FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BOB MARTINEZ CENTER
2600 BLAIR STONE ROAD
TALLAHASSEE, FLORIDA 32399-2400

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

PERMITTEE

Omni Waste of Osceola County, LLC -
JED Solid Waste Management Facility
1501 Omni Way
St. Cloud, FL 34773

Authorized Representative:
Mr. Michael Kaiser, Region Engineer

Air Permit No. 0970079-011-AC/PSD-FL-429
Expires: September 11, 2024

Facility ID No. 0970079
Project: JED Solid Waste Management Facility Expansion

PROJECT

The existing JED Landfill will be expanded from its current (existing) capacity of 16.2 million tons to an estimated 81.5 million tons. A gas collection & control system will be installed under the expansion into additional cells. All of the landfill gas (LFG) generated will be either routed and combusted in engines or in open flares. The JED landfill currently has one 3,600 scfm open flare. Two (2) open flares with a total flaring capacity of 7,200 scfm and twelve (12) Landfill Gas-to-Energy (LFGTE) CAT® G3520C engines will be added in PSD Phase 1. In PSD Phase 2 (full built-out), two (2) additional open flares with a total flaring capacity of 7,200 scfm will be added. The new landfill gas-to-energy (LFGTE) plant which is comprised of the 12 engines will be classified under electric generation - sanitary services under Standard Industrial Classification (SIC) No. 4953.

The proposed expansion will be collocated with the existing JED Landfill, which is located in Osceola County at 1501 Omni Way, St. Cloud, Florida. The UTM Coordinates for the JED Landfill are: Zone 17, 491.6 East and 3102.9 North. Latitude is: 28°03'6.5" North; and, Longitude is: 81°05'8.4" West.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix CF of Section 4 of this permit

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

David L. Read, P.E.
2014.09.15
11:40:31 -04'00'

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

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

Mr. Michael Kaiser, OWOC-JED: michael.kaiser@progressivewaste.com
Mr. Kennard F. Kosky, P.E., Golder Associates Inc.: kkosky@golder.com
Mr. Tom Lubozynski, DEP CD: tom.lubozynski@dep.state.fl.us
Ms. Heather Ceron, U.S. EPA Region 4: ceron.heather@epa.gov
Ms. Lynn Scearce, DEP OPC: lynn.scearce@dep.state.fl.us

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Lynn Scearce

Lynn Scearce
2014.09.15
12:54:24 -04'00'

FACILITY DESCRIPTION

The existing JED Landfill facility is located in Osceola County approximately 60 kilometers (km) (38 miles) southeast of downtown Orlando. The JED Landfill is an open Class I Landfill with a municipal solid waste (MSW) design capacity greater than 2.5 million megagrams (Mg) by mass or 2.5 million cubic meters by volume. This landfill began receiving solid waste in January 2004. The JED Landfill is currently operating under Title V air operation Permit No. 0970079-009-AV.

The facility currently operates one 3,600-scfm open flare (E.U. ID No. 002) used as the primary flare, which was installed in 2009. The open flare is not equipped with a bypass in which LFG can bypass the control device in an uncombusted manner.

PROPOSED PROJECT

The proposed project is for the JED Solid Waste Management Facility Expansion.

The permittee is proposing flares and a LFGTE plant to accommodate the LFG generated by the full build-out of the JED Landfill from the existing capacity of 16.2 million tons to an estimated 81.5 million tons. All of the LFG collected at the JED Landfill will be combusted in the LFGTE plant and/or open flares. At capacity, the LFGTE plant will use LFG to fire up to 12 CAT® G3520C. The 12 engines will be capable of generating a total of 19.2 MW of electricity (1.6 MW per CAT® G3520C). The generation capacity varies with ambient temperature and may go up to 1.63 MW per engine if the ambient temperature is below 90ºF.

The existing JED Landfill is currently operating one open flare with a maximum capacity of 3,600 scfm of LFG. The additional flares are required to flare the maximum potential LFG estimated to be collected at the landfill in 2041 when the landfill is expected to be fully built out. The additional flares and the LFGTE plant will be constructed in two PSD phases:

- PSD Phase 1 - Two open candlestick utility flares (total additional flaring capacity of 7,200 scfm to accommodate total LFG collection up of 10,800 scfm). The LFGTE plant with 12 CAT® G3520C engines.
- PSD Phase 2 - Two additional open candlestick utility flares (total additional flaring capacity of 7,200 scfm of LFG) to achieve a total facility-wide flaring capacity of up to 18,000 scfm, which is necessary for the full build-out LFG collection capacity of 15,845 scfm.

The first phase of the project is estimated to be completed within 10 years of receiving the permit. Additional flares in the second phase of the project will be required once the gas generation potential exceeds 10,800 scfm and therefore, the second phase is expected to start in 2024. As shown in the LFG gas curve presented in Appendix A of the permit application, 10,910 scfm of the LFG will be collected at the landfill in 2025.

The project will include installation of a gas collection & control system (GCCS) for the additional cells and routing of LFG from the GCCS to the flares and to the CAT® engines after being processed in a gas treatment and conditioning system. The current GCCS was installed and is operated in accordance with NSPS found in 40 CFR 60, Subpart WWW, Standards of Performance for Municipal Solid Waste Landfills. Expansion of the system to accommodate the additional LFG gas and modification to the system to connect to the additional flares and LFGTE plant will be in accordance with Subpart WWW requirements.

The LFG treatment and conditioning system associated with the LFGTE plant will include the following:

- Initial gas dewatering, utilizing a moisture knock-out vessel;
- Gas compressor and blowers;
- Air-to-gas coolers and de-watering; and,
- Removal of particulate matter larger than 10 microns from the LFG.

This LFG treatment system meets the current U.S. EPA determinations for a treatment system that processes LFG for subsequent use. Additionally, in accordance with NSPS Subpart WWW, no LFG will be vented to the

atmosphere from the gas treatment system. When the LFG is routed to the LFGTE plant, the LFG will comply with the requirements of 40 CFR 60.752(b)(2)(iii)(C).

