UNDER PUBLIC REVIEW SMAQMD BACT CLEARINGHOUSE

CATEGORY: **COATING - AUTO BODY**

BACT Size: Minor Source BACT **PAINT SPRAY BOOTH**

BACT Determination Number:	153	**BACT Determination Date:**	**1/3/2018**

Equipment Information

Permit Number: 24973
Equipment Description: PAINT SPRAY BOOTH
Unit Size/Rating/Capacity: ≤ 4,700 lbs VOC/year
Equipment Location: SACRAMENTO AUTO BODY, INC
3430 LA GRANDE BLVD
SACRAMENTO, CA

BACT Determination Information

ROCs	**Standard:**	4,700 lb/year
	Technology Description:	Compliance with SMAQMD Rule 459. For heaters, use of natural gas or LPG fired burner
	Basis:	Achieved in Practice
NOx	**Standard:**	30 ppmvd @ 3% O2 or 0.036 lb/MMBTu/hr
	Technology Description:	low NOx burner, natural gas or LPG fired
	Basis:	Achieved in Practice
SOx	**Standard:**	
	Technology Description:	For heaters, natural gas or LPG fired burner
	Basis:	Achieved in Practice
PM10	**Standard:**	98% control efficiency, 0.0015 gr/dcsf
	Technology Description:	Spray booth with dry filters or waterwash, properly maintained. HVLP spray equivalent application equipment. For heaters, natural gas or LPG fired burner
	Basis:	Achieved in Practice
PM2.5	**Standard:**	98% control efficiency, 0.0015 gr/dcsf
	Technology Description:	Spray booth with dry filters or waterwash, properly maintained. HVLP spray equivalent application equipment. For heaters, natural gas or LPG fired burner
	Basis:	Achieved in Practice
CO	**Standard:**	
	Technology Description:	For heaters, natural gas or LPG fired burner
	Basis:	Achieved in Practice
LEAD	**Standard:**	
	Technology Description:	
	Basis:	

Comments: T-BACT is the following:
1.Spray booth with filter system, 98% PM10 control efficiency, HVLP spray equipment or equivalent technology
2.Compliance with VOC content compliant with BAAQMD Reg. 8, Rule 45 and transfer erriciency complying with Reg. 8, rule 45
3.Emissions controlled to overall capture/destruction efficiency ≥ 90% by weight

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

Printed: 1/3/2018

UNDER PUBLIC REVIEW SMAQMD BACT CLEARINGHOUSE

CATEGORY: **COATING - AUTO BODY**

BACT Size: Minor Source BACT **PAINT SPRAY BOOTH**

BACT Determination Number:	154	**BACT Determination Date:**	**1/3/2018**

Equipment Information

Permit Number: 24973
Equipment Description: PAINT SPRAY BOOTH
Unit Size/Rating/Capacity: > 4,700 lb VOC/year
Equipment Location: SACRAMENTO AUTO BODY, INC
3430 LA GRANDE BLVD
SACRAMENTO, CA

BACT Determination Information

ROCs	**Standard:**	
	Technology Description:	Coatings with VOC content and transfer efficiency complying with BAAQMD Reg. 8, Rule 45. Overall capture/destruction efficiency ≥ 90% by weight. For heaters, use of natural gas or LPG fired burner
	Basis:	Achieved in Practice
NOx	**Standard:**	30 ppmvd @ 3% O2 or 0.036 lb/MMBtu/hr
	Technology Description:	For heaters, Natural gas or LPG fired burner
	Basis:	Achieved in Practice
SOx	**Standard:**	
	Technology Description:	For heaters, natural gas or LPG fired burner
	Basis:	Achieved in Practice
PM10	**Standard:**	98% control efficiency, 0.0015 gr/dcsf
	Technology Description:	HVLP spray or equivalent application equipment. For heaters, natural gas or LPG fired burner.
	Basis:	Achieved in Practice
PM2.5	**Standard:**	98% control efficiency, 0.0015 gr/dcsf
	Technology Description:	HVLP spray or equivalent application equipment. For heaters, natural gas or LPG fired burner.
	Basis:	Achieved in Practice
CO	**Standard:**	
	Technology Description:	For heaters, natural gas or LPG fired burner
	Basis:	Achieved in Practice
LEAD	**Standard:**	
	Technology Description:	
	Basis:	

Comments: For T-BACT:
1. Spray booth with filter system, 98% PM control efficiency, HVLP spray equipment or equivalent technology
2. Coatings with VOC content compliant with BAAQMD Reg. 8, Rule 45 and transfer efficiency complying with Reg. 8, Rule 45
3. VOC emission controlled to overall capture/destruction efficiency ≥ 90% by weight

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

Printed: 1/3/2018

777 12th Street, Third Floor

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Sacramento, CA 95814

BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

DETERMINATION NO.: 153 & 154

DATE: December 20, 2017

ENGINEER: Jeffrey Quok

Category/General Equip Description: Coating – Auto Body

Equipment Specific Description: Paint Spray Booth

Equipment Size/Rating: ≤ 4,700 lbs VOC/year, Minor Source (**BACT #153**)

> 4,700 lbs VOC/year, Minor Source (**BACT #154**)

Previous BACT Det. No.: #107

This BACT determination will update Determination #107 for paint spray booths used for automotive coating. This BACT determination will also include stripping and solvent cleaning operations related to automotive coating operations. Additionally, this determination is being updated to include T-BACT for HAPs associated with VOC and PM emissions.

This BACT was determined under the project for A/C 24973 (Sacramento Auto Body, LLC).

BACT/T-BACT ANALYSIS

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

The following control technologies are currently employed as BACT/T-BACT for paint spray booths used for automotive coating operations by the following air pollution control districts:

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>US EPA

US EPA</td><td>

BACT
Source: EPA RACT/BACT/LAER Clearinghouse
RBLC ID: OH-0309 (5/03/2007)

<table>
<tr><td colspan="2">Automotive Refinishing</td></tr>
<tr><td>VOC</td><td>< 14.5 tons VOC/year emission limit, 4.8 lb/gal coating – exempt lb/gal excluding water & exempt solvents</td></tr>
<tr><td>NOx</td><td>No standard</td></tr>
<tr><td>SOx</td><td>No standard</td></tr>
<tr><td>PM10</td><td>Dry Filtration, 98% efficiency, < 0.62 tons PM10/year emission limit, 0.0015 gr/dscf</td></tr>
<tr><td>PM2.5</td><td>No standard</td></tr>
<tr><td>CO</td><td>No standard</td></tr>
</table>

T-BACT
The EPA BACT Clearinghouse did not contain any T-BACT determinations.

RULE REQUIREMENTS:
40 CFR 63 Subpart HHHHHH – National Emission Standards for Hazardous Air Pollutants for Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources

This subpart applies to autobody refinishing operations, among other area sources, that include motor vehicles and mobile equipment spray-applied surface coating operations; and apply coatings that may potentially contain the target HAP compounds of chromium, lead, manganese, nickel, or cadmium. This subpart also applies to operations using MeCl for the removal of dried paint.

General Requirements

For paint stripping operations using MeCl:

A. Implement management practice to minimize the evaporative emissions of MeCl. The management practices must address practices in paragraphs 1 through 5, as applicable.
   1. Evaluate each application to ensure there is a need for paint stripping.
   2. Evaluate each application where a paint stripper containing MeCl is used to ensure that there is no alternative paint stripping technology that can be used.
   3. Reduce exposure of all paint strippers containing MeCl to the air.
   4. Optimize application conditions when using paint strippers containing MeCl to reduce MeCl evaporation.
   5. Practice proper storage and disposal of paint strippers containing MeCl.

For coatings that may potentially contain the target HAP compounds of chromium, lead, manganese, nickel, or cadmium:

1. All spray-applied coatings must be performed in a spray booth, preparation station, or mobile enclosures that are fully enclosed with a full roof with four walls or complete side curtains. The enclosure must be ventilated at a negative pressure and equipped with a filter system that can achieve at least 98% capture efficiency.

</td></tr>
</table>

District/Agency	Best Available Control Technology (BACT)/Requirements
US EPA	2. Coatings must be applied with HVLP spray equipment, electrostatic application, airless spray gun, air-assisted airless spray gun, or an equivalent technology for which written approval has been obtained from the U.S. EPA. 3. Spray gun cleaning must be conducted such that an atomized mist or spray of gun cleaning solvent and paint residue is not created outside of a container that collects used cleaning solvent. 4. All new and existing personnel who spray-apply surface coatings must be trained in the proper application of surface coatings. 5. For new affected sources, submit an initial notification to EPA no later than 180 days after initial startup or July 7, 2008, whichever is later. For an existing affected source, submit the initial notification no later than January 11, 2010.

District/Agency	Best Available Control Technology (BACT)/Requirements
ARB	**BACT** Source: ARB BACT Clearinghouse SMAQMD Permit #18402 (7/25/2005)

Automotive Refinishing	
VOC	≤ 4,700 lbs/year, low VOC coating
NOx	No standard
SOx	No standard
PM10	No standard
PM2.5	No standard
CO	No standard

T-BACT
The ARB BACT Clearinghouse did not contain any T-BACT determinations.

RULE REQUIREMENTS:
Title 17, Cal. Code Regs. Section 93112 – Airborne Toxic Control Measure (ATCM) for Emissions of Hexavalent Chromium and Cadmium from Motor Vehicle and Mobile Equipment Coatings: This regulation prohibits the sale and supply of motor vehicle and/or mobile equipment coating manufactured on or after January 1, 2003 that contains hexavalent chromium or cadmium. Each motor vehicle and/or mobile equipment coating shall clearly display on its container or package, the day, month and year on which the coating was manufactured. Since this regulation is applicable to the sale and supply of coatings only, it will not be considered as T-BACT for the end user.

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>SMAQMD</td><td>

BACT
BACT Determination #107 (6/10/2015)

<table>
<tr><td colspan="2">Paint Spray Booth</td></tr>
<tr><td>VOC</td><td>4,700 lb VOC/quarter/year limit, use of low VOC coatings and solvents, and high efficiency spray equipment complying with Rule 459. For heaters use of natural gas or LPG fired burner.</td></tr>
<tr><td>NOx</td><td>For heaters, Low NOx burner, 30 ppmvd @ 3% O2</td></tr>
<tr><td>SOx</td><td>Natural gas or LPG fired burner</td></tr>
<tr><td>PM10</td><td>Spray booth with exhaust filters; 95% control efficiency and high transfer efficiency application equipment, Natural gas or LPG fired burner</td></tr>
<tr><td>PM2.5</td><td>Spray booth with exhaust filters; 95% control efficiency and high transfer efficiency application equipment, Natural gas or LPG fired burner</td></tr>
<tr><td>CO</td><td>Natural gas or LPG fired burner</td></tr>
</table>

T-BACT
The current BACT determination does not address T-BACT.

