

# STATEMENT OF BASIS for SOMERSET RARITAN VALLEY SEWERAGE AUTHORITY

## TITLE V OPERATING PERMIT RENEWAL

Program Interest (PI): 35857 / Permit Activity Number: BOP180002

### I. FACILITY INFORMATION

Somerset Raritan Valley Sewerage Authority is located at 50 Polhemus Lane, Bridgewater, Somerset County, NJ 08807 and consists of wastewater treatment and disposal facility. The facility is owned and operated by Somerset Raritan Valley Sewerage Authority.

The facility obtained a Title V Operating Permit as required per 40 CFR Part 62 Subpart LLL Federal Plan requirements for existing sewage sludge incineration units. The facility does not exceed the major facility threshold based on its potential to emit criteria pollutants.

This permit allows individual hazardous air pollutant to be emitted at a rate to not exceed: 1.83 pounds per year of arsenic, 0.183 pounds per year of beryllium, 0.315 pounds per year of cadmium, 5.28 pounds per year of chromium, 0.528 pounds per year of hexavalent chromium, 9.32 pounds per year of nickel, 7.28 pounds per year of mercury, 152 pounds per year of hydrogen chloride, 0.000236 pounds per year of dioxins/furans(total), 0.421 pounds per year of benzo(a)pyrene, 166 pounds per year of benzene, and 1.46 pounds per year of lead.

### 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 (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), 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 includes: a fluidized bed sewage sludge incineration unit controlled with venturi scrubber, wet electrostatic precipitator, and granular activated carbon adsorber to control mercury emissions. The facility has two belt filter presses that vent to the incinerator control devices; a septage receiving tank and a sludge blend tank that vents to a carbon adsorber; and a hot water heater boiler.

Table 1 - Operating Permit Revision History (located at the end of this document) provides a summary of all the changes that have been incorporated into the operating permit through seven-day notice changes, administrative amendments, minor modifications, or significant modifications since the approval of the initial operating permit or the most recent renewal thereof. 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.

A Facility-Wide Risk Assessment was previously conducted on July 30, 2018, and health risk was determined to be negligible consistent with NJDEP Technical Manual 1003. A revised Facility-Wide Risk Assessment was not conducted with this permit application since no changes were made to Air Toxics (including HAPs) emissions or risk parameters since the last risk assessment.

This is an operating permit renewal with permit modification and includes the following changes:

1. CD7 MECS Adsorber – Inserted requirement to conduct periodic emissions monitoring or annual inspection to determine breakthrough consistent with the Site-Specific Monitoring Plan.
2. CD7 Adsorber - Updated the minimum outlet temperature to 135 deg F based on Amended Petition for Alternate Site-Specific Operating Parameter and updated manufacturer recommendation.

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3. E1 R1 Incinerator #1, E3 Reheat Chamber and emission point PT1 were removed from inventory. The facility has no plans to restart E1 R1 Incinerator.

There are no proposed changes to air contaminants.

#### IV. 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.

For boiler U140, the facility monitors fuel use as the surrogate for the long-term (TPY) emission limits for NO<sub>x</sub> and CO.

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.

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

The facility is also subject to Federal regulations listed below.

NSPS Subpart A:	General Provisions
NSPS Subpart O:	Standards of Performance for Sewage Treatment Plants
NESHAP Subpart A:	General Provisions
NESHAP Subpart C:	National Emission Standard for Beryllium
NESHAP Subpart E:	National Emission Standard for Mercury
Part 62 Subpart LLL:	Federal Plan Requirements for Existing Sewage Sludge Incineration Units
Part 503 Subpart E:	Standards for the Use or Disposal of Sewage Sludge by Incineration

The Greenhouse Gas (GHG) emissions from this facility are 30,009 TPY CO<sub>2</sub>e and the GHG emissions increase is less than 75,000 TPY CO<sub>2</sub>e. This renewal is not subject to PSD rules at 40 CFR 52.21

#### VI. 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

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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 also 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.

