

SMAQMD BACT CLEARINGHOUSE

CATEGORY Type: **BOILER/HEATER < 5 MMBTU**

BACT Category: Boilers 2-5 MMBtu/hr Natural Gas

BACT Determination Number: 309	BACT Determination Date: 7/20/2022
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Equipment Information

Permit Number: N/A -- Generic BACT Determination
Equipment Description: BOILER
Unit Size/Rating/Capacity: Small Emitter BACT (PTE < 10 lb/day)
Equipment Location:

EXPIRED

BACT Determination Information

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

ROCs	Standard:	Good combustion practice and use of natural gas
	Technology Description:	
	Basis:	Achieved in Practice
NOx	Standard:	See Comments
	Technology Description:	
	Basis:	Achieved in Practice
SOx	Standard:	Good combustion practice and use of natural gas
	Technology Description:	
	Basis:	Achieved in Practice
PM10	Standard:	Good combustion practice and use of natural gas
	Technology Description:	
	Basis:	Achieved in Practice
PM2.5	Standard:	Good combustion practice and use of natural gas
	Technology Description:	
	Basis:	Achieved in Practice
CO	Standard:	See Description Below
	Technology Description:	Firetube Boilers: 50 ppmvd at 3% O2 Watertube Boilers: 100 ppmvd at 3% O2
	Basis:	Achieved in Practice
LEAD	Standard:	
	Technology Description:	
	Basis:	

Comments: BACT for NOx:
 Any unit fired on natural gas, excluding fire-tube boilers, atmospheric units, and thermal fluid heaters: 9 ppmvd at 3% O2
 Any fire-tube boilers on natural gas: 7 ppmvd corrected to 3% O2
 Atmospheric units and thermal fluid heaters: 12 ppmvd at 3% O2

SMAQMD BACT CLEARINGHOUSE

CATEGORY Type: **BOILER/HEATER < 5 MMBTU**

BACT Category: Boiler 2-5 MMBtu/hr LPG

BACT Determination Number: 310	BACT Determination Date: 7/20/2022
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Equipment Information

Permit Number: N/A -- Generic BACT Determination
Equipment Description: BOILER
Unit Size/Rating/Capacity: Small Emitter BACT (PTE < 10 lb/day)
Equipment Location:

EXPIRED

BACT Determination Information

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

ROCs	Standard:	Good combustion practice and use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
NOx	Standard:	See Comments
	Technology Description:	
	Basis:	Achieved in Practice
SOx	Standard:	Good combustion practice and use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
PM10	Standard:	Good combustion practice and use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
PM2.5	Standard:	Good combustion practice and use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
CO	Standard:	See Description Below
	Technology Description:	Firetube Boilers: 50 ppmvd at 3% O2 Watertube Boilers: 100 ppmvd at 3% O2
	Basis:	Achieved in Practice
LEAD	Standard:	
	Technology Description:	
	Basis:	

Comments: BACT for NOx:
 Non-atmospheric units: 9 ppmvd at 3% O2
 Atmospheric units: 12 ppmvd at 3% O2



BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

EXPIRED

DETERMINATION NO.: 309 & 310
DATE: 7/20/22
ENGINEER: Jeffrey Quok

Category/General Equip Description: Boiler/Heater – Natural Gas or LPG Fired

Equipment Specific Description: #309 – Boiler/heater natural gas fired greater or equal to 2 MMBtu/hr to less than 5 MMBtu/hr
#310 – Boiler/heater LPG fired greater or equal to 2 MMBtu/hr to less than 5 MMBtu/hr

Equipment Size/Rating: Minor Source BACT and Small Emitter

Previous BACT Det. No.: 239 & 240

This BACT/T-BACT determination will update BACT Determinations #239 & #240 which was made on 4/14/2020.

This determination will focus on natural gas and LPG boilers/heaters, 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.

The District’s Small Emitter and “Otherwise-Exempt Equipment” BACT Determinations policy 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. 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 this criteria.

BACT ANALYSIS

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

The following control technologies are currently employed as BACT for boilers/heaters greater or equal to 2 and less than 5 MMBTU/hr by the following air pollution control districts:

US EPA

BACT

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

RBLC ID: [CA-1190](#)

For natural gas and LPG/propane fired units with a rating of ≥ 2 to < 5 MMBtu/hr	
VOC	No standard
NOx	12 ppmvd corrected to 3% O ₂ *
SOx	No standard
PM10	No standard
PM2.5	No standard
CO	No standard

* This BACT determination was found to be the most stringent Achieved in Practice BACT determination published in the EPA clearinghouse. See Attachment A for more information.

RULE REQUIREMENTS:

None.

California Air Resource Board (CARB)

BACT

Source: [ARB BACT Clearinghouse](#)

[CARB BACT Guidelines Search](#)

[ATC 13623 \(6-7-11\) SBCAPCD](#)

For non-atmospheric natural gas units with a rating of ≥ 2 to < 5 MMBtu/hr	
VOC	No BACT determinations found for VOC in the ≥ 2 to < 5 MMBtu/hr range.
NOx	12 ppmvd corrected to 3% O ₂ [SBCAPCD]
SOx	No BACT determinations found for SOx in the ≥ 2 to < 5 MMBtu/hr range.
PM10	No BACT determinations found for PM10 in the ≥ 2 to < 5 MMBtu/hr range.
PM2.5	No BACT determinations found for PM2.5 in the ≥ 2 to < 5 MMBtu/hr range.
CO	100 ppmvd corrected to 3% O ₂ [SBCAPCD]

No BACT determinations found for atmospheric units in the ≥ 2 to < 5 MMBtu/hr range.