RULE REQUIREMENTS:

Rule 459 Automotive, Mobile Equipment, and Associated Parts and Components Coating Operations (Last amended 8/25/2011)

Vehicle Coating Limits: No person shall apply to any motor vehicle, mobile equipment, or associated parts and components, any coating with a VOC regulatory content, as calculated pursuant to Section 407, in excess of the following limits:

<table>
<tr><th>Coating Category
(SMAQMD Rule 459 Definition)</th><th>VOC Regulatory Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Adhesion Promoter</td><td>540 (4.5)</td></tr>
<tr><td>Clear Coating</td><td>250 (2.1)</td></tr>
<tr><td>Color Coating</td><td>420 (3.5)</td></tr>
<tr><td>Multi-Color Coating:
Mobile equipment driven or drawn on rails and its associated parts and components</td><td>520 (4.3)</td></tr>
<tr><td>Any other mobile equipment or motor vehicle and its associated parts and components</td><td>680 (5.7)</td></tr>
</table>

</td></tr>
</table>

<table>
<tr><td>District/Agency</td><td>Best Available Control Technology (BACT)/Requirements</td></tr>
<tr><td>SMAQMD</td><td>
<table>
<tr><th>Coating Category
(SMAQMD Rule 459 Definition)</th><th>VOC Regulatory Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Pretreatment Coating</td><td>660 (5.5)</td></tr>
<tr><td>Primer/Primer Sealer</td><td>250 (2.1)</td></tr>
<tr><td>Single-Stage Coating</td><td>340 (2.8)</td></tr>
<tr><td>Temporary Protective Coating</td><td>60 (0.5)</td></tr>
<tr><td>Truck Bed Liner Coating</td><td>200 (1.7)</td></tr>
<tr><td>Underbody Coating</td><td>430 (3.6)</td></tr>
<tr><td>Uniform Finish Coating</td><td>540 (4.5)</td></tr>
<tr><td>Any Other Coating Type, Excluding Materials Listed In Section 302</td><td>250 (2.1)</td></tr>
</table>
Vehicle Material Limits: No person shall apply to any motor vehicle any of the following materials with a VOC regulatory content, as calculated pursuant to section 407, in excess of the following limits:
<table>
<tr><th>Material</th><th>VOC Regulatory Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Gasket/Gasket Sealing Material</td><td>200 (1.7)</td></tr>
<tr><td>Cavity Wax</td><td>650 (5.4)</td></tr>
<tr><td>Deadener</td><td>650 (5.4)</td></tr>
<tr><td>Lubricating Wax/Compound</td><td>700 (5.8)</td></tr>
</table>
If anywhere on the container of any automotive coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a person, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Section 301, then the lowest VOC content limit shall apply.
Emission Control Equipment: As an alternative to the coating limits, as applicable, a person may use air pollution control equipment, subject to the approval to the Air Pollution Control Officer, that provides an overall system efficiency of not less than 85% as determined pursuant to Section 406. Any approved emission control equipment must be maintained and used at all times in proper working condition.
Application Equipment Requirement:
A person shall not apply any coating unless one of the following application methods is used:
<ol type="a">
Electrostatic application equipment.
High-Volume Low-Pressure spray equipment. The spray gun shall meet one of the following:

The spray gun shall be permanently labeled as HVLP; or
If the spray gun is not permanently labeled as a HVLP, then the end user shall demonstrate that the spray gun meets the HVLP definition in

</td></tr>
</table>

District/Agency	Best Available Control Technology (BACT)/Requirements
SMAQMD	Section 224 in design and use. A satisfactory demonstration shall be based on the manufacturer's published technical material on the design of the gun and by a demonstration of the operation of the gun using an air pressure tip gauge from the manufacturer of the gun. c. Low-Volume Low-Pressure spray equipment. d. Brush or roll coating, dip coat, or flow coat. e. Any other application method that achieves a transfer efficiency equivalent to, or higher than, the application methods listed in Sections 305.1 (a)-(d) as determined by the methods specified on Section 504.9. Written approval from the Air Pollution Control Officer shall be obtained for each alternative application method prior to use. **Solvent Cleaning Operations and Storage Requirements:** Any person subject to this rule shall comply with the following requirements: a. Closed containers shall be used for the disposal of cloth, sponges, or paper used for solvent cleaning operations and coating removal. b. Volatile organic compound-containing materials shall be stored in closed, vapor-tight containers, when not in use except while adding to or removing them from the containers. c. A person shall not perform cleaning operations using a solvent with a volatile organic compound content in excess of 25 grams per liter (0.21 pounds per gallon), as determined pursuant to Section 409. d. For bug and tar removal a person shall not use any solvent other than bug and tar remover regulated under the Consumer Products Regulation (California Code of Regulations Section 94507 et seq.) or a solvent with a volatile organic compound content of no more than 25 grams per liter. **Coating remover (stripper requirements):** A person shall not perform coating removal with a material containing volatile organic compounds in excess of 200 grams per liter (1.7 pounds per gallon).

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>South Coast AQMD</td><td>

BACT
Source: SCAQMD BACT Guidelines (Part D) for Non-Major Polluting Facilities, page 43 & 114 (Last Revised 12/2/16), Makeup Air Heater, A/N 413559 (11/24/04)

<table>
<tr><th colspan="2">Spray Booths – Automotive, Down-Draft Type</th></tr>
<tr><td>VOC</td><td>For Automotive, down-draft booths with < 7,920 lbs/year (<660 lbs/month) VOC Emissions
1. Compliance with applicable AQMD Regulation XI Rules

For Automotive, down-draft booths with ≥7,920 lbs/year (≥ 22 lbs/day) VOC Emissions
1. Compliance with applicable AQMD Regulation XI Rules, and VOC control system with ≥90% collection efficiency and ≥ 95% destruction efficiency; OR
2. Use of Super Compliant Materials (<5% VOC by weight); OR
3. Use of low-VOC materials resulting in an equivalent emission reduction</td></tr>
<tr><td>NOx</td><td>For booths with heaters
1. Low NOx burner not to exceed 30 ppmvd @ 3% O2</td></tr>
<tr><td>SOx</td><td>No standard</td></tr>
<tr><td>PM10</td><td>Dry filters or waterwash</td></tr>
<tr><td>PM2.5</td><td>No standard</td></tr>
<tr><td>CO</td><td>No standard</td></tr>
</table>

<table>
<tr><th colspan="2">Spray Booths – Other Types</th></tr>
<tr><td>VOC</td><td>For booths with < 14,040 lbs/year (< 1,170 lbs/month) VOC Emissions
1. Compliance with applicable AQMD Regulation XI Rules

For booths with ≥ 14,040 lbs/year (≥ 1,170 lbs/month) VOC Emissions
1. Compliance with applicable AQMD Regulation XI Rules, and VOC control system with ≥90% collection efficiency and ≥ 95% destruction efficiency; OR
2. Use of Super Compliant Materials (<5% VOC by weight); OR
3. Use of low-VOC materials resulting in an equivalent emission reduction</td></tr>
<tr><td>NOx</td><td>For booths with heaters
1. Low NOx burner not to exceed 30 ppmvd @ 3% O2</td></tr>
<tr><td>SOx</td><td>No standard</td></tr>
<tr><td>PM10</td><td>Dry filters or waterwash</td></tr>
<tr><td>PM2.5</td><td>No standard</td></tr>
<tr><td>CO</td><td>No standard</td></tr>
</table>

</td></tr>
</table>

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>South Coast AQMD</td><td>

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

RULE REQUIREMENTS:

Reg XI, Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations (Last amended 9/5/2014)

A person shall not apply any automotive coating to a motor vehicle, mobile equipment, or associated parts or components of a motor vehicle or mobile equipment that contains VOC in excess of the limits specified in Table of Standards below. Compliance with the applicable VOC content limits shall be based on VOC content, including any material added to the original automotive coating supplied by the manufacturer, as applied, less water and exempt compounds.

<table>
<tr><th>Coating Category
(SCAQMD Rule 1151 Definition)</th><th>VOC Content Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Adhesion Promoter</td><td>540 (4.5)</td></tr>
<tr><td>Clear Coating</td><td>250 (2.1)</td></tr>
<tr><td>Color Coating</td><td>420 (3.5)</td></tr>
<tr><td>Coating Category
(SCAQMD Rule 1151 Definition)</td><td>VOC Content Limit as Applied
g/l (lbs/gal)</td></tr>
<tr><td>Multi-Color Coating</td><td>680 (5.7)</td></tr>
<tr><td>Pretreatment Coating</td><td>660 (5.5)</td></tr>
<tr><td>Primer</td><td>250 (2.1)</td></tr>
<tr><td>Single-Stage Coating</td><td>340 (2.8)</td></tr>
<tr><td>Temporary Protective Coating</td><td>60 (0.5)</td></tr>
<tr><td>Truck Bed Liner Coating</td><td>310 (2.6)</td></tr>
<tr><td>Underbody Coating</td><td>430 (3.6)</td></tr>
<tr><td>Uniform Finish Coating</td><td>540 (4.5)</td></tr>
<tr><td>Any Other Coating Type</td><td>250 (2.1)</td></tr>
</table>

Most Restrictive VOC Limit
If any representation or information on the container of any automotive coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature that indicates that the automotive coating meets the definition of or is recommended for use for more than one of the automotive coating categories listed in VOC Content Limit table, then the lowest VOC content shall apply.

</td></tr>
</table>

District/Agency	Best Available Control Technology (BACT)/Requirements
South Coast AQMD	**Alternative Compliance** A person may comply with the provisions of the VOC content Limit table, by using an approved emission control system, consisting of collection and control devices provided such emission control system is approved pursuant to Rule 203 – Permit to Operate, in writing, by the Executive Officer for reducing emissions of VOC. The Executive Officer shall approve such emission control system only if the VOC emissions resulting from the use of non-compliant automotive coatings will be reduced to a level equivalent to or lower than that which would have been achieved by compliance with the terms of the VOC Content Limit table. The required efficiency of an emission control system at which an equivalent or greater level of VOC emission reduction will be achieved shall be calculated by the following equation, $$C.E. = \left[1 - \left\{ \frac{(VOC_{LWc})}{(VOC_{LWn,Max})} \times \frac{1-(VOC_{LWn,Max}/D_{n,Max})}{1-(VOC_{LWc}/D_c)} \right\}\right] \times 100$$ Where: $C.E.$ = Control Efficiency, percent VOC_{LWc} = VOC Limit of Rule 1151, less water and less exempt compounds, pursuant to paragraph (d)(1). $VOC_{LWn,Max}$ = Maximum VOC content of non-compliant automotive coating used in conjunction with a control device, less water and exempt compounds. $D_{n,Max}$ = Density of VOC solvent, reducer, or thinner contained in the non-compliant automotive coating containing the maximum VOC. D_c = Density of corresponding VOC solvent, reducer, or thinner used in the compliant automotive coating system = 880 g/L. **Transfer Efficiency** A person shall not apply automotive coatings to any motor vehicle, mobile equipment or any associated parts or components to a motor vehicle or mobile equipment except by the use of one of the following methods: A. Electrostatic application, or B. High-volume, low-pressure (HVLP) spray, or C. Brush, dip, or roller, or D. Spray gun application, provided the owner or operator demonstrate that the spray gun meets the HVLP definition in paragraph (c)(17) in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the spray gun and by a demonstration of the operation of the spray gun using an air pressure tip gauge from the manufacturer of the spray gum. E. Any such other automotive coating application methods as demonstrated, in accordance with the provisions of subparagraph (h)(1)(F), to be capable of

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>South Coast AQMD</td><td>
achieving equivalent or better transfer efficiency than the automotive coating application method listed in clause (d)(6)(A)(ii), provided written approval is obtained from the Executive Officer Prior to use.

Reg XI, Rule 1171 – Solvent Cleaning Operations (Last amended 5/1/2009)
This rule applies to all persons who use solvent materials in solvent cleaning operations during the production, repair, maintenance, or servicing of parts, products, tools, machinery, equipment, or general work areas; all persons who store and dispose of these materials used in solvent cleaning operations; and all solvent suppliers who supply, sell, or offer for sale solvent cleaning materials for use in solvent cleaning operations.