All 12 of the CAT® G3520C engines will be located in an enclosed building (east and west). Exhaust from each engine will be routed to the atmosphere via individual vertical exhaust stacks, each equipped with a silencer and located in the north side of the building.

LFG collected at the landfill will be filtered, compressed, and treated to remove the moisture prior to combustion in the flares or in the engines. The permittee is also proposing to install equipment to treat LFG for the purpose of reducing the concentrations of hydrogen sulfide (H_2S) in the LFG. When the LFGTE plant will be operating (one or all engines), excess LFG that are not combusted in the engines will be combusted in the flares. The LFGTE plant may be expanded in the future depending on adequate power market and/or alternative energy use. Separate permit application(s) shall be submitted for such an expansion.

The proposed project is considered an expansion of the existing facility and is subject to PSD preconstruction review for CO, NOx, PM, PM_{10}, $PM_{2.5}$, VOC, NMOC and GHG emissions in accordance with Rule 62-212.400, F.A.C.

The proposed project will add the following *new* emissions units (E.U.s):

E.U. ID No.	E.U. Brief Description(s)
005	*new* MSW Class I Landfill (expansion) with Gas Extraction - Cells 11-23
006	*new* LFGTE Plant - 12 LFG-fired Engines
007	*new* 4 Open Candlestick Utility Flares

The proposed project affects the following *existing* emissions units (E.U.s):

E.U. ID No.	E.U. Brief Description(s)
001	*existing* MSW Class I Landfill with Gas Extraction - Cells 1-10
002	*existing* Open Candlestick Utility Flare, Flare #1

FACILITY REGULATORY CLASSIFICATIONS

- The existing facility is not classified as a Prevention of Significant Deterioration (PSD) major facility. The proposed project is subject to PSD preconstruction review in accordance with Rule 62-212.400, F.A.C.
- The existing facility is not a major source of hazardous air pollutants (HAP). However, the proposed project will not cause it to become a major source of HAP.
- The existing facility is as a Title V Source in accordance with Rule 62-210.200, F.A.C.
- The proposed project includes units subject to applicable New Source Performance Standards (NSPS) in Title 40, Part 60 of the Code of Federal Regulations.
- The proposed project includes units subject to applicable National Emissions Standards for Hazardous Air Pollutants (NESHAP) in Title 40, Part 63 of the Code of Federal Regulations.
- The proposed project includes no units subject to the acid rain or CAIR provisions of the Clean Air Act.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The Permitting Authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The mailing address for the Office of Permitting and Compliance is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Central District Office (Compliance Authority) at 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767; Telephone: (407) 894-7555, Fax: (407) 897-2966.

3. Appendices: The following Appendices are attached as a part of this permit and the permittee must comply with the requirements of the appendices:

Appendix CF	Citation Formats and Glossary of Common Terms;
Appendix GC	General Conditions;
Appendix CC	Common Conditions;
Appendix CTR	Common Testing Requirements;
Appendix BD	Final BACT Determinations;
Appendix ATM	U.S. EPA Alternative Test Method ALT-096 (TECO 55I);
Appendix A	NSPS 40 CFR 60, Subpart A - General Provisions;
Appendix WWW	NSPS 40 CFR 60, Subpart WWW - Municipal Solid Waste Landfills;
Appendix JJJJ	NSPS 40 CFR 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines;
Appendix A1	NESHAP 40 CFR 63, Subpart A - General Provisions;
Appendix AAAA	NESHAP 40 CFR 63, Subpart AAAA - Municipal Solid Waste Landfills; and,
Appendix ZZZZ	NESHAP 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.

5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(4), 62-4.080 & 62-210.300(1), F.A.C.]

8. Source Obligation:

(a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.

(b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

(c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

9. Approved Phases of a Phased Construction Project: This permit contains an approved phased construction project. In accordance with Rule 62-212.400(12)(a), F.A.C., each phase must commence construction within 18 months of the commencement date established by the Department in this permit.

The existing JED Landfill is currently operating one open flare with a maximum capacity of 3,600 scfm of LFG. Additional flares and a LFGTE plant are required to combust the maximum potential LFG estimated to be collected at the landfill in by the year 2041 when the landfill is expected to be fully built out. The additional flares and the LFGTE plant shall be constructed in two major PSD phases.

- *PSD Phase 1* - Two open candlestick utility flares (total additional flaring capacity of 7,200 scfm to accommodate total LFG collection up of 10,800 scfm). The LFGTE plant with 12 CAT® G3520C engines. During this phase, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, approval to construct PSD Phase 1 authorized by this permit shall expire. This means that construction defined as the expansion of the new landfill (EU 005) and the installation of flares, engines, the GCCS, the LFG conditioning system and/or the Phase 1 LFG H_2S removal system cannot cease for a period of 18 months or more.
- *PSD Phase 2* - Two additional open candlestick utility flares (total additional flaring capacity of 7,200 scfm of LFG) to achieve a total facility-wide flaring capacity of up to 18,000 scfm, which is necessary for the full build-out LFG collection capacity of 15,845 scfm. During this phase, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, approval to construct PSD Phase 2 authorized by this permit shall expire. This means that construction defined as the as the expansion of the new landfill (EU 005) and the installation of flares and the continued installation of GCCS and/or the Phase 2 LFG H_2S removal system cannot cease for a period of 18 months or more.

The first phase (PSD Phase 1) of the project is estimated to be completed within 10 years of receiving the permit. Additional flares in the second phase (PSD Phase 2) of the project will be required once the gas generation potential exceeds 10,800 scfm and therefore, the second phase (PSD Phase 2) is expected to start around the year 2024.

If the requirements of Rule 62-212.400(12)(a), F.A.C. are not met, the permittee must submit a revised PSD BACT analysis and proposals to the Department.

[Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rule 62-212.400(12)(a), F.A.C.]