Source: [ARB BACT Clearinghouse](#)
[CARB BACT Guidelines Search](#)
[ATC 12949-01 \(1-24-12\) SBAPCD](#)

For LPG/propane fired units with a rating of ≥ 2 to <5 MMBtu/hr	
VOC	No standard
NOx	20 ppmvd corrected to 3% O ₂ [SBCAPCD]
SOx	No standard
PM10	No standard
PM2.5	No standard
CO	No standard

RULE REQUIREMENTS:

None

Sacramento Metropolitan AQMD

BACT

Source: [SMAQMD BACT Clearinghouse](#) (BACT #239)
[SMAQMD BACT Clearinghouse](#) (BACT #240)

BACT #239: For boilers/heaters ≥ 2 to < 5 MMBtu/hr, fired on natural gas	
VOC	Good combustion practice and fired with natural gas
NOx	9 ppmvd corrected to 3% O ₂ for non-atmospheric boilers 12 ppmvd corrected to 3% O ₂ for atmospheric boilers/thermal fluid heaters
SOx	Good combustion practices and fired with natural gas
PM10	Good combustion practices and fired with natural gas
PM2.5	Good combustion practices and fired with natural gas
CO	Firetube Boiler: 50 ppmvd corrected to 3% O ₂ Watertube Boiler: 100 ppmvd corrected to 3% O ₂

BACT #240: For boilers/heaters ≥ 2 to < 5 MMBtu/hr, fired on LPG	
VOC	Good combustion practice, Use of LPG
NOx	12 ppmvd corrected to 3% O ₂
SOx	Good combustion practice, Use of LPG
PM10	Good combustion practice, Use of LPG
PM2.5	Good combustion practice, Use of LPG
CO	Firetube Boiler: 50 ppmvd corrected to 3% O ₂ Watertube Boiler: 100 ppmvd corrected to 3% O ₂

RULE REQUIREMENTS:

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

For units with a rating of ≥ 2 and < 5 MMBtu/hr, emissions shall not exceed the following levels:

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

South Coast AQMD

BACT

Source: [SCAQMD BACT Guidelines for Non-Major Polluting Facilities, page 13 \(2/5/2021\)](#)

For both atmospheric and non-atmospheric fired units, fueled by natural gas, with a rating of > 2 and < 5 MMBtu/hr:	
VOC	No Standard
NOx	Compliance with SCAQMD Rules 1146 or 1146.1 (see below)
SOx	Use of natural gas
PM10	Use of natural gas
PM2.5	No standard
CO	Firetube Boiler: 50 ppmvd corrected to 3% O ₂ Watertube Boiler: 100 ppmvd corrected to 3% O ₂

Source: [SCAQMD BACT Guidelines for Non-Major Polluting Facilities, page 13](#) (2/5/2021)

For units fueled by LPG/propane, with a rating of ≥ 2 and < 5 MMBtu/hr:	
VOC	No standard
NOx	12 ppmvd corrected to 3% O ₂
SOx	No standard
PM10	No standard
PM2.5	No standard
CO	Firetube Boiler: 50 ppmvd corrected to 3% O ₂ Watertube Boiler: 100 ppmvd corrected to 3% O ₂

RULE REQUIREMENTS:

Reg XI, Rule 1146.1 – Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters (12-7-2018)

Requirements Table 1146-1

Category - Boiler Rating ≥ 2 and < 5 MMBtu/hr	NOx Limit
Atmospheric Units	12 ppmvd @ 3% O ₂ or 0.015 lbs/10 ⁶ BTU
Any unit fired on natural gas, excluding fire-tube boilers subject to (c)(1)(F), atmospheric units and thermal fluid heaters	9 ppm @ 3% O ₂ or 0.011 lbs/10 ⁶ BTU
Any fire-tube boilers fired on natural gas, excluding units with less than or equal to 12 ppm and greater than 9 ppm prior to 12/7/18	7 ppm @ 3% O ₂ or 0.0085 lbs/10 ⁶ Btu
Thermal Fluid Heaters	12 ppm @ 3% O ₂ or 0.015 lbs/10 ⁶ Btu
All other Units (A)	30 ppmvd @ 3% O ₂ or 0.036 lbs/10 ⁶ Btu

(A) All other units would include LPG/propane fired units (excluding atmospheric units and thermal fluid heaters)

All units rated > 2 MMBtu/hr must have CO emissions ≤ 400 ppmvd @ 3% O₂

San Diego County APCD

BACT

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

Note: SDCAPCD BACT Guidelines do not contain a specific determination for boilers/heaters in the size range of 2 to less than 5 MMBtu/hr, since these units are not required to obtain a written permit, pursuant to SDAPCD Regulation II Rule 11 – Exemptions from Rule 10 Permit Requirements.

SDAPCD Rule 11(d)

Any equipment, operation, or process that is listed below in Subsections (d)(1) through (d)(20), and that meets the stated exemption provision, parameter, requirement, or limitation, is exempt from the requirements of Rule 10. (d)(2)(v) Any boiler, process heater, or steam generator with a manufacturer's maximum gross heat input rating of less than 5 million BTU per hour fired exclusively with natural gas and/or liquefied petroleum gas.

The SDCAPCD has a BACT determination that applies to natural gas or propane fired boilers/heaters with a rating of less than 50 MMBtu/hr. The SDCAPCD has a BACT trigger level of 10.0 lbs/day for NOx, VOC, SOx and PM10. No limits have been established for PM2.5 or CO. Since, boilers in the size range of 2 to less than 5 MMBtu/hr are exempt from permit requirements, this BACT guideline does not apply.

RULE REQUIREMENTS:

Regulation 4, Rule 69.2.1 – Small Boilers, Process Heaters, Steam Generators and Large Water Heaters (7-01-2021)

This rule applies to any unit with a heat input rating from 75,000 Btu/hr to 2 MMBtu/hr. (Note that for this BACT determination only units rated exactly at 2 MMBtu/hr would apply)

Equipment Type	Fuel	Heat Input Rating (Btu per hour)	Concentration of NOx (ppmv at 3% O2)	Concentration of CO (ppmv at 3% O2)
New Unit	Natural Gas	Greater than 400,000 to 2,000,000	20	400
New Unit	Non PUC gas or Liquid Fuel	Greater than 400,000 to 2,000,000	30	400

Regulation 4, Rule 69.2.2 – Medium Boilers, Process Heaters and Steam Generators (9-09-2021)

This rule applies to any unit with a heat input rating greater than 2 MMBtu/hr to less than 5 MMBtu/hr.

