



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



<b>Permit Number:</b>	PFE-TV-4953-70-0903-1526
<b>Application Receipt Date:</b>	September 24, 2003
<b>Effective or Issue Date:</b>	June 28, 2016
<b>Expiration Date:</b>	June 28, 2021

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

**MUNICIPALITY OF TOA BAJA LANDFILL  
TOA BAJA, PUERTO RICO**

Herein after **VMTB** or the **permittee**, to operate a stationary source of air pollutants emissions consisting of the units described in this permit. Until such time as this permit expires, is modified or revoked, the permittee is allowed to discharge atmospheric pollutants from those processes and activities directly related and associated with the sources of emission, in compliance with the requirements, limitations and conditions of this permit, until its expiration date or until such is modified or revoked.

The conditions of the permit are 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 shall be kept on-site at the above-mentioned facility at all times.

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**SECTION I - GENERAL INFORMATION**

**A. Facility Information**

Name of the Owner: MUNICIPALITY OF TOA BAJA

Postal Address Box 2359  
Toa Baja, P.R. 00951

Facility Name: Municipality of Toa Baja Landfill

Facility Location: PR-866, Km 1.5  
Sabana Seca Ward  
Candelaria Sector  
Toa Baja, Puerto Rico

Responsible Official: Aníbal Vega Borges  
Mayor  
Municipality of Toa Baja

Phone: 787-261-7922

Fax: 787-261-7958

Technical Contact: Rey O. Contreras Moreno  
President  
Landfill Technologies, Corp.

Postal Address: P.O. Box 1322  
Gurabo, P.R. 00778

Phone: 787-273-7639

Fax: 787-687-0337

SIC Primary Code: 4953

**B. Process Description**

The Municipality of Toa Baja Landfill (**VMTB**) is an active solid waste municipal landfill that started disposal operations since the beginning of the 70's and is expected to continue operations until approximately 2014. Approximately 212,776 tons of non-hazardous solid waste is deposited per year in the **VMTB**.

**VMTB** is located on Road PR-866 Km 1.5 in Sabana Seca Ward, Candelaria Sector of Toa Baja. Landfill Technologies, Corp. administers the Municipal Sanitary Landfill System of Toa Baja.

In the **VMTB**, solid waste is carried in various types of trucks or transportation vehicles, and deposited in the landfill work area (disposal area). Excavators and compactors spread and compact the waste after unloading. At the end of each work day the solid waste is covered with soil.

The decomposition of the encapsulated waste in the solid waste municipal landfill produces gases (greenhouse gases), such as methane (CH<sub>4</sub>), carbon dioxide (CO<sub>2</sub>) and other non-methane organic compounds (NMOC). The gas generated in the **VMTB** is collected through an active gas collection system routed to two enclosed flares or to two internal combustion engines to produce electricity. In addition, the landfill has three internal combustion engines for three electricity generators that consume diesel.

The Municipality of Toa Baja Landfill is subject to the Title V permit requirements because its Design Capacity is greater than 2.5 million megagrams and 2.5 million cubic meters, and for being a major source exceeding 100 tons per year of carbon monoxide (CO) and NMOC (which includes volatile organic compounds) and more than 100,000 tons per year of greenhouse gases (GHGs) expressed as CO<sub>2</sub>e (carbon dioxide equivalent).

**SECTION II - EMISSION UNITS DESCRIPTION**

The emission units regulated by this permit are the following:

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Emission Unit	Description	Control Equipment
EU-1	<p align="center"><b>Active Municipal Sanitary Landfill System</b></p> <p>The landfill accepts municipal solid waste since the beginning of the 70s. It has a maximum design capacity of 8,115,550 megagrams.            Maximum gas generation of the landfill: 2,520 scfm.            Projected year for landfill closure: 2014.</p>	<p><b>Active Landfill Gas Collection System</b> routed towards the <b>Control System</b> (two enclosed flares CD-1, CD-2 and two internal combustion engines CD-3).</p>

Emission Unit	Description	Control Equipment
<p>CD-1 CD-2</p>	<p><b>Active Landfill Gas Collection System routed towards the two Enclosed Flares</b></p> <p>Two enclosed flares.  Manufacturer: Perennial Energy  Model: EGFS-25.5-32  Series: FLR-301</p> <ul style="list-style-type: none"> <li>• Both process a maximum of 1,699 ft<sup>3</sup>/min (160,060 lb/day) of greenhouse gases.</li> <li>• Heat input rate: 22.5 MMBtu/hr</li> <li>• Output temperature: 1,800 °F</li> <li>• Startup fuel: Consumes propane at a rate of 2.58 lb/h.</li> <li>• Velocity: 26.7 ft<sup>3</sup>/sec.</li> <li>• Stack: <ul style="list-style-type: none"> <li>• Height = 30'-4¼"</li> <li>• Diameter = 7'-7"</li> </ul> </li> <li>• Maximum operation schedule: 8,760 hours per year</li> <li>• Minimum destruction efficiency for NMOC: 98%</li> <li>• Minimum temperature.<sup>1</sup></li> </ul>	-
<p>EU-2</p>	<p><b>International combustion engine</b></p> <p>Engine of the electric generatory is brand Perkins.  Model: 3.1524  Capacity of 42 hp.  Consumes diesel at a rate of 3.5 gallons per hour.  Maximum sulfur content: 0.2% per weight  Hours of operation: 1,000 hours per year</p>	None
<p>EU-3</p>	<p><b>International combustion engine</b></p> <p>Perkins engine of the Olympian electric generator.  Model: D50P2S  Capacity of 95.2 hp.  Consumes diesel at a rate of 4.73 gallons per hour.  Maximum sulfur content: 0.2% per weight  Maximum operation schedule: 3,750 hr/ year</p>	None