<table>
<tr><th>Solvent Cleaning Activity</th><th>VOC limits
g/l (lb/gal)</th></tr>
<tr><td>(A) Product cleaning during manufacturing process or surface preparation for coating, adhesive, or ink application</td><td></td></tr>
<tr><td>(i) General</td><td>25
(0.21)</td></tr>
<tr><td>(ii) Electrical apparatus components & electronic components</td><td>100
(0.83)</td></tr>
<tr><td>(B) Repair and Maintenance Cleaning</td><td></td></tr>
<tr><td>(i) General</td><td>25
(0.21)</td></tr>
<tr><td>(ii) Electrical apparatus components & electronic components</td><td>100
(0.83)</td></tr>
<tr><td>(C) Cleaning of coatings or adhesives application equipment</td><td>25
(0.1)</td></tr>
<tr><td>(D) Cleaning of polyester resin application equipment</td><td>25
(0.21)</td></tr>
</table>

Reg XI, Rule 1147 – NOx Reductions from Miscellaneous Sources
(Last amended 9/9/2011)
This rule applies to ovens, dryers, dehydrators, heaters, kilns, calciners, furnaces, crematories, incinerators, heated pots, cookers, roasters, fryers, closed and open heated tanks and evaporators, distillation units, afterburners, degassing units, vapor incinerators, catalytic or thermal oxidizers, soil and water remediation units and other combustion equipment with nitrogen oxide emissions that require a District permit and are not specifically required to comply with a nitrogen oxide emission limit by other District Regulation XI rules.
</td></tr>
</table>

<table>
<tr><td>District/Agency</td><td>Best Available Control Technology (BACT)/Requirements</td></tr>
<tr><td>South Coast AQMD</td><td>
<table>
<tr><th rowspan="3">Equipment Category</th><th colspan="3">NOx Emission Limit
PPM @ 3% O2, dry or pound/MMBtu heat input</th></tr>
<tr><th colspan="3">Process Temperature</th></tr>
<tr><th>≤800° F</th><th>>800° F and <1200° F</th><th>≥1200 ° F</th></tr>
<tr><td>Make-Up air heater or other air heater located outside of building with temperature controlled zone inside building</td><td>30 ppm or 0.036 lb/MMBtu/hr</td><td>-</td><td>-</td></tr>
</table>
</td></tr>
<tr><td>San Diego County APCD</td><td>
<u>BACT</u>
Source: NSR Requirements for BACT, page 3-3 & 3-4. (June 2011)
<table>
<tr><td colspan="2">Automotive Refinishing Operations <10,403 lb VOC/year (based on average limit of <5 gal/day and assuming 5.7 lbs VOC/gal, & 365 days/year) (A)</td></tr>
<tr><td>VOC</td><td>Compliance with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations</td></tr>
<tr><td>NOx</td><td>No standard</td></tr>
<tr><td>SOx</td><td>No standard</td></tr>
<tr><td>PM10</td><td>Spray booth equipped with overspray filters</td></tr>
<tr><td>PM2.5</td><td>Spray booth equipped with overspray filters</td></tr>
<tr><td>CO</td><td>No standard</td></tr>
</table>
(A) <u>The gallon per day limit is based on a daily average and 5.7 lbs VOC/gal coating is maximum Rule 67.20.1 limit.</u>
</td></tr>
</table>

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>San Diego County APCD</td><td>
<table>
<tr><td colspan="2">Automotive Refinishing Operations ≥ 10,403 lb VOC/year (based on average limit of ≥ 5 gal/day and assuming 5.7 lbs VOC/gal, & 365 days/year) (A)</td></tr>
<tr><td>VOC</td><td>1. Collection system vented to carbon adsorber or afterburner with coatings complying with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations, overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible)
2. Compliance with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations (Achieved in Practice)</td></tr>
<tr><td>NOx</td><td>No standard</td></tr>
<tr><td>SOx</td><td>No standard</td></tr>
<tr><td>PM10</td><td>Spray booth equipped with overspray filters</td></tr>
<tr><td>PM2.5</td><td>Spray booth equipped with overspray filters</td></tr>
<tr><td>CO</td><td>No standard</td></tr>
</table>
(A) The gallon per day limit is based on a daily average and 5.7 lbs VOC/gal coating is maximum Rule 67.20.1 limit.

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

RULE REQUIREMENTS:

Regulation 4, Rule 67.20.1 – Motor Vehicle and Mobile Equipment Coating Operations (Effective 6/30/2010)
This rule applies to all motor vehicle and mobile equipment coating operations including finishing or refinishing of motor vehicles, mobile equipment, non-motorized models, and their associated parts and components.

VOC Content Limits
<table>
<tr><th>Coating Category
(SDAPCD Rule 67.20.1 Definition)</th><th>VOC Content Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Adhesion Promoter</td><td>540 (4.5)</td></tr>
<tr><td>Clear Coating</td><td>250 (2.1)</td></tr>
<tr><td>Color Coating</td><td>420 (3.5)</td></tr>
<tr><td>Multi-Color Coating</td><td>680 (5.7)</td></tr>
<tr><td>Pigmented Coating for Military Tactical Support Vehicles and Equipment</td><td>420 (3.5)</td></tr>
<tr><td>Pretreatment Coating</td><td>660 (5.5)</td></tr>
<tr><td>Primer</td><td>250 (2.1)</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>District/Agency</td><td>Best Available Control Technology (BACT)/Requirements</td></tr>
<tr><td>San Diego County APCD</td><td>
<table>
<tr><th>Coating Category
(SDAPCD Rule 67.20.1 Definition)</th><th>VOC Content Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Primer for Military Tactical Support Vehicles and Equipment</td><td>420 (3.5)</td></tr>
<tr><td>Primer Sealer</td><td>250 (2.1)</td></tr>
<tr><td>Single-Stage Coating</td><td>340 (2.8)</td></tr>
<tr><td>Temporary Protective Coating</td><td>60 (0.5)</td></tr>
<tr><td>Truck Bed Liner Coating</td><td>310 (2.6)</td></tr>
<tr><td>Underbody Coating</td><td>430 (3.6)</td></tr>
<tr><td>Uniform Finish Coating or Blender</td><td>540 (4.5)</td></tr>
<tr><td>Any Other Coating Type</td><td>250 (2.1)</td></tr>
</table>

Most Restrictive VOC Content Limit
If anywhere on the automotive coating container, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in the VOC Content Limit table, then the lowest VOC content limit shall apply.

No coatings shall be applied unless one of the following coating application methods is used:
1. Electrostatic spray application
2. Flow coat application
3. Dip coat application
4. High-volume low-pressure (HVLP) spray application
5. Roll coat
6. Hand application methods
7. Other coating application methods that are demonstrated to have a transfer efficiency a least equal to one of the above application methods, and which are used in such a manner that the parameters under which they were tested are permanent features of the method. Such coating application methods shall be features in writing prior to use by the Air Pollution Control Officer.

Coating Application Equipment
A person shall conduct motor vehicle and mobile equipment coating operations by using only the following coating application methods:
1. Electrostatic spray application; or
2. Flow coat application; or
3. Dip coat application; or
4. Roll coat; or
5. Hand application methods; or
6. High-volume low-pressure spray. Facilities using an HVLP spray gun shall have available on site pressure gauges in proper operating condition to measure the air cap pressure or have available manufacturer’s technical</td></tr>
</table>

District/Agency	Best Available Control Technology (BACT)/Requirements
San Diego County APCD	information regarding the correlation option is used to demonstrate compliance, a handle air inlet pressure gauge will be required on site in proper operating condition to measure the handle air inlet pressure; or 7. Other coating application methods that are demonstrated to have transfer efficiency at least equal to one of the above application methods, and which are used in such a manner that the operating parameters under which they were demonstrated to achieve such transfer efficiency are permanent features of the method. Such coating application methods shall be approved in writing by the Air Pollution Control Officer prior to use. **Cleaning of Coating Application Equipment** A person shall not clean coating application equipment used in motor vehicle and mobile equipment coating operations unless: 1. The VOC content of cleaning material does not exceed 25 grams per liter (0.21 lbs/gal), as applied; and 2. The cleaning material is flushed or rinsed through the application equipment, including paint lines, without exposure to air, into a container which has in place a lid that completely covers the container and has no visible holes, breaks or openings; and either 3. The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning material is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or 4. A system is used that totally encloses the component parts being cleaned during the washing, rinsing, and draining process. **Surface Preparation and Other Cleaning Operations** A person shall not use any material for surface preparation or any other surface cleaning unless its VOC content is 25 grams or less per liter of material (0.21 lbs/gal), as applied. **Waste Disposal** A person shall not use coating application equipment or any other means to dispose of waste coatings, coating components, surface preparation materials, or cleaning materials by spraying into the air, except when momentarily purging coating material from a spray applicator cap immediately before or after applying the coating material. **Control Equipment** In lieu of complying with the provisions of the VOC Content Limits, Most Restrictive VOC Content Limit, Coating Application Equipment, Cleaning of Coating Application Equipment, and Surface Preparation and Other Cleaning Operations requirements, a person may elect to us an air pollution control system which: 1. Has been installed in accordance with an Authority to Construct; and 2. Includes an emission collection system which captures emissions generated from coating, surface preparation, and/or application equipment cleaning and transports the captured emissions to an air pollution control device; and 3. Has an overall control efficiency of at least 85% by weight.

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>Bay Area AQMD</td><td>
<u>BACT</u>
Source: <u>BAAQMD BACT Guideline Document # 161.3.1 for < 14,600 lbs/year) (< 40 lb/day) (uncontrolled)</u> (12/16/91)
<u>Document # 161.3.2 for ≥ 14,600 lbs/year (≥ 40 lb/day) (uncontrolled)</u> (05/05/95)
<table>
<tr><th colspan="2">Spray Booths – Coating of Motor Vehicle and Mobile Equipment, Rework or Bodyshop</th></tr>
<tr><td>POC</td><td><u>For < 14,600 lb/year (< 40 lb/day) VOC emissions</u>
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible); or
2. Compliance with Reg. 8, Rule 45 (Achieved in Practice)

<u>For ≥ 14,600 lb/year (≥ 40 lb/day) VOC emissions</u>
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible); or
2. Coatings with VOC content and transfer efficiency complying with Reg. 8, Rule 45, and emission controlled to overall capture/destruction efficiency ≥ 90% by weight (Achieved in Practice)
Note: The 40 lb/day threshold listed in the BAAQMD BACT standard was derived from their cost-effectiveness level, which is an annualized cost. Therefore, this would be equivalent to an uncontrolled emissions rate of 14,600 lbs/year.</td></tr>
<tr><td>NOx</td><td>No standard</td></tr>
<tr><td>SOx</td><td>No standard</td></tr>
<tr><td>PM10</td><td>Dry filters or waterwash, properly maintained</td></tr>
<tr><td>PM2.5</td><td>No standard</td></tr>
<tr><td>CO</td><td>No standard</td></tr>
<tr><td>NPOC</td><td><u>For < 14,600 lb/year (< 40 lb/day) VOC emissions</u>
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible); or
2. Compliance with Reg. 8, Rule 45 (Achieved in Practice)

<u>For ≥ 14,600 lb/year (≥ 40 lb/day) VOC emissions</u>
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible)</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>Bay Area AQMD</td><td>

T-BACT
Source: BAAQMD BACT Guideline
Document # 161.3.1 for < 14,600 lb VOC/year) (<40 lb VOC/day) (uncontrolled) (12/16/91)
Document # 161.3.2 for ≥ 14,600 lb VOC/year (≥40 lb VOC/day) (uncontrolled) (05/05/95)