Equipment Type	Fuel	Heat Input Rating (Btu per hour)	Concentration of NOx (ppmv at 3% O2)	Concentration of CO (ppmv at 3% O2)
New Unit	Gaseous Fuel	Greater than 2,000,000 to less than 5 MMBtu/hr	30	400

Bay Area AQMD

BACT

Source: [BAAQMD BACT Workbook](#)

Note: BAAQMD BACT Workbook does not contain a determination for boilers/heaters 5 MMBtu/hr or less fired exclusively on natural gas or LPG, since these units are not required to obtain a written permit, pursuant to BAAQMD Regulation 2, Rule 1 – General Requirements.

[BAAQMD Rule 2-1-114 – General Requirements](#)

The following equipment is exempt from the, requirements of Sections 2-1-301 and 302 (requirement to obtain an ATC or PTO): (114.1) Boilers, Heaters, Steam Generators, Duct Burners, and Similar Combustion Equipment:

- 1.2 Any of the above equipment with less than 10 million BTU per hour rated heat input if fired exclusively with natural gas (including compressed natural gas), liquefied petroleum gas (e.g. propane, butane, isobutane, propylene, butylenes, and their mixtures), or any combination thereof.

RULE REQUIREMENTS:

Regulation 9, Rule 6 – Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters (11-7-2007)

For units with a rating of 400,001 Btu/hr to 2 MMBtu/hr:

1. Manufactured after 1/1/2008: NOx limit of 30 ppmvd corrected to 3% O₂.
2. Manufactured after 1/1/2013: NOx limit of 20 ppmvd corrected to 3% O₂.

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

For gaseous, except landfill or digester gas units with a rating of greater than 2 MMBtu/hr and less than or equal to 5 MMBtu/hr:

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

San Joaquin Valley Unified APCD

BACT

Source: [SJVUAPCD BACT Guideline 1.1.1 \(Rescinded\)](#)

The boiler BACT determinations listed in the SJVAPCD Clearinghouse have been rescinded.

Note: SJVUAPCD BACT Guidelines do not contain a determination for boilers 5 MMBtu/hr or less, since these units are not required to obtain a written permit, pursuant to SJVUAPCD Rule 2020 - Exemptions.

SJVUAPCD Rule 2020 §6.0

No Authority to Construct or Permit to Operate shall be required for (§6.1) steam generators, steam super heaters, water boilers, water heaters, steam cleaners, and closed indirect heat transfer systems that have a maximum input heat rating of 5,000,000 Btu per hour (gross) or less and is equipped to be fired exclusively with (§6.1.1.1) natural gas, (§6.1.1.2) liquefied petroleum gas, or (§6.1.1.3) any combination of the two.

RULE REQUIREMENTS:

Rule 4307 – Boilers, Steam Generators, and Process Heaters – 2.0 MMBtu/hr to 5.0 MMBtu/hr (4-21-2016)

Type (Gaseous or Liquid Fuel Fired)	NOx Limit ppmvd @ 3% O₂	CO Limit ppmvd @ 3% O₂	Effective Date
New or replacement atmospheric units not listed below	12 or 0.014 lb/MMBtu	400	1/1/2010
New or replacement atmospheric unit that is one of the following: - A unit used at a school, or - A unit in an oil field or refinery, or - A glycol reboiler, or - A unit with a heat input of 1.8 to 5.0 billion Btu per calendar year.	12 or 0.014 lb/MMBtu	400	1/1/2016
New or replacement non-atmospheric units not listed below	9 or 0.011 lb/MMBtu	400	1/1/2010
New or replacement non-atmospheric unit that is one of the following: - A unit used at a school, or - A unit in an oil field or refinery, or - A glycol reboiler, or - A unit with a heat input of 1.8 to 5.0 billion Btu per calendar year.	9 or 0.011 lb/MMBtu	400	1/1/2016

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

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
VOC	<p><u>For Natural Gas Fired Units</u></p> <ol style="list-style-type: none"> 1. Good combustion practice and use of natural gas – [SMAQMD] 2. No standard – [EPA, ARB, SCAQMD, SDAPCD, BAAQMD, SJVAPCD] <p><u>For LPG/Propane Fired Units</u></p> <ol style="list-style-type: none"> 1. Good combustion practice and use of LPG – [SMAQMD] 2. No standard – [EPA, ARB, SCAQMD, SDAPCD, BAAQMD, SJVAPCD]
NOx	<p><u>For Natural Gas Fired Units</u></p> <ol style="list-style-type: none"> 1. Any unit fired on natural gas, excluding fire-tube boilers, atmospheric units, and thermal fluid heaters: 9 ppmvd corrected to 3% O₂ Any fire-tube boilers on natural gas: 7 ppmvd corrected to 3% O₂ Atmospheric units & Thermal Fluid Heaters: 12 ppmvd corrected to 3% O₂ – [SCAQMD] 2. Non-atmospheric: 9 ppmvd corrected to 3% O₂ Atmospheric units & Thermal Fluid Heaters: 12 ppmvd corrected to 3% O₂ – [SMAQMD] 3. Non-atmospheric: 9 ppmvd corrected to 3% O₂ Atmospheric: 12 ppmvd corrected to 3% O₂ – [SJVUAPCD] 4. 12 ppmvd corrected to 3% O₂ – [EPA, ARB, SBCAPCD] 5. 20 ppmvd corrected to 3% O₂ for units equal to 2.0 MMBtu/hr 30 ppmvd corrected to 3% O₂ for units greater than 2.0 to less than 5.0 MMBtu/hr – [SDAPCD, BAAQMD] <p><u>For LPG/Propane Fired Units</u></p> <ol style="list-style-type: none"> 1. Non-atmospheric: 9 ppmvd corrected to 3% O₂ Atmospheric: 12 ppmvd corrected to 3% O₂ – [SJVUAPCD] 2. 12 ppmvd corrected to 3% O₂ – [EPA, SMAQMD, SCAQMD (A)] 3. 20 ppmvd corrected to 3% O₂ - [ARB, SBAPCD] 4. 30 ppmvd corrected to 3% O₂ - [SDAPCD, BAAQMD, SCAQMD (B)]
SOx	<p><u>For Natural Gas Fired Units</u></p> <ol style="list-style-type: none"> 1. Good combustion practice and use of natural gas – [SMAQMD] 2. Use of natural gas – [SCAQMD] 3. No standard – [EPA, ARB, SDAPCD, BAAQMD SJVUAPCD] <p><u>For LPG/Propane Fired Units</u></p> <ol style="list-style-type: none"> 1. Good combustion practice and use of LPG – [SMAQMD] 2. No standard – [EPA, ARB, SCAQMD, SDAPCD, BAAQMD, SJVUAPCD]
PM10	<p><u>For Natural Gas Fired Units</u></p> <ol style="list-style-type: none"> 1. Good combustion practice and use of natural gas – [SMAQMD] 2. Use of natural gas – [SCAQMD] 3. No standard – [EPA, ARB, SDAPCD, BAAQMD SJVUAPCD]