10. Approved Phases of a Phased Construction Project - Reporting: The permittee shall provide a written notification to the Department of the actual date of commencement for each PSD phase of the approved phased construction project. In addition, 18 months after the issuance of the final version of this permit and every 18 months thereafter, the permittee shall submitted a written report to both the Compliance Authority and the Permitting Authority describing what construction activities have occurred during the previous 18 months. This report shall be submitted within 60 days of the end of each 18 month reporting period. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rule 62-212.400(12)(a), F.A.C.]

11. Approved Phases of a Phased Construction Project - New Standards: The emission units under this phased construction project shall meet any new applicable requirements, i.e., newly promulgated federal and/or state specific emission limiting standards. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rule 62-212.400(12)(a), F.A.C.]

12. Title V Air Operation Permit: This permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V air operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V air operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to each Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

13. Objectionable Odors Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. [Rule 62-296.320(2), F.A.C.]

    {Note: An objectionable odor is defined in Rule 62-210.200(Definitions), F.A.C., as 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.}

14. Unconfined Emissions of 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. Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter. General reasonable precautions include the following: a. Paving and maintenance of roads, parking areas and yards; b. Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing; c. Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities; d. Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment, and from buildings or work areas to prevent particulates from becoming airborne; e. Landscaping or planting of vegetation; f. Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter; g. Confining abrasive blasting where possible; and h. Enclosure or covering of conveyor systems.
    [Rule 62-296.320(4)(c), F.A.C.]

A. JED Landfill (E.U. ID Nos. 001 & 005)

This subsection of the permit addresses the following emission units:

E.U. ID No.	E.U. Brief Description(s)
001	*The E.U. ID No. 001's description as part of this project is administratively corrected* *from:* MSW Class I Landfill with Gas Extraction *to: existing* MSW Class I Landfill with Gas Extraction - Cells 1-10
005	*new* MSW Class I Landfill (expansion) with Gas Extraction - Cells 11-23

The existing JED Landfill will be expanded from the existing capacity of 16.2 million tons to an estimated new capacity 81.5 million tons.

The JED landfill, a Class I landfill, currently accepts municipal solid waste (MSW). The current annual waste acceptance is approximately 1,600,000 tons. The JED landfill commenced construction in April 2003 and started receiving waste in January 2004. The facility is currently authorized to construct 10 landfill cells (cells 1-10) for a total footprint of 123 acres. At full build-out, the landfill will have 23 cells (cells 11-23) for a total footprint of 360 acres.

Non-methane organic compound (NMOC) emissions from the JED landfill had been calculated to be greater than 50 Mg per year, therefore, gas collection & control systems (GCCS) had been and will continue to be required.

As part of this proposed project, the permittee proposed to install additional equipment at the JED Landfill to treat LFG for the purpose of reducing the concentrations of hydrogen sulfide (H_2S) in the JED landfill gas (LFG). This equipment is referred to as the H_2S scrubbing system in this permit. Reducing H_2S content prior to combustion in either the engines and/or the flares effectively reduces SO_2 emissions. With the proposed H_2S scrubbing system installed & operational potential SO_2 emissions from the engines and flares were calculated to be 38.9 & 38.2 TPY in the proposed project, just below the PSD SER of 40 TPY. To demonstrate that the proposed project escapes PSD for SO_2 emissions this permit contains specific conditions for reasonable assurances.

The following conditions apply to the *existing* and *new* landfill (expansion).

PERFORMANCE RESTRICTIONS

1. Permitted Capacity: The existing JED Landfill may be expanded to an estimated new capacity of 81.5 million tons. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-210.200, *PTE*, F.A.C.]

2. LFG Collection & Control System: The project shall include installation of a GCCS for the additional cells and routing of the LFG from the GCCS to the flares and to the CAT® engines after being processed in a gas treatment & conditioning system. [Application No. 0970079-011-AC/PSD-FL-429; and, Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

3. Applicable NSPS Provisions: The JED Landfill is subject to, and shall continue to comply with, the applicable provisions in NSPS Subpart A (General Provisions) and NSPS Subpart WWW (Municipal Solid Waste Landfills) of 40 CFR 60, which are identified in Appendix A and Appendix WWW of this permit. [NSPS Subparts A and WWW in 40 CFR 60; and, Rule 62-204.800, F.A.C.]

4. Applicable NESHAP Provisions: The JED Landfill is subject to, and shall continue to comply with, the applicable provisions in NESHAP Subpart A (General Provisions) and NESHAP Subpart AAAA (Municipal Solid Waste Landfills) of 40 CFR 63, which are identified in Appendix A1 and Appendix AAAA of this permit. [NESHAP Subparts A and AAAA in 40 CFR 63; and, Rule 62-204.800, F.A.C.]

Note: The following specific conditions are related specifically to the new H_2S Scrubbing System:

EQUIPMENT

5. New H_2S Scrubbing System: The permittee shall install, maintain and operate a two-stage H_2S scrubbing system for the JED LFG with the first stage constructed and operated in the first PSD phase ("PSD Phase 1") and the second stage constructed and operated in the second PSD phase ("PSD Phase 2"). The two stages shall have the following design efficiencies:

   a. First stage - Reduce LFG H_2S concentration to < 160 ppmv; and,

   b. Second stage - Reduce LFG H_2S concentration to < 65 ppmv.

