

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Best Available Control Technology Guidelines

Part D: BACT Guidelines for Non-Major Polluting Facilities

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Table of Contents

Abrasive Blasting – Enclosed	1
Absorption Chiller.....	2
Air Stripper – Ground Water Treatment	3
Aluminum Melting Furnace	4
Crucible or Pot.....	4
Reverberatory, Non-Sweating.....	4
Reverberatory or Rotary, Sweating.....	4
Ammonium Bisulfate and Thiosulfate Production.....	5
Asbestos Machining Equipment.....	6
Asphalt Batch Plant.....	7
Asphalt Roofing Line	8
Asphaltic Day Tanker.....	9
Auto Body Shredder.....	10
Ball Mill	11
Beryllium Machining Equipment.....	12
Boiler.....	13
Natural Gas or Propane Fired	13
Atmospheric Unit.....	14
Landfill Gas Fired.....	14
Digester Gas Fired	14
Brakeshoe Debonder	15
Brass Melting Furnace	16
Crucible	16
Reverberatory or Rotary, Non-Sweating.....	16
Reverberatory or Rotary, Sweating.....	16
Tilting Induction	16
Bulk Solid Material Handling – Other	17
Animal Feed Mfg. – Dry Material Handling.....	17
Clay, Ceramics and Refractories Handling (Except Mixing).....	17
Coal, Coke and Sulfur Handling.....	17
Feed and Grain Handling.....	17
Paper and Fiber Handling	17
Pneumatic Conveying, Except Paper and Fiber	17
Railcar Dumper.....	17

Bulk Solid Material Ship Loading	18
Non-White Commodities	18
White Commodities	18
Bulk Solid Material Ship Unloading	19
Bulk Cement	19
Other Bulk Solid Materials	19
Bulk Solid Material Storage	20
Coal, Petroleum Coke, Sulfur	20
Other Non-White Commodities	20
White Commodities	20
Storage Tanks and Silos.....	20
Other Open Storage	20
Burnoff or Burnout Furnace (Excluding Wax Furnace)	21
Calciner	22
Petroleum Coke	22
Other	22
Carpet Beating and Shearing.....	23
Catalyst Manufacturing and Regeneration.....	24
Calcining.....	24
Reactor.....	24
Rotary or Spray Dryer.....	24
Regeneration, Hydrocarbon Removal.....	24
Catalyst Solids Handling.....	24
Charbroiler, Chain-driven (conveyorized)	25
Chemical Milling Tanks.....	26
Aluminum and Magnesium.....	26
Nickel Alloys, Stainless Steel and Titanium.....	26
Chip Dryer	27
Chrome Plating.....	28
Decorative Chrome	28
Hard Chrome	28
Circuit Board Etcher	29
Batch Immersion Type, Subtractive Process.....	29
Conveyorized Spray Type, Subtractive Process	29
Cleaning Compound Blender	30

Coffee Roasting.....	31
Roaster.....	31
Handling Equipment.....	31
Composting.....	32
Co-composting.....	32
Concrete Batch Plant.....	33
Central Mixed.....	33
Transit-Mixed.....	33
Concrete Blocks and Forms Manufacturing.....	34
Cotton Gin.....	35
Crematory.....	36
Degreaser – Other.....	37
Batch-Loaded or Conveyorized Cold Cleaners.....	37
Film Cleaning Machine.....	37
Solvent Spraying.....	37
Degreaser – Vapor Cleaning, Volatile Organic Compounds.....	38
Batch.....	38
Conveyorized.....	38
Detergent Manufacturing.....	39
Solids Handling.....	39
Spray Dryer.....	39
Dry Cleaning.....	41
Perchloroethylene.....	41
Petroleum Solvent.....	41
Dryer – Kiln.....	42
Dryer or Oven.....	43
Carpet Oven.....	43
Rotary, Spray and Flash Dryers.....	43
Tray, Agitated Pan, and Rotary Vacuum Dryers.....	43
Tenter Frame Fabric Dryer.....	43
Other Dryers and Ovens – Direct and Indirect Fired.....	43
Electric Furnace – Pyrolyzing, Carbonizing and Graphitizing.....	44
Electrical Wire Reclamation – Insulation Burn-Off Furnace.....	45
Ethylene Oxide Sterilization.....	46
Aeration.....	46

