

STATEMENT OF BASIS for BERGEN COUNTY UTILITIES AUTHORITY WTP

TITLE V OPERATING PERMIT RENEWAL AND PERMIT MODIFICATION

Program Interest (PI): 02620 / Permit Activity Number: BOP190001

I. FACILITY INFORMATION

Bergen County Utilities Authority WTP is located at Mehrhof Road, Little Ferry, Bergen County, NJ 07643 and consists of sewage treatment facilities and cogeneration plant. The facility is owned by Bergen County Utilities Authority and is operated by Bergen County Utilities Authority, Water Treatment Plant.

The facility is classified as a major facility based on its potential to emit 62.09 tons per year of Volatile Organic Compounds, 61.07 tons per year of Nitrogen Oxides, and 74.66 tons per year of Carbon Monoxide.

This permit allows individual hazardous air pollutant to be emitted at a rate to not exceed: 560 pounds per year of acrolein and 8700 pounds per year of formaldehyde.

VOC emissions are being corrected to include formaldehyde emissions previously not accounted for. This emission increase is meant to capture emissions already present, and no new actual emissions are being generated. As a result, the Department is not revisiting the applicability of State of The Art (N.J.A.C. 7:27-22.35) and Federal New Source Review (40 CFR 52.21-PSD and N.J.A.C. 7:27-18).

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: The facility's current operating permit was approved on 6/1/2020. Please refer to the attached explanation sheet for the structure and configuration of conditions of approval, included in the Facility Specific Requirements section of this permit. This modification would allow the following changes to the facility's approved operating permit:

1. Emission Unit U13 revised to replace current flares (CD1306 and CD1307) with new flares (CD1308 and CD1309). The flares will be installed at a different location with new Emission Points (PT1308 and PT1309). All digester gas generated from the digesters, that will not be used in boilers E601, E602 and E603 and the Cogen unit (E4301, E4302 and E5404) will flow to the new flares.
2. Removed storage tanks E1306 and E1307 from the permit. They were never built.
3. Allowed Flares CD1306 and CD1307 and their emission points PT1306 and PT1307 respectively to remain in operation until the new flares CD1308 and CD 1309 their emission points PT1308 and PT1309, respectively, commence operation.
4. Emission Unit U13, Operating Scenarios OS1 through OS10 are revised for emissions flowing through flares CD1308 and CD1309 and Emission Points PT1308 and PT1308. Operating Scenarios OS11 through OS14 are removed.
5. Revised the following parameters in Compliance Plan for Emission Unit U13: Fuel Usage, Maximum Gross Input, VOC (Total), NO_x, CO, SO₂ and Methane,
6. Removed Reference Nos. 15, 16, 17, 26 and 27 from Emission Unit U13, OS Summary, because TSP, PM-10 and H₂S emissions are now below applicable reporting thresholds.
7. Removed IS2, Paint Spray Booth.
8. Added IS12 and IS13 - Final Settling Tank Polymer Feed System. These are listed in the IS Section.

Health Risk Assessment was conducted as part of the review of this permit application and health risk was determined to be negligible to the Department consistent with NJDEP Technical Manual 1003.

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This Permit Renewal with Significant Modification will also change the allowable 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	50.39	57.97	27.94	22.50	14.10	14.10	8.54	NA	4.69	59243
Proposed Permit	62.09	61.07	74.66	24.46	13.43	13.43	8.54	NA	4.71	64037
Change (+ / -)	+11.70	+3.10	+46.72	+1.56	-0.67	-0.67	0.00	NA	+0.02	+4794

VOC Volatile Organic Compounds
 NO_x Nitrogen Oxides
 CO Carbon Monoxide
 SO₂ Sulfur Dioxide
 TSP Total Suspended Particulates

PM₁₀ Particulates under 10 microns
 PM_{2.5} Particulates under 2.5 microns
 Pb Lead
 HAPs Hazardous Air Pollutants
 CO_{2e} Carbon Dioxide equivalent

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

IV. CASE-BY-CASE DETERMINATIONS

No case-by-case determinations were required for this permit action.

V. EMISSION OFFSET REQUIREMENTS

This permit action 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:

1. 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
2. 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. In this case, monitoring of fuel consumption is required for three large boilers, three small boilers and three engines for purposes of monitoring compliance with the emission limits.
3. 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,
 - 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

The facility 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:

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

NSPS Subpart A: General Provisions
NSPS Subpart JJJJ: Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (Engine #3, NJID E4303)
MACT Subpart A: General Provisions
MACT Subpart JJJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (NJID E601, E602, and E4601)

The Greenhouse Gas (GHG) emissions from this facility are 64,037 TPY CO₂e and the GHG emissions increases are 4,794 TPY CO₂e. The facility is not subject to PSD regulations for Greenhouse Gas (GHG) 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.

The facility has submitted a timely and complete application to renew their operating permit and an application shield is in effect.

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.

Also, prior to the expiration of the five-year period, the facility will be required to apply for a renewal of this operating permit, 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.

New Jersey Department of Environmental Protection

Operating Permit Revision History
 BERGEN COUNTY UTIL AUTH WTP PI 02620

Permit Activity Number	Type of Revision	Description of Revision	Final Action Date
BOP180001	Minor Modification	<p>(1) Permit modification provided the stack test extension to conduct stack testing per U43/OS Summary, reference 1 and 2, for Engines 1, 2, and 3 (OS1 through OS9) to be completed by June 1, 2019.</p> <p>(2) Engine 3 (E4203) has a different maximum capacity for natural gas combustion (U43 OS7) which is 1,721 brake horsepower (bhp). U43/OS8 and OS9 will remain at 1,966 bhp. The revised OS7 will not affect U43 total emissions nor GR1 Emissions, because of the marked decrease in emissions in pounds per hour. The specification also states that for natural gas combustion the maximum power output is 1,237 kilowatts. Also, maximum heat input based maximum gas use rate of 12,364 cubic feet per hour multiplied by a heat capacity of 1,020 BTU per cubic foot is 12.61 million of BTU per hour.</p> <p>- U43 OS Summary Reference No. 25 indicated that 1966 HP is for engine 1 and 2, each burning natural gas in Applicable Requirement. Added Reference 26 in OS Summary indicated "Maximum Horsepower for Engine 3 burning Digester Gas or Mixed Gas <= 1,966 horsepower" in Applicable Requirement. Added Reference 27 in OS Summary indicated "Maximum Horsepower for Engine 3 burning Natural Gas <= 1,721 horsepower" in Applicable Requirement.</p> <p>(3) Revised the short term limits in the compliance plan for U43 OS7 for engine 3 combusting natural gas, based on the reduced HP at OS Summary Reference 27: Reference Nos 1 and 2: For CO, changed from 1.55 lb/hr to 1.35 lb/hr. Reference Nos. 3 and 4.: For NOx, changed from 2.6 lb/hr to 2.3 lb/hr. Reference No. 5: For PM-10, changed from 0.65 lb/hr to 0.57 lb/hr. Reference No. 6: For TSP changed from 0.65 lb/hr to 0.57 lb/hr. Reference No. 7: For VOC, changed from 0.65 lb/hr to 0.56 lb/hr Reference No. 8: For PM-2.5, changed from 0.65 lb/hr to 0.56 lb/hr.</p> <p>(4) Emission Unit U43/OS Summary/Reference 2: Removed CO & NMHC Destruction and Removal Efficiency (DRE) from the stack testing requirement due to the lack of an acceptable inlet test location.</p>	5/21/19

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