



GOVERNMENT OF PUERTO RICO
DEPARTMENT OF NATURAL AND ENVIRONMENTAL RESOURCES

**STATEMENT OF BASIS – TITLE V PERMIT
MUNICIPALITY OF GUAYNABO LANDFILL
PFE-TV-4953-32-0621-0253**

The Department of Natural and Environmental Resources (DNER) is issuing the draft Title V permit pursuant to Title 40 of the Code of Federal Regulations (CFR), Part 70 and Part VI of the Regulations for the Control of Atmospheric Pollution (RCAP) for the **Municipality of Guaynabo Landfill (MGL)**. The facility is located on State Road PR-834, Km 0.58 in Guaynabo, Puerto Rico. The DNER received an application for Title V permit on June 17, 2021, which was amended April 13, 2022, November 22, 2023, April 22, 2024 and April 26, 2024.

The **Municipality of Guaynabo Landfill** is a closed municipal solid waste landfill that accepted municipal solid waste since 1973 and stopped receiving waste on May 5, 2008. Landfill Technologies, LLC administers the Municipal of Guaynabo Landfill.

When the landfill received the garbage, the solid waste was dumped from the hauling vehicle, spread and compacted by a compactor. The closure and the post-closure care include the landfill cover and long-term care provisions of the closed landfill. Closing a municipal sanitary landfill system, requires the landfill cover system to be made of an infiltration layer and coated by an erosion layer.

The decomposition of encapsulated waste in the municipal solid wastes landfill produces gas (greenhouse gases) such as methane (CH₄), carbon dioxide (CO₂) and other non-methane organic compound (NMOC). This landfill is not required to install or operate a gas collection and control system since the NMOC emissions do not exceed the 50 megagrams per year threshold (using the Tier 2 results, approved by the DNER on June 6, 2022, that indicated the NMOC emission ratio was 21.19 megagrams per year).

The Municipality of Guaynabo Landfill is subject to Title V permit requirements because it has a design capacity of more than 2.5 million megagrams and 2.5 million cubic meters. The landfill is subject to the applicable requirements listed in Part VII- Emission Guidelines for Municipal Sanitary Landfill Systems of the Regulations for the Control of Atmospheric Pollution (RCAP). The MGL is a minor source of emissions of criteria pollutants, hazardous air pollutants and greenhouse gases (GHGs), expressed as CO₂e.

Emission Units

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

EU-1: Municipal Sanitary Landfill System. The landfill has accepted municipal solid waste since 1973 and it closed in 2008. The total waste deposited was 2.815 million megagrams (3,096,314 tons of waste) during its active period. The NMOC emission rate is 21.19 Mg/year (23.36 tons/year) as determined through Tier 2. No gas collection and control equipment for NMOC is required because NMOC emissions are below 50 Megagrams per year.

EU-3: Clarke Fire Pump Engine. Existing emergency fire pump engine, John Deere Co., brand., model 4045TF220. The internal combustion engine has a capacity of 106 hp. It consumes diesel at a rate of 3.1 gallons per hour. It is limited to operate a maximum of 100 hours per year. It has no control equipment.

EU-4: Clarke Fire Pump Engine. Existing emergency fire pump engine, John Deere Co., brand., model 4045TF220. The internal combustion engine has a capacity of 85 hp. It consumes diesel at a rate of 2.7 gallons per hour. It is limited to operate a maximum of 100 hours per year. It has no control equipment.

EU-5: Internal combustion engine. New Non-Emergency diesel generator, Caterpillar brand, model C4.4. It includes a compression ignition internal combustion engine has a capacity of 134.1 hp. It consumes diesel at a rate of 7.14 gallons per hour. It is limited to operate a maximum of 4,000 hours per year. It has no control equipment.

EU-6: Internal combustion engine. New emergency diesel generator, Caterpillar brand, model C2.2. It includes a compression ignition internal combustion engine has a capacity of 27 hp. It consumes diesel at a rate of 1.7 gallons per hour. It is limited to operate a maximum of 500 hours per year. It has no control equipment.

EU-7: Internal combustion engine. Existing emergency diesel generator, Perkin brand, model 1306-E87TA300. It includes a compression ignition internal combustion engine has a capacity of 300 hp. It consumes diesel at a rate of 13.4 gallons per hour. It is limited to operate a maximum of 500 hours per year. It has no control equipment.

Allowable Emissions

The emissions described in the table below represent the allowable emissions at the time of the permit application and will be used only for payment purposes. According to Rule 610(a) of the RCAP, when the MGL applies for a modification, administrative change or minor modification of its Title V permit, the source will pay only those charges related to any emission increase (if any) per tonnage, based on the change and not based on the total fees paid previously according to Rule 610(a) of the RCAP.