<sup>1</sup> The minimum temperature that will prevail is the one established by the initial performance test for the flare or as established by the most recent test approved by the Board, according to the applicable regulation.

Emission Unit	Description	Control Equipment
EU-4/ CD-3	<p><b>Active Landfill Gas Collection System routed towards an internal combustion engine to control landfill gases.</b></p> <p>Spark ignition internal combustion engine.  Brand: Caterpillar  Model: G3516 LE  Capacity of 1,148 hp. Consumes treated landfill gas as main fuel.</p> <ul style="list-style-type: none"> <li>• Maximum flow: 331 scfm</li> <li>• Maximum sulfur content: 2.039E-03% per weight.</li> <li>• Heat input rate: 10.82 MMBtu/hr</li> <li>• Stack:  Height = 22.83' Diameter = 12"  Output temperature: 847°F  Output speed: 100.6 ft/sec</li> </ul> <p>Maximum operation schedule: 8,000 hours per year</p>	None
EU-5/ CD-3	<p><b>Active Landfill Gas Collection System routed towards an internal combustion engine to control landfill gases.</b></p> <p>Spark ignition internal combustion engines. Brand: <i>Caterpillar</i>  Model: G3520 C  Capacity of 2,233 hp. Consumes treated landfill gas as main fuel.</p> <ul style="list-style-type: none"> <li>• Maximum flow: 518.58 scfm</li> <li>• Maximum sulfur content: 2.039 E-03% per weight.</li> <li>• Heat input rate: 14.2 MMBtu/hr</li> <li>• Stack:  Height = 22.83' Diameter = 12"  Output temperature: 898°F  Speed: 200.93 ft/sec</li> </ul> <p>Maximum operation schedule: 2,950 hours per year.</p>	None
EU-6	<p><b>Activities in Roadways</b></p> <p>Entails the transportation of non hazardous waste from the landfill entrance to the open area designated to deposit the waste. Fugitive emissions.</p>	Aspersion / Dust suppressant agent

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Emission Unit	Description	Control Equipment
EU-7	<p style="text-align: center;"><b>Internal combustion engine</b></p> Perkins Electropack 3125 engine of the electricity generator. Capacity of 33.5 hp. Consumes diesel at a rate of 2.2 gallons per hour. Maximum sulfur content: 0.2% per weight Maximum operation schedule: 4,000 hours per year	None

**SECTION III - GENERAL CONDITIONS OF THE PERMIT**

1. **Sanctions and Penalties:** VMTB must comply with all the 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 Article 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, VMTB shall allow the entrance to the facilities to the Board representatives, upon presentation of credentials, to perform the following activities:
  - a. Enter upon 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, to 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 fuel;
  - d. As authorized by the Clean Air Act and the RCAP, to sample or monitor, at reasonable time; substance or parameter for the purpose of assuring compliance with the permit and other applicable requirements.
  
3. **Sworn Statement:** All reports required pursuant to 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 shall attest to the truth, correctness and completeness of such records and reports.

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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, and data obtained in any other way, shall be available for public inspection and may also be made available to the public in any additional way that the Board may deem appropriate.
5. **Emergency Plan:** As specified under Rule 107 of the RCAP, **VMTB** 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 Board 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 representative of the Board at any time.
6. **Control Equipment :** **VMTB** shall comply with Rule 108 of the RCAP, as follows :
  - a. All the air pollution control equipment or control measures shall have provide for continuous compliance with the applicable rules and regulations. Such equipment or measures shall be installed, maintained, and operated according to those conditions imposed by the Board within the specified operating limitations of the manufacturer.
  - b. The collected material from the 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 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:
    - i. Identification of the specific source to be taken out of service, with its location and permit number.

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- ii. The expected length of time that the air pollution control equipment will be out of service.
- iii. The nature and quantity of emission of air pollutants likely to be emitted during the shutdown period.
- iv. Measures such as the use of off-shift labor and equipment that will be taken to minimize the length of the shutdown period.
- v. The reasons why it will be impossible or impractical to shutdown the operating source during the maintenance period.

