CAPCOA

ENFORCEMENT, ENGINEERING & TOXICS SYMPOSIUM

NOVEMBER 7-8, 2017

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ENGINEERING MANAGER
VENTURA COUNTY APCD

GREENHOUSE GAS EMISSION STANDARDS
CRUDE OIL & NATURAL GAS FACILITIES

CARB'S NEW GHG RULE

OIL & GAS INDUSTRY

FLARE REQUIREMENTS


FR CK


HALLIBURTON

GHG REGULATION - SECTION 95671

VAPOR COLLECTION SYSTEMS & VAPOR CONTROL DEVICES

Separator and Tank Systems

***Rod Packing & Seal Vents – Reciprocating Compressors**

***Wet Seal Vents – Centrifugal Compressors**

***Vents – Gas Powered Pneumatic Devices & Pumps**

***Venting – Gas Well Liquids Unloading**

*** = Optional**

GHG REGULATION - SECTION 95671

VAPOR COLLECTION SYSTEMS & VAPOR CONTROL DEVICES

Sales gas system, fuel gas system, or gas disposal well

A non-destructive vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not result in emissions of nitrogen oxides (NOx);

A vapor control device that achieves at least 95 percent vapor control efficiency of total emissions and does not generate more than 15 parts per million volume (ppmv) NO_x when measured at 3 percent oxygen and does not require the use of supplemental fuel gas, other than gas required for a pilot burner, to operate.

CALIFORNIA AIR RESOURCES BOARD

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About Our Work Resources Business Assistance Rulemaking News

Friday, October 27, 2017

UP LINKS

- Business Assistance
- e-Services / Databases
  - Best Available Control Technology (BACT)

PROGRAM LINKS

- Background
- New BACT Clearinghouse
  - Input New BACT Determination
  - Search Determinations
- RACT / BARCT

RESOURCES

- Contact Us
  - ARB Contacts
  - BACT Contacts in California
- Join Any ARB Email List(s)
- RSS / Newsfeed

BACT Clearinghouse Search Results v1.2

[3] matching record(s) found

District - All Districts

Category - Oil and Gas Production: Flares and Thermal Oxidizers

Pollutant - All

Capacity / Dimension	Pollutant	District Name District Contact	Plant Name	
17.00 MMBtu/hr	NOx, VOC,	Santa Barbara County APCD David Harris	PetroRock - Tunnell Lease	View Determination
41.00 MMBtu/hr	NOx, VOC,	Santa Barbara County APCD David Harris	Careaga Lease, Orcutt Hill Oilfield	View Determination
3.40 MMBtu/hr	NOx, VOC,	Santa Barbara County APCD David Harris	E & B Crude Loading Rack	View Determination

BACT Input Form

Search Determinations

Our Vision Clean Air

Santa Barbara County
Air Pollution Control District

BEST AVAILABLE CONTROL TECHNOLOGY (BACT) GUIDELINE 1.5.1

Equipment Category:	Oilfield Production Flares and Thermal Oxidizers
Revision:	1.2
Date:	July 6, 2017

Pollutant	BACT Requirement	BACT Technology	Performance Standard	AIP/TF
NO_x	1	Ultra-low emission burner technology	15 ppmvd at 3% O_2; 0.0183 lb/MMBtu	AIP
ROC	1	Ultra-low emission burner technology	10 ppmvd at 3% O_2; 0.0042 lb/MMBtu	AIP
CO	1	Ultra-low emission burner technology	10 ppmvd at 3% O_2; 0.0074 lb/MMBtu	AIP
SO_x, PM, PM_{10}, $PM_{2.5}$	1.a	PUC quality natural gas	$\leq$ 80 ppmv total sulfur and $\leq$ 4 ppmv H_2S	AIP
	1.b	Produced gas treated using a continuously operating sulfur removal system	Case-by-case	AIP
	2	Fuel Gas Sulfur Plan	N/A	AIP
All Pollutants	1	Flare Minimization Plan	N/A	AIP

Notes:

1. NO_x means oxides of nitrogen (as NO_2) and SO_x means oxides of sulfur (as SO_2).
2. AIP means Achieved in Practice. TF means Technologically Feasible.
3. BACT is the most stringent control technique for the emissions unit and equipment category that is either achieved in practice or technologically feasible/cost effective.
4. BACT determinations are subject to periodic updates without advanced notice.

