



Lane Regional Air Protection Agency  
 Standard Air Contaminant Discharge Permit

**REVIEW REPORT**

**ADDENDUM NO. 2**  
**NON-PSD/NSR MODERATE TECHNICAL PERMIT MODIFICATION**

**Metropolitan Wastewater Management Commission –**  
**Eugene/Springfield Water Pollution Control Facility**  
 410 River Avenue  
 Eugene, Oregon  
<https://www.eugene-or.gov/186/Wastewater>

**Permit No. 202537**

**Source Information:**

Primary SIC	4952
Primary NAICS	221320
Secondary SIC	4922
Secondary NAICS	486210

Source Categories (LRAPA Title 37, Table 1)	B.65: Sewage treatment facilities employing internal combustion engines for digester gases C.3: Source electing to maintain a baseline or netting basis C.4: Source requesting a PSEL equal to or greater than the SER
Public Notice Category	II

**Compliance and Emissions Monitoring Requirements:**

Unassigned emissions	n
Emission credits	n
Compliance schedule	n
Source test date	n

COMS	n
CEMS	n
Ambient monitoring	n

**Reporting Requirements:**

Annual report (due date)	March 15
SACC (due date)	n
Quarterly report (due dates)	n

Monthly report (due dates)	n
Excess emissions report	y
GHG	March 15

**Air Programs:**

NSPS (list subparts)	A, IIII
NESHAP (list subparts)	A, ZZZZ
CAM	n
Regional Haze (RH)	n
Synthetic Minor (SM)	n
Part 68 Risk Management	n
Title V	n
ACDP (SIP)	n

New Source Review (NSR)	n
Prevention of Significant Deterioration (PSD)	n
Acid Rain	n
Clean Air Mercury Rule (CAMR)	n
TACT	y

1. Permittee Identification

The Metropolitan Wastewater Management Commission - Eugene/Springfield Water Pollution Control Facility (“the facility”), located at 410 River Avenue in Eugene, operates a wastewater treatment plant that serves the Eugene and Springfield municipal area.

2. General Background Information

Prior to this addendum, the digester gas derived from two (2) sludge holding tanks and four (4) primary digesters was combusted in the Engine Generator-set (EU-1) to produce electricity and heat the anaerobic digesters. When the digester heat demands were less than the thermal load available from the digester gas, the excess gas was sent to two biogas flares (EU-3) for combustion before release to the atmosphere.

3. Reasons for Permit Action

The facility is proposing to route the digester gas produced by the wastewater treatment process to a Digester Gas Upgrade System (EU-5) for processing and injection into the natural gas pipeline. The boiler (EU-2) will combust natural gas or digester gas to provide heat to the digesters and EU-1 will be available, combusting either digester gas or natural gas, when the system is down for maintenance. The two flares (EU-3) will remain onsite for control of digester gas and off-spec renewable natural gas from EU-5. This addendum also proposes the addition of a secondary SIC (4922 Natural Gas Transmission) to the cover page of the permit. LRAPA has determined that this request is a Non-PSD/NSR Moderate Technical Permit Modification under Title 37, Table2, Part 4.

4. Emission Unit Description

The installation and operation of the Digester Gas Upgrade System required a revision of the emissions units at the facility. The description for EU-1 has also been updated to include the potential to combust natural gas in the emissions unit and EU-3 has been updated to include combustion of off-specification renewable natural gas. There are no other changes to the emission unit descriptions as a result of this project.

Emission Unit (EU) Number	Emission Unit	Description
EU-1	Engine Generator-set	Jenbacher Genset, 1143 BHP, 7.3 MMBtu/hr, biogas and natural gas-fired, installed in 1997 Pollution control device: Miratech “L” CO catalytic converter
EU-3	Biogas Flares	Two (2) Shand & Jurs 97300 waste gas flares, 8" burner, 76,000 scf/hr, biogas, off-specification gas and natural gas-fired, installed 2018
EU-5	Digester Gas Upgrade System	Pressure Swing Adsorption (PSA) Pollution control devices: Regenerative Thermal Oxidizer (RTO) Biogas Flares (EU-3)

5. General Emissions Limitations

The installation and operation of the Digester Gas Upgrade System (EU-5) does not result in any changes to the applicable limitations at this facility.

