



Proposed Updates to BACT Guidelines

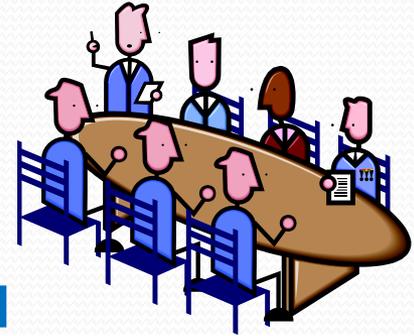
BACT Scientific Review Committee
May 24, 2017

Background

- **Updated BACT Guidelines and established Charter for BACT SRC at December 2016 Board meeting**
- **Board directed staff to continue work on updating BACT Guidelines, reviewing BACT determinations done by other air districts with an emphasis on UV/EB inks and coatings technology and report back to Stationary Source Committee by June 2017 on proposed updates**
- **Held two public BACT SRC meetings, April 4 & May 24, 2017 including 30-Day Comment period**

Proposed Updates to BACT Guidelines

- Parts B and D (major & minor source BACT)
- Reviewed achieved in practice BACT for UV/EV and water-based inks and coatings, Food Ovens, Engines and other equipment categories
- Reviewed BACT determinations from SCAQMD Engineering & Permitting and other Air Districts
- Conducted site visits to facilities (Printing, Food Oven, APC mfg.) and worked with printing industry trade organizations.
- Maintain consistency with recent changes to SCAQMD rules, State and Federal requirements
- Make BACT webpage more “User Friendly”



Received Nine Comments Letters

- **General** – Provide consistent emission units and averaging times
- **Part B, Major Source**
 - **Section I**
 - Flare (Landfill) – Indicate primary, backup & pilot fuels used and emission variations; CEB flare emission guarantees be recognized as BACT/LAER; “landfill gas” correction; Establish separate categories such as back-up flare and prime use flare
 - Flare (Digester) – Operational reliability issues should be considered; residence time; destruction efficiency should be included; CEB flare emission guarantees be recognized as BACT/LAER; source test emission correction; Establish separate categories such as back-up flare and prime use flare; Do not list as LAER due to limited capacity operation

Comments Letters (cont'd)

- **Section II**
 - Printing (Graphic Arts) – Flexographic: May allow higher VOC ink than Rule 1130. Rule 1130 should remain the standard.
 - Fiberglass Operations- Hand & Spray Layup: Not currently being applied at BACT for new permits. Current SCAQMD Rule 1162 and BAAQMD Reg. 8, Rule 50 have more stringent requirements.
- **Section III – Other Technologies**
 - Clarification that listings are not BACT/LAER; Should be excluded from BACT Guidelines.
 - I.C. Engine, Stationary, Emergency, Elec. Gen. - Engine family; Applicable EPA Tier 4 test methods and duty cycles; Recognize for public disclosure challenges of demonstrating emission control technologies due to limited operating schedules and SCR maintenance records for public review prior to moving listing from Sec. III to Sec. I or II; Cost effectiveness estimates should be disclosed in BACT Form and to Governing Board

Comments Letters (cont'd)

- **Section III – Other Technologies**
 - Fuel Cell (Digester gas) - Indicate test methods used and allowed deviations; applicable operating conditions
- **Part D, Non-Major Source**
 - Food Oven– CatOx applicability requirements; 600°F requirement clarification
 - Food Oven (Ribbon Burner >500°F)- Supporting test data unclear
 - Food Oven (Direct Fired)- missing source test data

Comments Letters (cont'd)

- **Part D, Non-Major Source**

- Printing (Graphic Arts) – Flexographic: Compliant UV/EB and water-based inks/coatings should be recognized as alternative to add-on control; Replace use of super compliant cleanup solvent with Rule 1171 compliance.
- Printing (Graphic Arts) – Screen Printing: Compliant UV/EB and water-based inks/coatings should be recognized as alternative to add-on control; Replace use of super compliant cleanup solvent with Rule 1171 compliance
- Printing (Graphic Arts) – Lithographic add-on control: 99% overall control achievable in practice
- Printing (Graphic Arts) – Flexographic add-on control: 95% destruction efficiency sample listing missing?

