



COMMONWEALTH OF
PUERTO RICO
Environmental Quality Board

**TITLE V OPERATING PERMIT
AIR QUALITY AREA
ENVIRONMENTAL QUALITY BOARD**



Permit Number:	PFE-TV-4953-36-1001-2294
Application Receipt Date:	October 25, 2001
Effective or Issue Date:	June 16, 2016
Expiration Date:	June 16, 2021

In conformity with the provisions of Part VI of the Regulation for Atmospheric Pollution Control (RCAP) and the provisions of the Code of Federal Regulations (CFR), Volume 40, Part 70 we authorize:

**EL COQUI LANDFILL COMPANY, INC.
HUMACAO, PUERTO RICO**

hereinafter **ECL** or the **permittee**, to operate a stationary source of air pollutants emissions consisting of the units described in this permit. Until this permit expires, is modified or revoked, the permittee will be able to emit atmospheric pollutants as a result of those processes and activities directly related and associated with the sources of emission, in compliance with the, limitations and conditions of this permit, until its expiration date or until such is modified or revoked.

The conditions of the permit will be enforceable by the federal and state government. Those requirements that are enforceable only by the state government will be identified as such in the permit. A copy of the permit must be kept in the aforementioned facility at all times

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Section I - General Information

A. Facility Information

Name of the Owner:	El Coquí Landfill Company, Inc.
Postal Address	P.O. Box 918 Punta Santiago Humacao, P.R. 00741-0918
Facility Name:	El Coqui Landfill Company, Inc.
Facility Location:	PR-3, Int. 923, Km 1.7 Barrio Buena Vista Humacao, Puerto Rico
Responsible Officer:	Mr. Jaime J. Jaen Disposal Operations Director
Phone:	787-391-0074
Fax:	787-285-6153
Technical Contact:	Mr. René Rodríguez Environmental Protection Manager
Postal Address	P.O. Box 918 Punta Santiago, P.R. 00741-0918
Phone:	787-852-4444
Fax:	787-850-3435
SIC Primary Code:	4953

B. Process Overview

El Coqui Landfill (ECL) is an active solid waste municipal landfill that initiated operations in 1972, and it is projected to continue operating until 2036. At **ECL** approximately 600,000 tons of non-hazardous solid waste are deposited per year.

The **ECL** is located on Road PR-3, intersection 923, Km 1.7 in Bo. Buena Vista, Humacao, Puerto Rico. **El Coqui Landfill Company, Inc.**, is the owner and administrator of the Sanitary Landfill System (SLS) of Humacao.

At **ECL** only non-hazardous waste is received, including municipal, commercial and residual waste. Solid waste received are weighted and directed to an active cell for disposal. The wastes are discharged from transport vehicles, scattered over the work area and compacted. All wastes are covered at the end of the workday with both alternate material, as with soil. When the disposal areas have reached their maximum capacity, the landfill will close permanently using a system of synthetic cover, soil and vegetation.

The decomposition of waste encapsulated in municipal waste produce gas (landfill gas) consisting of methane (CH₄), carbon dioxide (CO₂) and other non-methane organic compounds (NMOC). The gas generated in the **ECL** is collected through an active system of gas collection and directed to two enclosed burners.

El Coqui Landfill Company, Inc. is subject to the Title V permit requirements for having a design capacity greater than 2.5 million megagrams and 2.5 million cubic meters, and for being a major source of carbon monoxide exceeding 100 tons per year and of greenhouse gases (GHGs) expressed as carbon dioxide equivalent (CO₂e) exceeding 100,000 per year.

Section II - Emission Units Description

The emission units regulated by this permit are the following:

Emission Unit	Description	Control Equipment
 EU-1	<p style="text-align: center;">Active Municipal Sanitary Landfill System</p> <p>The landfill accepts municipal solid waste since 1972. It has a design capacity of 21,600,000 megagrams. Accepts waste at a rate of 600,000 tons per year. Acceptance of waste must register aggregated monthly and annual basis. The amount of waste accepted 600,000 tons a year is an estimate that does not limit the maximum amount to be received and can be adjusted to meet the needs of final disposal of Puerto Rico and the market whenever it fully complies with the requirements of the condition 14 of Section V(B) of this permit. An increase in the amount of waste acceptance, include an analysis of the capacity of the collection and control system. The permittee shall not increase the rate of acceptance if the collection and control system does not meet the requirements of the condition 14 of Section V(B). Maximum Landfill Gas Generation: 5,184 scfm. Approximate year end: 2036, although it It may vary according to the actual quantities of solid waste disposed.</p>	<p style="text-align: center;">CD-1 and CD-2 Active Landfill Gas Collection System routed to two enclosed flares</p>

Emission Unit	Description	Control Equipment
CD-1	<p style="text-align: center;">Active System of Landfill Gas Collection directed to two Enclosed Burners</p> <p>Enclosed flare 1. Manufacturer: <i>LFG Specialties, LLC</i>. Model: EF1045I12</p> <ul style="list-style-type: none"> • Processes a maximum de 2,800 scfm • <i>Heat input rate</i>: 90 MMBtu/hr • Exit temperature: 1,500 °F • Fuel use for <i>startup</i>: Propane at a rate of 1,000 gal/year. • Velocity: 8.48 pies/sec. • Stack: <ul style="list-style-type: none"> • Height = 45 feet • Diameter = 10' • Operation Hours: 8,760 hr/year • Minimum destruction efficiency for NMOC: 98% • Minimum temperature.¹ 	
CD-2	<p style="text-align: center;">Active System of Landfill Gas Collection directed to two Enclosed Burners.</p> <p>Enclosed flare 2. Manufacturer: LFG Specialties Model: EF73516.</p> <ul style="list-style-type: none"> • Processes a máximo of 1,000 scfm • <i>Heat input rate</i>: 27.4 MMBtu/hr • Exit Temperature: 1,650 °F • Fuel use for <i>startup</i>: Propane at a rate of 100 gal/year • Velocity: 5 ft/sec. • Stack: <ul style="list-style-type: none"> • Heigh = 35' • Diameter = 84" • Operation hours: 8,760 hr/year • Minimum destruction efficiency for NMOC: 98% Minimum temperature.¹ 	

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¹The minimum temperature is the temperature that will prevail in the initial performance test for the flare or the one established in the most recent test approved by the Board, as established by applicable regulations.

Emission Unit	Description	Control Equipment
Piles and cover material handling and hauling of cover material	Water aspersion or vacuum sweeping, and broom sweeping and flushing with control efficiency 50% for PM ₁₀ .	Truck traffic to the storage area, piles handling and transport of material. It manages and carries around 1,048 ton / day (327,000 tons / year) of material (topsoil / daily cover). Fugitive emissions estimated 0.04 ton / year for PM ₁₀ .
Unpaved roads	Water aspersion or vacuum sweeping, and broom sweeping and flushing with control efficiency 50% for PM ₁₀ .	Truck traffic. Fugitive emissions estimated in 56.64 tons/year for PM ₁₀ .
Paved roads	Water aspersion or vacuum sweeping, and broom sweeping and flushing with control efficiency 50% for PM ₁₀ .	Truck traffic. Fugitive emissions estimated in 4.84 ton/year for PM ₁₀ .

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Section III – General Permit Conditions

1. **Sanctions and Penalties:** ECL must comply with all terms, conditions, requirements, limitations and restrictions established in this permit. Any violation to the terms of this permit is subject to administrative, civil or criminal measures, as established in Section 16 of the Environmental Public Policy Act (Law No. 416 of September 22, 2004, as amended).
2. **Right of Entry:** As specified under Rules 103 and 603(c)(2) of the RCAP, ECL shall allow the Board or an authorized representative, upon presentation of credentials and other documents as may be required by law, to perform the following activities:
 - a. Enter upon the permittee premises where an emission source is located or where emissions related activities are conducted, or where records must be kept under the conditions of this permit, under the RCAP, or under the Clean Air Act;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit, under the RCAP, or under the Clean Air Act;
 - c. Inspect and examine any facility, equipment (including monitoring and air pollution control equipment), practices or operations (including QA/QC methods) regulated or required under this permit; as well as sampling emissions of air quality and fuels; and

- d. As authorized by the Clean Air Act and the RCAP, to sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements.
3. **Sworn Statement or Affidavit:** All reports required pursuant Rule 103(D) of the RCAP (i.e., semiannual monitoring reports and annual compliance certification) should be submitted together with a sworn statement or affidavit by the Responsible Official or a duly authorized representative. Such sworn statement or affidavit shall attest to the truth, correctness and completeness of such records and reports.
4. **Data Availability:** As specified under Rule 104 of the RCAP, all emission data obtained by or submitted to the EQB, including data reported pursuant to Rule 103 of the RCAP, as well as that obtained in any other way, shall be available for public inspection and may also be made available to the public in any additional manner that the EQB may deem appropriate.
5. **Emergency Plan:** As specified under Rule 107 of the RCAP, ECL shall have available an Emergency Plan which must be consistent with adequate safety practices, and provides for the reduction or retention of the emissions from the plant during periods classified by the EQB as air pollution alerts, warnings or emergencies. These plans shall identify the emission sources, include the reduction to be accomplished for each source, and the means by which such reduction will be accomplished. These plans will be available for any authorized representative of the EQB at any time.
6. **Air Pollution Control Equipment:** ECL shall comply with Rule 108 of the RCAP, as follows:
- a. All air pollution control equipment or control measures shall provide for continuous compliance with applicable rules and regulations. Such equipment or measures shall be installed, maintained, and operated according to those conditions imposed by this Title V permit, within the specified operating limitations of the manufacturer.
- b. The collected material from air pollution control equipment shall be disposed in accordance with applicable rules and regulations. The removal, manipulation, transportation, storage, treatment or disposal will be done in such or manner that shall not to produce environmental degradation, and in accordance with applicable rules and regulations.
- c. The Board may require, when deemed appropriate to safeguard the health and welfare of human beings, the installation and maintenance of additional, complete and separate air pollution control equipment of a capacity equal to the capacity of the primary control equipment. Furthermore, the Board may require that such additional air pollution control equipment be operated continuously and conjunctionally with the primary air pollution control equipment.