<table>
<tr><td colspan="2">Spray Booths – Coating of Motor Vehicle and Mobile Equipment, Rework or Bodyshop</td></tr>
<tr><td>POC</td><td>For < 14,600 lb/year (< 40 lb/day) VOC emissions
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible); or
2. Compliance with Reg. 8, Rule 45 (Achieved in Practice)

For ≥ 14,600 lb/year (≥ 40 lb/day) VOC emissions
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible); or
2. Coatings with VOC content and transfer efficiency complying with Reg. 8, Rule 45, and emission controlled to overall capture/destruction efficiency ≥ 90% by weight (Achieved in Practice)</td></tr>
<tr><td>NPOC</td><td>For < 14,600 lb/year (< 40 lb/day) VOC emissions
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible); or
2. Compliance with Reg. 8, Rule 45 (Achieved in Practice)

For ≥ 14,600 lb/year (≥ 40 lb /day) VOC emissions
1. Coatings with VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥ 90% by weight (Technologically Feasible); or</td></tr>
</table>

RULE REQUIREMENTS:
Reg 8, Rule 45 – Motor Vehicle and Mobile Equipment Coating Operations (12/03/2008)

Coating Limits
No person shall finish or refinish any vehicles, mobile equipment or their parts and components using any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter (or pounds per gallon) of coating applied, excluding water and exempt solvents, in excess of the following limits unless emissions to the atmosphere are controlled to an equivalent level by air pollution abatement equipment with an overall control efficiency of at least 85% and which meets the requirements of Regulation 2, Rule 1:

</td></tr>
</table>

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>Bay Area AQMD</td><td>
<table>
<tr><th>Coating Category
(BAAQMD Rule 45 Definition)</th><th>VOC Content Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Adhesion Promoter</td><td>540 (4.5)</td></tr>
<tr><td>Clear Coating</td><td>250 (2.1)</td></tr>
<tr><td>Color Coating</td><td>420 (3.5)</td></tr>
<tr><td>Multi-Color Coating</td><td>680 (5.7)</td></tr>
<tr><td>Pretreatment Coating</td><td>660 (5.5)</td></tr>
<tr><td>Primer</td><td>250 (2.1)</td></tr>
<tr><td>Primer Sealer</td><td>250 (2.1)</td></tr>
<tr><td>Single-Stage Coating</td><td>340 (2.8)</td></tr>
<tr><td>Temporary Protective Coating</td><td>60 (0.5)</td></tr>
<tr><td>Truck Bed Liner Coating</td><td>310 (2.6)</td></tr>
<tr><td>Underbody Coating</td><td>430 (3.6)</td></tr>
<tr><td>Uniform Finish Coating</td><td>540 (4.5)</td></tr>
<tr><td>Any Other Coating Type</td><td>250 (2.1)</td></tr>
</table>
Transfer Efficiency: A person shall not apply any coating to any motor vehicles or mobile equipment or their parts and components with spray application equipment unless one of the following methods is used:

Electrostatic application equipment, operated in accordance with the manufacturer’s recommendations; or
High-Volume Low-Pressure (HVLP) spray equipment, operated in accordance with the manufacturer’s recommendations; or
Any alternative coating application method that achieves a transfer efficiency equivalent to, or higher than, the application methods listed above. Prior written approval from the APCO shall be obtained for each alternative method used.

Surface Preparation and Solvent Loss Minimization:
Any person using an organic solvent for surface preparation and cleanup or mixing, using or disposing of coating or stripper containing organic solvent:

Shall close containers used for the storage or disposal of cloth or paper used for solvent surface preparation and cleanup.
Shall close containers of fresh or spent solvent, coating, catalyst, thinner, or reducer when not in use.
Shall not use organic compounds for the cleanup of spray equipment, including paint lines, unless equipment for collecting the organic compounds and minimizing their evaporation to the atmosphere is used.
The VOC content of surface preparation solvent shall not exceed 25 g/l (0.2 lb/gal). This limit shall not apply to surface preparation solvent used as bug

</td></tr>
</table>

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>Bay Area AQMD</td><td>
and tar remover provided that the VOC content of such solvent does not exceed 350 g/l (2.9 lb/gal). Usage of solvent used as bug and tar remover is limited as follows:
i. 20 gallons in any consecutive 12-month period for facilities and operations with 400 gallons or more of coating usage per year;
ii. 15 gallons in any consecutive 12-month period for facilities and operations with 150 gallons or more of coating usage per year; and
iii. 10 gallons in any consecutive 12-month period for facilities and operations with less than 150 gallons of coating usage per year.

Specialty Coatings
The volume of adhesion promoter, uniform finish coating and multi-color coating combined shall not exceed 5.0% of all topcoats applied, on a monthly basis.

Filtration: A person shall not apply single or multi-stage topcoats subject to the coating limits to any vehicle except when exhausted through properly maintained particulate filtration media. A person shall not apply clear coating, color coating, multi-color coating, single-stage coating or uniform finish coating to any vehicle except when exhausted through properly maintained particulate filtration media. This requirement applies to all persons applying coating subject to this rule at stationary and mobile locations. The filter system shall meet the requirements of Regulation 2, Rule 1, as applicable.

Most Restrictive VOC Limit: If anywhere on the container or any automotive coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a person, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Coating Limits table, then the lowest VOC content limit shall apply.
</td></tr>
<tr><td>San Joaquin Valley APCD</td><td>
<u>BACT</u>
Source: <u>SJVUAPCD BACT Guideline</u>
<u>Guideline 4.2.1 Automotive Spray Painting Operation, <5.0 MMBtu/hr (3/18/1999)</u>

<table>
<tr><td colspan="2">Automotive Spray Painting Operation, < 5.0 MMBtu/hr (also applies to operations without a heat source)</td></tr>
<tr><td>VOC</td><td>1. HVLP spray guns, coatings, cleaning materials, and solvents compliant with District Rule 4612 (Achieved in Practice)
2. VOC capture and control system (Technologically Feasible)</td></tr>
<tr><td>NOx</td><td>Natural gas or LPG fired burner</td></tr>
<tr><td>SOx</td><td>No standard</td></tr>
<tr><td>PM10</td><td>Spray booth with exhaust filters; 95% control efficiency</td></tr>
<tr><td>PM2.5</td><td>No standard</td></tr>
<tr><td>CO</td><td>No standard</td></tr>
</table>

<u>T-BACT</u>
There are no T-BACT standards published in the clearinghouse for this category.
</td></tr>
</table>

<table>
<tr><th>District/Agency</th><th>Best Available Control Technology (BACT)/Requirements</th></tr>
<tr><td>San Joaquin Valley APCD</td><td>

RULE REQUIREMENTS:
Rule 4612 – Motor Vehicle and Mobile Equipment Coating Operations
(Amended 10/21/2010)

Coating Limits
No person shall apply to any motor vehicle, mobile equipment, or associated parts and components, any coating with a VOC regulatory content, as calculated pursuant to Section 3.45.1, in excess of the applicable limits in Table 1, except as provided in Section 5.3.

<table>
<tr><th>Coating Category
(SJVAPCD Rule 4612 Definition)</th><th>VOC Regulatory Limit as Applied
g/l (lbs/gal)</th></tr>
<tr><td>Adhesion Promoter</td><td>540 (4.5)</td></tr>
<tr><td>Clear Coating</td><td>250 (2.1)</td></tr>
<tr><td>Color Coating</td><td>420 (3.5)</td></tr>
<tr><td>Multi-Color Coating</td><td>680 (5.7)</td></tr>
<tr><td>Pretreatment Coating</td><td>660 (5.5)</td></tr>
<tr><td>Primer</td><td>250 (2.1)</td></tr>
<tr><td>Primer Sealer</td><td>250 (2.1)</td></tr>
<tr><td>Single-Stage Coating</td><td>340 (2.8)</td></tr>
<tr><td>Temporary Protective Coating</td><td>60 (0.5)</td></tr>
<tr><td>Truck Bed Liner Coating</td><td>310 (2.6)</td></tr>
<tr><td>Underbody Coating</td><td>430 (3.6)</td></tr>
<tr><td>Uniform Finish Coating</td><td>540 (4.5)</td></tr>
<tr><td>Any Other Coating Type</td><td>250 (2.1)</td></tr>
</table>

Most Restrictive VOC Limit
If anywhere on the container of any automotive coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Coating Limits table, then the lowest applicable VOC content limit in the Coating Limits Table shall apply.

VOC Emission Control System
In lieu of complying with the applicable requirements of Section 5.1, 5.7, or 5.8, a person may use a VOC emission control system that meets all of the following requirements:

1. The VOC emission control system shall be approved, in writing, by the APCO.
2. The VOC emission control system shall achieve an overall capture and control efficiency of at least 85% by weight.

</td></tr>
</table>

District/Agency	Best Available Control Technology (BACT)/Requirements
San Joaquin Valley APCD	3. In no case shall compliance through the use of a VOC emission control system result in a VOC emissions in excess of the VOC emissions which would result from compliance with applicable requirements of Section 5.1, 5.7, or 5.8. **Coating Application Methods** Except for underbody coatings, graphic arts operations, truck bed liner coatings, or any coating use of less than one (1.0) fluid ounce (29.6 milliliters), no person shall apply any coating to any motor vehicle, mobile equipment, or associated parts and components unless one of the following application methods is used: 1. Brush, dip, or roller; 2. Electrostatic spray 3. High-volume low-pressure (HVLP) spray equipment A. HVLP spray equipment shall be operated in accordance with the manufacturer's recommendations B. A person shall not sell or offer for sale for use within the SJVAB any HVLP spray gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Section 3.0. 4. Use of a spray gun not permanently marked HVLP. If a spray gun is used, the operator must demonstrate that the gun meets the HVLP definition in Section 3.21 in design and use. A satisfactory demonstration must be based on the manufacturer's published technical material on the design of the gun and by a demonstration of the operation of the gun using an air pressure tip gauge designed specifically for the gun in use. 5. Any other coating application method that is capable of achieving at least 65 percent transfer efficiency, as determined per Section 6.8.8. Written approval from the APCO shall be obtained for each alternative method prior to use. 6. In lieu of complying with the applicable provisions of Sections 5.7.1 through 5.7.5, an operator may control VOC emissions from coating application with a VOC emission control system that meets the requirements of Section 5.3 around the coating operation. **Organic Solvent Cleaning Requirements** For solvent cleaning operations other than for bug and tar removal, a person shall not use solvents that have VOC content greater than 25 grams VOC per liter of cleaning material, as calculated using the equation listed in Section 3.45.3. For bug and tar removal, a person shall not use any material other than bug and tar remover regulated under Consumer Products Regulation (California Code of Regulations Section 94507 et seq.). In lieu of complying with Sections 5.8.1 and 5.8.2, a person may control VOC emissions from solvent cleaning with an APCO-approved VOC emission control system for the solvent cleaning operation that meets the requirements of Section 5.3.

The following control technologies have been identified and are ranked based on stringency. The VOC emissions from use of coatings and solvents were split into two categories, with-out add-on controls and with add-on controls. For the add-on controls category, the annual usage trigger levels were left off due to the variability in different districts cost effectiveness threshold levels for which the add-on control devices were required. In this case, the overall capture and control efficiency of the add-on control devices was compared for stringency.

