the outcome and timing of EPA’s determination, it is possible that EPA could undertake a new rulemaking with an earlier date that would supersede the current rule language.

Appendix D: Insignificant Activities
Appendix E: Regulatory Applicability Summary and Title V Core List
Appendix F: Compliance Plan
Appendix G: Emission Calculations
Appendix H: Fuel Analysis
Appendix I: Correspondence

Transferred to Tallahassee, 2-6-13



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

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JAN 23 2013

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I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

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FEB 06 2013

DIVISION OF AIR
RESOURCE MANAGEMENT

Identification of Facility

1. Facility Owner/Company Name: Okeechobee Landfill, Inc.	
2. Site Name: Okeechobee Landfill	
3. Facility Identification Number: 0930104	
4. Facility Location... Street Address or Other Locator: 10800 NE 128th Ave (3.5 mi north of SR 70 on NE 128th Ave) City: Okeechobee County: Okeechobee Zip Code: 34972	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: Jim Christiansen	
2. Application Contact Mailing Address... Organization/Firm: Waste Management Inc. of Florida Street Address: 10800 NE 128th Ave City: Okeechobee State: Florida Zip Code: 34972	
3. Application Contact Telephone Numbers... Telephone: (321) 704-4162 ext. Fax: (321) 984-8170	
4. Application Contact E-mail Address: jchristi@wm.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

- Air construction permit.
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

- Initial Title V air operation permit.
- Title V air operation permit revision.
- Title V air operation permit renewal.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
- Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

- Air construction permit and Title V permit revision, incorporating the proposed project.
- Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

- I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application is for the renewal of the Title V Air Operation Permit No. 0930104-016-AV.

The facility also has an active PSD Air Construction Permit No. 0930104-018-AC/PSD-FL-382A.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
EU 001	MSW Landfill with GCCS and GDP	AF2C	NA
EU 008	1,500 scfm open flare	AF2C	NA
EU 009	3,000 scfm open flare	AF2C	NA
EU 010	3,000 scfm open flare	AF2C	NA
EU 016	Portable Concrete Crusher	AF2C	NA

Application Processing Fee

Check one: Attached - Amount: \$ _____ Not Applicable

APPLICATION INFORMATION

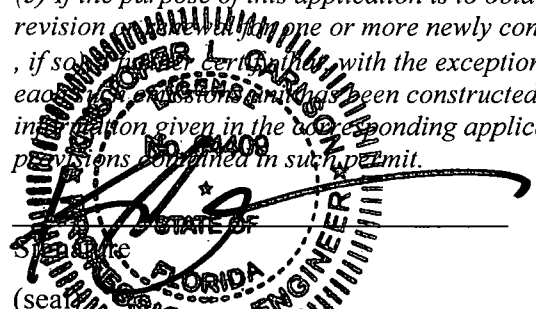
Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: Tony Bishop, District Manager
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input checked="" type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source or CAIR source.
3. Application Responsible Official Mailing Address... Organization/Firm: Okeechobee Landfill, Inc. Street Address: 10800 NE 128th Avenue City: Okeechobee State: Florida Zip Code: 34972
4. Application Responsible Official Telephone Numbers... Telephone: (863)357-0111 ext. Fax: ()
5. Application Responsible Official E-mail Address: tbishop2@wm.com
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained 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 and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i> Signature: <u>T. Bishop</u> Date: <u>1-8-13</u>

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Kristofer L. Carlson Registration Number: 64409
2. Professional Engineer Mailing Address... Organization/Firm: Carlson Environmental Consultants, PC Street Address: 305 S. Main Street City: Monroe State: NC Zip Code: 28112
3. Professional Engineer Telephone Numbers... Telephone: (704) 283-9765 ext. Fax: (704) 283-9755
4. Professional Engineer E-mail Address: kcarlson@cecenv.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input checked="" type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input checked="" type="checkbox"/>, if so), I further certify that each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  <p>STATE OF FLORIDA KRIKSTOFER L. CARLSON 64409 PROFESSIONAL ENGINEER</p> </div> <div style="text-align: right;"> <p>1-8-13 Date</p> </div> </div>

* Attach any supporting documentation to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 530.28 North (km) 3023.96		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 27° 20' 24"N Longitude (DD/MM/SS) 80° 41' 27"W	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4953
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: Jim Christiansen
2. Facility Contact Mailing Address... Organization/Firm: Waste Management Inc. of Florida Street Address: 10800 NE 128th Ave City: Okeechobee State: Florida Zip Code: 34972
3. Facility Contact Telephone Numbers: Telephone: (321) 701-4162 ext. Fax: (321) 984 - 8170
4. Facility Contact E-mail Address: jchristi@wm.com

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name: Timothy Hawkins, Vice President
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: 10800 NE 128th Ave City: Okeechobee State: Florida Zip Code: 34972
3. Facility Primary Responsible Official Telephone Numbers... Telephone: (352)368-1890 ext. Fax: () -
4. Facility Primary Responsible Official E-mail Address: thawkins@wm.com

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a “major source” and a “synthetic minor source.”

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	
<p>This facility is subject to the New Source Performance Standards (NSPS) for solid waste landfills, promulgated by USEPA under 40 CFR 60 Subpart WWW. This facility is also subject to 40 CFR Part 60 Subpart IIII and JJJJ, 40 CFR Part 61.154, and 40 CFR Part 63 Subpart AAAA and ZZZZ.</p>	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
NOx	B	N
CO	A	N
PM10	B	N
SOx	B	N
NMOC	B	N
VOC	B	N
HAPs	B	N
CO2(e)	B	N

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix A</u> <input type="checkbox"/> Previously Submitted, Date: _____
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix B</u> <input type="checkbox"/> Previously Submitted, Date: _____
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix C</u> <input type="checkbox"/> Previously Submitted, Date: _____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): <input type="checkbox"/> Attached, Document ID: _____
3. Rule Applicability Analysis: <input type="checkbox"/> Attached, Document ID: _____
4. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
 Attached, Document ID: _____ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities: (Required for initial/renewal applications only)
 Attached, Document ID: **Appendix D** Not Applicable (revision application)
2. Identification of Applicable Requirements: (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought)
 Attached, Document ID: **Appendix E**
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)
 Attached, Document ID: **Appendix F**
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI: (If applicable, required for initial/renewal applications only)
 Attached, Document ID: _____
 Equipment/Activities Onsite but Not Required to be Individually Listed
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)
 Attached, Document ID: _____ Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:
 Attached, Document ID: **Executive Summary** Not Applicable

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

<p>1. Acid Rain Program Forms:</p> <p>Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable (not an Acid Rain source)</p> <p>Phase II NO_x Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p> <p>New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>2. CAIR Part (DEP Form No. 62-210.900(1)(b)):</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____</p> <p><input checked="" type="checkbox"/> Not Applicable (not a CAIR source)</p>

Additional Requirements Comment

FACILITY INFORMATION

MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

EMISSIONS UNIT INFORMATION

Section [1] of [5]

**A. GENERAL EMISSIONS UNIT INFORMATION
MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)**

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
Municipal solid waste landfill with an active landfill gas system (LFGS) and gas desulfurization plant (GDP)

3. Emissions Unit Identification Number: **008**

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: 1/1/1981	7. Emissions Unit Major Group SIC Code: 49
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8. Federal Program Applicability: (Check all that apply)

Acid Rain Unit

CAIR Unit

9. Package Unit:
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating:

11. Emission Unit Comment:
Fugitive emissions from MSW Landfill.

EMISSIONS UNIT INFORMATION

Section [1] of [5]

MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:

A gas collection system is installed in applicable sections of the landfill. According to AP-42, Section 2.4, the gas collection system is estimated to capture approximately 75% of emissions from the landfill. Therefore, approximately 25% of the total landfill emissions generated in the landfill escape as fugitive emissions.

2. Control Device or Method Code: **003**

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

Section [1] of [5]

**C. EMISSION POINT (STACK/VENT) INFORMATION
MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)**

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: Fugitive Emissions		2. Emission Point Type Code: 4	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Fugitive emissions from the MSW landfill.			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: F	6. Stack Height: feet	7. Exit Diameter: feet	
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Fugitive emission from MSW landfill.			

EMISSIONS UNIT INFORMATION

Section [1] of [5]

D. SEGMENT (PROCESS/FUEL) INFORMATION
MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Fugitive emission from MSW landfill.		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment of

1. Segment Description (Process/Fuel Type): N/A		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
 MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)
 (Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NMOC		2. Total Percent Efficiency of Control: 75%	
3. Potential Emissions: 6.9 lb/hour 30.1 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 25% fugitive emissions Reference: EPA LandGEM		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-1.			
11. Potential, Fugitive, and Actual Emissions Comment: Assume 75% collection efficiency per EPA AP-42 Section 2.4. Thus, 25% of LFG is fugitive emissions.			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control: 75%	
3. Potential Emissions: 2.7lb/hour 11.7 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 25% fugitive emissions Reference: EPA LandGEM		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-1.			
11. Potential, Fugitive, and Actual Emissions Comment: Assume 75% collection efficiency per EPA AP-42 Section 2.4. Thus, 25% of LFG is fugitive emissions.			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HAPs		2. Total Percent Efficiency of Control: Approx. 75%	
3. Potential Emissions: 1.4 lb/hour 6.2 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 25% fugitive emissions Reference: EPA LandGEM		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-1.			
11. Potential, Fugitive, and Actual Emissions Comment: Assume 75% collection efficiency per EPA AP-42 Section 2.4. Thus, 25% of LFG is fugitive emissions.			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: TRS		2. Total Percent Efficiency of Control: 75%	
3. Potential Emissions: 10.2 lb/hour 44.8 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 2,385 ppmv Reference: Site-Specific Data		7. Emissions Method Code: 1	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-1.			
11. Potential, Fugitive, and Actual Emissions Comment: Assume 75% collection efficiency per EPA AP-42 Section 2.4. Thus, 25% of LFG is fugitive emissions.			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM₁₀/PM_{2.5}		2. Total Percent Efficiency of Control:	
3. Potential Emissions: PM₁₀: 11.0 lb/hour 48.4 tons/year PM_{2.5}: 1.4 lb/hour 6.3 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Reference: AP-42 Section 13.2.1 and 13.2.2		7. Emissions Method Code: 1	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-1.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

Section [1] of [5]

H. CONTINUOUS MONITOR INFORMATION

MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code: N/A	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [5]

**I. EMISSIONS UNIT ADDITIONAL INFORMATION
MUNICIPAL SOLID WASTE LANDFILL WITH LFGS AND GDP (EU 001)**

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Appendix B <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Appendix H <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Executive Summary <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/22/2011</u> <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/1/2010</u> <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

1,500 SCFM OPEN FLARE (EU 008)

EMISSIONS UNIT INFORMATION

Section [2] of [5]

**A. GENERAL EMISSIONS UNIT INFORMATION
1,500 SCFM OPEN FLARE (EU 008)**

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
1,500 scfm open flare

3. Emissions Unit Identification Number: **008**

4. Emissions Unit Status Code: a	5. Commence Construction Date: 9/2010 to 1/2011	6. Initial Startup Date: 3/23/11	7. Emissions Unit Major Group SIC Code: 49
---	--	---	---

8. Federal Program Applicability: (Check all that apply)

Acid Rain Unit

CAIR Unit

9. Package Unit:
Manufacturer: **LFG Specialties, LLC** Model Number:

10. Generator Nameplate Rating:

11. Emissions Unit Comment:
Approximately 75% of the generated landfill gas is delivered to the flare for combustion per AP-42 Section 2.4.

EMISSIONS UNIT INFORMATION

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1,500 SCFM OPEN FLARE (EU 008)

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:

Open flare with a maximum flow of 1,500 scfm

2. Control Device or Method Code: 023

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

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B. EMISSIONS UNIT CAPACITY INFORMATION

1,500 SCFM OPEN FLARE (EU 008)

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 1,500 scfm
2. Maximum Production Rate: N/A
3. Maximum Heat Input Rate: 45 MMBtu/hr 505 MMBtu/ft³ LFG
4. Maximum Incineration Rate: pounds/hr N/A tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

Section [2] of [5]

C. EMISSION POINT (STACK/VENT) INFORMATION

1,500 SCFM OPEN FLARE (EU 008)

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: Open Flare Station		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: 1,500 scfm open flare			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: P	6. Stack Height: 42 feet	7. Exit Diameter: 0.667 feet	
8. Exit Temperature: 800 to 900 °F	9. Actual Volumetric Flow Rate: 1,500 scfm	10. Water Vapor: 0%	
11. Maximum Dry Standard Flow Rate: 1,500 scfm		12. Nonstack Emission Point Height:	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: *The landfill gas combustion temperature occurring after the tip of the flare tip is approximately 1,400 °F. Based on vendor supplied information.			

EMISSIONS UNIT INFORMATION

Section [2] of [5]

D. SEGMENT (PROCESS/FUEL) INFORMATION
1,500 SCFM OPEN FLARE (EU 008)

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Landfill gas combusted in the 1,500 scfm open flare		
2. Source Classification Code (SCC): 5-03-006-01		3. SCC Units: Million cubic feet landfill gas burned
4. Maximum Hourly Rate: 0.09	5. Maximum Annual Rate: 788.4	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 505
10. Segment Comment:		

Segment Description and Rate: Segment of

1. Segment Description (Process/Fuel Type): N/A		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

Section [2] of [5]

**E. EMISSIONS UNIT POLLUTANTS
1,500 SCFM OPEN FLARE (EU 008)**

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NO _x	023	N/A	NS
VOC	023	N/A	NS
HAP	023	N/A	NS
NMOC	023	N/A	NS
CO	023	N/A	NS
SO _x	023	N/A	NS
PM/PM-10/PM-2.5	023	N/A	NS
HCl	023	N/A	NS
CO ₂ (e)	023	N/A	NS

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

1,500 SCFM OPEN FLARE (EU 008)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NO_x		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 3.1 lb/hour 13.5 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.068 lb/MMBtu Reference: Flare Manufacturer's Guarantee		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

1,500 SCFM OPEN FLARE (EU 008)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.08 lb/hour 0.0005 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 99.2% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**1,500 SCFM OPEN FLARE (EU 008)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HAPs		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 0.42 lb/hour 1.85 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 98% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2. Total HAPs include HAPs + HCl			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**1,500 SCFM OPEN FLARE (EU 008)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 16.8 lb/hour 73.7 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.37 lb/MMBtu Reference: Flare Manufacturer's Guarantee		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**1,500 SCFM OPEN FLARE (EU 008)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3.3 lb/hour 14.4 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 210 ppmv Reference: Condition 7 of 0930104-18-AC (PSD FL-382A)		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**1,500 SCFM OPEN FLARE (EU 008)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM / PM-10 / PM-2.5		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.76 lb/hour 3.3 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 17 lb/106 ft³ CH₄ Reference: AP-42, Section 2.4, Table 2.4-5		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

1,500 SCFM OPEN FLARE (EU 008)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HCl		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.38 lb/hour 1.7 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 42 ppmv Reference: AP-42, Section 2.4, Page 9		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2. Also accounted in the HAPs calculations.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
1,500 SCFM OPEN FLARE (EU 008)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Anthropogenic CO₂e		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 26.3lb/hour 115.2 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: See Appendix G Reference: 40 CFR 98, Table C-2		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): N/A tons/year		8.b. Baseline 24-month Period: N/A From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: N/A <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

Section [2] of [5]

G. VISIBLE EMISSIONS INFORMATION
1,500 SCFM OPEN FLARE (EU 008)

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: 5 minutes of visible emissions within 2 hour EPA Method 22 test Normal Conditions: _____ Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: 5 minutes in 2-hour test	
4. Method of Compliance: 40 CFR 60.18	
5. Visible Emissions Comment: Per 40 CFR 60.18, the open flare is allowed to have no visible emissions lasting more than 5 minutes during the 2 hour EPA Method 22 Visual Emissions Test.	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

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H. CONTINUOUS MONITOR INFORMATION

1,500 SCFM OPEN FLARE (EU 008)

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code: N/A	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [2] of [5]

**I. EMISSIONS UNIT ADDITIONAL INFORMATION
1,500 SCFM OPEN FLARE (EU 008)**

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Appendix B <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Appendix H <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Executive Summary <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/22/2011</u> <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/1/2010</u> <input type="checkbox"/> Not Applicable Available at the facility for review
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

3,000 SCFM OPEN FLARE (EU 009)

EMISSIONS UNIT INFORMATION

Section [3] of [5]

A. GENERAL EMISSIONS UNIT INFORMATION

3,000 SCFM OPEN FLARE (EU 009)

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
3,000 scfm open flare

3. Emissions Unit Identification Number: **008**

4. Emissions Unit Status Code: a	5. Commence Construction Date: 9/2010 to 1/2011	6. Initial Startup Date: 3/23/11	7. Emissions Unit Major Group SIC Code: 49
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8. Federal Program Applicability: (Check all that apply)

Acid Rain Unit

CAIR Unit

9. Package Unit:
Manufacturer: **LFG Specialties, LLC** Model Number:

10. Generator Nameplate Rating:

11. Emissions Unit Comment:
Approximately 75% of the generated landfill gas is delivered to the flare for combustion per AP-42 Section 2.4.

EMISSIONS UNIT INFORMATION

Section [3] of [5]

3,000 SCFM OPEN FLARE (EU 009)

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:

Open flare with a maximum flow of 3,000 scfm

2. Control Device or Method Code: 023

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control of

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

Section **[3]** of **[5]**

B. EMISSIONS UNIT CAPACITY INFORMATION

3,000 SCFM OPEN FLARE (EU 009)

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 3,000 scfm
2. Maximum Production Rate: N/A
3. Maximum Heat Input Rate: 91 MMBtu/hr 505 MMBtu/ft³ LFG
4. Maximum Incineration Rate: pounds/hr N/A tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

Section **[3]** of **[5]**

C. EMISSION POINT (STACK/VENT) INFORMATION

3,000 SCFM OPEN FLARE (EU 009)

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: Open Flare Station		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: 3,000 scfm open flare			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: P	6. Stack Height: 42 feet	7. Exit Diameter: 1 foot	
8. Exit Temperature: 800 to 900 °F	9. Actual Volumetric Flow Rate: 3,000 scfm	10. Water Vapor: 0%	
11. Maximum Dry Standard Flow Rate: 3,000 scfm		12. Nonstack Emission Point Height:	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: *The landfill gas combustion temperature occurring after the tip of the flare tip is approximately 1,400 °F. Based on vendor supplied information.			

EMISSIONS UNIT INFORMATION

Section [3] of [5]

D. SEGMENT (PROCESS/FUEL) INFORMATION

3,000 SCFM OPEN FLARE (EU 009)

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Landfill gas combusted in the 3,000 scfm open flare		
2. Source Classification Code (SCC): 5-03-006-01		3. SCC Units: Million cubic feet landfill gas burned
4. Maximum Hourly Rate: 0.18	5. Maximum Annual Rate: 1,576.8	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 505
10. Segment Comment:		

Segment Description and Rate: Segment of

1. Segment Description (Process/Fuel Type): N/A		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

Section [3] of [5]

**E. EMISSIONS UNIT POLLUTANTS
3,000 SCFM OPEN FLARE (EU 009)**

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NO _x	023	N/A	NS
VOC	023	N/A	NS
HAP	023	N/A	NS
NMOC	023	N/A	NS
CO	023	N/A	NS
SO _x	023	N/A	NS
PM/PM-10/PM-2.5	023	N/A	NS
HCl	023	N/A	NS
CO ₂ (e)	023	N/A	NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 009)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NO_x		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 6.2 lb/hour 27.1 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.068 lb/MMBtu Reference: Flare Manufacturer's Guarantee		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 009)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.16 lb/hour 0.001 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 99.2% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
3,000 SCFM OPEN FLARE (EU 009)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HAPs		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 0.84 lb/hour 3.70 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 98% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2. Total HAPs include HAPs + HCl			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**3,000 SCFM OPEN FLARE (EU 009)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NMOC		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 0.41 lb/hour 0.002 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 99.2% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**3,000 SCFM OPEN FLARE (EU 009)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 33.6 lb/hour 147.31 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.37 lb/MMBtu Reference: Flare Manufacturer's Guarantee		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 009)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 6.6 lb/hour 28.8 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 210 ppmv Reference: Condition 7 of 0930104-18-AC (PSD FL-382A)		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**3,000 SCFM OPEN FLARE (EU 009)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM / PM-10 / PM-2.5		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1.5 lb/hour 6.7 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 17 lb/106 ft3 CH4 Reference: AP-42, Section 2.4, Table 2.4-5		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 009)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HCl		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.75 lb/hour 3.3 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 42 ppmv Reference: AP-42, Section 2.4, Page 9		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2. Also accounted in the HAPs calculations.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**3,000 SCFM OPEN FLARE (EU 009)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Anthropogenic CO₂e		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 52.6 lb/hour 230.4 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: See Appendix G Reference: 40 CFR 98, Table C-2		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): N/A tons/year		8.b. Baseline 24-month Period: N/A From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: N/A <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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G. VISIBLE EMISSIONS INFORMATION

3,000 SCFM OPEN FLARE (EU 009)

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: 5 minutes of visible emissions within 2 hour EPA Method 22 test Normal Conditions: _____ Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: 5 minutes in 2-hour test	
4. Method of Compliance: 40 CFR 60.18	
5. Visible Emissions Comment: Per 40 CFR 60.18, the open flare is allowed to have no visible emissions lasting more than 5 minutes during the 2 hour EPA Method 22 Visual Emissions Test.	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

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H. CONTINUOUS MONITOR INFORMATION

3,000 SCFM OPEN FLARE (EU 009)

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code: N/A	2. Pollutant(s):
3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: <input type="checkbox"/> Rule <input type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

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**J. EMISSIONS UNIT ADDITIONAL INFORMATION
3,000 SCFM OPEN FLARE (EU 009)**

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Appendix B <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Appendix H <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: Executive Summary <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/22/2011</u> <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/1/2010</u> <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

3,000 SCFM OPEN FLARE (EU 010)

EMISSIONS UNIT INFORMATION

Section [4] of [5]

**A. GENERAL EMISSIONS UNIT INFORMATION
3,000 SCFM OPEN FLARE (EU 010)**

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
3,000 scfm open flare

3. Emissions Unit Identification Number: **008**

4. Emissions Unit Status Code: a	5. Commence Construction Date: 9/2010 to 1/2011	6. Initial Startup Date: 3/23/11	7. Emissions Unit Major Group SIC Code: 49
---	---	--	---

8. Federal Program Applicability: (Check all that apply)

Acid Rain Unit

CAIR Unit

9. Package Unit:
Manufacturer: **LFG Specialties, LLC** Model Number:

10. Generator Nameplate Rating:

11. Emissions Unit Comment:

Approximately 75% of the generated landfill gas is delivered to the flare for combustion per AP-42 Section 2.4.