- d. All air pollution control equipment shall be operated at all times while the source being controlled is in operation.
- e. In the case of a shutdown of air pollution control equipment for the necessary scheduled maintenance, the intent to shutdown such equipment shall be reported to the Board at least three days prior to the planned shutdown. Such prior notice shall include, but is not limited to the following:
 - 1. Identification of the specific source to be taken out of service with its location and permit number.
 - 2. The expected length of time that the air pollution control equipment will be out of service.
 - 3. The nature and quantity of emissions of air pollutants likely to be permitted during the shutdown period.
 - 4. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period.
 - 5. The reasons why it will be impossible or impractical to shutdown the operating source during the maintenance period.

 7. **Compliance Certification:** As specified under Rule 602(c)(2)(ix)(C) of the RCAP, ECL shall submit each year a compliance certification. This certification must be submitted to both the EQB and the Environmental Protection Agency (EPA)² no later than April 1st of each year, covering the previous calendar year. The compliance certification shall include, but is not limited to, the information required under Rule 603(c) of the RCAP as follows:

- a. The identification of each term or condition of the permit that is the basis of the certification; and
- b. The compliance status. Each deviation shall be identified and taken into account in the compliance certification; and
- c. A statement indicating whether the compliance was continuous or intermittent; and
- d. The methods or other means used for determining the compliance status with each term and condition, currently and over the reporting period consistent with sections (a)(3)-(5) of Rule 603 of the RCAP; and

² The certification to the EQB shall be mailed to: Manager, Air Quality Area, P.O. Box 11488, San Juan, P.R. 00910. The certification to the EPA shall be mailed to: Chief, Enforcement and Superfund Branch, CEPD, US EPA-Region II, City View Plaza – Suite 7000, #48 Rd. 165 Km 1.2 Guaynabo, P.R. 00968-8069.

- e. Identification of possible exceptions to compliance, any periods which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (CAM) occurred; and
 - f. Such other facts as the Board may require to determine the compliance status of a source.
8. **Regulation Compliance:** As specified under Rule 115 of the RCAP, any violation to the RCAP, or to any other applicable rule or regulation, shall be grounds for the Board to suspend, modify, or revoke any relevant permit, approval, variance or other authorization issued by the Board according to the procedures of the Uniform Administrative Procedures Law.
9. **Location Approval:** As specified under Rule 201 of the RCAP, nothing in this permit shall be interpreted as authorizing the location or construction of a major stationary source, or the modification of a major stationary source, or a major modification of a significant source, without obtaining first a location approval from the Board and without first demonstrating compliance with the National Ambient Air Quality Standards (NAAQS). This permit does not allow the construction of new minor sources without the required permit under Rule 203 of the RCAP.
10. **Objectionable Odors:** As specified under Rule 420 of the RCAP, **ECL** shall not cause or permit emissions to the atmosphere of any matter which produces an *objectionable* odor that can be perceived in an area other than that designated for industrial purposes. If objectionable odors are detectable beyond the property perimeter, and complaints are received, **ECL** shall investigate and take measures to minimize and/or eliminate the objectionable odors, if necessary. [This condition is enforceable only by the State]
11. **Permit Renewal Applications:** As established under Rule 602 (a)(1)(iv) of the RCAP, **ECL** shall submit a permit renewal application applications for permit renewal shall be submitted at least 12 months prior to the date of permit expiration. A responsible official must certify all required applications consistent with paragraph (c)(3) of Rule 602 of the RCAP.
12. **Permit Duration:** As specified under Rule 603 of the RCAP, the following terms will apply during the duration of this permit:
- a. **Expiration:** This authorization shall have a fixed term of five (5) years since the effective date. The expiration date will be automatically extended until the Board approves or denies a renewal application (Rule 605(c)(4)(ii) of the RCAP) but only in those cases where the permittee submits a complete renewal application at least twelve (12) months before the expiration date. [Rules 603 (a)(2), 605(c)(2), and 605(c)(4) of the RCAP]
 - b. **Permit Shield:** As specified under Rule 605 (c)(4)(i) of the RCAP, the permit shield may be extended until the time the permit is renewed if a timely and complete renewal application is submitted.

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- c. In case that this permit is subject to any challenge by third parties, the permit shall remain in effect until the time it is revoked by a court of law with jurisdiction in the matter.
13. **Recordkeeping Requirement:** As established under Rule 603(a)(4)(ii) of the RCAP, ECL shall retain records of all required monitoring data and support information for a period of 5 years from the date of the monitoring sample, measurement, report, or application.
14. **Semiannual Monitoring Reports/Samplings:** As established under Rule 603(a)(5)(i) of the RCAP, the permittee shall submit reports to the EQB of all required monitoring every 6 months, or more frequently if required by the Board or any other underlying applicable requirement. These reports cover two major elements. The first element is the summary of all periodic monitoring / sampling required in this permit. The second element requires that all deviations from permit conditions are clearly identified, summarized and reported to the Board. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official as established under Rule 602(c)(3) of the RCAP. The report covering the period from January through June shall be submitted no later than October 1st of the same year and the report covering the period from July through December shall be submitted no later than April 1st of the following year. Once the guidelines are developed by the Board, the permittee must use them to complete these reports.
15. **Deviations Reporting due to Emergencies:** According to Rule 603(a)(5)(ii)(a) of the RCAP, any deviation resulting from an upset (such as sudden malfunction or break-down) or emergency conditions, as defined in Rule 603(e) of the RCAP, must be reported within the next 2 working days from the time the emission limits are exceeded due to the emergency, if ECL wishes to assert the affirmative defense authorized under Rule 603 (e) of the RCAP. If ECL raises the emergency defense upon an enforcement action, the permittee shall demonstrate that such deviation happens due to an emergency and that the Board was adequately notified. If such emergency deviation last for more than 24 hours, the affected units may be operated until the end of the cycle or 48 hours, whichever occurs first. The Board may only extend the operation of an emission source in excess of 48 hours, if the source demonstrates to the Board's satisfaction that the National Air Quality Standards have not been exceeded and that there is no risk to the public health.
16. **Deviation Reporting (Hazardous Air Pollutants):** The source shall act as specified in its Emergency Response Plan (established in Rule 107 (C) of the RCAP), when such Plan has shown no significant impact on an area other than those that have been designated for industrial purposes or will cease operations immediately if there is a significant impact on an area other than those that have been designated for industrial purposes (state-only enforceable condition). In accordance with Rule 603(a)(5)(ii)(b) of the RCAP, the Board shall be notified within the next 24 hours if a deviation that results in the release of emissions of hazardous air pollutants for more than an hour in excess of the applicable limit occurs. For the discharge of any regulated air pollutant that continues for more than 2 hours in excess of the applicable limit, the permittee shall notify the Board within 24 hours of the

deviation. ECL shall submit to the Board, within 7 days of the deviation, a detailed written report which includes probable causes, time and duration of the deviation, remedial action taken and the steps you are following to prevent recurrence.

17. **Severability Clause:** As specified under Rule 603(a)(6) of the RCAP, the clauses in this permit are severable. In the event of a successful challenge to any portion of the permit in an administrative or judicial forum, or in the event any of its clauses is held to be invalid, all other portions of the permit shall remain valid and effective, including those related to emission limits, terms and conditions, be they specific or general, as well as monitoring, record keeping and reporting requirements.
18. **Permit Noncompliance:** According to Rule 603(a)(7)(i) of the RCAP, the permittee must comply with all conditions of the permit. Permit noncompliance constitutes a violation of the RCAP and will be grounds for taking the appropriate enforcement action, impose sanctions, revoke, terminate, modify, and/or reissue the permit, or to deny a permit renewal application.
19. **Defense not Allowed:** As specified under Rule 603(a)(7)(ii) of the RCAP, ECL shall not allege as a defense in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
20. **Permit Modification and Revocation:** As specified under Rule 603(a)(7)(iii) of the RCAP, the permit may be modified, revoked, reopened, reissued, or terminated for cause. The filing of a request by ECL for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
21. **Property Rights:** As specified under Rule 603(a)(7)(iv) of the RCAP, this permit does not convey any property rights of any sort, nor does it grant any exclusive privilege.
22. **Obligation to Furnish Information:** As specified under Rule 603(a)(7)(v) of the RCAP, ECL shall furnish to the EQB, within a reasonable time, any information that the EQB may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, ECL shall also furnish to the EQB copies of documents related to this permit.
23. **Changes in Operating Scenarios:** As specified in Rule 603(a)(10) of the RCAP, ECL shall, contemporaneously with making a change from one operating scenario to another, record in a log the scenario under which it is operating. This record shall be kept onsite at all times.
24. **Prohibition on Default Issuance:** As specified under Rule 605(d) of the RCAP, it shall never be considered that a permit has been issued by default as a result of the EQB's failure to take final action on a permit application within 18 months. The EQB's failure to issue a final permit within 18 months should be treated as a final action solely for the purpose of obtaining judicial review in a state court.