6. Projected Potential Emissions per Plant Site Emission Limit (PSEL) Pollutant

The maximum annual emissions are based on the throughputs per process provided by the facility and using emission factors detailed in the facility's Attachment to the Review Report.

Pollutant	Post-Construction Emissions	PSEL
	(tons/yr)	(tons/yr)
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.77	NA
SO <sub>2</sub>	0.06	NA
NO <sub>x</sub>	9.4	98
CO	10.7	99
VOC	9.0	46

7. Typically Achievable Control Technology (TACT)

LRAPA 32-008 requires new and modified emission units to meet TACT if the emission unit meets the following criteria: the emission unit is not already subject to emission standards for the regulated pollutant under Title 32, Title 33, Title 39, Title 46 or Major NSR or Type A State NSR under Title 38 at the time TACT is required; the source is required to have a permit; the emission unit has emissions of criteria pollutants equal to or greater than one (1) ton per year of any criteria pollutant; and LRAPA determines the proposed air pollution control devices and emission reduction processes in use for the emissions do not represent TACT. The Digester Gas Upgrade System (EU-5) will have emissions of NO<sub>x</sub> and CO over one (1) ton per year, so this unit is required to meet TACT; proper operation and maintenance of the RTO control device will be considered TACT for this emissions unit.

8. New Source Performance Standards (NSPSs)

This permitting action does not change current NSPSs for the facility.

9. National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

This permitting action does not change current NESHAPs for the facility. The Jenbacher engine generator in EU-1 is subject to 40 CFR 63 Subpart ZZZZ as an engine that combusts digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. Since the facility is proposing to expand the gas combusted in the generator to natural gas as well as digester gas, the facility plans to install a natural gas meter on EU-1 to ensure this criterion is met.

10. Recordkeeping Requirements

The proposed amendment to the permit changed several recordkeeping requirements, including the addition of natural gas combustion monitoring in EU-1, off-specification gas burned in EU-3, and operating information for the RTO in EU-5. The updated items in the recordkeeping table are listed below:

Emission Unit (EU)	Monitoring Parameter (units)	Minimum Recording Frequency
EU-1	Digester gas burned in the genset (cubic feet)	Monthly
EU-1	Natural gas burned in the genset (cubic feet)	Monthly

Emission Unit (EU)	Monitoring Parameter (units)	Minimum Recording Frequency
EU-2	Natural gas burned in the boiler (cubic feet)	Monthly
EU-2	Digester gas burned in the boiler (cubic feet)	Monthly
EU-3	Digester gas burned in the waste gas flares (cubic feet)	Monthly
EU-3	Off-specification gas burned in the waste gas flares (cubic feet)	Monthly
EU-5	Natural gas combusted in the RTO (cubic feet)	Monthly
EU-5	PSA tail gas combusted in the RTO (cubic feet)	Monthly
EU-5	RTO maintenance and inspections performed	Upon occurrence

11. Emission Factors

The following emission factors were added for the natural gas combustion in the RTO for EU-5 and emission factors were added for natural gas combustion in the engine generator in EU-1:

Emission Unit	Pollutant	Emission Factor	Emission Factor Units	Reference
Genset (EU-1)	VOC	120.4	lb/MMscf natural gas	AP-42, Table 3.2-2
	NO <sub>x</sub>	863.9	lb/MMscf natural gas	AP-42, Table 3.2-2
	CO	568.1	lb/MMscf natural gas	AP-42, Table 3.2-2
Digester Gas Upgrade System, RTO (EU-5)	VOC	5.5	lb/MMscf natural gas	AP-42, Table 1.4-2
	NO <sub>x</sub>	50	lb/MMscf natural gas	AP-42, Table 1.4-1
	CO	84	lb/MMscf natural gas	AP-42, Table 1.4-1

12. Reporting Requirements

There are no changes to the facility reporting requirements from the installation and operation of the Digester Gas Upgrade System (EU-5).

13. Public Notice

In accordance with LRAPA 37-0066(4)(b)(B), as a Non-NSR Moderate Technical Permit Modification, Title 31 Category II public notice is required. Category II public notice procedures specify that LRAPA will provide public notice with a minimum of 30 days to submit written comments.

