Escambia County Board of County Commissioners
Perdido Landfill

Facility ID No. 0330246
Escambia County

Title V Air Operation Permit Renewal

Permit No. 0330246-008-AV
(Renewal of Title V Air Operation Permit No. 0330246-006-AV)

Permitting Authority:

State of Florida
Department of Environmental Protection
Office of Permitting and Compliance

2600 Blair Stone Road
Tallahassee, Florida 32399-2400

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Compliance Authority:

Florida Department of Environmental Protection
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Title V Air Operation Permit Renewal

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FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
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GOVERNOR

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PERMITTEE:
Escambia County Board of County Commissioners
Department of Solid Waste Management
13009 Beulah Road
Cantonment, FL 32533-8831

Permit No. 0330246-008-AV
Perdido Landfill
Facility ID No. 0330246

Title V Air Operation Permit Renewal

The purpose of this permit is to renew the Title V Air Operation Permit for the above referenced facility. The existing Perdido Landfill is located at, 13009 Beulah Road in Cantonment, Escambia County; UTM Coordinates: Zone 16, 462.27 km East and 3382.82 km North; and, Latitude: 30° 34' 41" North and Longitude: 87° 23' 43" West.

The Title V air operation permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210 and 62-213. The above named permittee is hereby authorized to operate the facility shown on the application and approved drawings, plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

Effective Date: January 1, 2014
Renewal Application Due Date: May 20, 2018
Expiration Date: December 31, 2018

For the Division of Air Resource Management

Syed Arif

Digitally signed by Syed Arif
Date: 2013.11.25 12:43:55 -05'00'

for Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

SA/es/lp

SECTION I. FACILITY INFORMATION.

Subsection A. Facility Description.

Perdido Landfill is an open Class I and Class III municipal solid waste (MSW) landfill which encompasses approximately 320 acres, of which the active and closed MSW disposal areas currently occupy approximately 110 acres. The facility has a design capacity of 6.37 million megagrams by mass. Solid waste was initially accepted in July 1981. The landfill does not contain a bioreactor. The landfill is an active asbestos waste disposal site, and is subject to 40 CFR 61.154, Standard for active waste disposal sites, which is part of 40 CFR 61 Subpart M. Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

The Initial Design Capacity Report and NMOC Emissions Estimate, received on June 10, 1996, identified the landfill as a new facility due to the modification for expansion that began on August 30, 1994. The landfill's maximum design capacity of 6.37 million megagrams exceeds the NSPS Title V criteria of 2.5 million megagrams. Therefore, the facility is subject to 40 CFR 60 (NSPS) Subpart WWW which requires the operation of a landfill gas collection and control system (LGCCS), since the Tier 1 potential estimates of non-methane organic compounds (NMOC) emissions are greater than 50 megagrams per year. The facility is also subject to 40 CFR 63 Subpart AAAA - National Emission Standards for Hazardous Air Pollutants (NESHAP): Municipal Solid Waste Landfills. Collected landfill gas is sent to the blower flare station (BFS) and then to the Gulf Power Perdido Landfill Gas to Energy (LGTE) facility and/or to the flare for combustion. A visible emissions test using EPA Method 22 is conducted every federal fiscal year on the non-assisted open utility flare.

Permit 0330246-005-AC included the installation of: 38 vertical gas extraction wells, lateral gas piping, header gas piping, a new blower/flare station (BFS) using a non-assisted open utility flare, gas transmission piping from the BFS to Gulf Power Perdido LGTE facility, and a condensate management system. As part of the expansion, the horizontal extraction wells and the existing flare station were decommissioned. The existing flare station was taken offline following the successful startup of the new BFS (October 4, 2010). The new BFS is capable of handling up to 4400 scfm of gas flow. The current flaring capacity is 2200 scfm.

The collected landfill gas is sent off site to Gulf Power's Perdido Landfill Gas-to-Energy (GTE) Facility. The GTE facility treats and uses landfill gas from Perdido Landfill to operate two Caterpillar G3520C spark ignition internal combustion engines and auxiliary equipment. The electric power produced by the engines is added to the distribution network. Any excess landfill gas, including excess due to engine(s) downtime (during periods of malfunction, maintenance and repair), is diverted to Perdido Landfill's landfill gas control system flare.