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
VOC	**VOCs from Coating Operation and booths without add-on controls** 1. 4,700 lb VOC/year limit, use of low VOC coatings and solvents, high efficiency spray equipment, and compliance with SMAQMD Rule 459 limits for all booth types. [SMAQMD] 2. < 7,920 lb VOC/year and compliance with SCAQMD Regulation XI, Rule 1151 and 1171 for Down-Draft Booths [SCAQMD] 3. < 10,403 lb VOC/year and compliance with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations [SDAPCD] 4. < 14,040 lb VOC/year and compliance with SCAQMD Regulation XI, Rule 1151 and 1171 for Non-Down-Draft Booths [SCAQMD] 5. < 14,600 lb VOC/year and compliance with Reg. 8, Rule 45 [BAAQMD] 6. High-volume low-pressure (HVLP) spray guns, coatings, cleaning materials, and solvents compliant with District Rule 4612 [SJVAPCD] 7. < 29,000 lb VOC/year (14.5 tons/year) and max coating VOC content of 4.8 lb/gal coating [US EPA, RBLC ID: OH-0309] **VOCs from Coating Operation and booths with add-on controls** 1. Coatings with VOC content and transfer efficiency complying with Reg. 8, Rule 45, and emission controlled to overall capture/destruction efficiency ≥ 90% by weight [BAAQMD] 2a. Compliance with applicable AQMD Regulation XI Rules, and VOC control system with ≥90% collection efficiency and ≥ 95% destruction efficiency; OR [SCAQMD] 2b. Use of Super Compliant Materials (<5% VOC by weight); OR [SCAQMD] 2c. Use of low-VOC materials resulting in an equivalent emission reduction [SCAQMD] 3. High-volume low-pressure (HVLP) spray guns, coatings, cleaning materials, and solvents compliant with District Rule 4612 [SJVAPCD] 4. Compliance with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations [SDAPCD] 5. 14.5 tons/year, 4.8 lb/gal coating [US EPA, RBLC ID: OH-0309] **VOCs from fuel combustion in Heaters** 1. Natural gas or LPG fired burner [SMAQMD] 2. No Standard – [SCAQMD, SDCAPCD, BAAQMD, SJVAPCD]
NOx	1. For heaters, low NOx burner, 30 ppmvd @ 3% O2 or 0.036 lb/MMBtu/hr [SMAQMD, SCAQMD Rule 1147] 2. Natural gas or LPG fired burner [SJVAPCD] 3. No Standard – [SDCAPCD, BAAQMD]
SOx	1. For heaters, natural gas or LPG fired burner [SMAQMD] 2. No Standard – [SCAQMD, SDCAPCD, BAAQMD, SJVAPCD]

SUMMARY OF ACHIEVED IN PRACTICE CONTROL TECHNOLOGIES	
PM10	PM10 from Coating Operation 1. Dry filtration, 98% efficiency, 0.62 tons/year, 0.0015 gr/dcsf [US EPA, RBLC ID: OH-0309] 2. Spray booth with exhaust filters; 95% control efficiency and high transfer efficiency application equipment burner [SMAQMD] 3. Spray booth with exhaust filters; 95% control efficiency [SJVAPCD] 4. Dry filters or waterwash, properly maintained [BAAQMD] 5. Dry filters or waterwash [SCAQMD] 6. Spray booth equipped with overspray filters [SDAPCD] PM10 from fuel combustion in Heaters 1. Natural gas or LPG fired burner [SMAQMD] 2. No Standard – [SCAQMD, SDCAPCD, BAAQMD, SJVAPCD]
PM2.5	1. Spray booth with exhaust filters; 95% control efficiency and high transfer efficiency application equipment [SMAQMD] 2. Spray booth equipped with overspray filters [SDAPCD] 3. No Standard – [SCAQMD, BAAQMD, SJVAPCD] PM2.5 from fuel combustion in Heaters 1. For heaters, natural gas or LPG fired burner [SMAQMD] 2. No Standard – [SCAQMD, SDCAPCD, BAAQMD, SJVAPCD]
CO	1. For heaters, natural gas or LPG fired burner [SMAQMD] 2. No Standard – [SCAQMD, SDCAPCD, BAAQMD, SJVAPCD]
NPOC	For booths with < 14,600 lbs/year (average of <40 lbs/day VOC emissions [BAAQMD] 1. Compliance with Reg. 8, Rule 45 [BAAQMD] For booths with ≥ 14,600 lbs/year (average of ≥ 40 lb/day) VOC emissions [BAAQMD] 1. Coatings with VOC content and transfer efficiency complying with Reg. 8, Rule 45, and emission controlled to overall capture/destruction efficiency ≥ 90% by weight [BAAQMD]
HAP/VHAP **(T-BACT) (A)**	For booths with < 14,600 lbs/year (average of < 40 lbs/day VOC emissions [BAAQMD] 1. Compliance with Reg. 8, Rule 45 [BAAQMD] 2. Spray booth with filter system, 98% capture efficiency, HVLVP Spray equipment or equivalent technology [US EPA, 40 CFR 63 Subpart HHHHH] For booths with ≥ 14,600 lbs/year (average of ≥ 40 lbs/day VOC emissions [BAAQMD] 1. Coatings with VOC content and transfer efficiency complying with Reg. 8, Rule 45, and emission controlled to overall capture/destruction efficiency ≥ 90% by weight [BAAQMD] 2. Spray booth with filter system, 98% capture efficiency, HVLVP Spray equipment or equivalent technology [US EPA, 40 CFR 63 Subpart HHHHH]

(A) Since toxics are in the form of VOCs, T-BACT includes BACT requirements for VOCs.

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

BEST CONTROL TECHNOLOGIES ACHIEVED		
Pollutant	**Standard**	**Source**
VOC	<u>For booths with ≤ 4,700 lbs/year VOC Emissions</u> 1. 4,700 lb VOC/year limit 2. Compliance with SMAQMD Rule 459. 3. For heaters, use of natural gas or LPG fired burner <u>For booths with > 4,700 lbs/year VOC Emissions</u> 1. Coatings with VOC content and transfer efficiency complying with Reg. 8, Rule 45, and emission controlled to overall capture/destruction efficiency ≥ 90% by weight [BAAQMD] 2. For heaters, use of natural gas or LPG fired burner	SMAQMD BAAQMD SMAQMD
NOx	1. For heaters, low NOx burner, 30 ppmvd @ 3% O2 or 0.036 lb/MMBtu/hr 2. Natural gas or LPG fired burner	SMAQMD SCAQMD SJVAPCD
SOx	For heaters, natural gas or LPG fired burner	SMAQMD SCAQMD
PM10	1. Spray booth with dry filters or waterwash, properly maintained, 98% PM control efficiency, 0.0015 gr/dcsf 2. HVLP spray or equivalent application equipment 3. For heaters, natural gas or LPG fired burner	US EPA, RBLC ID: OH-0309 SMAQMD SCAQMD SDAPCD BAAQMD SJVAPCD
PM2.5	1. Spray booth dry filters or waterwash, properly maintained, 98% PM control efficiency, 0.0015 gr/dcsf 2. HVLP spray or equivalent application equipment 3. For heaters, natural gas or LPG fired burner	US EPA, RBLC ID: OH-0309 SMAQMD SCAQMD SDAPCD BAAQMD SJVAPCD
CO	For heaters, natural gas or LPG fired burner	SMAQMD
HAP/VHAP (T-BACT) (A)	1. Spray booth with filter system, 98% PM control efficiency for PM, HVLP spray equipment or equivalent technology 2. Coatings with VOC content compliant with BAAQMD Reg. 8, Rule 45 and transfer efficiency complying with Reg. 8, Rule 45 3. VOC emission controlled to overall capture/destruction efficiency ≥ 90% by weight	US EPA (40 CFR 63 Subpart HHHHH) BAAQMD

(A) Since toxics are in the form of VOCs, T-BACT includes BACT requirements for VOCs.

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

Technologically Feasible Alternatives:
Any alternative basic equipment, fuel, process, emission control device or technique, singly or in combination, determined to be technologically feasible by the Air Pollution Control Officer.

The table below shows the technologically feasible alternatives identified as capable of reducing emissions beyond the levels determined to be "Achieved in Practice" as per Rule 202, §205.1.a.

Pollutant	Technologically Feasible Alternative
VOC	1. Carbon Adsorber 2. Thermal Oxidizer
NOx	No other technologically feasible option identified
SOx	No other technologically feasible option identified
PM10	No other technologically feasible option identified
PM2.5	No other technologically feasible option identified
CO	No other technologically feasible option identified

Cost Effective Determination:
After identifying the technologically feasible control options, a cost analysis is performed to take into consideration economic impacts for all technologically feasible controls identified.

Maximum Cost per Ton of Air Pollutants Controlled

1. A control technology is considered to be cost-effective if the cost of controlling one ton of that air pollutant is less than the limits specified below:

Pollutant	Maximum Cost ($/ton)
VOC	17,500
NO_X	24,500
PM10	11,400
SO_X	18,300
CO	TBD if BACT triggered

Cost Effectiveness Analysis Summary

A previous cost effectiveness analysis determined that 4,700 lb VOC/year was the highest allowable uncontrolled emission rate that did not require any add-on control devices. This BACT determination will revisit this limit by using new cost data. The cost analysis was processed in accordance with the EPA OAQPS Air Pollution Control Cost Manual (sixth Edition). The sales tax rate was based on the District's standard rate of 8.5% as approved on 10/17/16. The electricity (11.24 cents/kWh) and natural gas (6.41 dollars/1,000 cubic feet) rates were based on an industrial application as approved by the District on 10/17/16. The life of the equipment was based on the EPA cost manual recommendation. The interest rate was based on the previous 6-month average interest rate on United States Treasury Securities (based on the life of the

equipment) and addition of two percentage points and rounding up to the next higher integer rate. The labor (Occupation Code 51-9122: Painters, Transportation Equipment) and maintenance (Occupation Code 49-9099: Installation, maintenance, and repair workers, all other) rates were based on data from the Bureau of Labor Statistics.

Carbon Adsorber:

As shown in Attachment C, the cost effectiveness for the add on carbon adsorber system to control VOC was calculated to be **$17,505.28/ton** (see attached Paint Spray Booth for Automotive Coating Cost Effectiveness Analysis). The following basic parameters were used in the analysis.

Equipment Life = 10 years

Total Capital Investment = $10,210.98

Direct Annual Cost = $32,782.49 per year

Indirect Annual Cost = $4,977.14 per year

Total Annual Cost = $37,759.63 per year

VOC Removed = 2.2 tons per year

Cost of VOC Removal = $17,505.28 per ton reduced

A detailed calculation of the cost effectiveness for VOC removal with a carbon absorber is shown in Attachment C. Uncontrolled VOC emissions of 4,790 lb/year or greater is the cost-effective threshold for control equipment using carbon absorption control technology

Thermal Oxidizer:

Equipment Life = 10 years

Direct Cost = $176,605

Direct Annual Cost = $92,025.77 per year

Indirect Annual Cost = $36,786.55 per year

Total Annual Cost = $128,812.32 per year

VOC Removed = 7.36 tons per year

Cost of VOC Removal = $75,173.58 per ton reduced

A detailed calculation of the cost effectiveness for VOC removal with a thermal oxidizer is shown in Attachment C. Uncontrolled VOC emissions of 14,720 lb/year or greater is the cost-effective threshold for control equipment using thermal oxidation control technology.

Conclusion: In this analysis, different emission operating levels are presented with the corresponding total cost per ton of VOC controlled using either a carbon adsorption control or a thermal oxidizer. Uncontrolled VOC emission level of 4,790 lb per year or greater must be reached in order for the carbon adsorption control option to be cost effective. Uncontrolled VOC emission level of 14,720 lb per year or greater must be reached in order for a thermal oxidizer to be cost effective. The emissions levels for the cost effectiveness of controls is based on the District cost effective limit for ROC of $17,500 per ton controlled.

