

*Prepared for*



**Omni Waste**

**Omni Waste of Osceola County, LLC  
1501 Omni Way  
St. Cloud, Florida 34773**

**APPLICATION FOR AN  
AIR CONSTRUCTION PERMIT  
PHASES 2 AND 3  
OAK HAMMOCK DISPOSAL FACILITY**

*Prepared by*

**Geosyntec**   
consultants

engineers | scientists | innovators

**14055 Riveredge Drive, Suite 300  
Tampa, Florida 33637**

**Project Number FL0916  
PDF Doc. No. GEAG-07-08**

**March 2007**

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**PERMIT APPLICATION**

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# PERMIT APPLICATION



# Department of Environmental Protection

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## Division of Air Resource Management

### APPLICATION FOR AIR PERMIT - LONG FORM

#### I. APPLICATION INFORMATION

**Air Construction Permit** – Use this form to apply for any air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes 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/renewal Title V air operation permit.

**Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option)** – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

#### Identification of Facility

1. Facility Owner/Company Name: <b>Omni Waste of Osceola County, LLC (Omni)*</b>	
2. Site Name: <b>Oak Hammock Disposal (OHD) Facility</b>	
3. Facility Identification Number: <b>0970079</b>	
4. Facility Location... <b>Approximately 6.5 miles south of Holopaw, Florida, on Highway</b> Street Address or Other Locator: <b>1501 Omni Way</b> U.S. 441 City: <b>St. Cloud</b> County: <b>Osceola</b> Zip Code: <b>34773</b>	
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: <b>Ayushman Gupta, P.E., Senior Engineer</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>GeoSyntec Consultants</b> Street Address: <b>14055 Riveredge Drive, Suite 300</b> City: <b>Tampa</b> State: <b>Florida</b> Zip Code: <b>33637</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(813) 558 - 0990</b> ext. 235 Fax: <b>(813) 558 - 9726</b>	
4. Application Contact Email Address: <b>agupta@geosyntec.com</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application: <b>3/20/07</b>	3. PSD Number (if applicable):
2. Project Number(s): <b>0970079-004-Ac</b>	4. Siting Number (if applicable):

Note: \*Omni is a wholly owned subsidiary of Waste Services, Inc (WSI)

## APPLICATION INFORMATION

### Purpose of Application

**This application for air permit is 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

**Phase I of the OHD facility was developed under Air Construction Permit # 0970079-001-AC. This application is being submitted to permit development of Phases 2 and 3 at the OHD facility over the next 5 years (through end of 2011).**

**APPLICATION INFORMATION**

**Scope of Application**

<b>Emissions Unit ID Number</b>	<b>Description of Emissions Unit</b>	<b>Air Permit Type</b>	<b>Air Permit Proc. Fee</b>
1	Class I MSW landfill with up to 2 flares that will be installed as part of gas extraction and control system over the next 5 years of operation (through end of 2011).	AC1B	

**Application Processing Fee**


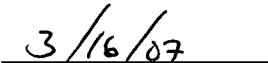
Check one:  Attached - Amount:  Not Applicable \*

Note: \* Based on discussion with Teresa Heron of FDEP on 16 March 2007

**APPLICATION INFORMATION**

**Owner/Authorized Representative Statement**

**Complete if applying for an air construction permit or an initial FESOP.**

1. Owner/Authorized Representative Name : <b>R. Shawn McCash</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>Omni Waste of Osceola County, LLC (Omni)*</b> Street Address: <b>1501 Omni Way</b> City: <b>St. Cloud</b> State: <b>Florida</b> Zip Code: <b>34773</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: <b>( 561 ) 237 - 3414</b> ext. Fax: <b>( 561 ) 237 - 3401</b>
4. Owner/Authorized Representative Email Address: <b>smccash@wsii.us</b>
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the facility 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 requirements identified in this application to which the facility 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.</i>   Signature  Date

**Note: \*Omni is a wholly owned subsidiary of Waste Services, Inc (WSI)**

# APPLICATION INFORMATION

## Application Responsible Official Certification

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

1. Application Responsible Official Name:			
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.			
3. Application Responsible Official Mailing Address...			
Organization/Firm:			
Street Address:			
City:		State:	Zip Code:
4. Application Responsible Official Telephone Numbers...			
Telephone:		ext.	Fax:
5. Application Responsible Official Email Address:			
6. Application Responsible Official Certification:			
<p><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></p>			
_____ Signature		_____ Date	



# APPLICATION INFORMATION

## Professional Engineer Certification

1. Professional Engineer Name: <b>Ayushman Gupta</b> Registration Number: <b>54023</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>GeoSyntec Consultants</b> Street Address: <b>14055 Riveredge Dr. Suite 300</b> City: <b>Tampa</b> State: <b>FL</b> Zip Code: <b>33637</b>
3. Professional Engineer Telephone Numbers... <b>(813) 558 - 0990</b> ext. <b>235</b> Fax: <b>(813) 558 - 9726</b>
4. Professional Engineer Email Address: <b>agupta@geosyntec.com</b>
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 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 checked="" 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 type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, 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>  Signature <u><i>Ayushman Gupta</i></u> Date <u>3/19/07</u> (seal)

\* Attach any exception to certification statement.

## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates.. <b>Sections 11 &amp; 14 Township 28S Range 32E.</b> Zone 17      East (km) <b>190.4</b> North (km) <b>413.5</b>		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) <b>28° 03' 32''</b> Longitude (DD/MM/SS) <b>81° 05' 46''</b>	
3. Governmental Facility Code: <b>0</b>	4. Facility Status Code: <b>C</b>	5. Facility Major Group SIC Code: <b>95</b>	6. Facility SIC(s): <b>9511</b>
7. Facility Comment : <b>Phase I of the OHD facility was developed under Air Construction Permit # 0970079-001-AC. This application is being submitted to permit development of Phases 2 and 3 at the OHD facility over the next 5 years (through end of 2011). See attached report for details.</b>			

#### Facility Contact

1. Facility Contact Name: <b>Matt Orr, General Manager, WSI</b>
2. Facility Contact Mailing Address... Organization/Firm: <b>Omni Waste of Osceola County, LLC (Omni)</b> Street Address: <b>1501 Omni Way</b> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span>City: <b>St. Cloud</b></span> <span>State: <b>FL</b></span> <span>Zip Code: <b>34773</b></span> </div>
3. Facility Contact Telephone Numbers: Telephone: <b>( 407 ) 891-3720</b> ext. Fax: <b>( 407 ) 891 - 3730</b>
4. Facility Contact Email Address: <b>morr@wasteservicesinc.com</b>

#### 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: <b>Same as in Section I</b>
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span>City:</span> <span>State:</span> <span>Zip Code:</span> </div>
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) -      ext.      Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

## 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 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 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 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:  <b>OHD facility is a Title V source because of the design capacity of the landfill. However, Phases 1 through 3 of OHD facility will <u>not</u> be a major stationary source. See attached report for details.</b>	

**FACILITY INFORMATION**

**List of Pollutants Emitted by Facility**

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
CO	A	N
TRS	A	N
NMOC	B	N
VOC	A	N
Any Individual HAP (H001 to H189)	A	N
Total HAPS	A	N
HCl (H106)	A	N
Mg (H114)	A	N
NOX	A	N
PM	A	N

**FACILITY INFORMATION**

**B. EMISSIONS CAPS**

**Facility-Wide or Multi-Unit Emissions Caps**

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
7. Facility-Wide or Multi-Unit Emissions Cap Comment:					

## 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>Attached Report</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 type="checkbox"/> Attached, Document ID: _____ <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 type="checkbox"/> Attached, Document ID: _____ <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 checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL): <input checked="" type="checkbox"/> Attached, Document ID: <u>Attached Report</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>Attached Report</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input checked="" type="checkbox"/> Attached, Document ID: <u>Attached Report</u> <input type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" 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 checked="" 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 checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

**FACILITY INFORMATION**

**Additional Requirements for FESOP Applications**

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):  
 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: \_\_\_\_\_  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: \_\_\_\_\_  
 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: \_\_\_\_\_  
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 On site 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: \_\_\_\_\_  Not Applicable

**Additional Requirements Comment**

## EMISSIONS UNIT INFORMATION

Section [ ] of [ ]

### III. EMISSIONS UNIT INFORMATION

**Title V Air Operation Permit Application** - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

**Air Construction Permit or FESOP Application** - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

**Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application** - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.



**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**A. GENERAL EMISSIONS UNIT INFORMATION**

**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:  
**Class I MSW landfill (Phases 2 and 3 of OHD facility) and 2 flares that will be installed as part of the GECS over the next 5 years of operation.**

3. Emissions Unit Identification Number:**001 (Landfill), 002 (Flare), and 003 (Flare)**

4. Emissions Unit Status Code: <b>C</b>	5. Commence Construction Date: <b>Phase 2: Mid-2007 GECS &amp; Flares: 2008</b>	6. Initial Startup Date: <b>Phase 2: 4Q 2007 GECS &amp; Flares: Mid-2008</b>	7. Emissions Unit Major Group SIC Code: <b>95</b>	8. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	--	---	--	--

9. Package Unit:  
 Manufacturer: \_\_\_\_\_ Model Number: \_\_\_\_\_

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment: **Based on the air construction permit (Permit No. 0970079-001-AC) issued in April 2003, three emission units are permitted at the OHD facility. Emission unit number 001 is the Class I MSW landfill with gas extraction and control system (GECS). Emission unit numbers 002 and 003 include two flares that will be installed as part of the GECS. It is noted that no flares have been installed at this time.**

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**Emissions Unit Control Equipment**

1. Control Equipment/Method(s) Description:

**Equipment: Up to 2 flare(s) that will be installed over the next 5 years of operation.**

**Method: Flaring MSW landfill gas collected by the gas extraction and control system.**

2. Control Device or Method Code(s): 023

**EMISSIONS UNIT INFORMATION**

Section [1 ] of [1 ]

**B. EMISSIONS UNIT CAPACITY INFORMATION**

**(Optional for unregulated emissions units.)**

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate:	
2. <i>Maximum Production Rate:</i>	
3. Maximum Heat Input Rate: million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
hours/day	days/week
weeks/year	hours/year
6. Operating Capacity/Schedule Comment:	
<p><b>Information regarding the flare(s) will be provided in the Title V Air Operation Permit, which will be submitted to FDEP within 180 days of start of waste disposal in Phase 2 at the OHD facility.</b></p>	

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**C. EMISSION POINT (STACK/VENT) INFORMATION  
(Optional for unregulated emissions units.)****Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram:		2. Emission Point Type Code:	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code:	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:  <b>Information regarding the flare(s) will be provided in the Title V Air Operation Permit, which will be submitted to FDEP within 180 days of start of waste disposal in Phase 2 at the OHD facility.</b>			

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**D. SEGMENT (PROCESS/FUEL) INFORMATION**