The emergency 450 horsepower diesel generator is used to provide power to the facility during outages. This engine was manufactured in 2008. The engine is subject to the requirements of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ and is classified as an existing, emergency CI engine, by the subparts.

Subsection B. Summary of Emissions Units.

EU No.	Brief Description
Regulated Emissions Units	
001	Landfill (Class I Disposal Area) Gas Collection System
003	2,200 scfm Landfill Gas Utility Flare
004	2,200 scfm Landfill Gas Utility Flare
005	Diesel Emergency Generator

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities. Other fugitive air emissions are generated from vehicular traffic and other activities related to operating the landfill.

Subsection C. Applicable Regulations.

Based on the Title V Air Operation Renewal application received May 20, 2013, this facility is not a major source of hazardous air pollutants (HAPs). A summary of applicable regulations is shown in the following table.

Regulation	**EU No(s).**
40 CFR 60, Subpart A, NSPS General Provisions	001, 003, 004, 005
40 CFR 60, Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills	001, 003, 004
40 CFR 60, Subpart IIII, Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE)	005
40 CFR 63, Subpart A, NESHAP General Provisions	001, 003, 004, 005
40 CFR 63, Subpart ZZZZ, Standards for Stationary Reciprocating Internal Combustion Engines	005
40 CFR 63, Subpart AAAA, NESHAP for Municipal Solid Waste Landfills	001
40 CFR 61, Subpart A, General Provisions	001
40 CFR 61, Subpart M (Set A), NESHAP for Asbestos	001

State Rule Citations	**EU No(s).**
Rule 62-4, Florida Administrative Code (F.A.C.), Permitting Requirements	001, 003, 004, 005
Rule 62-204, F.A.C., Air Pollution Control-General Provisions	001, 003, 004, 005
Rule 62-210, F.A.C., Stationary Sources-General Requirements	001, 003, 004, 005
Rule 62-213, F.A.C. (Title V Air Operation Permits for Major Sources of Air Pollution)	001, 003, 004, 005
Rule 62-296, F.A.C., Stationary Sources Emissions Standards	003, 004
Rule 62-297, F.A.C., Stationary Sources Emissions Monitoring	003, 004

SECTION II. FACILITY-WIDE CONDITIONS.

The following conditions apply facility-wide to all emission units and activities:

FW1. Appendices. The permittee shall comply with all documents identified in Section V, Appendices, listed in the Table of Contents. Each document is an enforceable part of this permit unless otherwise indicated. [Rule 62-213.440, F.A.C.]

Emissions and Controls

FW2. Not federally enforceable. Objectionable Odor Prohibited. No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rule 62-296.320(2) and 62-210.200(Definitions), F.A.C.]

FW3. General Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions. The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed unnecessary and ordered by the Department. Nothing is deemed necessary and ordered at this time. [Rule 62-296.320(1)(a), F.A.C.]

FW4. General Visible Emissions. No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. EPA Method 9 is the method of compliance pursuant to Chapter 62-297, F.A.C. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]

FW5. Unconfined Particulate Matter. No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction; alteration; demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Reasonable precautions to prevent emissions of unconfined particulate matter at this facility include:

a. Maintenance of roads, parking areas, and yards;
b. Landscaping or planting of vegetation;
c. Confining abrasive blasting where possible; and,
d. Other techniques, as necessary

[Rule 62-296.320(4)(c), F.A.C.; and, proposed by applicant in Title V air operation permit renewal application received July 7, 2008]

Annual Reports and Fees

See Appendix RR, Facility-wide Reporting Requirements for additional details.

FW6. Annual Operating Report. The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by April 1st of each year. [Rule 62-210.370(3), F.A.C.]