However, the previous BACT determination (#107) for paint spray booths for automotive refinishing deemed carbon adsorption control to be cost effective at 4,700 lb per year or greater. Since the previous carbon adsorption cost effective calculation is more stringent, the use of carbon adsorption for VOC emissions greater than 4,700 lbs per year will still be considered cost effective.

C. SELECTION OF BACT:

Based on the review of SMAQMD, SCAQMD, SDCAPCD, BAAQMD, SJVAPCD, CARB, and EPA BACT Clearinghouses and cost effectiveness determinations, BACT for VOC, NOx, SOx, PM10, PM2.5, and CO will be the following:

BACT For Paint Spray Booths for Automotive Refinishing (#153) ≤ 4,700 lbs VOC/year		
Pollutant	**Standard**	**Source**
VOC	1. Compliance with SMAQMD Rule 459 2. For heaters, use of natural gas or LPG fired burner	SMAQMD SCAQMD
NOx	1. For heaters, low NOx burner, 30 ppmvd @ 3% O2 or 0.036 lb/MMBtu/hr 2. Natural gas or LPG fired burner	SMAQMD SCAQMD SJVAPCD
SOx	For heaters, natural gas or LPG fired burner	SMAQMD
PM10	1. Spray booth with dry filters or waterwash, properly maintained, 98% PM control efficiency, 0.0015 gr/dcsf 2. HVLP spray or equivalent application equipment 3. For heaters, natural gas or LPG fired burner	US EPA, RBLC ID: OH-0309 SMAQMD SCAQMD SDAPCD BAAQMD SJVAPCD
PM2.5	1. Spray booth dry filters or waterwash, properly maintained, 98% PM control efficiency, 0.0015 gr/dcsf 2. HVLP spray or equivalent application equipment 3. For heaters, natural gas or LPG fired burner	US EPA, RBLC ID: OH-0309 SMAQMD SCAQMD SDAPCD BAAQMD SJVAPCD
CO	For heaters, natural gas or LPG fired burner	SMAQMD

T-BACT Paint Spray Booths for Automotive Refinishing (#153) ≤ 4,700 lbs VOC/year		
Pollutant	**Standard**	**Source**
Organic HAP (T-BACT)	1. Spray booth with filter system, 98% PM control efficiency, HVLP spray equipment or equivalent technology 2. Coatings with VOC content compliant with BAAQMD Reg. 8, Rule 45 and transfer efficiency complying with Reg. 8, Rule 45 3. VOC emission controlled to overall capture/destruction efficiency ≥ 90% by weight	US EPA (40 CFR 63 Subpart HHHHH) BAAQMD

BACT For Paint Spray Booths for Automotive Refinishing (#154) > 4,700 lb VOC/year		
Pollutant	**Standard**	**Source**
VOC	1. Coatings with VOC content and transfer efficiency complying with Reg. 8, Rule 45, and emission controlled to overall capture/destruction efficiency ≥ 90% by weight 2. For heaters, use of natural gas or LPG fired burner	SMAQMD BAAQMD
NOx	1. For heaters, low NOx burner, 30 ppmvd @ 3% O2 or 0.036 lb/MMBtu/hr 2. Natural gas or LPG fired burner	SMAQMD SCAQMD SJVAPCD
SOx	For heaters, natural gas or LPG fired burner	SMAQMD
PM10	1. Spray booth with dry filters or waterwash, properly maintained, 98% PM control efficiency, 0.0015 gr/dcsf 2. HVLP spray or equivalent application equipment 3. For heaters, natural gas or LPG fired burner	US EPA, RBLC ID: OH-0309 SMAQMD SCAQMD SDAPCD BAAQMD SJVAPCD
PM2.5	1. Spray booth with dry filters or waterwash, properly maintained, 98% PM control efficiency, 0.0015 gr/dcsf 2. HVLP spray or equivalent application equipment 3. For heaters, natural gas or LPG fired burner	US EPA, RBLC ID: OH-0309 SMAQMD SCAQMD SDAPCD BAAQMD SJVAPCD
CO	For heaters, natural gas or LPG fired burner	SMAQMD

T-BACT For Paint Spray Booths for Automotive Refinishing (#154) > 4,700 lb VOC/year		
Pollutant	**Standard**	**Source**
Organic HAP (T-BACT)	1. Spray booth with filter system, 98% PM control efficiency, HVLP spray equipment or equivalent technology 2. Coatings with VOC content compliant with BAAQMD Reg. 8, Rule 45 and transfer efficiency complying with Reg. 8, Rule 45 3. VOC emission controlled to overall capture/destruction efficiency ≥ 90% by weight	US EPA (40 CFR 63 Subpart HHHHH) BAAQMD

REVIEWED BY: _____ **DATE:** _____

APPROVED BY: _____ **DATE:** _____

Attachment A

Review of BACT Determinations published by EPA

List of BACT determinations published in EPA's RACT/BACT/LAER Clearinghouse (RBLC) for Automotive Refinishing:

RBLC	Permit Date	Process Code (A)	Process/Equipment	Pollutant	Standard	Control Technology	Case-By-Case Basis
OH-0309	05/03/2007	41.003	Automotive Off-Line Repair Booth with Dry Filtration and Indirect Fired 5 MMBtu/hr Natural Gas Fired Infrared Oven	PM10 (filterable)	0.62 tons/year per rolling month, 0.0015 gr/dscf	Dry Filtration, 98% efficiency	BACT-PSD
				PM	2.4 tons/year, 0.5510 lb/hr	Dry Filtration, 98% efficiency	BACT-PSD
				Visible Emissions (VE)	5% Opacity as a 6-minute average	Dry Filtration	BACT-PSD
				VOC	14.5 tons/year, 4.8 lb/gal coat - Exempt lb/gal coat excluding 2ater & exempt solvents	VOC content shall be maintained as a monthly maximum for all coating repair operations or as a daily volume weighted average of the materials used	LAER/MACT

(A) Process Code 41.003 includes automotive refinishing.

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

Attachment B

Review of BACT Determinations published by ARB

List of BACT determinations published in ARB's BACT Clearinghouse for spray booths that were used for automotive coatings:

Capacity	Source	Date	NOx	VOC	CO	PM10
16' x 30' x 17'	SMAQMD	7/25/2005		4,700 lb/year, low VOC coatings		
16'4"W x 12'2"L x 10'8"H	SCAQMD	07/01/1999		15 lb VOC/day, dry filters		

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

Attachment C

Cost Effectiveness Determination for Carbon Adsorption and Thermal Oxidizers

COST EFFECTIVENESS ANALYSIS FOR CARBON ADSORPTION

This cost effectiveness analysis was performed using EPA's OAQPS Control Cost Manual
EPA publication no. 450/3-90-006

FACILITY NAME: Sacramento Auto Body, Inc
LOCATION: 3430 La Grande Blvd.
PERMIT NO.: 24973
EQUIPMENT DESCRIPTION: Autobody Refinishing

VOC Parameters

VOC of concern	Toluene
Cost of pure VOC ($/ton)	100
Molecular weight of VOC (Refer to Control Cost Manual, pg 3-63)	92.13
Emission rate (lbs/hr - inlet)	2.4
Inlet concentration (ppm)	22
k factor (Refer to Control Cost Manual, pg 4-11)	0.551
m factor (Refer to Control Cost Manual, pg 4-11)	0.11
Partial pressure (psi)	0.000317514

Gas Parameters

Total gas flow rate (acfm - inlet)	8,000
Total gas pressure (psi - inlet)	14.7

Equipment Parameters

Removal efficiency (%)	90.0%
Adsorption time (hours)	8
Desorption time (hours)	8
Number of adsorbing beds	1
Number of Desorbing beds	1
Equipment life (years)	10

Operating Parameters

Hours per day	8
Days per week	5
Weeks per year	52

Carbon Requirements

Controlled VOC Emissions with max operation (tons/year)	2.2

VOC Emissions BACT add on limit (lbs/year)			4790
Controlled VOC Emissions BACT add on limit (tons/year)			2.2
Carbon working capacity (lb VOC/lb carbon)			0.25
Amount of carbon needed (lbs)			17,244
Carbon cost			$25,866
Carbon life (years)			5
Direct Costs:			
Purchased Equipment Cost			
Adsorber and auxiliary equipment			$7,800.00
Instrumentation			$780.00
Sales taxes			$663.00
Freight			$390.00
Purchased Equipment Cost			$9,633.00
Direct installation costs	Canister carbon adsorption doesn't require site prep and building costs		
Foundations & supports		$	-
Handling & erection		$	-
Electrical		$	-
Piping		$	-
Insulation		$	-
Painting		$	-
Direct installation costs		$	-
Indirect Costs:			
Indirect Costs (installation)			
Engineering		$	-
Construction and field expenses		$	-
Contractor fees		$	-
Start-up		$	192.66
Performance test		$	96.33
Contingencies		$	288.99
Total Indirect Costs		$	577.98
Total Capital Investment			$10,210.98
Interest Rate			0.04
Equipment Life (years)			10
Capital Recovery Factor (CRF)			0.1233
Capital recovery cost			$1,258.92
Capital Recovery Inflation adjustment			$1,481.46
Direct Annual Costs			
Labor wage ($/hr)			19.79

operator hour (hrs/shift)			0.5
shifts per day (shift/day)			1
days of work per year (days/year)			260
Operator labor			
	Bureau of Labor Statistics. Occupation Code: 51-9122 (Painters, Transportation		
Operator	Equipment)		$2,572.70
Supervisor			$0.00
Material			$2,572.70
Replacement labor			$0.00
Utilities			
Electrical Cost			
kW/hp			0.746
hp			10
hours/year			2080
kWh price			0.1124
Electrical			$1,744.09
Total Direct Annual Costs (without carbon costs)			$6,889.49
Indirect Annual Costs			
Overhead			$3,087.24
Administrative Charges		$	204.22
Property Tax		$	102.11
Insurance		$	102.11
Total Indirect Annual Costs (without Capital Recovery)			$3,495.68
Ton VOC controlled			2.16
Carbon needed			17,244
Cost of Carbon per year			$25,866.00
Total Annual Costs			$37,732.63
Cost of VOC Removal			$17,505.28

Determination of Maximum Annual VOC Limit Not Requiring Add-on Bact

Annual Direct Operating Cost (without carbon costs)	$6,889.49
Annual Indirect Operating Cost	$4,977.14
Carbon working capacity (lb carbon/lb VOC)	0.25

Annual lb VOC PTE	4790
Annual tons Controlled VOC	2.2
Control Efficiency	0.900
Amount of Carbon Needed	17244
Cost of Carbon	$25,866.00
Total Annual Cost	$37,732.63
Cost per ton VOC Controlled	$17,505.28

COST EFFECTIVENESS ANALYSIS FOR THERMAL INCINERATION

This cost effectiveness analysis was performed using EPA's OAQPS Control Cost Manual
EPA publication no. 450/3-90-006

FACILITY NAME: Sacramento Auto Body, Inc.
LOCATION: 3430 La Grande Blvd.
PERMIT NO.: 24973
EQUIPMENT DESCRIPTION: Autobody Refinishing

VOC Parameters

VOC of concern	Toluene
Molecular weight of VOC (see Control Cost Manual, p 3-63)	92.13
Heat of combustion (Btu/lb - see Control Cost Manual, p 3-63)	17,601
Heating value of VOC (Btu/scf)	4,074
Emission rate (lbs/hr - inlet)	2.4
Inlet concentration (ppm)	21

