

SMAQMD BACT CLEARINGHOUSE

ACTIVE

CATEGORY Type:

BOILER

BACT Category: Minor Source BACT

BACT Determination Number: 359	BACT Determination Date: 7/23/2024
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Equipment Information

Permit Number: N/A -- Generic BACT Determination
Equipment Description: BOILER > 5 MMBTU
Unit Size/Rating/Capacity: Boiler Digester gas fired, ≥ 5 MMBtu/hr to ≤ 20 MMBtu/hr
Equipment Location:

BACT Determination Information

District Contact: Jeff Quok Phone No.: (279) 207-1145 email: jquok@airquality.org

ROCs	Standard:	No Standard
	Technology Description:	
	Basis:	Achieved in Practice
NOx	Standard:	9 ppm at 3% O2 or 0.011 lb/MMBtu
	Technology Description:	For natural gas co-firing see BACT #359 Evaluation
	Basis:	Achieved in Practice
SOx	Standard:	No Standard
	Technology Description:	
	Basis:	
PM10	Standard:	≤ 0.1 gr/scf at 12% CO2
	Technology Description:	
	Basis:	Achieved in Practice
PM2.5	Standard:	≤ 0.1 gr/scf at 12% CO2
	Technology Description:	
	Basis:	Achieved in Practice
CO	Standard:	100 ppm at 3% O2
	Technology Description:	
	Basis:	Achieved in Practice
LEAD	Standard:	No Standard
	Technology Description:	
	Basis:	

Comments: T-BACT is compliance with BACT for VOC and PM.

For natural gas co-firing see BACT #359 Evaluation



BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

DETERMINATION NOS.: 359
DATE: 7/23/2024
ENGINEER: Jeffrey Quok

Category/General Equip Description: Boiler/Heater – Digester gas Fired
Equipment Specific Description: #359 – Boiler/Heater Digester Gas Fired, ≥ 5 MMBtu/hr to ≤ 20 MMBtu/hr, with Natural Gas Co-firing Fuel
Equipment Size/Rating: Small Emitter BACT
Previous BACT Det. No.: N/A

This determination will focus on digester gas fired boilers/heaters, rated between 5 MMBtu/hr to 20 MMBtu/hr, which include external combustion equipment used to produce hot water or steam and units which transfer heat from combustion gases to water or process streams. Heaters do not include any dryer in which the material being dried is in direct contact with the products of combustion, cement or lime kilns, glass melting furnaces, or smelters. It is common for such units to also be supplemented with a mixture of natural gas to sustain enough fuel supply to operate at desired firing rate. BACT for units with natural gas co-firing fuel will also be reviewed in this BACT Determination.

Digester gas is defined as gas derived from the decomposition of organic matter in a digester.

The District’s Small Emitter and “Otherwise-Exempt Equipment” BACT Determinations policy (dated 5/16/2019) states that units which are classified as small emitters (less than 10 lbs/day of VOC, NOx, SOx, PM10, or PM2.5 and less than 550 lbs/day of CO) and are located at non-major stationary sources are only required to meet BACT standards that have been achieved in practice.

BACT/T-BACT ANALYSIS

A. ACHIEVED IN PRACTICE (Rule 202, §205.1a):

The following control technologies are currently employed as BACT/T-BACT for boilers/heaters 5 MMBtu/hr to 20 MMBtu/hr by the following air pollution control districts:

US EPA

BACT

Source: [EPA RACT/BACT/LAER Clearinghouse](#)

There are no T-BACT standards published in the clearinghouse for this category.

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:

[40 CFR 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units](#)

This regulation applies to steam generating units rated between 10-100 MMBtu/hr. However, no standards within the subpart are applicable to units fired by digester gas or natural gas only. Therefore, this NSPS is not applicable.

California Air Resource Board (CARB)

BACT

Source: [ARB BACT Clearinghouse](#)
[CARB BACT Guidelines Search](#)

There are no applicable BACT standards published in the clearinghouse for this category. The BACT Guidelines search contained BACTs from BAAQMD and SCAQMD that will be reviewed in the specific District evaluations in this Determination.

T-BACT

Source: [ARB BACT Clearinghouse](#)
[CARB BACT Guidelines Search](#)

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:

None.