SCAQMD BACT DETERMINATION

FLARE - OIL AND GAS OPERATIONS

27 MMBTU/Hr Flare Industries/Bekaert Model CEB 800

NIT mesh knitted metal fiber enclosed burner
Continuous pilot burner w/ thermocouple flame detection

BACT Limits:

VOC = 10 ppmv tested 99.9+% destruction VOC/BTEX
NOx = 15 ppmv
CO = 10 ppmv

1-hour average at 3% O2

*****Bekaert is now AEREON**

Thermal Oxidation/Incineration Systems

Ultra-Low Emissions Systems

Enclosed Vapor Combustion Systems

CERTIFIED ULTRA-LOW EMISSIONS BURNER (CEB®)

The Certified Ultra-Low Emissions Burner (CEB®) is an ultra-low emissions vapor device that utilizes premix surface combustion to effectively combust waste gases in a compact footprint. With VOC destruction efficiencies of up to 99.99% and a NOx emissions guarantee of ≤ 15 ppmv at 3% oxygen, carbon monoxide emissions guarantee of < 10 ppmv, smokeless operation and no luminous flame, the CEB® is the best solution for your VOC destruction requirements.

The CEB® single unit product range varies from nominal thermal capacities as low as .34 MMBtu/hr (0.1 MW) to 41 MMBtu/hr (12 MW). The CEB® can be staged where multiple units can be installed in series for higher flows or turndowns.

CEB® Features:

The standard certified ultra-low emissions burner (CEB®) is a truly enclosed device which incorporates the following features:

- Ultra-low NOx burner

Downloads

- AEREON CEB 50 Product Sheet
- AEREON CEB 100 Product Sheet
- AEREON CEB 350 Product Sheet
- AEREON CEB 500 Product Sheet
- AEREON CEB 800-CA Product Sheet
- AEREON CEB 800 Product Sheet