Part B, Section I, SCAQMD LAER/BACT



New Listings

Furnace

(Heat Treating Aluminum $\leq 900^{\circ}\text{F}$)

5MMBtu/hr, Low NOx burner, NOx=30ppm



Food Oven- Bakery

Four ovens: 3.2, 2.8, 3.2 & 5.4MMBtu/hr vented to 4MMBtu/hr CatOx @ 95% control & $\geq 600^{\circ}\text{F}$ inlet temp & ceramic pre filter, R1147 compliant, Ovens - R1153.1 compliant



Food Oven- Tortilla Chip

5.774MMBtu/hr, IR & Ribbon burners, NOx=54ppm @ 1 hr. avg., CO=2000ppm, @ 15 min. avg.



Food Oven- Snack Food

1.6MMBtu/hr, Maxon Low NOx burner, NOx=25ppm, CO=75ppm, both @ 1 hr. avg. 3% O₂



Flare- Biogas

12MMBtu/hr, Bekaert, NOx=0.025 lb/MMBtu, CO=0.06 & VOC=0.038
39.3MMBtu/hr, Emergency Stand-by, Zink, Ultra Low NOx, NOx=0.025, CO=0.06, VOC=5.5, PM=14.2



Flare- Landfill Gas

120MMBtu/hr, Zink ultra Low NOx, NOx=0.025 lb/MMBtu, CO=0.06; VOC=1.33 lb/hr, PM=1.4 lb/hr & SOx=2.5 lb/hr



Part B, Section I, SCAQMD LAER/BACT



Listing Updates

Boilers

39.9 MMBtu/hr, Low NOx burner, SCR & anhydrous NH₃. NOx=5ppm, CO=100ppm & NH₃=5ppm



I.C. Engine – Digester Gas-Fired

Compliance with Rule 1110.2(d)(1)(C);
NOx=11ppm, VOC=30ppm & CO=250ppm



Part B, Section II, Other LAER/BACT



New Listings II

Printing (Graphic Arts)
Flexographic
(Labels, Tags & Forms)

~~SJVAPCD: Use of materials with VOC equal to or lower than: UV-curing inks—1% by weight, UV-cured coatings—8% by weight and evaporative minimization methods (use of closed containers)~~
This proposed listing may allow higher VOC content ink than Rule 1162. Placing listing on hold.



Fiberglass Operations,
Application Hand and
Spray Lay up
(Polyester Resin Oper.)

~~BAAQMD: Compliance with BAAQMD Reg. 8, Rule 50 use of polyester resin with monomer content <34% by weight & use of aqueous emulsion cleaner or acetone for clean-up.~~
Not being applied as BACT for new permits. Current SCAQMD Rule 1162 and BAAQMD Reg. 8, Rule 50 have more stringent requirements. Therefore, will not proceed with listing.



Part B, Section III, Other Technologies



Emerging Technologies

I.C. Engine- Emergency Compression Ignition with PM Trap and SCR

Equipped with SCR & DPF certified to meet EPA Tier 4 emission limits: NMHC=0.14 g/bhp-hr, NO_x=0.5 g/bhp-hr, CO=2.61 and PM=0.022 g/bhp-hr



Distributed Generation Fuel Cell with digester gas clean up system

Equipped with 2.5 MMBtu/hr heater fired on digester gas used for start up, cool down and low power operation. Rule 222 limited $\leq 90,000$ therms/yr. NO_x=0.07, VOC=CO=0.10 lb/MW-hr



These are emerging technologies which have been achieved in practice with an air quality permit, however do not yet qualify as LAER

Part D, BACT for Non-Major Facilities



New Listings

Printing (Graphic Arts) Flexographic

Inks with ≤ 1.5 lb VOC/gal, Less Water and Exempt Compounds; or UV/EB or water-based inks/coatings ≤ 180 g VOC/L.
Compliance with SCAQMD Rules 1130 and 1171.