FW7. Annual Emissions Fee Form and Fee. The annual Title V emissions fees are due (postmarked) by April 1st of each year. The completed form and calculated fee shall be submitted to: Major Air Pollution Source Annual Emissions Fee, P.O. Box 3070, Tallahassee, Florida 32315-3070. The forms are available for download by accessing the Title V Annual Emissions Fee On-line Information Center at the following Internet web site: http://www.dep.state.fl.us/Air/permitting/tvfee.htm. [Rule 62-213.205, F.A.C. and §403.0872(11), Florida Statutes (2013)]

{Permitting Note: In addition to the change in the Title V fee submission from March 1st to April 1st, Chapter 403.0872(11)(a) has been revised to require that the annual fee be calculated based upon actual emissions rather than allowable emissions, as in the past. The Department will be exploring the development of a revision to the electronic annual operating report (EAOR) application to automatically calculate the amount

of the fee based upon actual emission information provided with the annual operating report. When completed, the procedures for submitting the fee and/or the submission address may change. Until further notice, the fees shall continue to be submitted to the address shown in Specific Condition FW7 and according to instructions posted on the Department's fee information web page. Be sure to check the Title V Annual Emissions Fee On-line Information Center (see above web site address) periodically for updates, especially before submitting future Title V fee payments.}

FW8. Annual Statement of Compliance. The permittee shall submit an annual statement of compliance to the compliance authority at the address shown on the cover of this permit within 60 days after the end of each calendar year during which the Title V permit was effective.
[Rules 62-213.440(3)(a)2. & 3. and (3)(b), F.A.C.]

FW9. Prevention of Accidental Releases (Section 112(r) of CAA). If, and when, the facility becomes subject to 112(r), the permittee shall:

a. Submit its Risk Management Plan (RMP) to the Chemical Emergency Preparedness and Prevention Office (CEPPO) RMP Reporting Center. Any Risk Management Plans, original submittals, revisions or updates to submittals, should be sent electronically through EPA's Central Data Exchange system at the following address: https://cdx.epa.gov. Information on electronically submitting risk management plans using the Central Data Exchange system is available at: http://www.epa.gov/osweroe1/content/rmp/index.htm. The RMP Reporting Center can be contacted at: RMP Reporting Center, Post Office Box 10162, Fairfax, VA 22038, Telephone: (703) 227-7650.
b. Submit to the permitting authority Title V certification forms or a compliance schedule in accordance with Rule 62-213.440(2), F.A.C.

[40 CFR 68]

FW10. Compliance Plan. Based on the application, some interior wellheads of the LGCCS received a waiver to operate with a landfill gas temperature less than less than 66°C and landfill gas well oxygen level greater than 5%. Alternate Operating Procedure (March 14, 2011 Attachment 1 letter) is a part of this permit. [Rule 62-213.440(2), F.A.C.]

Subsection A. Emissions Unit 001

The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
001	Landfill (Class I Disposal Area) Gas Collection System

The landfill gas collection and control system consists of approximately 90 vertical gas extraction wells (which includes 38 new vertical gas extraction wells), a condensate collection and management system, lateral gas piping, header gas piping, a new blower/flare station (BFS) using a non-assisted open utility flare, gas transmission piping from the BFS to Gulf Power Perdido landfill gas to energy (LFGTE) facility, and a condensate management system. The horizontal extraction wells and previous flare station were decommissioned upon successful startup of the new BFS (October 4, 2010). The blower for the new BFS is capable of handling up to 4400 scfm of gas flow, however the current flare is rated for 2200 scfm (EU 003). The other 2200 scfm flare (EU 004) has been permitted, but not yet installed.

{Permitting Note: This emissions unit is regulated by NSPS - 40 CFR 60 Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills, adopted and incorporated by reference in Rule 62-204.800(8)(b)75, F.A.C.; and by NESHAP - 40 CFR 63 Subpart AAAA, National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills, adopted and incorporated by reference in Rule 62-204.800(11)(b), F.A.C. A Compliance Assurance Monitoring Plan is not required since the facility is subject to NSPS and NESHAP regulations.}

Essential Potential to Emit (PTE) Parameters

A.1. Hours of Operation: The emissions unit may operate continuously (8760 hours/year). [Rule 62-210.200(PTE), F.A.C.; and permit 0330246-005-AC]

A.2. Asbestos Disposal: Permittee is subject to the requirements of 40 CFR 61.154 for the disposal of covered asbestos containing wastes. [40 CFR 61.154]

A.3. Asbestos Disposal: Permittee shall comply with at least one of the following requirements of a, b or c:

a) There must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or

b) At the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

1. Be covered with at least 15 centimeters (6 inches) of compacted non-asbestos-containing material, or
2. Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used with prior approval by the Administrator. For purposes of the paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

c) Use an alternative emissions control method that has received prior written approval by the Administrator.