25. **Administrative Permit Amendments and Permit Modifications:** As specified under Rule 606 of the RCAP, the permit shall not be amended nor modified unless ECL complies with the requirements for administrative permit amendments and permit modifications as described in the RCAP.
26. **Permit Reopening:** As specified under Rule 608(a)(1), this permit shall be reopened and revised under the following circumstances:
- a. Whenever additional applicable requirements under any law or regulation become applicable to the permittee, when the remaining permit term is of 3 or more years. Such reopening shall be completed 18 months after promulgation of said applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions have been extended pursuant to Rule 605(c)(4)(i) or Rule 605(c)(4)(ii) of the RCAP.
 - b. Whenever the EQB or the EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit.
 - c. Whenever the EQB or the EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
27. **Changes in Name or Responsible Official:** This permit is issued to **El Coqui Landfill**. In the event that the company and/or facility change its name, the responsible official must submit an administrative amendment to this permit to reflect the change in name. If the event that the responsible official changes, the new responsible official must submit no later than 30 days after the change, an administrative amendment including a sworn statement in which he/she accepts and promises to comply with all the conditions of this permit.
28. **Changes in Ownership:** This permit is issued to **El Coqui Landfill**. In the event that the company and/or facility is transferred to a different owner or change operational control and the Board determines that no other change in the permit is necessary, the new responsible official must submit an administrative amendment. The administrative amendment shall include a sworn statement in which the new responsible official accepts and promises to comply with all the conditions of this permit, and a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee. This is not applicable if the Board determines that changes to the permit are necessary.
29. **Renovation Work/ Demolition:** ECL shall comply with the provisions set forth in 40 CFR §61.145 and §61.150, and Rule 422 of the RCAP, and Regulations for the Processing of General Permits (General Permit for the Handling of Asbestos Containing Materials) when doing renovation or demolition activities of asbestos containing materials at the

facility. **ECL** is not authorized to receive asbestos containing materials in the sanitary landfill system.

30. **Risk Management Plan:** If during the effectiveness of this permit, **ECL** is subject to the 40 CFR part 68, the permittee shall submit a Risk Management Plan according with the compliance schedule in the 40 CFR part 68.10. If during the effectiveness of this permit, **ECL** is subject to the 40 CFR part 68, **ECL** shall submit a compliance certification with the requirements of part 68 as part of the annual compliance certification required under 40 CFR part 70, including the recordkeeping and the Risk Management Plan.
31. **General Duty:** **ECL** has the general obligation of identifying hazards which may result from accidental releases of any controlled substance under section 112(r) of the Clean Air Act or any other extremely hazardous substance in a process, using appropriate hazard assessment techniques, designing, maintaining, and operating a safe facility and minimizing the consequences of accidental releases if they occur as required in section 112(r)(1) of the Act and Rule 107(D) of the RCAP.
32. **Requirements for Refrigerants (Climatologic and Stratospheric Ozone Protection):**
- a. In the event that the permittee has equipment or appliances, including air conditioning units, which use Class I or II refrigerants as defined in 40 CFR part 82, subpart A, Appendices A and B, **ECL** shall take the necessary measures to ensure that all maintenance, service or repair services performed are done so according to the practices, certification and personnel requirements, disposition requirements, and recycling and/or recovery equipment certification requirements specified under 40 CFR part 82, subpart F.
- b. Owners/ operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to 40 CFR §82.166.
- c. Service on Motor Vehicles: If **ECL** performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, subpart B, Servicing of Motor Vehicle Air Conditioners. The term motor vehicle as used in subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term MVAC as used in subpart B does not include the airtight sealed refrigeration system used as refrigerated cargo or system used on passenger buses using HCFC-22 refrigerant.
33. **Labeling of Products Using Ozone-Depleting Substances:** **ECL** shall comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR part 82, subpart E.
- a. All containers in which a class I or class II substance is stored or transported, all products containing a class I substance, and all products directly manufactured with

a class I substance must bear the required warning statement if it is being introduced into interstate commerce pursuant to 40 CFR §82.106.

- b. The placement of the required warning statement must comply with the requirements pursuant to 40 CFR §82.108.
- c. The form of the label bearing the required warning statement must comply with the requirements pursuant to 40 CFR §82.110.
- d. No person may modify, remove, or interfere with the required warning statement except as described in 40 CFR §82.112.

34. **Roof Surface Coating:** Pursuant to Rule 424 of the RCAP, ECL shall not cause or permit the roof surface coating by applying hot tar or any other coating material containing organic compounds without previous notification to the Board. The use of used oil or hazardous waste for roof surface coating is prohibited. This rule will not apply to activities where tar or sealing material is applied without heat and such material is asbestos-free. [State enforceable only]

35. **Storage Tanks:** ECL shall keep records of all fuel oil storage tanks showing the dimensions of each tank and an analysis showing the capacity of each tank pursuant to the 40 CFR §60.116b. This documentation shall be readily available at any time for inspection of the Board personnel and shall be kept onsite for the life of the tank.

36. **Compliance Clause:** Under no circumstances does compliance with this permit exempt ECL from complying with all other applicable state or federal laws, regulations, permits, administrative orders or applicable court orders

37. **Emissions Calculations:** ECL shall submit, on or before April 1st of each year, the actual or permissible emissions calculations for the previous natural year. The emissions calculations shall be submitted on the forms prepared by the Board for this purpose and the responsible official must certify all the information submitted as true, correct and representative of the permitted activity included in the permit.

38. **Annual Fee:** As specified under Rule 610 of the RCAP, ECL must submit an annual payment based on the emissions calculations for each regulated pollutant. The payment will be based on their actual emissions at a rate of \$37.00 per ton, unless the Board decides otherwise as permitted under Rule 610(b)(2)(iv) of the RCAP. This payment for the previous year must be made on or before June 30 of each year.

39. **New or Amended Regulation:** Whether a federal or state regulation is promulgated or amended and the facility is affected by it, the owner or operator shall comply with the requirements of the new or amended regulation. The Board will provide a specified and reasonable period of time so ECL reach compliance with the amendments or new regulations.

40. **Reports:** Unless a permit condition establishes otherwise, any requirement of information submittal to the Board shall be addressed to: Manager, Air Quality Area, PO Box 11488, San Juan, P.R. 00910.
41. **Reservation of Rights:** Except as expressly provided in this Title V permit:
- a. Nothing herein shall prevent Board or the EPA from taking administrative enforcement measures or seeking legal or equitable relief to enforce the terms of the Title V permits, including but not limited to the right to seek injunctive relief, and imposition of statutory penalties and/or fines.
 - b. Nothing herein shall be construed to limit the rights of the Board or the EPA to undertake any criminal enforcement activity against **ECL** or any person.
 - c. Nothing herein shall be construed to limit the authority the Board or the EPA to undertake any actions in response to conditions that present an imminent and substantial endangerment to public health or welfare, or the environment
 - d. Nothing herein shall be construed to limit **ECL**'s rights to administrative hearing and judicial appeal of termination/ revocation/ disputes over modification/ denial actions in accordance with regulations and the Environmental Public Policy Act.

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Section IV- Allowable Emissions

- A. The emissions described in the following table represent the allowable emissions of the facility and will be used for payment purposed only.

Pollutants	Allowable Emissions (tons/year)
PM ₁₀	78.50
SO ₂	7.86
NO _x	30.85
CO	106.66
CONM	53.05
VOC (combustión)	16.39
HAP's	14.83
CO ₂ e	279,760.3

- B. According to EQB Resolution RI-06-02³, emission calculations shall be based on the actual emissions of **ECL**; although calculations based on the allowable emissions will be accepted. If **ECL** decides to perform calculations based on allowable emissions, **ECL** shall pay the same charges per ton that the facilities that decide to do the calculation based on actual emissions.

³ EQB Resolution – Payment Procedure for Title V operating charges and Title V operating charges and Title V permit renewal charges, issued on March 20, 2006.

- C. According to Rule 610(a) of the RCAP, when ECL requests a modification, or minor administrative change to its Title V permit, the source will only pay the charges associated with increases in emissions (if any) per ton, based on the change and not based on the total fees previously paid according to Rule 610(a) of the RCAP.
- D. According to EQB Resolution R-04-04-1⁴, to determine the modification and renewal charges, ECL shall calculate allowable emissions with factors K, L_o and C_{NMOC} established in section 60.754(a)(1)(i) of 40 CFR or to the specific values of k and C_{NMOC}, as determined in section 60.754(a)(3)(i) or 60.754(a)(4) of 40 CFR.
- E. According to EQB Resolution R-12-17-5⁵, those sources that must include or estimate GHGs emission are exempt from payment for Greenhouse Gases (expressed as CO₂e) in conformity with the Tailoring Rule for Title V permits until the Board issues a final determination stating the emissions charges or any other charges, if needed, or by repeal of this Resolution R-12-17 -5, whichever comes first.
- F. To make the calculations and demonstrate compliance with the allowable emissions in the Table of this section, the permittee shall use:
- a. The emission factors in Section 2.5 - Municipal Waste Landfills AP-42.
 - i. If there is no specific data from the landfill system, the permittee can use the default values for SO₂ and HCl.
 - ii. The permittee must calculate both the emissions collected and controlled as well as the emissions not collected (fugitive).
 - iii. The values used should be consistent with any Resolution and Order issued by the Board.
 - b. For fugitive emissions of paved roads, unpaved and piles the permittee must use the formulas and emission factors from AP-42.
 - c. To calculate emissions from CD-1 and CD-2, the permittee may use factors guaranteed by the manufacturer, that is, 0.06 lb NO_x / MMBtu for NO_x and 0.20 lb CO/MMBtu for CO.
 - d. For CO₂e, the permittee will use those provided in Table A-1, A-2, C-1, C-2 of Part 98 of the Mandatory Reporting Rule. The permittee must calculate both the emissions collected and controlled as well as the emissions not collected (fugitive).

⁴EQB Resolution – Consultation to the Government Board about the annual calculation of the gas emissions to the atmosphere for Sanitary Landfills, issued on February 27, 2004.

⁵EQB Resolution, PR Tailoring Requirements for Greenhouse Gases (GHGs) – Payment exemption issued on September 7, 2012.

Section V - Specific Permit Conditions

A. Compliance with Rule 402 of the RCAP (Open Burning) for EU-1:

1. According to Rule 402(D) of the RCAP, **ECL** shall not allow open burning of refuse, tires or other solid waste disposed in EU-1. To comply, **ECL** must prepare and obtain immediate approval of the following operating procedures within 90 days of the effective date of this permit:
 - a. A fire abatement plan to control any open burning in the property or by the sanitary landfill boundaries.
 - b. A fire abatement plan must have the concurrence of the State and Municipal Fire Department.