7. **Compliance Certification:** According to Rule 602(c)(2)(ix)(C) of the RCAP, VMTB shall submit each year a compliance certification. This certification must be submitted to both the Board and to the Environmental Protection Agency (EPA)<sup>2</sup>, no later than April 1<sup>st</sup> 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 determine the compliance status with each term and condition, currently and over throughout the report period, consistent with sections (a)(3) - (5) of Rule 603 of the RCAP; and
- e. Identification of the possible exceptions to compliance any period which compliance is required and in which an exclusion or exceedance as defined under 40 CFR Part 64 (CAM) has occurred; and
- f. Such other facts as the Board may require to determine the compliance status of the source.

8. **Regulatory Compliance:** As specified under Rule 115 of the RCAP, any violation to the RCAP or any other applicable rule or regulation, shall be grounds for the Board to suspend, modify or revoke any permit, approval, variance or other authorization issued by the Board according to the Administrative Uniform Procedures Act.

<sup>2</sup> The certification for the EQB must be sent by mail to: Manager, Air Quality Area, P.O. Box 11488, San Juan, PR, 00910. The certification for the EPA must be sent by mail 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.

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, 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 a new minor source without required permit under Rule 203 of the RCAP.
10. **Objectionable Odors:** As specified under Rule 420 of the RCAP, **VMTB** shall not cause or permit emissions to the atmosphere of matter which produces an objectionable or unpleasant odor that can be perceived on an area other than designated for industrial purposes. If objectionable odors are detected beyond the **VMTB** property perimeter, and complaints are received, the permittee 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 specified under Rule 602(a)(1)(iv) of the RCAP, **VMTB**'s 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 paragraph (c)(3) of Rule 602.
12. **Permit Duration:** As specified under Rule 603 of the RCAP, the following terms will apply during the duration of this permit:
- Expiration: This authorization shall have a fixed term of five (5) years. The expiration date will be automatically extended until the Board approves or denies a renewal application (RCAP Rule 605(c)(4)(ii)) but only in those cases where the permittee submits a complete renewal application at least twelve (12) months before the expiration date. (RCAP Rule 603(a)(2), RCAP Rule 605(c)(2) and RCAP Rule 605(c)(4))
  - 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.
  - 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 Requirements:** As specified in Rule 603(a)(4)(ii) of the RCAP, **VMTB** shall retain records of all required monitoring data and support information for a period of 5 years from the date of monitoring, sample measurement, report or application.
14. **Semiannual Monitoring/Sampling Reports:** According to Rule 603(a)(5)(i) of the RCAP, the permittee shall submit report of all required monitoring, every six 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 that covers the period from January to June must be submitted no later than October 1<sup>st</sup> of the same year and the report covering the period from July to December must be submitted no later than April 1<sup>st</sup> of next year. Once the guidelines are developed by the Board, they must be used to complete these reports.

15. **Deviations Reporting due to Emergency:** According to Rule 603(a)(5)(ii)(a) of the RCAP, any deviation resulting from an upset (such as a sudden malfunction or breakdown) or emergency conditions as defined under Rule 603(e) of the RCAP must be reported within the next 2 working days of the time when emission limitations were exceeded due to the emergency if VMTB wishes to assert the affirmative defense authorized under Rule 603(e) of the RCAP. If VMTB raises the emergency defense upon an enforcement action, the permittee shall demonstrate that such deviation occurred due to an emergency and that the Board was adequately notified. If such emergency deviation lasts 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 is no risk to public health.

16. **Deviations Reporting (Hazardous Air Pollutants):** The source shall act as specified in its Emergency Response Plan (established in Rule 107(C) of the RCAP), where such a Plan has demonstrated that there is no significant impact at the fence line or shall shut down its operations immediately if there is a significant impact at the fence line. (This condition is state enforceable only). Pursuant to Rule 603(a)(5)(ii)(b) of the RCAP, a notification will be required if a deviation occurs that results in the release of emissions of hazardous air pollutant for more than an hour in excess of the applicable limit. The Permittee shall also submit to the Board within 24 hours of the deviation. For the discharge of any hazardous air pollutant for more than 2 hours in excess of the applicable limit, the Permittee shall notified the Board within 24 hours of the deviation. The Permittee shall also submit to the Board within 7 days of the deviation, a detailed written report, which includes probable cause, time and duration of the deviation, remedial action taken and steps which are being taken to prevent a reoccurrence.

17. **Severability Clause:** As established 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 whether they are specific or general as well as the sampling, recordkeeping and reporting requirements.