EMISSIONS UNIT INFORMATION

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3,000 SCFM OPEN FLARE (EU 010)

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description: Open flare with a maximum flow of 3,000 scfm
2. Control Device or Method Code: 023

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:
2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

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B. EMISSIONS UNIT CAPACITY INFORMATION

3,000 SCFM OPEN FLARE (EU 010)

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 3,000 scfm
2. Maximum Production Rate: N/A
3. Maximum Heat Input Rate: 91 MMBtu/hr 505 BTU/ft³ LFG
4. Maximum Incineration Rate: pounds/hr N/A tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

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C. EMISSION POINT (STACK/VENT) INFORMATION

3,000 SCFM OPEN FLARE (EU 010)

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: Open Flare Station		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: 3,000 scfm open flare			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: P	6. Stack Height: 42 feet	7. Exit Diameter: 1 foot	
8. Exit Temperature: 800-900 °F	9. Actual Volumetric Flow Rate: 3,000 scfm	10. Water Vapor: 0%	
11. Maximum Dry Standard Flow Rate: 3,000 scfm		12. Nonstack Emission Point Height:	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: *The landfill gas combustion temperature occurring after the tip of the flare tip is approximately 1,400 °F. Based on vendor supplied information.			

EMISSIONS UNIT INFORMATION

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**D. SEGMENT (PROCESS/FUEL) INFORMATION
3,000 SCFM OPEN FLARE (EU 010)**

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Landfill gas combusted in the 3,000 scfm open flare		
2. Source Classification Code (SCC): 5-03-006-01		3. SCC Units: Million cubic feet landfill gas burned
4. Maximum Hourly Rate: 0.18	5. Maximum Annual Rate: 1,576.8	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 505
10. Segment Comment:		

Segment Description and Rate: Segment of

1. Segment Description (Process/Fuel Type): N/A		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

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**E. EMISSIONS UNIT POLLUTANTS
3,000 SCFM OPEN FLARE (EU 010)**

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NO _x	023	N/A	NS
VOC	023	N/A	NS
HAP	023	N/A	NS
NMOC	023	N/A	NS
CO	023	N/A	NS
SO _x	023	N/A	NS
PM/PM-10/PM-2.5	023	N/A	NS
HCl	023	N/A	NS
CO ₂ (e)	023	N/A	NS

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 010)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NO_x		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 6.2 lb/hour 27.1 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.068 lb/MMBtu Reference: Flare Manufacturer's Guarantee		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 010)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.16 lb/hour 0.001 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 99.2% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**3,000 SCFM OPEN FLARE (EU 010)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HAPs		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 0.84 lb/hour 3.70 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 98% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2. Total HAPs include HAPs + HCl			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**3,000 SCFM OPEN FLARE (EU 010)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NMOC		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 0.41 lb/hour 0.002 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 99.2% destruction efficiency Reference: AP-42, Section 2.4		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 010)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 33.6 lb/hour 147.31 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.37 lb/MMBtu Reference: Flare Manufacturer's Guarantee		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

**3,000 SCFM OPEN FLARE (EU 010)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 6.6 lb/hour 28.8 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 210 ppmv Reference: Condition 7 of 0930104-18-AC (PSD FL-382A)		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 010)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM / PM-10 / PM-2.5		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1.5 lb/hour 6.7 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 17 lb/106 ft ³ CH ₄ Reference: AP-42, Section 2.4, Table 2.4-5		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

3,000 SCFM OPEN FLARE (EU 010)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: HCl		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.75 lb/hour 3.3 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 42 ppmv Reference: AP-42, Section 2.4, Page 9		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2. Also accounted in the HAPs calculations.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
3,000 SCFM OPEN FLARE (EU 010)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Anthropogenic CO₂e		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 52.6 lb/hour 230.4 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: See Appendix G Reference: 40 CFR 98, Table C-2		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): N/A tons/year		8.b. Baseline 24-month Period: N/A From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: N/A <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-2.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

Section [4] of [5]

G. VISIBLE EMISSIONS INFORMATION

3,000 SCFM OPEN FLARE (EU 010)

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: 5 minutes of visible emissions within 2 hour EPA Method 22 test Normal Conditions: _____ Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: 5 minutes in 2-hour test	
4. Method of Compliance: 40 CFR 60.18	
5. Visible Emissions Comment: Per 40 CFR 60.18, the open flare is allowed to have no visible emissions lasting more than 5 minutes during the 2 hour EPA Method 22 Visual Emissions Test.	

Visible Emissions Limitation: Visible Emissions Limitation __ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: _____ % Exceptional Conditions: _____ % Maximum Period of Excess Opacity Allowed: _____ min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

Section [4] of [5]

H. CONTINUOUS MONITOR INFORMATION

3,000 SCFM OPEN FLARE (EU 010)

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code: N/A	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [4] of [5]

**I. EMISSIONS UNIT ADDITIONAL INFORMATION
3,000 SCFM OPEN FLARE (EU 010)**

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix B</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix H</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Executive Summary</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/22/2011</u> <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>9/1/2010</u> <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

PORTABLE CONCRETE CRUSHER (EU 016)

EMISSIONS UNIT INFORMATION

Section [5] of [5]

**A. GENERAL EMISSIONS UNIT INFORMATION
PORTABLE CONCRETE CRUSHER (EU 016)**

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

- The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
- The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

- This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
- This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
- This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:

Portable Concrete Crusher by Vendor

3. Emissions Unit Identification Number: **016**

4. Emissions Unit Status Code:
A – VENDOR

5. Commence Construction Date:

6. Initial Startup Date:

7. Emissions Unit Major Group SIC Code: **49**

8. Federal Program Applicability: (Check all that apply)

- Acid Rain Unit
- CAIR Unit

9. Package Unit:

Manufacturer: **TBD as supplied by Vendor** Model Number:

10. Generator Nameplate Rating: **375 HP**

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION

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PORTABLE CONCRETE CRUSHER (EU 016)

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:

2. Control Device or Method Code: 023

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ___ of ___

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

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B. EMISSIONS UNIT CAPACITY INFORMATION

PORTABLE CONCRETE CRUSHER (EU 016)

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: 375 HP
2. Maximum Production Rate: N/A
3. Maximum Heat Input Rate: N/A
4. Maximum Incineration Rate: pounds/hr N/A tons/day
5. Requested Maximum Operating Schedule: hours/day days/week weeks/year 1,000 hours/year
6. Operating Capacity/Schedule Comment:

EMISSIONS UNIT INFORMATION

Section [5] of [5]

C. EMISSION POINT (STACK/VENT) INFORMATION

PORTABLE CONCRETE CRUSHER (EU 016)

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: Portable Concrete Crusher		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Exhaust Stack			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: P	6. Stack Height:		7. Exit Diameter:
8. Exit Temperature:	9. Actual Volumetric Flow Rate:		10. Water Vapor:
11. Maximum Dry Standard Flow Rate:		12. Nonstack Emission Point Height:	
13. Emission Point UTM Coordinates... Zone: Varies East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Varies Longitude (DD/MM/SS)	
15. Emission Point Comment: Equipment used for concrete crushing process based on vendor delivery to facility.			

EMISSIONS UNIT INFORMATION

Section [5] of [5]

**D. SEGMENT (PROCESS/FUEL) INFORMATION
PORTABLE CONCRETE CRUSHER (EU 016)**

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Portable Concrete Crusher – Powered by 375 HP engine		
2. Source Classification Code (SCC): 3-05-0200-3		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

Segment Description and Rate: Segment of

1. Segment Description (Process/Fuel Type): N/A		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

EMISSIONS UNIT INFORMATION

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**E. EMISSIONS UNIT POLLUTANTS
PORTABLE CONCRETE CRUSHER (EU 016)**

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NO_x	N/A	N/A	NS
VOC	N/A	N/A	NS
CO	N/A	N/A	NS
SO_x	N/A	N/A	NS
PM/PM-10/PM-2.5	N/A	N/A	NS

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

PORTABLE CONCRETE CRUSHER (EU 016)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NO_x		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 11.6 lb/hour 5.8 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.31 lb/hp-hr Reference: AP-42 Chapter 3.3, Table 3.3-1		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-3.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

PORTABLE CONCRETE CRUSHER (EU 016)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.9 lb/hour 0.5 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.00247 lb/hp-hr (exhaust) 0.0000441 lb/hp-hr (crankcase)		7. Emissions Method Code: 3	
Reference: AP-42 Chapter 3.3, Table 3.3-1			
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-3.			
11. Potential, Fugitive, and Actual Emissions Comment:			

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
PORTABLE CONCRETE CRUSHER (EU 016)
(Optional for unregulated emissions units.)**

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 2.5 lb/hour 1.3 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.00668 lb/hp-hr Reference: AP-42 Chapter 3.3, Table 3.3-1		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-3.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

PORTABLE CONCRETE CRUSHER (EU 016)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SOx		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 0.8 lb/hour 0.4 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.00205 lb/hp-hr Reference: AP-42 Chapter 3.3, Table 3.3-1		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-3.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –

POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

PORTABLE CONCRETE CRUSHER (EU 016)

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control: N/A	
3. Potential Emissions: 1.7 lb/hour 0.8 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.0022 lb/hr-hr (engine) 0.0024 lb/ton (crushing) 0.0087 lb/ton (screening) Reference: AP-42 Chapter 3.3, Table 3.3-1 (engine) AP-42 Chapter 11.19.2 (crushing/screening)		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: See Appendix G-3.			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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**H. CONTINUOUS MONITOR INFORMATION
PORTABLE CONCRETE CRUSHER (EU 016)**

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code: N/A	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

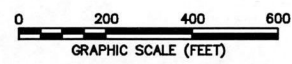
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**I. EMISSIONS UNIT ADDITIONAL INFORMATION
PORTABLE CONCRETE CRUSHER (EU 016)**

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Appendix B</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Executive Summary</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: <u>N/A</u> <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

APPENDIX A
PLOT PLAN



LEGEND	
	10-FOOT CONTOUR LINE
	CELL BOUNDARY
	CELL DESIGNATION

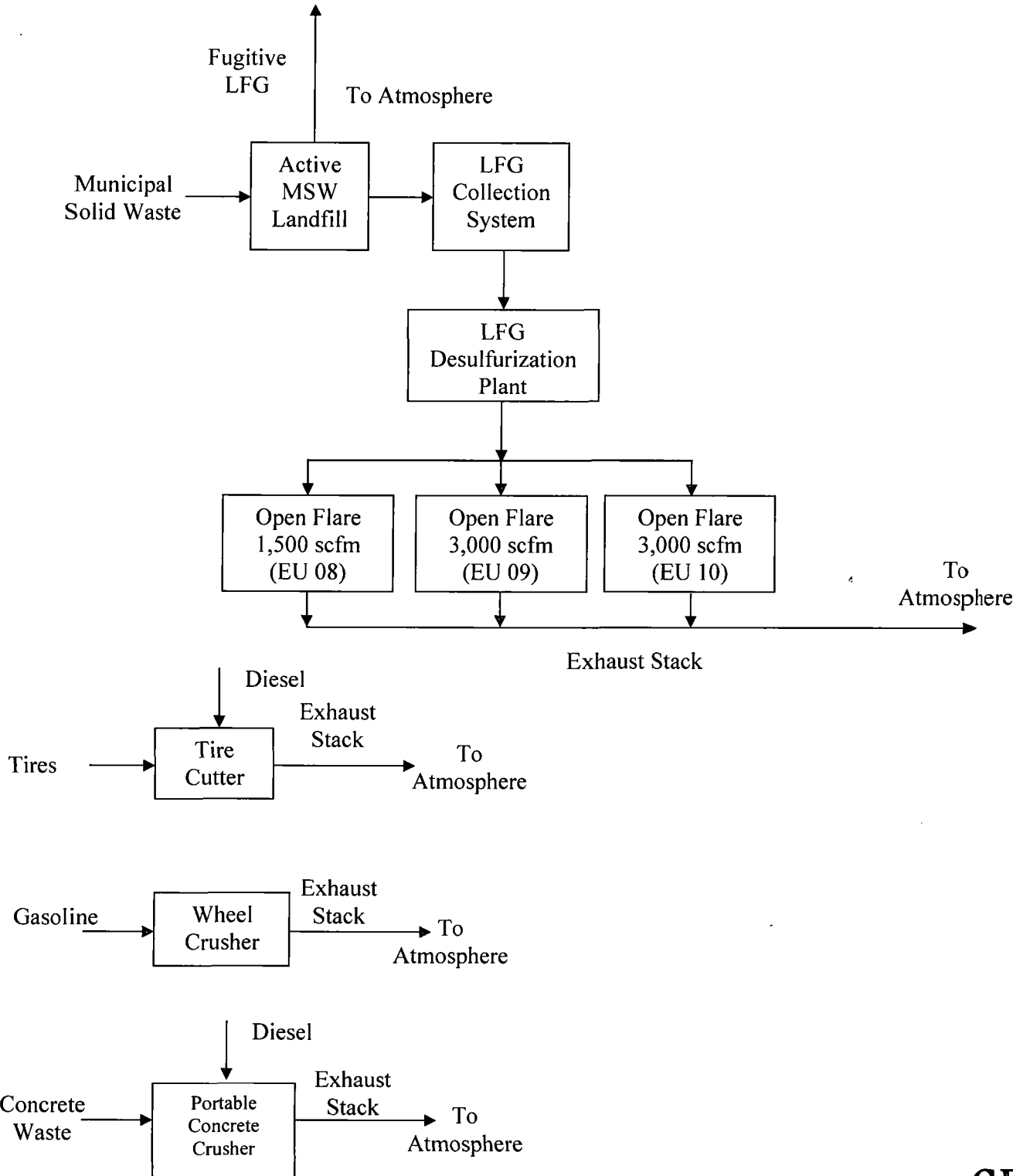
NOTES:
 1. TOPOGRAPHIC CONTOURS TAKEN FROM AERIAL SURVEY DATED JANUARY 20, 2012 BY PICKETT AND ASSOCIATES, INC.

DRAWING TITLE:	SITE PLAN	
PROJECT:	TITLE V APPLICATION RENEWAL	
SITE:	OKEECHOBEE LANDFILL, INC. BERMAN ROAD LANDFILL OKEECHOBEE, FLORIDA	
CARLSON ENVIRONMENTAL CONSULTANTS, PC		
<small>305 SOUTH MAIN STREET MONROE, NORTH CAROLINA 28112 FLORIDA COA# 27045 (704) 283-9765 FAX (704) 283-9755</small>		
CEC PROJECT NO. 101.01.22	DWG. 1-OLI.LFG.SITE	REV. 0
SCALE 1" = 200'	SHEET 1 OF 1	
DATE OCTOBER 2012		

APPENDIX B

FLOW CHART

APPENDIX B FLOW CHART



APPENDIX C

PRECAUTIONS TO PREVENT EMISSION OF UNCONFINED PARTICULATE MATTER

APPENDIX C
Precautions to Prevent Emission Of Unconfined Particulate Matter

Okeechobee Landfill – Okeechobee, Florida
Title V Permit No. 0930104-016-AV

The facility routinely takes steps to prevent the emission of uncontrolled particulate matter to the atmosphere. The steps are outlined below. It should be noted that the steps and procedures listed might be augmented from time to time. The weather patterns of the Okeechobee area also contribute to dust control due to the large amounts of rainfall during the year.

- Waste is placed in lifts in the landfill in a manner to prevent windblown litter and dust. The working face is kept as small as practicable to further reduce windblown dust and litter.
- Portable fences are used around and near the working face to keep windblown litter in the work area.
- Waste is covered daily to prevent windblown litter after operation hours.
- Paved Roads: During hours of operation, the frequency of vehicle traffic may warrant dust control measures. Roadway sweeping will be performed as needed, especially in the portions of the year with less rainfall. Roadway washing will take place as needed to prevent carry out of dirt and mud onto adjoining roadways.
- Unpaved Roads: Roadways in the active areas of the landfill will be graded and compacted to allow safe passage of vehicles and to prevent carry out of dirt and mud. Dust control will be managed using a water truck.
- Roads General: The type and frequency of the dust control operations will vary according to weather conditions. Maintenance of the paved and unpaved roads will be performed from time to time as needed.

APPENDIX D
INSIGNIFICANT ACTIVITIES

APPENDIX D
LIST OF INSIGNIFICANT EMISSION UNITS AND/OR ACTIVITIES

The Okeechobee Landfill has several sources that are insignificant by category or by having associated pollutant emissions less than 5 tons per year. This information is summarized below and is being provided for incorporation into the Landfill's Title V Permit.

Emission Unit Description	Citation	Pollutant(s) Emitted
Stationary Storage Tanks (used oil, anti-freeze, differential hydraulic fluid, hydraulic fluid, transmission fluid, diesel fuel, unleaded gasoline)	Rule 62-213.430 (6), F.A.C.	VOC
Mulching Operations (Wood Waste Grinder LIMITED TO 250 Hr/Yr)	Rule 62-213.430 (6), F.A.C.	PM
Aggregate Handling and Storage Piles (fugitive particulate matter emissions-multiple sources)	Rule 62-213.430 (6), F.A.C.	PM
Onsite Diesel Engines (portable backup electric generators, gas-powered light system, gas/diesel powered water pumps, mowing operations)	Rule 62-213.430 (6), F.A.C.	VOC, NO _x , SO _x , PM, CO
Onsite Kerosene/Propane Heaters	Rule 62-213.430 (6), F.A.C.	VOC, NO _x , PM, CO
Parts Cleaning/Solvent Degreasing (maintenance shop)	Rule 62-213.430 (6), F.A.C.	VOC, NO _x , SO _x , PM, CO
Mining Activities (power screener)	Rule 62-213.430 (6), F.A.C.	VOC, NO _x , SO _x , PM, CO
Painting Activities	Rule 62-213.430 (6), F.A.C.	VOC
Solidification Operation <i>See Correspondence in Appendix I</i>	Rule 62-213.430 (6), F.A.C.	PM
Compost System <i>See Correspondence in Appendix I</i>	Rule 62-213.430 (6), F.A.C.	VOC
Tire Cutter	Rule 62-213.430 (6), F.A.C.	VOC, NO _x , SO _x , PM, CO
Wheel Crusher	Rule 62-213.430 (6), F.A.C.	VOC, NO _x , SO _x , PM, CO

APPENDIX E
REGULATORY APPLICABILITY SUMMARY
AND
TITLE V CORE LIST

APPENDIX E - Title V Core List

Effective: 03/01/02

- 1) 40 CFR 60, Subpart A – *Standards of Performance for New Stationary Sources-General Provisions*
The facility is considered to be a new stationary source under 40 CFR 60 Subpart A and is subject to the applicable conditions listed under Section 60.1 through 60.18.
- 2) 40 CFR 60 Subpart WWW - *Standards of Performance for Municipal Solid Waste Landfills*
The Okeechobee Landfill is subject to the NSPS as listed under 40 CFR 60 Subpart WWW in applicable Sections 60.750 through Section 60.759.
- 3) 40 CFR 60 Subpart IIII - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*
The Okeechobee Landfill has two installed generators that are subject to 40 CFR 60 Subpart IIII. See Table 5, located in Appendix G-3.
- 4) 40 CFR 61, Subpart M – *National Emission Standards for Asbestos*
The facility is permitted to accept asbestos material, therefore 40 CFR 61 Subpart M is applicable under Sections 61.149, 61.150, 61.154, 61.156, and 61.157.
- 5) 40 CFR 63, Subpart A – *National Emission Standards for Hazardous Air Pollutants for Source Categories-General Provisions*
The Okeechobee Landfill (EU001), and three open flares (EU008, EU009, and EU010) have the potential to emit HAPs, therefore the facility is subject to 40 CFR 63, Subpart A. The applicable provisions are in Sections 63.1 through 63.16.
- 6) 40 CFR 63, Subpart AAAA – *National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills*
The Okeechobee Landfill (EU001), and three open flares (EU008, EU009, and EU010) have the potential to emit HAPs and the facility meets the applicable requirements; therefore, the facility is subject to 40 CFR 63, Subpart AAAA as listed in Sections 63.1930 through 63.1990.
- 7) 40 CFR 63 Subpart ZZZZ - *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*
The Okeechobee Landfill has several installed generators that are subject to 40 CFR 63 Subpart ZZZZ. See Table 5, located in Appendix G-3.
- 8) 40 CFR 68 – *Chemical Accident Prevention Provisions*
The Okeechobee Landfill will submit a Risk Management Plan to the Chemical Emergency Preparedness Office Risk Management Plan Reporting Center when, and if, such requirement becomes applicable. The Okeechobee Landfill will also submit Title V Certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C (as applicable).
- 9) The Landfill also recognizes the applicable State regulations listed in the FDEP Title V Core List (shown on following page).