Pollutants	Allowable Emissions (tons/year)
PM ₁₀	3.16
SO ₂	0.74
NO _x	4.42
CO	1.01
NMOC	15.95
VOC (combustion)	6.11

Pollutants	Allowable Emissions (tons/year)
HAPs	3.48
CO ₂ e	70,814.12

According to Resolution RI-06-02¹, emission calculations will be based on actual source emissions; however, calculations based on the emissions allowable for the facilities will be accepted. If the **MGL** decides to use the allowable emission for their calculations, the **MGL** will pay the same charge per ton as the facility that decides to make the calculation based on the actual emissions. Also, according to EQB Resolution R-04-04-1², to determine the modification and renovation fees, the **MGL** must calculate the emission using with factors k , L_o and C_{NMOC} determined under Rule 704(a) of the RCAP or the specific values of k , L_o and C_{NMOC} values as determined under Rule 704(c) and (d) of the RCAP. The total allowable emissions were calculated by adding the landfill emissions (based on the Tier 2 NMOC results) (since the landfill is closed, which were approved by the DNER on June 22, 2022) and the potential emissions from the internal combustion engines.

According to EQB Resolution R-12-17-5³ those sources that must include or estimate GHGs emission are exempt for payment for Greenhouse Gases (expressed as CO₂e) in conformity with the Tailoring Rule for Title V permits until the DNER issues a final determination stating the emission charges or any other charges if needed, or if Resolution R-12-17-5 is revoked, whichever comes first.

Applicable Requirements

Emissions Guidelines and Compliance Schedules for Municipal Sanitary Landfill Systems established under Part VII of the RCAP (this is the current and approved plan by EPA that implements Title 40 of the Code of Federal Regulations (40 CFR) part 60, subpart Cc.)

This emission source is subject to Part VII of the RCAP because the construction of the **MGL** started before May 30, 1991 and it has a design capacity greater than 2.5 million megagrams and 2.5 million cubic meter (m³). The facilities that are subject to this part must submit annual emissions reports and must install controls if the NMOC emissions are greater than or equal to 50 megagrams per year. The facility used the Tier 2 calculations to determine the potential NMOC emissions, and these were below 50 megagrams per year, therefore the facility did not have to install a gas collection and control system.

¹ 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.

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) – Payment exemption issued on September 7, 2012.

National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines - 40 CFR Part 63 Subpart ZZZZ

This subpart applies to any existing stationary reciprocal internal combustion engine, new or reconstructed, located in area sources or major sources of hazardous air pollutants. The MGL is a minor source of hazardous air pollutants. The engines of units EU-3 and EU-7 are considered existing since they were constructed and ordered before June 12, 2006. The engine EU-3 was authorized in the emergency engine category in the construction permit PFE-32-0703-1106-II-C. Under these regulations, the requirements for existing engines include oil and filter changes and recordkeeping.

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines - 40 CFR Part 60, Subpart IIII

This subpart applies to compression ignition stationary internal combustion engines that were ordered after July 11, 2005 and were manufactured after April 1st, 2006. This subpart applies to the engines in emission units EU-4, EU-5 and EU-6. The requirements under this regulation require compliance with the emission limits. These engines are certified to be in compliance with EPA requirements as required by Subpart IIII. Verification of compliance with emission limits is done through certification.

The following requirements do not apply to Municipality of Guaynabo Landfill:

- **Standards of Performance for Municipal Solid Waste Landfills** that commenced construction, reconstruction or modification on or after May 30, 1991 under the 40 CFR Part 60, Subpart WWW. This subpart is not applicable because the landfill is operating since 1973, and it has not been reconstructed or modified after May 30, 1991.
- **Standards of Performance for Municipal Solid Waste Landfills** that commenced construction, reconstruction, or modification after July 17, 2014 under the 40 CFR Part 60, Subpart XXX. This subpart is not applicable because the landfill is operating since 1973, and it has not been reconstructed or modified after July 17, 2014.
- **National Emission Standards for Hazardous Air Pollutants (NESHAP):** Municipal Solid Waste Landfills - 40 CFR Part 63, Subpart AAAA apply to area sources that are subject to Part VII of the RCAP (they have a design capacity equal or greater than 2.5 million megagrams and greater than 2.5 million m³ and non-controlled NMOC estimated emissions of 50 megagrams per year or more). This Subpart does not apply to the landfill because the estimated NMOC emissions do not exceed 50 megagrams per year.
- **Standards of Performance for Stationary Compression Ignition Internal Combustion Engines - 40 CFR Part 60, Subpart IIII** applies to stationary compression ignition internal combustion engines that were ordered after July 11, 2005 and manufactured after April 1st, 2006. This subpart does not apply to the engine of units EU-3 and EU-7 because they were ordered before July 11, 2005.

- **Standards of Performance for Stationary Spark Ignition Internal Combustion Engines** - 40 CFR Part 60, Subpart JJJ apply to stationary spark ignition internal combustion engines. This subpart does not apply to the engines of emission units EU-3, EU-4, EU-5, EU-6 and EU-7 because these are compression ignition engines and not spark ignition engines.
- **Particulate matter emission limit** established in Rule 406 of the Regulations for the Control of Atmospheric Pollution. This Rule does not apply to units EU-3, EU-4, EU-5, EU-6 and EU-7 since these unit do not meet the definition of Fuel Burning Equipment of Rule 102 of the RCAP.

It is required that MGL submits semi-annual Reports and Annual Compliance Certifications. Unless specifically established, all the terms and conditions of the Title V permit, including provisions designed to limit the potential emission of the source, are enforceable by the EPA and by citizens under the US Clean Air Act. Terms and conditions, designated as enforceable only by the state, as indicated in the permit, are enforceable only by the DNER.

The DNER has determined that this Draft permit renewal meets all the requirements of Part VI of the RCAP.