Sacramento Metropolitan AQMD

BACT

Source: [SMAQMD BACT Clearinghouse](#)

No BACT Determinations for this category in the Clearinghouse.

T-BACT

No T-BACT Determinations for this category in the Clearinghouse.

RULE REQUIREMENTS:

[Rule 411 – NOx from Boilers, Process Heaters, and Steam Generators](#) (8-23-2007)

For landfill gas or a combination of landfill gas and natural gas units with a rating of ≥ 5 MMBtu/hr, emissions shall not exceed the following levels:

1. 15 ppmvd of NOx corrected to 3% O₂
2. 400 ppmvd of CO corrected to 3% O₂

Landfill gas and digester gas have similar characteristics. Therefore, it is assumed that these landfill gas standards are achievable for digester gas.

South Coast AQMD

BACT

Source: [SCAQMD BACT Guidelines for Non-Major Polluting Facilities, page 13 & 14](#) (9/2/2022)

For Digester gas fired boilers with a rating of < 75 MMBTU/hr :	
VOC	No Standard
NOx	Compliance with SCAQMD Rules 1146 or 1146.1 (12-02-2016) (15 ppm at 3% O ₂)
SOx	No Standard
PM10	≤ 0.1 gr/scf at 12% CO ₂ (Rule 409) (04-10-98)
PM2.5	No standard
CO	≤ 100 ppmvd at 3% O ₂ dry

SCAQMD's BACT Guidelines Overview (<https://www.aqmd.gov/docs/default-source/bact/bact-guidelines/overview.pdf>), page 10 explains that CO is not subject to NSR or BACT. The guideline explains that BACT is only triggered when emission increases exceed or equal 1.0 pound per day for any nonattainment air contaminant, any ozone depleting compound, or ammonia. Since CO is in attainment in SCAQMD, not an ozone depleting compound, or ammonia, CO is not subject to BACT.

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:

[Reg. XI, Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters \(12-4-2020\)](#)

Requirements Table 1146-1

Category	NOx Limit for Units ≥ 5 MMBTU/hr
Any Units Fired on Landfill Gas	25 ppmvd @ 3% O ₂
Any Units Fired on Digester Gas	15 ppm @ 3% O ₂

All units rated greater than or equal to 5 MMBtu/hr must have CO emissions ≤ 400 ppmvd @ 3% O₂.

For landfill or digester gas boilers with natural gas co-fired fuel:

(c)(9) An owner or operator of any landfill or digester gas (biogas) unit co-fired with natural gas shall not operate the unit in a manner that exceeds the emission concentration limits specified in subparagraph (c)(1)(C) or (c)(1)(D), provided that the facility monthly average biogas usage by the biogas units is 90 percent or more, based on the higher heating value of the fuels used.

(A) The Executive Officer may approve the burning of more than 10percent natural gas up to:

(i) 25 percent natural gas in a biogas fired unit at the 15 ppm (digester gas) or 25 ppm (landfill gas) NOx level, when it is necessary, if the only alternative to limiting natural gas to 10 percent would be shutting down the unit and flaring more biogas.

(ii) 50 percent natural gas in a digester gas-fired unit at the 15 ppm NOx level, when it is necessary as specified in clause (c)(9)(A)(i) and for any unit installed on or after September 5, 2008 provided the unit has demonstrated compliance with the NOx limits in paragraph (c)(1) applicable to units fired exclusively on natural gas.

For any unit subject to this subparagraph, the percent natural gas usage shall be based on the facility monthly average biogas usage by the biogas units and the higher heating value of the fuels used.

(B) Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(9)(A) shall comply with the weighted average NOx limit specified in paragraph (c)(2).

(c)(2) For dual fuel co-fired combustion units a weighted average emission limit calculated by Equation 1146-1 may be used in lieu of the emission limits of Table 1146-1 provided a totalizing fuel flow meter is installed pursuant to paragraph (c)(8), for units burning a combination of both fuels.

$$\text{Weighted Limit} = \frac{(CL_A \times Q_A) + (CL_B \times Q_B)}{Q_A + Q_B}$$

Where:

CL_A = compliance limit for fuel A

CL_B = compliance limit for fuel B

Q_A = heat input from fuel A

Q_B = heat input from fuel B

San Joaquin Valley APCD

BACT

Source: [SJVAPCD BACT Guideline 1.1.4 \(10/26/09\)](#)

No BACT Determinations for this category in the Clearinghouse. SJVAPCD's BACT Guideline 1.1.4 for Digester gas fired boilers has been rescinded.