Quarantine Storage	46
Expanded Polystyrene Manufacturing Using Blowing Agent	47
Fatty Acid – Fat Hydrolyzing and Fractionation	48
Fatty Alcohol.....	49
Fermentation, Beer and Wine.....	50
All Closed Systems	50
All Open Systems	50
Fiberglass Operations.....	51
Fabrication – Hand and Spray Layup.....	51
Panel Manufacturing.....	51
Pultrusion.....	51
Fish Reduction.....	52
Cooker	52
Digester, Evaporator and Acidulation Tank	52
Dryer.....	52
Meal Handling	52
Rendering – Presses, Centrifuges, Separators, Tanks, Etc.	52
Flare.....	53
Digester Gas or Landfill Gas from Non-Hazardous Waste Landfill	53
Landfill Gas from Hazardous Waste Landfill	53
Flow Coater, Dip Tank and Roller Coater	54
Food Oven	55
Foundry Sand Mold – Cold Cure Process.....	57
Fryer – Deep Fat.....	58
Fugitive Emission Sources at Natural Gas Plants and Oil and Gas Production Fields.....	59
Compressors, Centrifugal Type	59
Compressors, Rotary Type.....	59
Pressure Relief Valves	59
Pumps – In Heavy Liquid Service	59
Pumps – In Light Liquid Service	59
Sampling Connections	59
Valves, Fittings, Diaphragms, Hatches, Sight-Glasses, Open-Ended Pipes and Meters in VOC Service	59
Fugitive Emission Sources at Organic Liquid Bulk Loading Facilities.....	60
Compressors, Centrifugal Type	60
Compressors, Rotary Type.....	60

Connectors in Gas, Vapor or Light Liquid VOC Service	60
Open Ended Valves and Pipes	60
Pressure Relief Valves	60
Process Valves – Gate, Globe and Ball	60
Pumps – In Heavy Liquid Service	60
Pumps – In Light Liquid Service	60
Sampling Connections	60
Fugitive Emission Sources, Other Facilities	61
Compressors, Fittings, Open Ended Pipes, Pressure Relief Devices, , Valves, Pumps, Sampling Connections, Diaphragms, Hatches, Sight-Glasses and Meters in VOC Service	61
Galvanizing Furnace.....	62
Batch Operations	62
Continuous Sheet Metal Operations.....	62
Continuous Wire Operations.....	62
Garnetting Equipment	63
Gas Turbine	64
Natural Gas Fired.....	64
Emergency	64
Landfill or Digester Gas Fired	64
Glass Melting Furnace	65
Decorator Glass	65
Flat Glass	65
Incinerator – Hazardous Waste	66
Incinerator – Infectious Waste	67
Incinerator – Non-Infectious, Non-Hazardous Waste	68
I.C. Engine, Portable	69
Compression-Ignition	69
Spark Ignition	70
I.C. Engine, Stationary, Emergency	71
Compression Ignition, Fire Pump	71
Compression-Ignition, Other	72
Spark Ignition	74
I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators	76
Landfill or Digester Gas Fired	76
I.C. Engine, Stationary, Non-Emergency, Electrical Generator.....	77
Landfill or Digeter Gas Fired.....	77

Jet Engine Test Facility.....	78
Experimental High Altitude Testing	78
Experimental Sea Level (Low Altitude) Testing.....	78
Performance Testing.....	78
Landfill Gas Gathering System.....	79
Latex Manufacturing - Reaction	80
Lead Melting Furnace	81
Pot or Crucible, Non-Refining Operations.....	81
Pot or Crucible, Refining Operations.....	81
Reverberatory, Secondary Melting Operations.....	81
Lead Oxide Manufacturing – Reaction Pot Barton Process.....	82
Liquid Transfer and Handling.....	83
Marine, Loading	83
Tank Truck and Rail Car Bulk Loading, Class A (SCAQMD Rule 462)	83
Tank Truck and Rail Car Bulk Loading, Classes B and C.....	83
Gasoline Transfer and Dispensing	83
Metal Heating Furnace	84
Metallizing Spray Gun	85
Mixer, Blender or Mill	86
Dry.....	86
Wet	86
Nitric Acid Manufacturing.....	87
Non-Metallic Mineral Processing – Except Rock or Aggregate.....	88
Nut Roasting.....	89
Roaster	89
Handling Equipment.....	89
Oil and Gas Production	90
Combined Tankage	90
Wellhead.....	90
Open Spraying – Spray Gun.....	91
Oven (see "Dryer or Oven")	
Perlite Manufacturing System.....	92
Pharmaceutical Manufacturing	93
Operations Involving Solvents.....	93
Solids Handling	93