APPENDIX E - Title V Core List

Effective: 03/01/02

[**Note:** The Title V Core List is meant to simplify the completion of the "List of Applicable Regulations" for DEP Form No. 62-210.900(1), Application for Air Permit - Long Form. The Title V Core List is a list of rules to which all Title V Sources are presumptively subject. The Title V Core List may be referenced in its entirety, or with specific exceptions. The Department may periodically update the Title V Core List.]

Federal: (description)

40 CFR 61, Subpart M: NESHAP for Asbestos.

The facility is permitted to accept asbestos material, therefore this regulation is applicable.

40 CFR 82: Protection of Stratospheric Ozone.

The facility has the potential to emit air pollutants which may contribute to Stratospheric Ozone, therefore this regulation is applicable.

40 CFR 82, Subpart B: Servicing of Motor Vehicle Air Conditioners (MVAC).

There is a maintenance shop on-site at the facility where repairs and routine upkeep of machinery and equipment with air conditioning units takes place, therefore this regulation is potentially applicable.

40 CFR 82, Subpart F: Recycling and Emissions Reduction.

The Landfill will comply with these requirements as applicable.

State: (description)

CHAPTER 62-4, F.A.C.: PERMITS, effective 06-01-01

62-4.030, F.A.C.: General Prohibition.

The facility has the potential to produce air pollutant emissions and is therefore subject to this regulation. The facility may only be operated, maintained, constructed, expanded or modified in a manner that is consistent with the terms of its permit.

62-4.040, F.A.C.: Exemptions.

The facility is not exempted from the permit requirements of this chapter, therefore this regulation is applicable.

62-4.050, F.A.C.: Procedure to Obtain Permits; Application.

The facility intends to comply with appropriate permitting procedure(s).

APPENDIX E - Title V Core List

Effective: 03/01/02

62-4.060, F.A.C.: Consultation.

Facility representatives have, and intend to continue to consult with FDEP personnel during the permit application process, as applicable.

62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.

This is an informational regulation which is potentially applicable to the facility.

62-4.080, F.A.C.: Modification of Permit Conditions.

This is an informational regulation which is potentially applicable to the facility.

62-4.090, F.A.C.: Renewals.

62-4.100, F.A.C.: Suspension and Revocation.

62-4.110, F.A.C.: Financial Responsibility.

62-4.120, F.A.C.: Transfer of Permits.

62-4.130, F.A.C.: Plant Operation - Problems.

62-4.150, F.A.C.: Review.

62-4.160, F.A.C.: Permit Conditions.

62-4.210, F.A.C.: Construction Permits.

62-4.220, F.A.C.: Operation Permit for New Sources.

CHAPTER 62-210, F.A.C.: STATIONARY SOURCES - GENERAL REQUIREMENTS, effective 06-21-01

62-210.300, F.A.C.: Permits Required.

62-210.300(1), F.A.C.: Air Construction Permits.

62-210.300(2), F.A.C.: Air Operation Permits.

62-210.300(3), F.A.C.: Exemptions.

62-210.300(5), F.A.C.: Notification of Startup.

62-210.300(6), F.A.C.: Emissions Unit Reclassification.

62-210.300(7), F.A.C.: Transfer of Air Permits.

APPENDIX E - Title V Core List

Effective: 03/01/02

62-210.350, F.A.C.: Public Notice and Comment.
62-210.350(1), F.A.C.: Public Notice of Proposed Agency Action.
62-210.350(2), F.A.C.: Additional Public Notice Requirements for Emissions Units Subject to Prevention of Significant Deterioration or Nonattainment-Area Preconstruction Review.
62-210.350(3), F.A.C.: Additional Public Notice Requirements for Sources Subject to Operation Permits for Title V Sources.

62-210.360, F.A.C.: Administrative Permit Corrections.
62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.
62-210.400, F.A.C.: Emission Estimates.
62-210.650, F.A.C.: Circumvention.
62-210.700, F.A.C.: Excess Emissions.

62-210.900, F.A.C.: Forms and Instructions.
62-210.900(1), F.A.C.: Application for Air Permit – Title V Source, Form and Instructions.
62-210.900(5), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility, Form and Instructions.
62-210.900(7), F.A.C.: Application for Transfer of Air Permit – Title V and Non-Title V Source.

CHAPTER 62-212, F.A.C.: STATIONARY SOURCES - PRECONSTRUCTION REVIEW, effective 08-17-00

CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION, effective 04-16-01

62-213.205, F.A.C.: Annual Emissions Fee.
62-213.400, F.A.C.: Permits and Permit Revisions Required.
62-213.410, F.A.C.: Changes Without Permit Revision.
62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
62-213.415, F.A.C.: Trading of Emissions Within a Source.
62-213.420, F.A.C.: Permit Applications.
62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
62-213.440, F.A.C.: Permit Content.
62-213.450, F.A.C.: Permit Review by EPA and Affected States
62-213.460, F.A.C.: Permit Shield.

62-213.900, F.A.C.: Forms and Instructions.
62-213.900(1), F.A.C.: Major Air Pollution Source Annual Emissions Fee Form.
62-213.900(7), F.A.C.: Statement of Compliance Form.

APPENDIX E - Title V Core List

Effective: 03/01/02

CHAPTER 62-296, F.A.C.: STATIONARY SOURCES - EMISSION STANDARDS, effective 03-02-99

62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.

62-296.320(2), F.A.C.: Objectionable Odor Prohibited.

CHAPTER 62-297, F.A.C.: STATIONARY SOURCES - EMISSIONS MONITORING, effective 03-02-99

62-297.310, F.A.C.: General Test Requirements.

62-297.330, F.A.C.: Applicable Test Procedures.

62-297.340, F.A.C.: Frequency of Compliance Tests.

62-297.345, F.A.C.: Stack Sampling Facilities Provided by the Owner of an Emissions Unit.

62-297.350, F.A.C.: Determination of Process Variables.

62-297.570, F.A.C.: Test Report.

62-297.620, F.A.C.: Exceptions and Approval of Alternate Procedures and Requirements.

Miscellaneous:

CHAPTER 28-106, F.A.C.: Decisions Determining Substantial Interests

CHAPTER 62-110, F.A.C.: Exception to the Uniform Rules of Procedure, effective
07-01-98

CHAPTER 62-256, F.A.C.: Open Burning and Frost Protection Fires, effective 11-30-94

CHAPTER 62-257, F.A.C.: Asbestos Notification and Fee, effective 02-09-99

CHAPTER 62-281, F.A.C.: Motor Vehicle Air Conditioning Refrigerant Recovery and
Recycling, effective 09-10-96

APPENDIX F
COMPLIANCE PLAN

APPENDIX F
Compliance Plan

Okeechobee Landfill – Okeechobee, Florida
Title V Permit No. 0930104-016-AV

Based on information provided by Okeechobee Landfill, Inc, there are no air emission units out of compliance. Therefore, a Compliance Plan is not required.

APPENDIX G
EMISSION CALCULATIONS

APPENDIX G-1

FUGITIVE EMISSION CALCULATIONS

**APPENDIX G-1: FUGITIVES
TABLE 3. FUGITIVE NMOC/VOC EMISSIONS
OKEECHOBEE LANDFILL, INC.**

CLIENT Okeechobee Landfill, Inc	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22	
SUBJECT FUGITIVE NMOC/VOC EMISSIONS		BY Lindsey Kennelly	DATE 10/25/2012
		CHECKED	DATE

OBJECTIVE: Calculate the fugitive emissions from the MSW landfill.

(1) Fugitive NMOC Emissions

Use emission factors obtained from AP-42, Section 2.4, Municipal Solid Waste Landfills to determine fugitive NMOC emissions

- Use the NMOC content from AP-42, 2.4.4

$$C_{\text{NMOC}} = 595 \text{ ppmv as hexane}$$

$$MW_{\text{NMOC}} = 86.18 \text{ g/gmol}$$

$$\text{Temperature of LFG} = 37.8 \text{ C} = 100 \text{ F}$$

- Use Equations (3) and (4) of AP-42, Section 2.4 to determine NMOC emissions.

- Use conservative ESTIMATED flow during the permitting period:

	LFG Generated (scfm)	Collection Efficiency (%)	Fugitive LFG (scfm)
2013 Q =	3,659	75%	915
2014 Q =	3,617	75%	904
2015 Q =	3,578	75%	894
2016 Q =	3,540	75%	885
2017 Q =	3,503	75%	876
2018 Q =	3,468	75%	867
			$Q_{\text{max-fugitive}} = 915 \text{ scfm}$

$$\text{Eqn (3)} \quad Q_{\text{NMOC}} \approx (Q_{\text{max-fugitive}} \text{ ft}^3/\text{min} * \text{m}^3/35.315\text{ft}^3) * (C_{\text{NMOC}} \text{ ppmv}/1\text{E}+06) (525,600 \text{ min/yr}) = \mathbf{8,100.1 \text{ m}^3/\text{yr}}$$

$$\text{Eqn (4)} \quad UM_{\text{NMOC}} = (Q_{\text{NMOC}} \text{ m}^3/\text{yr}) * [(86.18 \text{ g/gmol} * 1 \text{ atm}) / (8.205\text{E}-5 \text{ m}^3 \text{ atm/gmol K} * 1,000 \text{ g/kg} * (273 + T) \text{ K})] = \mathbf{27,374.0 \text{ kg/yr}}$$

$$UM_{\text{NMOC}} = UM_{\text{NMOC}} \text{ kg/yr} * (2.2 \text{ lb/kg}) * (\text{yr}/365 \text{ days}) = \mathbf{165.0 \text{ lb/day NMOC}}$$

$$UM_{\text{NMOC}} = (UM_{\text{NMOC}} \text{ lb/day}) * (\text{ton}/2000 \text{ lb}) * (365 \text{ days/yr}) = \mathbf{30.1 \text{ tons/yr NMOC}}$$

(2) VOC Emissions

- Per Note c of AP-42, Table 2.4-2, VOC emissions are 39% of NMOC emissions.

$$CM_{\text{VOC}} = CM_{\text{NMOC}} \text{ lbs/day} * 0.39 = \mathbf{64.3 \text{ lb/day VOC}}$$

$$CM_{\text{VOC}} = (CM_{\text{NMOC}} \text{ tons/yr}) * 0.39 = \mathbf{11.7 \text{ tons/yr VOC}}$$

**APPENDIX G-1: FUGITIVES
TABLE 4. FUGITIVE HAP EMISSIONS
OKEECHOBEE LANDFILL, INC.**

CLIENT Okeechobee Landfill, Inc	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22
SUBJECT FUGITIVE HAP EMISSIONS		BY Lindsey Kennelly
		DATE 10/25/2012
		CHECKED
		DATE

$$Q_{\text{max-fugitive}} = 915 \text{ scfm}$$

$$Q_{\text{max-fugitive}} = 13,613,780.5 \text{ m}^3/\text{yr} = (Q \text{ ft}^3/\text{min} * 525,600 \text{ min}/\text{yr})$$

$$(35.314667 \text{ ft}^3/\text{m}^3)$$

LFG Temperature (T)= 37.78 deg C = 100 deg F

Pollutant	Molecular		FUGITIVE EMISSIONS		
	Weight (g/gmol)	Conc. (C _p) (ppmv)	Q _p (m ³ /yr)	Mass Flow of Pollutant (M _p) (kg/yr)	(tpy)
methyl chloroform	133.41	0.48	6.53	34.19	0.04
1,1,2,2-tetrachloroethane	167.85	1.11	15.11	99.47	0.11
ethylidene dichloride	98.97	2.35	31.99	124.17	0.14
vinylidene chloride	96.94	0.20	2.72	10.35	0.01
ethylene dichloride	98.96	0.41	5.58	21.66	0.02
propylene dichloride	112.99	0.18	2.45	10.86	0.01
acrylonitrile	53.06	6.33	86.18	179.32	0.20
carbon disulfide	76.13	0.58	7.90	23.57	0.03
carbon tetrachloride	153.84	0.004	0.05	0.33	0.00
carbonyl sulfide	60.07	0.49	6.67	15.71	0.02
chlorobenzene	112.56	0.25	3.40	15.02	0.02
ethyl chloride	64.52	1.25	17.02	43.06	0.05
chloroform	119.39	0.03	0.41	1.91	0.00
1,4-dichlorobenzene	147.00	0.21	2.86	16.48	0.02
methylene chloride	84.94	14.30	194.68	648.48	0.71
ethylbenzene	106.16	4.61	62.76	261.28	0.29
hexane	86.18	6.57	89.44	302.29	0.33
mercury	200.61	0.0003	0.00	0.03	0.00
methyl ethyl ketone	72.11	7.09	96.52	272.96	0.30
methyl isobutyl ketone	100.16	1.87	25.46	100.00	0.11
perchloroethylene	165.83	3.73	50.78	330.23	0.36
trichloroethylene	131.40	2.82	38.39	197.83	0.22
benzene	78.11	1.91	26.00	79.65	0.09
toluene	92.13	39.30	535.02	1933.05	2.13
vinyl chloride	62.50	7.34	99.93	244.92	0.27
xylenes	106.16	12.10	164.73	685.80	0.76
TOTAL HAPs				5652.64	6.23

$$\text{HAPS lb/day} = (\text{HAPS tpy} \times 2000 \text{ lb}) / 365 = \boxed{34.15}$$

$$\boxed{1.42}$$

lb/day
lb/hr

Notes:

1. Q_p = Volumetric emission rate of pollutant. AP-42 Section 2.4 equation (3).

$$Q_p = (Q_{\text{enc}}) * (10^{-6} C_p)$$

$$Q_{\text{enc}} = \text{LFG process rate at flare (m}^3/\text{yr)}$$

C_p = Concentration of pollutant

2. M_p = Mass generation of pollutant

$$M_p = \frac{(Q_p * MW_p * x \text{ atm})}{[(8.205 \times 10^{-5} \text{ m}^3 \cdot \text{atm} / \text{gmol} \cdot \text{K}) (1000 \text{ g} / \text{kg}) (273 + (T) \text{K})]}$$

3. The equations and all of the pollutant concentrations used to compute the estimated emissions are from AP-42 Section 2.4, as revised Nov. 1998.

APPENDIX G-1: FUGITIVES
TABLE 5. FUGITIVE SULFUR EMISSIONS
OKEECHOBEE LANDFILL, INC.

CLIENT Okeechobee Landfill, Inc	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22	
SUBJECT FUGITIVE SULFUR EMISSIONS		BY Lindsey Kennelly	DATE 10/25/2012
		CHECKED	DATE

OBJECTIVE: Calculate the fugitive sulfur emissions from the MSW landfill.

$$Q_{\text{max-fugitive}} = 914.7 \text{ scfm}$$

$$\text{LFG Temperature (T)} = 37.8 \text{ deg C} = 100 \text{ deg F}$$

$$\text{Destruction Efficiency (D)} = 98\%$$

(1) Sulfur Emissions

- Use Equations (8), (3), (4), & (7) from AP-42 Section 2.4 to determine SO₂ emissions.

The molecular weight of sulfur (S) = **32** g/gmol
 Site Specific Sulfur Concentration (Cs) = **2385** ppmv Monthly Sulfur Sampling

$$\text{Eqn (3) } Q_S = (Q \text{ ft}^3/\text{min}) * (365 \text{ day/year}) * (1440 \text{ min/day}) * (m^3/35.3198 \text{ ft}^3) (C_s / 1,000,000) = 32,459.9 \text{ m}^3/\text{yr S}$$

$$\text{Eqn (4) } UM_S = (Q_S) * [(S \text{ g/gmol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3\text{-atm/gmol-K} * 1,000 \text{ g/kg} * (273 + (T) \text{ K}))] = 40,732.2 \text{ kg S/yr}$$

$$UM_{SO_2a} = [(CM_{SO_2} \text{ kg/yr}) (2.2 \text{ lb/kg})] / (365 \text{ day/yr}) = \boxed{245.51} \text{ lb/day SO}_2$$

$$CM_{SO_2b} = (CM_{SO_2a} \text{ lb/day}) / (\text{ton}/2000 \text{ lb} (365 \text{ days/yr})) = \boxed{44.81} \text{ tons/yr SO}_2$$

$$CM_{SO_2} = (CM_{SO_2b} \text{ lb/day}) * (\text{day}/24 \text{ hrs}) = \boxed{10.23} \text{ lb/hr SO}_2$$

**APPENDIX G-1: FUGITIVES
TABLE 6. GHG EMISSIONS
OKEECHOBEE LANDFILL, INC.**

CLIENT Okeechobee Landfill, Inc	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22	
SUBJECT GHG EMISSIONS		BY Lindsey Kennelly	DATE 10/25/2012
		CHECKED	DATE

OBJECTIVE: Calculate the GHG from the MSW landfill.

Emission Factors

CO ₂ (S)	52.07	kg/MMBtu	40 CFR 98, Table C-2
CH ₄ (Z)	0.0032	kg/MMBtu	40 CFR 98, Table C-2
N ₂ O (N)	0.00063	kg/MMBtu	40 CFR 98, Table C-2

Q _{max-fugitive}	= 915	scfm (see LandGEM)
% CH ₄ (M)	50.0%	
Heat Content of CH ₄	1010	Btu/ft ³
Time (D)	365	day/year

- Since 1 ft³ of CH₄ produces 1010 Btu,

$$\text{LFG with (M) ft}^3 \text{ CH}_4/\text{ft}^3 \text{ LFG produces (X) = } \begin{array}{|c|} \hline 505 \\ \hline 28 \\ \hline \end{array} \begin{array}{l} \text{Btu/ft}^3 \text{ LFG} \\ \text{MMBtu/hr} \end{array}$$

- Biogenic CO₂ Emissions

$$CM_{CO_2} = 2[(X \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (Y \text{ kg/MMBtu}) (0.0011023 \text{ ton/kg})]$$

$$CM_{CO_2} (Y) = 27,870.4 \text{ tons/yr CH}_4$$

$$CO_2 \text{ Emission Rate (} CM_{CO_2} \text{)} = 27,870.4 \text{ tons/yr CO}_2 \text{ (BIOGENIC)}$$

- Anthropogenic CH₄ Emissions

$$CM_{CH_4} = (Z \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (Z \text{ kg/MMBtu}) (0.0011023 \text{ ton/kg})$$

$$CM_{CH_4} (Y) = 0.86 \text{ tons/yr CH}_4$$

$$\text{Global Warming Potential of CH}_4 (G) = 21 \text{ Source: 40 CFR 98, Table A-1}$$

$$CH_4 \text{ Emission Rate (} CM_{CH_4} \text{)} = (Y) * (G) = 18.0 \text{ tons/yr CO}_{2E-CH_4} \text{ (Anthropogenic)}$$

Potential-to-emit (PTE) GHG emissions have been included in this application, however, since the PTE method has not yet been defined, this application presents two different PTE calculation methods for GHG emissions: (1) life of site gas curve (i.e., expected actual emissions); and, (2) the capacity of the control device, see flare calculations.