Unless a natural barrier adequately deters access by the general public, either warning signs and/or fencing must be installed and maintained, or the requirements of (b)(1) above must be met.
[40 CFR 61.154(a), (b), (c) and (d)]

Landfill Gas Control Emission Limitations and Standards

A.4. Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of 40 CFR 60.752, as shown below.

(A) An open flare designed and operated in accordance with § 60.18 except as noted in § 60.754(e);

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 60.754(d).

(1) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(2) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in § 60.756;

(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of 40 CFR 60.752,

A.5. Active Gas Collection System shall:

a) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;
b) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:
   1. 5 years or more if active; or
   2. 2 years or more if closed or at final grade.
c) Collect gas at a sufficient extraction rate;
d) Be designed to minimize off-site migration of subsurface gas.

[40 CFR 60.752 and Rule 204.800(15), F.A.C.]

<u>Testing and Monitoring of Operations</u>

A.6. Operational standards for collection and control systems: Operate the collection and control device installed to comply with the Subpart in accordance with the provisions of 40 CFR 60.753, 60.755 and 60.756.

A.7. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of 40 CFR 60.752(b)(2)(ii) of this Subpart shall:

a) Operate the collection system with negative pressure at each wellhead except under the following conditions:

1. A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in 40 CFR 60.757(f)(1);
2. Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;
3. A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator.

b) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55° C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

1. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by 40 CFR 60.752(b)(2)(i) of this Subpart.
2. Unless an alternative test method is established as allowed by 40 CFR 60.752(b)(2)(i) of this Subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(ii) A data recorder is not required;
(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;
(iv) A calibration error check is not required;
(v) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

A.8. Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. The following procedures shall be used for compliance with the surface methane operational standard as provided in 40 CFR 60.753(d):

a) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.
b) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.
c) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of Appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

A.9. Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and operate the control or treatment system at all times when the collected gas is routed to the system.
[40 CFR 60.753]

Recordkeeping and Reporting Requirements

A.10. Reporting Schedule: The following reports and notifications shall be submitted to the Compliance Authority:

Report	Reporting Deadline	Related Condition(s)
Facility Closure Report	Within 30 days of Waste Acceptance Cessation	A.12.

[Rule 62-213.440(1)(b), F.A.C.]

A.11. Other Reporting Requirements: See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements. [Rule 62-213.440(1)(b), F.A.C.]

A.12. Facility Closure Report: Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional

information as may be necessary to verify that permanent closure has taken place. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill. [40 CFR 60.757]

A.13. Asbestos Records and Reports: Permittee shall maintain records and reports in accordance with 40 CFR 61.154(e) and for a period of at least five years. [40 CFR 61.154(e)]

A.14. Asbestos Location Records: Permittee shall maintain, until closure, location records of the asbestos containing waste subject to 40 CFR 61.154 in accordance with 40 CFR 61.154(f). [40 CFR 61.154(f)]

A.15. 40 CFR 60 Subpart A - General Provisions: The emissions unit is subject to all applicable General Provisions of 40 CFR 60 Subpart A.

A.16. 40 CFR 61 Subpart A - General Provisions and Subpart M - National Emission Standard for Asbestos: This emissions unit is subject to all applicable requirements of 40 CFR 61 Subpart A and to all applicable requirements of 40 CFR 61 Subpart M.

A.17. 40 CFR 63 Subpart A - General Provisions: This emissions unit is subject to all applicable requirements of 40 CFR 63 Subpart A, as specified in Table 1 to 40 CFR 63 Subpart AAAA.

Combined Requirements with the Gulf Power Company's Perdido Landfill Gas-to-Energy Facility

A.18. The Escambia County Board of County Commissioners Perdido Landfill (Facility I.D. 0330246), shall properly dispose of the landfill gas generated at the Perdido Landfill by either flaring the gas or routing the gas to Gulf Power Company's Perdido Landfill Gas-to-Energy Facility (Facility I.D. 0330286), for treatment and beneficial reuse.

A.19. The Escambia County Board of County Commissioners Perdido Landfill (Facility I.D. 0330246), and Gulf Power Company's Perdido Landfill Gas-to-Energy Facility (Facility I.D. 0330286), will cooperate and share responsibility in regards to compliance with the NSPS, Subpart WWW. Specifically, they will share the requirement to route all collected landfill gas to a control system according to 40 CFR 60.752(b)(2)(iii). Escambia County shall report all occurrences when the flare is shut down for more than one hour or all periods when the collection system was not operating in excess of 5 days in accordance with 40 CFR 60.757 (Subpart WWW).