B. Unit EU-1

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1. **ECL** shall not cause or permit the discharge of visible emissions of fugitive dust beyond the boundary line of the property on which the emissions originated. [Rule 404(B) of the RCAP]
 2. The permittee shall conduct visual inspections to determine whether or not visible emissions of fugitive dust beyond the boundary of the SRS during each day of operation to determine compliance with the limits of visible emissions of fugitive dust mentioned in condition B.1 of this section. [PFE-RH-36-0304-0007-I-II-III-C]
 3. The permittee shall keep a record of the results of daily visible inspections. This record shall be kept accessible at any time at the facility for review by the technical staff of the Board and EPA. [PFE-RH-36-0304-0007-I-II-III-C]
 4. **ECL** must use dust suppression measures, as necessary, to comply with the limits specified under condition B.1 of this section. [PFE-RH-36-0304-0007-I-II-III-C]
 5. **ECL** must register daily when using dust suppression equipment for processes, which are manually operated and intermittent. For example, the operation of water trucks to spray the roads. This log shall be kept accessible at all times at the facility for review by the technical staff of the EQB and EPA. [PFE-RH-36-0304-0007-I-II-III-C]
 6. **ECL** shall maintain appropriate and functional equipment for dust suppression in the SLS at all times. [PFE-RH-36-0304-0007-I-II-III-C]
 7. **ECL** must cover, at all times while in motion, open bodied trucks transporting materials likely to release airborne particulate powder. [Rule 404(A)(4) of the RCAP]
 8. When reasonable, **ECL** shall pave the roads and keep them clean. [Rule 404(A)(6) of the RCAP]

9. **ECL** must promptly remove earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, by erosion by water, or by other means. [Rule 404(A)(7) of the RCAP]
10. Every area, lot or part of a piece of land intended for parking with a capacity greater than 900 square feet must be paved with concrete, asphalt, equivalent hard surface or chemically stabilization on all its accesses and internal roads where unpaved traffic adjoin paved roadways and parking areas. [Rule 404(D) of the RCAP]
11. **ECL** must retain all records required and supporting information for a period of five years from the date of registration. [PFE-RH-36-0304-0007-I-II-III-C]
12. The maximum design capacity of the **Sanity Landfill System of Humacao** will not exceed the **21,600,000 megagrams**. [PFE-RH-36-0304-0007-I-II-III-C]
13. The construction permit PFE-RH-36-0304-0007-I-II-III-C was issued under the specifications set forth in the Design Plan of the Collection and Gas Extraction System as adopted on September 16, 2008. The Design Plan for the Collection and Gas Extraction System for Burner 1000 scfm (CD-2) is under the designation of the Environmental Protection Agency for evaluation. If there are discrepancies between the Design Plan and construction permit PFE-RH-36-0304-0007-I-II-III-C, the descriptions and conditions of the construction permit PFE-RH-36-0304-0007-I-II-III-C will prevail. Any change in the footprint, initial capacity, control equipment that are not included in the approved design plan must be submitted to the Board for review by requesting a revision or modification to the construction permit PFE-RH-36-0304-0007-I-II-III-C, as applicable. [PFE-RH-36-0304-0007-I-II-III-C]
14. The permittee must confirm annually, using the Model LandGEM or any other method required by the Board, that their existing control equipments will have the capacity to handle the maximum expected flow of landfill gas generated within five (5) years. In accordance with 40 CFR §60.755, the permittee shall use the methods set out in paragraphs (a) (1) through (a) (6) to determine whether the gas collection system is in compliance with 40 CFR §60.752 (b)(2)(ii). The permittee must use either equation set forth in 40 CFR §60.755(a) for purposes of calculating the ratio of maximum expected gas generation flow to determine compliance with 40 CFR §60.752 (b)(2)(ii)(A)(1). This information will be included with the annual certification of the emissions from the facility. The permittee shall submit revisions or amendments to the construction permit PFE-RH-36-0304-0007-I-II-III-C and the Design Plan, at least 12 months before the estimated facade that can exceed the capacity of the existing control equipment before installing and/or construct such equipment. After obtaining the necessary permits, the permittee shall install or implement additional control measures. The permittee must ensure that the Plan Design: [PFE-RH-36-0304-0007-I-II-III-C]
 - a. Cover the area to be controlled for the period of intended use (lifetime) of the gas control system. In each report, the permittee should specifically include the lifetime for each control equipment.

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- b. The system of collection and control must be designed to handle the maximum expected gas flow rate from the entire area of the landfill (areas that meet the criteria of collection and control of gas), that warrants control over the intended use period of the gas control equipments.
- c. The collection system must comply with 40 CFR §60.752 (b)(2)(ii)(A).

15. SLS activities, including the management of piles, cover hauling, paved and unpaved roads, are limited to an operation of 3,120 hours per year. The speed of vehicles on unpaved roads should not exceed 15 miles per hour. For these sources, the permittee must apply or use, as necessary, water aspersion, vacuum sweeping, and/or broom sweeping and flushing to control fugitive emissions. [PFE-RH-36-0304-0007-I-II-III-C]

C. Conditions under Part 60, Subpart WWW Title 40 Code of Federal Regulations (40 CFR, in English), Standards of Performance for Municipal Sanitary Landfill System.⁶

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1. ECL shall comply with all applicable requirements of the Standards of Performance for Municipal Systems Landfill Subpart WWW contained in Part 60 of Title 40 Code of Federal Regulations (40 CFR) for the EU-1 unit. [PFE-RH-36-0304-0007-I-II-III-C]
 2. The permittee shall install and operate a gas collection and control system that complies with all applicable requirements of 40 CFR Part 60, Subpart WWW. [PFE-RH-36-0304-0007-I-II-III-C]
 3. The permittee shall submit a collection and control system design plan prepared by a professional engineer to the EPA with a copy to the Environmental Quality Board (EQB), within 1 year, if the calculated of Non Methane Organic Compounds (NMOC) emission rate is equal to or greater than 50 megagrams per year. [40 CFR §60.752 (b) (2) (i)]
 - a. The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring recordkeeping or reporting provisions of §§60.753 through 60.758 of 40 CFR proposed by the owner or operator. [40 CFR § 60.752 (b) (2) (i) (B)]
 - b. The EPA shall review the information submitted under paragraphs (b)(2)(i)(A), (B) and (C) of 40 CFR §60.752 and either approve it, disapprove it, or request that additional information be submitted. [40 CFR 60.752 (b) (2) (i) (D)]
 4. The permittee shall install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of the section 60.752 within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year unless Tier 2 or Tier 3 sampling demonstrates

⁶ Any dispute arising from translation of a condition or requirement under federal law or regulation and provision to these purposes is incorporated into the permit in Spanish, the language prevail provisions of applicable federal standards.

that the emission rate is less than 50 megagrams per year, as specified in Section 60.757 (c)(1) or (2) of 40 CFR. [40 CFR § 60.752 (b) (2) (ii)]

5. ECL shall route all the collected gas to a control system that complies with the requirements of paragraph (b)(2)(iii)(B) of section 60.752 of 40 CFR:
 - a. The enclosed combustion chambers (flares CD-1 and CD-2) shall be designed and operated to reduce NMOC by 98% weight, or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3% oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test using to the test methods specified in Section 60.754 of 40 CFR. [40 CFR §60.752 (b) (2) (iii) (B)]
6. The owner or operator shall operate the collection and control device installed in accordance with sections 60.753, 60.755 and 60.756 of 40 CFR. [40 CFR §60.752 (b) (2) (iv)]
7. The collection and control system may be capped or removed to met the following conditions [40 CFR §60.752(b)(2)(v)]:
 - a. The landfill shall be closed landfill as defined in Section 60.751 of 40 CFR. A closure report shall be submitted to the EPA with a copy to the Board as provided in Section 60.757 (d) of 40 CFR. [40 CFR §60.752 (b) (2) (v) (A)]
 - b. The collection and control system shall have been in operation a minimum of 15 years; and [40 CFR §60.752(b)(2)(v)(B)]
 - c. Following the procedures specified in Section 60.754 (b) of 40 CFR, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart and no more than 180 days apart. [40 CFR §60.752 (b) (2) (v) (C)]
 - d. A closure report shall be submitted to the Board. [PFE-RH-36-0304-0007-I-II-III-C]
8. Operate the collection system such that the gas is collected from each area, cell or group of cells in the MSW landfill in which solid waste has been in place for 5 years or more, if active, or 2 years or more if closed or at final grade. [40 CFR §60.753 (a)]
9. The permittee shall operate the collection system with negative pressure at each wellhead except under the following conditions [40 CFR §60.753 (b)]:
 - a. A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid fire. These records shall be submitted with the annual reports as provided in Section 60.757 (f)(1);

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- b. Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan.
 - c. A decommissioned well. A well may experience static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Environmental Protection Agency (EPA).
10. Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C, and with either a nitrogen levels than 20% or an oxygen level less than 5%. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen values 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. [40 CFR§60.753 (c)]
- a. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established, as allowed by Section 60.752(b)(2)(i) del 40 CFR.
 - b. According to 40 CFR Section 60.753 (c)(2) of the 40 CFR, unless an alternative test method is established as allowed by Section 60.752 (b) (2) (i) of 40 CFR, the oxygen shall be determined by a 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% of the span.
 - ii. A data recorder is not required.
 - iii. Only two calibration gases are required, one 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 the calibration drift are ±10%.
11. 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 the 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. [40 CFR §60.753 (d)]
12. Operate the system such that all collected gases are vented to a control system (CD-1 and CD-2) designed and operated in compliance with Section 60.752 (b)(2)(iii) of 40 CFR.