Gas Parameters

Total gas flow rate (scfm - inlet)	8000
Total gas pressure (psi - inlet)	14.7
Inlet gas temperature (deg F)	71

Equipment Parameters

Level of energy recovery (0%, 35%, 50% or 70%)	70%
Control efficiency (%)	90.0%
Equipment life (years)	10

Operating Parameters

Hours per day	8
Days per week	5
Weeks per year	52
Shifts per day	2

Incinerator Parameters

Volumetric heat of combustion of effluent (Btu/scf)	0.09
Heat of combustion per pound of effluent (Btu/lb)	1.15
Temperature Required for incineration (deg F)	1,500.00
Gas temperature at exit of pre-heater (deg F)	1,071.30
Effluent gas temperature (deg F)	499.7

Electricity Usage

Price of electricity ($/kWh)	$0.1124
System fan (kWh/yr)	61,651.20
Total Power Used (kWh/yr)	61,651.20

Gas Usage

Price of gas ($/1000 cu.ft.)	$6.41
Auxiliary fuel required (scfm)	87.43

CAPITAL COST

Direct Costs:

Incinerator	$110,000
Auxiliary equipment (if not included above)	$0
Equipment Cost (A)	**$110,000**
Instrumentation (0.1A if not included above)	$11,000
CA Sales taxes (0.085)	$9,350
Freight (0.05A)	$5,500
Total Equipment Cost (B)	**$135,850**

Direct Installation Costs:

Foundation & Supports (0.08B)	$10,868
Handling & erection (0.14B)	$19,019
Electrical (0.04B)	$5,434
Piping (0.02B)	$2,717
Insulation for duct work (0.01B)	$1,359
Painting (0.01B)	$1,359
Direct Installation Cost	**$40,755**
Site preparation	$0
Facilities & buildings	$0
Total Direct Costs	**$176,605**

Indirect Costs (installation)

Engineering (0.10B)	$13,585
Construction & field expenses (0.05B)	$6,793
Contractor fees (0.10B)	$13,585
Start-up (0.02B)	$2,717
Performance test (0.01B)	$1,359
Contingencies (0.03B)	$4,076
Total Indirect Costs	**$42,114**

TOTAL CAPITAL INVESTMENT	**$218,719**

ANNUAL COST

Direct Annual Costs

Operating Cost		
	Operator (@ $19.79/hr & .5 hr per shift)	$5,145.40
	Supervisor (15% of operator)	$771.81
	Operating materials	$0.00
Maintenance		
	Labor (@17.77/hr & .5 hr per shift)	$4,620.20
	Material (same as labor)	$4,620.20
Utilities		
	Price of electricity ($/kWh)	$0.11
	Price of gas ($/1000 cu.ft.)	$6.41
	Electricity ($/yr)	$6,929.59
	Natural Gas ($/yr)	$69,938.56
	Total Direct Costs	**$92,025.77**

Indirect Annual Costs

Overhead	$9,094.57
Administrative charges	$4,374.37
Property taxes	$2,187.19
Insurance	$2,187.19
Interest rate (%)	4%
Equipment life (years)	10
CRF	0.0736
Capital recovery	$16,097.68
Capital Recovery Inflation Adjustment	$18,943.24
Total Indirect Costs	**$36,786.55**

TOTAL ANNUAL COST	**$128,812.31**

Annual Cost ($/yr)	$128,812.31
Annual Emissions Reductions (tons/yr)	7.36

(annual emissions based on BACT determination limit for add-on controls)

COST PER TON OF VOCs REDUCED ($/ton)	**$17,501.67**

Attachment D

BACT Determinations from Air Districts

https://cfpub.epa.gov/rblc/index.cfm?action=PermitDetail.ProcessInfo&facility_id=26659&PROCESS_ID=106094
Last updated on 2/3/2017

Technology Transfer Network

Clean Air Technology Center RACT/BACT/LAER Clearinghouse

Clean Air Technology Center | EPA Home | Air Pollution Control Technology | TTN Web | 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: OH-0309
Corporate/Company: DAIMLER CHRYSLER CORPORATION
Facility Name: TOLEDO SUPPLIER PARK- PAINT SHOP
Process: AUTOMOTIVE OFF-LINE REPAIR BOOTH

Primary Fuel:
Throughput:
Process Code: 41.003

Pollutant Information - List of Pollutants

Help

Pollutant	Primary Emission Limit	Basis	Verified
Particulate matter, filterable < 10 µ (FPM10)	0.6200 T/YR	BACT-PSD	UNKNOWN
Particulate Matter (PM)	0.5510 LB/H	BACT-PSD	UNKNOWN
Visible Emissions (VE)	5.0000 % OPACITY	BACT-PSD	UNKNOWN
Volatile Organic Compounds (VOC)	14.5000 T/YR	LAER	UNKNOWN

Process Notes: WITH DRY FILTRATION AND INDIRECT FIRED 5MMBTU/HR NATURAL GAS FIRED INFRARED OVEN

California Environmental Protection Agency
Air Resources Board

BACT Determination Detail

Category

Source Category:	Motor Vehicle and Mobile Equipment Coating Spray Booth: <40 lb/day Emissions (Uncontrolled)
SIC Code	7532
NAICS Code	811121

Emission Unit Information

Manufacturer:	TBD - Paint Booth
Type:	Paint Booth
Model:	TBD
Equipment Description:	Automotive paint spray booth
Capacity / Dimentions	16' x 30' x 17',
Fuel Type	None-applicable
Multiple Fuel Types	

Operating Schedule (hours/day)/(days/week)/ (weeks/year)e	Variable (8/5/52)
Function of Equipment	Vehicle refinishing
VOC Limit	4700
VOC Limit Units	lb/yr
VOC Average Time	
VOC Control Method	Pollution Prevention
VOC Control Method Desc	low VOC coatings - see notes
VOC Percent Control Efficiency	
VOC Cost Effectiveness (%/ton)	
VOC Incremental Cost Effectiveness (%/ton)	
VOC Cost Verified (Y/N)	
VOC Dollar Year	

Project / Permit Information

Application/Permit No.:	18402
Application Completeness Date:	
	New Construction

New Construction/Modification:	
ATC Date:	07-25-2005
PTO Date:	
Startup Date:	
Technology Status:	BACT Determination
Source Test Available:	No
Source Test Results:	

Facility / District Information

Facility Name:	Fleet Refinish, LLC
Facility Zip Code:	95655
Facility County:	Sacramento
District Name:	Sacramento Metropolitan AQMD
District Contact:	Paul Glanville
Contact Phone No.:	916-874-4800
Contact E-Mail:	pglanville@airquality.org

Notes

Notes:	low VOC coatings are required, add on control devices are not cost effective for our threshold levels for operations limited to 4700 lb/year of VOC emissions.

Report Error In Determination

EXPIRED SMAQMD BACT CLEARINGHOUSE

CATEGORY: **COATING - AUTO BODY**

BACT Size: Minor Source BACT **PAINT SPRAY BOOTH**

BACT Determination Number:	107	**BACT Determination Date:**	**6/10/2015**

Equipment Information

Permit Number: 24446
Equipment Description: PAINT SPRAY BOOTH
Unit Size/Rating/Capacity: Emissions limited to 4,700 lb VOC/qtr/year
Equipment Location: CALIBER COLLISION CENTERS
2341 FULTON AVE
SACRAMENTO, CA

BACT Determination Information

ROCs	**Standard:**	Low VOC coatings and solvents
	Technology Description:	Compliant with Rule 459 and high transfer efficiency application equipment, Natural gas or LPG fired burner
	Basis:	Achieved in Practice
NOx	**Standard:**	30 ppmvd @ 3% O2
	Technology Description:	Low-Nox burner
	Basis:	Achieved in Practice
SOx	**Standard:**	
	Technology Description:	Natural gas or LPG fired burner
	Basis:	Achieved in Practice
PM10	**Standard:**	
	Technology Description:	Spray booth with exhaust filters; 95% control efficiency and high transfer efficiency application equipment, Natural gas or LPG fired burner
	Basis:	Achieved in Practice
PM2.5	**Standard:**	
	Technology Description:	Spray booth with exhaust filters; 95% control efficiency and high transfer efficiency application equipment, Natural gas or LPG fired burner
	Basis:	Achieved in Practice
CO	**Standard:**	
	Technology Description:	Natural gas or LPG fired burner
	Basis:	Achieved in Practice
LEAD	**Standard:**	
	Technology Description:	
	Basis:	

Comments: BACT for A/Cs 24446, 24447 & 24448 for three paint spray booths each with a 1 MMBtu/hr low-NOx burner (booth heater). Booths exhaust at a flowrate of 14,000 cfm. This is for a non-OEM operation. This BACT is also applicable to an automotive paint spray booth without a heater.

District Contact: Felix Trujillo Phone No.: (916) 874 - 7357 email: ftrujillo@airquality.org

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: Spray Booth

	Criteria Pollutants					
Subcategory/ Rating/Size	**VOC**	**NOx**	**SOx**	**CO**	**PM_{10}**	**Inorganic**
Automotive, Down-Draft Type, < 660 Lbs/Month of VOC Emissions	Compliance with Applicable SCAQMD Regulation XI Rules (10-20-2000)				Dry Filters or Waterwash (1990)	
Other Types, < 1170 Lbs/Month of VOC Emissions	Compliance with Applicable SCAQMD Regulation XI Rules (10-20-2000)				Same as Above (1990)	
Automotive, Down-Draft Type, ≥ 22 Lbs/Day of VOC Emissions	- Compliance with Applicable SCAQMD Regulation XI Rules, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or - Use of Super Compliant Materials (< 5% VOC by weight): or - Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction (10-20-2000)				Same as Above (1990)	
Other Types, ≥ 1170 Lbs/Month of VOC Emissions	Same as Above (10-20-2000)				Same as Above (1990)	

Note: The sum of all VOC emissions from all spray booths within the same subcategory applied for in the previous two years at the same facility are considered toward the emission threshold.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

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: Dryer or Oven

	Criteria Pollutants					
Subcategory/ Rating/Size	**VOC**	**NOx**	**SOx**	**CO**	**PM_{10}**	**Inorganic**
Carpet Oven		80 ppmvd, corrected to 3% O_2 (10-20-2000)	Natural Gas (1990)		Natural Gas (1990)	
Rotary, Spray and Flash Dryers[1)]		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Tray, Agitated Pan, and Rotary Vacuum Dryers		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas (1990)	
Tenter Frame Fabric Dryer		60 ppmvd Corrected to 3% O_2 (10-20-2000)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)	
Other Dryers and Ovens – Direct and Indirect Fired		30 ppmvd corrected to 3% O_2 (04-10-98)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)	

1. Dryers for foodstuff, pharmaceuticals, aggregate & chemicals.

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

Section I: AQMD BACT Determinations

Application No.: 413559

Equipment Category – Dryer or Oven

1. GENERAL INFORMATION

DATE: 9/15/2004

A. MANUFACTURER: Spray Systems

B. TYPE: Direct-Fired Makeup Air Heater for Automotive Type Side-Draft Spray Booth

C. MODEL: MD1000 (Spray Booth)

D. STYLE: Manual application of coatings by workers within spray booth

E. APPLICABLE AQMD RULES: 401, 402

F. COST: $ (NA) SOURCE OF COST DATA:

G. OPERATING SCHEDULE: 10 HRS/DAY 4 DAYS/WK 50 WKS/YR

2. EQUIPMENT INFORMATION

APP. NO.: 413559

A. FUNCTION: Heats spray booth ventilation air to control booth temperature. This spray booth is used for application of coatings and for drying/curing coated parts used in manufacture of aerial refueling system components. The booth is in use approximately half time on a batch basis with batch times running typically one to three hours. Booth temperature varies from approximately 70F to a maximum of 130F, depending on the operation taking place. The facility operates 4 days/week, two 10-hr shifts per day.