18. **Permit Non-Compliance:** As specified under RCAP Rule 603(a)(7)(i), the permittee must comply with all conditions of this permit. Permit non-compliance constitutes a violation of the RCAP and will be grounds for taking the appropriate enforcement action, impose sanctions, revoke, 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, **VMTB** it shall not be a defense for a permittee 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 **VMTB** for a permit modification, revocation reissuance or termination, or of a notification of planned changes or anticipated non-compliance does not suspend any permit condition.
21. **Property Rights:** As specified under Rule 603(a)(7)(iv) of 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, **VMTB** shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine complied with the permit. Upon request, **VMTB** shall also furnish to the Board copies of record required to be kept by the permit.
23. **Change in Operating Scenarios:** As specified under Rule 603(a)(10) of the RCAP, **VMTB** shall, contemporaneously with making a change from one scenario to another, record in a logbook the scenario under which it is operating. This log is 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 Board's failure to take final action on a permit application within 18 months as of the application completeness date. The Board's failure to issue a final permit within 18 months should be treated as a final action solely for the purpose of obtaining a judicial review in state court.
25. **Administrative Permit Amendments and Permit Modification:** As specified under Rule 606 of the RCAP, the permit shall not be amended nor modified unless **VMTB** complies with the requirements for administrative permit amendments and permit modifications as described in the RCAP.
26. **Permit Reopenings:** As specified under RCAP Rule 608(a)(1), this permit shall be reopened and revised under the following circumstances:

- a. When additional applicable requirements under any law or regulation become applicable to **VMTB**, 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 Rules 605(c)(4)(i) or 605(c)(4)(ii) of the RCAP.
- b. Whenever the Board or 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 Board or EPA determines that the permit must be revised or revoked to assure compliance with applicable requirements.

27. **Change of Name or Responsible Official:** This permit is issued to the **Municipality of Toa Baja Landfill**. In the event that the company and/or installation change its name, the responsible official must submit an administrative amendment to the 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. **Change of Ownership:** This permit is issued to the **Municipality of Toa Baja Landfill**. In the event that the company and/or installation is transferred to a different owner or changes 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/Demolition Work:** **VMTB** shall comply with the provisions set forth in 40 CFR §61.145 and §61.150 and Rule 422 of the RCAP and the Regulation for Processing General Permits (General Permit for Handling Asbestos-Containing Materials) when conducting any renovation or demolition activities of asbestos containing materials at the facilities. **VMTB** is not authorized to receive materials containing asbestos in the sanitary landfill system.

30. **Risk Management Plan (RMP):** If during the effectiveness of this permit **VMTB** is subject to the 40 CFR part 68, the permittee shall submit a Risk Management Plan according with the compliance schedule in 40 CFR part 68.10. If during the effectiveness of this permit, **VMTB** is subject to 40 CFR part 68, as the permittee 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 Requirements:** VMTB has the general obligation to 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 minimize 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. Refrigerant Requirements (Climatologic and Stratospheric Ozone Protection):**

- a. In the event that VMTB has equipment or appliances , including air conditioners units, which use Class I or II refrigerants as defined in 40 CFR Part 82, Subpart A, Appendices A and B, he/she shall take 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 or 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. If VMTB performs a service on motor (fleet) vehicles when this services involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), VMTB 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 air-tight sealed refrigeration system used as refrigerated cargo or system used on passenger buses using HCFC-22 refrigerant.

**33. Labeling of Products that use ozone-depleting substances:** VMTB shall comply with the standards for labeling 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 according to 40 CFR §82.106.
- b. The placement of the required warning statement must comply with the requirements under 40 CFR §82.108.

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- c. The form of the label bearing the required warning statement must comply with the requirements under 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 Surfaces Coating:** Pursuant to Rule 424 of the RCAP, **VMTB** 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 proof 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. [This is a state-only requirement.]
35. **Storage Tanks:** **VMTB** shall maintain records of all *fuel oil* storage tanks in the facility including the dimensions of each tank and an analysis showing the capacity of each tank according to 40 CFR §60.116b. This documentation shall be available for review by the technical staff of the Board at all times and be maintained at the facility for the life of the tank.
36. **Compliance Clause:** Under no circumstances does compliance with this permit exempt **VMTB** from complying with all other applicable state or federal laws, regulations, permits, administrative orders or applicable court orders.
37. **Emissions Calculations:** **VMTB** shall submit on the first day of April each year, the actual or permissible emissions calculations for the previous natural year. The emissions calculation shall be submitted on the forms prepared by the Board for this purpose and the responsible official must certify all information submitted as true, correct and representative of the activity included in the permit.
38. **Annual Fee:** As specified under Rule 610 of the RCAP, **VMTB** 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 Amendments Regulations:** 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
40. **Reports:** Any requirement of information to the Board shall be addressed to: Manager, Air Quality Area, PO Box 11488, San Juan, P.R. 00910.
41. **Reservation of Rights RCAP:** Except as expressly provided in this Title V permit:
- a. Nothing herein shall prevent the EPA or the Board from taking administrative enforcement measures or seeking legal or equitable relief to enforce the terms of

the Title V permit, including but not limited to the right to seek injunction and imposition of statutory penalties and/or fines.