At the time of the submission of this application, there are no additional federal regulatory requirements applicable to GHG emissions from the Landfill nor are GHG emissions covered under Title V Permit Program authority. Federal GHG Mandatory Reporting Rule requirements published at 40 CFR 98 were enacted under sections 114(a)(1) and 208 of the Clean Air Act and, as such, are not "applicable requirements" for inclusion in a Title V permit pursuant to 40 CFR 70.2 and 71.2 (see also, 74 FR 209, page 56,288).

Note that the Greenhouse Gas Reporting Rule does not belong in the Title V permit. This issue was discussed in the Preamble of the Rule in the October 30, 2009 Federal Register and is included in Appendix H. According to the Q&A in the Preamble, the EPA received several comments about whether or not the requirements imposed by the GHG Reporting Rule are applicable under the Title V operating permit program. According to the EPA, the definition of "applicable requirement" in 40 CFR 70.2 and 71.2 as currently written does not include the GHG reporting rule. Therefore, the GHG Reporting Rule does not belong in the Title V permit.

**APPENDIX G-1: FUGITIVES
TABLE 7a. PM EMISSIONS - VEHICLES
OKEECHOBEE LANDFILL, INC.**

CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.03.08
SUBJECT	PM EMISSIONS - VEHICLE INFORMATION PAVED AND UNPAVED ROADS	BY	Lindsey Kennelly	DATE	11/7/2012
		CHECKED		DATE	

VEHICLE INFORMATION - PAVED

Equipment	Quantity	Weight		No. Trips per Day	Length of PAVED Road (per round trip)		Vehicle Speed (miles/hr)	VMT - PAVED	
		(lb)	(tons)		(feet)	(miles)		(miles/day)	(miles/yr)
Dozer	1	80,000	40	845	0	0	2	0	0
Dozer	2	110,000	55	656	0	0	2	0	0
Compactor	2	130,000	65	440	0	0	1	0	0
Volvo A30 Articulated Dump Truck-Loaded	1	110,000	55	1	3,168	0.6	15	0.6	187
Volvo A30 Articulated Dump Truck-Empty	1	50,000	25	1	3,168	0.6	15	0.6	187
Volvo A40 Articulated Dump Truck-Loaded	1	150,000	75	1	3,168	0.6	15	0.6	187
Volvo A40 Articulated Dump Truck-Empty	1	66,000	33	1	3,168	0.6	15	0.6	187
Caterpillar 320 Track Hoe	1	80,000	40	1	0	0	1	0	0
Caterpillar 329 Track Hoe	1	80,000	40	1	0	0	1	0	0
Pick Up Trucks	5	7,000	4	25	5,280	1.0	15	25	7,800
Skid Loader for Compost Center	1	2,000	1	5	1,420	0.3	3	1.3	406
Fuel Truck	1	6,000	3	1	8,448	1.6	15	1.6	499
Maintenance Truck	2	4,000	2	1	9,504	1.8	15	1.8	562
Water Truck	1	6,000	3	5	10,560	2.0	10	10	3,120
Hauling Truck with Waste		14,000	7	164	4,224	0.8	15	131.2	40,934
Hauling Truck without Waste		80,000	40	164	4,224	0.8	15	131.2	40,934

VEHICLE INFORMATION - UNPAVED

Equipment	Quantity	Weight		No. Trips per Day	Length of UNPAVED Road (per round trip)		Vehicle Speed (miles/hr)	VMT - UNPAVED	
		(lb)	(tons)		(feet)	(miles)		(miles/day)	(miles/yr)
Dozer	1	80,000	40	845	100	0.02	2	16.055	5,009
Dozer	2	110,000	55	656	400	0.1	2	49.2	15,350
Compactor	2	130,000	65	440	300	0.1	1	25.08	7,825
Volvo A30 Articulated Dump Truck-Loaded	1	110,000	55	1	7,392	1.4	15	1.4	437
Volvo A30 Articulated Dump Truck-Empty	1	50,000	25	1	7,392	1.4	15	1.4	437
Volvo A40 Articulated Dump Truck-Loaded	1	150,000	75	1	7,392	1.4	15	1.4	437
Volvo A40 Articulated Dump Truck-Empty	1	66,000	33	1	7,392	1.4	15	1.4	437
Caterpillar 320 Track Hoe	1	80,000	40	1	2,640	0.5	1	0.5	156
Caterpillar 329 Track Hoe	1	80,000	40	1	2,640	0.5	1	0.5	156
Pick Up Trucks	5	7,000	4	25	10,560	2.0	15	50	15,600
Skid Loader for Compost Center	1	2,000	1	5	0	0	3	0	0
Fuel Truck	1	6,000	3	1	3,168	0.6	15	0.6	187
Maintenance Truck	2	4,000	2	1	2,112	0	15	0.4	125
Water Truck	1	6,000	3	5	10,560	2.0	10	10	3,120
Hauling Truck with Waste		14,000	7	164	1,056	0.2	15	32.8	10,234
Hauling Truck without Waste		80,000	40	164	1,056	0.2	15	32.8	10,234

**APPENDIX G-1: FUGITIVES
TABLE 7b. PM EMISSIONS - PAVED ROADS
OKEECHOBEE LANDFILL, INC.**

CLIENT Okeechobee Landfill, Inc	PROJECT Title V Operating Permit Renewal	JOB NO. 101.03.08
SUBJECT PM EMISSIONS - PAVED ROADS		BY Lindsey Kennelly
		CHECKED
		DATE 11/7/2012
		DATE

OBJECTIVE: Calculate the PM emissions from traffic on PAVED roads at the MSW landfill.

APPROACH - PAVED ROADS:

Use AP-42, Section 13.2.1 to calculate PM emissions from PAVED roads.

$$E = [k (sL)^{0.91} \times (W)^{1.02}] (1 - P/4N)$$

E = particulate emission factor (lb/VMT)

k = particle size multiplier = See Table 1

sL = road surface silt loading (g/m²) = 7.4 SOURCE: AP-42 Table 13.2.1-3

W = average weight of vehicles (tons)

P = no. of "wet" days in averaging period = 120 SOURCE: AP-42 Figure 13.2.1-2

N = no. of days in averaging period = 365

Table 1. Particle Size Multiplier (k)

Size Range	k (lb/VMT)	Source
PM _{2.5}	0.00054	AP-42 Table 13.2.1-1
PM ₁₀	0.0022	AP-42 Table 13.2.1-1

CALCULATE THE PM EMISSIONS FOR PAVED ROADS:

Equipment	Weight		E _{PM-2.5}	E _{PM-10}	VMT - PAVED (miles/yr)	PM-2.5		PM-10	
	(lbs)	(tons)				(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
Dozer	80,000	40	0.13	0.54	0.00	0.00	0.00	0.00	0.00
Dozer	110,000	55	0.18	0.74	0.00	0.00	0.00	0.00	0.00
Compactor	130,000	65	0.22	0.88	0.00	0.00	0.00	0.00	0.00
Volvo A30 Articulated Dump Truck-Loaded	110,000	55	0.18	0.74	187.20	34.17	0.02	139.20	0.07
Volvo A30 Articulated Dump Truck-Empty	50,000	25	0.08	0.33	187.20	15.29	0.01	62.28	0.03
Volvo A40 Articulated Dump Truck-Loaded	150,000	75	0.25	1.02	187.20	46.88	0.02	191.00	0.10
Volvo A40 Articulated Dump Truck-Empty	66,000	33	0.11	0.44	187.20	20.29	0.01	82.67	0.04
Caterpillar 320 Track Hoe	80,000	40	0.13	0.54	0.00	0.00	0.00	0.00	0.00
Caterpillar 329 Track Hoe	80,000	40	0.13	0.54	0.00	0.00	0.00	0.00	0.00
Pick Up Trucks	7,000	4	0.01	0.04	7,800.00	85.74	0.04	349.32	0.17
Skid Loader for Compost Center	2,000	1	0.00	0.01	405.60	1.24	0.00	5.06	0.00
Fuel Truck	6,000	3	0.01	0.04	499.20	4.69	0.00	19.10	0.01
Maintenance Truck	4,000	2	0.01	0.03	561.60	3.49	0.00	14.21	0.01
Water Truck	6,000	3	0.01	0.04	3,120.00	29.31	0.01	119.40	0.06
Hauling Truck with Waste	14,000	7	0.02	0.09	40,934.40	912.50	0.46	3,717.61	1.86
Hauling Truck without Waste	80,000	40	0.13	0.54	40,934.40	5,399.28	2.70	21,997.08	11.00

OLI sweeps and waters the paved roads to minimize fugitive dust emissions. Based upon guidance from AP-42, it is assumed that these controls reduce the fugitive dust emissions from the paved roads by 75%.

Reduction Factor = 75%

APPLY REDUCTION FACTOR:

Equipment	PAVED PM-2.5		PAVED PM-10	
	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
Dozer	0.00	0.00	0.00	0.00
Dozer	0.00	0.00	0.00	0.00
Compactor	0.00	0.00	0.00	0.00
Volvo A30 Articulated Dump Truck-Loaded	25.63	0.01	104.40	0.05
Volvo A30 Articulated Dump Truck-Empty	11.47	0.01	46.71	0.02
Volvo A40 Articulated Dump Truck-Loaded	35.16	0.02	143.25	0.07
Volvo A40 Articulated Dump Truck-Empty	15.22	0.01	62.01	0.03
Caterpillar 320 Track Hoe	0.00	0.00	0.00	0.00
Caterpillar 329 Track Hoe	0.00	0.00	0.00	0.00
Pick Up Trucks	64.31	0.03	261.99	0.13
Skid Loader for Compost Center	0.93	0.00	3.80	0.00
Fuel Truck	3.52	0.00	14.33	0.01
Maintenance Truck	2.62	0.00	10.66	0.01
Water Truck	21.98	0.01	89.55	0.04
Hauling Truck with Waste	684.38	0.34	2,788.21	1.39
Hauling Truck without Waste	4,049.46	2.02	16,497.81	8.25
TOTAL PM - PAVED EMISSIONS =	4,914.67	2.46	20,022.71	10.01

**APPENDIX G-1: FUGITIVES
TABLE 7c. PM EMISSIONS - UNPAVED ROADS
OKEECHOBEE LANDFILL, INC.**

CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.03.08
SUBJECT	PM EMISSIONS - UNPAVED ROADS			BY	Lindsey Kennelly
				CHECKED	DATE
					11/7/2012
					DATE

OBJECTIVE: Calculate the PM emissions from traffic on UNPAVED roads at the MSW landfill.

APPROACH - UNPAVED ROADS:

Use AP-42, Section 13.2.2 to calculate PM emissions from UNPAVED roads.

$$E = k (s/12)^a \times (W/3)^b \times [(365-p)/365]$$

E = annual size-specific emission factor extrapolated for natural mitigation

k, a, b, c and d = empirical constants = See Table 2

s = surface material silt content (%) = 6.4 SOURCE: AP-42 Table 13.2.2-1

W = average weight of vehicles (tons)

P = no. of "wet" days in averaging period 120 SOURCE: AP-42 Figure 13.2.2-1

Table 2. Constants

Constant	PM _{2.5}	PM ₁₀	Source
k (lb/VMT) =	0.15	1.5	AP-42, Table 13.2.2-2
a =	0.9	0.9	AP-42, Table 13.2.2-2
b =	0.45	0.45	AP-42, Table 13.2.2-2

CALCULATE THE PM EMISSION FACTOR FOR UNPAVED ROADS:

Equipment	Weight		E _{PM-2.5}	E _{PM-10}	VMT - UNPAVED (miles/yr)	PM-2.5		PM-10	
	(lb)	(tons)				(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
Dozer	80,000	40	0.18	1.83	5009.16	918.86	0.46	9188.63	4.59
Dozer	110,000	55	0.21	2.12	15350.40	3249.69	1.62	32496.88	16.25
Compactor	130,000	65	0.23	2.28	7824.96	1785.88	0.89	17858.78	8.93
Volvo A30 Articulated Dump Truck-Loaded	110,000	55	0.21	2.12	436.80	92.47	0.05	924.71	0.46
Volvo A30 Articulated Dump Truck-Empty	50,000	25	0.15	1.48	436.80	64.85	0.03	648.51	0.32
Volvo A40 Articulated Dump Truck-Loaded	150,000	75	0.24	2.43	436.80	106.32	0.05	1063.21	0.53
Volvo A40 Articulated Dump Truck-Empty	66,000	33	0.17	1.68	436.80	73.48	0.04	734.81	0.37
Caterpillar 320 Track Hoe	80,000	40	0.18	1.83	156.00	28.62	0.01	286.16	0.14
Caterpillar 329 Track Hoe	80,000	40	0.18	1.83	156.00	28.62	0.01	286.16	0.14
Pick Up Trucks	7,000	4	0.06	0.61	15600.00	956.12	0.48	9561.23	4.78
Skid Loader for Compost Center	2,000	1	0.03	0.35	0.00	0.00	0.00	0.00	0.00
Fuel Truck	6,000	3	0.06	0.57	187.20	10.70	0.01	107.05	0.05
Maintenance Truck	4,000	2	0.05	0.48	124.80	5.95	0.00	59.46	0.03
Water Truck	6,000	3	0.06	0.57	3120.00	178.41	0.09	1784.09	0.89
Hauling Truck with Waste	14,000	7	0.08	0.84	10233.60	856.80	0.43	8568.04	4.28
Hauling Truck without Waste	80,000	40	0.18	1.83	10233.60	1877.22	0.94	18772.16	9.39

OLI sweeps and waters the unpaved roads to minimize fugitive dust emissions. Based upon guidance from AP-42, it is assumed that these controls reduce the fugitive dust emissions from the unpaved roads by 75%.

Reduction Factor = 75%

APPLY REDUCTION FACTOR:

Equipment	UNPAVED PM-2.5		UNPAVED PM-10	
	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
Dozer	689.15	0.34	6,891.47	3.45
Dozer	2,437.27	1.22	24,372.66	12.19
Compactor	1,339.41	0.67	13,394.09	6.70
Volvo A30 Articulated Dump Truck-Loaded	69.35	0.03	693.53	0.35
Volvo A30 Articulated Dump Truck-Empty	48.64	0.02	486.38	0.24
Volvo A40 Articulated Dump Truck-Loaded	79.74	0.04	797.41	0.40
Volvo A40 Articulated Dump Truck-Empty	55.11	0.03	551.10	0.28
Caterpillar 320 Track Hoe	21.46	0.01	214.62	0.11
Caterpillar 329 Track Hoe	21.46	0.01	214.62	0.11
Pick Up Trucks	717.09	0.36	7,170.93	3.59
Skid Loader for Compost Center	0.00	0.00	0.00	0.00
Fuel Truck	8.03	0.00	80.28	0.04
Maintenance Truck	4.46	0.00	44.60	0.02
Water Truck	133.81	0.07	1,338.07	0.67
Hauling Truck with Waste	642.60	0.32	6,426.03	3.21
Hauling Truck without Waste	1,407.91	0.70	14,079.12	7.04
TOTAL PM - UNPAVED EMISSIONS =	7,675.49	3.84	76,754.91	38.38

APPENDIX G-1: FUGITIVES
TABLE 7d. PM EMISSIONS - UNPAVED ROADS
OKEECHOBEE LANDFILL, INC.

CLIENT Okeechobee Landfill, Inc	PROJECT Title V Operating Permit Renewal	JOB NO. 101.03.08
SUBJECT FUGITIVE PM EMISSIONS	BY Lindsey Kennelly	DATE 11/7/2012
	CHECKED	DATE

TOTAL PM_{2.5} EMISSIONS

Equipment	PAVED PM _{2.5}		UNPAVED PM _{2.5}	
	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
Dozer	0.00	0.00	689.15	0.34
Dozer	0.00	0.00	2,437.27	1.22
Compactor	0.00	0.00	1,339.41	0.67
Volvo A30 Articulated Dump Truck-Loaded	25.63	0.01	69.35	0.03
Volvo A30 Articulated Dump Truck-Empty	11.47	0.01	48.64	0.02
Volvo A40 Articulated Dump Truck-Loaded	35.16	0.02	79.74	0.04
Volvo A40 Articulated Dump Truck-Empty	15.22	0.01	55.11	0.03
Caterpillar 320 Track Hoe	0.00	0.00	21.46	0.01
Caterpillar 329 Track Hoe	0.00	0.00	21.46	0.01
Pick Up Trucks	64.31	0.03	717.09	0.36
Skid Loader for Compost Center	0.93	0.00	0.00	0.00
Fuel Truck	3.52	0.00	8.03	0.00
Maintenance Truck	2.62	0.00	4.46	0.00
Water Truck	21.98	0.01	133.81	0.07
Hauling Truck with Waste	684.38	0.34	642.60	0.32
Hauling Truck without Waste	4,049.46	2.02	1,407.91	0.70
TOTAL PM_{2.5} EMISSIONS =	4,914.67	2.46	7,675.49	3.84

TOTAL PAVED + UNPAVED PM_{2.5} = 12,590.2 lb/year = 1.4 lb/hr

TOTAL PAVED + UNPAVED PM_{2.5} = 6.3 ton/year

TOTAL PM₁₀ EMISSIONS

Equipment	PAVED PM ₁₀		UNPAVED PM ₁₀	
	(lb/yr)	(ton/yr)	(lb/yr)	(ton/yr)
Dozer	0.00	0.00	6,891.47	3.45
Dozer	0.00	0.00	24,372.66	12.19
Compactor	0.00	0.00	13,394.09	6.70
Volvo A30 Articulated Dump Truck-Loaded	104.40	0.05	693.53	0.35
Volvo A30 Articulated Dump Truck-Empty	46.71	0.02	486.38	0.24
Volvo A40 Articulated Dump Truck-Loaded	143.25	0.07	797.41	0.40
Volvo A40 Articulated Dump Truck-Empty	62.01	0.03	551.10	0.28
Caterpillar 320 Track Hoe	0.00	0.00	214.62	0.11
Caterpillar 329 Track Hoe	0.00	0.00	214.62	0.11
Pick Up Trucks	261.99	0.13	7,170.93	3.59
Skid Loader for Compost Center	3.80	0.00	0.00	0.00
Fuel Truck	14.33	0.01	80.28	0.04
Maintenance Truck	10.66	0.01	44.60	0.02
Water Truck	89.55	0.04	1,338.07	0.67
Hauling Truck with Waste	2,788.21	1.39	6,426.03	3.21
Hauling Truck without Waste	16,497.81	8.25	14,079.12	7.04
TOTAL PM₁₀ EMISSIONS =	20,022.71	10.01	76,754.91	38.38

TOTAL PAVED + UNPAVED PM₁₀ = 96,777.6 lb/year = 11.0 lb/hr

TOTAL PAVED + UNPAVED PM₁₀ = 48.4 ton/year

APPENDIX G-2

FLARE EMISSION CALCULATIONS

APPENDIX G-2: CONTROL DEVICE EMISSIONS
TABLE 1. EMISSION SUMMARY
OKEECHOBEE LANDFILL, INC.

CLIENT Okeechobee Landfill, Inc.	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22
SUBJECT EMISSION SUMMARY		BY Lindsey Kennelly
		DATE 10/11/2012
		CHECKED
		DATE

EMISSION UNIT NO.	DESCRIPTION	STATUS	EMISSIONS (tons/year)									
			NO _x	CO	PM10	SO _x	NMOC	VOC ¹	HCl	HAPs ²	HAPs + HCl	CO _{2e} ³
008	1,500 scfm open flare	Startup March 23, 2011	13.5	73.7	3.3	14.4	0.0012	0.0005	1.65	0.20	1.85	115.2
009	3,000 scfm open flare	Startup March 23, 2011	27.1	147.3	6.7	28.9	0.0025	0.0010	3.30	0.41	3.70	230.4
010	3,000 scfm open flare	Startup March 23, 2011	27.1	147.3	6.7	28.9	0.0025	0.0010	3.30	0.41	3.70	230.4
			67.7	368.3	16.7	72.2	0.01	0.002	8.2	1.0	9.3	576.0

- VOC emissions are based on the assumption that the VOC content of NMOC emissions is 100 percent.
- Total HAPs are conservatively estimated using those pollutants present in both the HAPs, Section 112 of the Clean Air Act and AP-42 Table 2.4-1 (revised 11/98).
- The EPA has deferred biogenic GHG emissions from biomass facilities for three (3) years, therefore CO_{2e} emissions (CO₂ and CH₄) from the Landfill are not included in the total maximum potential CO_{2e} emissions from the facility. See Executive Summary for additional information.

**APPENDIX G-2: CONTROL DEVICE EMISSIONS
TABLE 2-1. EU 008 EMISSIONS
OKEECHOBEE LANDFILL, INC.**

CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 008 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly	DATE	10/11/2012
		CHECKED		DATE	

OBJECTIVE: Calculate emissions for the Utility Flare EU 008 based on standard emission factors and flare capacity.

APPROACH: Use typical manufacturer guaranteed emission factors and equations and factors from AP-42.