**Segment Description and Rate: Segment 1 of 2**

1. Segment Description (Process/Fuel Type):  <b>Potential/fugitive emissions related to Class I MSW landfill with a maximum waste disposal rate of 6,000 tpd with 4,000 tpd of degradable waste.</b>		
2. Source Classification Code (SCC): <b>50200602</b>		3. SCC Units: <b>Tons Stored</b>
4. Maximum Hourly Rate:	5. Maximum Annual Rate: <b>1.144 million tons/yr (degradable)</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:  <b>Waste storage at the OHD facility assumes landfill operation for 5.5 days per week corresponding to 286 equivalent full days per year. See attached report for details.</b>		

**Segment Description and Rate: Segment 2 of 2**

1. Segment Description (Process/Fuel Type):  <b>Emissions related to MSW landfill gas burned in the flare(s) that will be installed as part of the gas extraction and control system.</b>		
2. Source Classification Code (SCC): <b>50200601</b>		3. SCC Units: <b>Million Cubic Feet Burned</b>
4. Maximum Hourly Rate:	5. Maximum Annual Rate: <b>619 million cu. ft. burned</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: <b>Maximum landfill gas generation rate during the next 5 years of operation at the OHD facility is approximately 825 million cu. ft. per year. Assuming a 75 percent collection efficiency of the gas extraction and control system, the maximum landfill gas burned at the flare(s) is approximately 619 million cu. ft. per year. See attached report for details.</b>		

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)**

**Segment Description and Rate:** Segment \_\_ of \_\_

1. Segment Description (Process/Fuel Type):		
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):		
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 [ 1 ] of [ 1 ]

**E. EMISSIONS UNIT POLLUTANTS**

**List of Pollutants Emitted by Emissions Unit**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			EL
TRS			EL
NMOC	023		EL
VOC	023		EL
Any Individual HAP (H001 to H189)	023		EL
HAPS	023		EL
H106			NS
H114			EL
NOX (Nitrogen Dioxide)			EL
PM			EL

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

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

**Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.**

1. Pollutant Emitted: <b>CO</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour <b>233.7<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>2.0 to 233.7 tons/year</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents CO emissions at the end of 8th year of landfill operation. It is noted that the CO is generated essentially by the flares that will be installed as part of the GECS.</b>			



**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>ESCPSD</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>233.7 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>233.7</b> tons/year
5. Method of Compliance:  <b>In accordance with Title V Air Operation Permit</b>	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

**(Optional for unregulated emissions units.)**

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

**Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.**

1. Pollutant Emitted: <b>TRS (as SO<sub>2</sub>)</b>		2. Total Percent Efficiency of Control: <b>99.7</b>	
3. Potential Emissions: lb/hour <b>5.8<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>0.7 to 5.8 tons/year</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents SO<sub>2</sub> emissions at the end of 8th year of landfill operation.</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

**Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.**

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>5.8 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>5.8</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

**(Optional for unregulated emissions units.)**

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

**Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.**

1. Pollutant Emitted: <b>NMOC</b>		2. Total Percent Efficiency of Control: <b>99.2</b>	
3. Potential Emissions: lb/hour <b>48.7<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>25.2 to 48.7 tons/year</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents maximum emissions for NMOC in the 5th year of landfill operation (mid-2008).</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

**Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.**

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>48.7 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>48.7</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

**(Optional for unregulated emissions units.)**

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

**Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.**

1. Pollutant Emitted: <b>VOC</b>		2. Total Percent Efficiency of Control: <b>98.0 to 99.7</b>	
3. Potential Emissions:  lb/hour <b>17.4<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>9.0 to 17.4 tons/year</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents maximum emissions for VOC in the 5th year of landfill operation (mid-2008).</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
ALLOWABLE EMISSIONS**

**Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.**

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>17.4 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>17.4</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>Any Individual HAP (H001 to H189)</b>	2. Total Percent Efficiency of Control: <b>98.0 to 99.7</b>
3. Potential Emissions: lb/hour <b>3.4<sup>(a)</sup></b> tons/year	4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): <b>1.8 to 3.4 tons/year</b>	
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>	7. Emissions Method Code: <b>3</b>
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:  <b>See attached report.</b>	
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents maximum emissions for any individual HAP in the 5th year of landfill operation (mid-2008).</b>	



**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>3.4 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>3.4</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

**(Optional for unregulated emissions units.)**

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

**Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.**

1. Pollutant Emitted: <b>Total HAPs</b>		2. Total Percent Efficiency of Control: <b>98.0 to 99.7</b>	
3. Potential Emissions:  lb/hour <b>10.1<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>5.2 to 10.1 tons/year</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents maximum emissions for total HAPs in the 5th year of landfill operation (mid-2008).</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
ALLOWABLE EMISSIONS**

**Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.**

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>10.1 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>10.1</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>HCl (H106)</b>		2. Total Percent Efficiency of Control: <b>98.0</b>	
3. Potential Emissions: lb/hour <b>2.9<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>0.7 to 2.9 tons/year</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents HCl emissions at the end of 8th year of landfill operation.</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>2.9 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>2.9</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions \_\_ of \_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions \_\_ of \_\_

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>Mercury (Hg, H114)</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour <b>6.4x10<sup>-5</sup> (a)</b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>2.9*10<sup>-5</sup> to 6.4x10<sup>-5</sup> tons/year</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents maximum emissions for Hg in the 5th year of landfill operation (mid-2008).</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
ALLOWABLE EMISSIONS**

**Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.**

**Allowable Emissions** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>6.4x10<sup>-5</sup> tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>6.4x10<sup>-5</sup> tons/year</b>
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

(Optional for unregulated emissions units.)

**Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions**

Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>NOX (Nitrogen Dioxide)</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour <b>12.6<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): <b>N/A</b>			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents NOX emissions at the end of 8th year of landfill operation.</b>			



**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>12.6 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>12.6</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete 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 permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: <b>PM</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour <b>5.2<sup>(a)</sup></b> tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): N/A			
6. Emission Factor: <b>See attached report</b>  Reference: <b>USEPA AP-42 Section 2.4 (1998)</b>		7. Emissions Method Code: <b>3</b>	
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:  <b>See attached report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:  <b>(a) Potential emission reported represents PM emissions at the end of 8th year of landfill operation.</b>			

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -  
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>5.2 tons/year</b>	4. Equivalent Allowable Emissions: lb/hour <b>5.2</b> tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions    of   

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour                      tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**G. VISIBLE EMISSIONS INFORMATION**

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

**Visible Emissions Limitation:** Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: <b>VE00<sup>(a)</sup></b>	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <sup>(a)</sup> <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: <b>0 %</b> Exceptional Conditions: <b>100 %</b> Maximum Period of Excess Opacity Allowed: <b>5 minutes during any 2 consecutive hrs.</b>	
4. Method of Compliance: <b>40 CFR 60, Appendix A-7, Method 22 as specified in 40 CFR 60.18 (f)(1).</b>	
5. Visible Emissions Comment: <b>(a) According to 40 CFR 60.18 (c)(1), flares shall be designed and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.</b>	

**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 [ 1 ] of [ 1 ]

**H. CONTINUOUS MONITOR INFORMATION**

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

**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:	

**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 [ 1 ]

**H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**

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

**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:	

**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 [ 1 ]

**I. EMISSIONS UNIT ADDITIONAL INFORMATION**

**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 type="checkbox"/> Attached, Document ID: _____ <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: _____ <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 type="checkbox"/> Attached, Document ID: _____ <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 type="checkbox"/> Previously Submitted, Date _____ <input checked="" 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 type="checkbox"/> Previously Submitted, Date _____ <input checked="" 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

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 1 ]

**Additional Requirements for Air Construction Permit Applications**

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

**Additional Requirements for Title V Air Operation Permit Applications**

1. Identification of Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input type="checkbox"/> Copy Attached, Document ID: _____ <input type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable



# REPORT

AYU SYAH ALI  
3/19/07

**AIR CONSTRUCTION PERMIT – TITLE V SOURCE  
OAK HAMMOCK DISPOSAL FACILITY  
OSCEOLA COUNTY, FLORIDA**

**INTRODUCTION**

Oak Hammock Disposal (OHD) facility is an existing Class I municipal solid waste (MSW) landfill in Osceola County, Florida. The landfill started operations (i.e., the facility started accepting waste) in January 2004. The current Air Construction Permit for the landfill (Permit # 0970079-001-AC) allows development of Phase 1, which consists of first four cells, Cells 1 through 4. The first four cells at the OHD facility have been constructed. Almost the entire permitted storage capacity in three of the four cells in Phase 1 has been consumed. Waste is currently being deposited in last of the four cells in Phase 1 development of the OHD facility.

To continue landfill operations at the OHD facility, Phases 2 and 3 will be developed over the next five years. Three cells (Cells 5 through 7) will be constructed as part of Phase 2 development and another three cells (Cells 8 through 10) will be constructed as part of Phase 3 development. It is expected that construction of Cell 5 in Phase 2 will be initiated in second/third quarter of 2007 to continue operations at the landfill.

A draft solid waste permit (SC49-0199726-004 and SO49-0199726-005) to construct and operate Phases 2 and 3 at the Oak Hammock Disposal (OHD) facility was issued on 15 February 2007. The permit was issued to Omni Waste of Osceola County, LLC (Omni) by the Florida Department of Environmental Protection (FDEP) for a period of 5 years. Specific Condition No. 63 of this draft solid waste permit addresses the requirements for "*Prevention of Significant Deterioration (PSD)*".

To satisfy the PSD requirements addressed in the Specific Condition No. 63 of the above referenced draft permit, Geosyntec (on behalf of Omni) is hereby submitting an Air Construction Permit Application - Title V Source not requiring a PSD Pre-construction Review. The Air Construction Permit Application is being submitted to permit the construction of Phases 2 and 3 (Cells 5 through 10) at the OHD facility. This report supports the Air Construction Permit Application to which it is attached. It establishes the inapplicability of the PSD pre-construction review requirements of Chapter 62-212, Florida Administrative Code (F.A.C.) to development of Phases 1 through 3 at the OHD facility.

The remainder of this report presents: (i) a project background; (ii) approach used to establish the inapplicability of the PSD review requirements; (iii) methodology, analyses,

and assumptions used for estimating the emissions of various pollutants; and (iv) the applicability/inapplicability of the PSD pre-construction review requirements.

## PROJECT BACKGROUND

The OHD site comprises a total of 2178.8 acres and is located in eastern Osceola County in Florida, west of highway U.S. 441, approximately 6.5 miles south of Holopaw. The OHD site is located in Sections 11, 13, and 14 of Township 28 South, Range 32 East, and Sections 17 and 18 of Township 28 South, Range 33 East, Osceola County, Florida.

The complete build-out of the OHD facility includes 21 landfill cells (that will be developed in 5 phases) with a total footprint of approximately 264 acres. The center of the 264-acre landfill is located at latitude 28° 03' 32" and longitude 81° 05' 46" or a Northing of 1354222 and an Easting of 625229 in the Florida State Plane Coordinate System. Phase 1 development included four cells (Cells 1 through 4) with a total footprint of approximately 53 acres and ancillary facilities to support the landfill operations. Construction of Phase 1 has been completed. Phase 2 development will consist of three cells, Cells 5 through 7, with a footprint of approximately 36 acres. Phase 3 will also consist of three cells, Cells 8 through 10, and has a footprint of approximately 34 acres. The combined footprint of Phases 1 through 3 will be approximately 123 acres. The site location, the 264-acre landfill footprint, and Phases 1 through 3 of the OHD facility are presented in Figure 1.