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
	<u>For LPG/Propane Fired Units</u> 1. Good combustion practice and use of LPG – [SMAQMD] 2. No standard – [EPA, ARB, SCAQMD, SDAPCD, BAAQMD, SJVUAPCD]
PM2.5	<u>For Natural Gas Fired Units</u> 1. Good combustion practice and use of natural gas – [SMAQMD] 2. No standard – [EPA, ARB, SCAQMD, SDAPCD, BAAQMD, SJVUAPCD]
	<u>For LPG/Propane Fired Units</u> 1. Good combustion practice and use of LPG – [SMAQMD] 2. No standard – [EPA, ARB, SCAQMD, SDAPCD, BAAQMD, SJVUAPCD]
CO	<u>For Natural Gas Fired Units</u> 1. Firetube Boilers: 50 ppmvd corrected to 3% O ₂ , and Watertube Boilers: 100 ppmvd corrected to 3% O ₂ – [SMAQMD, SCAQMD] 2. 100 ppmvd corrected to 3% O ₂ – [ARB, SBCAPCD] 3. 400 ppm of CO corrected to 3% O ₂ – [SDAPCD, BAAQMD, SJVAPCD] 4. No standard – [EPA]
	<u>For LPG/Propane Fired Units</u> 1. Firetube Boilers: 50 ppmvd corrected to 3% O ₂ , and Watertube Boilers: 100 ppmvd corrected to 3% O ₂ – [SMAQMD, SCAQMD] 2. 400 ppm of CO corrected to 3% O ₂ – [SDAPCD, BAAQMD, SJVAPCD] 3. No standard – [EPA, ARB]

- (A) 12 ppmvd NO_x corrected to 3% O₂ is the SCAQMD standard for Atmospheric boilers only fired on LPG/Propane.
- (B) 30 ppmvd NO_x corrected to 3% O₂ is the SCAQMD standard for Non-Atmospheric boilers only fired on LPG/Propane.

SCAQMD’s BACT Determination and Rule 1146.1 requires that fire-tube boilers meet 7 ppmvd NO_x corrected to 3% O₂. In the previous SMAQMD BACT #239 comments were received from Cleaver Brooks that the 7 ppmvd standard for fire-tube boilers is not feasible for boilers in the 2-5 MMBtu/hr size range, which is primarily for commercial heating boilers. To determine if 7 ppm boilers have been achieved in practice, SCAQMD’s Public Document Search was used to identify permitted boilers under 5 MMBtu/hr, since the 7 ppm NO_x standard was added to Rule 1146.1 on 12/7/18.

Four different makes of fire-tube boilers were found to be permitted at the 7 ppm standard. The boilers permitted at 7 ppm NO_x include a 2.94 MMBtu/hr Hurst Model S4-X-100-150 (Permit #G63725), 3.5 MMBtu/hr Lochinvar Crest Model FB 3501 (Permit #G66984), 4.0 MMBtu/hr Cleaver-Brooks Model CFLC-700-4000-160HW (Permit #G67136), and 3.348 MMBtu/hr Burnham Commercial Boilers Model LN3P-80-50-G-STJ (Permit #G58483). See Attachment D for SCAQMD Permits.

SMAQMD, SCAQMD, and SJVAPCD Achieved in Practice require the following criteria. Per SMAQMD’s Small Emitter Policy, to be Achieved in Practice “the rating and capacity for the achieved in practice device is approximately the same as that for the proposed device” and “the control technology must be verified to perform effectively over the range of operations expected for that class

and category of source.” SCAQMD has “the control technology must be verified to perform effectively over the range of operation expected for that type of equipment.” and SJVAPCD has “The rating and capacity for the unit where the control was achieved must be approximately the same as that for the proposed unit.”

Multiple boiler makes and size ratings have been permitted in SCAQMD which achieve the 7 ppm standard. Therefore, the emission standard of 7 ppm NOx for fire-tube boilers will be considered achieved in practice across the rating and capacity of the proposed BACT Determination size category.

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

BEST CONTROL TECHNOLOGIES ACHIEVED		
BACT #309 – Boiler/heater natural gas fired greater or equal to 2 MMBtu/hr to less than 5 MMBtu/hr		
Pollutant	Standard	Source
VOC	Good combustion practice and use of natural gas	SMAQMD
NOx	Any unit fired on natural gas, excluding fire-tube boilers, atmospheric units, and thermal fluid heaters: 9 ppmvd at 3% O ₂ Any fire-tube boilers on natural gas: 7 ppmvd corrected to 3% O ₂ Atmospheric units and thermal fluid heaters: 12 ppmvd at 3% O ₂	SCAQMD
SOx	Good combustion practice and use of natural gas	SMAQMD
PM10	Good combustion practice and use of natural gas	SMAQMD
PM2.5	Good combustion practice and use of natural gas	SMAQMD
CO	Firetube Boilers: 50 ppmvd at 3% O ₂ Watertube Boilers: 100 ppmvd at 3% O ₂	SMAQMD, SCAQMD

BEST CONTROL TECHNOLOGIES ACHIEVED		
BACT #310 – Boiler/heater LPG fired greater or equal to 2 MMBtu/hr to less than 5 MMBtu/hr		
Pollutant	Standard	Source
VOC	Good combustion practice and use of LPG	SMAQMD
NOx	Non-atmospheric units: 9 ppmvd at 3% O ₂ Atmospheric units: 12 ppmvd at 3% O ₂	SJVAPCD
SOx	Good combustion practice and use of LPG	SMAQMD
PM10	Good combustion practice and use of LPG	SMAQMD

BEST CONTROL TECHNOLOGIES ACHIEVED		
BACT #310 – Boiler/heater LPG fired greater or equal to 2 MMBtu/hr to less than 5 MMBtu/hr		
Pollutant	Standard	Source
PM2.5	Good combustion practice and use of LPG	SMAQMD
CO	Firetube Boilers: 50 ppmvd at 3% O ₂ Watertube Boilers: 100 ppmvd at 3% O ₂	SMAQMD, SCAQMD

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, 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. 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, PM2.5 and CO will be the most stringent standards of what is currently achieved in practice.