Printing (Graphic Arts) Screen Printing and Drying

Compliance with SCAQMD Rules 1130.1 and 1171; or use of Rule 1130,1 compliant UV/EB or water-based inks/coatings.



Printing (Graphic Arts) Lithographic or Offset, Heatset

Add-on control venting to Regenerative Thermal Oxidizer, 99% overall control and $\geq 1595^{\circ}\text{F}$ operating temp. *{cost effectiveness}*



Printing (Graphic Arts) Flexographic

Add-on control venting to Regenerative Thermal Oxidizer, 95% destruction eff. and $\geq 1500^{\circ}\text{F}$ operating temp with total enclosure. *{cost effectiveness}*



Part D, BACT for Non-Major Facilities



New Listings

Food Oven

- **Ribbon burner** >500°F: NO_x = 60 ppm, CO= Rule 407/1153.1, PM₁₀=SO_x= Nat Gas
≤500°F: NO_x = 30ppm CO = Rule 1147/1153.1, PM₁₀=SO_x= Nat Gas
- **Direct fired** NO_x = 30 ppm, CO=Rule 407/1153.1, PM₁₀=SO_x= Nat Gas
- **Infrared** NO_x = 30 ppm, CO=Rule 407/1153.1, PM₁₀=SO_x= Nat Gas
- **Other** Compliance with Rule 1147/1153.1, PM₁₀=SO_x= Nat Gas
- **Bakery Oven with Yeast Leavened Products ≥30 lb VOC/day** CatOx @ 95% overall control, ≥600°F inlet temp & ceramic pre filter *{cost effectiveness}*



Part D, BACT for Non-Major Facilities



New Listing/Updates

**I.C. Engine, Stationary,
Non-Emergency,
Electrical Generators**

Compliance with Rule 1110.2



**I.C. Engine, Stationary,
Non-Emergency, Non-
Electrical Generators**

Footnote regarding removal of “I.C. Engine, Stationary, Non-Emergency” by listing of new BACT determination for “I.C. Engine, Stationary, Non-Emergency, Electrical Generator”