SOLUTION:

EMISSION FACTORS:

	Emission Factors	Units	Source
NOx (R)	0.068	lb/MMBtu	Flare Manufacturer's Guarantee
CO (S)	0.37	lb/MMBtu	Flare Manufacturer's Guarantee
PM10	17	lb/10 ⁶ ft ³ CH ₄	AP-42, Table 2.4-5
TRS (Cs)	210	ppmv	Condition 7 of 0930104-018 (PSD FL-382A)
HCl (C)	42	ppmv	AP-42, Page 2.4-9
CH ₄ (Z)	0.0032	kg/MMBtu	40 CFR 98, Table C-2
N ₂ O (N)	0.00063	kg/MMBtu	40 CFR 98, Table C-2

PARAMETERS:

Flow Rate (Q)	1500	scfm
% CH ₄ (M)	50.0%	
Temperature (T)	37.8	C
Heat Content of CH ₄	1010	Btu/ft ³
Days per Reporting Period (D)	365	day/year

100.0 F

- Since 1 ft³ of CH₄ produces 1010 Btu,
LFG with (M) ft³ CH₄/ft³ LFG produces (X)=

505	Btu/ft ³ LFG
45	MMBtu/hr

EMISSION RATES:

	lbs/Hour	lbs/Day	tons/Year
NOx	3.09	74.17	13.54
CO	16.82	403.60	73.66
PM10	0.76	18.32	3.34
SOx	3.30	79.11	14.44
NMOC	0.21	4.93	0.001
VOC	0.08	1.92	0.0005
HCl	0.38	9.03	1.65
CO ₂ e (anthropogenic)	26.30	631.25	115.2

EXAMPLE CALCS:

(1) NOx Emissions

$$CM_{NOx} = (R/1E+06 \text{ Btu}) * (Q \text{ ft}^3 \text{ LFG/min}) * (X \text{ Btu/ft}^3 \text{ LFG}) * (D \text{ day/yr}) * (1440 \text{ min/day}) * (\text{ton}/2,000 \text{ lb})$$

$$CM_{NOx} \text{ (CM)} = \boxed{13.5} \text{ tons/yr NOx}$$

$$CM_{NOx} \text{ (CM2)} = (\text{CM}) * (2,000 \text{ lb/ton}) / (D \text{ day/yr}) = \boxed{74.2} \text{ lbs/day NOx}$$

$$CM_{NOx} = (\text{CM2}) * (\text{day}/24 \text{ hrs}) = \boxed{3.09} \text{ lbs/hr NOx}$$

(2) CO Emissions

$$CM_{CO} = (S/1E+06 \text{ Btu}) * (Q \text{ LFG/min}) * (X \text{ Btu/ft}^3 \text{ LFG}) * (D \text{ day/yr}) * (1440 \text{ min/day}) * (\text{ton}/2,000 \text{ lb})$$

APPENDIX G-2: CONTROL DEVICE EMISSIONS
TABLE 2-1. EU 008 EMISSIONS
OKEECHOBEE LANDFILL, INC.

CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 008 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC			BY	Lindsey Kennelly
				CHECKED	DATE
					10/11/2012

$$CM_{CO} (C) = \boxed{73.66} \text{ tons/yr CO}$$

$$CM_{CO} (C2) = (C) * (2,000 \text{ lb/ton}) / (D \text{ day/yr}) = \boxed{403.60} \text{ lbs/day CO}$$

$$CM_{CO} = (C2) * (\text{day}/24 \text{ hrs}) = \boxed{16.82} \text{ lbs/hr CO}$$

(3) PM-10 Emissions

- From Note a, AP-42, Section 2.4, Table 2.4-5,

$$(17 \text{ lb}/10^6 \text{ ft}^3) / (16,700) = \boxed{1.0E-03} \text{ lb/hr} \cdot \text{dft}^3/\text{min}$$

$$CM_{PM-10a} = (1.0E-03 \text{ lb/hr-dft}^3/\text{min CH4}) * ((M) * (Q)) = \boxed{0.76} \text{ lbs/hr PM-10}$$

$$CM_{PM-10b} = (CM_{PM-10a}) * (24 \text{ hrs/day}) = \boxed{18.32} \text{ lbs/day PM-10}$$

$$CM_{PM-10} = (CM_{PM-10b}) * (\text{ton}/2,000 \text{ lb}) * (D \text{ days/yr}) = \boxed{3.34} \text{ tons/yr PM-10}$$

(4) SO₂ Emissions

- Use Equations (8), (3), (4), & (7) from AP-42 Section 2.4 to determine SO₂ emissions.

The molecular weight of sulfur (S) = 32 g/gmol

$$\text{Eqn (3)} \quad Q_s = (Q \text{ ft}^3/\text{min}) * (D \text{ day/year}) * (1440 \text{ min/day}) * (m^3/35.3198 \text{ ft}^3) (C_s / 1,000,000) = \boxed{4,687.6} \text{ m}^3/\text{yr S}$$

$$\text{Eqn (4)} \quad UM_s = (Q_s) * [(S \text{ g/gmol}) * (1 \text{ atm}) / (8.205E-5 \text{ m}^3 \cdot \text{atm}/\text{gmol} \cdot \text{K} * 1,000 \text{ g/kg} * (273 + (T) \text{ K}))] = \boxed{6,696.6} \text{ kg S/yr}$$

$$\text{Eqn (7)} \quad CM_{SO_2} = UM_s * (N_{col}/100) * 2.0$$

$N_{col} = 100\%$ since calc is based on the PTE for the flare and not an assumed collection rate.

$$CM_{SO_2a} = UM_s * (100/100) * 2.0 * (98\% \text{ destruction efficiency}) = \boxed{13,125.4} \text{ kg/yr}$$

Note: Destruction Efficiency is referenced in AP-42, Table 2.4-3, Flare, Non-Halogenated Species Control Efficiency

$$CM_{SO_2b} = [(CM_{SO_2a} \text{ kg/yr}) / (2.2 \text{ lb/kg})] / (N \text{ day/yr}) = \boxed{79.11} \text{ lb/day SO}_2$$

$$CM_{SO_2c} = (CM_{SO_2b} \text{ lb/day}) / (\text{ton}/2000 \text{ lb}) / (N \text{ days/yr}) = \boxed{14.44} \text{ tons/yr SO}_2$$

$$CM_{SO_2} = (CM_{SO_2b} \text{ lb/day}) * (\text{day}/24 \text{ hrs}) = \boxed{3.30} \text{ lb/hr SO}_2$$

(5) NMOC Emissions

Use emission factors obtained from AP-42, Section 2.4, Municipal Solid Waste Landfills and the flare manufacturer to determine controlled emissions from the flare for NMOC

- Use the NMOC content from AP-42, 2.4.4

$$C_{NMOC} = 595 \text{ ppmv as hexane}$$

$$MW_{NMOC} = 86.18 \text{ g/gmol}$$

- Use Equations (3), (4), & (5) of AP-42, Section 2.4 to determine NMOC emissions.

$$\text{Eqn (3)} \quad Q_{NMOC} = (Q_{CH_4} \text{ ft}^3/\text{min} * m^3/35.315 \text{ ft}^3) * (C_{NMOC} \text{ ppmv} / 1E+06) (60 \text{ min/day} * 24 \text{ hr/day} * D \text{ day/yr}) = \boxed{36.4} \text{ m}^3/\text{yr}$$

$$\text{Eqn (4)} \quad UM_{NMOC} = (Q_{NMOC} \text{ m}^3/\text{yr}) * [(86.18 \text{ g/gmol}) * (1 \text{ atm}) / (8.205E-5 \text{ m}^3 \cdot \text{atm}/\text{gmol} \cdot \text{K} * 1,000 \text{ g/kg} * (273 + T) \text{ K})] = \boxed{140.0} \text{ kg/yr}$$

$$\text{Eqn (5)} \quad CM_{NMOC} = [UM_{NMOC} \text{ kg/yr} * (1 - N_{col}/100)] + [UM_{NMOC} \text{ kg/yr} * (N_{col}/100) * (1 - N_{cnt}/100)]$$

$N_{col} = 100\%$ since calc is based on actual flow rate to the flare and not an assumed collection rate.
 $N_{cnt} = 99.2\%$ Per AP-42, Table 2.4-3

$$CM_{NMOC} = [UM_{NMOC} \text{ kg/yr} * (1 - 100/100)] + [UM_{NMOC} \text{ kg/yr} * (100/100) * (1 - 99.2/100)] = \boxed{1.12} \text{ kg/yr}$$

$$CM_{NMOC} = CM_{NMOC} \text{ kg/yr} * (2.2 \text{ lb/kg}) * (\text{yr}/N \text{ days}) = \boxed{4.93} \text{ lb/day NMOC}$$

$$CM_{NMOC} = (CM_{NMOC} \text{ lb/day}) * (\text{ton}/2000 \text{ lb}) * (N \text{ days/yr}) = \boxed{0.001} \text{ tons/yr NMOC}$$

(6) VOC Emissions

- Per Note c of AP-42, Table 2.4-2, VOC emissions are 39% of NMOC emissions.

$$CM_{VOC} = CM_{NMOC} \text{ lbs/day} * 0.39 = \boxed{1.92} \text{ lb/day VOC}$$

$$CM_{VOC} = (CM_{NMOC} \text{ tons/yr}) * 0.39 = \boxed{0.0005} \text{ tons/yr VOC}$$

APPENDIX G-2: CONTROL DEVICE EMISSIONS
TABLE 2-1. EU 008 EMISSIONS
OKEECHOBEE LANDFILL, INC.

CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 008 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly	DATE	10/11/2012
		CHECKED		DATE	

(7) HCl Emissions

- Use Equations (8), (3), (4), & (10) from AP-42 Section 2.4 to determine HCl emissions.

- The molecular weight of HCl (MW_{HCl}) = 35.45 g/gmol

Eqn (8) $C_{HCl} = C (1 \text{ mol Cl} / 1 \text{ mol HCl}) = 42 \text{ ppmv Cl}$

Eqn (3) $Q_{HCl} = (Q) * [D \text{ days/yr} * 24 \text{ hr/day} * 60 \text{ min/hr}] * (m^3 / 35.31472 \text{ ft}^3) * (C_{HCl} / 1E+06) = 937.6 \text{ m}^3/\text{yr Cl}$

Eqn (4) $UM_{HCl} = (Q_{HCl}) * ((MW_{HCl} \text{ g/gmol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3 \cdot \text{atm/gmol} \cdot \text{K} * 1,000 \text{ g/kg} * (273 + (T) \text{ K}))) = 1,483.9 \text{ kg Cl/yr}$

Eqn (10) $CM_{HCl} = UM_{HCl} * (N_{COI} / 100) * 1.03 * (N_{cnt} / 100)$

$N_{COI} = 100\%$ Collection Efficiency, since actual flow rate to flare, assume 100%
 $1.03 =$ Ratio of the molecular weight of HC to the molecular weight of Cl
 $N_{cnt} = 98\%$ Control Efficiency of the control device

$CM_{HCl} = UM_{HCl} * (N_{COI} / 100) * 1.03 * (N_{cnt} / 100) = 1,497.88 \text{ kg/yr}$

$CM_{HCl} = (CM_{HCl} \text{ kg/yr}) * (2.2 \text{ lb/kg}) / (D \text{ day/yr}) = 9.03 \text{ lb/day HCl}$

$CM_{HCl} = (CM_{HCl} \text{ lb/day}) * (\text{ton} / 2000 \text{ lb}) * (D \text{ days/yr}) = 1.65 \text{ tons/yr HCl}$

$CM_{HCl} = (CM_{HCl} \text{ lb/day}) * (\text{day} / 24 \text{ hrs}) = 0.38 \text{ lb/hr HCl}$

(8) CO_{2e} Emissions

- CH₄ Emissions

$CM_{CH4} = (X \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (Z \text{ kg/MMBtu}) [0.0011023 \text{ ton/kg}]$

$CM_{CH4} (Y) = 1.40 \text{ tons/yr CH}_4$

Global Warming Potential of CH₄ (G) = 21 Source: 40 CFR 98, Table A-1

CH₄ Emission Rate (CM_{CH4}) = (Y) * (G) = 29.5 tons/yr CO_{2e} (CH₄)

- N₂O Emissions

$CM_{N2O} = (X \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (N \text{ kg/MMBtu}) [0.0011023 \text{ ton/kg}]$

$CM_{N2O} (W) = 0.28 \text{ tons/yr N}_2\text{O}$

Global Warming Potential of N₂O (P) = 310 Source: 40 CFR 98, Table A-1

N₂O Emission Rate (CM_{N2O}) = (W) * (P) = 85.7 tons/yr CO_{2e} (N₂O)

CO_{2e} Emissions = (CM_{CH4}) + (CM_{N2O}) = 115.2 tons/yr CO_{2e}

Potential-to-emit (PTE) GHG emissions have been included in this application, however, since the PTE method has not yet been defined, this application presents two different PTE calculation methods for GHG emissions: (1) life of site gas curve located in the fugitive calculations (i.e., expected actual emissions); and, (2) the capacity of the control device.

At the time of the submission of this application, there are no additional federal regulatory requirements applicable to GHG emissions from the Landfill nor are GHG emissions covered under Title V Permit Program authority. Federal GHG Mandatory Reporting Rule requirements published at 40 CFR 98 were enacted under sections 114(a)(1) and 208 of the Clean Air Act and, as such, are not "applicable requirements" for inclusion in a Title V permit pursuant to 40 CFR 70.2 and 71.2 (see also, 74 FR 209, page 56,288).

Note that the Greenhouse Gas Reporting Rule does not belong in the Title V permit. This issue was discussed in the Preamble of the Rule in the October 30, 2009 Federal Register and is included in Appendix H. According to the Q&A in the Preamble, the EPA received several comments about whether or not the requirements imposed by the GHG Reporting Rule are applicable under the Title V operating permit program. According to the EPA, the definition of "applicable requirement" in 40 CFR 70.2 and 71.2 as currently written does not include the GHG reporting rule. Therefore, the GHG Reporting Rule does not belong in the Title V permit.

APPENDIX G-2: CONTROL DEVICE EMISSIONS TABLE 2-2. EU 008 EMISSIONS OKEECHOBEE LANDFILL, INC.			
CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal
		JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 008 Emissions Calculations - HAPs	BY	Lindsey Kennelly
		CHECKED	
		DATE	10/11/2012
		DATE	

Flow Rate = 22,325,001.9 m³/yr = (Q ft³/yr for EU 008)
 (35.31 4667 ft³/m³)
 LFG Temperature (T) = 37.78 deg F = 3.21
 Destruction Efficiency (D) = 98%

Pollutant	Molecular		Q _p (m ³ /yr)	HAPS to Flare Mass Flow of Pollutant (M _p)		HAPs emitted from Flare (tpy)
	Weight (g/gmol)	Conc. (C _p) (ppmv)		(kg/yr)	(tpy)	
methyl chloroform	133.41	0.48	10.72	56.07	0.06	0.0012
1,1,2,2-tetrachloroethane	167.85	1.11	24.78	163.12	0.18	0.0036
ethylidene dichloride	98.97	2.35	52.46	203.63	0.22	0.0045
vinylidene chloride	96.94	0.20	4.47	16.97	0.02	0.0004
ethylene dichloride	98.96	0.41	9.15	35.52	0.04	0.0008
propylene dichloride	112.99	0.18	4.02	17.81	0.02	0.0004
acrylonitrile	53.06	6.33	141.32	294.06	0.32	0.0065
carbon disulfide	76.13	0.58	12.95	38.66	0.04	0.0009
carbon tetrachloride	153.84	0.004	0.09	0.54	0.00	0.0000
carbonyl sulfide	60.07	0.49	10.94	25.77	0.03	0.0006
chlorobenzene	112.56	0.25	5.58	24.64	0.03	0.0005
ethyl chloride	64.52	1.25	27.91	70.61	0.08	0.0016
chloroform	119.39	0.03	0.67	3.14	0.00	0.0001
1,4-dichlorobenzene	147.00	0.21	4.69	27.03	0.03	0.0006
methylene chloride	84.94	14.30	319.25	1063.44	1.17	0.0234
ethylbenzene	106.16	4.61	102.92	428.47	0.47	0.0094
hexane	86.18	6.57	146.68	495.72	0.55	0.0109
methyl ethyl ketone	72.11	7.09	158.28	447.62	0.49	0.0099
methyl isobutyl ketone	100.16	1.87	41.75	163.98	0.18	0.0036
perchloroethylene	165.83	3.73	83.27	541.55	0.60	0.0119
trichloroethylene	131.40	2.82	62.96	324.42	0.36	0.0072
mercury	200.61	0.0003	0.01	0.05	0.00	0.0000
benzene	78.11	1.91	42.64	130.62	0.14	0.0029
toluene	92.13	39.30	877.37	3169.98	3.49	0.0699
vinyl chloride	62.50	7.34	163.87	401.64	0.44	0.0089
xylenes	106.16	12.10	270.13	1124.63	1.24	0.0248
TOTAL HAPs				9269.66	10.22	0.20

HAPS lb/day = (HAPS tpy x 2000 lb)/365 =

1.12
0.05

 lb/day
lb/hr

Notes:

1. Q_p = Volumetric emission rate of pollutant. AP-42 Section 2.4 equation (3).

$$Q_p = (Q_{enc}) * (10^{-6} C_p)$$

Q_{enc} = LFG process rate at flare (m³/yr)

C_p = Concentration of pollutant

2. M_p = Mass generation of pollutant

$$M_p = \frac{(Q_p * MW_p * 1 \text{ atm})}{[(8.205 \times 10^{-5} \text{ m}^3\text{-atm/gmol-K}) (1000 \text{ g/kg}) (273 + (T)K)]}$$

3. The equations and all of the pollutant concentrations used to compute the estimated emissions are from AP-42 Section 2.4, as revised Nov. 1998.

APPENDIX G-2: CONTROL DEVICE EMISSIONS TABLE 3-1. EU 009 EMISSIONS OKEECHOBEE LANDFILL, INC.			
CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal
		JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 009 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly
		DATE	10/11/2012
		CHECKED	DATE

OBJECTIVE: Calculate emissions for the Utility Flare EU 009 based on standard emission factors and flare capacity.

APPROACH: Use typical manufacturer guaranteed emission factors and equations and factors from AP-42.

SOLUTION:

EMISSION FACTORS:

	Emission Factors	Units	Source
NOx (R)	0.068	lb/MMBtu	Flare Manufacturer's Guarantee
CO (S)	0.37	lb/MMBtu	Flare Manufacturer's Guarantee
PM10	17	lb/10 ⁶ ft ³ CH ₄	AP-42, Table 2.4-5
TRSl (Cs)	210	ppmv	Condition 7 of 0930104-018 (PSD FL-382A)
HCl (C)	42	ppmv	AP-42, Page 2.4-9
CH ₄ (Z)	0.0032	kg/MMBtu	40 CFR 98, Table C-2
N ₂ O (N)	0.00063	kg/MMBtu	40 CFR 98, Table C-2

PARAMETERS:

Flow Rate (Q)	3000	scfm	
% CH ₄ (M)	50.0%		
Temperature (T)	37.8	C	100.0 F
Heat Content of CH ₄	1010	Btu/ft ³	
Days per Reporting Period (D)	365	day/year	

- Since 1 ft³ of CH₄ produces 1010 Btu,

LFG with (M) ft³ CH₄/ft³ LFG produces (X)=

505	Btu/ft ³ LFG
91	MMBtu/hr

EMISSION RATES:

	lbs/Hour	lbs/Day	tons/Year
NOx	6.18	148.35	27.07
CO	33.63	807.19	147.31
PM10	1.53	36.65	6.69
SOx	6.59	158.22	28.88
NMOC	0.41	9.86	0.002
VOC	0.16	3.84	0.0010
HCl	0.75	18.06	3.30
CO ₂ e	52.60	1262.51	230.4

EXAMPLE CALCS:

(1) NOx Emissions

$$CM_{NOx} = (R/1E+06 \text{ Btu}) * (Q \text{ ft}^3 \text{ LFG/min}) * (X \text{ Btu/ft}^3 \text{ LFG}) * (D \text{ day/yr}) * (1440 \text{ min/day}) * (\text{ton}/2,000 \text{ lb})$$

$$CM_{NOx} (\text{CM}) = \boxed{27.1} \text{ tons/yr NOx}$$

$$CM_{NOx} (\text{CM2}) = (\text{CM}) * (2,000 \text{ lb/ton}) / (D \text{ day/yr}) = \boxed{148.3} \text{ lbs/day NOx}$$

$$CM_{NOx} = (\text{CM2}) * (\text{day}/24 \text{ hrs}) = \boxed{6.18} \text{ lbs/hr NOx}$$

(2) CO Emissions

$$CM_{CO} = (S/1E+06 \text{ Btu}) * (Q \text{ LFG/min}) * (X \text{ Btu/ft}^3 \text{ LFG}) * (D \text{ day/yr}) * (1440 \text{ min/day}) * (\text{ton}/2,000 \text{ lb})$$

APPENDIX G-2: CONTROL DEVICE EMISSIONS TABLE 3-1. EU 009 EMISSIONS OKEECHOBEE LANDFILL, INC.			
CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal
		JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 009 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly
		CHECKED	
		DATE	10/11/2012
		DATE	

$$CM_{CO} (C) = \boxed{147.31} \text{ tons/yr CO}$$

$$CM_{CO} (C2) = (C) * (2,000 \text{ lb/ton}) / (D \text{ day/yr}) = \boxed{807.19} \text{ lbs/day CO}$$

$$CM_{CO} = (C2) * (\text{day}/24 \text{ hrs}) = \boxed{33.63} \text{ lbs/hr CO}$$

(3) PM-10 Emissions

- From Note a, AP-42, Section 2.4, Table 2.4-5,

$$(17 \text{ lb}/10^6 \text{ ft}^3) / (16,700) = \boxed{1.0E-03} \text{ lb/hr - dft3/min}$$

$$CM_{PM-10a} = (1.0E-03 \text{ lb/hr-dft}^3/\text{min CH4}) * [(M) * (Q)] = \boxed{1.53} \text{ lbs/hr PM-10}$$

$$CM_{PM-10b} = (CMPM10a) * (24 \text{ hrs/day}) = \boxed{36.65} \text{ lbs/day PM-10}$$

$$CM_{PM-10} = (CMPM-10 b) * (\text{ton}/2,000 \text{ lb}) * (D \text{ days/yr}) = \boxed{6.69} \text{ tons/yr PM-10}$$

(4) SO₂ Emissions

- Use Equations (8), (3), (4), & (7) from AP-42 Section 2.4 to determine SO₂ emissions.