- b. Nothing herein shall be construed to limit the rights of EPA or the Board to undertake any criminal enforcement activity against **VMTB** or any person.
- c. Nothing herein shall be construed to limit the authority of the EPA or the Board to undertake any action in response to conditions that present an imminent and substantial endangerment to public health, or welfare or the environmental.
- d. Nothing herein shall be construed to limit **VMTB's** rights to administrative hearing and judicial appeal of termination / revocation /disputes over modification/denial action according with regulations and the Environmental Public Policy Act.

42. **Source Modifications without a permit revision:** According to Rule 607 of the RCAP, the permittee may perform:

(a) Source changes

(1) Permitted sources may make Section 502(b)(10) changes without requiring a permit revision, if the changes are not modifications under any provision of Title I of the Act and the changes do not exceed the emissions allowable under the permit (whether expressed therein as a rate of emissions or in terms of total emissions).

(i) For each such change, the facility must provide the Administrator and the Board with written notification in advance of the proposed changes, which shall be seven (7) days. The written notification shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The source, the Board, and EPA shall attach each such notice to their copy of the relevant permit.

(ii) The permit shield described in paragraph (d) of Rule 603 shall not apply to any change made pursuant to section (a)(1) of Rule 607.

(2) Permitted sources may trade increases and decreases in emissions in the permitted facility for the same pollutant, where the permit provides for such emissions trades without requiring a permit revision and based on the 7-day notice prescribed in section (a)(2)

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of Rule 607. This provision is available in those cases where the permit does not already provide for such emissions trading.

(i) Under paragraph (a)(2) of Rule 607, the written notification required shall include such information as may be required by the provision in the Puerto Rico State Implementation Plan (PR-SIP) authorizing the emissions trade, including when the proposed change will occur, a description of each such change, any change in emissions, the permit requirements with which the source will comply using the emissions trading provisions of the PR-SIP, and the pollutants emitted subject to the emissions trade. The notice shall also refer to the provisions with which the source will comply in the PR- SIP and that provide for the emissions trade.

(ii) The permit shield described in paragraph (d) of Rule 603 shall not extend to any change made under section (a)(2) of Rule 607. Compliance with the permit requirements that the source will meet using the emissions trade shall be determined according to requirements of the applicable implementation plan authorizing the emissions trade.

(3) If a permit applicant requests it, the Board shall issue permits that contain terms and conditions (including all terms required under sections (a) and (c) of Rule 603 to determine compliance) allowing for the trading of emissions increases and decreases in the permitted facility solely for the purpose of complying with a federally-enforceable emissions cap. Such a cap must be established in the permit independent of otherwise applicable requirements. The permit applicant shall include in its application proposed replicable procedures and permit terms that ensure the emissions trades are quantifiable and enforceable. The Board shall not be required to include in the emissions trading provisions any emissions units for which emissions are not quantifiable or for which there are no replicable procedures to enforce the emissions trades. The permit shall also require compliance with all applicable requirements.

(i) Under section (a)(3) of Rule 607, the written notification required shall state when the change will occur and shall describe the changes in emissions that will result and how these increases and decreases in emissions will comply with the terms and conditions of the permit.

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- (ii) The permit shield described in paragraph (d) of Rule 603 may extend to terms and conditions that allow such increases and decreases in emissions.
  - (b) Off-Permit Changes. The Board may allow changes that are not addressed or prohibited by the permit and/or State Law.
    - (1) A permitted facility may make changes without obtaining a permit revision if such changes are not addressed or prohibited by the permit, other than those described in paragraph (c) of Rule 607.
      - (i) Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition.
      - (ii) Sources must provide contemporaneous written notice to the Board and EPA of each such change, except for changes that qualify as insignificant under paragraph (c)(1) of Rule 602. Such written notice shall describe each such change, including the date, any change in emissions, pollutants emitted and any applicable requirement that would apply because of the change.
      - (iii) The change shall not qualify for the shield under paragraph (d) of Rule 603.
      - (iv) The permittee shall keep a record describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.
  - (c) A permitted facility cannot make changes without a permit revision if such changes are modifications under any provision of Title I of the Act.
- 43. (a) The permittee may make changes under section 502(b)(10) of the Act without requiring a permit revision if such changes:
  - (1) are not modifications under any provision of Title I of the Act,
  - (2) do not exceed the allowable emissions under the permit,
  - (3) do not result in the emission of any pollutant not previously emitted,