A.20. The Escambia County Board of County Commissioners Perdido Landfill (Facility I.D. 0330246), and Gulf Power Company's Perdido Landfill Gas-to-Energy Facility (Facility I.D. 0330286), are considered one facility for purposes of determining applicability of the Prevention of Significant Deterioration requirements. In determining whether any modification proposed for either or both facilities would result in a significant net emissions increase, potential-to-emit emissions of PSD pollutants shall be calculated based on the combined emissions from all emissions units at both facilities.

A.21. Escambia County Board of County Commissioners Perdido Landfill (Facility I.D. 0330246), and Gulf Power Company's Perdido Landfill Gas-to-Energy Facility (Facility I.D. 0330286), will cooperate and share emissions information and other information needed to apply for construction and/or modification projects.

A.22. Escambia County Board of County Commissioners Perdido Landfill (Facility I.D. 0330246), and Gulf Power Company's Perdido Landfill Gas-to-Energy Facility (Facility I.D. 0330286), will each provide the Department no later than 30 days after the issuance of this permit an inventory of emissions to evaluate the current status of the one contiguous facility as a Major Stationary Source for Prevention of Significant Deterioration.

The specific conditions in this section apply to the following emissions unit:

EU No.	Brief Description
003	2,200 scfm Landfill Gas Utility Flare
004	2,200 scfm Landfill Gas Utility Flare

The blower flare station currently contains one of two, 2,200 scfm, non-assisted open utility flares.

{Permitting Note: The flares are subject to the requirements of 40 CFR 60 Subpart A General Requirements.}

Essential Potential to Emit (PTE) Parameters

B. 1. Methods of Operation: *Fuels.* The fuels that are allowed to be burned in this unit are landfill gas, natural gas, or propane. [Rule 62-213.410, F.A.C.; and, Permit No. 0730099-006-AC.]

B. 2. Hours of Operation: This emissions unit may operate continuously (8,760 hours/year). [Rule 62-210.200(PTE), F.A.C.]

Emission Limitations and Standards

B. 3. Flares: An open flare designed and operated in accordance with 40 CFR 60.18 except as noted in 40 CFR 60.754(e) Paragraphs (c) through (f) apply to flares.

(c)

(1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
(2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).
(3) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (c)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (c)(4) of this section, or adhering to the requirements in paragraph (c)(3)(i) of this section.
(i)
(A). Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max}, as determined by the following equation:

$$V_{max} = (X_{H2} - K_1)* K_2$$

Where:
V_{max} = Maximum permitted velocity, m/sec.
K_1 = Constant, 6.0 volume-percent hydrogen.
K_2 = Constant, 3.9(m/sec)/volume-percent hydrogen.
X_{H2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in 40 CFR 60.17).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (f)(4) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.

(6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(d) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(f)

(1) Method 22 of Appendix A to this part shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25° C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20° C;

$$K = \text{Constant, } 1.740 \times 10^{-7} \left(\frac{1}{ppm}\right) \left(\frac{g\ mole}{scm}\right) \left(\frac{MJ}{kcal}\right)$$

where the standard temperature for $\left(\frac{g\ mole}{scm}\right)$ is 20°C;

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994) (Incorporated by reference as specified in 40 CFR 60.17); and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25° C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in 40 CFR 60.17) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

[Rule 62-204.800(8)(d), F.A.C., 40 CFR 60.18 (c) - (f)]

<u>Continuous Monitoring Systems</u>

B. 4. Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(2) A device that records flow to or bypass of the flare. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

Test Methods and Procedures

B.5. Visible Emissions (VE). A visible emissions test on the utility flare using EPA method 22 shall be conducted annually during each federal fiscal year ending on September 30. The testing period is two hours. Due to the variable flow nature of landfill gas, the flare is not limited to operating at 110% of the maximum rate tested during the previous annual emissions tests. Results shall be submitted to the Department within 45 days after testing. The Department shall be notified at least 15 days prior to testing to allow witnessing. Results shall be submitted to the Department within 45 days after testing. The use of EPA method 22 in lieu of method 9 shall constitute compliance with the requirement of Rule 62-296.320(4)(b)4.a., F.A.C., to use method 9 for the annual visible emissions compliance test. [Rules 62-204.800(8)(d), 62-297.310(7)(a)4., 62-297.310(7)(a)9., and 62-297.310(8)(b), F.A.C.; 40 CFR 60.18(f)(1)]

B.6. Visible Emissions (VE). The flare shall be operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any two consecutive hours. [40 CFR 60.18 and Rule 62-4.070(3), F.A.C.]