The molecular weight of sulfur (S) = 32 g/gmol

$$\text{Eqn (3)} \quad Q_S = (Q \text{ ft}^3/\text{min}) * (D \text{ day/year}) * (1440 \text{ min/day}) * (m^3/35.3198 \text{ ft}^3) (C_f/1,000,000) = 9,375.1 \text{ m}^3/\text{yr S}$$

$$\text{Eqn (4)} \quad UM_S = (Q_S) * [(S \text{ g/gmol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3\text{-atm/gmol-K} * 1,000 \text{ g/kg} * (273 + (T) K))] = 13,393.3 \text{ kg S/yr}$$

$$\text{Eqn (7)} \quad CM_{SO_2} = UM_S * (N_{COL}/100) * 2.0$$

N_{COL} = 100% since calc is based on the PTE for the flare and not an assumed collection rate.

$$CM_{SO_2a} = UM_S * (100/100) * 2.0 * (98\% \text{ destruction efficiency}) = 26,250.8 \text{ kg/yr}$$

Note: Destruction Efficiency is referenced in AP-42, Table 2.4-3, Flare, Non-Halogenated Species Control Efficiency

$$CM_{SO_2b} = [(CM_{SO_2a} \text{ kg/yr}) / (2.2 \text{ lb/kg})] / (N \text{ day/yr}) = \boxed{158.22} \text{ lb/day SO}_2$$

$$CM_{SO_2c} = (CM_{SO_2b} \text{ lb/day}) / (\text{ton}/2000 \text{ lb}) (N \text{ days/yr}) = \boxed{28.88} \text{ tons/yr SO}_2$$

$$CM_{SO_2} = (CM_{SO_2b} \text{ lb/day}) * (\text{day}/24 \text{ hrs}) = \boxed{6.59} \text{ lb/hr SO}_2$$

(5) NMOC Emissions

Use emission factors obtained from AP-42, Section 2.4, Municipal Solid Waste Landfills and the flare manufacturer to determine controlled emissions from the flare for NMOC

- Use the NMOC content from AP-42, 2.4.4

$$C_{NMOC} = 595 \text{ ppmv as hexane}$$

$$MW_{NMOC} = 86.18 \text{ g/gmol}$$

- Use Equations (3), (4), & (5) of AP-42, Section 2.4 to determine NMOC emissions.

$$\text{Eqn (3)} \quad Q_{NMOC} = (Q_{flame} \text{ ft}^3/\text{min} * m^3/35.315\text{ft}^3) * (C_{NMOC} \text{ ppmv}/1E+06) (60 \text{ min/day} * 24 \text{ hr/day} * D \text{ day/yr}) = 72.8 \text{ m}^3/\text{yr}$$

$$\text{Eqn (4)} \quad UM_{NMOC} = (Q_{NMOC} \text{ m}^3/\text{yr}) * [(86.18 \text{ g/gmol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3\text{atm/gmol K} * 1,000 \text{ g/kg} * (273 + T) K)] = 280.0 \text{ kg/yr}$$

$$\text{Eqn (5)} \quad CM_{NMOC} = [UM_{NMOC} \text{ kg/yr} * (1 - N_{COL}/100)] + [UM_{NMOC} \text{ kg/yr} * (N_{COL}/100) * (1 - N_{CNT}/100)]$$

N_{COL} = 100% since calc is based on actual flow rate to the flare and not an assumed collection rate.
N_{CNT} = 99.2% Per AP-42, Table 2.4-3

$$CM_{NMOC} = [UM_{NMOC} \text{ kg/yr} * (1 - 100/100)] + [UM_{NMOC} \text{ kg/yr} * (100/100) * (1 - 99.2/100)] = 2.24 \text{ kg/yr}$$

$$CM_{NMOC} = CM_{NMOC} \text{ kg/yr} * (2.2 \text{ lb/kg}) * (\text{yr}/N \text{ days}) = \boxed{9.86} \text{ lb/day NMOC}$$

$$CM_{NMOC} = (CM_{NMOC} \text{ lb/day}) * (\text{ton}/2000 \text{ lb}) * (N \text{ days/yr}) = \boxed{0.002} \text{ tons/yr NMOC}$$

(6) VOC Emissions

- Per Note c of AP-42, Table 2.4-2, VOC emissions are 39% of NMOC emissions.

$$CM_{VOC} = CM_{NMOC} \text{ lbs/day} * 0.39 = \boxed{3.84} \text{ lb/day VOC}$$

$$CM_{VOC} = (CM_{NMOC} \text{ tons/yr}) * 0.39 = \boxed{0.0010} \text{ tons/yr VOC}$$

**APPENDIX G-2: CONTROL DEVICE EMISSIONS
TABLE 3-1. EU 009 EMISSIONS
OKEECHOBEE LANDFILL, INC.**

CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 009 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly	DATE	10/11/2012
		CHECKED		DATE	

(7) HCl Emissions

- Use Equations (8), (3), (4), & (10) from AP-42 Section 2.4 to determine HCl emissions.

- The molecular weight of HCl (MW_{HCl}) = **35.45** g/gmol

Eqn (8) $C_{HCl} = C$ (1 mol Cl/1 mol HCl) = **42** ppmv Cl

Eqn (3) $Q_{HCl} = (Q) * (D \text{ days/yr} * 24 \text{ hr/day} * 60 \text{ min/hr}) * (m^3/35.31472 \text{ ft}^3) * (C_{HCl}/1E+06) =$ **1,875.3** m³/yr Cl

Eqn (4) $UM_{HCl} = (Q_{HCl}) * [(MW_{HCl} \text{ g/gmol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3\text{-atm/gmol-K} * 1,000 \text{ g/kg} * (273 + (T) \text{ K}))] =$ **2,967.9** kg Cl/yr

Eqn (10) $CM_{HCl} = UM_{HCl} * (N_{col}/100) * 1.03 * (N_{cnt}/100)$

$N_{col} = 100\%$ Collection Efficiency, since actual flow rate to flare, assume 100%
 $1.03 =$ Ratio of the molecular weight of HC to the molecular weight of Cl
 $N_{cnt} = 98\%$ Control Efficiency of the control device

$CM_{HCl} = UM_{HCl} * (N_{col}/100) * 1.03 * (N_{cnt}/100) =$ **2,995.77** kg/yr

$CM_{HCl} = (CM_{HCl} \text{ kg/yr}) * (2.2 \text{ lb/kg}) / (D \text{ day/yr}) =$ **18.06** lb/day HCl

$CM_{HCl} = (CM_{HCl} \text{ lb/day}) * (\text{ton}/2000 \text{ lb}) * (D \text{ days/yr}) =$ **3.30** tons/yr HCl

$CM_{HCl} = (CM_{HCl} \text{ lb/day}) * (\text{day}/24 \text{ hrs}) =$ **0.75** lb/hr HCl

(8) CO_{2e} Emissions

- CH₄ Emissions

$CM_{CH4} = (X \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (2 \text{ kg/MMBtu}) (0.0011023 \text{ ton/kg})$

$CM_{CH4} (Y) =$ **2.81** tons/yr CH₄

Global Warming Potential of CH₄ (G) = **21** Source: 40 CFR 98, Table A-1

CH₄ Emission Rate (CM_{CH4}) = (Y)*(G) = **59.0** tons/yr CO_{2e} (CH₄)

- N₂O Emissions

$CM_{N2O} = (X \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (N \text{ kg/MMBtu}) (0.0011023 \text{ ton/kg})$

$CM_{N2O} (W) =$ **0.55** tons/yr N₂O

Global Warming Potential of N₂O (P) = **310** Source: 40 CFR 98, Table A-1

N₂O Emission Rate (CM_{N2O}) = (W)*(P) = **171.4** tons/yr CO_{2e} (N₂O)

CO_{2e} Emissions = (CM_{CH4}) + (CM_{N2O}) = **230.4** tons/yr CO_{2e}

Potential-to-emit (PTE) GHG emissions have been included in this application, however, since the PTE method has not yet been defined, this application presents two different PTE calculation methods for GHG emissions: (1) Use of site gas curve located in the fugitive calculations (i.e., expected actual emissions); and, (2) the capacity of the control device.

At the time of the submission of this application, there are no additional federal regulatory requirements applicable to GHG emissions from the Landfill nor are GHG emissions covered under Title V Permit Program authority. Federal GHG Mandatory Reporting Rule requirements published at 40 CFR 98 were enacted under sections 114(a)(1) and 208 of the Clean Air Act and, as such, are not "applicable requirements" for inclusion in a Title V permit pursuant to 40 CFR 70.2 and 71.2 (see also, 74 FR 209, page 56,288).

Note that the Greenhouse Gas Reporting Rule does not belong in the Title V permit. This issue was discussed in the Preamble of the Rule in the October 30, 2009 Federal Register and is included in Appendix H. According to the Q&A in the Preamble, the EPA received several comments about whether or not the requirements imposed by the GHG Reporting Rule are applicable under the Title V operating permit program. According to the EPA, the definition of "applicable requirement" in 40 CFR 70.2 and 71.2 as currently written does not include the GHG reporting rule. Therefore, the GHG Reporting Rule does not belong in the Title V permit.

APPENDIX G-2: CONTROL DEVICE EMISSIONS TABLE 3-2. EU 009 EMISSIONS OKEECHOBEE LANDFILL, INC.			
CLIENT Okeechobee Landfill, Inc	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22	
SUBJECT UTILITY FLARE EU 009 Emissions Calculations - HAPs		BY Lindsey Kennelly	DATE 10/11/2012
		CHECKED	DATE

$$\text{Flow Rate} = 44,650,003.7 \text{ m}^3/\text{yr} = \frac{(Q \text{ ft}^3/\text{yr for EU 008})}{(35.314667 \text{ ft}^3/\text{m}^3)}$$

$$\text{LFG Temperature (T)} = 37.78 \text{ deg F} = 3.21$$

$$\text{Destruction Efficiency (D)} = 98\%$$

Pollutant	Molecular		Q _p (m ³ /yr)	HAPS to Flare Mass Flow of Pollutant (M _p)		HAPs emitted from Flare (tpy)
	Weight (g/gmol)	Conc. (C _p) (ppmv)		(kg/yr)	(tpy)	
methyl chloroform	133.41	0.48	21.43	112.13	0.12	0.0025
1,1,2,2-tetrachloroethane	167.85	1.11	49.56	326.24	0.36	0.0072
ethylidene dichloride	98.97	2.35	104.93	407.25	0.45	0.0090
vinylidene chloride	96.94	0.20	8.93	33.95	0.04	0.0007
ethylene dichloride	98.96	0.41	18.31	71.05	0.08	0.0016
propylene dichloride	112.99	0.18	8.04	35.61	0.04	0.0008
acrylonitrile	53.06	6.33	282.63	588.12	0.65	0.0130
carbon disulfide	76.13	0.58	25.90	77.32	0.09	0.0017
carbon tetrachloride	153.84	0.004	0.18	1.08	0.00	0.0000
carbonyl sulfide	60.07	0.49	21.88	51.54	0.06	0.0011
chlorobenzene	112.56	0.25	11.16	49.27	0.05	0.0011
ethyl chloride	64.52	1.25	55.81	141.22	0.16	0.0031
chloroform	119.39	0.03	1.34	6.27	0.01	0.0001
1,4-dichlorobenzene	147.00	0.21	9.38	54.05	0.06	0.0012
methylene chloride	84.94	14.30	638.50	2126.87	2.34	0.0469
ethylbenzene	106.16	4.61	205.84	856.95	0.94	0.0189
hexane	86.18	6.57	293.35	991.44	1.09	0.0219
methyl ethyl ketone	72.11	7.09	316.57	895.23	0.99	0.0197
methyl isobutyl ketone	100.16	1.87	83.50	327.97	0.36	0.0072
perchloroethylene	165.83	3.73	166.54	1083.09	1.19	0.0239
trichloroethylene	131.40	2.82	125.91	648.84	0.72	0.0143
mercury	200.61	0.0003	0.01	0.10	0.00	0.0000
benzene	78.11	1.91	85.28	261.24	0.29	0.0058
toluene	92.13	39.30	1754.75	6339.96	6.99	0.1398
vinyl chloride	62.50	7.34	327.73	803.28	0.89	0.0177
xylenes	106.16	12.10	540.27	2249.26	2.48	0.0496
TOTAL HAPs				18539.33	20.44	0.41

$$\text{HAPS lb/day} = (\text{HAPS tpy} \times 2000 \text{ lb}) / 365 =$$

2.24	lb/day
0.09	lb/hr

Notes:

1. Q_p = Volumetric emission rate of pollutant. AP-42 Section 2.4 equation (3).

$$Q_p = (Q_{enc}) \cdot (10^{-6} C_p)$$

$$Q_{enc} = \text{LFG process rate at flare (m}^3/\text{yr)}$$

$$C_p = \text{Concentration of pollutant}$$

2. M_p = Mass generation of pollutant

$$M_p = \frac{(Q_p \cdot MW_p \times 1 \text{ atm})}{[8.205 \times 10^{-5} \text{ m}^3 \cdot \text{atm} / \text{gmol} \cdot \text{K}] (1000 \text{ g/kg}) (273 + (T)K)}$$

3. The equations and all of the pollutant concentrations used to compute the estimated emissions are from AP-42 Section 2.4, as revised Nov. 1998.

APPENDIX G-2: CONTROL DEVICE EMISSIONS TABLE 4-1. EU 010 EMISSIONS OKEECHOBEE LANDFILL, INC.			
CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal
		JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 010 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly
		CHECKED	
		DATE	10/11/2012
		DATE	

OBJECTIVE: Calculate emissions for the Utility Flare EU 010 based on standard emission factors and flare capacity

APPROACH: Use typical manufacturer guaranteed emission factors and equations and factors from AP-42

SOLUTION:

EMISSION FACTORS:

	Emission Factors	Units	Source
NOx (R)	0.068	lb/MMBtu	Flare Manufacturer's Guarantee
CO (S)	0.37	lb/MMBtu	Flare Manufacturer's Guarantee
PM10	17	lb/10 ⁶ ft ³ CH ₄	AP-42, Table 2.4-5
TRS (Cs)	210	ppmv	Condition 7 of 0930104-018 (PSD FL-382A)
HCl (C)	42	ppmv	AP-42, Page 2.4-9
CH ₄ (Z)	0.0032	kg/MMBtu	40 CFR 98, Table C-2
N ₂ O (N)	0.00063	kg/MMBtu	40 CFR 98, Table C-2

PARAMETERS:

Flow Rate (Q)	3000	scfm	
% CH4 (M)	50.0%		
Temperature (T)	37.8	C	100.0 F
Heat Content of CH4	1010	Btu/ft ³	
Days per Reporting Period (D)	365	day/year	

- Since 1 ft³ of CH₄ produces 1010 Btu,
LFG with (M) ft³ CH₄/ft³ LFG produces (X)=

505	Btu/ft ³ LFG
91	MMBtu/hr

EMISSION RATES:

	lbs/Hour	lbs/Day	tons/Year
NOx	6.18	148.35	27.07
CO	33.63	807.19	147.31
PM10	1.53	36.65	6.69
SOx	6.59	158.22	28.88
NMOC	0.41	9.86	0.002
VOC	0.16	3.84	0.0010
HCl	0.75	18.06	3.30
CO2e	52.60	1262.51	230.4

EXAMPLE CALCS:

(1) NOx Emissions

$$CM_{NOx} = (R/1E+06 \text{ Btu}) * (Q \text{ ft}^3 \text{ LFG/min}) * (X \text{ Btu/ft}^3 \text{ LFG}) * (D \text{ day/yr}) * (1440 \text{ min/day}) * (\text{ton}/2,000 \text{ lb})$$

$$CM_{NOx} (CM) = \boxed{27.1} \text{ tons/yr NOx}$$

$$CM_{NOx} (CM2) = (CM) * (2,000 \text{ lb/ton}) / (D \text{ day/yr}) = \boxed{148.3} \text{ lbs/day NOx}$$

$$CM_{NOx} = (CM2) * (\text{day}/24 \text{ hrs}) = \boxed{6.18} \text{ lbs/hr NOx}$$

(2) CO Emissions

$$CM_{CO} = (S/1E+06 \text{ Btu}) * (Q \text{ LFG/min}) * (X \text{ Btu/ft}^3 \text{ LFG}) * (D \text{ day/yr}) * (1440 \text{ min/day}) * (\text{ton}/2,000 \text{ lb})$$

APPENDIX G-2: CONTROL DEVICE EMISSIONS TABLE 4-1. EU 010 EMISSIONS OKEECHOBEE LANDFILL, INC.			
CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal
		JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 010 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly
		CHECKED	
		DATE	10/11/2012
		DATE	

$$CM_{CO} (C) = \boxed{147.31} \text{ tons/yr CO}$$

$$CM_{CO}(C2) = (C) * (2,000 \text{ lb/ton}) / (D \text{ day/yr}) = \boxed{807.19} \text{ lbs/day CO}$$

$$CM_{CO} = (C2) * (\text{day}/24 \text{ hrs}) = \boxed{33.63} \text{ lbs/hr CO}$$

(3) PM-10 Emissions

- From Note a, AP-42, Section 2.4, Table 2.4-5,

$$(17 \text{ lb}/10^6 \text{ ft}^3) / (16,700) = \boxed{1.0E-03} \text{ lb/hr - dft3/min}$$

$$CM_{PM-10a} = (1.0E-03 \text{ lb/hr-dft}^3/\text{min CH4}) * [(M) * (Q)] = \boxed{1.53} \text{ lbs/hr PM-10}$$

$$CM_{PM-10b} = (CM_{PM-10a}) * (24 \text{ hrs/day}) = \boxed{36.65} \text{ lbs/day PM-10}$$

$$CM_{PM-10} = (CM_{PM-10b}) * (\text{ton}/2,000 \text{ lb}) * (D \text{ days/yr}) = \boxed{6.69} \text{ tons/yr PM-10}$$

(4) SO₂ Emissions

- Use Equations (8), (3), (4), & (7) from AP-42 Section 2.4 to determine SO₂ emissions.