In the event the collection and 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 to the gas to the atmosphere shall be closed within 1 hour. [40 CFR §60.753 (e)]

13. Operate the control system (CD-1 and CD-2) at all times when the collected gas is routed to the system. [40 CFR §60.753 (f)]
14. According to section 60.753(g) of 40 CFR, if monitoring demonstrates that the operational requirements in section 60.753 (b), (c) or (d) are not met, corrective action shall be taken⁷ as specified in section 60.755 (a)(3) through (5) or section 60.755 (c) of 40 CFR. If corrective actions are taken as specified in Section 60.755 of 40 CFR, the monitored exceedance is not a violation of the operational requirements in section 60.753 (g) of 40 CFR.
15. The landfill owner or operator shall calculate the NMOC emission rate using the equations provided in Section 60.754 of 40 CFR. The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.
16. The owner or operator may use other methods to determine the NMOC concentration or a site-specific k as an alternative to the methods required if the method has been approved by EPA as provided in Section 60.754 (a) (5) of 40 CFR.
17. After the installation of a collection and control system in compliance with §60.755 of 40 CFR, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed. [40 CFR §60.754 (b)]
18. **Comparing Levels of Prevention of Significant Deterioration (PSD).** The owner or operator of each Municipal SLS shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels established in section 51.16 or 52.21 of 40 CFR using the Federal Environmental Protection Agency Compilation of Air Pollutants Emission Factors (AP-42) or other EPA approved measurement procedures. [40 CFR §60.754 (c)]
19. As established in section 60.754(d) of 40 CFR, for the performance test required in section 60.752(b)(2)(iii)(B) of 40 CFR, method 25, 25C, or Method 18 of Appendix A of 40 CFR Part 60 must be used to determine compliance with the 98% by weight efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by EPA, as provided by section 60.752 (b) (2) (i) (B) of 40 CFR. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentrartion as hexane to 3%. In case where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane). Method 25A should be used in place of Method 25. If using Metod 18 of Appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutants

⁷ The monitoring results showing that the operational requirements were not met shall be documented before taking corrective action. The corrective action must be documented as well.

Emission Factors (AP-42). Equation in Section 60.754 (d) of 40 CFR shall be used to calculate efficiency.

20. Except as provided in § 60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of section 60.755 of 40 CFR, shall be used to determine whether the gas collection system is in compliance with section 60.752(b)(2)(ii) of 40 CFR.

a. For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with Section 60.752 (b)(2)(ii)(A)(1) of 40 CFR, one of the following equations shall be used. The k and L_0 kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific value demonstrated to be appropriate and approved by EPA. If k has been determined as specified in Section 60.754 (a) (4) of 40 CFR, the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

i. For sites with unknown year-to-year solid waste acceptance rate the equation provided in section 60.755(a)(1)(i) of 40 CFR shall be used.

ii. For sites with known year-to-year solid waste acceptance rate the equation provided in section 60.755(a)(1)(ii) of 40 CFR shall be used.

iii. If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in section 60.755(a)(1)(i) and ((ii) of 40 CFR. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in Section 60.755 (a)(1)(i) or (ii) of 40 CFR, or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

b. For the purposes of determining sufficient density of gas collectors for compliance with section 60.752 (b) (2) (ii) (A) (2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices satisfactory to the EPA, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards. [40 CFR 60.755(a)(2)]

c. For purposes of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with section 60.752 (b) (2) (ii) (A) (3) of 40 CFR, the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under section 60.753 (b) 40 CFR. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first

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measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval. [The permittee must send a copy to the Board of this request of an alternative timeline and EPA's response to this request]. [40 CFR 60.755(a)(3)]

- d. Owners or operators are not required to expand the system as required in section 60.755(a)(3) of 40 CFR during the first 180 days after gas collection system startup. [40 CFR 60.755(a)(4)]
- e. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in § 60.753 (c) of 40 CFR. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the EPA for approval. [40 CFR 60.755(a)(5)]
- f. An owner or operator seeking to demonstrate compliance with Section 60.752 (b) (2) (ii) (A) (4) of 40 CFR through the use of a collection system not conforming to the specifications provided in section 60.759 shall provide information satisfactory to the EPA with a copy to the Board, as specified in Section 60.752 (b) (2) (i) (C) of 40 CFR, demonstrating that off-site migration is being controlled. [40 CFR 60.755(a)(6)]

21. For purposes of compliance with Section 60.753 (a) of 40 CFR, each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan, as provided in section 60.752 (b) (2) (i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of 5 years or more, if active; or 2 years or more if closed or at final grade. [40 CFR 60.755(b)]

22. In accordance with section 60.755 (c) of 40 CFR, the owner or operator shall use the following for compliance with the surface methane operational standard as provided in section 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 meters 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 Section 60.755 (d) of 40 CFR.



- 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 well.
- c. Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of 40 CFR Part 60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
- d. Any reading of 500 parts per million (ppm) or more above background at any location shall be recorded as a monitored exceedance and the actions here specified, shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of § 60.753(d) of 40 CFR.
 - i. The location of each monitored exceedance shall be marked and the location recorded.
 - ii. Cover maintenance or adjustment to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance.
 - iii. Any location that initially showed an exceedance but has a methane concentration of 500 ppm methane above background at the 10-day re-monitoring, shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in the next paragraph shall be taken.
 - iv. For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes, or control device, and a corresponding timeline for installation may be submitted to the EPA for approval with a copy to the Board, and no monitoring is required until the action takes place.
 - v. The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(5)]

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23. The owner or operator seeking to comply with the provisions in section 60.755 (c) of 40 CFR, shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices, in accordance with Section 60.755(d) of 40 CFR:
- a. The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of Appendix A of 40 CFR part 60, except that “methane” shall replace all references to VOC.
 - b. The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.
 - c. To meet the performance evaluation requirements in section 3.1.3 of Method 21 of Appendix A of 40 CFR Part 60, the instrument evaluation procedures of section 4.4 of Method 21 Appendix A of 40 CFR Part 60 shall be used.
 - d. The calibration procedures provided in Section 4.2 of Method 21 of Appendix A of 40 CFR Part 60 shall be followed immediately before commencing a surface monitoring survey.
24. The provisions of Subpart WWW of 40 CFR part 60 apply at all times, except during periods of start-up, shutdown, or malfunction⁸, provided that the duration of start-up, shutdown or malfunction, shall not exceed 5 days for collection systems and shall not exceed 1 hour for control devices. [40 CFR 60.755(e)]
25. **Active Gas Collection Monitoring Systems:** In accordance with Section 60.756, except as provided in section 60.752 (b) (2) (i) (B) of 40 CFR, the owner or operator seeking to comply with section 60.752 (b) (2) (ii) (A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:
- a. Measure the gauge pressure in the gas collection header on a monthly basis as provided in section 60.755(a)(3) of 40 CFR; and
 - b. Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in section 60.755(a)(5) of 40 CFR; and
 - c. Monitor temperature of the landfill gas on a monthly basis as provided in section 60.755(a)(5) of 40 CFR.
26. **Monitoring for the enclosed combustion chamber (CD-1 and CD-2)** In accordance with Section 60.756 (b) of 40 CFR, the owner or operator seeking to comply with §60.752(b)(2)(iii), shall calibrate, maintain and operate according to the manufacturer’s specifications, the following equipment:

⁸It refers to the existing definition of malfunction as defined in Subpart A of Part 60 of 40 CFR.

- a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of $\pm 1\%$ of the temperature being measured expressed in degrees Celsius or ± 0.5 °Celsius, whichever is greater.
 - b. A device that records flow to or bypass of the control device. 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 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.
27. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, the owner or operator seeking to install a collection system that does not meet the specifications in section 60.759 of the 40 CFR, or seeking to monitor alternative parameters to those required by section 60.753(b)(2)(iii) through 60.756 of 40 CFR, shall provide information satisfactory to the EPA with a copy to the Board, describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The EPA may specify additional appropriate monitoring procedures, as provided in section 60.752(b)(2)(i)(B) and (C) of 40 CFR.
28. The owner or operator seeking to demonstrate compliance with section 60.755(c) of 40 CFR, shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in section 60.755(d) of 40 CFR. Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring. [40 CFR 60.756(f)]
29. Except as provided in section 60.752 (b) (2) (i) (B) of 40 CFR, the owner or operator shall submit an NMOC emission rate report to the EPA with a copy to the Board, initially and annually thereafter, except as provided in Section 60.757 (b) (1) (ii) or (b) (3) of 40 CFR. The EPA or the Board may request such additional information, as may be necessary to verify the reported NMOC emission rate. The permittee shall submit subsequent NMOC emission rate annually. [40 CFR 60.757(b)]
30. In accordance with Section 60.757(b)(1) of 40 CFR, the NMOC emission rate report shall contain an annual or 5-years estimate of the NMOC emission rate calculated using the formula and procedures provided in section 60.754(a) or (b) of 40 CFR, as applicable.
31. In accordance with Section 60.757(b)(1)(ii) of 40 CFR, if the estimated NMOC emission rate as reported in the annual report to the EPA and the Board, is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit

an estimate of the NMOC emission rate for the next five-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the EPA, with a copy to the Board. This estimate shall be revised at least once every 5 years. If the actual waste acceptance exceeds the estimated waste acceptance rate in any year reported in the 5-years estimate, a revised 5-year estimate shall be submitted to EPA with copy to the Board. The revised estimate shall cover the 5-years period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