   The H_2S scrubbing system shall achieve the H_2S reduction concentrations for each stage (these reductions restrict SO_2 emissions from the combustion of the LFG in the engines and the flares). The H_2S scrubbing system shall be maintained in accordance with the manufacturer's recommendations or determined best practices. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

6. H_2S Scrubbing System Selected Notification: The permittee is required to select an H_2S scrubbing system that will achieve the reduced H_2S concentrations of this permit for the JED LFG. The permittee provided the following types of reduction technologies from which they may select from: Biological Conversion to Sulfate, Biological Conversion to Elemental Sulfur, Physical-Chemical Conversion to Elemental Sulfur (LOW-CAT™ process by Merichem or equivalent, Paques/THIOPAQ® Process or equivalent), Physical/Chemical Sulfur Removal System (ECO-TEC™, Nrgtek, Inc. or equivalent), Sacrificial Media Systems; and, Packed Tower Chemical Scrubber. The permittee shall inform the Department upon selection of the specific H_2S scrubbing system to be installed under this project, i.e., biological conversion/treatment, etc. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

   {Note: The permittee is not restricted to these specific technologies, these were simply the ones that had been identified in the permit application.}

7. H_2S Scrubbing System Selected Information: The permittee shall provide detailed information on the selected specific H_2S scrubbing system selected as soon as it becomes available. The details shall include but not be limited to the manufacturer information (Make, Model No., etc.), manufacturer brochure, actual process/operation diagram for the technology selected, facility (plant) layout showing where the equipment will be installed if different from the application submitted, etc. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

8. Operating & Maintenance (O&M) Procedures: All operators and supervisors shall be properly trained to operate and maintain the H_2S scrubbing system in accordance with the guidelines and procedures established by the manufacturer. The training shall include good operating & maintenance practices. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

MONITORING REQUIREMENTS

9. Semi-Annual LFG Sampling/Analysis - H_2S Content: The sulfur content of the H_2S scrubbing system's outlet concentration shall be sampled semi-annually, analyzed and the results provided to the compliance authority. Based on the sampling results and Rule 62-297.310(7)(b), F.A.C., the Department may request additional gas sampling and analyses. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

10. LFG - H_2S Content Analysis: The owner or operator shall analyze the sulfur content of the H_2S scrubbing system's outlet concentration using ASTM Methods D1072-90 or D5504-01, or equivalent, and later

methods. The LFG shall be collected and transported in an appropriate canister (e.g. SUMMA®, Bottle-Vac Sampler or equivalent). [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

INITIAL COMPLIANCE REQUIREMENTS

11. Compliance - H_2S Concentration Reductions: To demonstrate initial compliance that the selected H_2S scrubbing system achieves the design H_2S reduction efficiencies for each stage, within 30 days of completion of each stage the permittee shall notify the compliance authority of the results with a copy to the permitting authority. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

RECORDKEEPING & REPORTING

12. H_2S Content Recordkeeping for LFG: The owner or operator shall maintain records of the sulfur content analysis of the H_2S scrubbing system's outlet concentrations. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

13. H_2S Content Sampling & Analysis Results for LFG: The results of the sulfur content sampling & analysis of the H_2S scrubbing system's outlet concentrations shall be provided to the compliance authority. Based on the sampling results and Rule 62-297.310(7)(b), F.A.C., the Department may request additional gas sampling and analyses of the JED LFG. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

B. *New* LFGTE Plant: Twelve (12) LFG-fired Engines (E.U. ID No. 006)

This subsection of the permit addresses the following emission units:

E.U. ID No.	E.U. Brief Description(s)
006	*new* Landfill Gas-to-Energy (LFGTE) Plant 12 LFG-fired Lean-burn Reciprocating Internal Combustion Engine/Generator Sets

This emissions unit is the Landfill Gas-to-Energy (LFGTE) Plant which is comprised of 12 LFG-fired engines.

The LFG-fired engines shall be Caterpillar Model G3520C or equivalent. The CAT® G3520C internal combustion engine is a lean-burn water-cooled engine with a design power generation rating of 2,242 brake-horsepower (bhp) and a maximum fuel consumption rating of 6,511 Btu/bhp-hr (lower heating value, LHV). The maximum heat input rating for each engine is 14.6 million British thermal units per hour (MMBtu/hr, LHV) (engine power at 100% load is 2,241 bhp and nominal engine fuel consumption is 6,511 Btu/bhp-hr, LHV). Each engine will be connected to an electric power generator with a nominal rating of 1.6 MW. Using a fuel consumption tolerance of +2.5% (Caterpillar data), the maximum heat input could be 14.96 MMBtu/hr, LHV, which is equivalent to 16.61 MMBtu/hr, HHV. Exhaust gases from each engine will be vented through a 60-foot (ft) high stack. The exhaust parameters and other design parameters for the engine were provided in the permit application in Appendix C.

{Permitting Note: In accordance with Rule 62-212.400, PSD, F.A.C., the above engines are subject to Best Available Control Technology (BACT) determinations for the following air pollutants: CO, NOx, PM, PM_{10}, $PM_{2.5}$, VOC, NMOC and GHG. The final BACT determinations are presented in the appendices of this permit. Other emissions standards and performance restrictions specified in this permit allow the emission units to escape PSD preconstruction review for sulfur dioxide (SO_2) emissions.}

EQUIPMENT

1. LFG Engine/Generator Sets: The permittee is authorized to install and operate 12 lean-burn, spark-ignited reciprocating internal combustion engine/generator sets (Caterpillar Model G3520C or equivalent) that will fire LFG with the following nominal design specifications per engine: a maximum engine rating of 2,242 bhp at 100% load; a nominal electrical generator rating of 1.6 MW; and a heat input rate of approximately 16.61 MMBtu/hour, HHV from LFG.
   a. Each engine shall be equipped with an air-to-fuel ratio controller and electronic ignition timing to maintain efficient fuel combustion.
   b. Each engine shall be equipped with an automatic fail-safe block valve which must be designed to stop the flow of LFG in the event of an engine failure. Excess LFG not fired in the engines shall be flared or free vented until the facility is required to meet the applicable collection and control system requirements in accordance with NSPS Subpart WWW in 40 CFR 60.
   c. Each engine shall be equipped with a non-resettable elapsed time meter to indicate the elapsed engine operating time in cumulative hours.
   d. A gas flow meter shall be installed to monitor the total volumetric flow rate of LFG to the engines.

   [Application No. 0970079-011-AC/PSD-FL-429; Rules 62-4.070(1)&(3), *Reasonable Assurance*, 62-210.200, *Definitions - Potential to Emit (PTE)*, and 62-212.400, *PSD - BACT Determination*, F.A.C.; and, NESHAP Subpart ZZZZ.]