As noted earlier, all four cells in Phase 1 development of the OHD facility have been constructed. An Air Construction Permit (Permit # 0970079-001-AC) was issued in April 2003 that authorized the construction of Cells 1 through 4 in Phase 1 and the installation of a gas extraction and control system (GECS) with up to two flares. The expiration of this Air Construction Permit was extended by FDEP from April 2006 to April 2010 in a letter dated 19 May 2006. This application is being submitted to request the issuance of an air construction permit that authorizes (i) the construction of Phases 2 and 3 (Cells 5 through 10) at the OHD facility and (ii) the installation of the proposed GECS with up to two flares over the next five years (2007 through end of 2011).

A solid waste renewal permit application entitled *Renewal Permit Application to Construct and Operate Phases 2 and 3 of the Oak Hammock Disposal Facility* was submitted to FDEP in September 2006 (and is hereafter referred to as the Renewal Permit Application). As discussed in Section 5 of the Renewal Permit Application, entitled *Landfill Gas Management*, the GECS will be installed in conjunction with the construction of the final cover system. The GECS will consist of vertical gas extraction wells, gas transmission pipes, and, ultimately, 4 flare stations as indicated on Sheet 29 of 40 of the permit drawings (submitted along with the Renewal Permit Application). The

installation of 3-ft diameter vertical gas extraction wells at a spacing of approximately 300 feet will begin in the 5<sup>th</sup> year of landfill operation (i.e., in 2008).

## APPLICABLE REGULATIONS

The regulations related to the PSD pre-construction requirements of Chapter 62-212, F.A.C., are listed below. The applicability to the PSD requirements of each of the following regulations is also briefly discussed below.

Chapter 62-4, Permits

Chapter 62-204, Air Pollution Control – General Provisions

Chapter 62-210, Stationary Sources – General Requirements

Chapter 62-212, Stationary Sources – Preconstruction Review

Chapter 62-296, Stationary Sources – Emission Standards

40 CFR 60, Subpart WWW, Standards of Performance for MSW Landfills

40 CFR 60.18, General Control Device Requirements

Chapter 62-4, F.A.C., sets forth the procedures and requirements for obtaining permits from FDEP. Chapter 62-4, F.A.C., lists the permit processing fee for Air Construction Permit Application - Title V Source not requiring a PSD Pre-construction Review in Rule 62-4.050(4)(a)2., F.A.C.

Chapter 62-204, F.A.C., adopts and incorporates the federal air pollution control regulations by reference. Chapter 62-204, F.A.C., adopts and incorporates 40 CFR 60 Subpart WWW.

Chapter 62-210, F.A.C., provides the criteria for determining the need to obtain an air construction or operation permit. Rule 62-210.200, F.A.C., includes definitions of words and phrases used in this chapter and in Chapters 62-212 and 62-296, F.A.C.

Chapter 62-212, F.A.C., establishes the preconstruction review requirements for proposed new emissions units or facilities and their modifications. The PSD preconstruction review requirements for new emissions units or facilities are included in Rule 62-212.400(2), F.A.C.

Chapter 62-296, F.A.C., establishes the emission limiting standards and compliance requirements for stationary sources of air pollution. With respect to MSW landfills, Rule 62-296.100, F.A.C., states that standards for any “new” facility or emissions unit shall be the federal standards of performance for new stationary sources adopted by reference in Rule 62-204.800(7), F.A.C.

40 CFR 60, Subpart WWW establishes the standards for air emissions (with respect to operation, test methods and procedure, compliance, monitoring, reporting, and record keeping) for MSW landfills constructed after 30 May 1991. The 40 CFR 60.754(c) in Subpart WWW recommends using USEPA AP-42 for estimating MSW landfill emissions for PSD purposes.

40 CFR 60.18 contains the requirements for control devices used to comply with applicable rules in 40 CFR 60 and 61. 40 CFR 60.18 (b) through (f) details the design, operation, monitoring, and compliance requirements for flares used as control devices.

## APPROACH

The waste accepted at the landfill in the first year of operation (Jan 2004 through December 2004) was approximately 399,500 tons; in the second year of operation (calendar year 2005) was approximately 824,200 tons; and in the third year of operation (calendar year 2006) was approximately 1,538,300 tons. The current average waste disposal rate at the OHD facility is approximately 6,000 tons/day. Based on Omni's waste composition records, only about 60 percent of the waste accepted at the landfill is degradable waste. However, a maximum waste disposal rate of 4,000 tons/day (for degradable component of the incoming waste) was conservatively assumed for the OHD facility for the purpose of this Air Construction Permit Application. This waste disposal rate is consistent with the disposal rate used in the air construction permit application submitted to FDEP in January 2003 for Phase 1 development.

It will be shown that even for a conservative disposal rate of 4,000 tons/day (degradable waste), the mass emission rate for any pollutant over the next 5 years of operation at the OHD facility (i.e., during development of Phases 2 and 3) will be less than 250 tons/year. As a result, OHD facility (with Phases 1 through 3 developed) will not be a *major stationary source* in accordance with Rule 62-210.200(193), F.A.C. Therefore, development of Phases 1 through 3 at the OHD facility is not subject to the PSD pre-construction review requirements in accordance with Rule 62-212.400(2)(a), F.A.C.

It will also be shown that the OHD facility will become a *major facility* over the next 5 years of operation (2007 through end of 2011), in accordance with Rule 62-210.200(189), F.A.C., only because of the carbon monoxide emissions from the flare(s), which will be used as control device in the proposed GECS. It is noted that the installation of the proposed GECS will be initiated in the 5<sup>th</sup> year of the landfill operation (i.e., in year 2008).

## AIR POLLUTANTS/LANDFILL GAS CONSTITUENTS

The landfill gas (LFG) constituents for MSW landfills are listed in USEPA AP-42 Section 2.4 (1998), entitled “*Emission Factor Documentation for Municipal Solid Waste Landfills*”. It is noted that 40 CFR 60.754(c) in Subpart WWW recommends using USEPA AP-42 for estimating MSW landfill emissions for PSD purposes.

The air pollutants/LFG constituents include carbon monoxide (CO), total reduced sulfur compounds (TRS measured as sulfur, S, or sulfur dioxide, SO<sub>2</sub>), non-methane organic compounds (NMOC), total volatile organic compounds (VOC), total hazardous air pollutants (HAPS), chlorides (as Cl<sup>-</sup> or HCl), and mercury (Hg or H114). The mass emission rates of these air pollutants/LFG constituents were computed for the waste disposal rate of 4,000 tons/day, using the methodology outlined in USEPA AP-42, and are presented in Table 1 and in Figures 2 through 7, respectively. The mass emission rates of mercury (Hg) are included in the table but are not presented in the figures since Hg emissions were less than 0.13 pounds per year over the next 5 years.

The OHD facility after complete build-out will use up to 4 flares as control devices in the proposed GECS. However, it is expected that no more than 2 flares will be installed during development of Phases 1 through 3. As a result of the installation of the flare(s), nitrogen dioxide (NO<sub>x</sub> as NO<sub>2</sub>) and particulate matter (PM), which are also major air pollutants, will also be emitted at the OHD facility. The mass emission rates of these two air pollutants from the flare(s) were also computed using the methodology outlined in USEPA AP-42 and are presented in Figures 8 and 9, respectively. The USEPA AP-42 methodology used in computing the mass emission rates of the LFG constituents and the air pollutants is detailed in the calculation package included as Attachment 1 to this report.

Figures 2 through 9 present uncontrolled and controlled mass emission rates of the air pollutants/LFG constituents for the first 8 years of operations at the OHD facility. Eight years represent 3 years the landfill has been in operation (starting January 2004) and the next 5 years of operation (2007 through end of 2011). The *uncontrolled emissions* represent mass emission rates without the GECS. The *controlled emissions* are mass emission rates assuming that the installation of the proposed GECS will be initiated in the 5<sup>th</sup> year of the landfill operation (i.e., in year 2008). The controlled mass emission rates represent the sum of the potential emissions and the quantifiable fugitive emissions from the OHD facility.

The mass emission rates presented in the report were computed using and/or assuming: (i) the actual quantity of degradable waste accepted at the landfill in the first 3 years of operations; (ii) a waste disposal rate of 4,000 tons/day (degradable waste) over

the next 5 years of operation; (iii) the installation of the proposed GECS will be initiated in the 5<sup>th</sup> year of the landfill operation (i.e., in year 2008); and (iv) the GECS will be functional by mid-2008. It is noted that the first year of operation represents waste accepted from January 2004 (start of landfill operations) through December 2004. All other years represent the respective calendar years.

As discussed in Attachment 1, the controlled emission rates presented in the figures assume that the collection efficiency of the GECS is 75 percent, i.e., only 75 percent of the gas generated by the landfill is collected by the GECS and flared whereas the remaining 25 percent escapes as uncontrolled emissions. It is noted that 75 percent collection efficiency is the recommended average collection efficiency for landfill GECS by USEPA AP-42. The controlled emission rates presented in the figures also incorporate control device efficiency (i.e., efficiency of flares), ranging from 98.0 to 99.7 percent, as recommended by USEPA AP-42.

As expected, the controlled emission rates of the regulated air pollutants/LFG constituents are less than the uncontrolled emission rates except for CO. The controlled emission rates for CO are higher than the uncontrolled emission rates because of the CO generated by the flares (which will be used as control devices in the GECS at the OHD facility). It is noted that NO<sub>2</sub> and PM are not LFG constituents and are generated only by the flare(s). Therefore, only controlled emission rates are presented for NO<sub>2</sub> and PM, which will be generated after installation of the GECS beginning in the 5<sup>th</sup> year of the landfill operation.

The uncontrolled and controlled emission rates presented in Table 1 represent maximum mass emission rates over the first 8 years of operation at the OHD facility (January 2004 through December 2011). It is noted that the maximum uncontrolled emissions reported in the table represent emissions in mid-2008 based on the assumptions that the installation of the GECS will begin in the 5<sup>th</sup> year of the landfill operation and the GECS will be functional by mid-2008.

### **INAPPLICABILITY OF PSD REQUIREMENTS**

As noted in Table 1, during the first 8 years of operation at the OHD facility, the maximum uncontrolled emission rates of the air pollutants/LFG constituents are less than 18 tons per year except for the emission rate of NMOC of about 49 tons per year. The maximum controlled emission rates of the air pollutants/LFG constituents are about 25 tons per year except for the emission rate of CO of about 234 tons per year. In essence, the maximum uncontrolled or controlled emission rate of any applicable regulated air pollutant is less than 250 tons per year. As a result, OHD facility (with Phases 1 through 3 developed) will not be a *major stationary source* in accordance with Rule 62-

210.200(193), F.A.C. Therefore, for the next 5 years of operation, the OHD facility is not subject to the PSD pre-construction review requirements in accordance with Rule 62-212.400(2)(a), F.A.C.