Recordkeeping and Reporting Requirements

B.7. Other Reporting Requirements. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements. [Rule 62-213.440(1)(b), F.A.C.]

Other Applicable Requirements

B.8. 40 CFR 60 Subpart A - General Provisions: The emissions unit is subject to all applicable General Provisions of 40 CFR 60 Subpart A.

B.9. 40 CFR 63 Subpart A - General Provisions: This emissions unit is subject to all applicable requirements of 40 CFR 63 Subpart A, as specified in Table 1 to 40 CFR 63 Subpart AAAA.

Subsection C. Emission Unit 005

This section of the permit addresses the following emissions unit.

EU No.	Brief Description
005	450 horsepower Diesel Emergency Generator

Engine	Qty.	Engine Displacement	Engine Model Year	Rating	Rule Applicability
Emergency Generator	1	Less than 30 liters per cylinder	2007 or later	450Hp	NSPS Subpart A and IIII NESHAP Subpart A and ZZZZ

{Permitting Note: This emergency engine is regulated under 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) adopted in Rule 62.204.800(11)(b), F.A.C. The emergency generator is a new stationary RICE at an area source per 63.6590(c)(1). By meeting the NSPS Subpart IIII requirements, the Subpart ZZZZ requirements are satisfied.}

Essential Potential to Emit (PTE) Parameters

C.1. Authorized Fuel. These Stationary Reciprocating Internal Combustion Engines **(**RICE) must use diesel fuel that meets the following requirements for non-road diesel fuel:

a. *Sulfur Content*. The sulfur content shall not exceed = 15 ppm = 0.0015% by weight (ultra low sulfur) for non-road fuel.

b. *Cetane and Aromatic*. The fuel must have a minimum cetane index of 40 or must have a maximum aromatic content of 35 volume percent.

c. *Marking Provisions.* The diesel fuel fired shall be free of marker solvent yellow 124 until November 30, 2014. After December 1, 2014, there are no requirements or restrictions on the use of marker solvent yellow 124.

d. *Use of Existing Fuel.* Any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

[40 CFR 60.4207(b), 80.510(c), 80.510(f)(2) & 80.510(f)(7)]

C.2. Restricted Hours of Operation.

a. *Maintenance and Testing.* These engines are authorized to operate for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year.

b. *Emergency Situations*. There is no time limit on the use of emergency stationary RICE in emergency situations.

c. *Non-emergency Situations*. These engines may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing.

d. *Other Situations*. These engines cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity.

[40 CFR 60.4211(f)]

C.3. Operation and Maintenance. The owner or operator must operate and maintain the stationary CI internal combustion engines according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only

change those settings that are permitted by the manufacturer. These RICE must be maintained and operated to meet the emissions limits in Specific Conditions **C.4. - C.6.** over the entire life of the engine. [40 CFR 60.4206, 4211(a)(1), (2) & (3)]

Emissions Standards

C.4. NO_X + NMHC Emissions. Emissions of NO_X plus non-methane hydrocarbons shall not exceed 4.0 grams per kilowatt hour (g/kW-hr). [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2) & 40 CFR 89.112(a)]

C.5. CO Emissions. Carbon monoxide (CO) emissions shall not exceed 3.5 g/kW-hr. [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2) & 40 CFR 89.112(a)]

C.6. PM Emissions. Particulate matter (PM) emissions shall not exceed 0.2 g/kW-hr. [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2) & 40 CFR 89.112(a)]

Testing and Compliance Requirements

C.7. Engine Certification Requirements. The owner or operator must comply with the emissions standards specified above by having purchased an engine certified by the manufacturer to meet those limits. The engine must have been installed and configured according to the manufacturer's emission-related specifications, except as permitted in Specific Condition **C.8.** [40 CFR 60.4211(c)]