BACT #309 – Boiler/heater natural gas fired greater or equal to 2 MMBtu/hr to less than 5 MMBtu/hr		
Pollutant	Standard	Source
VOC	Good combustion practice and use of natural gas	SMAQMD
NOx	Any unit fired on natural gas, excluding fire-tube boilers, atmospheric units, and thermal fluid heaters: 9 ppmvd at 3% O ₂ Any fire-tube boilers on natural gas: 7 ppmvd corrected to 3% O ₂ Atmospheric units and thermal fluid heaters: 12 ppmvd at 3% O ₂	SCAQMD
SOx	Good combustion practice and use of natural gas	SMAQMD
PM10	Good combustion practice and use of natural gas	SMAQMD
PM2.5	Good combustion practice and use of natural gas	SMAQMD
CO	Firetube Boilers: 50 ppmvd at 3% O ₂ Watertube Boilers: 100 ppmvd at 3% O ₂	SMAQMD, SCAQMD

BACT #310 – Boiler/heater LPG fired greater or equal to 2 MMBtu/hr to less than 5 MMBtu/hr		
Pollutant	Standard	Source
VOC	Good combustion practice and use of LPG	SMAQMD
NOx	Non-atmospheric units: 9 ppmvd at 3% O ₂ Atmospheric units: 12 ppmvd at 3% O ₂	SJVAPCD
SOx	Good combustion practice and use of LPG	SMAQMD
PM10	Good combustion practice and use of LPG	SMAQMD
PM2.5	Good combustion practice and use of LPG	SMAQMD
CO	Firetube Boilers: 50 ppmvd at 3% O ₂ Watertube Boilers: 100 ppmvd at 3% O ₂	SMAQMD, SCAQMD

D: SELECTION OF T-BACT:

Toxics are in the form of VOCs and particulate matter. Since toxic emissions from natural gas fired boilers in the 2 to less than 5 MMBtu/hr size range are so small and the cancer risk is expected to be well below 1 in a million, T-BACT was not evaluated for this determination.

APPROVED BY: Brian F Krebs

DATE: 07-20-2022

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 - Natural Gas (includes propane & liquefied petroleum gas) (Process Code 13.310):

Boilers/Heaters 2.0 - < 5.0 MMBTU/hr							
RBLC#	Permit Date ^(A)	Rating	Fuel	Pollutant	Standard	Control Technology	Case-By-Case Basis
MI-0435	7/16/2018	3.8 MMBTU/hr	Natural gas	NOx	0.14 lb/hr	Low NOx burner	BACT-PSD
				CO	0.14 lb/hr	Good Combustion Controls	BACT-PSD
				PM10	0.03 lb/hr	Low sulfur fuel	BACT-PSD
				PM2.5	0.03 lb/hr	Low sulfur fuel	BACT-PSD
				VOC	0.03 lb/hr	Good Combustion Controls	BACT-PSD
MI-0426	3/24/2017	3 MMBTU/hr	Natural gas	CO	84 lb/MMSCF	Good combustion practices and clean burn fuel (pipeline quality NG)	BACT-PSD
				NOx	20 PPM @ 3% O2	Ultra-low NOx burners and good combustion practices	BACT-PSD
				PM10/PM2.5	0.52 lb/MMSCF	Good combustion practices and clean burn fuel (pipeline quality NG)	BACT-PSD
MI-0424	12/5/2016	3.7 MMBtu/hr	Natural gas	CO	0.41 lb/hr	Good combustion practices	BACT-PSD
				NOx	0.55 lb/hr	Good combustion practices	BACT-PSD
				PM10/PM2.5	0.0075 lb/MMBtu	Good combustion practices	BACT-PSD

Boilers/Heaters 2.0 - < 5.0 MMBTU/hr							
RBL#	Permit Date ^(A)	Rating	Fuel	Pollutant	Standard	Control Technology	Case-By-Case Basis
				VOC	0.03 lb/hr	Good combustion practices	BACT-PSD
CA-1189	1/24/12	2.0 MMBtu/hr	Propane, field gas, PUC, natural gas	NOx	20 ppmvd @ 3% O2	Low NOx Burner	OTHER CASE-BY-CASE
CA-1190	1/24/12	3.0 MMBtu/hr	Propane, field gas, PUC, natural gas	NOx	12 ppmvd @ 3% O2	Low NOx Burner	OTHER CASE-BY-CASE

(A) Due to the large number of entries only determinations made (based on Permit Date) entered since 01/01/2012 are included in the above table.

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



Technology Transfer Network

[Clean Air EPA Home](#) | [Air Quality Radiation & Noise Act \(PACT/NAFTA\) Clearinghouse](#) | [Clean Air Technology Center](#)
[RACT/BACT/LAER Clearinghouse](#) | [RBLC Basic Search](#) | [RBLC Search Results](#) | [Process Information - Details](#)

Process Information - Details

For information about the pollutants related to this process, click on the specific pollutant in the list below.