sales@aereon.com www.aereon.com

AEREON

PRODUCT SPECIFICATIONS

ENCLOSED COMBUSTION SYSTEMS

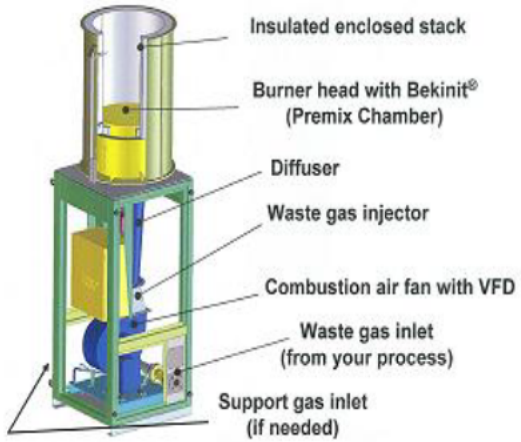
CEB® 800-CA

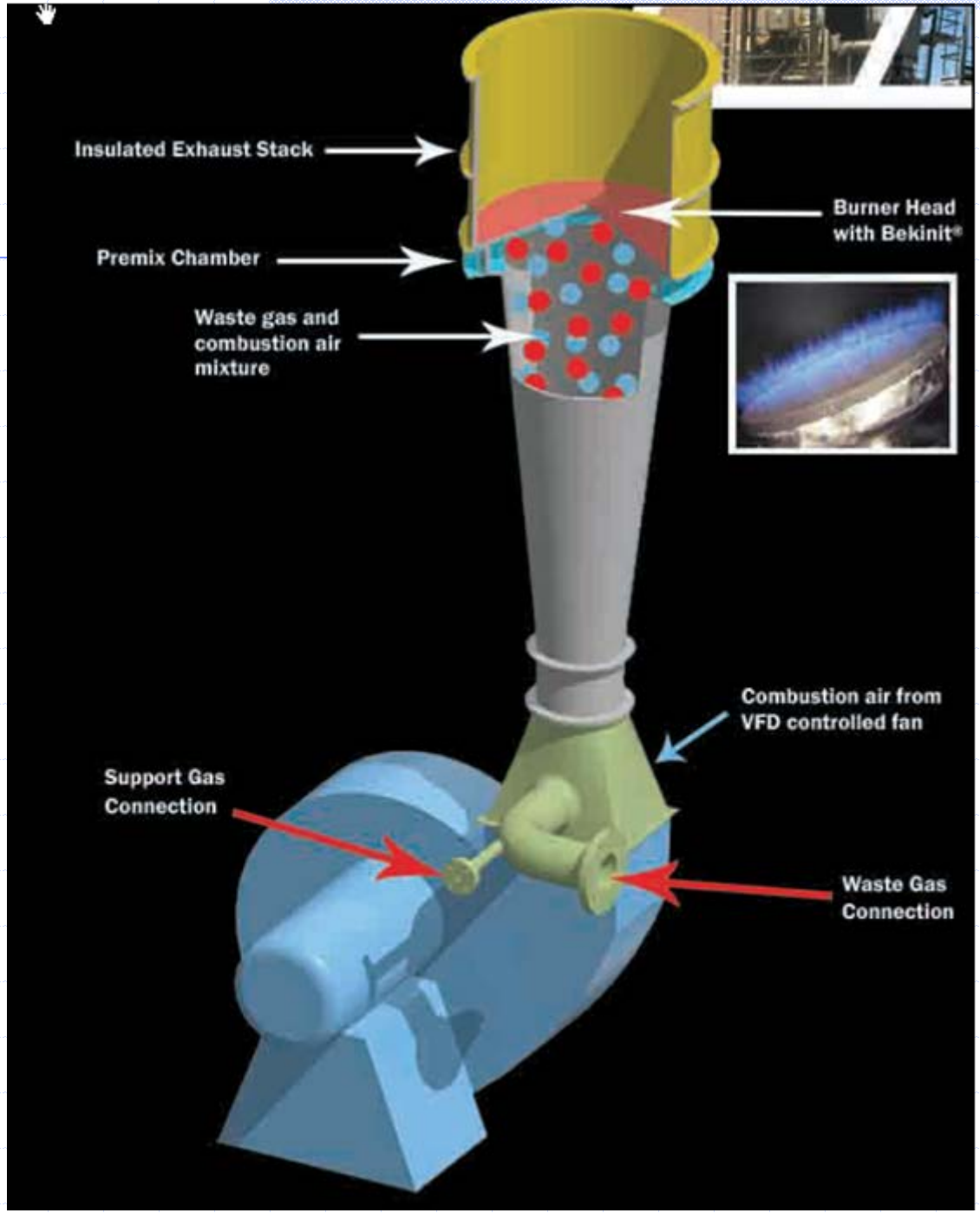
Specifications

Capacity*	898,000 SCFD or 898 MSCFD 25,500 (Nm3/day)
Maximum thermal capacity*	39 MMBTU/hr. (12.0 MWth)
Turndown ratio**	10:1
Footprint and height***	5' 10" x 6' 3" x 24' (178 x 191 x 731 cm)
Approximate weight	8,300 lbs. (3,770 kg)
Waste gas supply pressure	10 – 80" WC (25 – 200 mbar(g))
Fan motor size	40 hp (30 kWe)
Waste gas connection	4" ANSI 150 lbs. RF
Support gas connection	2" ANSI 150 lbs. RF
Ignition System	Spark or pilot ignition
Operating temperature	1,800 to 2,200°F (982 – 1204 °C)
Ground temperature	Ambient during operation

*Capacity is based on natural gas with gross heating value of 1,069 BTU/scf (39.8 MJ/Nm3)

** Turndown ratio can be increased for specific projects with customized units




Insulated Exhaust Stack
Burner Head with Bekinit®
Premix Chamber
Waste gas and combustion air mixture
Combustion air from VFD controlled fan
Support Gas Connection
Waste Gas Connection