The molecular weight of sulfur (S) = 32 g/mol

$$\text{Eqn (3)} \quad Q_s = (Q \text{ ft}^3/\text{min}) * (D \text{ day/year}) * (1440 \text{ min/day}) * (m^3/35.3198 \text{ ft}^3) (C_s / 1,000,000) = \boxed{9,375.1} \text{ m}^3/\text{yr S}$$

$$\text{Eqn (4)} \quad UM_s = (Q_s) * [(S \text{ g/mol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3\text{-atm/gmol-K} * 1,000 \text{ g/kg} * (273 + T) K)] = \boxed{13,393.3} \text{ kg S/yr}$$

$$\text{Eqn (7)} \quad CM_{SO_2} = UM_s * (N_{COL}/100) * 2.0$$

$N_{COL} = 100\%$ since calc is based on the PTE for the flare and not an assumed collection rate.

$$CM_{SO_2} = UM_s * (100/100) * 2.0 * (98\% \text{ destruction efficiency}) = \boxed{26,250.8} \text{ kg/yr}$$

Note: Destruction Efficiency is referenced in AP-42, Table 2.4-3, Flare, Non-Halogenated Species Control Efficiency

$$CM_{SO_2b} = [(CM_{SO_2a} \text{ kg/yr}) (2.2 \text{ lb/kg})] / (N \text{ day/yr}) = \boxed{158.22} \text{ lb/day SO}_2$$

$$CM_{SO_2c} = (CM_{SO_2b} \text{ lb/day}) / (\text{ton}/2000 \text{ lb}) (N \text{ days/yr}) = \boxed{28.88} \text{ tons/yr SO}_2$$

$$CM_{SO_2} = (CM_{SO_2b} \text{ lb/day}) * (\text{day}/24 \text{ hrs}) = \boxed{6.59} \text{ lb/hr SO}_2$$

(5) NMOC Emissions

Use emission factors obtained from AP-42, Section 2.4, Municipal Solid Waste Landfills and the flare manufacturer to determine controlled emissions from the flare for NMOC

- Use the NMOC content from AP-42, 2.4.4

$$C_{NMOC} = 595 \text{ ppmv as hexane}$$

$$MW_{NMOC} = 86.18 \text{ g/mol}$$

- Use Equations (3), (4), & (5) of AP-42, Section 2.4 to determine NMOC emissions.

$$\text{Eqn (3)} \quad Q_{NMOC} = (Q_{flare} \text{ ft}^3/\text{min} * m^3/35.315 \text{ ft}^3) * (C_{NMOC} \text{ ppmv} / 1E+06) (60 \text{ min/day} * 24 \text{ hr/day} * D \text{ day/yr}) = \boxed{72.8} \text{ m}^3/\text{yr}$$

$$\text{Eqn (4)} \quad UM_{NMOC} = (Q_{NMOC} \text{ m}^3/\text{yr}) * [(86.18 \text{ g/mol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3 \text{ atm/gmol K} * 1,000 \text{ g/kg} * (273 + T) K)] = \boxed{280.0} \text{ kg/yr}$$

$$\text{Eqn (5)} \quad CM_{NMOC} = [UM_{NMOC} \text{ kg/yr} * (1 - N_{col}/100)] + [UM_{NMOC} \text{ kg/yr} * (N_{col}/100) * (1 - N_{cnt}/100)]$$

$N_{col} = 100\%$ since calc is based on actual flow rate to the flare and not an assumed collection rate
 $N_{cnt} = 99.2\%$ Per AP-42, Table 2.4-3

$$CM_{NMOC} = [UM_{NMOC} \text{ kg/yr} * (1 - 100/100)] + [UM_{NMOC} \text{ kg/yr} * (100/100) * (1 - 99.2/100)] = \boxed{2.24} \text{ kg/yr}$$

$$CM_{NMOC} = CM_{NMOC} \text{ kg/yr} * (2.2 \text{ lb/kg}) * (\text{yr}/N \text{ days}) = \boxed{9.86} \text{ lb/day NMOC}$$

$$CM_{NMOC} = (CM_{NMOC} \text{ lb/day}) * (\text{ton}/2000 \text{ lb}) * (N \text{ days/yr}) = \boxed{0.002} \text{ tons/yr NMOC}$$

(6) VOC Emissions

- Per Note c of AP-42, Table 2.4-2, VOC emissions are 39% of NMOC emissions.

$$CM_{VOC} = CM_{NMOC} \text{ lbs/day} * 0.39 = \boxed{3.84} \text{ lb/day VOC}$$

$$CM_{VOC} = (CM_{NMOC} \text{ tons/yr}) * 0.39 = \boxed{0.0010} \text{ tons/yr VOC}$$

APPENDIX G-2: CONTROL DEVICE EMISSIONS			
TABLE 4-1. EU 010 EMISSIONS			
OKEECHOBEE LANDFILL, INC.			
CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal
		JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 010 Emissions Calculations - NOx, CO, SOx, PM10, NMOC, VOC	BY	Lindsey Kennelly
		CHECKED	
		DATE	10/11/2012
		DATE	

(7) HCl Emissions

- Use Equations (8), (3), (4), & (10) from AP-42 Section 2.4 to determine HCl emissions.

- The molecular weight of HCl (MW_{HCl}) = 35.45 g/gmol

Eqn (8) $C_{HCl} = C$ (1 mol Cl/1 mol HCl) = 42 ppmv Cl

Eqn (3) $Q_{HCl} = (Q) * (D \text{ days/yr} * 24 \text{ hr/day} * 60 \text{ min/hr}) * (m^3/35.31472 \text{ ft}^3) * (C_{HCl}/1E+06) = 1,875.3 \text{ m}^3/\text{yr Cl}$

Eqn (4) $UM_{HCl} = (Q_{HCl}) * ((MW_{HCl} \text{ g/gmol} * 1 \text{ atm}) / (8.205E-5 \text{ m}^3\text{-atm/gmol}\cdot\text{K} * 1,000 \text{ g/kg} * (273 + (T) \text{ K}))) = 2,967.9 \text{ kg Cl/yr}$

Eqn (10) $CM_{HCl} = UM_{HCl} * (N_{COL}/100) * 1.03 * (N_{CNT}/100)$

$N_{COL} = 100\%$ Collection Efficiency, since actual flow rate to flare, assume 100%
 $1.03 =$ Ratio of the molecular weight of HC to the molecular weight of Cl
 $N_{CNT} = 98\%$ Control Efficiency of the control device

$CM_{HCl} = UM_{HCl} * (N_{COL}/100) * 1.03 * (N_{CNT}/100) = 2,995.77 \text{ kg/yr}$

$CM_{HCl} = (CM_{HCl} \text{ kg/yr}) * (2.2 \text{ lb/kg}) / (D \text{ day/yr}) = 18.06 \text{ lb/day HCl}$

$CM_{HCl} = (CM_{HCl} \text{ lb/day}) * (\text{ton}/2000 \text{ lb}) * (D \text{ days/yr}) = 3.30 \text{ tons/yr HCl}$

$CM_{HCl} = (CM_{HCl} \text{ lb/day}) * (\text{day}/24 \text{ hrs}) = 0.75 \text{ lb/hr HCl}$

(8) CO_{2e} Emissions

- CH₄ Emissions

$CM_{CH4} = (X \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (Z \text{ kg/MMBtu}) (0.0011023 \text{ ton/kg})$

$CM_{CH4} (Y) = 2.81 \text{ tons/yr CH}_4$

Global Warming Potential of CH₄ (G) = 21 Source: 40 CFR 98, Table A-1

CH₄ Emission Rate (CM_{CH4}) = (Y)*(G) = 59.0 tons/yr CO_{2e} (CH₄)

- N₂O Emissions

$CM_{N2O} = (X \text{ MMBtu/hr}) * (D \text{ day/yr}) * (24 \text{ hr/day}) * (N \text{ kg/MMBtu}) (0.0011023 \text{ ton/kg})$

$CM_{N2O} (W) = 0.55 \text{ tons/yr N}_2\text{O}$

Global Warming Potential of N₂O (P) = 310 Source: 40 CFR 98, Table A-1

N₂O Emission Rate (CM_{N2O}) = (W)*(P) = 171.4 tons/yr CO_{2e} (N₂O)

CO_{2e} Emissions = (CM_{CH4}) + (CM_{N2O}) = 230.4 tons/yr CO_{2e}

Potential-to-emit (PTE) GHG emissions have been included in this application, however, since the PTE method has not yet been defined, this application presents two different PTE calculation methods for GHG emissions: (1) life of site gas curve located in the fugitive calculations (i.e., expected actual emissions); and, (2) the capacity of the control device.

At the time of the submission of this application, there are no additional federal regulatory requirements applicable to GHG emissions from the Landfill nor are GHG emissions covered under Title V Permit Program authority. Federal GHG Mandatory Reporting Rule requirements published at 40 CFR 98 were enacted under sections 114(a)(1) and 208 of the Clean Air Act and, as such, are not "applicable requirements" for inclusion in a Title V permit pursuant to 40 CFR 70.2 and 71.2 (see also, 74 FR 209, page 56,288).

Note that the Greenhouse Gas Reporting Rule does not belong in the Title V permit. This issue was discussed in the Preamble of the Rule in the October 30, 2009 Federal Register and is included in Appendix H. According to the Q&A in the Preamble, the EPA received several comments about whether or not the requirements imposed by the GHG Reporting Rule are applicable under the Title V operating permit program. According to the EPA, the definition of "applicable requirement" in 40 CFR 70.2 and 71.2 as currently written does not include the GHG reporting rule. Therefore, the GHG Reporting Rule does not belong in the Title V permit.

APPENDIX G-2: CONTROL DEVICE EMISSIONS TABLE 4-2. EU 010 EMISSIONS OKEECHOBEE LANDFILL, INC.			
CLIENT	Okeechobee Landfill, Inc	PROJECT	Title V Operating Permit Renewal
		JOB NO.	101.01.22
SUBJECT	UTILITY FLARE EU 010 Emissions Calculations - HAPs	BY	Lindsey Kennelly
		CHECKED	
		DATE	10/11/2012
		DATE	

$$\text{Flow Rate} = 44,650,003.7 \text{ m}^3/\text{yr} = (Q \text{ ft}^3/\text{yr for EU 008})$$

$$= (35.31 \text{ 4667 ft}^3/\text{m}^3)$$

$$\text{LFG Temperature (T)} = 37.78 \text{ deg F} = 3.21$$

$$\text{Destruction Efficiency (D)} = 98\%$$

Pollutant	Molecular		HAPS to Flare			HAPS emitted from Flare (tpy)
	Weight (g/gmol)	Conc. (C _p) (ppmv)	Q _p (m ³ /yr)	Mass Flow of Pollutant (M _p) (kg/yr) (tpy)		
methyl chloroform	133.41	0.48	21.43	112.13	0.12	0.0025
1,1,2,2-tetrachloroethane	167.85	1.11	49.56	326.24	0.36	0.0072
ethylidene dichloride	98.97	2.35	104.93	407.25	0.45	0.0090
vinylidene chloride	96.94	0.20	8.93	33.95	0.04	0.0007
ethylene dichloride	98.96	0.41	18.31	71.05	0.08	0.0016
propylene dichloride	112.99	0.18	8.04	35.61	0.04	0.0008
acrylonitrile	53.06	6.33	282.63	588.12	0.65	0.0130
carbon disulfide	76.13	0.58	25.90	77.32	0.09	0.0017
carbon tetrachloride	153.84	0.004	0.18	1.08	0.00	0.0000
carbonyl sulfide	60.07	0.49	21.88	51.54	0.06	0.0011
chlorobenzene	112.56	0.25	11.16	49.27	0.05	0.0011
ethyl chloride	64.52	1.25	55.81	141.22	0.16	0.0031
chloroform	119.39	0.03	1.34	6.27	0.01	0.0001
1,4-dichlorobenzene	147.00	0.21	9.38	54.05	0.06	0.0012
methylene chloride	84.94	14.30	638.50	2126.87	2.34	0.0469
ethylbenzene	106.16	4.61	205.84	856.95	0.94	0.0189
hexane	86.18	6.57	293.35	991.44	1.09	0.0219
methyl ethyl ketone	72.11	7.09	316.57	895.23	0.99	0.0197
methyl isobutyl ketone	100.16	1.87	83.50	327.97	0.36	0.0072
perchloroethylene	165.83	3.73	166.54	1083.09	1.19	0.0239
trichloroethylene	131.40	2.82	125.91	648.84	0.72	0.0143
mercury	200.61	0.0003	0.01	0.10	0.00	0.0000
benzene	78.11	1.91	85.28	261.24	0.29	0.0058
toluene	92.13	39.30	1754.75	6339.96	6.99	0.1398
vinyl chloride	62.50	7.34	327.73	803.28	0.89	0.0177
xylenes	106.16	12.10	540.27	2249.26	2.48	0.0496
TOTAL HAPs				18539.33	20.44	0.41

$$\text{HAPS lb/day} = (\text{HAPS tpy} \times 2000 \text{ lb}) / 365 =$$

2.24	lb/day
0.09	lb/hr

Notes:

1. Q_p = Volumetric emission rate of pollutant. AP-42 Section 2.4 equation (3).

$$Q_p = (Q_{enc}) \cdot (10^{-6} C_p)$$

$$Q_{enc} = \text{LFG process rate at flare (m}^3/\text{yr)}$$

$$C_p = \text{Concentration of pollutant}$$

2. M_p = Mass generation of pollutant

$$M_p = \frac{(Q_p \cdot MW_p \cdot x \cdot 1 \text{ atm})}{\{[8.205 \times 10^{-5} \text{ m}^3 \cdot \text{atm} / \text{gmol} \cdot \text{K}] (1000 \text{ g/kg}) (273 + (T)K)\}}$$

3. The equations and all of the pollutant concentrations used to compute the estimated emissions are from AP-42 Section 2.4, as revised Nov. 1998.

APPENDIX G-3

MISCELLANEOUS EQUIPMENT EMISSION CALCULATIONS

**APPENDIX G-3: PROCESS EMISSIONS
TABLE 1. RELOCATABLE CONCRETE CRUSHER
OKEECHOBEE LANDFILL, INC.**

CLIENT	Okeechobee Landfill, Inc.	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.01.22
SUBJECT	PROCESS EMISSIONS - RELOCATABLE CONCRETE CRUSHER	BY	Lindsey Kennelly	DATE	10/24/2012
		CHECKED		DATE	

OBJECTIVE: Calculate emissions for the RELOCATABLE ROCK CRUSHER owned by a third party at OLI.

Periodically throughout year, a vendor brings a diesel-fired portable concrete crusher to the Landfill. The portable concrete crusher is not subject to the provisions of 40 CFR Part 60, Subpart OOO as the capacity is less than 150 tons per hour as defined in §60.670(c)(2). The relocatable rock crusher consists of units with a power rating of 375 HP. The amount of concrete that will be crushed depends on the inflow of such wastes. For the purpose of these calculations, it has been assumed that the concrete crusher will be used approximately 1000 hours per year.

Power Rating = 375 HP
 Operating Hours = 1000 hr/yr
 Process Capacity = 150 ton/hr (worst-case)

APPROACH: Use emission factors for diesel engines provided in AP-42

Compound	Diesel Engine		EMISSIONS	
	Emission Factor		(lb/hr)	(ton/yr)
NO _x	0.031	(lb/hp-hr) ¹	11.6	5.8
VOC (exhaust)	0.00247	(lb/hp-hr) ¹	0.9	0.5
VOC (crankcase)	0.000441	(lb/hp-hr) ¹	0.017	0.008
		TOTAL VOC =	0.943	0.471
CO	0.00668	(lb/hp-hr) ¹	2.5	1.3
SO ₂	0.00205	(lb/hp-hr) ¹	0.8	0.4
PM ₁₀ (engine)	0.0022	(lb/hp-hr) ¹	0.8	0.4
PM ₁₀ (crushing)	0.0024	(lb/ton) ²	0.4	0.18
PM ₁₀ (screening)	0.0087	(lb/ton) ²	1.3	0.7
		TOTAL PM =	1.665	0.833

¹ Emission factor obtained from AP-42, Chapter 3.3, Table 3.3-1

² Emission factor obtained from AP-42, Chapter 11.19.2

**APPENDIX G-3: PROCESS EMISSIONS
TABLE 2. WOOD WASTE GRINDER
OKEECHOBEE LANDFILL, INC.**

CLIENT Okeechobee Landfill, Inc.	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22
SUBJECT PROCESS EMISSIONS - WOOD WASTE GRINDER	BY Lindsey Kennelly	DATE 10/24/2012
	CHECKED	DATE

OBJECTIVE: Calculate emissions for the WOOD WASTE GRINDER at OLI.

Fuel = Diesel
 Manufacture Date = 1990
 Power Rating = 860 HP
 Operating Hours = 250 hr/yr
 Process Rate = 100 ton/hr

APPROACH: Use emission factors for diesel engines provided in AP-42

Compound	Diesel Engine Emission Factor		EMISSIONS	
			(lb/hr)	(ton/yr)
NO _x	0.031	(lb/hp-hr) ¹	26.7	3.3
CO	0.00668	(lb/hp-hr) ¹	5.7	0.7
SO ₂	0.00205	(lb/hp-hr) ¹	1.8	0.2
PM ₁₀ (engine)	0.0022	(lb/hp-hr) ¹	1.9	0.2
PM (Inlet Feed Loading)	0.0024	(lb/ton) ²	0.2	0.03
PM ₁₀ (Hammermill)	0.000048	(lb/ton) ³	0.005	0.0006
PM _{2.5} (Conveyor Discharge)	0.000008	(lb/ton) ⁴	0.001	0.00010
VOC (exhaust)	0.00247	(lb/hp-hr) ¹	2.1	0.3
VOC (crankcase)	0.0000441	(lb/hp-hr) ¹	0.038	0.005

¹ Emission factor obtained from AP-42, Chapter 3.3, Table 3.3-1

² Emission factor obtained from AP-42, Table 11.19.2-2 for SCC 3-05-020-31

³ Emission factor obtained from AP-42, Table 10.3-1 Log Debarking (2/80)

⁴ Emission factor obtained from AP-42, Table 11.19.2-2 for SCC 3-05-020-06

**APPENDIX G-3: PROCESS EMISSIONS
TABLE 3. INSIGNIFICANT ACTIVITIES
OKEECHOBEE LANDFILL, INC.**

CLIENT Okeechobee Landfill, Inc.		PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22	
SUBJECT PROCESS EMISSIONS			BY Lindsey Kennelly	DATE 10/24/2012
			CHECKED	DATE

OBJECTIVE: Calculate emissions for the process equipment at OLI.

Emergency Engine Operation = 100 hr/yr

APPROACH: Use emission factors for diesel and gasoline engines provided in AP-42

Compound	Diesel Engine Emission Factor	Gasoline Engine Emission Factor	
NO _x	0.031	0.011	(lb/hp-hr) ¹
CO	0.00568	0.439	(lb/hp-hr) ¹
SO ₂	0.00205	0.000591	(lb/hp-hr) ¹
PM ₁₀ (engine)	0.0022	0.000721	(lb/hp-hr) ¹
VOC (exhaust)	0.00247	0.015	(lb/hp-hr) ¹
VOC (crankcase)	0.000441	0.00485	(lb/hp-hr) ¹

¹ Emission factor obtained from AP-42, Chapter 3.3, Table 3.3-1

² Emission factor obtained from AP-42, Chapter 11.19.2

DIESEL ENGINES

Equipment	Manufacture Date	Operating Hours (hr/yr)	Fuel Type	HP	EMISSIONS (ton/yr)						
					NO _x	CO	SO _x	PM10	VOC (exhaust)	VOC (crankcase)	
Tradewinds TP-300 Generator	2000	100	Diesel	546	0.846	0.182	0.056	0.060	0.067	0.001	Emergency
Baldor DLCS0-JD Generator	06/07/04	100	Diesel	100	0.155	0.033	0.010	0.011	0.012	0.000	Emergency
Baldor T525T Generator	2006	100	Diesel	60	0.093	0.020	0.006	0.007	0.007	0.000	Emergency
Caterpillar C27 ACERT Generator	2011	100	Diesel	1000	1.550	0.334	0.103	0.110	0.124	0.002	Emergency
Curmins DFE Generator	2007	100	Diesel	755	1.170	0.252	0.077	0.083	0.093	0.002	Emergency
ISI TC-125 Tire Cutter	2004	1250	Diesel	35	0.678	0.146	0.045	0.048	0.054	0.001	
Multiquip Red Pump	2002	2000	Diesel	60	1.860	0.401	0.123	0.132	0.148	0.003	
Thompson Water Pump	2005	2000	Diesel	46.2	1.432	0.309	0.095	0.102	0.114	0.002	
Columbia Tipper	2005	1560	Diesel	170	4.111	0.886	0.272	0.292	0.328	0.006	
Wacker LTN6 Light Plant	2010	1560	Diesel	60	1.451	0.313	0.096	0.103	0.116	0.002	
Wacker LTN6 Light Plant	2010	1560	Diesel	60	1.451	0.313	0.096	0.103	0.116	0.002	
Sullair 185CA Air Compressor	2010	1000	Diesel	82	1.271	0.274	0.084	0.090	0.101	0.002	
Sullair 185CA Air Compressor	2006	1000	Diesel	82	1.271	0.274	0.084	0.090	0.101	0.002	
Hydro TEK Steam Cleaner	Unknown	1500	Diesel		0.000	0.000	0.000	0.000	0.000	0.000	
McCloskey B105 Screener	2012	1000	Diesel	100	1.550	0.334	0.103	0.110	0.124	0.002	

GASOLINE ENGINES

Equipment	Manufacture Date	Operating Hours (hr/yr)	Fuel Type	HP	EMISSIONS (ton/yr)						
					NO _x	CO	SO _x	PM10	VOC (exhaust)	VOC (crankcase)	
ISI TC300 Wheel Crusher	2004	1250	Gasoline	18	0.124	4.939	0.007	0.008	0.169	0.055	
Air Compressor	2002	100	Gasoline	5.5	0.003	0.121	0.000	0.000	0.004	0.001	
Rigid RD80702 Pressure Washer	2011	100	Gasoline	7	0.004	0.154	0.000	0.000	0.005	0.002	
Rigid RD80702 Pressure Washer	2011	100	Gasoline	7	0.004	0.154	0.000	0.000	0.005	0.002	
Comp Dog Roller	2009	500	Gasoline	15	0.041	1.646	0.002	0.003	0.056	0.018	
Tarp Roller	2011	800	Gasoline	27	0.119	4.741	0.006	0.008	0.162	0.052	
Miller Welder	2005	500	Gasoline	20	0.055	2.195	0.003	0.004	0.075	0.024	
Hobart Welder	2002	500	Gasoline		0.000	0.000	0.000	0.000	0.000	0.000	
Dewalt DP3750 Pressure Washer	2002	200	Gasoline	10	0.011	0.439	0.001	0.001	0.015	0.005	

**APPENDIX G-3: PROCESS EMISSIONS
TABLE 4. GENERATORS
OKEECHOBEE LANDFILL, INC.**

CLIENT	Okeechobee Landfill, Inc.	PROJECT	Title V Operating Permit Renewal	JOB NO.	101.01.22
SUBJECT	GENERATOR EMISSIONS	BY	Lindsey Kennelly	DATE	10/24/2012
		CHECKED		DATE	

OBJECTIVE: Calculate emissions for the generators that use diesel and gasoline at OLI.