I.C. Engine, Portable

75 ≤ HP < 175, Tier 4 Final – Consistent with CARB

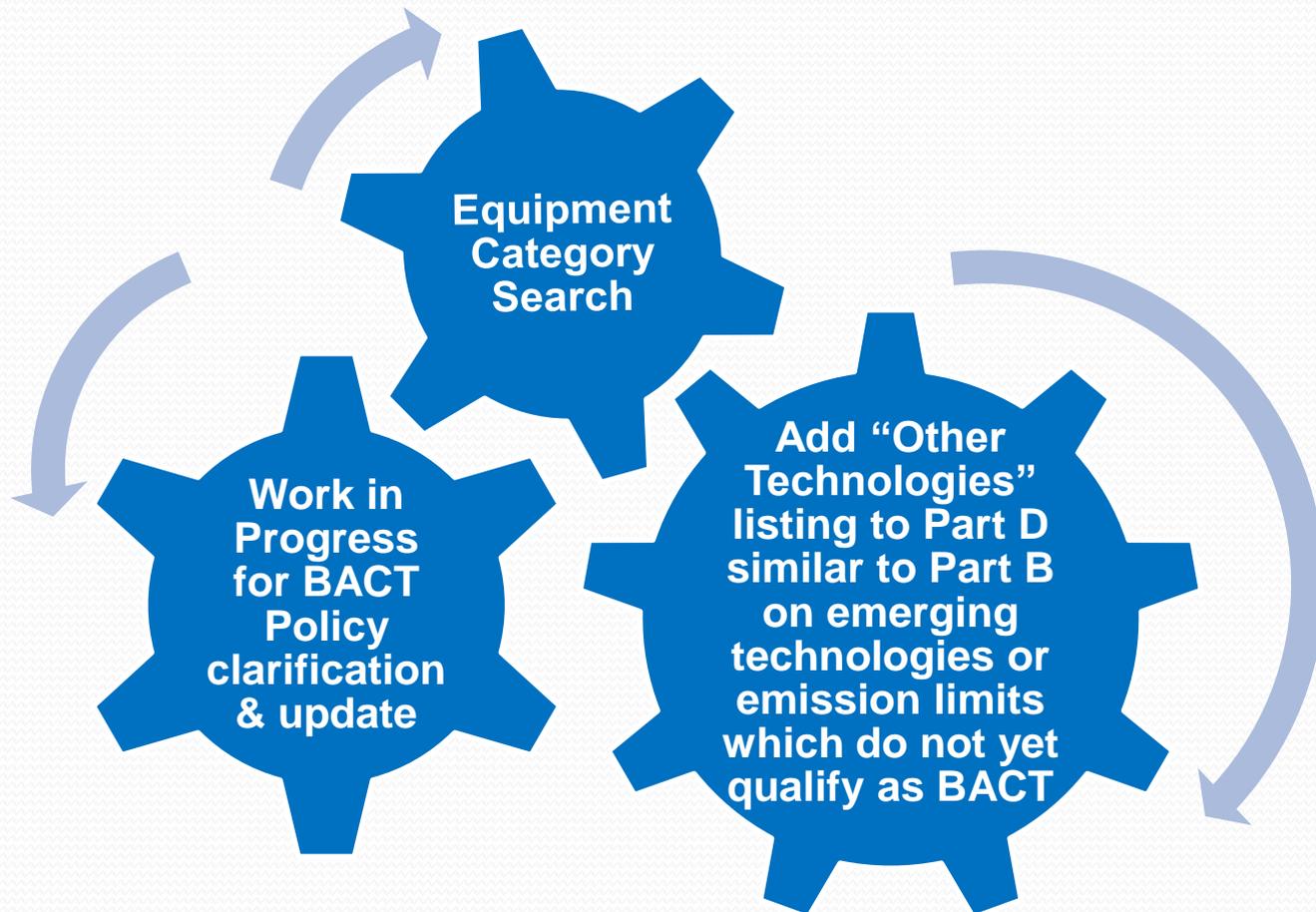


Dryer or Oven

Footnote of non-applicability to food oven



Making BACT Guidelines User Friendly



Equipment Category Search

The screenshot shows a web browser window displaying the South Coast Air Quality Management District website. The browser's address bar shows the URL: <http://sfdev.aqmd.gov/home/permits/bact/guidelines/Action/Preview>. The website header includes the South Coast Air Quality Management District logo and name, a search bar, and social media icons for Facebook, Twitter, Email, RSS, and YouTube. The breadcrumb trail reads: Home / Permits / Best Available Control Tech. / Guidelines. The main heading is "BACT Guidelines". Below the heading is a social media sharing bar. A green arrow points to the text "New proposed link" which is positioned above the link "EQUIPMENT CATEGORY SEARCH" in red. The page content includes a section titled "Best Available Control Technology Guidelines" followed by a list of elements. The "EQUIPMENT CATEGORY SEARCH" link is the first item in this list. To the right of the main content are two sidebars: "Trending" with links to "Torrance Refinery", "SCAQMD Rule Book Rules", "Special Meeting of the SCAQMD Governing Board: March 9, 2017", and "Proposed Rules"; and "More Information" with a "Contact" section listing the "BACT Team" and phone numbers: 909-396-2516 and 909-396-2491. The browser's taskbar at the bottom shows the Windows Start button, search icon, and several application icons (File Explorer, Edge, Outlook, Word, PowerPoint). The system tray shows the time as 11:01 AM on 3/9/2017.