As noted in Figure 2, the uncontrolled emission rate of CO (assuming no flares) at the end of the 8<sup>th</sup> year of operation is less than 8 tons per year, i.e., practically all CO is generated by the flares that will be installed as part of the GECS. In summary, except for the emission rate of CO from the flares, the OHD facility is a *minor facility* (in accordance with Rule 62-210.200(199), F.A.C.) during the first 8 years of landfill operation.

The emission rate of CO from the flare was computed using the default emission factors recommended in USEPA AP-42. The GECS installation is expected to begin in the 5<sup>th</sup> year of the landfill operation and will incorporate flare(s) as the control device. Prior to future phased developments of the OHD facility, the emission rate of CO from the flare(s) will be analyzed. The results of the analysis will be used to re-evaluate CO emission rates for the future developments and air construction permits for the OHD facility.

## CLOSURE

A conservative waste disposal rate of 4,000 tons/day (for degradable component of the waste stream) was assumed for the OHD facility for the purpose of this Air Construction Permit Application. Even for this waste disposal rate, the mass emission rates of the air pollutants/LFG constituents in the first 8 years of operation at the OHD facility (Phases 1 through 3) are less than 250 tons/year. As a result, OHD facility (with Phases 1 through 3 developed) will not be a *major stationary source*. Therefore, development of Phases 1 through 3 at the OHD facility is not subject to the PSD pre-construction review requirements. It is further noted that except for the emission rate of CO from the flares, the OHD facility is a *minor facility* during the first 8 years of operation even for the assumed conservative waste disposal rate of 4,000 tons/day. CO is emitted as a collateral pollutant from the flares that will be installed solely for the purpose of reducing the NMOC emissions as required by 40 CFR 60, Subpart WWW.



**TABLE**

Table 1

**MASS EMISSION RATES FOR REGULATED AIR POLLUTANTS AND LANDFILL GAS CONSTITUENTS**

Air Pollutant/LFG Constituent <sup>1</sup>	Maximum Mass Emission Rates (tons/yr)		
	For OHD facility Phases 1 through 3		
	End of 3rd year (Dec 2006) Uncontrolled <sup>2</sup>	5th year (Mid-2008) Uncontrolled <sup>2</sup>	End of 8th year (Dec 2011) Controlled <sup>3</sup>
Carbon Monoxide (CO)	2.0	4.3	233.7
Total Reduced Sulfur (TRS as S or SO <sub>2</sub> ) <sup>4</sup>	0.7	1.7	5.8
Non-Methane Organic Compounds (NMOC)	25.3	56.3	25.2
Total Volatile Organic Compounds (VOC)	9.1	20.1	9.0
Any Individual HAP (H001 through H189) <sup>5</sup>	1.8	4.0	1.8
Total Hazardous Air Pollutants (HAPS)	5.3	11.7	5.2
Chlorides (as Cl <sup>-</sup> or HCL) <sup>6</sup>	0.7	1.6	2.9
Mercury (Hg or H114)	2.9x10 <sup>-5</sup>	6.4x10 <sup>-5</sup>	--
Nitrogen Dioxide (NOX as NO <sub>2</sub> )	NA <sup>7</sup>	NA <sup>7</sup>	12.6
Particulate Matter (PM)	NA <sup>7</sup>	NA <sup>7</sup>	5.2

**Notes:**

<sup>1</sup> Per USEPA AP-42 Section 2.4 (1998).

<sup>2</sup> Assuming no gas extraction and control system (GECS) is installed.

<sup>3</sup> Assuming the proposed GECS is installed in the 5th year of operation. See text for other assumptions.

<sup>4</sup> Uncontrolled and controlled emissions are reported as S and SO<sub>2</sub>, respectively.

<sup>5</sup> Maximum emissions for any individual HAP. Emissions reported are for Toluene (H169).







<sup>6</sup> Uncontrolled and controlled emissions are reported as Cl<sup>-</sup> and HCL (H106), respectively.

<sup>7</sup> Not Applicable. NO<sub>2</sub> and PM are not landfill gas constituents and are generated only by the flare(s).

# FIGURES

# LAYOUT OF OAK HAMMOCK DISPOSAL FACILITY

## LEGEND

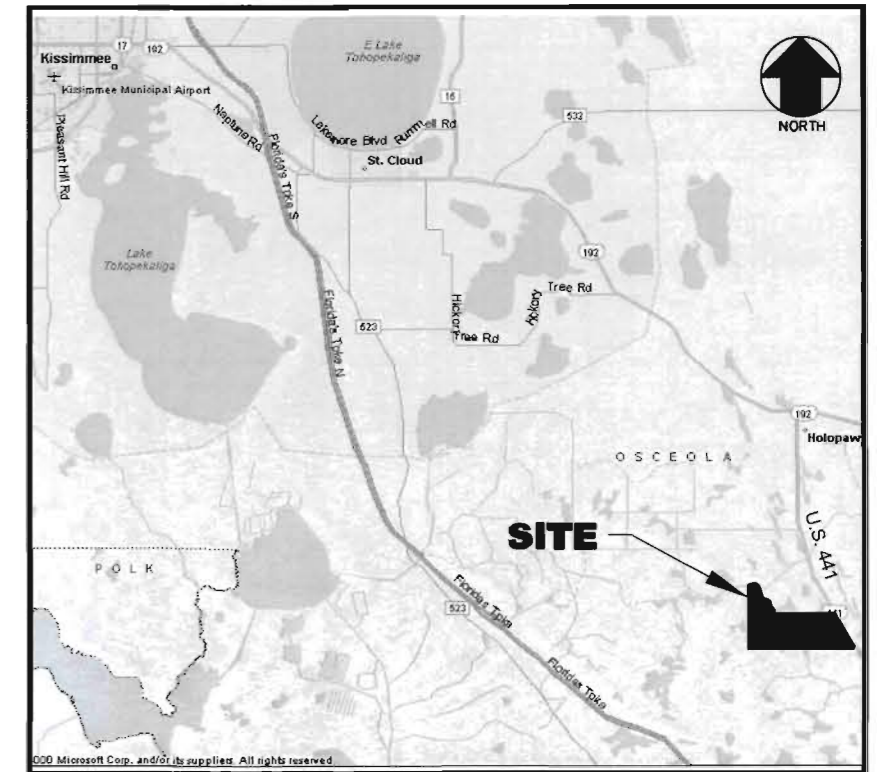
-  PROPERTY BOUNDARY
-  WETLAND
-  LANDFILL CELL NUMBER
-  STORMWATER MANAGEMENT AREA
-  BORROW AREA BOUNDARY
-  CONSERVATION AREA

## PROPERTY DESCRIPTION

Sections 13 and 14 and portion of Section 11 west of Bull Creek in Township 28 South, Range 32 East.

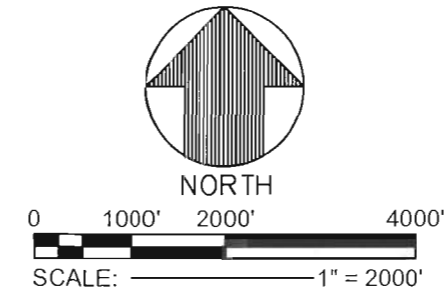
Portions of Sections 17 and 18 west of Highway 441 (State Road No. 15) in Township 28 South, Range 33 East.

Entire site lies in Osceola County, Florida.

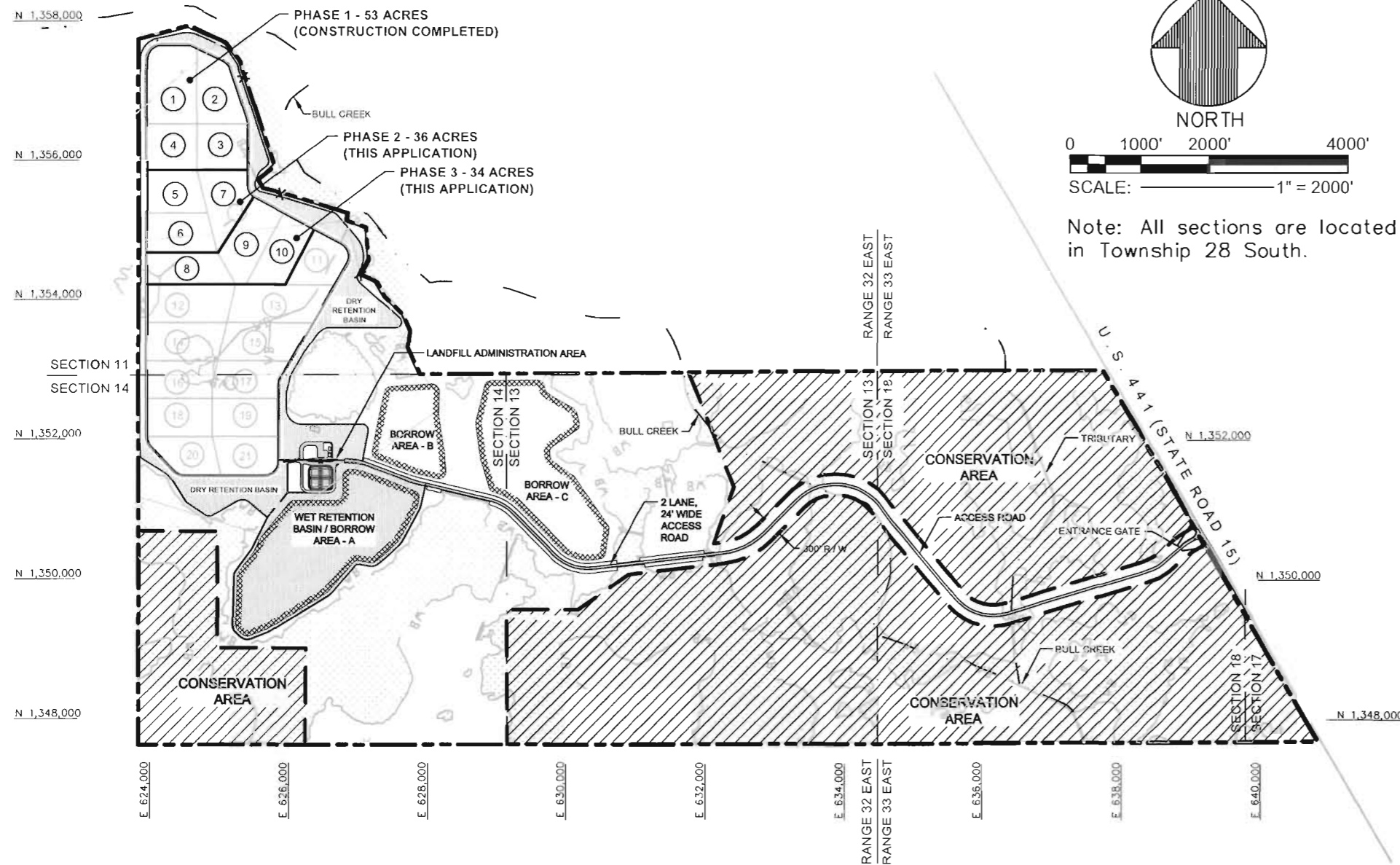


## AREA MAP

0 1 2 3 6  
SCALE: 1" = 6 MILES



Note: All sections are located in Township 28 South.