32. In accordance with Section 60.757(b)(2) of 40 CFR, the NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.
33. In accordance with Section 60.757(b)(3) of 40 CFR, the owner or operator is exempted from the requirements of Section 60.757 (b)(1) and (2), after the installation of a collection and control system in compliance with §60.752(b)(2), during such time as the collection and control system is in operation and in compliance with §§60.753 and 60.755.
34. The owner or operator of a controlled landfill shall submit a closure report to the EPA with copy to the Board, within 30 days of waste acceptance cessation, according to section 60.757(d) of 40 CFR. The EPA or the Board may request additional information, as may be necessary to verify that permanent closure has taken place in accordance with the requirements of section 258.60 of 40 CFR. If a closure report has been submitted to EPA with copy to the Board, no additional wastes may be placed into the landfill without filing a notification of modification as described under section 60.7 (a)(4) of 40 CFR.
35. After a collection and control system is installed, in compliance with established rules, the owner or operator shall calculate the NMOC emission rate using the equations of Section 60.754 of 40 CFR to determine when the system can be removed.
36. The owner or operator of a controlled landfill shall submit an equipment removal report to the EPA **with copy to the Board**, 30 days prior to removal or cessation of operation of the control equipment CD-1 and CD-2, pursuant to part 60.757 (e) 40 CFR. The equipment removal report shall contain all of the following:
- A copy of the closure report submitted in accordance with section 60.757(2)(d) of 40 CFR;
 - A copy of the initial performance test demonstrating that the 15 year minimum control period has expired; and
 - Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

37. In accordance with Section 60.757 (e) (2) of 40 CFR, EPA may request additional information as may be necessary to verify that all of the conditions for removal in section 60.752 (b) (2) (v) of 40 CFR have been met.
38. In accordance with section 60.757(f) of 40 CFR, the owner or operator of a landfill seeking to comply with section 60.752(b)(2) of 40 CFR, using an active collection system designed in accordance with section 60.752(b)(2)(ii) of 40 CFR, shall **submit to EPA with copy to the Board**, annual reports of the recorded information (f)(1) through (f)(2) of the 40 CFR 60.757. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test required under Section 60.8 of 40 CFR. For enclosed combustion devices and flares, reportable exceedances are defined under section 60.758(c) of 40 CFR.
- a. Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d) of the 40 CFR.
 - b. Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756 of the 40 CFR.
 - c. Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.
 - d. All periods when the collection system was not operating in excess of 5 days.
 - e. The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) of 40 CFR and the concentration recorded at each location for which an exceedance was recorded in the previous month.
 - f. The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of §60.755 of the 40 CFR.
39. The owner or operator seeking to comply with section 60.752(b)(2)(iii) of 40 CFR shall include the following information with the initial performance test report required under §60.8 of the 40 CFR. [40 CFR 60.757(g)]
- a. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;
 - b. The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

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- c. The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;
 - d. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and
 - e. The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and
 - f. The provisions for the control of off-site migration.
40. All of the SLS are required to comply with the above condition and inform the Board of its achievements in compliance with the progress increments with 60 days of achieving each of the progress increments on the compliance schedule.
41. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, the owner or operator of an MSW landfill subject to the provisions of §60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.
42. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, the owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.
- a. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(ii) of the 40 CFR:
 - i. The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by EPA.
 - ii. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in §60.759(a)(1) of the 40 CFR.

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- b. Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with §60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:
 - i. The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.
 - ii. The percent reduction of NMOC determined as specified in §60.752(b)(2)(iii)(B) achieved by the control device.
- c. Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in §60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. [40 CFR 60.758(c)]
- d. The following constitute exceedances that shall be recorded and reported under §60.757(f) of the 40 CFR:

- i. For enclosed combustors (CD-1 and CD-2), **all 3-hour periods of operation during which the average combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with §60.752(b)(2)(iii) was determined.**

- 43. In accordance with section 60.758(c)(2) of 40 CFR, the owner or operator shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under §60.756 of 40 CFR.
- 44. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, the owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.
 - a. The owner or operator of a Municipal SLS shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under §60.755(b) of 40 CFR.
 - b. The owner or operator s of a Municipal SLS shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii) of 40 CFR.

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45. Except as provided in §60.752(b)(2)(i)(B) of 40 CFR, the owner or operator of a Municipal SLS shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.
46. According to section 60.759(a) of 40 CFR, the owner or operator seeking to comply with section 60.752(b)(2)(i) of 40 CFR shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the EPA as provided in §60.752(b)(2)(i)(C) and (D) of 40 CFR.
- a. The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.
 - b. The sufficient density of gas collection devices determined in section 60.759(a)(1) of 40 CFR, shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.
 - c. The placement of gas collection devices determined in section 60.759(a)(1) of 40 CFR shall control all gas producing areas, except as provided below:
 - i. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the EQB with copy to the Board upon request.
 - ii. Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1% of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the EQB and the Board upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the equation described in section 60.759(a)(3)(ii) of 40 CFR.



- iii. The values for k , and C_{NMOC} determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applies by the blower or compressor approaches zero). If field testing has not been performed, the default values for k , L_0 and C_{NMOC} provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) of 40 CFR shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in section 60.759 (a)(3)(i) of 40 CFR.

47. According to section 60.759(b) of 40 CFR, the owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

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- a. The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.
- b. Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.
- c. Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

48. According to section 60.759(c) of 40 CFR, the owner or operator seeking to comply with section 60.752(b)(2)(i)(A) of 40 CFR shall convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) of 40 CFR, through the collection header pipes(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate

expected over the intended use period of the gas moving equipment using the following procedures:

- a. For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in section 60.759(c)(2) of 40 CFR, shall be used.
- b. For new collection systems, the maximum flow rate shall be in accordance with section 60.755(a)(1).

D. Conditions according to 40 CFR Part 63, Subpart AAAA – National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfill:⁶

1. The permittee shall comply with the applicable requirements of Subpart WWW, pursuant to section 63.1955(a)(1) of 40 CFR.
2. The permittee shall comply with the requirements in Sections 63.1960 through 63.1985 of 40 CFR and with the general provisions of this part specified in Table 1 to Subpart AAAA of 40 CFR. [40 CFR §63.1955 (b)]
3. For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, you must follow the procedures in 40 CFR 60.752(b)(2) of 40 CFR. [40 CFR §63.1955 (c)].
 - a. If alternatives have already been approved under 40 CFR Part 60, Subpart WWW or the Federal plan, or EPA approved and effective State plan, these alternatives can be used to comply with Subpart AAAA of 40 CFR, **except** that all affected sources must comply with the SSM requirements of the Startup, Shutdown and Malfunctioning Plan (SSM) as specified in Table 1 to Subpart AAAA of 40 CFR
 - i. The facility must submit Compliance Reports every 6 months as specified in § 63.1980(a) and (b) of 40 CFR, including information on all deviations that occurred during the 6-month reporting period.
 - ii. The deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average.⁹
4. Compliance with 40 CFR Subpart AAAA is determined in the same way it is determined for 40 CFR Part 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. [40 CFR §63.1960]

¹²Averages are calculated in the same way as they are calculated in 40 CFR Part 60, Subpart WWW, **except** that the data collected during the events listed in sections 63.1975(a), (b), (c), and (d) of 40 CFR are not to be included in any average computed under Subpart AAAA of 40 CFR.

- a. Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of Subpart WWW, are used to demonstrate compliance with the operating conditions for control systems.
 - i. If a deviation occurs, the facility has failed to meet the control device operating conditions described in 40 CFR Subpart AAAA.
- 5. The permittee shall develop and implement a Startup, Shutdown and Malfunctioning Plan (SSM) **written** according to the provisions under section 63.6(e)(3) of 40 CFR. [40 CFR §63.1960]
 - a. A copy of the SSM plan must be maintained on site.
 - b. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of 40 CFR Subpart AAAA.
 - i. A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) of subpart WWW are exceeded. [40 CFR §63.1965 (a)]
 - ii. A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. [40 CFR §63.1965 (b)]
 - 1. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.
 - iii. A deviation occurs when a SSM plan is not developed or maintained on site. [40 CFR §63.1965 (c)]
- 6. The permittee shall keep records and reports as specified in 40 CFR Part 60, Subpart WWW, **except** that the annual report described in 40 CFR 60.757(f) every 6 months must be submitted. [40 CFR §63.1980 (a)]
- 7. The permittee shall keep records and reports as specified in the general provisions of 40 CFR Part 60 and as shown in Table 1 to Subpart AAAA of 40 CFR. [40 CFR §63.1980 (b)]

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E. OTHER SPECIFIC CONDITIONS

CD-1 and CD-2 Enclosed Gas Flares

1. The permittee shall operate by burning a maximum of 3,800 cubic feet per minute on CD-1 and CD-2. [PFE-RH-36-0304-0007-I-II-III-C]
2. The permittee shall prepare and keep a monthly record containing the daily amount (on a monthly rotating basis) of collected landfill gas routed to each of the CD-1 and CD-2 units. [PFE-RH-36-0304-0007-I-II-III-C]
3. The authorized auxiliary fuel for the flares will be propane gas with consumption shall not exceed a maximum of 1,000 gallons per year for CD-1 and 100 gallons a year for CD-2 with a maximum sulfur content of 0.00001 weight-percent. [PFE-RH-36-0304-0007-I-II-III-C]
4. **VISIBLE EMISSIONS LIMIT:**
 - (i) The permittee shall not exceed the opacity limit of 20% in a 6-minute average for each enclosed burner CD-1 and CD-2. However, the permittee may discharge into the atmosphere visible emissions of an opacity up to 60% for a period no longer than four (4) minutes in any consecutive thirty (30) minutes. [RCAP Rule 403(A)]
 - (ii) The permittee shall hire an independent opacity reader, certified by a school approved or endorsed by the EPA or the Board to perform an opacity reading to each enclosed flare during the first year of the construction permit PFE-RH-36-0304-0007-I-II-III-C using Method 9 described in Appendix A of 40 CFR Part 60 must be used. The burner should be operating at the time of the opacity readings.
 - a. The permittee shall submit to the Board at least 30 days prior to the initial opacity reading a copy of the format to be used to record visible emissions.
 - b. Notify in writing to the Board at least fifteen (15) days before the initial monitoring using Method 9, to afford the Board the opportunity to have an observer present. [Rule 106(D) of the RCAP]
 - c. Submit two (2) copies of the initial monitoring results report using Method 9 within 60 days after the tests. This report shall contain the information required by Rule 106(E) of the RCAP.
 - (iii) The permittee shall perform visible emission test according to the requirements listed below:
 - a. The visible emissions readings shall be in accordance with Method 9 of 40 CFR Part 60, Appendix A, for a minimum of 6 minutes. The visible emissions readers

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shall be certified according to Method 9 by an institution endorsed by the EPA or the Board school.

