

STATEMENT OF BASIS for CUMBERLAND COUNTY GAS TO ENERGY PLANT

TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 75697 / Permit Activity Number: BOP210003

I. FACILITY INFORMATION

Cumberland County Gas to Energy Plant is located at 169 Jesse Bridge Road, Deerfield Twp., Cumberland County, NJ 08332-3823 and consists of a landfill gas to energy plant to produce electricity. The facility is owned by EPP Renewable Energy, LLC (EPP). and is operated by Cumberland County Gas to Energy Plant.

The facility is classified as a major facility based on its potential to emit 33.94 tons per year of NO_x, 245 tons per year of CO, and 35.73 tons per year of VOC to the atmosphere.

It is also classified as a major hazardous air pollutant (HAP) facility. A HAP emitting facility is designated as major when the allowed emissions exceed 10 tons per year of any individual hazardous air pollutant or 25 tons per year of any combination of individual hazardous air pollutants that may be emitted simultaneously.

This permit allows individual hazardous air pollutants to be emitted at a rate not to exceed: 1024 pounds per year of Acrolein, 12580 pounds per year of Hydrogen Chloride and 41200 pounds per year of Formaldehyde.

II. AREA ATTAINMENT CLASSIFICATION

The Federal Clean Air Act (CAA) sets National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are particulate matter, ground-level ozone, carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), and lead. The US Environmental Protection Agency (USEPA) also classifies areas as "attainment" or "nonattainment" for each criteria pollutant, based on the magnitude of an area's problem. Nonattainment classifications are used to specify what air pollution reduction measures an area must adopt, and when the area must reach attainment. Currently, the entire State of New Jersey is designated as nonattainment for the 8-hour ozone NAAQS. New Jersey is designated attainment for all other pollutants. For nonattainment classification refer to <https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information>.

III. BACKGROUND AND HISTORY

The equipment that emits air contaminants from this facility include: one 64 MMBtu/hr, 2000 cfm enclosed flare, one 500 cfm candlestick flare, and three 16.54 MMBtu/hr, 2230 HP each, G3520C caterpillar engines.

A Facility-Wide Risk Assessment will be conducted during the next Operating Permit Renewal process. Health Risk Assessment was not conducted with this permit modification, since no changes were made to Air Toxics (including HAPs) emissions.

This is a Permit Modification and includes the following changes:

1. Pursuant to BOP190001 U1 OS Summary Ref # 2 and 3, EPP performed compliance stack testing on the Landfill Gas Fired CAT3520C Engines (E1-E3) and the Leachate Evaporator (E6). The TSP stack test results for one engine and the combined operation of the engines and evaporator exceeded the existing permit limits for the following operating scenarios (within U1):

- U1 OS1 (Engine 1) - TSP Average Emission Rate of 0.277 lb/hr (vs. 0.21 lb/hr limit)
- U1 OS4 (Evaporator/Engines) - TSP Average Emission Rate of 0.955 lb/hr (vs. 0.64 lb/hr limit)

As a result of this testing, this modification proposed an increase in the TSP permit limits to reflect the latest stack test results. In addition to the revised TSP limits, this application proposed the PM₁₀ and PM_{2.5} limits from the combined operation of the engines and evaporator in accordance with BOP190001 U1 OS Summary, Ref # 14 and 15 and U1 OS4, Ref #10 and 11.

2. Pursuant to N.J.A.C. 7:27-22.30(I), HAP emissions from a source operation that equal or exceed the reporting threshold specified in N.J.A.C. 7:27-17.9(a) must be included in the facility's operating permit. This significant modification includes the applicable HAPs which were added to the permit as per the minor

STATEMENT OF BASIS for CUMBERLAND COUNTY GAS TO ENERGY PLANT

TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 75697 / Permit Activity Number: BOP210003

modification application BOP210002.

3. Added emission Point PT12 and PT13, Bypass Stack for LFG Engines 2 and 3 in the Emission Points Inventory.

This modification will also change the facility-wide emission limits as listed in the following table:

Allowable Emission Limits	Facility's Potential Emissions (tons per year)*									
	VOC (total)	NO _x	CO	SO ₂	TSP (total)	PM ₁₀ (total)	PM _{2.5} (total)	Pb	HAPs (total)	CO _{2e} (total)
Current Permit	35.73	37.14	245	37	9.12	12.62	12.62	NA	28.33	30,857
Proposed Permit	35.73	37.14	245	37	14.29	28.72	28.72	NA	28.33	30,857
Change (+ / -)	0	0	0	0	5.17	16.1	16.1	NA	0	0

VOC Volatile Organic Compounds

NO_x Nitrogen Oxides

CO Carbon Monoxide

SO₂ Sulfur Dioxide

TSP Total Suspended Particulates

* Other Any other air contaminant regulated under the Federal Clean Air Act. There is no change to the ammonia emissions.

PM₁₀ Particulates under 10 microns

PM_{2.5} Particulates under 2.5 microns

Pb Lead

HAPs Hazardous Air Pollutants

CO_{2e} Carbon Dioxide equivalent

IV. CASE-BY-CASE DETERMINATIONS

No case-by-case determinations were required for this modification.

V. EMISSION OFFSET REQUIREMENTS

This modification is not subject to Emission Offset requirements.

VI. BASIS FOR MONITORING AND RECORDKEEPING REQUIREMENTS

The facility's operating permit includes monitoring, recordkeeping and reporting requirements that are sufficient to demonstrate the facility's continued compliance with the applicable requirements consistent with the following:

- Provisions to implement the testing and monitoring requirements of N.J.A.C. 7:27-22.18, the recordkeeping and reporting requirements of N.J.A.C. 7:27-22.19, and all emissions monitoring and analysis procedures or compliance assurance methods required under the applicable requirements, including any procedures and methods promulgated pursuant to 40 CFR 64; and
- Where the applicable requirement does not require direct periodic monitoring of emissions, the Department requires periodic monitoring of surrogate parameters sufficient to yield reliable data from the relevant time period that are representative of the facility's compliance with the permit.