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**mni Waste**  
of Osceola County, LLC

OAK HAMMOCK DISPOSAL FACILITY  
OSCEOLA COUNTY, FLORIDA

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**Geosyntec**<sup>®</sup>  
consultants

TAMPA, FL

DATE:	19 MAR 2007	FILE NO.	FL0916.06F001
PROJECT NO.	FL0916.06	FIGURE NO.	1

Figure 2

**MASS EMISSION RATES  
CARBON MONOXIDE (CO)**

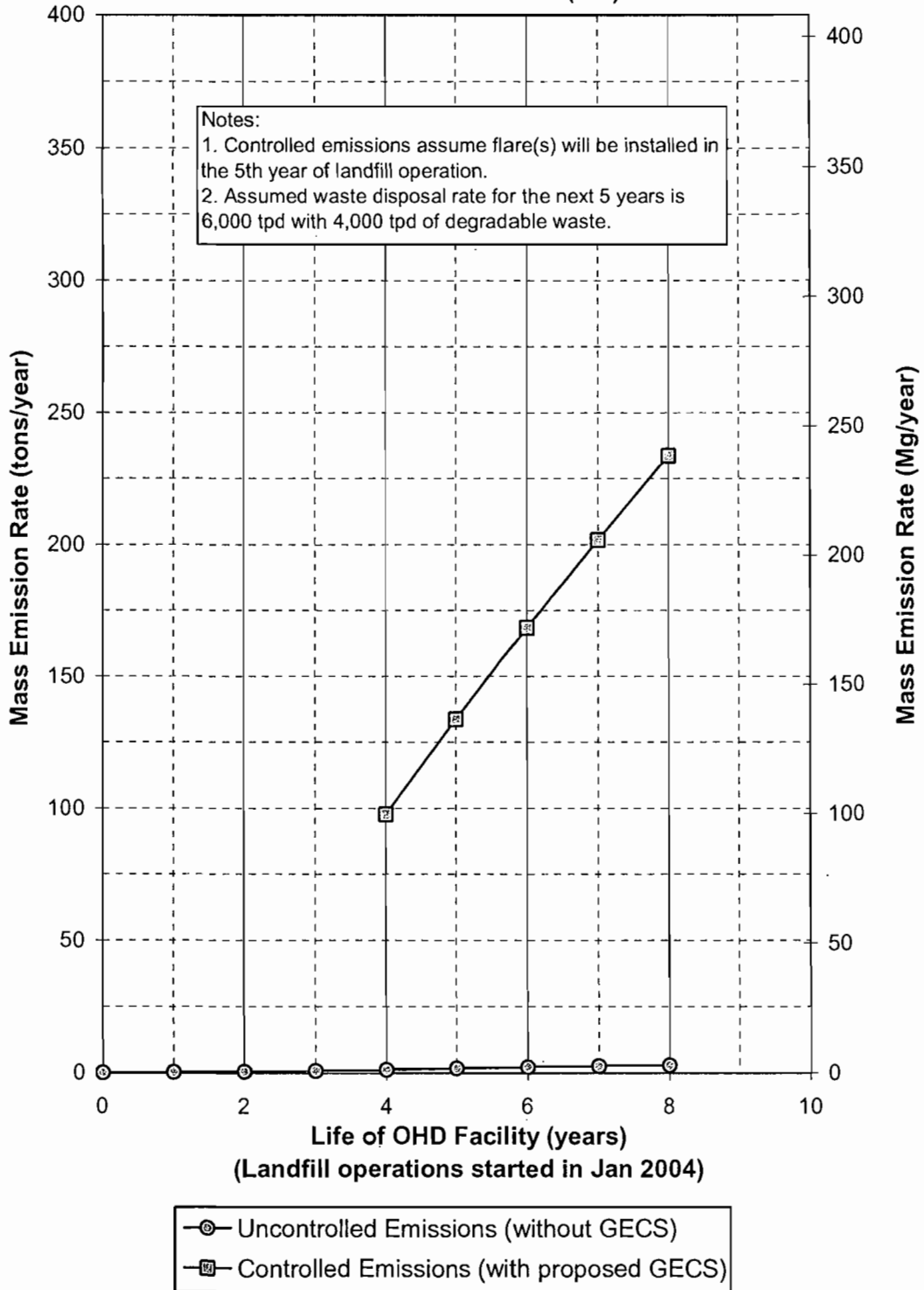