- 1) The visible emissions readers shall conduct monthly opacity readings for a minimum of four consecutive months. If no emissions are observed above the provisions of Rule 403 of the RCAP, then-
 - 2) The visible emissions reader can perform the opacity readings annually. If emissions are observed above the provisions of Rule 403 of the RCAP, in any of the annual readings, reversed the frequency of readings per month (according to clause 1 above) until no exceedances recorded the limit prescribed in Rule 403 for four consecutive months.
- b. All visible emissions readings must be recorded in accordance with Method 9. A record must be prepared and maintained indicating the dates and results of the readings, and be made available at all times for revision by the Board personnel.
- c. If the day that corresponds to take the reading, the unit is not in operation or not complied with the conditions of Method 9, the permittee must document it in the report of readings and inform it in the visible emissions summary to be submitted to the Board along with the semi-annual report required in this permit.
- d. The permittee must submit a summary of the readings of visible emissions along with the semi-annual report required in this permit. This report shall include a summary of the results of the readings and the beginning and ending dates and the reading of visible emissions was performed. The report shall also include the total number of readings issues made in that period for the units subject to this requirement. The permittee shall retain a copy of the visible emission readings including date and time of the reading for at least five years, in compliance with Rule 603 (A) (4) (ii) of the RCAP.
- (iv) The Board reserves the right to make or require an opacity evaluation under Method 9 is performed at any time during the daylight hours when the equipment are operating in order to demonstrate compliance with the opacity limit.
5. CD-1 and CD-2 shall be installed, operated and maintained in accordance with the manufacturer's specifications, in such a way that the unit's operational efficiency is not affected. The manufacturer's specifications should be available at all times at the installation for revision by the Board technical staff. [PFE-RH-36-0304-0007-I-II-III-C]



6. A monthly record of maintenance performed on CD-1 and CD-2 must be kept. These records must be kept at the installations for revision of Board personnel or to be submitted to the Board whenever it is required. [PFE-RH-36-0304-0007-I-II-III-C]
7. **A performance test must be done within 180 days** from the construction or installation date of the collection system **CD-1 and CD-2** and once final compliance is achieved. [PFE-RH-36-0304-0007-I-II-III-C]
8. In accordance to Rule 106(C) of RCAP, the permittee must submit to the Board and EPA at least thirty (30) days prior to the start of the test, a detailed test protocol describing all test equipment, procedures, and Quality Assurance (QA) measures to be utilized. The protocol must be specific for the test, facility, operating conditions and parameters to be measured. The protocol should include at a minimum, the following:
 - a. Stack diagram showing test port, their distances from upstream and downstream disturbances, the stack diameter, and planned sampling equipment and monitoring locations.
 - b. A determination of the presence and degree of cyclonic flow
 - c. The proposed number or sampling traverse points, sampling time at each point, and total sampling volume.
 - d. A detailed description of all sampling, sample recovery, and analytical procedures. The entire procedure in the case of nonstandard procedures or modification should be described with justifications and necessary data for backup. Options offered by the Reference Method should be selected and justified.
 - e. Any special conditions for the preparation of the sampling equipment and containers to avoid sample contamination.
 - f. Samples of forms to be used to record sample history, sampling conditions, and operating conditions.
 - g. Methodology for measurement of plant operating conditions, including production rate, fuel flow rate, process data and pollution control data, all to be recorded at a minimum of 15 minute intervals.
 - h. If more than one sampling train is to be used, detailed description of the relevant sequencing and logistics.
 - i. If Continuous Emission Monitors (CEMs) are to be used, detailed description of the operating and data logging procedures.

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9. In accordance with RCAP Rule 106(D), shall provide the Board at least 15 days of prior written notification of any test required by the Board, to afford the EQB the opportunity to have an observer present. Results of any stack test done in the absence of an EQB's approved protocol will not be accepted.
10. In accordance with RCAP Rule 106(E), two (2) copies of the emission test reports shall be submitted by the permittee to the Board within 60 days after the performance of the emission test. The emission test report should include at a minimum, the following:
 - a. A summary of emission rates, isokinetic sampling rates, operational level and any other relevant process, fuel, or control device parameters monitored during the test.
 - b. All field data collected, including legible copies of field data sheets (raw data) and any transcribed or computer data sheets that may be relevant.
 - c. All laboratory data, including blanks, tare weights, calibration data, quality assurance samples, and results of the analyses.
 - d. All calculations used in the determinations of emission rates, process rates, or other factors relevant to the test results, compliance, etc.
11. In accordance with Rule 106 (F) of the RCAP, during test, the source must be operated at its maximum rated capacity or based on representative performance of the affected facility; understanding that, after proving compliance with any applicable emission limit, the Board may restrict the operation of the source at the capacity reached during the performance tests.
12. If evaporation of the condensate occurs in the vertical wells, the fugitive emission of Hazardous Air Pollutants will be calculated as defined in RCAP. [PFE-RH-36-0304-0007-I-II-III-C]
13. The permittee shall send to the Board a monthly report regarding the CD-1 and CD-2 flares indicating:
 - a. The monthly consumption of propane fuel. This can be determined by assuming that all purchased propane has been consumed. It shall retain the installation purchase receipts to prove propane quantities purchased;
 - b. The daily sulfur content of fuel propane used in the flares in weight-percent as certified by the distributor or importer of the fuel. Every six months, the permittee shall obtain and submit an updated certification from the supplier, distributor or importer of the fuel. These reports will be sent to the Division of Validation Data and Mathematical Modeling of the Air Quality Area of the Board no later than the next 15 days of the following month for which the report is representative.

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14. **El Coqui Landfill** shall retain all of the required sampling data, and the supporting information for a period of five years beginning on; the sampling, measurement, report, or sampling application date. The support information will include all records of the calibration, maintenance, and all continuous supervision graphics produced by instrumentation, and of copies of reports required by the permit. [Regla 603(a)(4)(ii) of the RCAP]

Table 1 - Monitoring, Recordkeeping and Reporting	
Cotinuuous Monitoring	Flares should have a constant measure of the presence of the flame and the gas flow to the control device.
Monthly Monitoring	The permittee shall: 1. Measure gauge pressure in the gas collection header. 2. Measure nitrogen or oxygen content in the landfill gas, and 3. Measure the temperature of the landfill gas.
Quarterly Monitoring	Methane concentrations in the surface using Method 21 of the APA.
Recordkeeping	The permittee shall have readily accessible in the facility: 1. Records of the maximum design capacity 2. Amount of waste at the site 3. Performance/compliance testing 4. Operating parameters/equipment exceedances 5. Waste acceptance rate every year, for a period of at least 5 years 6. Records of the manufacturer's specifications of the equipment shall be maintained until the Gas Control System is removed. 7. A plot map showing all existing and planned collection wells, it must be maintained for the life of the Gas Control System. 8. The date and location of any newly installed well. The documentation regarding the nature, quantity, location and date of disposal of any non-degradable waste excluded from the Gas Control System will be maintained.
Reports:	The reports will be submitted to the EQB and EPA. An annual report must include all information recorded according to 40 CFR §60.757(f)(1) through (f)(6).
	When the performance test is requested, it must be submitted with the annual report that shall contain the information listed in 40 CFR §60.757(g)(1) through (g)(6).
	An equipment removal report shall be submitted to EPA 30 days prior to removal or cessation of any control equipment and it must contain the information listed in 40 CFR §60.757(e)(1)(i) through (e)(1)(iii).

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Section VI - Insignificant Emission Units

The following activities will be considered insignificant if ECL meets the descriptions below and is not subject to an applicable requirement.

Emission Source Identification	Units	Description (Exemption basis)
Tanque - 3: Oil tank with a capacity of 550 gallons.	1	Appendix B.3.iii (N) of the RCCA
Tanque - 4: Hydraulic and motor oil storage tanks of 550 gallons.	1	Appendix B.3.iii of the RCCA
Cleaner - 1: Cleaning container for parts of 20 gallons.	1	Appendix B.3.xxxviii of the RCCA

Section VII - Permit Shield

A. According to RCAP Rule 603(D), compliance with the conditions of the permit shall be deemed as the compliance with any applicable requirement to the date of issuance, provided that the requirement is included and specifically identified in the permit.

(1) Non Applicable Requirements

Requisitos No Aplicables	Regulación	Razón de No Aplicabilidad
Emission Guidelines for Municipal Sanitary Landfill Systems.	Part VII of the Regulation for the Control of Atmospheric Pollution.	It is a modified facility. Subject to 40 CFR, Part 60, Subpart WWW.

Section VIII – Permit Approval

By virtue of the powers vested in the Environmental Quality Board by the Environmental Public Policy Law, Law No. 416 of September 22, 2004, as amended, and after verifying the administrative file and compliance with the Uniform Administrative Procedure Law, Law No. 170 of August 12, 1988, as amended, the Federal Clean Air Act, Environmental Public Policy Law and the Regulation for the Control of Atmospheric Pollution of Puerto Rico, the Environmental Quality Board approves the permit subject to the terms and conditions therein expressed

In San Juan, Puerto Rico, June 6, 2016.