C.8. Compliance Requirements Due to Loss of Certification. If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:
You must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.
[40 CFR 60.4211(g)(2)]

C.9. Testing Requirements. In the event performance tests are required pursuant to Specific Condition **C.8.**, the following requirements shall be met:

a. *Testing Procedures*. The performance test must be conducted according to the in-use testing procedures in 40 CFR Part 1039, Subpart F. Link to Subpart F

b. *NTE Standards*. Exhaust emissions from these engines must not exceed the not-to-exceed (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard (STD) in Specific Conditions **C.4., C.5.** and **C.6.**, determined from the following equation:
NTE Requirement For Each Pollutant = (1.25) x (STD) (Eq. 1)

[40 CFR 60.4212(a) & (c)]

C.10. Common Testing Requirements. Unless otherwise specified, tests shall be conducted in accordance with the requirements and procedures specified in Appendix TR, Facility-Wide Testing Requirements, of this permit. [Rule 62-297.310, F.A.C.]

Monitoring Requirements

C.11. Hour Meter. A non-resettable hour meter is currently installed. [40 CFR 60.4209(a)]

Records and Reports

C.12. Hours of Operation Records. The owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner or operator must record the time of operation of the engine and the reason the engine was in operation during that time. [40 CFR 60.4214]

C.13. Maintenance Records. To demonstrate conformance with the manufacturer's written instructions for maintaining the certified engine and to document when compliance testing must be performed pursuant to Specific Condition **C.8.**, the owner or operator must keep the following records:

a. Engine manufacturer data indicating compliance with the standards.
b. A copy of the manufacturer's written instructions for operation and maintenance of the certified engine.
c. A written maintenance log detailing the date and type of maintenance performed on the engine, as well as any deviations from the manufacturer's written instructions.

[Rule 62-213.440(1), F.A.C.]

C.14. Testing Notification. At such time that the requirements of Specific Condition **C.8.** become applicable, the owner or operator shall notify the compliance authority of the date by which the initial compliance test must be performed. [Rule 62-213.440(1), F.A.C.]

C.15. Other Reporting Requirements. See Appendix RR, Facility-Wide Reporting Requirements, for additional reporting requirements. [Rule 62-213.440(1)(b), F.A.C.]

General Provisions

C.16. 40 CFR 60 Subpart A, General Provisions. The owner or operator shall comply with the applicable requirements of 40 CFR 60 Subpart A, General Provisions, as specified below. Link to 40 CFR 60, Subpart A - General Provisions.

General Provisions Citation	Subject of Citation
§ 60.1	General applicability of the General Provisions
§ 60.2	Definitions (see also § 60.4219)
§ 60.3	Units and abbreviations
§ 60.4	Address
§ 60.5	Determination of construction or modification
§ 60.6	Review of plans
§ 60.9	Availability of information
§ 60.10	State Authority
§ 60.12	Circumvention
§ 60.14	Modification
§ 60.15	Reconstruction
§ 60.16	Priority list
§ 60.17	Incorporations by reference
§ 60.19	General notification and reporting requirements

[40 CFR 60.4218]

SECTION IV. APPENDICES.

The Following Appendices Are Enforceable Parts of This Permit:

Appendix A, Glossary.
Appendix I, List of Insignificant Emissions Units and/or Activities.
Appendix 40 CFR 60 Subpart A – General Provisions - NSPS.
Appendix RR, Facility-wide Reporting Requirements.
Appendix TR, Facility-wide Testing Requirements.
Appendix TV, Title V General Conditions.
Appendix 40 CFR 63 Subpart A – General Provisions - NESHAP.
Appendix 40 CFR 63, Subpart AAAA –NESHAP for Municipal Solid Waste Landfills.
Appendix 40 CFR 63 Subpart ZZZZ – NESHAP for Stationary Reciprocating Internal Combustion Engines.
Appendix 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE).
Appendix 40 CFR 61 Subpart A – General Provisions - NESHAP.
Appendix 40 CFR 61 Subpart M (Set A) – NESHAP For Asbestos.
Appendix 40 CFR 60 Subpart WWW – Standards of Performance for Municipal Solid Waste Landfills.
Appendix Alternate Operating Procedures, March 14, 2011 Landfill Gas Wells.