Figure 3

**MASS EMISSION RATES  
TOTAL REDUCED SULFUR (TRS as S or SO<sub>2</sub>)**

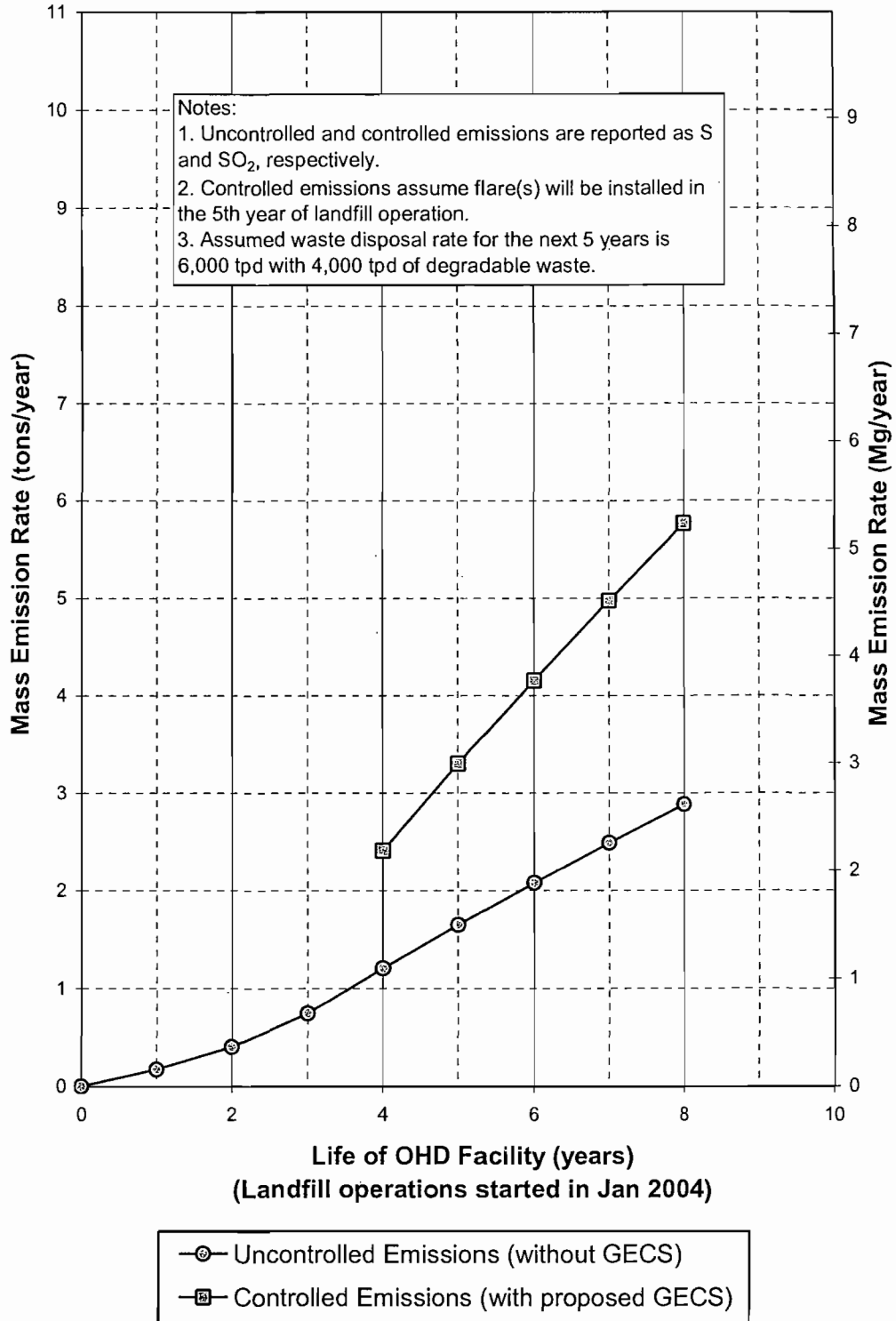


Figure 4

**MASS EMISSION RATES  
NON-METHANE ORGANIC COMPOUNDS (NMOC)**

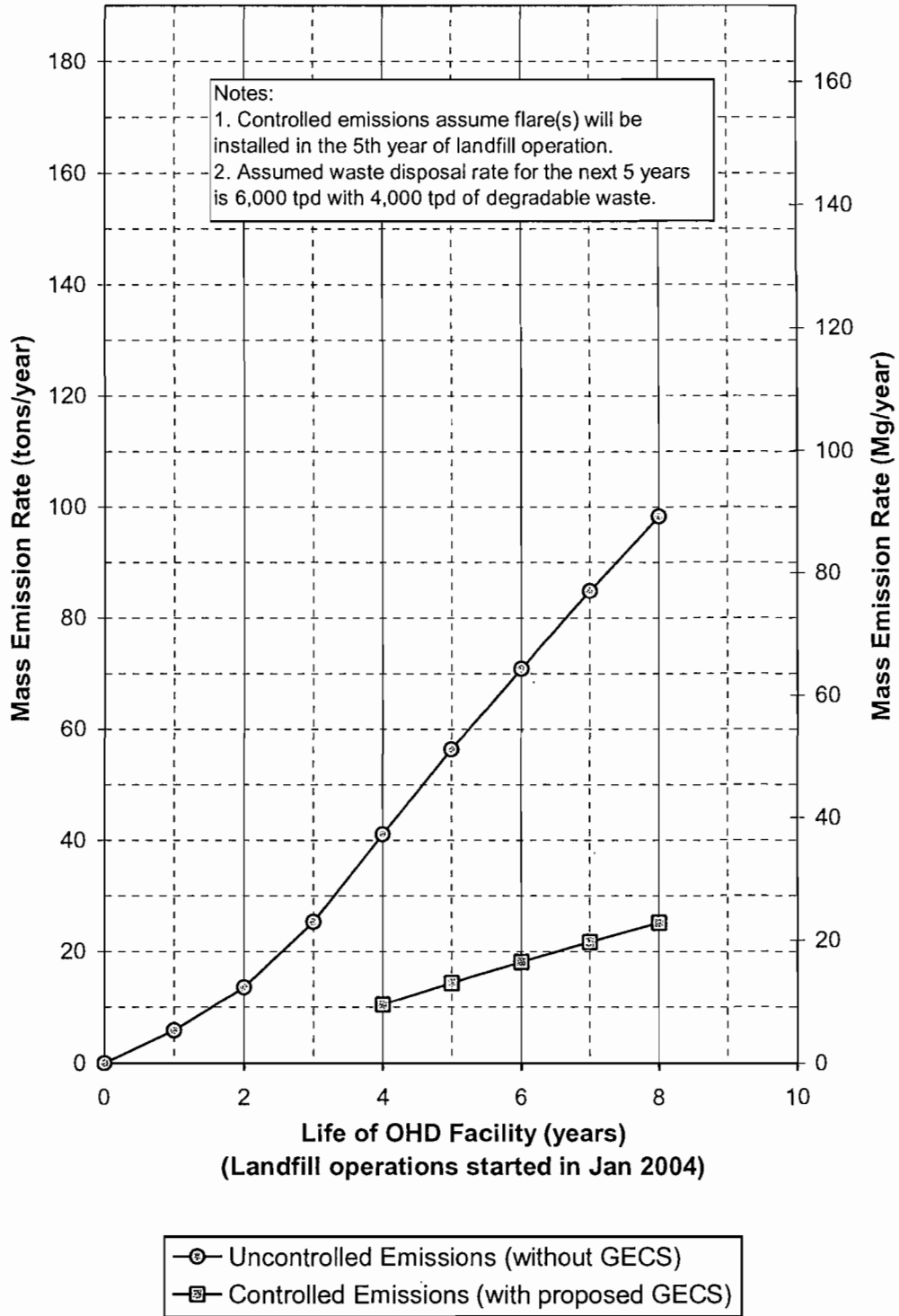


Figure 5

**MASS EMISSION RATES  
TOTAL VOLATILE ORGANIC COMPOUNDS (VOC)**

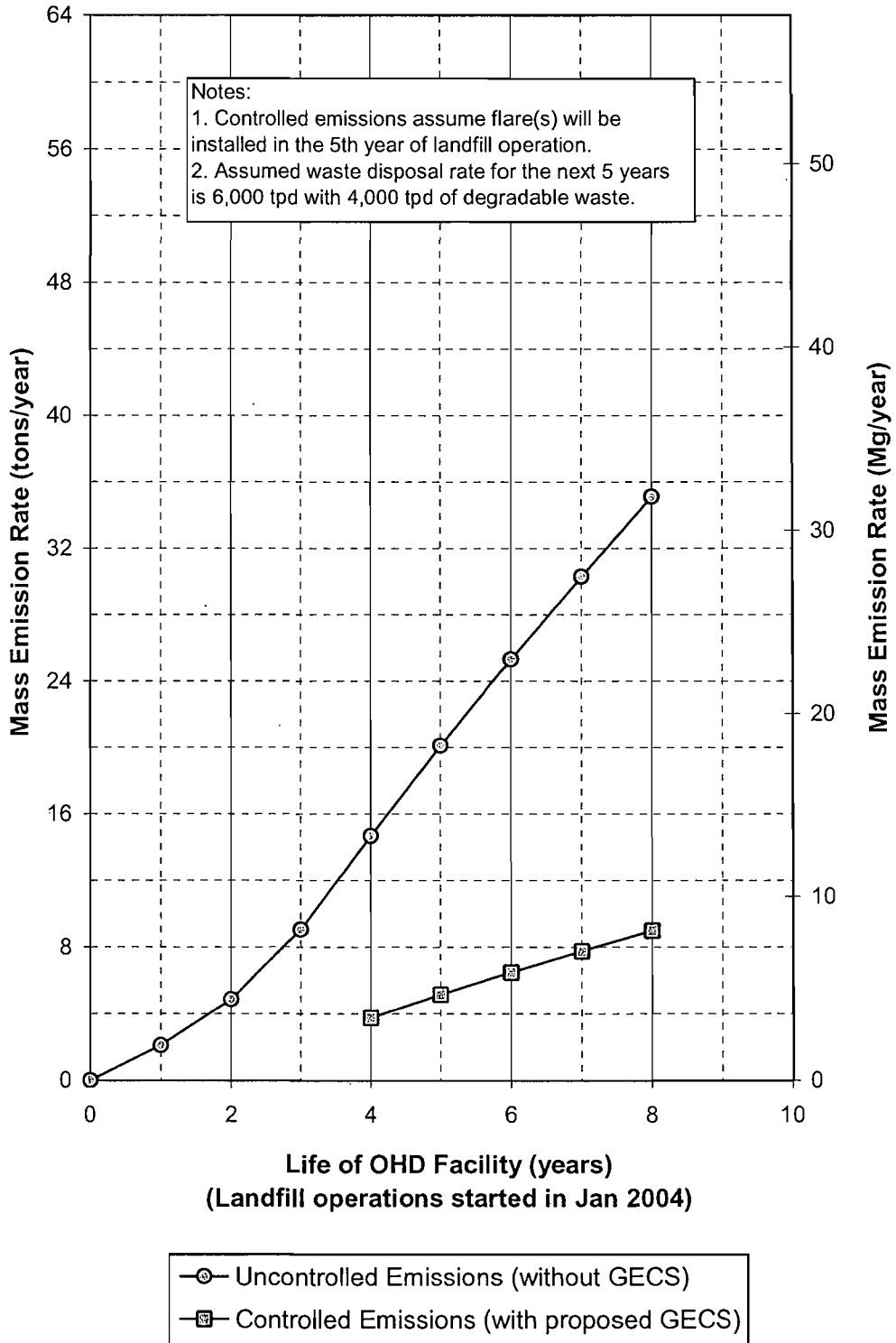
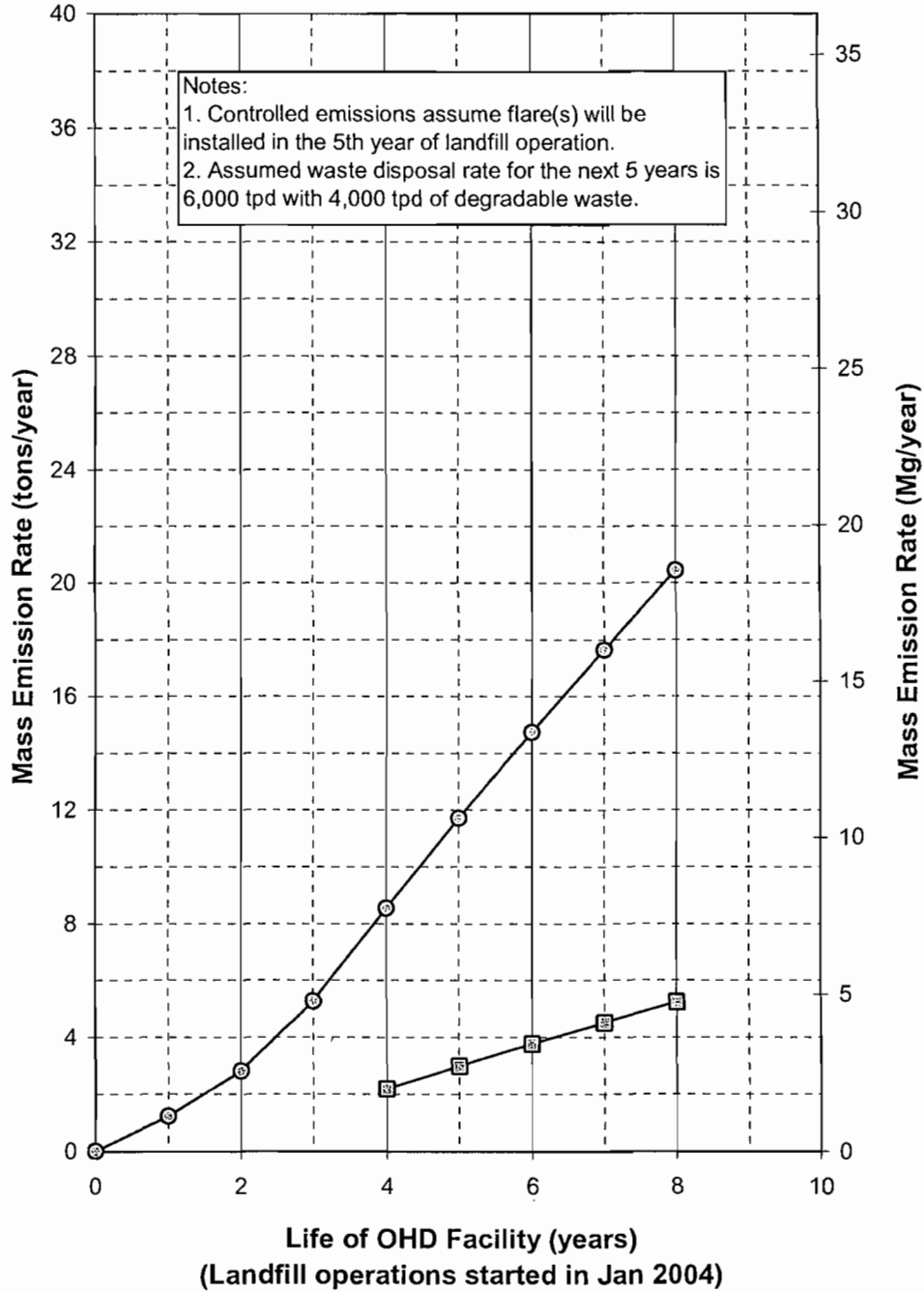