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- (4) do not violate any applicable requirement or contravene federally enforceable terms and permit conditions such as monitoring (including test methods), recordkeeping, reporting and compliance certification requirements,
- (5) are not changes under Title I of the Act to an emission limit, a work practice or a voluntary emission cap.
- (b) Rule 203 of the RCAP is required for any construction or modification of an emission source. For purposes of part II of the RCAP, a modification is defined as any physical change in, change in the method of operation or a change in type of fuel used of an existing stationary source, that would result in a net increase in that stationary source's potential to emit any air pollutant (subject to any standard), or which results in the emission of any pollutant (subject to an standard) not previously emitted. A physical change shall not include routine maintenance, repair and the replacement of any equipment having the same capacity, equal efficiency or greater environmental benefit to be used for the same purpose.
- (c) The written notification addressed in condition 42(a)(1)(i) refers to changes covered under condition 42 (a)(1). Changes not covered will be processed under the requirements of Rule 203 of the RCAP.
- (d) Any emission trading as provided in condition 42(a)(2) above will not be authorized if the facility does not provide the reference to the PR-SIP provisions authorizing such emissions trading.
- (e) If the permittee requests so, the Board may allow the emission trading in the facility solely for the purpose of complying with a federally-enforceable emissions cap. The application shall be based in replicable procedures and shall include permit terms that ensure the emission trades are quantifiable, replicable and enforceable.
- (f) Off-permit changes will not be exempt from complying with the requirements and procedures of Rule 203 of the RCAP, if applicable.



**SECTION IV - ALLOWABLE EMISSIONS**

A. The emissions described on the following table represent the facility allowable emissions of the facility and will be used only for payment purposes.

<b>Pollutants</b>	<b>Allowable Emissions (tons/year)</b>
PM <sub>10</sub>	44.27
SO <sub>2</sub>	19.39
NO <sub>x</sub>	43.71
CO	101.63
NMOC	185.73
VOC (combustion)	35.31
HAP's	4.96
CO <sub>2e</sub>	143,352.24

B. According to EQB Resolution RI-06-02<sup>3</sup>, emission calculations shall be based on the actual emissions of **VMTB**; although calculations based on the allowable emissions will be accepted. If **VMTB** decides to perform calculations based on allowable emissions, **VMTB** shall pay the same charge per ton that as the facilities that decide to do the calculation based on actual emissions.

C. According to Rule 610(a) of the RCAP, when **VMTB** 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-04-04-1<sup>4</sup>, to determine the modification and renewal charges, **VMTB** shall calculate allowable emissions with factors k, Lo, and C<sub>NMOC</sub> established under section 60.754(a)(1)(i) of 40 CFR or specific k and C<sub>NMOC</sub> values as determined by sections 60.754(a)(3)(i) or 60.754(a)(4) of 40 CFR.

<sup>3</sup>EQB Resolution - Payment Procedure for Title V operating charges and Title V permit renewal charges, issued on March 20, 2006.

<sup>4</sup>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.

- E. According to EQB Resolution R-12-17-5<sup>5</sup>, those sources that must include or estimate GHGs emission are exempt from payment for Greenhouse Gases (expressed as CO<sub>2</sub>e) 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.

## SECTION V - SPECIFIC PERMIT CONDITIONS

### SECTION V (A) - OPERATING CONDITIONS

1. The maximum design capacity of the **Municipality of Toa Baja Landfill**, will not exceed **8,115,550 megagrams**. [PFE-70-0113-0010-I-II-III-C]
2. This permit is granted under the specifications established in the **Collection and Control System Design Plan** as approved by the Environmental Protection Agency (EPA). If there are discrepancies between the Design Plan and construction permit, the descriptions and conditions of this permit shall prevail. Any change in the footprint, initial capacity, control equipment that are not included in the approved Design Plan shall be submitted to the Board for evaluation and a review or modification of the construction permit shall be required as applicable. [PFE-70-0113-0010-I-II-III-C]
3. The permittee 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. [RCAP Rule 404 (B)]
  - a. The permittee shall perform daily visual observations during the operation of the Sanitary Landfill System (SLS) to determine compliance with the visible emission limits listed in this permit condition.
  - b. The permittee shall maintain a record of the results of the daily visible emissions observations.
  - c. This log shall be kept accessible at all times at the facility for review by the technical staff of the EQB and EPA.
4. The **VMTB** shall apply asphalt, water, or suitable chemicals and the use of vegetation on dirt roads or roads under construction, materials, stockpiles and other surfaces which can give rise to airborne dust. [RCAP Rule 404(A)(2)]
  - a. The permittee must use dust suppression measures, as necessary, to comply with the limits specified under this permit condition.

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

- b. The permittee shall maintain appropriate and functional equipment for dust suppression in the SLS at all times.
  - c. The permittee 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.
5. The permittee shall retain all required logs and support information for a period of 5 years from the date of the record. [PFE-70-0113-0010-I-II-III-C]
6. Compliance with Rule 402 (Open Burning) of the RCAP for EU-1:
- a. According to Rule 402(D) of the RCAP, **VMTB** will not allow open burning of refuse, tires or other solid waste disposed in EU-1. In order to comply, **VMTB** must prepare and obtain immediate approval of the following operating procedures within 90 days of the effective date of this permit:
    - i. A fire abatement plan to control any open burning in the property or by the sanitary landfill boundaries.
    - ii. The fire abatement plan must have the concurrence of the State and Municipal Fire Department.