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:

[Rule 4306 – Boilers, Steam Generators, and Process Heaters – Phase 3 \(12-17-2020\)](#)

This rule applies to any gaseous fuel or liquid fuel boiler, steam generator, or process heater with a total rated heat input greater than 5 MMBtu/hr.

Units with a total rated heat input > 5.0 MMBtu/hr and ≤ 20.0 MMBtu/hr, except for categories C through E		
Type (Gaseous Fuel Fired)	NOx Limit ppmvd @ 3% O₂	CO Limit ppmvd @ 3% O₂
Units fired on Digester Gas	9 or 0.011 lb/MMBtu	400
Fire Tube Boilers	7 or 0.0085 lb/MMBtu	400
Units at Schools	9 or 0.011 lb/MMBtu	400
Thermal Fluid Heaters	9 or 0.011 lb/MMBtu	400
All other units ^(A)	9 or 0.011 lb/MMBtu	400

(A) Per SJVAPCD, landfill gas would need to meet the "All other units" standards.

[Rule 4320 – Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater Than 5.0 MMBtu/hr \(12-17-2020\)](#)

This rule applies to any gaseous fuel or liquid fuel boiler, steam generator, or process heater with a total rated heat input greater than 5 MMBtu/hr.

An operator of a unit(s) subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

1. Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or
2. Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or
3. Comply with the applicable Low-use Unit requirements of Section 5.5.

Units with a total rated heat input > 5.0 MMBtu/hr and ≤ 20.0 MMBtu/hr, except for categories C through E		
Type (Gaseous Fuel Fired)	NOx Limit ppmvd @ 3% O₂	CO Limit ppmvd @ 3% O₂
Units fired on Digester Gas	9 or 0.011 lb/MMBtu	400
Fire Tube Boilers	5 or 0.0061 lb/MMBtu	400
Units at Schools	9 or 0.011 lb/MMBtu	400
Thermal Fluid Heaters	9 or 0.011 lb/MMBtu	400
All Other Units ^(A)	5 or 0.0061 lb/MMBtu	400
Units with a permit limit of > 1.8 billion Btu/year but ≤ 30 billion Btu/year	9 or 0.011 lb/MMBtu	400

(A) Per SJVAPCD, landfill gas would need to meet the “All other units” standards

Section 5.3: Annual Fee Calculation

On and after January 1, 2010, an operator with units that will comply with the requirements of Section 5.1.2 in lieu of complying with Section 5.2 Table 1 SJVUAPCD 4320 – 10/12/17/2020 shall pay a total annual fee to the District based on the total NOx emissions from those units.

Section 5.4: Particulate Matter Control Requirements

5.4.1 To limit particulate matter emissions, an operator shall comply with one of the following requirements:

5.4.1.1 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;

5.4.1.2 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or

5.4.1.3 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall install and properly operate an emission control system that reduces SO₂ emissions by at least 95% by weight; or limit exhaust SO₂ to less than or equal to 9 ppmv corrected to 3.0% O₂.

5.4.1.4 Notwithstanding the compliance deadlines indicated in Sections 5.4.1.1 through 5.4.1.3, refinery units, which require modification of refinery equipment to reduce sulfur emissions, shall be in compliance with the applicable requirement in Section 5.4.1 no later than July 1, 2013.

Section 5.5: Low-use Unit

This exemption only applies to “each unit was installed prior to January 1, 2009 and is limited to less than or equal to 1.8 billion Btu per calendar year heat input pursuant to a District Permit to Operate”.

Rule 4320 has lower NOx limits than Rule 4306. However, Rule 4320 has an alternate compliance option of paying an annual emissions fee instead of meeting the NOx limits of Section 5.2. SJVAPCD’s Public Permits Information Portal (<https://apps.valleyair.org/PublicPermits/Search/Permit>) was searched and no boilers in this BACT Category are permitted at 5 ppm NOx. Therefore, the NOx standards of Rule 4320 won’t be considered Achieved in Practice.