**Post-Construction Potential to Emit Calculations**

**Jenbacher Genset (EU-1)**

Design Capacity (bhp)	1,143
Design Capacity (MMBtu/hr)	7.304

Pollutant	DG Emission Factor	DG Emission Factor	DG Emission Factor	NG Emission Factor	NG Emission Factor	Annual Emissions (tons)
	(g/hp-hr)	(lb/MMBtu)	(lb/MMcf)	(lb/MMBtu)	(lb/MMcf)	
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	-	0.010	6.0	0.010	10.2	0.02
SO <sub>2</sub>	-	0.0006	0.4	0.0006	0.6	0.001
NO <sub>x</sub>	1.5	0.517	310.5	0.847	863.9	1.0
CO	2.8	0.966	579.6	0.557	568.1	1.6
VOC	0.6	0.207	124.2	0.118	120.4	0.3

Notes: Estimates assume operation at 480 hrs/yr as defined by the facility, with a heating value of 600 Btu/scf for digester gas (DG) and 1020 Btu/scf for natural gas (NG). Facility estimated 84% of gas combusted to be digester gas, with the remaining as natural gas. DG Emission Factors for NO<sub>x</sub>, CO and VOC are from a March 28, 2000, gas analysis taken by Jenbacher Energy Systems Ltd. NG Emission Factors for NO<sub>x</sub>, CO and VOC and the PM/PM<sub>10</sub>/PM<sub>2.5</sub> and SO<sub>2</sub> emission factors for both gases are from AP-42, Table 3.2-2, Emission Factors for Natural Gas-fired Reciprocating Engines, July 2000.

**Hurst Boiler (EU-2)**

Natural Gas/Digester Gas Capacity (scf/hr)	15,000
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Pollutant	Emission Factor	Annual Emissions
	(lbs/MMscf)	(tons/yr)
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	7.6	0.5
SO <sub>2</sub>	0.6	0.04
NO <sub>x</sub>	100	6.6
CO	84	5.5
VOC	5.5	0.4

Notes: The boiler is assumed to operate continuously (8760 hrs/yr). Boiler Emission Factors are from AP-42, Table 1.4-1 and 1.4-2, Emission Factors for Natural Gas Combustion, July 1998.

**Shand & Jurs Waste Gas Flares (EU-3)**

Projected Gas Throughput (MMcf/yr)	5.0
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Pollutant	Emission Factor	Emissions
	(lbs/MMBtu)	(tons/yr)
NO <sub>x</sub>	0.068	0.2
CO	0.31	0.8
HC (VOC surrogate)	0.14	0.4

Notes: Facility-provided throughput and a heating value of 1020 Btu/scf was assumed for the off-spec renewable natural gas. Emission Factors are from AP-42, Table 13.5-1 and Table 13.5-2, Emission Factors for Flare Operations.

**Wastewater Treatment Operations (EU-4)**

Pollutant	Wastewater Treated	Emission Factor	Emissions
	(10 <sup>6</sup> gal/day)	(lb VOC/10 <sup>6</sup> gal)	(tons/yr)
VOC	59.5	0.715	7.8

Notes: Emission estimates for EU-4 remain unchanged for this permit addendum.

**Digester Gas Upgrade System RTO (EU-5)**

Projected Gas Throughput (MMscf/yr)	66
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Pollutant	Emission Factor	Annual Emissions
	(lbs/MMscf)	(tons/yr)
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	7.6	0.3
SO <sub>2</sub>	0.6	0.02
NO <sub>x</sub>	50	1.7
CO	84	2.8
VOC	5.5	0.2

Notes: Facility estimated throughput. RTO Emission Factors are from AP-42, Table 1.4-1 and 1.4-2, Emission Factors for Natural Gas Combustion, July 1998, assuming a low-NO<sub>x</sub> burner.

**Potential to Emit**

Pollutant	Post-Construction Annual Emissions	Pre-Construction Annual Emissions
	(tons/yr)	(tons/yr)
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	0.77	0.88
SO <sub>2</sub>	0.06	0.25
NO <sub>x</sub>	9.4	26.5
CO	10.7	51.9
VOC	9.0	21.7