   {Permitting Note: The heat input rate is based on 100% load (2,242 bhp), a LFG higher heating value (HHV) of 446 British thermal units per standard cubic foot (Btu/scf) and an approximate LFG firing rate of 550 scfm per engine at a methane content of 44%.}

2. LFG Treatment & Conditioning System for Engines: The permittee shall install a LFG treatment & conditioning system that includes initial gas dewatering (moisture knock-out vessel), gas compressors and blowers, air-to-gas coolers or equivalent and particulate removal. The particulate filtration system shall be

designed to remove particulate matter larger than 10 microns via primary and polishing filters. The gas treatment system shall not be equipped with atmospheric vents. [Application No. 0970079-011-AC/PSD-FL-429; and, Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

3. Hours of Operation: The new engine/generator sets may operate continuously (i.e., 8,760 hours/year). [Application No. 0970079-011-AC/PSD-FL-429; and, Rule 62-210.200, *PTE*, F.A.C.]

PERFORMANCE RESTRICTIONS

4. Permitted Capacity: Each LFG engine has a maximum power rating of 2,242 bhp at 100% load (approximately 16.61 MMBtu/hour, HHV). The electrical generator set has a nominal power rating of 1,600 kilowatts (kW). [Rule 62-210.200, *PTE*, F.A.C.]

5. Authorized Fuel: Only H_2S scrubbed, treated & conditioned LFG shall be fired in the engine/generator sets. *{Permitting note: Propane may be used as a startup fuel.}* [Application No. 0970079-011-AC/PSD-FL-429; and, Rules 62-212.400, *PSD - BACT Determination*, and Rule 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

6. Applicable NSPS Provisions: The LFG engines are subject to, and shall comply with, the applicable provisions in NSPS Subpart A (General Provisions) and NSPS Subpart JJJJ (Stationary Spark Ignition Internal Combustion Engines) of 40 CFR 60, which are identified in Appendix A and Appendix JJJJ of this permit. [NSPS Subparts A and JJJJ in 40 CFR 60; and, Rule 62-204.800, F.A.C.]

7. Applicable NESHAP Provisions: The LFG engines are subject to, and shall comply with, the applicable provisions in NESHAP Subpart A (General Provisions) and NESHAP Subpart ZZZZ (Reciprocating Internal Combustion Engines) of 40 CFR 63, which are identified in Appendix A1 and Appendix ZZZZ of this permit. [NESHAP Subparts A and ZZZZ in 40 CFR 63; and, Rule 62-204.800, F.A.C.]

EMISSION STANDARDS & LIMITATIONS

8. CO, VOC, NMOC, NOx, PM/PM_{10}/$PM_{2.5}$ and GHG Emissions: The permittee shall minimize CO, VOC, NMOC, NOx, PM/PM_{10}/$PM_{2.5}$ and GHG emissions by installing, operating and maintaining the required LFG treatment systems [H_2S scrubbing system and treatment & conditioning system] as well as maintaining the air-to-fuel ratio to ensure efficient combustion. [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

9. Carbon Monoxide (CO): The advanced lean burn engine design, use of treated LFG, good combustion practices and proper maintenance minimizes CO emissions. CO emissions from each engine/generator set shall not exceed 3.5 gram per brake horsepower hour (g/bhp-hour) and 17.3 pounds/hour (lbs/hour). *{Permitting Note: For each engine/generator equivalent to 75.8 TPY of CO emissions. Compliance with the BACT limit assures compliance with the higher NSPS Subpart JJJJ limit of 5.0 g/bhp-hr.}* [NSPS Subparts A and JJJJ in 40 CFR 60; Rules 62-204.800 and, 62-212.400, *PSD - BACT Determination*, F.A.C.]

10. Volatile Organic Compounds (VOC): The advanced lean burn engine design, use of treated LFG, good combustion practices and proper maintenance minimizes VOC emissions. VOC emissions from each engine/generator set shall not exceed 0.56 g/bhp-hour and 2.77 lbs/hour. [NSPS Subparts A and JJJJ in 40 CFR 60; Rules 62-204.800 and, 62-212.400, *PSD - BACT Determination*, F.A.C.]

    {Permitting Note: VOC was assumed to be 100% NMOC. For each engine/generator equivalent to 12.12 TPY of CO emissions.}

11. Non-Methane Organic Compounds (NMOC): The advanced lean burn engine design, use of treated LFG, good combustion practices and proper maintenance minimizes NMOC emissions. NMOC emissions from each engine/generator set shall not exceed 0.85 g/bhp-hour and 4.2 lbs/hour. [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

    {Permitting Note: For each engine/generator equivalent to 18.4 TPY of CO emissions.}

12. Nitrogen Oxides (NOx): The advanced lean burn engine design, use of treated LFG, good combustion practices and proper maintenance minimizes NOx emissions. NOx emissions from each engine/generator set shall not exceed 0.60 g/bhp-hour and 3.0 lbs/hour. [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

    {Permitting Note: For each engine/generator equivalent to 13 TPY of NOx emissions.}

13. Particulate Matter (PM) - $PM/PM_{10}/PM_{2.5}$: The advanced engine design, use of treated LFG, good combustion practices and proper maintenance minimizes $PM/PM_{10}/PM_{2.5}$ emissions. The LFG shall also be treated to remove PM larger than 10 microns prior to combusting in the engines. In addition, as determined by EPA Method 9, visible emissions from each engine/generator set shall not exceed 10% opacity, based on a six-minute average. Visible emissions (VE) shall serve as a surrogate for $PM/PM_{10}/PM_{2.5}$ emissions. [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

    {Permitting Note: Based on these work practice standards, the maximum $PM/PM_{10}/PM_{2.5}$ emissions from each engine/generator were estimated to be 0.24 g/bhp-hour, 1.2 lbs/hour and 5.2 tons/year.}

14. Visible Emissions (VE): VE from each engine/generator set exhaust shall not exceed 10% opacity. [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