ENVIRONMENTAL QUALITY BOARD



Suzette M. Meléndez Colón
Vice President



Rebeca Acosta Pérez
Associate Member



Weldin F. Ortiz Franco
President

EL COQUI LANDFILL COMPANY, INC.
PFE-TV-4953-36-1001-2294
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APPENDIX

Appendix I - Definitions and Abbreviations

A. Definitions:

1. Law - Federal Clean Air Act, as amended, *42 U.S. 7401, et seq.*
2. Responsible Officer - See the definition of Responsible Officer as established under the Regulation for the Control of Atmospheric Pollution of the Environmental Quality Board (1995).
3. Regulation - Regulation for the Control of Atmospheric Pollution of the Environmental Quality Board.
4. Title V - Title V of the Federal Clean Air Act (*42 U.S.C. 7661*).

B. Abbreviations

AP-42	Compilation of Air Pollutant Emission Factors
Btu	British thermal unit
C _{NMOC}	Non Methane Organic Compounds Concentration
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
NMOC	Non Methane Organic Compounds
CFR	Code of Federal Regulations
ECL	El Coquí Landfill
EPA	Environmental Protection Agency
GHG	Greenhouse Gases
HAP	Hazardous Air Pollutants
EQB	Environmental Quality Board of Puerto Rico
k	Methane generation rate constant

Ullt
mm

Mg	Megagrams
MMBtu	Million Btu
NESHAP	National Emission Standards for Hazardous Air Pollutants
NAAQS	National Ambient Air Quality Standards
NSPS	New Sources Performance Standards
NO _x	Nitrogen oxides
NMHC	Non-methane hydrocarbons
Pb	Lead
PM	Particulate matter
PM ₁₀	Particulate matter with a particle which diameter has an aerodynamic mass size equal to or less than (10) microns
PSD	Prevention of Significant Deterioration
RCAP	Environmental Quality Board Regulation for the Control of Atmospheric Pollution
RMP	Risk Management Plan
SIC	Standard Industrial Classification
scfm	Standard cubic feet per minute
SO _x	Sulfur oxide
SO ₂	Sulfur dioxide
SLS	Sanitary Landfill System
VOC	Volatile Organic Compounds

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mm*



LEGAL AND FACTUAL BASIS – TITLE V PERMIT
EL COQUI LANDFILL COMPANY, INC.
PFE-TV-4953-36-1001-2294

The Environmental Quality Board (EQB) is issuing a Title V permit in conformity with Title 40 of the Code of Federal Regulations (CFR), Part 70 and Part VI of the Regulation for the Control of Atmospheric Pollution (RCAP) for El Coqui Landfill (ECL). The facility is located on Road PR-3, Intersection 923, Buena Vista Ward, in Humacao, Puerto Rico. The EQB received an application for Title V permit on October 25, 2001, which was amended several times.

El Coqui Landfill is an active Municipal Sanitary Landfill System that receives only non-hazardous solid waste, including municipal, commercial and residual waste. ECL is operating since 1972 and is expected to reach full capacity in 2036. El Coqui Landfill Company, Inc., owns and manages the Sanitary Landfill System (SLS) of Humacao.

Solid wastes are hauled by trucks and transport vehicles, and deposited in the work area of the landfill (shooting area). Excavators and compactors spread and compact waste after discharge. At the end of each working day the waste is covered with soil. The decomposition of encapsulated waste in the landfill produces gas (landfill gas). The gas is methane (CH₄), carbon dioxide (CO₂) and other non-methane organic compounds (NMOC). The gas generated in ECL is collected through an active gas collection system and directed to two enclosed flares.

El Coqui Landfill is required to have a Title V operating permit because the design capacity of the landfill is above 2.5 million megagrams and 2.5 million cubic meters. In addition, it is a major source exceeding 100 tons per year of carbon monoxide for (CO), and because it exceeds 100,000 per year of greenhouse gases (GHGs) expressed as carbon dioxide equivalent (CO₂e). The landfill is subject to the applicable requirements of Title 40 of the Code of Federal Regulations, Part 60, Subpart WWW, New Sources Performance Standards (NSPS) for Municipal Solid Waste Landfills; and Part 63, Subpart AAAA, National Emission Standards for Hazardous Air Pollutants, (NESHAP): for Municipal Solid Waste Landfills.

Emission Units

The Emission Units section lists the significant emission units, the related control equipment, if any, and the type of fuel. This section is a general description of the facility. The emission units are the following:

EU-1: Municipal Sanitary Landfill System. The landfill accepts non-hazardous municipal solid waste since 1972. The ratio of average annual waste acceptance is 600,000 tons per year, with a maximum landfill gas generation of 5,184 scfm. It has a maximum design capacity of 21,600,000 megagrams. Control Equipment: Two enclosed flares (CD-1 and CD-2).

CD-1 and CD-2: Active Collection System and Control of Landfill Gas. The landfill gas collected will be directed to two enclosed flares. The CD-1 burner processes a maximum of 2,800 scfm and a heat input of 90 MMBtu/hr. The CD-2 burner processes up to 1,000 scfm and a heat input of 27.4 MMBtu/hr. The auxiliary fuel used is propane.

Piles and cover material handling and hauling of cover material. Fugitive emissions from truck traffic to the storage area, piles handling and transport of material. It manages and carries around 1,048 ton/day (327,000 tons/year) of material (topsoil/daily cover). Water aspersion or vacuum sweeping, and broom sweeping and flushing with control efficiency 50% for PM₁₀ is used.

Unpaved roads. Fugitive emissions from truck traffic. Water aspersion or vacuum sweeping, and broom sweeping and flushing with control efficiency 50% for PM₁₀ is used.

Paved roads. Fugitive emissions from truck traffic. Water aspersion or vacuum sweeping, and broom sweeping and flushing with control efficiency 50% for PM₁₀ is used.

Allowable Emissions

The emissions described in the following table represent the allowable emissions at the time of the permit application and will be used for payment purposes only. According to Rule 610(a) of the RCAP, when the EQL requests modification, administrative change or minor modification to its Title V permit, the source will only pay those charges related with any emissions increase (if any) per ton, based on the change and not based on the previously paid total charges in conformity with Rule 610(a) of the RCCA.

Pollutants	Allowable Emissions (tons/year)
PM ₁₀	78.50
SO ₂	7.86
NO _x	30.85
CO	106.66
NMOC	53.05
VOC (combustion)	16.39
HAP's	14.83
CO _{2e}	279,760.3

According to the EQB Resolution RI-06-02¹, the emissions calculations will be based on the current emissions of the ECL; however, calculations based on the emissions cap of the facility will be accepted. If ECL decides to make the calculations based on the permissible emissions cap, ECL will pay the same charge per ton as the facilities that decide to make the calculations based on current emissions. Also, according to EQB resolution R-04-04-1², to determine the charges for modification and renewal, ECL shall calculate the emissions with the k, Lo and C_{NMOC} factors established in Section 60.754 (a) (1) (i) of the CFR 40, or the specific values of k, Lo and C_{NMOC}, as determined in Sections 60.754 (a) (3) (1) and 60.754 (a) (4) of the 40 CFR.

In accordance to the Resolution of the EQB JCA R-12-17-5³, exemption from payment for Greenhouse Gases (expressed as CO_{2e}) is granted to those sources who have to include, or are requested an estimate of emissions according to the Tailoring Rule, in Title V permits, until the Board issues its final determination regarding emissions charges, or any other charges, if needed, or through a repeal of this Resolution R-12-17-5, whichever comes first.

Applicable Requirements

New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills: 40 CFR, Part 60, Subpart WWW.

This emission source is subject to the performance standards of Subpart WWW because it was modified after May 30, 1991. Facilities that are subject to this subpart, must install controls if NMOC emissions which are greater than or equal to 50 Mg year. Also, this part requires the effective capture of generated gas, minimize gas migration subsurface

1. EQB Resolution - Payment procedure for Title V operating charges and Title V permit renewal charges, issued on March 20, 2006.
 2. EQB Resolution - Consultation to the Government Board about the annual calculation of the gas emissions to the atmosphere for Sanitary Landfills, issued on February 27, 2004.
 3 EQB resolution, *PR Tailoring Requirements for Greenhouse Gases (GHGs)* - Exemption from payment was issued on September 7, 2012.

outside the boundaries of the site and to direct the collected gas to enclosed burners (CD-1 and CD-2) which will be operated to reduce NMOC by 98% by weight.

National Emission Standards for Hazardous Air Pollutants (NESHAP): Municipal Solid Waste Landfills - 40 CFR Part 63, Subpart AAAA

This subpart applies to area sources subject to applicable requirements of 40 CFR Part 60, Subpart WWW, with a design capacity equal to or greater than 2.5 million megagrams (Mg) and equal to or greater than 2.5 million cubic meters (m³) and estimated uncontrolled emissions NMOC 50 Mg per year or more. Control technologies chosen by the EPA are the same as Subpart WWW 40 CFR Part 60, so that the MACT does not impose additional control requirements. The NESHAP imposes some additional requirements for determining compliance and reports that are required under section 112 of the Clean Air Act. This includes provisions startup, shutdown, and malfunction (SSM) using data from continuous parameter monitoring to determine compliance with the requirements of operating conditions, and report deviations every 6 months instead of every year.

The following requirements are not applicable to El Coqui Landfill

- Emissions Guidelines and Compliance Schedules for Municipal Sanitary Landfill Systems established under Part VII of RCAP. The provisions of this part apply only to existing systems whose municipal landfill construction, reconstruction or modification commenced before May 30, 1991.

The frequency of reporting for compliance certification for this source should be annual. Unless specifically established, all the terms and conditions of the Title V permit, including the provisions designated to limit the emission capacity of the source, are enforceable by the EPA and the citizens, under the Federal Clean Air Act. The terms and conditions that are designated as enforceable only by the state, as indicated by the permit, are enforceable by the EQB.

Changes were incorporated in accordance with the comments received during the Public Hearing for the draft Title V permit included in Resolution R-14-33-1 of August 26, 2014 and the ones ordered by Resolution R-15-28-26 of December 17, 2015 on the reconsideration of the construction permit PFE-RH-0304-0007-I-II-III-C.

The EQB has determined that this Title V Operating Permit fulfills the requirements under Part VI of the RCAP.