Solids Storage Tanks	93
Phosphoric Acid - Thermal Process	94
Phthalic Anhydride.....	95
Plasma Arc Metal Cutting Torch	96
> 30 KVA Electrical Input.....	96
Polyester Resin Operations - Molding and Casting	97
Polystyrene Extruder	98
Polystyrene Manufacturing	99
Powder Coating Booth	100
Precious Metal Reclamation	101
Incineration	101
Chemical Recovery and Chemical Reactions.....	101
Printing (Graphic Arts)	102
Flexographic	102
Letterpress	102
Lithographic or Offset, Heatset.....	102
Lithographic or Offset, Non-Heatset.....	103
Rotogravure or Gravure—Publication and Packaging.....	103
Screen Printing and Drying.....	103
Process Heater – Non-Refinery.....	104
Reactor with Atmospheric Vent.....	105
Rendering	106
Processing Equipment.....	106
Meal Grinding and Handling System.....	106
Tanks and Miscellaneous Equipment.....	106
Resin Manufacturing	107
Continuous Polystyrene Process	107
Liquid-Phase, High-Density Polyethylene Slurry Process	107
Liquid-Phase Polypropylene Process.....	107
Other Resin Manufacturing.....	107
Rock – Aggregate Processing.....	108
Rocket Engine Test Cell.....	109
Rubber Compounding – Banbury Type Mixer.....	110
Sand Handling System with Shakeout and/or Muller in System	111
Sewage Treatment Plants	112

Smokehouse.....	113
Solder Leveling –Hot Oil or Hot Air	114
Solvent Reclamation	115
Spray Booth.....	116
Automotive, Down-Draft Type.....	116
Other Types	116
Steel Melting Furnace	117
Electric Arc.....	117
Induction.....	117
Storage Tanks - Liquid.....	118
Asphalt.....	118
External Floating Roof.....	118
Fixed Roof.....	118
Fuming Sulfuric Acid.....	118
Grease or Tallow.....	118
Internal Floating Roof.....	118
Sulfuric Acid.....	118
Underground.....	118
Surfactant Manufacturing.....	119
Tank – Grease or Tallow Processing	120
Tire Buffer.....	121
Vegetable Oil Purification.....	122
Vinegar Manufacturing	123
Wastewater System	124
Oil/Water Separator.....	124
Other Equipment.....	124
Wax Burnoff Furnace.....	125
Wood Processing Equipment	126
Woodworking.....	127
Pneumatic Conveyance System.....	127
Zinc Melting Furnace	128
Crucible or Pot.....	128
Reverberatory, Non-Sweating Operations	128
Reverberatory, Sweating Operations	128
Rotary, Sweating Operations	128

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

10-20-2000 Rev. 0

Equipment or Process: Abrasive Blasting – Enclosed

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse; or Cartridge Dust Collector (07-11-97)	

* Means those facilities that are minor 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: Absorption Chiller

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		≤ 20 ppmv dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	≤50 ppmv for firetube type, ≤ 100 ppmv for watertube type, dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	

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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: Air Stripper – Ground Water Treatment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Carbon Adsorber, Thermal Oxidizer, or Catalytic Oxidizer (10-20-2000)					

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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: Aluminum Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Crucible or Pot		Natural Gas (07-11-97)	Natural Gas (07-11-97)		Natural Gas with Ingots or Non-contaminated Scrap Charge, or Baghouse (10-20-2000)	
Reverberatory, Non-Sweating < 5 MM BTU/HR		Natural Gas (1990)	Natural Gas (1990)		Same as above. (10-20-2000)	
Reverberatory, Non-Sweating ≥ 5 MM BTU/HR		Natural Gas with Low NOx Burner ≤ 60 ppmvd @ 3% O ₂ (10-20-2000)	Natural Gas (1990)		Same as above. (10-20-2000)	
Reverberatory or Rotary, Sweating < 5 MM BTU/HR	Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F) or Secondary Combustion Chamber (1990)	Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Baghouse and: - Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F); or - Secondary Combustion Chamber (1990)	
Reverberatory or Rotary, Sweating ≥ 5 MM BTU/HR	Same as Above (1990)	Natural Gas with Low NOx Burner ≤ 60 ppmvd @ 3% O ₂ (10-20-2000)	Natural Gas (1990)		Same as above. (1990)	