- [RBLC Home](#)
- [New Search](#)
- [Search Results](#)
- [Facility Information](#)
- [Process List](#)
- [Process Information](#)

[Help](#)

FINAL

RBLC ID: CA-1190
Corporate/Company: PETROROCK- TUNNELL LEASE
Facility Name: PETROROCK- TUNNELL LEASE
Process: Heater

Primary Fuel: Propane, field gas, PUC natural gas
Throughput: 3.00 MMBTU/H
Process Code: 13.310

Pollutant Information - List of Pollutants

[Help](#)

Pollutant	Primary Emission Limit	Basis	Verified
<u>Nitrogen Oxides (NOx)</u>	12.0000 PPMVD@3% O2	OTHER CASE-BY- CASE	UNKNOWN

Process Notes:



https://cfpub.epa.gov/rblc/index.cfm?action=PermitDetail.FacilityInfo&facility_id=27288
Last updated on 4/8/2016

Technology Transfer Network

Clean Air EPA Home | Air Quality Criteria | TTN Web | Technology Transfer Network | Clean Air Tech
RACT/BACT/LAER Clearinghouse | RBLC Basic Search | RBLC Search Results | Facility Information

Facility Information

To learn more about the processes associated with this facility, click the Process List button. You can then view pollutant information for each process.

[RBLC Home](#) [New Search](#) [Search Results](#) [Facility Information](#) [Process List](#)

[Help](#)

Date Entered:04/23/2012

Date Last Modified:09/06/2012

FINAL

RBLC ID: CA-1190

Corporate/Company: PETROROCK- TUNNELL LEASE

Facility Name: PETROROCK- TUNNELL LEASE

Facility Description:

State: CA
County: SANTA BARBARA
EPA Region: 9

Zip Code: 93454
Country: USA

Facility Contact Information:

Name:
Phone: E-Mail:

Agency Contact Information:

Agency: CA033 - SANTA BARBARA COUNTY APCD, CA
Contact: MR. BEN ELLENBERGER
Address: SANTA BARBARA COUNTY AIR
POLLUTION CONTROL DISTRICT
260 NORTH SAN ANTONIO RD.
SUITE A.
SANTA BARBARA, CA 93110-1315
Phone: (805) 961-8879
Other Agency
Contact Info: 805-961-8800

[EXIT Disclaimer](#) [Agency Link](#)

Permit Number: ATC- 12949-01 (3)	EST/ACT DATE
	Complete
	Application ACT 03/07/2011
	Date:
	Permit
	Issuance ACT 01/24/2012
	Date:
Permit Type: B: Add new process to existing facility	FRS Number: Not Available
	SIC Code: 1311
	NAICS Code: 211111

PERMIT URL:

Affected Class I / U.S. Border Area:

No affected Class 1 areas identified.

Facility-Wide Emission Increase/Decrease:
(After prevention/control measures)

No facilitywide emissions data available for this facility.

Other Permitting Information:

Attachment B

Review of BACT Determinations published by CARB

List of BACT determinations published in CARB's BACT Clearinghouse for boilers ≥ 2 MMBtu/hr to < 5 MMBtu/hr:

Capacity MMBtu/hr	Source	Date	Type	NOx ppmv @ 3% O ₂	CO ppmv @ 3% O ₂	VOC lbs/MMBtu	Filterable PM10 lbs/MMBtu	SO ₂ lbs/MMBtu
3.00	SANTA BARBARA COUNTY APCD	6/7/2011	Non- Atmospheric	12	100	NA	NA	NA
2.00	SANTA BARBARA COUNTY APCD	1/24/2012	Not Specified	20	NA	NA	NA	NA



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

ATTACHMENT
BACT Documentation

1. Pollutant(s): NO_x
2. Emission Unit: The Cleaver-Brooks boilers rated at 3.00 MMBtu/hr, Serial No: 02207-1-1, and 02207-1-2. Emission Controls: Low NO_x burner. PUC quality natural gas fired.
3. BACT Determination Summary:

Technology 1: Low NO_x burner (PUC quality natural gas)
Performance Standard: 12 ppmvd at 3 percent oxygen for NO_x
100 ppmvd at 3 percent oxygen for CO
4. Level of Stringency: Achieved in Practice
 Technologically Feasible
 RACT, BARCT, NSPS, NESHAPS, MACT
5. BACT Selection Process Discussion: Achieved in Practice determination based on SCAQMD BACT Guidelines for boilers rated between 2.0 MMBtu/hr and 5.0 MMBtu/hr.
6. BACT Effectiveness: BACT is expected to be effective overall operating loads.
7. BACT During Non-Standard Operations: Non-standard operations were not identified by the applicant.
8. Operating Constraints: The boilers are required to operate with low NO_x burners.
9. Continuously Monitored BACT: CEMS are not required for this project.
10. Source Testing Requirement: Initial source testing is required for NO_x, ROC, and CO while fired on PUC quality natural gas. Subsequent source testing required upon District request.
11. Compliance Averaging Times: The concentration limits shall be enforced based on the approved source test procedures (the average of three 40-minute runs).
12. Multi-Phase Projects: This is not a multi-year project.
13. Referenced Documents: The SCAQMD BACT Guidelines are found online at:
SCAQMD BACT Guidelines: <http://www.aqmd.gov/bact/BACTGuidelines.htm>
14. PSD BACT: Not Applicable.

Attachment C

**Review of BACT Determinations published by
California Air Districts**

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0; 10-03-2008 Rev. 1; 12-02-2016 Rev. 2

2-1-2019 Rev. 3

Equipment or Process: Boiler

Subcategory/Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx ¹	SOx	CO	PM ₁₀	
Natural Gas Fired, > 2 and < 20 MMBtu/HR		Compliance with Rules 1146 or 1146.1 ² (12-02-2016)	Natural Gas (10-20-2000)	≤50 ppmvd for firetube type, ≤ 100 ppmvd for watertube type, corrected to 3% O ₂ (04-10-98)	Natural Gas (04-10-98)	
Propane Fired, > 2 and < 20 MMBtu/HR		≤ 12 ppmvd corrected to 3% O ₂ ² (10-20-2000)		≤50 ppmvd for firetube type, ≤ 100 ppmvd for watertube type, corrected to 3% O ₂ (04-10-98)		
Natural Gas or Propane Fired, ≥ 20 and < 75 MM Btu/HR		Compliance with Rule 1146 (2-1-2019)	Natural Gas (10-20-2000)	Same as above. (04-10-98)	Natural Gas (04-10-98)	With Add-On Controls: ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)
Natural Gas or Propane Fired, ≥ 75 MM Btu/HR		Compliance with Rule 1146 (12-02-2016)	Natural Gas (10-20-2000)	Same as above. (04-10-98)	Natural Gas (04-10-98)	With Add-On Controls: ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)