15. Sulfur Dioxide (SO_2) Emissions:

    a. To ensure that PSD is avoided, SO_2 emissions shall not exceed 38.9 tons per consecutive 12 months from all 12 LFG-fired engines (combined). Compliance with this SO_2 emissions cap shall be demonstrated on a 12-month rolling basis using the following information: the sulfur level in the scrubbed LFG; the amount of LFG fired in each engine; and, the assumption that all sulfur is converted to SO_2.

    b. SO_2 emissions from each engine/generator set shall not exceed 45 pounds/million standard cubic feet (lbs/MMscf). *{Permitting Note: For each engine/generator equivalent to 0.68 lbs/hour and 3.24 TPY.}*

    [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

16. Greenhouse Gases (GHG): The advanced engine design, use of treated LFG, good combustion practices and proper maintenance minimize GHG emissions (being primarily N_2O & CH_4). The collection of the LFG and subsequent combustion in the engines along with the energy production facility also minimize GHG emissions. NOx & CO emissions shall serve as primary surrogates for GHG emissions (being primarily N_2O & CH_4). [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

COMPLIANCE DEMONSTRATION (TESTING) REQUIREMENTS

17. Test Requirements: During each required compliance stack test, the permittee shall operate a tested LFG engine at permitted capacity (90% to 100% of 2,242 bhp). The permittee shall notify the Compliance Authority in writing at least 15 days prior to any scheduled stack tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix CTR (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9., F.A.C.]

    {Permitting Note: Although the NSPS provides for a 30-day test notification, a 15-day notice is sufficient in Florida.}

18. Test Methods: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
7 or 7E	Determination of NOx Emissions from Stationary Sources
9	Visual Determination of the Opacity (VE) of Emissions from Stationary Sources
10	Determination of CO Emissions from Stationary Sources *{Note: The method shall be based on a continuous sampling train.}*

Method	Description of Method and Comments
19	Determination of SO_2 Removal Efficiency and PM, SO_2, and NOx Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)
18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)
25C	Method for Determining NMOC in Landfill Gases
TECO-55I	ALT-096 Direct total Non-Methane Hydrocarbon Analyzer

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800 and 62-297.100, F.A.C.; and, Appendix A of 40 CFR 60.]

19. Initial Compliance Tests - CO, VOC, NMOC, NOx & VE: Each engine shall be tested to demonstrate initial compliance with the emissions standards for CO, NOx and VOC under 40 CFR 60, Subpart JJJJ as well as the BACT standards of this permit. In addition, each unit shall be tested for opacity in accordance with EPA Method 9. Each engine shall be tested for NMOC in accordance with EPA Method 25C, or Method 25A and 18, or alternative test method ALT-096 (TECO-55I) as instructed in the EPA's alternative approval letter in Appendix ATM of this permit. The initial performance tests must be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial startup of each engine. [Rules 62-212.400, *PSD - BACT Determination* and 62-297.310(7)(a)1., F.A.C.; and, NSPS Subpart JJJJ of 40 CFR 60.]

20. Periodic Compliance Tests - CO, VOC, NMOC, NOx & VE: Every 8,760 engine hours or at least once every three years, whichever comes first, each engine shall be tested to demonstrate compliance with the emissions standards for CO, NOx and VOC under 40 CFR 60, Subpart JJJJ as well as the BACT standards of this permit. During these periodic tests, at least one engine shall also be tested for opacity in accordance with EPA Method 9 and NMOC in accordance with EPA Method 25C, or Method 25A and 18, or alternative test method ALT-096 (TECO-55I) as instructed in the EPA's alternative approval letter in Appendix ATM of this permit. [Rules 62-212.400, *PSD - BACT Determination* and 62-297.310(7)(a)1., F.A.C.; and, NSPS Subpart JJJJ of 40 CFR 60.]

21. Compliance Tests - $PM/PM_{10}/PM_{2.5}$: Since VE serves as a surrogate for $PM/PM_{10}/PM_{2.5}$ emissions $PM/PM_{10}/PM_{2.5}$ emissions testing is not required. Instead, demonstration of compliance with the $PM/PM_{10}/PM_{2.5}$ BACT standards of this permit is through the VE testing. [Rules 62-212.400, *PSD - BACT Determination* and 62-297.310(7), F.A.C.]

22. Compliance Tests - GHG: Since NOx & CO emissions serves as primary surrogates for GHG emissions (being primarily N_2O & CH_4) GHG emissions testing is not required. Instead, demonstration of compliance with the GHG BACT standards of this permit is through the NOx & CO emissions testing. Low NOx emissions indicates low formation of N_2O, a GHG gas. Low CO emissions is an indicator of complete combustion, i.e., conversion of CH_4 (a GHG gas) to CO_2 and water. [Rules 62-212.400, *PSD - BACT Determination* and 62-297.310(7)(a), F.A.C.]

MONITORING REQUIREMENTS

23. Gas Flow Meter Daily Records: Daily records shall be used to monitor and record the fuel usage for all engines combined with a separate fuel meter to measure the volumetric flow rate of the LFG. [NESHAP Subpart ZZZZ of 40 CFR 63.]

RECORDKEEPING & REPORTING

24. Test Reports: The required test reports shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA test, shall provide the applicable information identified in Rule 62-297.310(8)(c), F.A.C. [Rule 62-297.310(8), F.A.C.]

25. Monthly Records: Within ten business days following each month, the permittee shall observe and record the following information in a written log or electronic format accessible to the Department: number of hours of operation of each engine; total monthly LFG flow rate to each engine; and total SO_2 emissions for the month and previous 12-month period, for a rolling 12-month total. Emissions of SO_2 shall be calculated from the monthly LFG consumption as well as the analytical results for the sulfur contents of the LFG representative of the given month of operation based on the semi-annual sampling for that period. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

26. Gas Flow Meter Report: An annual report shall be submitted including the following data:
    a. Fuel flow rate of the LFG and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by LFG is equivalent to 10% or more of the total fuel consumption on an annual basis.
    b. The operating limits provided in your federally enforceable permit, and any deviations from these limits.
    c. Any problems or errors suspected with the meters.