South Coast Air Quality Management District

Home / Permits / Best Available Control Tech. / Guidelines

BACT Guidelines

[New proposed link](#)

Best Available Control Technology Guidelines

EQUIPMENT CATEGORY SEARCH

The BACT Guidelines consist of the following elements:

- [Overview](#) (PDF, 557kb)
- [PART A: POLICY AND PROCEDURES FOR MAJOR POLLUTING FACILITIES](#) (PDF, 557kb)
Part A of the BACT Guidelines explains what BACT is, why it is required, when it is required, and how it is determined for major polluting facilities. Persons who want to learn about BACT and the BACT process for major polluting facilities should start by reading Part A.
- [PART B: LAER/BACT DETERMINATIONS FOR MAJOR POLLUTING FACILITIES](#)
The current Part B began in March 1999 with listings for only boilers, degreasers, and spray booths. As new permits are issued, they will be added to the current Part B, which includes three sections:
 - [Section I - SCAQMD LAER/BACT Determinations](#), provides information on LAER/BACT determinations contained in permits issued by SCAQMD.
 - [Section II - Other LAER/BACT Determinations](#), provides information about LAER/BACT requirements in permits or guidelines issued by other agencies.
 - [Section III - Other Technologies](#), provides information on technologies which have been achieved in practice but are not reflected in a permit limit, and information on emerging technologies or emission limits which have not yet been achieved in practice and do not yet qualify as LAER.
- [PART C: POLICY AND PROCEDURES FOR NON-MAJOR POLLUTING FACILITIES](#) (PDF, 557kb)

Trending

- [Torrance Refinery](#)
- [SCAQMD Rule Book Rules](#)
- [Special Meeting of the SCAQMD Governing Board: March 9, 2017](#)
- [Proposed Rules](#)

More Information

Contact

[BACT Team](#)
Ph: 909-396-2516
909-396-2491

EQUIPMENT CATEGORIES

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Index of Equipment Categories

A

Abrasive Blasting Room

Absorption Chiller

Air Start Unit

Air Stripper – Ground Water Treatment

Aluminum Mating Furnace

Ammonium Bisulfate and Thiosulfate Production

Asbestos Machining Equipment

Asphalt Batch Plant

Asphaltic Day Tanker

Auto Body Shredder

EQUIPMENT CATEGORIES

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Index of Equipment Categories

Search 

Abrasive Blasting Room

Part D- Minor Source

1. Abrasive Blasting - Enclosed

Part B- Major Source - LAER

I. SCAQMD Listings

[Abrasive Blasting Room, Rohr, Ind. A/N 391420 12/6/02](#)

II. Other Districts

TBD

III. Other/Potential Technologies

TBD

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*
10-20-2000 Rev. 0

Equipment or Process: Abrasive Blasting - Enclosed

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Baghouse or Cartridge Dust Collector (07-11-97)	

Section I: AQMD BACT Determination -
Application No.: 391420
Equipment Category - Abrasive Blasting Room

1. GENERAL INFORMATION DATE: 11/14/2002

A. MANUFACTURER: Cimco Industries
B. TYPE: Constarck C. MODEL:
E. APPLICABLE REGULATIONS: 1146, 401, 402, 404, 405, 1409
F. CODE: 5 (NA) SOURCE OF CODE DATA:
G. OPERATING SCHEDULE: 24 HRS/DAY 3 DAYS/WK 51 WKS/YR

2. EQUIPMENT INFORMATION APP NO: 391420

A. FUNCTION: Facility manufactures aircraft parts. This abrasive blasting room (RECLAIM device No. D214) is used to remove excess adhesive materials from parts. Constarck particles are used as the abrasive medium. Blasting is done by hand using a 1/2" velocity air nozzle. After contacting the part, the particles drop through a floor grate and are recaptured to a cyclone for recovery. Air from the cyclone is filtered prior to exhaust.

C. DIMENSIONS: 12'0" W x 8'6" x 17'4"
E. MATERIAL STORAGE/PROCESSING/STORAGE: Constarck TOTAL FLOW RATE: acfm
F. THROUGHPUT/PROCESS RATE/USAGE RATE:

Next Steps

- **Provide Status Update at Stationary Source Committee meeting June 16, 2017**
- **CEQA Evaluation**
- **BACT SRC meeting**
- **Stationary Source Committee**
- **Governing Board Meeting**