### **VII. 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.

Table 1 - Operating Permit Revision History  
New Jersey Department of Environmental Protection  
Operating Permit Revision History

SOMERSET RARITAN VALLEY SEWERAGE AUTHORITY      PI 35857

Permit Activity Number	Type of Revision	Description of Revision	Final Action Date
BOP220001	Minor Modification	<p>This permit modification incorporates permit activities BOP200001 and OPL updates from BOP230001. The modifications include the following changes:</p> <p>1. U1 R2 Fluidized Bed Incinerator #2 operating scenario OS2, and control devices CD2, CD3 - Operating parameter limits were established based on the lowest 4-hour average data measured in Subpart LLL performance tests conducted during November 14-16, 2019 (TST190001), October 11-13, 2022 (TST220001):</p> <ul style="list-style-type: none"> <li>- U2 OS2 Ref. # 3 Minimum Combustion Chamber Operating Temperature was established at <math>\geq 1546</math> deg F.</li> <li>- CD2 Scrubber medium flowrate reestablished from 345 to <math>\geq 492</math> gal/min.</li> <li>- CD2 Venturi scrubber reestablished the Minimum Pressure Drop at <math>\geq 27.5</math> inches w.c.</li> <li>- CD2 Scrubber medium pH established to 3.0 s.u.</li> <li>- CD3 Wet Electrostatic Precipitator Secondary Voltage and Current established to 0.031 kW.</li> <li>- CD3 WESP Minimum Influent Water Flow Rate established at <math>\geq 0</math> gal/min.</li> </ul> <p>2. U1 R2 Fluidized Bed Incinerator #2 OS Summary and OS2 - Updated the stack testing language and testing frequency by replacing the references "prior to permit expiration" with "every 5 years (based on the completion date of the last stack test)".</p>	2/6/2024

		<p>3. IS150 12,000 gallon Aboveground Storage Tank to store #2 Fuel Oil was added, and it replaced IS102 UST 10,000 gallon capacity. The IS150 PTE is below reporting threshold.</p> <p>4. U130 Sludge Thickener and its associated operating scenarios, equipment numbers, emission points, and control device were deleted from permit since the equipment were removed. E7 Belt Press #2 was also removed from the equipment inventory.</p> <p>5. U140 Building 600 Boiler - Updated the monitoring requirement for natural gas usage to "Monitored by fuel usage totalizing meter in Building 600".</p> <p>6. Facility Profile - Updated the facility profile contact information.</p>	
BOP190001	Administrative Amendment	This Administrative Amendment corrected the typographical error in compliance plan applicable requirement for U1 OS2 Ref. #30. The hexavalent chromium emission rate in U1 OS2 Ref.#30 was corrected from 0.00000603 lb/hr to 0.0000603 lb/hr based on 10% of the total chromium emission rate.	8/14/2019

BOP180001	Significant Modification	<p>This permit modification includes the following changes:</p> <ol style="list-style-type: none"> <li>1. Resumed operation of the R2 Fluidized Bed Incinerator #2 unit in emission unit U1. This sludge incineration unit was previously shutdown and rendered inoperable.</li> <li>2. Incorporated the 40 CFR Part 62 Subpart LLL – Federal Plan requirements for existing sewage sludge incinerators in U1 R2 Fluidized Bed Incinerator #2 in OS Summary, OS2, and control devices CD2, CD3 and CD7.</li> <li>3. Added new control devices CD5, CD6 and CD7 as part of the mercury control system on U1 R2 Fluidized Bed Incinerator #2.</li> <li>4. Incinerator #2 annual and short-term emission limits were reduced from previous permitted limits based maximum sludge feed rate limit of 30 dry tons per day and 2500 dry pounds per hour, and 40 CFR Part 62 Subpart LLL emission limits.</li> </ol>	3/18/2019
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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