    [NESHAP Subpart ZZZZ of 40 CFR 63.]

27. Annual Reporting in AOR: The total SO_2 emissions from all of the engines (combined) shall be reported in the AOR, along with the total LFG consumption for all of the engines (combined). The sulfur content shall also be included with the AOR. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

28. Initial Notification: An Initial Notification shall be submitted no later than 120 days after you begin startup of the engine/generator sets. [NESHAP Subpart ZZZZ of 40 CFR 63.]

C. *New* Four (4) Open Candlestick Utility Flares (E.U. ID No. 007)

This subsection of the permit addresses the following emission units:

E.U. ID No.	E.U. Brief Description(s)
002	*The E.U. ID No. 002's description as part of this project is administratively corrected* *from:* Phase 1 - Class I Landfill Gas Collection System Flare #1 *to: existing* Open Candlestick Utility Flare, Flare #1
007	*new* 4 Open Candlestick Utility Flares

This emissions unit is comprised of 4 open candlestick utility flares.

The JED Landfill currently operates a 3,600 scfm candle type open flare (Model No. PCFT1444I12, manufactured by LFG Specialties), which is used as the primary flare. Volumetric flow to the flare is measured using a thermal dispersion flow meter and flow is continuously recorded on a data recorder. The flare has an automatic propane pilot system and control panel that monitors the presence and temperature of pilot flame. The free cross-sectional area of the flare tip is 143.5 in^2 and the height of the flare is 58 feet above ground. The exit velocity of the combusted gas for the flare is 58.6 feet/second (LFG flow of 3,506 scfm and cross-sectional are of 143.5 in^2). There will be no change to this flare as a result of the proposed expansion.

Additional open flares similar in model and size to the existing flare were proposed. Likely two 3,600 scfm open flares are planned for PSD Phase 1 and two more 3,600 scfm open flares are planned for PSD Phase 2. Note that the exact size and manufacturer of the flare may vary depending on availability and cost.

{Permitting Note: In accordance with Rule 62-212.400, PSD, F.A.C., the above flares are subject to Best Available Control Technology (BACT) determinations for the following air pollutants: CO, NOx, PM, PM_{10}, $PM_{2.5}$, VOC, NMOC and GHG. The final BACT determinations are presented in the appendices of this permit. Other emissions standards and performance restrictions specified in this permit allow the emission units to escape PSD preconstruction review for sulfur dioxide (SO_2) emissions.}

EQUIPMENT

1. Flares: The permittee is authorized to install, operate and maintain four (4) open candlestick utility flares (LFG Specialties Model No. PCFT1444I12 or equivalent) that will fire LFG with the following nominal design specifications per flare: a maximum rating of 3,600 scfm; and, a maximum heat input rate of 106 MMBtu/hour, HHV from LFG.
   a. Each flare shall be equipped with an automatic propane pilot system and control panel that monitors the presence and temperature of pilot flame.
   b. The total LFG volumetric flow to each flare shall be measured using a thermal dispersion flow meter and flow shall be continuously recorded on a data recorder.

   {Permitting Note: The heat input rate is based on Phase 2 flaring-only case, a LFG higher heating value (HHV) of 577 Btu/scf and an approximate LFG firing rate of 3,061 scfm per flare at a methane content of 44%.}

   [Application No. 0970079-011-AC/PSD-FL-429; Rules 62-4.070(1)&(3), *Reasonable Assurance*, 62-210.200, *Definitions - Potential to Emit (PTE)*, and 62-212.400, *PSD - BACT Determination*, F.A.C.]

2. Flares: The *existing* and *new* flares may be moved during the landfill expansion project. [Application No. 0970079-011-AC/PSD-FL-429.]

3. Hours of Operation: The new flares may operate continuously (i.e., 8,760 hours/year). [Application No. 0970079-011-AC/PSD-FL-429; and, Rule 62-210.200, *PTE*, F.A.C.]

C. *New* Four (4) Open Candlestick Utility Flares (E.U. ID No. 007)

PERFORMANCE RESTRICTIONS

4. Permitted Capacity: Each flare shall have a maximum rating of 3,600 scfm and a maximum heat input rate of 106 MMBtu/hour, HHV from LFG. [Rule 62-210.200, *PTE*, F.A.C.]

5. Authorized Fuel: Only H_2S scrubbed LFG shall be fired in the flares. *{Permitting note: Propane may be used as a startup fuel.}* [Application No. 0970079-011-AC/PSD-FL-429; and, Rules 62-212.400, *PSD - BACT Determination*, and Rule 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

6. Applicable NSPS Provisions: The flares are subject to, and shall comply with, the applicable provisions in NSPS Subpart A (General Provisions) of 40 CFR 60, which are identified in Appendix A of this permit. [NSPS Subpart A in 40 CFR 60; and, Rule 62-204.800, F.A.C.]

OPERATIONAL REQUIREMENTS

7. Operation: The flares shall be operated with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). [Rule 62-204.800(8)(d), F.A.C.; 40 CFR 60.18(c)(2); and, Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

8. Exit Velocity: The flares shall be operated with an exit velocity, in accordance with 40 CFR 60.18(c)(4) and (5), as determined by the methods specified in 40 CFR 60.18(f)(4) and (f)(6). [Rule 62-204.800(8)(d), F.A.C.; 40 CFR 60.18(c)(4) & (5); and, Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

9. Actual Exit Velocity: The owner or operator shall annually determine the actual exit velocity of each flare as determined by the methods specified in 40 CFR 60.18(f)(4) and (f)(6). [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

10. Operation: Flares used to comply with provisions of 40 CFR 60, Subpart A shall be operated at all times when emissions may be vented to them. [Rule 62-204.800(8)(d), F.A.C.; 40 CFR 60.18(e); and, Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

EMISSION STANDARDS & LIMITATIONS

11. CO, VOC, NMOC, NOx & GHG Emissions: The permittee shall minimize CO, VOC, NMOC, NOx and GHG emissions by following the operational requirements of this permit. The operational requirements of this permit shall serve as a surrogate for CO, VOC, NMOC, NOx & GHG emissions. [Rule 62-212.400, PSD - BACT Determination, F.A.C.]