San Diego County APCD

BACT

Source: [NSR Requirements for BACT, page 3-5 \(11/2023\)](#)

There are no BACT standards published in the clearinghouse for this category. The BACTs for boilers in SDAPCD’s Guidance document are only for units fired on natural gas, LPG, and No.2 oil as backup fuel.

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:

[Regulation 4, Rule 69.2 – Industrial and Commercial Boilers, Process Heaters and Steam Generators \(9-27-1994\)](#)

This rule applies to any unit with a heat input rating of 5 MMBtu/hr or more.

Equipment Type	Fuel	Heat Input Rating (Btu per hour)	Concentration of NOx (ppmv at 3% O ₂)	Concentration of CO (ppmv at 3% O ₂)
New Unit	Gaseous Fuel	≥ 5 MMBtu/hr	30	400

Bay Area AQMD

BACT

Source: [BAAQMD BACT Workbook](#)

<u>BACT Guideline 17.5.1 (4/21/93)</u> For Boiler or Water Heater – Landfill or Digester Gas:	
VOC	Automatic combustion air control and retention time ≥ 0.3 seconds at ≥ 1,600°F
NOx	40 ppm at 3% O ₂ , dry
SOx	No Standard
PM10	No Standard
PM2.5	No Standard
CO	100 ppmvd corrected to 3% O ₂ , dry

BAAQMD has a BACT threshold of 10.0 lbs/day. Therefore, BAAQMD's BACT standards should only apply if the boiler emits greater than 10.0 lbs/day of the applicable pollutant type.

Boilers in this Small Emitter BACT category will not emit greater than 10 lbs/day of VOC and NOx. Therefore, VOC and NOx standards do not apply to this BACT category.

T-BACT

There are no T-BACT standards published in the clearinghouse for this category.

RULE REQUIREMENTS:

[Regulation 9, Rule 7 – Nitrogen Oxides and Carbon Monoxide from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters \(5-4-2011\)](#)

For landfill or digester gas units with a rating of 1 MMBtu/hr or more:

1. NOx limit of 30 ppmvd corrected to 3% O₂
2. CO limit of 400 ppmvd corrected to 3% O₂

Summary of Achieved in Practice Control Technologies

The following control technologies have been identified and are ranked based on stringency:

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
VOC	1. No standard – [EPA, CARB, SMAQMD, SCAQMD, SJVAPCD, SDAPCD, BAAQMD ^(A)]
NOx	<p><u>For Digester Gas:</u></p> <ol style="list-style-type: none"> 1. 9 ppm at 3% O₂ or 0.011 lb/MMBtu – [SJVAPCD] 2. 15 ppm NOx at 3% O₂ – [SMAQMD] 3. 15 ppm at 3% O₂ – [SCAQMD] 4. 30 ppm at 3% O₂ – [SDAPCD] 5. 30 ppmvd corrected to 3% O₂ – [BAAQMD] 6. No Standard – [EPA, CARB] <p><u>For Natural Gas Co-Firing:</u></p> <ol style="list-style-type: none"> 1. Compliance with SCAQMD Rule 1146 <ol style="list-style-type: none"> 1a. 15 ppm at 3% O₂ if digester gas usage by the biogas unit is 90% or more, based on the higher heating value of the fuels used; OR 1b. 15 ppm at 3% O₂ if >10 to 25% natural gas in the digester gas unit, if the only alternative to limiting natural gas to 10 percent would be shutting down the unit and flaring more biogas; OR 1c. 15 ppm at 3% O₂ if >10 to 50% natural gas in a digester gas-fired unit at the 15 ppm NOx level, if the only alternative to limiting natural gas to 10 percent would be shutting down the unit and flaring more biogas and installed on or after 9/5/2008 provided the unit has demonstrated compliance with the NOx limits in paragraph (c)(1) applicable to units fired exclusively on natural gas; OR 1d. Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(9)(A) shall comply with the weighted average NOx limit specified in paragraph (c)(2). – [SCAQMD] 2. No Standards – [EPA, CARB, SMAQMD, SJVAPCD, BAAQMD, SDAPCD]
SOx	1. No Standard – [EPA, CARB, SMAQMD, SCAQMD, SJVAPCD, SDAPCD, BAAQMD]
PM10	<ol style="list-style-type: none"> 1. ≤ 0.1 gr/scf at 12% CO₂ – [SCAQMD] 2. No standard – [EPA, CARB, SMAQMD, SJVAPCD, SDAPCD, BAAQMD]
PM2.5^(B)	<ol style="list-style-type: none"> 1. ≤ 0.1 gr/scf at 12% CO₂ – [SCAQMD] 2. No standard – [EPA, CARB, SMAQMD, SJVAPCD, SDAPCD, BAAQMD]
CO	<ol style="list-style-type: none"> 1. 100 ppmvd at 3% O₂ – [BAAQMD] 2. 400 ppm of CO corrected to 3% O₂ – [SMAQMD, SDAPCD] 3. No Standard [EPA, CARB, SJVAPCD]