For stationary reciprocating engine U1, the facility monitors the fuel use as the surrogate for the long-term (TPY) emission limits for VOC, NO_x, CO, TSP, PM-10, PM-2.5, HAPs (Total), and formaldehyde. Surrogate monitoring for the short-term (lb/hr) emission limits are combustion process adjustment for NO_x and CO, and sulfur content for SO₂.

- In some cases, direct periodic monitoring of emissions and/or surrogate parameters is not required due to one or more of the following:
 - Equipment size and capacity limitations,
 - Subject equipment being permitted at the maximum rated capacity,
 - There is no specific state or Federal standard that applies to this piece of equipment,

STATEMENT OF BASIS for CUMBERLAND COUNTY GAS TO ENERGY PLANT

TITLE V OPERATING PERMIT SIGNIFICANT MODIFICATION

Program Interest (PI): 75697 / Permit Activity Number: BOP210003

- Not a pollutant of concern for this piece of equipment,
- Agreements with EPA on the frequency of testing and monitoring for combustion sources.

VII. APPLICABLE STATE AND FEDERAL RULES

This modification is subject to New Jersey Air Pollution Control Regulations, codified in N.J.A.C. 7:27-1 through 34, as applicable. A complete text of these regulations is available at:

<http://www.nj.gov/dep/aqm/rules27.html>

This modification is also subject to Federal regulations listed below.

NSPS Subpart A (40 CFR 60)	General Provisions
NSPS Subpart WWW (40 CFR 60)	Standards of Performance for Municipal Solid Waste Landfills
NSPS Subpart JJJJ (40 CFR 60)	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
MACT Subpart A (40 CFR 63)	General Provisions
MACT Subpart AAAA (40 CFR 63)	National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills
MACT Subpart ZZZZ (40 CFR 63)	National Emissions Standards for Hazardous Air Pollutants: Stationary Reciprocating Internal Combustion Engines

The Greenhouse Gas (GHG) emissions from this facility are 30,857 TPY CO₂e and there is no GHG emissions increase. The facility is not subject to PSD regulations codified at 40 CFR 52.21.

VIII. FACILITY'S COMPLIANCE STATUS

The Responsible Official at the facility has certified that the facility currently meets all applicable requirements of the Federal Clean Air Act and the New Jersey Air Pollution Control Act. Based on this certification, the Department's evaluation of the information included in the facility's application, and a review of the facility's compliance status, the Department has concluded that this air pollution control operating permit should be approved.

This operating permit includes a permit shield, pursuant to the provisions of N.J.A.C. 7:27-22.17. A permit shield provides that compliance with the relevant conditions of the operating permit shall be deemed compliance with the specific applicable requirements that are in effect on the date of issuance of the draft operating permit, and which form the basis for the conditions in the operating permit.

Prior to the expiration of the Operating Permit's five-year term, the facility will be required to apply for a renewal, at which time the Department will evaluate the facility and issue a public notice with its findings.

IX. EXEMPT ACTIVITIES

The facility's operating permit does not include exempt activities such as office and interior maintenance activities, maintenance shop activities, food preparation facilities, cafeterias and dining rooms, etc. A complete list of exempt activities, as allowed by the Operating Permit rule, can be found at N.J.A.C. 7:27-22.1.

FACILITY NAME (FACILITY ID NUMBER)
BOP050001

Activity Number assigned
by the Department

New Jersey Department of Environmental Protection Facility Specific Requirements

Emission Unit Number
assigned by the Facility

Brief description of
emission unit

Emission Unit: U40 Sewage Sludge Incinerators
Operating Scenario: OS Summary

OR

OS2 Fluidized Bed Incinerator

OS Summary lists all rules and requirements that apply to an emission unit. An emission unit may contain one or more pieces of equipment and corresponding operating scenarios.

OSX denotes the operating scenario number and lists the rules and requirements that apply to a scenario. An operating scenario represents various ways (or scenarios) a piece of equipment is permitted to operate.

Item
Number

Description of applicable
requirement

Monitoring method to
ensure compliance

Recordkeeping to show
facility's compliance

Actions and submittals
required for the facility

Ref.#	Applicable Requirement	Monitoring Requirement	Recordkeeping Requirement	Submittal/Action Requirement
3	The permittee shall conduct an annual performance test for each pollutant in Table 2 of 40CFR62 Subpart LLL between 11 and 13 calendar months after the previous performance test or within 60 days of a process change. [40 CFR 62.16000(a)]	Other: Conduct the performance test using the test methods, averaging methods and minimum sampling volumes or durations as specified in 40CFR62 Subpart LLL and according to the testing, monitoring and calibration requirements specified in 40 CFR 62.16015(a). [40 CFR 62.16000(a)].	Other: (1) Maintain records of the results of initial, annual and any subsequent performance tests conducted to determine compliance with the emission limits and standards and/or to establish operating limits, as applicable. [40 CFR 62.16025(e)].	Submit a report: Annually to the Administrator and to the Department. The permittee shall submit an annual compliance report as specified in 40 CFR 62. [40 CFR 62.16000(d)]

Rule citation for
applicable requirement

Rule citation for
monitoring requirement

Rule citation for
recordkeeping requirement

Rule citation for submittal/
action requirement

Explanation Sheet for Facility Specific Requirements