12. Particulate Matter (PM) - $PM/PM_{10}/PM_{2.5}$: The requirements stated in the previous specific condition 11. for CO, VOC, NMOC, NOx and GHG emissions also apply for PM emissions. The use of treated LFG also minimizes $PM/PM_{10}/PM_{2.5}$ emissions. The LFG shall be treated to remove PM larger than 10 microns prior to combusting in the flares. The flares shall be operated with air assist to promote proper mixing and complete combustion of LFG and to reduce VE. VE shall serve as a surrogate for $PM/PM_{10}/PM_{2.5}$ emissions. *{Permitting Note: Based on these work practice standards, the maximum $PM/PM_{10}/PM_{2.5}$ emissions from each flare were estimated to be 1.6 lbs/hour and 6.9 tons/year.}* [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

13. Visible Emissions (VE): The flares shall be operated with no visible emissions (VE), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [Rule 62-204.800(8)(d), F.A.C.; 40 CFR 60.18(c)(1); and, Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

29. Sulfur Dioxide (SO_2) Emissions:
    a. To ensure that PSD is avoided, SO_2 emissions shall not exceed 38.2 tons per consecutive 12 months from all 4 flares (combined). Compliance with this SO_2 emissions cap shall be demonstrated on a 12-month rolling basis using the following information: the sulfur level in the scrubbed LFG; the amount of LFG combusted by each flare; and, the assumption that all sulfur is converted to SO_2.

b. SO_2 emissions from each flare shall not exceed 22.8 lbs/MMscf. *{Permitting Note: For each flare equivalent to 2.2 lbs/hour and 9.6 TPY.}*

[Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

14. Greenhouse Gases (GHG): The operational requirements of this permit minimize GHG emissions (being primarily N_2O & CH_4). The collection of the LFG and subsequent combustion in the flares also minimizes GHG emissions. NOx & CO emissions shall serve as primary surrogates for GHG emissions (being primarily N_2O & CH_4). [Rule 62-212.400, *PSD - BACT Determination*, F.A.C.]

COMPLIANCE DEMONSTRATION (TESTING) REQUIREMENTS

15. Compliance Tests - CO, VOC, NMOC, NOx & GHG: Since the operational requirements of this permit serve as a surrogate for CO, VOC, NMOC, NOx & GHG emissions CO, VOC, NMOC, NOx & GHG emissions testing is not required. Instead, demonstration of compliance with the CO, VOC, NMOC, NOx & GHG BACT standards of this permit is by the owner or operator's following the operational requirements of this permit. [Rules 62-212.400, *PSD - BACT Determination* and 62-297.310(7), F.A.C.]

16. Compliance Tests - $PM/PM_{10}/PM_{2.5}$: Since VE serves as a surrogate for $PM/PM_{10}/PM_{2.5}$ emissions $PM/PM_{10}/PM_{2.5}$ emissions testing is not required. Instead, demonstration of compliance with the $PM/PM_{10}/PM_{2.5}$ BACT standards of this permit is through the VE testing. [Rules 62-212.400, *PSD - BACT Determination* and 62-297.310(7), F.A.C.]

TESTING REQUIREMENTS

17. Test Methods: Required tests shall be performed in accordance with the following reference methods:

Method(s)	Description of Method(s) and Comment(s)
EPA Method 22	Visual Determination of Smoke Emissions from Flares

The above methods are described in Chapter 62-297, F.A.C. and/or 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Chapter 62-297, F.A.C. and Rule 62-204.800(9)(b)7., F.A.C.]

18. Visible Emission Test Method: EPA Method 22 shall be used to determine the compliance with the visible emission limit for the flares. The observation period is 2 hours and shall be used according to EPA Method 22. [Rule 62-204.800(8)(d), F.A.C.; and, 40 CFR 60.18(f)(1).]

19. Test Requirements: Tests shall be conducted in accordance with the applicable requirements specified in Appendix CTR (Common Testing Requirements) of this permit. [Rule 62-297.310(7)(a)9., F.A.C.]

MONITORING REQUIREMENTS

20. Operation & Maintenance (O&M) Plan: The permittee shall submit an O&M plan for the flares selected. [Application No. 0970079-011-AC/PSD-FL-429; Rules 62-4.070(1)&(3), *Reasonable Assurance*, 62-210.200, *Definitions - Potential to Emit (PTE)*, and 62-212.400, *PSD - BACT Determination*, F.A.C.]

RECORDKEEPING & REPORTING

21. Monthly Records: Within ten calendar days following each month, the permittee shall observe and record the following information in a written log or electronic format accessible to the Department: number of hours of operation of each flare; total monthly LFG flow rate to each flare; and total SO_2 emissions for the month and previous 12-month period, for a rolling 12-month total. Emissions of SO_2 shall be calculated from the monthly LFG consumption as well as the analytical results for the sulfur contents of the LFG representative of the given month of operation based on the semi-annual sampling for that period. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

22. Annual Reporting in AOR: The total SO_2 emissions from all flares (combined) shall be reported in the AOR, along with the total LFG consumption for all flares (combined). The sulfur content shall also be included with the AOR. [Application No. 0970079-011-AC/PSD-FL-429; Applicant Request; and, Rules 62-4.160(2) and 62-212.400(12), *Source Obligation - escape-PSD*, F.A.C.]

23. Annual Reporting in AOR: The permittee shall annually report the actual exit velocity of each flare. The actual exit velocity shall be reported to the Department as an attachment to the facility's AOR. [Rules 62-4.070(1)&(3), *Reasonable Assurance* and 62-4.160(2), F.A.C.]