(A) BAAQMD BACT Standard does not apply for this source category. BAAQMD's BACT threshold is 10 lbs/day and boilers in this category will not emit 10 lbs/day of VOC.

(B) PM2.5 BACT will be considered equivalent to PM10 BACT.

The following control technologies have been identified as the most stringent, achieved in practice control technologies:

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	Standard	Source
VOC	No Standard	EPA, CARB, SMAQMD, SCAQMD, SJVAPCD, SDAPCD, BAAQMD
NOx	<p><u>For Digester Gas:</u> 9 ppm at 3% O₂ or 0.011 lb/MMBtu</p> <p><u>For Natural Gas Co-Firing:</u></p> <p>1. Compliance with SCAQMD Rule 1146</p> <p>1a. 15 ppm at 3% O₂ if digester gas usage by the biogas unit is 90% or more, based on the higher heating value of the fuels used; OR</p> <p>1b. 15 ppm at 3% O₂ if >10 to 25% natural gas in the digester gas unit, if the only alternative to limiting natural gas to 10 percent would be shutting down the unit and flaring more biogas; OR</p> <p>1c. 15 ppm at 3% O₂ if >10 to 50% natural gas in a digester gas-fired unit at the 15 ppm NOx level, if the only alternative to limiting natural gas to 10 percent would be shutting down the unit and flaring more biogas and installed on or after 9/5/2008 provided the unit has demonstrated compliance with the NOx limits in paragraph (c)(1) applicable to units fired exclusively on natural gas; OR</p> <p>1d. Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(9)(A) shall comply with the weighted average NOx limit specified in paragraph (c)(2). See equation below.</p>	SJVAPCD, SCAQMD

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	Standard	Source
	$\text{Weighted Limit} = \frac{(CL_A \times Q_A) + (CL_B \times Q_B)}{Q_A + Q_B}$ <p>Where:</p> <p>CL_A = compliance limit for fuel A CL_B = compliance limit for fuel B Q_A = heat input from fuel A Q_B = heat input from fuel B</p>	
SO _x	No Standard	EPA, CARB, SMAQMD, SCAQMD, SJVAPCD, SDAPCD, BAAQMD
PM ₁₀	≤ 0.1 gr/scf at 12% CO ₂	SCAQMD
PM _{2.5}	≤ 0.1 gr/scf at 12% CO ₂	SCAQMD
CO	100 ppm at 3% O ₂	BAAQMD

B. TECHNOLOGICALLY FEASIBLE AND COST EFFECTIVE (Rule 202, §205.1.b.):

The District’s Small Emitter and “Otherwise-Exempt Equipment” BACT Determinations policy (dated 5/16/2019) states that units which are classified as small emitters (less than 10 lbs/day of VOC, NO_x, SO_x, PM₁₀, or PM_{2.5} and less than 550 lbs/day of CO) and are located at non-major stationary sources are only required to meet BACT standards that have been achieved in practice. Therefore, this BACT determination will only be based on what is achieved in practice and will only be applied to small emitters at non-major sources. BACT will be evaluated on a case-by-case basis for units that do not fit these criteria.