Note: Some of this equipment may also subject to 40 CFR 63, Subpart RRR – National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production

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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: Ammonium Bisulfate and Thiosulfate Production

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All					Packed Column Scrubber with Heat Exchanger and Mist Eliminator (1990)	Packed Column Scrubber for NH ₃ (1990)

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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: Asbestos Machining Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Air Cleaning Equipment (40 CFR Part 61 Subpart M) (07-11-97)	

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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: Asphalt Batch Plant

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All		Natural Gas with Low NOx Burner ≤ 36 ppmvd @ 3% O ₂ (10-20-2000)			Baghouse (1990)	

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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: Asphalt Roofing Line

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas (1990)	Natural Gas (1990)		Natural Gas with High Velocity Filter and Mist Eliminator (1990)	

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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: Asphaltic Day Tanker

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Fiberglass or Steel Wool Filter (07-11-97)	

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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: Auto Body Shredder

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse with Water Sprays in Hammermill (1988)	

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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: Ball Mill

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (07-11-97)	

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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: Beryllium Machining Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					High Efficiency Particulate Air Filter and Compliance with 40CFR Part 61, Subpart D (1988)	

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

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

Equipment or Process: Boiler

Subcategory/Rating/ Size	Criteria Pollutants					Inorganic
	VOC	NO _x ¹	SO _x	CO	PM ₁₀	
Natural Gas Fired, > 2 and < 20 MMBtu/HR		Compliance with SCAQMD Rules 1146 or 1146.1 ² (12-02-2016)	Natural Gas (10-20-2000)	≤50 ppmvd for firetube type, ≤ 100 ppmvd for watertube type, corrected to 3% O ₂ (04-10-98)	Natural Gas (04-10-98)	
Propane Fired, > 2 and < 20 MMBtu/HR		≤ 12 ppmvd corrected to 3% O ₂ ² (10-20-2000)		≤50 ppmvd for firetube type, ≤ 100 ppmvd for watertube type, corrected to 3% O ₂ (04-10-98)		
Natural Gas or Propane Fired, ≥ 20 and < 75 MM Btu/HR		<u>With Low-NO_x Burner:</u> ≤ 9 ppmv dry corrected to 3% O ₂ <u>With Add-On Controls:</u> ≤ 7 ppmv dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	Same as above. (04-10-98)	Natural Gas (04-10-98)	<u>With Add-On Controls:</u> ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)
Natural Gas or Propane Fired, ≥ 75 MM Btu/HR		Compliance with SCAQMD Rule 1146 (12-02-2016)	Natural Gas (10-20-2000)	Same as above. (04-10-98)	Natural Gas (04-10-98)	<u>With Add-On Controls:</u> ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)

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

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

Subcategory/Rating/ Size	Criteria Pollutants					Inorganic
	VOC	NO _x ¹	SO _x	CO	PM ₁₀	
Oil Fired ³		Compliance with SCAQMD Rule 1146 or 1146.1 (10-20-2000)	Fuel Sulfur Content ≤ 0.0015% by weight (10-03-2008)	≤ 50 ppmvd for firetube type ≤ 100 ppmvd for watertube type, corrected to 3% O ₂ (04-10-98)		
Atmospheric Unit, ≥ 2 and ≤ 10 MMBtu/HR		Compliance with SCAQMD Rules 1146 and 1146.1 (12-02-2016)		Compliance with SCAQMD Rules 1146 and 1146.1 (12-02-2016)		
Landfill Gas Fired, < 75 MMBTU/Hr		Compliance with SCAQMD Rules 1146 and 1146.1 (12-02-2016)		≤ 100 ppmvd at 3% O ₂ dry. (04-10-98)	≤ 0.1 gr/scf at 12% CO ₂ (Rule 409) (04-10-98)	
Digester Gas Fired, < 75 MMBTU/Hr		Compliance with SCAQMD Rules 1146 and 1146.1 (12-02-2016)		≤ 100 ppmvd at 3% O ₂ dry. (04-10-98)	≤ 0.1 gr/scf at 12% CO ₂ (Rule 409) (04-10-98)	

- 1) Electric utility boilers, refinery boilers rated >40 MMBtu/hr and sulfur plant reaction boilers rated ≥5 MMBtu/hr are excluded; and there are exceptions for low-use boilers and boilers that met a 12-ppm limit prior to 9/5/08. Applicants are advised to review these rules for further details.
- 2) A higher NO_x limit may be allowed for facilities required to have a standby fuel, where use of a clean standby fuel is not possible and an ultra low-NO_x burner is not available.
- 3) See Clean Fuels Policy in Part C of the BACT Guidelines. Oil firing is only allowed as a standby fuel, and where use of a clean standby fuel is not possible.