Figure 6

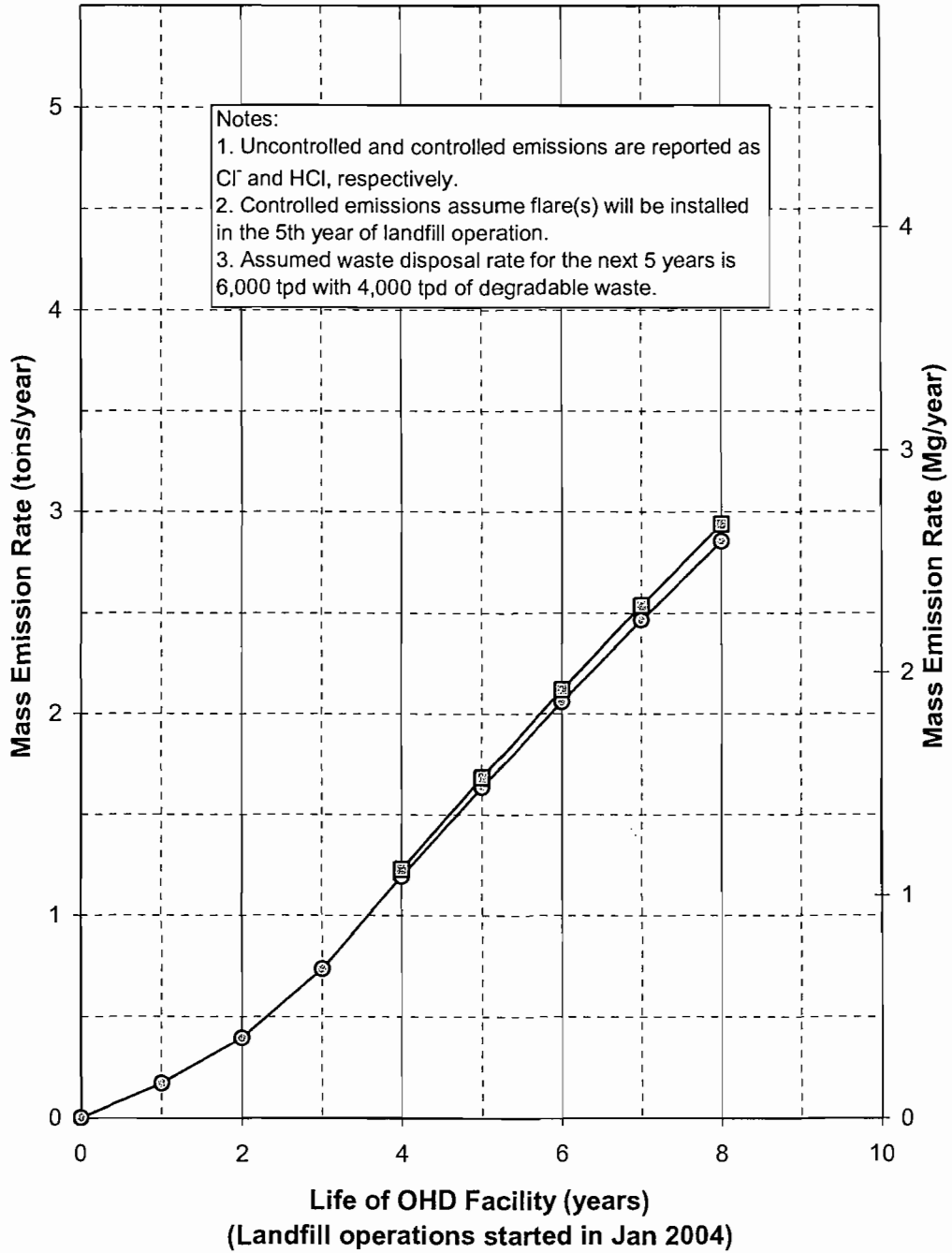
**MASS EMISSION RATES  
TOTAL HAZARDOUS AIR POLLUTANTS (HAPS)**



—○— Uncontrolled Emissions (without GECS)  
—□— Controlled Emissions (with proposed GECS)

Figure 7

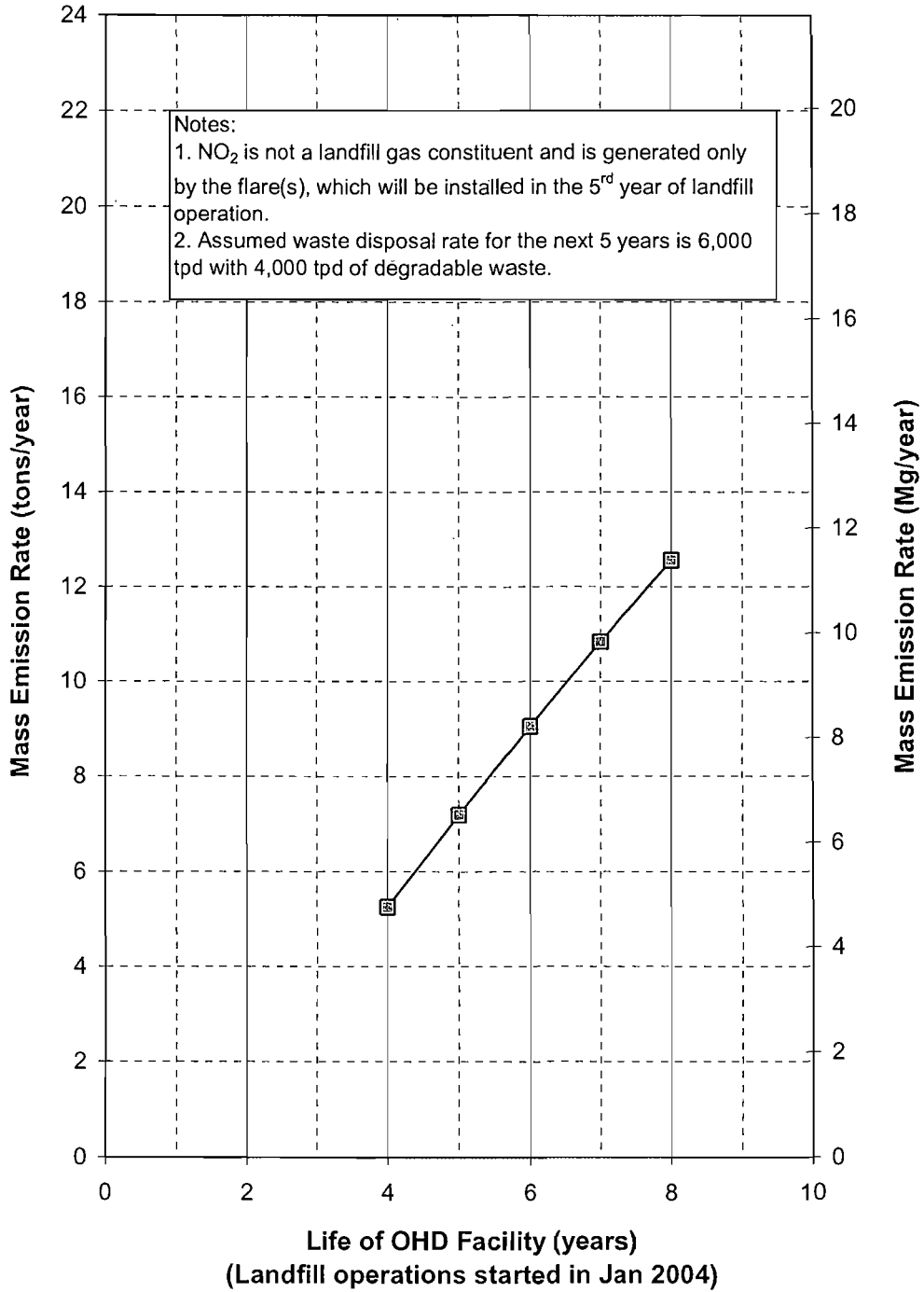
**MASS EMISSION RATES  
CHLORIDES (as Cl<sup>-</sup> or HCl)**



—○— Uncontrolled Emissions (without GECS)  
—□— Controlled Emissions (with proposed (GECS))

Figure 8

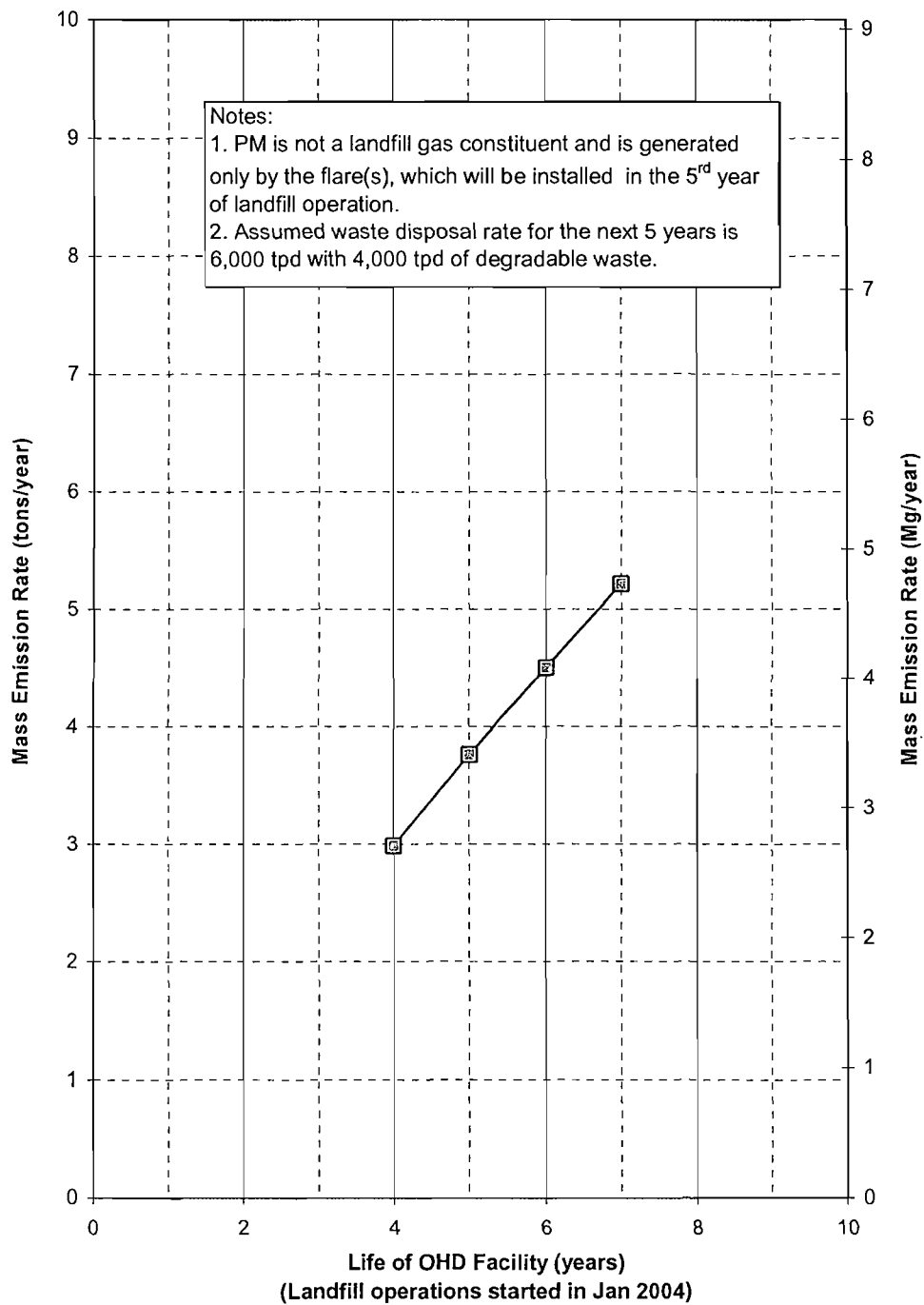
**MASS EMISSION RATES  
NITROGEN DIOXIDE (NO<sub>x</sub> as NO<sub>2</sub>)**



—■— Controlled Emissions (with proposed GECS)

Figure 9

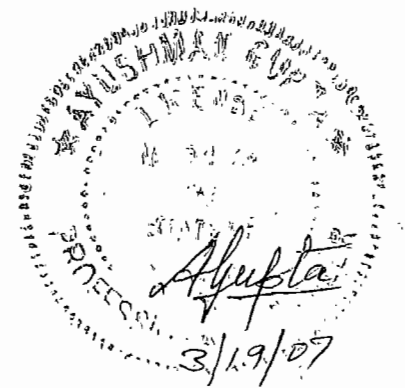
### MASS EMISSION RATES PARTICULATE MATTER (PM)



—■— Controlled Emissions (with proposed GECS)

# ATTACHMENT 1

## LANDFILL GAS CONSTITUENTS EMISSION ESTIMATED USING AP-42 SECTION 2.4



## Attachment 1

**LANDFILL GAS CONSTITUENTS EMISSION  
ESTIMATED USING AP-42 SECTION 2.4**

The methane (CH<sub>4</sub>) generation rate and the landfill gas (LFG) constituents emission rates were estimated using the procedure outlined in USEPA AP-42 (Fifth Edition, Volume I), entitled “*Compilation of Air Pollutant Emission Factors*”. USEPA AP-42 Section 2.4, entitled “*Emission Factor Documentation for Municipal Solid Waste Landfills*”, (Supplement E, November 1998), referenced herein simply as AP-42, was used to estimate the emissions of relevant LFG constituents for the Oak Hammock Disposal (OHD) facility.