* Means those facilities that are minor facilities as defined by Rule 1302 - Definitions

CATEGORY Type: **BOILER/HEATER < 5 MMBTU**

BACT Category: SMALL EMITTER (PTE < 10 LBS/DAY)

BACT Determination Number: 239	BACT Determination Date: 4/14/2020
---------------------------------------	---

Equipment Information

Permit Number: N/A -- Generic BACT Determination
Equipment Description: BOILER
Unit Size/Rating/Capacity: Natural gas fired ≥2 MMBtu/hr & <5 MMBtu/hr
Equipment Location:

BACT Determination Information

District Contact: Jeffrey Quok Phone No.: (916) 874-4863 email: jquok@airquality.org

ROCs	Standard:	Good combustion practice
	Technology Description:	
	Basis:	Achieved in Practice
NOx	Standard:	
	Technology Description:	Non-atmospheric units: 9 ppmvd at 3% O ₂ , Atmospheric units/thermal fluid heaters: 12 ppmvd at 3% O ₂
	Basis:	Achieved in Practice
SOx	Standard:	Good combustion practice
	Technology Description:	
	Basis:	Achieved in Practice
PM10	Standard:	Good combustion practice
	Technology Description:	
	Basis:	Achieved in Practice
PM2.5	Standard:	Good combustion practice
	Technology Description:	
	Basis:	Achieved in Practice
CO	Standard:	
	Technology Description:	Firetube Boilers: 50 ppmvd at 3% O ₂ , Watertube Boilers: 100 ppmvd at 3% O ₂
	Basis:	Achieved in Practice
LEAD	Standard:	
	Technology Description:	
	Basis:	

Comments: This is a generic BACT determination based on BACT determinations made and published by other air agencies in California and/or other states.

This BACT Determination is for units classified as small emitters (less than 10 lbs/day of VOC, NOx, SOx, PM10, or PM2.5 and less than 550 lbs/day CO) and are located at non-major stationary sources.

CATEGORY Type: **BOILER/HEATER < 5 MMBTU**

BACT Category: SMALL EMITTER (PTE < 10 LBS/DAY)

BACT Determination Number: 240	BACT Determination Date: 4/14/2020
---------------------------------------	---

Equipment Information

Permit Number: N/A -- Generic BACT Determination
Equipment Description: BOILER
Unit Size/Rating/Capacity: LPG fired ≥2 & <5 MMBTU/HR
Equipment Location:

BACT Determination Information

District Contact: Jeffrey Quok Phone No.: (916) 874-4863 email: jquok@airquality.org

ROCs	Standard:	Good combustion practice, Use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
NOx	Standard:	12 ppmvd @ 3% O2
	Technology Description:	
	Basis:	Achieved in Practice
SOx	Standard:	Good combustion practice, Use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
PM10	Standard:	Good combustion practice, Use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
PM2.5	Standard:	Good combustion practice, Use of LPG
	Technology Description:	
	Basis:	Achieved in Practice
CO	Standard:	
	Technology Description:	Firetube: 50 ppmvd @ 3% O2, Watertube: 100 ppmvd @3% O2
	Basis:	Achieved in Practice
LEAD	Standard:	
	Technology Description:	
	Basis:	

Comments: This is a generic BACT determination based on BACT determinations made and published by other air agencies in California and/or other states.

This BACT Determination is for units classified as small emitters (less than 10 lbs/day of VOC, NOx, SOx, PM10, or PM2.5 and less than 550 lbs/day CO) and are located at non-major stationary sources.

Attachment D

SCAQMD Boiler Permits with 7 PPM NOx Standard



South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
PERMIT TO CONSTRUCT/OPERATE

Page 1
Permit No.
G66979
A/N 632157

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for the annual renewal fee (Rule 301(d)) is not received by the expiration date, contact the District.

**Legal Owner
or Operator:**

HUNTSMAN ADVANCED MATERIALS AMERICAS LLC
5121 SAN FERNANDO RD WEST
LOS ANGELES, CA 90039-1011

ID 193550

Equipment Location: 5121 SAN FERNANDO RD WEST LOS ANGELES, CA 90039-1011

Equipment Description :

Boiler, Hurst, Fire-Tube Type, Model 400 S4-X-70-150, with one Power Flame Nova Plus 2 Ultra Low NOx Burner, Model NP2-G-340, Natural Gas Fired, Rated 2.94 MMBTU/hr, one 70HP Combustion Air Blower, and an Oxygen Trim System.

Conditions :

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
2. This equipment shall be properly maintained and kept in good operating condition at all times.
3. This equipment shall be fired on natural gas only.
4. This equipment shall be operated in compliance with all applicable provisions of Rule 1146.1.
5. This equipment shall not emit more than 7 ppm of Oxides of Nitrogen (NOx), calculated as NO₂, and not more than 50 ppm of Carbon Monoxide (CO), all measured by volume on a dry basis at 3% O₂.
6. The owner or operator of this equipment shall conduct an initial source test and subsequent source test every three years under the following conditions and per Rule 1146.1 to verify compliance with NOx and CO emission limits in this permit:
 - A. The test shall be performed by a testing laboratory certified to meet the criteria in South Coast AQMD Rule 304 (No Conflict of Interest).
 - B. A source test shall be conducted within 60 days after initial start-up of this equipment or within 180 days after receipt of this permit, unless otherwise approved in writing by the Executive Officer.
 - C. Written notice of the source test shall be submitted to the South Coast AQMD (addressed to South Coast AQMD, PO Box 4941, Diamond Bar, CA 91765) at least 14 days prior to testing so that an observer may be present.
 - D. Source testing shall be conducted in accordance with South Coast AQMD Method 100.1. The tests shall be conducted while the boiler is operating at maximum, minimum and average firing rates. The sampling times shall be at least 15 consecutive minutes for maximum and minimum loads and at least one hour for normal operating load.