**SECTION V (B) - CONDITIONS ACCORDING TO 40 CFR PART 60, SUBPART WWW, STANDARDS OF PERFORMANCE FOR MUNICIPAL SOLID WASTE LANDFILLS.**

- 1. The permittee shall comply with all applicable requirements of the Standards of Performance for Municipal Waste Landfill contained in 40 CFR Part 60, Subpart WWW for unit EU-1.
- 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.
- 3. The permittee shall submit a collection and control system design plan prepared by a professional engineer to the EPA with copy to the Environmental Quality Board (EQB), within a year of having calculated the emission rate of Non Methane Organic Compounds (NMOC) in 50 megagrams per year or more according to section 60.754 of 40 CFR. [40 CFR §60.752(b)(2)(i)]
  - a. The collection and control system design plan shall include any alternatives to operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 of 40 CFR. [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 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 samples demonstrate 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. The permittee shall route all the collected gas to a control system that compliance with the requirements of paragraph (b)(2)(iii)(B) of section 60.752 of 40 CFR.
- a. CD-1, CD-2 and CD-3: The collected gas will be routed towards two enclosed flares (CD-1 and CD-2) and two internal combustion engines CD-3 (EU-4 and EU-5). The enclosed combustion chambers (flares CD-1 and CD-2 and engines CD -3/ EU-4 and EU-5) shall be designed and operated to reduce NMOC by 98% by 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)]
- b. The **VMTB** shall ensure that all the gas captured by the gas collection system is routed and burned in the control system (CD-1, CD -2 and CD-3). The permittee must ensure that the coordinated operation of the equipment CD-1, CD-2 and CD-3 (EU-4 and EU-5) burns all the gas captured without exceeding the limits of hours of operation for combustion internal engines EU-4 and EU-5.
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 reach the following conditions [40 CFR §60.752(b)(2)(v)]:
- a. The landfill shall be closed as defined in section 60.751 of 40 CFR. A closure report shall be submitted to the EPA with 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 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 letter is submitted to the Board [PFE-70-0113-0010-I-II-III-C].
- 8. The permittee shall operate the collection system so that the gas is collected in each area, cell or group of cells in the landfill for 5 years or more if active, or 2 years or more if closed or at final stage. [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 fires. These records shall be submitted with the annual report as provided in section 60.757(f)(1);
  - b. Use of a geo-membrane 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 flow. 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 level less 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 reducing 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) of 40 CFR.
  - b. According to section 60.753(c) of the 40 CFR, unless an alternative test method is established as allowed by section 60.752(b)(2)(i) of 40 CFR, oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:
    - i. The span shall be set so that the regulatory limit is between 20 and 50% of the span;
    - ii. A data recorder is not required;
    - iii. Only two calibration gases are required, a zero and span, and ambient air may be used as the span;
    - iv. A calibration error check is not required;
    - v. The allowable sample bias, zero drift, and calibration drift are ±10%.

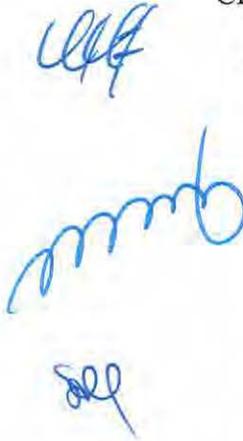
11. The permittee shall operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [40 CFR §60.753 (d)]
12. The permittee shall operate the system such that all collected gases are vented to a **control system** designed and operated in compliance with section 60.752(b)(2)(iii) of 40 CFR. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour. [40 CFR §60.753(e)]
13. The permittee shall operate the control or treatment system at all times when the collected gas is routed to the system. [40 CFR §60.753 (f)]
14. Under section 60.753(g) of 40 CFR, if monitoring demonstrates that the operational requirements in sections 60.753(b), (c), or (d) are not met, corrective action shall be taken<sup>6</sup> 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 SLS 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. **Comparison of the Levels of Prevention of Significant Deterioration (PSD):** The owner or operator of each SLS shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels established in §§ 51.166 or 52.21 of 40 CFR using the

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<sup>6</sup> The monitoring results showing that the operational requirements were not met, shall be documented before taking the corrective action. The corrective action shall be documented as well.

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 the EPA as provided by §60.752(b)(2)(i)(B) of 40 CFR. Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases 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 Method 18 of Appendix A, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). Equation in section 60.754(d) of 40 CFR shall be used to calculate efficiency.
20. According to section 60.755 (a)(1) through (a)(6) of 40 CFR, the specified methods in this section shall be used to determine whether the gas collection system is in compliance with section 60.752(b)(2)(ii) of 40 CFR, except as provided in section 60.752(b)(2)(i)(B) of 40 CFR.

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- 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) or 60.755(a)(1)(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 60.755(a)(1)(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 whether the gas collection system flow rate is sufficient to determine 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 and the Board, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.
- c. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with section 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well. 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) of 40 CFR. If negative pressure cannot be achieved without excess air infiltration 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 measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards.
- 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.
- 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 section 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.
- 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 of 40 CFR shall provide information satisfactory to the EPA with 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.
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) of 40 CFR. 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.
22. In accordance with section 60.755(c) of 40 CFR, the owner or operator shall use the following procedures for compliance with the surface methane operational standard.