B. MAXIMUM HEAT INPUT: 1.9 MMBtu/hr

C. MAXIMUM THROUGHPUT: Two 10 hp exhaust fans

D. BURNER INFORMATION: NO.: 1 TYPE: Low-NOx

E. PRIMARY FUEL: Natural Gas

F. OTHER FUEL: None

G. OPERATING CONDITIONS: Firing rate varies with air throughput. Maximum booth temperature is 130F.

3. COMPANY INFORMATION

APP. NO.: 413559

A. NAME: Sargent Fletcher

B. SIC CODE: 3728

C. ADDRESS: 9400 East Flair Drive

CITY: El Monte STATE: CA ZIP: 91731

D. CONTACT PERSON: Gilbert Tanon

E. PHONE NO.: 626-402-2205

4. PERMIT INFORMATION

APP. NO.: 413559

A. AGENCY: SCAQMD

B. APPLICATION TYPE: new construction

C. AGENCY CONTACT PERSON: Emmanuel Quizon

D. PHONE NO.: 909-396-2523

E. PERMIT TO CONSTRUCT/OPERATE INFORMATION: P/C NO.: 413559 ISSUANCE DATE: 5/27/2003

☐ CHECK IF NO P/C P/O NO.: F67626 ISSUANCE DATE: 4/6/2004

F. START-UP DATE: October 2003

5. EMISSION INFORMATION

APP. NO.: 413559

A. PERMIT

A1. PERMIT LIMIT: Spray booth temperature not to exceed 130F. NOx not to exceed 30 ppmvd@3%O2 (30-Minute average).

A2. BACT/LAER DETERMINATION: NOx: 30 ppmvd@3%O2

A3. BASIS OF THE BACT/LAER DETERMINATION:

B. CONTROL TECHNOLOGY

B1. MANUFACTURER/SUPPLIER: Eclipse Combustion

B2. TYPE: Nozzle-Mix Low-NOx burner

B3. DESCRIPTION: Winnox WX 200

B4. CONTROL EQUIPMENT PERMIT APPLICATION DATA: P/C NO.: ISSUANCE DATE:
P/O NO.: ISSUANCE DATE:

B5. WASTE AIR FLOW TO CONTROL EQUIPMENT: FLOW RATE:
ACTUAL CONTAMINANT LOADING: BLOWER HP:

B6. WARRANTY: Manufacturer guaranteed 30 ppmvd@3%O2 NOx and 5 ppmvd CO.

B7. PRIMARY POLLUTANTS: NOx, CO, VOC, PM10

B8. SECONDARY POLLUTANTS:

B9. SPACE REQUIREMENT:

B10. LIMITATIONS: B11. UNUSED

B12. OPERATING HISTORY: The makeup air heater has been in regular use since October 2003.

B13. UNUSED B14. UNUSED

C. CONTROL EQUIPMENT COSTS

C1. CAPITAL COST: ☐ CHECK IF INSTALLATION COST IS INCLUDED IN EQUIPMENT COST
EQUIPMENT: $ INSTALLATION: $ (NA) SOURCE OF COST DATA:

C2. ANNUAL OPERATING COST: $ (NA) SOURCE OF COST DATA:

D. DEMONSTRATION OF COMPLIANCE

D1. STAFF PERMFORMING FIELD EVALUATION:
ENGINEER'S NAME: INSPECTOR'S NAME: DATE:

D2. COMPLIANCE DEMONSTRATION:

D3. VARIANCE: NO. OF VARIANCES: None DATES:
CAUSES:

D4. VIOLATION: NO. OF VIOLATIONS: None DATES:
CAUSES:

D5. MAINTENANCE REQUIREMENTS: D6. UNUSED

5. EMISSION INFORMATION

APP. NO.: 413559

D7. SOURCE TEST/PERFORMANCE DATA RESULTS AND ANALYSIS:

DATE OF SOURCE TEST: 11/10/2003

CAPTURE EFFICIENCY:

DESTRUCTION EFFICIENCY:

OVERALL EFFICIENCY:

SOURCE TEST/PERFORMANCE DATA: 20.76% O2 (dry vol.), 0.23% CO2 (dry vol.), 0.21 ppmvd NOx, 1.3 ppmvd CO---PPMVD@3%O2: 27 NOx, 162 CO

OPERATING CONDITIONS: Normal. Booth temperature 130F.

TEST METHODS: AQMD Method 100.1. Test report was approved by AQMD Monitoring & Source Test Engineering group. Minimum 20% of analyzer range requirement was waived in this case. Based on USEPA's Method 19, the NOx emission rate is .011 lb/MMBtu using the CO2 F-factor method and .033 lb/MMBtu using the O2 F-factor method. Both are less than the .036 lb/MMBtu emission rate that is equivalent to 30 ppmvd@3%O2.

6. COMMENTS

APP. NO.: 413559

AUTOMOTIVE REFINISHING OPERATIONS (<5 gal/day)
Fee Schedule 27R

Review the BACT Control Option listed below. The applicant must propose the Control Option listed or perform a Top-down BACT Analysis as described in Section 4 to justify the selection of another Control Option. The applicant will be required to provide documentation that the Control Option selected meets the requirements listed in the table.

	VOC	NOx	SOx	PM
BACT Emission Rate Limit	Not Determined	(N/A)	(N/A)	Not Determined
BACT Control Option	Compliance with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations (A/P)	(N/A)	(N/A)	Spray booth equipped with overspray filters. (A/P)

The applicant may choose to limit the Potential to Emit (PTE) from the equipment to less than 10 pounds per day for each pollutant in lieu of meeting the stated BACT requirement.

(This table does not apply to operations applying, on average, 5 or more gallons of coating per day.)

AUTOMOTIVE REFINISHING OPERATIONS
Fee Schedule 27S

The BACT Control Options which have been determined to be technologically feasible (T/F - demonstrated but not necessarily proven in field application) or have achieved the BACT emission rate limits in practice (A/P - demonstrated in use for the specific equipment category) are listed below. The BACT Control Options are listed in descending order of control stringency. If the top-listed T/F control option is proposed, no further analysis is required. If the first T/F control option is not chosen, then the applicant must review and determine the cost-effectiveness of each T/F control option in the order listed. The first control option determined to be cost-effective must be installed to meet the BACT requirement. A control option is considered cost-effective if the annualized cost of implementing that control option is equal to or less than the reference cost-effectiveness value for the same pollutant shown in Table 2-4. If none of the T/F control options are determined to be cost-effective, the applicant must propose the A/P control option, propose an alternative technology that meets the BACT emission rate limit or perform a full Top-down BACT Analysis as described in Section 4. The applicant is responsible for ensuring that the installed equipment meets the specified BACT Emission Rate Limit. (See Section 2 for further guidance.)

	VOC	NOx	SOx	PM
BACT Control Option	Collection System Vented to Carbon Adsorber or Afterburner with coatings complying with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations (T/F) **BACT Emission Rate Limit -** emissions controlled to overall capture/ destruction efficiency ≥ 90% by weight	(N/A)	(N/A)	Spray booth equipped with overspray filters. (A/P)
BACT Control Option	Compliance with Rule 67.20.1, Motor Vehicle and Mobile Equipment Refinishing Operations (A/P)	(N/A)	(N/A)	Spray booth equipped with overspray filters. (A/P)

The applicant may choose to limit the Potential to Emit (PTE) from the equipment to less than 10 pounds per day for each pollutant in lieu of meeting the stated BACT requirement.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guideline

Source Category

Source:	***Spray Booth - Coating of Motor Vehicle and Mobile Equipment, Rework or Bodyshop***	Revision:	***2***
		Document #:	***161.3.1***
Class:	***<40 lb/day Emissions (Uncontrolled)***	Date:	***12/16/91***

Determination

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. *Coating w/ VOC content and transfer efficiency complying w/ Reg. 8, Rule 45, and emissions controlled to overall capture/ destruction efficiency ≥90%*[a,b,T] 2. *Compliance w/ Reg. 8, Rule 45*[a,T]	1. *Collection System Vented to Carbon Adsorber System or thermal Oxidizer*[a,b,T] 2. *Complying Coatings and Coating Equipment (HVLP or Electrostatic or other BAAQMD approved applicator)*[a,T]
NOx	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
SO_2	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
CO	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
PM_{10}	1. *n/d* 2. *n/s*	1. *n/d* 2. *Dry Filters or Waterwash, Properly Maintained*[a]
NPOC	1. *Coating w/ solvent content and transfer efficiency complying w/ Reg. 8, Rule 45, and emissions controlled to overall capture/ destruction efficiency ≥90%*[a,b,T] 2. *Compliance w/ Reg. 8, Rule 45*[a,T]	1. *Collection System Vented to Carbon Adsorber System*[a,T] 2. *Complying Coatings and Coating Equipment (HVLP or Electrostatic or other BAAQMD approved applicator)*[a,T]

References

a. BAAQMD
b. Generally considered to be cost-effective if uncontrolled emissions ≥40 lb/day
T. TBACT

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
Best Available Control Technology (BACT) Guideline

Source Category

Source:	***Spray Booth - Coating of Motor Vehicle and Mobile Equipment, Rework or Bodyshop***	Revision:	***2***
		Document #:	***161.3.2***
Class:	***≥40 lb/day Emissions (Uncontrolled)***	Date:	***05/05/95***

Determination

POLLUTANT	BACT 1. Technologically Feasible/ Cost Effective 2. Achieved in Practice	TYPICAL TECHNOLOGY
POC	1. *Coating w/ VOC content less than and transfer efficiency greater than that required by Reg. 8, Rule 45, and emissions controlled to overall capture/destruction efficiency ≥90%[a,T]* 2. *Coating w/ VOC content and transfer efficiency complying w/ Reg. 8, Rule 45, and emission controlled to overall capture/ destruction efficiency ≥90%[a,b,T]*	1. *Collection System Vented to Carbon Adsorption System or thermal Oxidizer[a,T]* 2. *Collection System Vented to Carbon Adsorption System or thermal Oxidizer[a,T]*
NOx	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
SO_2	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
CO	1. *n/a* 2. *n/a*	1. *n/a* 2. *n/a*
PM_{10}	1. *n/d* 2. *n/s*	1. *n/d* 2. *Dry Filters or Waterwash, Properly Maintained[a]*
NPOC	1. *Coating w/ VOC content and transfer efficiency complying w/ Reg. 8, Rule 45, and emissions controlled to overall capture/ destruction efficiency ≥90%[a,T]* 2. *n/d*	1. *Collection System Vented to Carbon Adsorption System[a,T]* 2. *n/d*

References

a. BAAQMD

b. *A/N 3856 (Note: POC BACT2 control is achieved in practice for auto coating, not for bus coating, 7/9/02 memo from B. Young to B. deBoisblanc).*

T. TBACT

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 4.2.1*

Last Update: 03/23/2010

Automotive Spray Painting Operation, < 5.0 MMBtu/hr**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	HVLP spray guns, coatings, cleaning materials, and solvents compliant with District Rule 4612	VOC capture and control system	Other compliant coating methods as stated in Rule 4612
PM10	Spray Booth with Exhaust Filters; 95% control efficiency		Other compliant coating methods as stated in Rule 4612
NOx	Natural gas or LPG fired burner		

** This Determination is also applicable to automotive spray painting operations without a heat source

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**