* Means those facilities that are minor 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: Brakeshoe Debonder

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner or Secondary Combustion Chamber with ≥ 0.3 Second Retention Time at $\geq 1,400^\circ\text{F}$ Achieved within 15 Minutes of Primary Burner Ignition (07-11-97)	Natural Gas (07-11-97)	Natural Gas (07-11-97)		Natural Gas (07-11-97)	

* 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: Brass Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Crucible, ≤ 300 Lbs/Hr Process Rate		Natural Gas (1990)	Natural Gas (1990)		Natural Gas, Charge Clean Metal Only and Maintain Slag Cover Over Entire Melt Surface (1990)	
Crucible, > 300 Lbs/Hr Process Rate		Low-NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas, with Baghouse (1990)	
Reverberatory or Rotary, Non- Sweating		Natural Gas and Low NOx Burner (10-20-2000)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Reverberatory or Rotary, Sweating	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1990)	Natural Gas with Low NOx Burner (1990)	Natural Gas (1990)	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1990)	Natural Gas with Baghouse (1990)	
Tilting Induction, ≤ 300 Lbs/Hr Process Rate					Charge Clean Metal Only and Slag Cover Maintained Over Entire Melt Surface (1988)	
Tilting Induction, > 300 Lbs/Hr Process Rate					Baghouse (7-11-97)	

* 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: Bulk Solid Material Handling – Other

Subcategory ³ /Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Animal Feed Mfg. – Dry Material Handling					Baghouse (07-11-97)	
Clay, Ceramics and Refractories Handling (Except Mixing)					Baghouse (1988)	
Coal, Coke and Sulfur Handling					Compliance with SCAQMD Rule 1158 (10-20-2000)	
Feed and Grain Handling					Baghouse (1988)	
Natural Fertilizer Handling ¹⁾					Baghouse or Equivalent Material Moisture (07-11-97)	
Paper and Fiber Handling					High Efficiency Cyclone with Baghouse (10-20-2000)	
Pneumatic Conveying, Except Paper and Fiber					Baghouse (1988)	
Railcar Dumper					Enclosed Dump Station and Water Spray for Wet Material (1988)	
Other Dry Materials Handling ²⁾					Enclosed Conveyors and Baghouse (7-11-97)	
Other Wet Materials Handling ²⁾					Water Spray or Adequate Material Moisture (1988)	

1. Includes conveying, size reduction, classification and packaging.
2. Includes conveying, size reduction and classification.
3. Also see Catalyst Manufacturing, Coffee Roasting, Non-Metallic Mineral Processing, Nut Roasting, Rendering, Pharmaceutical Operations, and Rock-Aggregate Processing for other bulk solid material handling.

* 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: Bulk Solid Material Ship Loading

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Non-White Commodities					Enclosed Conveyor and - Water Spray; or - Adequate Material Moisture (1988)	
White Commodities					Enclosed Conveyor and Baghouse Venting Ship Holds and Transfer Points (07-11-97)	

Notes:

1. Non-White commodities include coal, copper concentrate, sulfur, iron slag, iron ore, iron pellets, green petroleum coke and other wet commodities
2. White commodities include soda ash, salt cake, potash and other dry commodities.

* 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: Bulk Solid Material Ship Unloading

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Bulk Cement		Shore Utility Power (1988)	Shore Utility Power (1988)		Enclosed, Self- Unloading Ship (1988)	
Other Bulk Solid Materials					Enclosed Hold and Baghouse; or Material Moisture Equivalent to an Enclosed Hold and Baghouse (1988)	

* 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: Bulk Solid Material Storage

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Coal, Petroleum Coke, Sulfur					Enclosed Storage in Compliance with SCAQMD Rule 1158 (10-20-2000)	
Other Non-White Commodities					Water Spray and Chemical Additives or Charged Fog Spray (1988)	
White Commodities					Enclosed Storage and Baghouse (1988)	
Storage Tanks and Silos					Baghouse or Filtered Vent for Dry Material; Water Spray or Adequate Moisture for Wet Material (07-11-97)	
Other Open Storage					Water with Chemical Additives (1988)	

Notes:

1. Other non-white commodities include copper concentrate, iron slag, iron ore, and iron pellets.
2. White commodities include cement, gypsum, lime, soda ash, borax and flour.