The LFG constituents, for which uncontrolled and controlled mass emission rates were computed, include carbon monoxide (CO), total reduced sulfur (as sulfur, S, or sulfur dioxide, SO<sub>2</sub>), non-methane organic compounds (NMOC), total hazardous air pollutants (HAP), and acrylonitrile (an HAP). Flare(s) will be used as the control device in the proposed gas extraction and control system (GECS) at the OHD facility. Secondary compounds exiting the flare(s) for which controlled mass emission rates were computed include CO, nitrogen dioxide (NO<sub>2</sub>), and particulate matter (PM).

### Methane Generation Rate

The methane generation rate for the OHD facility was estimated using the following Landfill Air Emissions Estimation model equation developed by EPA:

$$Q_{CH_4} = \sum_{i=1}^n kL_0M_i(e^{-kt_i}) \quad (1)$$

where:

- $Q_{CH_4}$  = CH<sub>4</sub> generation rate at time t, m<sup>3</sup>/yr;
- $k$  = CH<sub>4</sub> generation rate constant, yr<sup>-1</sup>;
- $L_0$  = CH<sub>4</sub> generation potential, m<sup>3</sup> of CH<sub>4</sub> per megagrams (Mg) of refuse;
- $M_i$  = waste of mass accepted in the i<sup>th</sup> year, Mg;
- $e$  = natural log, unitless; and
- $t_i$  = age of the i<sup>th</sup> section of the landfill, years.

An  $L_0$  value of 100 m<sup>3</sup>/Mg was used as recommended in AP-42. A  $k$  value of 0.04/year was used corresponding to areas with annual rainfall of 25 inches or more. For a  $M_i$  value, the actual solid waste acceptance rate (degradable component) was used for the first 3 years of the landfill operation (January 2004 through end of 2006), i.e., 0.36, 0.49, and 0.76 million Mg per year. For the next 5 years of operation (2007 through end

of 2011), a waste disposal rate of 4,000 tons per day (1.04 million Mg per year) was conservatively assumed to compute the methane generation rate. The computed methane generation rates are presented in Figure A1-1.

### Uncontrolled Emissions

The uncontrolled emission rates of relevant LFG constituents (e.g. NMOC) were estimated using the following equation:

$$Q_P = 1.82 Q_{CH_4} * \frac{C_P}{(1 \times 10^6)} \quad (2)$$

where:

- $Q_P$  = uncontrolled emission rate of pollutant P (e.g. NMOC),  $m^3/yr$ ;
- $Q_{CH_4}$  =  $CH_4$  generation rate,  $m^3/yr$  (from Equation 1);
- $C_P$  = concentration of pollutant P in LFG, ppmv (ppm by volume); and
- 1.82 = multiplication factor assuming 55 percent of LFG (by volume) is  $CH_4$ .

The concentrations ( $C_P$ ) of relevant LFG constituents used in computing the uncontrolled emission rates are presented in Table A1-1. It is noted that a concentration of 595 ppmv as hexane was used for NMOC, as recommended by AP-42 for "no or unknown co-disposal", since the landfill will primarily contain municipal solid waste.

The uncontrolled mass emissions rate of relevant LFG constituents (e.g. NMOC) was estimated using the following equation:

$$UM_P = Q_P * \left[ \frac{MW_P * 1 \text{ atm}}{(8.205 \times 10^{-5} \text{ m}^3 * \text{atm} / \text{gmol} * ^\circ K) (1000 \text{ g} / \text{kg}) (273 + T)} \right] \quad (3)$$

where:

- $UM_P$  = uncontrolled mass emission rate of pollutant P (e.g. NMOC),  $kg/yr$ ;
- $MW_P$  = molecular weight of pollutant P,  $g/gmol$ ;
- $Q_P$  = emission rate of pollutant P,  $m^3/yr$  (from Equation 2); and
- $T$  = temperature of landfill gas,  $^\circ C$ .

The molecular weights ( $MW_P$ ) of relevant LFG constituents used in computing the uncontrolled mass emission rates are also presented in Table A1-1. It was assumed that the operating pressure of the system is 1 atmosphere and the temperature of the LFG is  $25^\circ C$ , as recommended by AP-42.

### Controlled Emissions

The controlled mass emission rates of relevant LFG constituents (except for total reduced sulfur) were estimated using the following equation:

$$CM_P = \left[ UM_P * \left( 1 - \frac{\eta_{col.}}{100} \right) \right] + \left[ UM_P * \frac{\eta_{col.}}{100} * \left( 1 - \frac{\eta_{cnt}}{100} \right) \right] \quad (4)$$

where:

- CM<sub>P</sub> = controlled mass emission rate of pollutant P, kg/yr;
- UM<sub>P</sub> = uncontrolled mass emissions of pollutant P, kg/yr (from Equation 3);
- η<sub>col</sub> = collection efficiency of GECS, percent; and
- η<sub>cnt</sub> = control efficiency of the GECS control device (i.e., flare), percent.

A collection efficiency of 75 percent was assumed for the GECS (i.e., only 75 percent of the gas generated by the landfill is collected by the GECS and the remaining 25 percent escapes as uncontrolled emissions). It is noted that 75 percent collection efficiency is the recommended average collection efficiency for landfill GECS in AP-42. Flare(s) will be used as the control device in the proposed GECS. Therefore, control efficiencies for flare(s), ranging from 98.0 to 99.7 percent, recommended in AP-42 were used in Equation 4.

The following equation was used to estimate the controlled mass emission rate of total reduced sulfur (as SO<sub>2</sub>):

$$CM_{SO_2} = UM_S * \frac{\eta_{col.}}{100} * 2.0 \quad (5)$$

where:

- CM<sub>SO<sub>2</sub></sub> = Controlled mass emission rate of SO<sub>2</sub>, kg/yr;
- UM<sub>S</sub> = Uncontrolled mass emission rate of total reduced sulfur (as S), kg/yr (from Equation 3);
- η<sub>col</sub> = Collection efficiency of the GECS, percent; and
- 2.0 = Ratio of the molecular weight of SO<sub>2</sub> to S.

The following equation was used to estimate the controlled mass emission rate of Chlorides (as HCl):



$$CM_{HCl} = UM_{Cl} * \frac{\eta_{col}}{100} * 1.03 * \left( \frac{\eta_{cnt}}{100} \right) \quad (6)$$

where:

- $CM_{HCl}$  = controlled mass emissions of HCl, kg/yr;  
 $UM_{Cl}$  = uncontrolled mass emission rate of chlorides (as  $Cl^-$ ); kg/yr  
 (from Equation 3);  
 $\eta_{col}$  = collection efficiency of the GECS, percent (assumed as 75 percent),  
 1.03 = ratio of the molecular weight of HCl to  $Cl^-$ ; and  
 $\eta_{cnt}$  = control efficiency of the GECS control device (i.e., flare), percent.

Controlled mass emissions of secondary compounds exiting the flare(s) (i.e., the control device in the proposed GECS) were estimated using the emission factors recommended in AP-42. It is noted that the controlled mass emissions of secondary compounds from the flare(s) were computed based on the amount of methane reaching the flare (i.e., 75% of the total methane generated by the landfill), corresponding to the assumed collection efficiency of the GECS. Further, the controlled mass emissions of secondary compounds from the flare(s) were estimated starting in the year in which the proposed GECS installation will begin at the OHD facility.

It is noted that:

- the controlled emission rates of CO presented include the CO emissions from the flare and the CO that will be released directly from the landfill due to the collection and control device inefficiencies;
- the controlled emission rates of TRS and Chlorides are presented as  $SO_2$  and HCl, respectively (However, it is recognized that the TRS and Chlorides that will be released directly from the landfill due to the collection and control device inefficiencies, will be released as S and  $Cl^-$ , respectively); and
- the mass emission rates of total HAPs and total VOCs were estimated by summing the mass emission rates of individual HAP and individual VOC, respectively.

Table A1-1

**CONCENTRATIONS AND MOLECULAR WEIGHTS USED IN ESTIMATING  
LANDFILL GAS CONSTITUENTS EMISSIONS**

Pollutant/Constituent	Concentration C <sub>p</sub> (ppmv)	Molecular Weight MW <sub>p</sub> (g/gmol)	Pollutant/Constituent	Concentration C <sub>p</sub> (ppmv)	Molecular Weight MW <sub>p</sub> (g/gmol)
Carbon Monoxide (CO)	141.00	28.01	HAP & VOC (continued)		
Total Reduced Sulfur (TRS as S)	46.90	32.06	1,1-Dichloroethane	2.35	98.96
Non-Methane Organic Compound (NMOC)	595.00*	86.18	1,1-Dichloroethene	0.20	96.94
Chlorides (as Cl <sup>-</sup> )	42.00	35.45	1,2-Dichloroethane	0.41	98.96
Hazardous Air Pollutants (HAP)			1,2-Dichloropropane	0.18	112.99
1,1,1-Trichloroethane	0.48	133.41	Acrylonitrile	6.33	53.06
Dichloromethane	14.30	84.93	Benzene	1.91*	78.12
Mercury	2.92x10 <sup>-4</sup>	200.61	Carbon Disulfide	0.58	76.14
Volatile Organic Compounds (VOC)			Carbon Tetrachloride	0.004	153.84
2-Propanol	50.10	60.11	Carbonyl Sulfide	0.49	60.07
Bromodichloromethane	3.13	163.83	Chlorobenzene	0.25	112.56
Butane	5.03	58.12	Chloroethane	1.25	64.52
Chlorodifluoromethane	1.30	86.47	Chloroform	0.03	119.38
Dichlorodifluoromethane	15.70	120.91	Chloromethane	1.21	50.49
Dichlorofluoromethane	2.62	102.92	Dichlorobenzene	0.21	147.00
Dimethyl Sulfide	7.82	62.13	Ethylbenzene	4.61	106.17
Ethanol	27.20	46.08	Ethylene Dibromide	0.001	187.88
Ethyl Mercaptan	2.28	62.13	Hexane	6.57	86.18
Fluorotrichloromethane	0.76	137.37	Methyl Ethyl Ketone	7.09	72.11
Methyl Mercaptan	2.49	48.11	Methyl Isobutyl Ketone	1.87	100.16
Pentane	3.29	72.15	Perchloroethylene	3.73	165.83
Propane	11.10	44.10	Toluene	39.30*	92.14
HAP & VOC			Trichloroethene	2.82	131.38
1,1,1,2-Tetrachloroethane	1.11	167.85	Vinyl Chloride	7.34	62.50
1,1,2-Trichloroethane	0.10	133.41	Xylene	12.10	106.17

\* Concentration corresponding to "No or Unknown co-disposal".

Figure A-1

METHANE GENERATION RATE