- a. After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 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 wells.
- 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 or more above background at any location shall be recorded as a monitored exceedance and the actions specified below, shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of section 60.755(c)(i) through (v) of 40 CFR.
  - i. The location of each monitored exceedance shall be marked and the location recorded.
  - ii. Cover maintenance or adjustments 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 less than 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 with copy to the Board for approval and the place shall not be monitored until the action is taken.

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- v. The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.
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 methane emission monitoring devices, as established under 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 of 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 40 CFR Part 60, Subpart WWW apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction<sup>7</sup> shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.
25. **Monitoring Active Gas Collection 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) of 40 CFR 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 § 60.755(a)(3) of 40 CFR; and
    - i. 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
    - ii. Monitor temperature of the landfill gas on a monthly basis as provided in § 60.755(a)(5) of 40 CFR.

<sup>7</sup>It refers to the current definition of malfunction as defined in 40 CFR Part 60, Subpart A.

26. **Monitoring for enclosed combustor (CD-1, CD-2 and CD-3):** In accordance with section 60.756(b) of 40 CFR, the owner or operator shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:
- a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of  $\pm 1$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 0.5$  degrees Celsius, whichever is greater.
  - b. A device that records flow to or bypass of the control device. The owner or operator shall:
    - i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
    - ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
-  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 40 CFR or seeking to monitor alternative parameters to those required by section 60.753 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.
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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 in section 60.755(d) of 40 CFR. Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitored 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 quarterly monitoring.
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29. Except as provided in section 60.752(b)(2)(i)(B) of 40 CFR, the owner or operator shall submit a NMOC emission rate report to the EPA with copy to the Board initially and annually thereafter, except as provided under 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. Subsequent NMOC emission rate reports must be submitted annually.

30. In accordance with section 60.757(b)(1) of 40 CFR, the NMOC emission rate report may contain an annual or 5-year 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. According to 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 5-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 copy to the Board. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the EPA with copy to the Board. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.
32. According to 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. According to section 60.757(b)(3) of 40 CFR, the owner or operator subject to the requirement of section 60.757 of 40 CFR, is exempted from the requirements of section 60.757(b)(1) and (2) of 40 CFR, after the installation of a collection and control system in compliance with section 60.752(b)(2), during such time as the collection and control system is in operation and in compliance with sections 60.753 and 60.755 of 40 CFR.
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 40 CFR 258.60. If a closure report has been submitted to the 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 the installation of a collection and control system in compliance with section 60.755 of the 40 CFR, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed using the equations of section 60.754 of 40 CFR.
36. The owner or operator of a controlled landfill shall submit an equipment removal report to the EPA 30 days prior to removal or cessation of operation of the control equipment CD-1, CD-2 or CD-3, according to section 60.757(e) of 40 CFR. The equipment removal report shall contain all of the following items:
- a. A copy of the closure report submitted in accordance with section 60.757(d) of 40 CFR;

- b. A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and
  - c. 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, the EPA may request such 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 the EPA with copy to the Board annual reports of the recorded information described below. 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 report required under section 60.8 of 40 CFR. For enclosed combustion devices and flares, reportable exceedances are defined under § 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 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 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 40 CFR.
39. The owner or operator seeking to comply with § 60.752(b)(2)(iii) of 40 CFR shall include the following information with the initial performance test report required under § 60.8 of 40 CFR:
- a. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices,

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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;
- 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 non-degradable 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 SLS that are required to meet the previous condition, shall inform its achievements to the Board regarding to compliance with the increments of progress within 60 days after reaching each of the increments of progress in the compliance schedule.

41. Except as provided in §60.752(b)(2)(i)(B) of 40 CFR, each owner or operator of a Municipal SLS subject to the provisions of § 60.752(b) of 40 CFR 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) of 40 CFR, 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 §60.752(b)(2)(i)(B) of 40 CFR, each 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 below 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. An owner or operator of a Municipal SLS subject to the provisions of the section 60.758 of the 40 CFR seeks to demonstrate compliance with section 60.752(b)(2)(ii) of 40 CFR shall file:

i. The maximum expected gas generation flow rate as calculated in § 60.755(a)(1) of 40 CFR. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the 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 40 CFR.
  - b. An owner or operator seeks to demonstrate compliance with section 60.752(b)(2)(iii) of 40 CFR 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 shall file:
    - 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) of 40 CFR achieved by the control device.
  - c. Except as provided in § 60.752(b)(2)(i)(B), the 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 of 40 CFR 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.
  - d. The following **constitute exceedances** that shall be recorded and reported under §60.757(f):
    - i. For enclosed combustors (CD-1, 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) of 40 CFR was determined.**
- 43. In accordance with section 60.757(c)(2) of 40 CFR, the owner or operator of a Municipal SLS 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 of a Municipal SLS 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.

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