C. SELECTION OF BACT:

Based on the above analysis, BACT for VOC, NOx, SOx, PM10, and CO will remain at what is currently achieved in practice and BACT for PM2.5 will be set to be the same as for PM10.

BACT #359 for Boiler/Heater Digester with Natural Gas Co-Firing Fuel ≥ 5 MMBtu/hr to ≤ 20 MMBtu/hr		
Pollutant	Standard	Source
VOC	No Standard	EPA, CARB, SMAQMD, SCAQMD, SJVAPCD, BAAQMD
NOx	<p><u>For Digester gas:</u> 9 ppm at 3% O₂ or 0.011 lb/MMBtu</p> <p><u>For Natural Gas Co-Firing:</u></p> <ol style="list-style-type: none"> 1. Compliance with SCAQMD Rule 1146 <ol style="list-style-type: none"> a. 15 ppm at 3% O₂ if digester gas usage by the biogas unit is 90% or more, based on the higher heating value of the fuels used; OR b. 15 ppm at 3% O₂ if >10 to 25% natural gas in the digester gas unit, if the only alternative to limiting natural gas to 10 percent would be shutting down the unit and flaring more biogas; OR c. 15 ppm at 3% O₂ if >10 to 50% natural gas in a digester gas-fired unit at the 15 ppm NOx level, if the only alternative to limiting natural gas to 10 percent would be shutting down the unit and flaring more biogas and installed on or after 9/5/2008 provided the unit has demonstrated compliance with the NOx limits in paragraph (c)(1) applicable to units fired exclusively on natural gas; OR d. Any biogas-fired unit burning more than the approved percent natural gas as determined under subparagraph (c)(9)(A) shall comply with the weighted average NOx limit specified in paragraph (c)(2). See Equation below. 	SJVAPCD, SCAQMD

BACT #359 for Boiler/Heater Digester with Natural Gas Co-Firing Fuel ≥ 5 MMBtu/hr to ≤ 20 MMBtu/hr		
	$\text{Weighted Limit} = \frac{(CL_A \times Q_A) + (CL_B \times Q_B)}{Q_A + Q_B}$ <p>Where:</p> <p>CL_A = compliance limit for fuel A CL_B = compliance limit for fuel B Q_A = heat input from fuel A Q_B = heat input from fuel B</p>	
SOx	No Standard	EPA, CARB, SMAQMD, SCAQMD, SJVAPCD, BAAQMD
PM10	≤ 0.1 gr/scf at 12% CO ₂	SCAQMD
PM2.5	≤ 0.1 gr/scf at 12% CO ₂	SCAQMD
CO	100 ppm at 3% O ₂	BAAQMD

D: SELECTION OF T-BACT:

Toxics are in the form of VOCs and particulate matter. T-BACT was not identified by any agency. Therefore, T-BACT is compliance with BACT for VOC and PM.

T-BACT #359 for Boiler/Heater Digester with Natural Gas Co-Firing Fuel ≥ 5 MMBtu/hr to ≤ 20 MMBtu/hr		
Pollutant	Standard	Source
VOC-HAP	No Standard	EPA, CARB, SMAQMD, SCAQMD, SJVAPCD, BAAQMD
PM-HAP	≤ 0.1 gr/scf at 12% CO ₂	SCAQMD

APPROVED BY: Brian F Krebs DATE: 07-23-2024

Attachment A

Review of BACT Determinations published by EPA

List of BACT determinations published in EPA's RACT/BACT/LAER Clearinghouse (RBLC) for Commercial/Institutional-Sized Boilers/Furnaces < 100 Million BTU/H – Landfill/Digester/Bio-Gas (Process Code 13.320):

RBLC	Permit Date	Process Code ^(A)	Process/Equipment	Pollutant	Standard	Control Technology	Case-By-Case Basis
DC-0009	4/1/19	13.320	Boiler, 65.99 MMBtu/hr ^(B)	NOx	0.036 lb/MMBtu on Digester gas	None	LAER

(A) Process Code 13.320 includes commercial and industrial landfill/digester/bio-gas boilers < 100 million BTU/hr.

(B) This boiler is 65.99 MMBtu/hr and does not meet this BACT Determination size category.

= Selected as the most stringent BACT determination achieved in practice.