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South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
PERMIT TO OPERATE

Page 1
Permit No.
G66984
A/N 626710

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for the annual renewal fee (Rule 301(d)) is not received by the expiration date, contact the District.

**Legal Owner
or Operator:**

GLENDALÉ UNI SCH DIST/GLENDALÉ HIGH SCH
333 W MAGNOLIA AVE, ATTN:FAC & SUPPORT OPER
GLENDALÉ, CA 91204

ID 82741

Equipment Location: 1440 E BROADWAY GLENDALÉ, CA 91205

Equipment Description :

Boiler, Fire-tube Type, Lochinvar Crest, Model FB 3501, with a Bekaert Low NOX Burner, Natural Gas Fired,
rated at 3,500,000 Btu per hour.

Conditions :

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
2. This equipment shall be properly maintained and kept in good operating condition at all times.
3. This boiler shall be fired with natural gas only.
4. This equipment shall comply with all applicable requirements of Rule 1146.1 and Rule 431.1.
5. This equipment shall emit no more than 7 ppmv of Oxides of Nitrogen (NO_x), calculated as NO₂, and 50 ppmv of Carbon Monoxide (CO), all measured by volume on a dry basis at 3% oxygen averaged over a period of 15 consecutive minutes.
6. This equipment shall automatically regulate the combustion air and fuel rate as the heater load varies. This automatic control system shall be adjusted, tuned, and maintained periodically, according to the manufacturer's specifications to assure its ability to repeat the same performance at the same burner firing rate.
7. This equipment shall not exceed a maximum firing load of 16%.
8. The operator of this equipment shall conduct periodic monitoring of NO_x and CO emissions, pursuant to the schedule in Rule 1146.1, with a portable NO_x, CO and oxygen analyzer and in accordance with the protocols/guidelines specified in Rule 1146.1.
9. A source test shall be conducted every five years to verify compliance with the NO_x and CO emission limits specified in Condition No. 5.
10. The owner or operator of this equipment shall conduct a source test on the equipment to verify compliance with Condition No. 5 and Rule 1146.1 under the following conditions:



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South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
PERMIT TO CONSTRUCT/OPERATE

Page 1
Permit No.
G67136
A/N 629585

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for the annual renewal fee (Rule 301(d)) is not received by the expiration date, contact the District.

**Legal Owner
or Operator:**

PROVIDENCE TARZANA MEDICAL CENTER
18321 CLARK ST
TARZANA, CA 91356-3501

ID 156902

Equipment Location: 18321 CLARK ST, TARZANA, CA 91356-3501

Equipment Description :

Cleaver-Brooks, Boiler, Model No. CFLC-700-4000-160HW, Serial No. 1601040021054, Natural Gas Fired, Fire Tube, with a Low NOx Cleaver-Brooks burner, Model: Premix, Rated at 4,000,000 Btu/hr, Equipped with a 5 HP Blower.

Conditions :

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
2. This equipment shall be properly maintained and kept in good operating condition at all times.
3. This equipment shall be fired with natural gas only.
4. The owner or operator of this equipment shall comply with all applicable requirements of Rule 1146.1.
5. The operator of this equipment shall comply with all applicable source testing and periodic monitoring requirements of Rule 1146.1.
6. This boiler shall emit no more than 7 ppm for Oxides of Nitrogen (NOx) measured by volume on a dry basis at 3% oxygen averaged over a period of 15 consecutive minutes.
7. This boiler shall emit no more than 50 ppm for Carbon Monoxide (CO) measured by volume on a dry basis at 3% oxygen over a period of 15 consecutive minutes.
8. This boiler shall be equipped with a non-resettable, totalizing fuel flow meter to indicate fuel usage.
9. The operator shall limit the natural gas fuel usage to no more than 2.83 MMCF in any one month.
10. The owner or operator of the equipment shall conduct a source test to verify compliance with condition nos. 6 and 7 and Rule 1146.1 under the following conditions:
 - A. Source testing shall be conducted within 180 days of start of boiler operations and at least every 5 years thereafter.]]



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South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
PERMIT TO CONSTRUCT/OPERATE

Page 1
Permit No.
G58482
A/N 613911

This initial permit must be renewed ANNUALLY unless the equipment is moved, or changes ownership.
If the billing for the annual renewal fee (Rule 301(d)) is not received by the expiration date, contact the District.

**Legal Owner
or Operator:**

ORANGE COAST MEMORIAL MEDICAL CENTER
9920 TALBERT AVE
FOUNTAIN VALLEY, CA 92708

ID 107891

Equipment Location: 9900-40 TALBERT AVE, FOUNTAIN VALLEY, CA 92708

Equipment Description :

Boiler No. 1, Fire Tube, Burnham Commercial Boilers, Model No. LN3P-80-50-G-STJ, 3,348,000 Btu per Hour,
with a Lox-NOx Burner, Natural Gas-Fired, Equipped with a 5 HP Blower.

Conditions :

1. Operation of this equipment shall be conducted in accordance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.
2. This equipment shall be properly maintained and kept in good operating condition at all times.
3. This equipment shall be fired with natural gas only.
4. The owner or operator of this equipment shall comply with all applicable requirements of Rule 1146.1.
5. The owner or operator of this equipment shall comply with source testing and periodic monitoring requirements of Rule 1146.1.
6. This boiler shall emit no more than 7 ppm for oxides of nitrogen (NOx) measured by volume on a dry basis at 3% oxygen averaged over a period of 15 consecutive minutes.
7. This boiler shall emit no more than 50 ppm for carbon monoxide (CO) measured by volume on a dry basis at 3% oxygen averaged over a period of 15 consecutive minutes.
8. An operational non-resettable totalizing fuel flow meter shall be installed and maintained on each boiler to indicate the fuel usage.
9. The operator shall limit the monthly natural gas usage to no more than 2.372 mmcf in any one month.
10. The facility shall retain all records required by the permit for a period of two years and make all records available to South Coast AQMD personnel upon request.
11. The owner or operator of this equipment shall conduct a source test to verify compliance with Conditions 6 and 7 and Rule 1146.1 under the following conditions:



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