APPROACH: Use emission factors for diesel and gasoline engines provided in AP-42

Compound	Diesel Engine Emission Factor	Gasoline Engine Emission Factor	
NO _x	0.031	0.011	(lb/hp-hr) ¹
CO	0.00668	0.439	(lb/hp-hr) ¹
SO ₂	0.00205	0.000591	(lb/hp-hr) ¹
PM ₁₀ (engine)	0.0022	0.000721	(lb/hp-hr) ¹
VOC (exhaust)	0.00247	0.015	(lb/hp-hr) ¹
VOC (crankcase)	0.0000441	0.00485	(lb/hp-hr) ¹

¹ Emission factor obtained from AP-42, Chapter 3.3, Table 3.3-1

² Emission factor obtained from AP-42, Chapter 11.19.2

Equipment	Install Year	HP	Fuel Type	EMISSIONS (lb/hr)					
				NO _x	CO	SO _x	PM10	VOC (exhaust)	VOC (crankcase)
DIESEL GENERATOR									
Tradewinds/Perkins generator *	2000	360	diesel	11.2	2.4	0.7	0.8	0.9	0.0
Generac generator	2004	20	diesel	0.6	0.1	0.04	0.04	0.05	0.001
John Deere Power Tech 4.5L/Baldor Gen Set	2006	70	diesel	2.2	0.5	0.1	0.2	0.2	0.003
Caterpillar generator	2007	450	diesel	14.0	3.0	0.9	1.0	1.1	0.020
John Deere Power Tech 2.4L/Baldor Gen Set	2008	60	diesel	1.9	0.4	0.1	0.1	0.1	0.003
Caterpillar generator **	2011	1000	diesel	31.0	6.7	2.1	2.2	2.5	0.0
GASOLINE GENERATOR									
Cummins QSX15-G9 Generator	2007	755	gasoline	8.3	11.3	0.4	0.5	11.3	3.7

ASSUME: Each generator operates **200** hr/yr

Equipment	EMISSIONS (ton/yr)					
	NO _x	CO	SO _x	PM10	VOC (exhaust)	VOC (crankcase)
DIESEL GENERATOR						
Tradewinds/Perkins generator *	1.1	0.2	0.1	0.1	0.1	0.0
Generac generator	0.062	0.013	0.004	0.004	0.005	0.0001
John Deere Power Tech 4.5L/Baldor Gen Set	0.217	0.047	0.014	0.015	0.017	0.000
Caterpillar generator	1.395	0.301	0.092	0.099	0.111	0.0020
John Deere Power Tech 2.4L/Baldor Gen Set	0.2	0.0	0.0	0.0	0.0	0.0
Caterpillar generator **	3.100	0.668	0.205	0.220	0.247	0.004
GASOLINE GENERATOR						
Cummins QSX15-G9 Generator	0.83	1.13	0.04	0.05	1.13	0.37
TOTAL =	6.9	2.4	0.4	0.5	1.6	0.4

* Tradewinds/Perkins generator rated at 270 kW

** Caterpillar generator rated at 744 kW

**APPENDIX G-3: COMBUSTION ASSETS
TABLE 5. ENGINE APPLICABILITY
OKEECHOBEE LANDFILL, INC.**

CLIENT Okeechobee Landfill, Inc.	PROJECT Title V Operating Permit Renewal	JOB NO. 101.01.22
SUBJECT		BY Lindsey Kennelly
		DATE 10/24/2012
		CHECKED
		DATE

Unit	Unit Manufacturer	Engine Fuel	Engine Ignition	Stationary/ Mobile	Emergency/Non- Emergency	40 CFR 60 Subpart IIII (Y/N - Reason)	40 CFR 60 Subpart JJJJ (Y/N - Reason)	40 CFR 63 Subpart ZZZZ (Y/N - Reason)
Generator	Tradewinds	Diesel	Compression	Stationary	Emergency	N - Manufactured before April 1, 2006	N - Compression Ignition	Y - Located at area source of HAPs
Generator	Generac	Propane	Spark	Stationary	Emergency	N - Spark Ignition	N - Manufactured before January 1, 2009	Y - Located at area source of HAPs
Water Pump	Thompson	Diesel	Compression	Stationary	Non-Emergency	N - Manufactured before April 1, 2006	N - Compression Ignition	Y - Located at area source of HAPs
Generator	Baldor	Diesel	Compression	Stationary	Emergency	N - Manufactured before April 1, 2006	N - Compression Ignition	Y - Located at area source of HAPs
Generator	Cummins	Diesel	Compression	Stationary	Emergency	Y - Compression Ignition & manufactured after	N - Compression Ignition	Y - Located at area source of HAPs
Generator	Caterpillar	Diesel	Compression	Stationary	Emergency	Y - Compression Ignition & manufactured after	N - Compression Ignition	Y - Located at area source of HAPs
Wood Waste Grinder	Peterson	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Red Pump	Multiquip	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Tire Cutter	TSI	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Wheel Crusher	TSI	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Welder	Miller	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Air Compressor	Sullair	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Rock Crusher	Metso	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Tipper	Columbia	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Generator	Baldor	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Light Plant	Wacker	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Light Plant	Wacker	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Air Compressor	Sullair	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Air Compressor		Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Pressure Washer	Rigid	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Pressure Washer	Rigid	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Comp Dog Roller	Briggs Straton	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Tarp Roller	Kawasaki	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Pressure Washer	Dewalt	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Screener	McCloskey	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Heater	Dayton	Kerosene	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Heater	Dayton	Kerosene	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Steam Cleaner	HydroTEK	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Steam Cleaner	Beckett	Diesel	Compression	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile
Welder	Hobart	Gasoline	Spark	Mobile	Non-Emergency	N - Mobile	N - Mobile	N - Mobile

APPENDIX H
FUEL ANALYSIS

APPENDIX H **FUEL ANALYSIS**

The open flares (EU 008, EU 009, and 010) burn landfill gas (LFG), which consists primarily of methane and carbon dioxide. For the purpose of the control device calculations presented in this application, LFG is assumed to have the following characteristics:

- Approx. energy content of methane: 1,010 BTU/ft³
- Average CH₄ content of LFG, by volume: 50%
- Approx. energy content of LFG: 505 BTU/ft³

APPENDIX I
CORRESPONDENCE

From: [Anderson, Lennon](#)
To: [Bishop, Tony](#)
Cc: [Christiansen, Jim](#); [Thorley, David](#); [Delosantos, Manuel](#); [Hoefert, Lee](#)
Subject: FW: Waste Management Letter
Date: Monday, April 11, 2011 12:33:47 PM

Dear Mr. Bishop,

In response to your March 18, 2011 letter, please note below that DEP concurs with your conclusion regarding the composting system.

Thanks!

From: Delosantos, Manuel
Sent: Tuesday, March 29, 2011 3:28 PM
To: Anderson, Lennon
Subject: Waste Management Letter

Lennon,

The letter from Waste Management for the construction of a composting system at the Okeechobee landfill is in your inbox. According to the information in the letter the emissions from the composting of vegetative food waste is less than 5 lb. Of VOC per ton of compostable material. This activity can be considered as an insignificant activity and can be incorporated into the TV permit in the next TV renewal or revision.

Manny

Manuel P. Delosantos
Engineering Specialist IV
DEP Southeast District
Air Program
Phone 561/ 681-6628
Fax 561/ 681-6790
manuel.delosantos@dep.state.fl.us

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Herschel T. Vinyard Jr. is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.

Carlson Environmental Consultants, PC

305 South Main Street
Monroe, NC 28112
704-283-9765
704-283-9755 fax

January 17, 2010

Mr. Lennon Anderson, PE
Director, Air Program
Florida Department of Environmental Protection
Southeast District Office, Air Program
400 North Congress Street, Suite 200
West Palm Beach, Florida 33401

Subject: Rule Applicability Analysis – Landfill Equipment
40 CFR 63 Subpart ZZZZ, 40 CFR 60 Subpart IIII & 40 CFR 60 Subpart JJJJ
Okeechobee Landfill, Inc. – Berman Road Landfill
Facility ID No. 0930104
Title V Permit No. 0930104-016-AV

Dear Mr. Anderson:

Per the request of FDEP and on behalf of Okeechobee Landfill, Inc. (OLI), Carlson Environmental Consultants, PC (CEC) is submitting this Rule Applicability Analysis for three (3) pieces of landfill equipment to be utilized at the Berman Road Landfill (Landfill) located near Okeechobee, Florida. OLI previously submitted a letter request (dated December 2, 2009) to FDEP for the addition of this equipment to be listed as insignificant air emissions sources in the Landfill's subject Title V Permit. In an email to OLI dated December 4, 2009, the FDEP requested a rule applicability analysis for the equipment based on the following regulations:

- 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines;
- 40 CFR 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines; and,
- 40 CFR 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE).

The following page details the landfill equipment to be utilized and a summary of applicability concerning each of the above regulations.

Landfill Equipment

Description	Model	Manufacture Date	Engine Type	Cylinder Displacement	Rated Horsepower	Hours Used Per Year
Wood Waste Grinder	Peterson 6710B	1990	CAT Diesel	27 liters	860	70
Tire Cutter	TSI TC-125	2004	Kubota Diesel	2.0 liters	35	1,250
Wheel Crusher	TCI TC-300	2004	B&S Gas	570 cc (34.78 cu in)	18	1,250

Note: All equipment information and estimated usage provided to CEC by Okeechobee Landfill, Inc.

40 CFR 60 – Subpart IIII

The provisions of this subpart are applicable to owners and operators of stationary compression (i.e., diesel) internal combustion engines that were manufactured after April 1, 2006. The wood waste grinder and tire cutter are not applicable to this regulation based upon the date of manufacture.

40 CFR 60 – Subpart JJJJ

The provisions of this subpart are applicable to owners and operators of stationary spark ignition (i.e., gasoline) internal combustion engines at any horsepower that were manufactured after July 1, 2008. The wheel crusher is not applicable to this regulation based on the date of manufacture.

40 CFR 63 – Subpart ZZZZ

The provisions of this subpart are applicable to owners and operators of stationary reciprocating internal combustion engines (RICE) (gasoline or diesel) that are located at an area source of HAP emissions. The Berman Road Landfill is an area source of HAP air emissions; therefore, this subpart applies to the facility. The tire cutter and wheel crusher do not have engines that exceed 500 hp; therefore, they do not have to meet the requirements of this regulation. The wood waste grinder has an engine that exceeds the 500 hp threshold; however, the grinder is utilized less than 100 hours per year. Therefore, the grinder is classified as a “limited use stationary RICE” and is not subject to any requirements of Subpart ZZZZ with the exception of an initial notification that meets the requirements of 40 CFR 63.6645(d).

Responsible Official Certification

Mr. Lennon Anderson, PE
January 17, 2010
Page 3 of 4

Based on reasonable inquiry into the accuracy of this information, the below signed Responsible Official for the Landfill certifies that the statements and information in these documents are true, accurate, and complete.

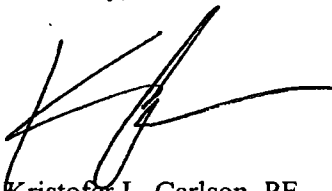
Name of Responsible Official and Title: Tony Bishop – District Manager

Signature:  Date: 1/17/10

Closing

We trust that this information will assist with the permitting of the noted equipment in this letter. Please feel free to contact the undersigned at (704) 283-9765 or Mr. Tony Bishop of Okeechobee Landfill, Inc. at (863) 357-0824 if you have any questions concerning this letter or require additional information.

Sincerely,



Kristofer L. Carlson, PE
Principal
Carlson Environmental Consultants, PC

Attachments

cc: Manuel P. Delosantos, FDEP
Tony Bishop, OLI
Charlie Orcutt, OLI
Jim Christiansen, OLI
Seth Nunes, PE, CEC



Jack Long, Director
Southeast District Office

Florida Department of Environmental Protection

Southeast District Office
400 N. Congress Avenue, Suite 200
West Palm Beach, FL 33401
(561) 681-6600

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

April 6, 2009

Electronically Sent – Received Receipt Requested
thawkins@wm.com

Mr. Timothy B. Hawkins
Vice President
Okeechobee Landfill, Inc.
10800 NE 128th Avenue
Okeechobee, FL. 34972

Okeechobee County
Project: Pug Mill Construction at
Okeechobee Landfill

RE: Notice of Exemption

Dear Mr. Hawkins:

We have reviewed the application received March 2, 2009, for the project described as follows:

Construction of a Pug Mill at the Okeechobee Landfill facility, where fly ash will be combined with water in an enclosed area, to hydrate the ash before placing it in the landfill for disposal.

The proposed project will include two fly ash storage silos and a mixing and loading of the hydrated fly ash. The mixing and loading activities are conducted in an enclosed area. Emissions of particulate matter (PM) generated during loading of the dry fly ash to the storage silos will be controlled with baghouses atop of each silo.

No emissions of PM will be generated during the mixing and transfer to vehicles of the hydrated fly ash since the ash contains 70 percent of moisture, and the operation takes place in an enclosed area. According to the applicant, the potential emissions of PM on a throughput average of 700 tons of fly ash per day and operating 8760 hours were calculated to be 0.253 tons per year.

Based on the information you submitted on March 2, 2009, no permit is required for your project by the Department's air pollution program. This source is exempted under the provisions of Florida Administrative Code (F.A.C.) Rule 62-4.040. Note that exemptions pursuant to F.A.C. Rule 62-4.040 may be revoked by the Department if the project is substantially modified or if the basis for the exemption is determined to be materially incorrect.

Any changes in your plans or process should be submitted for review, as changes may result in permits being required. This exemption is valid only for the specific processes and operations you described and any deviation from those described may cause a permit to be required and may subject you to enforcement action by the Department. This letter does not relieve you from the need to obtain any other permits (local, state, or federal) which may be required.

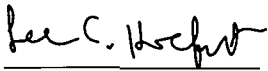
This exemption only applies to the requirement to obtain an air permit for the Pug Mill operations. Operation of the facility must comply with all other applicable air pollution regulations. General requirements for all facilities are summarized as follows:

- a) No person may allow emission of air pollutants which cause or contribute to an objectionable odor.
 - b) No person may allow emission of air pollutants of a density equal to or greater than 5% opacity from any baghouse.
 - c) No person may allow emission of unconfined particulate matter from any conveying equipment, drop points, truck loading and unloading activity without taking reasonable precautions to prevent such emissions.
 - d) Reasonable precautions include removal of particulate matter, paving of roads, application of water for dust suppression, use of enclosures, and use of materials that minimize dust.
 - e) The facility and related appurtenances that are installed and used to control emissions of air pollutants shall be properly operated and maintained at all times.
- [Rule 62-4.070(3), F.A.C.]

By accepting this exemption the facility owner and operator specifically agrees to allow a duly authorized Department representative access to the facility at reasonable times to inspect and test, upon presentation of credentials or other documents as may be required by law, to determine compliance with Department rules.

If you have any questions, please contact Manuel P. Delosantos at 561-681-6628.

Sincerely,

 4/6/2009

Lee C. Hoefert, P.E. Date
Air Permitting Supervisor

cc:

David A. Duff, Golder Associates, Inc
Seth A. Nunes, WM, Market Area Engineer

e-mail
e-mail

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Determination Detail

Control Number: M090038

Category: MACT
EPA Office: Region 5
Date: 12/05/2008
Title: Reciprocating Internal Combustion Engines
Recipient: Seltz, Owen
Author: Bagherian, Reza
Comments:

Subparts: Part 63, IIII Auto and Light Duty Trucks (surface coating)
 ZZZZ Stationary Reciprocating Internal Combustion Engines

References: 63.6585(a)
 1068.30
 60.4200

Abstract:

Q1: Does 40 CFR part 63, subpart ZZZZ, apply to non-road, non-stationary reciprocating internal combustion engines located at a major source of hazardous air pollutants?

A1: No. MACT subpart ZZZZ does not apply to non-road, non-stationary reciprocating internal combustion engines located at a major source of hazardous air pollutants.

Q2: Does 40 CFR part 60, subpart IIII, apply to non-road, non-stationary reciprocating internal combustion engines?

A2: No. NSPS subpart IIII does not apply to non-road, non-stationary reciprocating internal combustion engines.

Letter:

12/05/2008

Owen Seltz, Engineer
Minnesota Pollution Control Agency
Metallic Mining Sector
Industrial Division
520 Lafayette Road North
St. Paul, MN 55155-4194

Dear Mr. Seltz:

This letter is in response to your letter dated October 29, 2008, requesting an applicability determination that a Reciprocating Internal Combustion Engine (RICE) at Hibbing Taconite Company's Hibbing, Minnesota facility qualifies as a non-road, non-stationary engine. This request concerns the requirements of National Emissions Standards for Hazardous Air Pollutants for RICE, 40 C.F.R. Part 63, Subpart ZZZZ, and Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart IIII, as related to non-road, non-stationary engines. Specifically, 40 C.F.R. § 63.6585(a) states:

"a stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differs from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition."

In a recent permit application, Hibbing Taconite Company proposed to add a 1,825 KW diesel generator to its facility. The proposed generator will be used to move electric rope shovels, electric power drills, and the electrically powered tailings basin dragline around the mine. In the permit application, Hibbing Taconite Company asserted that the engine qualifies as a non-road engine, because the generator is regularly moved throughout the facility, approximately once every seven days. U.S. Environmental Protection Agency's (EPA's) response is stated below.

Determination:

We have reviewed the information Minnesota Pollution Control Agency provided, the underlying regulations and previous determinations. Based on our review, we determine that the diesel generator at the Hibbing Taconite Company qualifies as a non-road, non-stationary engine.

I. 40 C.F.R. Part 63, Subpart ZZZZ

The diesel engine used at the Hibbing Taconite Company is not subject to the requirements of 40 C.F.R. Part 63, Subpart ZZZZ. Specifically, 40 C.F.R. § 1068.30 states:

"(1) a nonroad engine is any internal combustion engine: (iii) [t]hat, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform."

In addition, 40 C.F.R. § 1068.30 states that which is not a non-road engine:

"(2) an internal combustion engine is not a nonroad engine if: (iii) [t]he engine otherwise included in paragraph (1)(iii) of this definition remains or will remain at a

location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine that replaces an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year."

The diesel engine used at the Hibbing Taconite Company is regularly moved through the facility. The engine is not stationary at one location for a period of more than 12 months. In fact, the engine is moved at least once every seven days. Therefore, the Hibbing Taconite Company's diesel engine is classified as a non-road engine.

II. 40 C.F.R. Part 60, Subpart IIII

The diesel engine used at the Hibbing Taconite Company is not subject to the requirements of 40 C.F.R. Part 60, Subpart IIII. Specifically, 40 C.F.R. § 60.4200 states "[t]he provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE)?"

The Hibbing Taconite Company's diesel engine is not a stationary source, because it does not remain in a single location on a permanent basis. Therefore, the diesel engine is not subject to the requirements of 40 C.F.R. Part 60, Subpart IIII.

The designation of the diesel engine as a non-road engine establishes that it is not subject to the specific requirements of 40 C.F.R. Part 63, Subpart ZZZZ. The designation of the diesel engine as a non-stationary engine establishes that it is not subject to the specific requirements of 40 C.F.R. Part 60, Subpart IIII. If you have any questions or concerns regarding this determination, please feel free to call Reza Bagherian at (312) 886-0674.

Sincerely yours,

George T. Czerniak, Chief
Air Enforcement and Compliance Assurance Branch

Cc: Robert Beresford, MPCA