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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: Burnoff or Burnout Furnace (Excluding Wax Furnace)

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner or Secondary Combustion Chamber with ≥ 0.3 Second Retention Time at $\geq 1,400^\circ\text{F}$ Achieved within 15 Minutes of Primary Burner Ignition (07-11-97)	Natural Gas (07-11-97)	Natural Gas (07-11-97)		Natural Gas (07-11-97)	

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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: Calciner

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Petroleum Coke	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	44 ppmv, Dry, Corrected to 3% O ₂ (1988)	Natural Gas with Flue Gas Desulfurization (> 90% Removal Efficiency) (1988)	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	0.005 gr/dscf Corrected to 3% O ₂ (1988)	
Other		45 ppmv, Dry, Corrected to 3% O ₂ (1988)	Natural Gas (1988)		Natural Gas with Baghouse (1988)	

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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: Carpet Beating and Shearing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (1988)	

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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: Catalyst Manufacturing and Regeneration

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Calcining		Three-Stage NO _x Reduction Scrubber (1990)	Natural Gas (1990)		Baghouse (10-20-2000)	
Reactor		NO _x Scrubber (07-11-97)				
Rotary or Spray Dryer					Baghouse (07-11-97)	
Regeneration, Hydrocarbon Removal	Flare, Firebox, or Afterburner (≥ 0.3 Second Retention Time at ≥ 1,400 °F) (07-11-97)					
Catalyst Solids Handling					Baghouse (07-11-97)	

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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: Charbroiler, Chain-driven (conveyorized)

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Catalytic Oxidizer (12-12-97)				Catalytic Oxidizer (12-12-97)	

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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: Chemical Milling Tanks

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO_x	SO_x	CO	PM₁₀	
Aluminum and Magnesium ¹						
Nickel Alloys, Stainless Steel and Titanium		Packed Chemical Scrubber (10-20-2000)			High Efficiency Mist Eliminator (10-20-2000)	

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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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: Chip Dryer

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400°F) (10-20-2000)	Natural Gas with Low NO _x Burner (10-20-2000)	Natural Gas (1989)		Natural Gas with: - Baghouse and Limestone Filter Coating; or - Baghouse and Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400°F) (1989)	

Note: This equipment may also subject to 40 CFR 63, Subpart RRR – National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production

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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: Chrome Plating

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Decorative Chrome					Packed Scrubber and Mist Suppressant (1988) Compliance with SCAQMD Rule 1469 (10-20-2000)	
Hard Chrome					Packed Scrubber and Mist Suppressant (1988) Compliance with SCAQMD Rule 1469 (10-20-2000)	

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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: Circuit Board Etcher

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Batch Immersion Type, Subtractive Process					Packed Water Scrubber and Etchant Solution Temperature Control (10-20-2000)	
Conveyorized Spray Type, Subtractive Process					Packed Water Scrubber and Etchant Solution Temperature Control (1988)	

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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: Cleaning Compound Blender

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse or Wet Centrifugal Collector or Cyclone (07-11-97)	

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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: Coffee Roasting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Roaster, < 110,000 BTU/Hr		Natural Gas (1988)	Natural Gas (1988)		Natural Gas (1988)	
Roaster, ≥ 110,000 BTU/Hr	Afterburner (0.3 Sec Retention Time at 1200 °F) (1990)	Natural Gas, with Heat Recovery on Afterburner Exhaust to Reduce Fuel Consumption (10-20-2000)	Natural Gas (1990)		Natural Gas with Cyclone and Afterburner (≥ 0.3 Second Retention Time at ≥ 1200 °F) (1990)	
Handling Equipment, < 1,590 Lbs/Hr All ¹						
Handling Equipment, ≥ 1,590 Lbs/Hr All					Cyclone (1990)	

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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

12-5-2003 Rev. 0

Equipment or Process: Composting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic (Ammonia)
	VOC	NO _x	SO _x	CO	PM ₁₀	
Co-composting ^{a)}	Compliance with SCAQMD Rule 1133.2 ^{b)} (12-5-2003)					Compliance with SCAQMD Rule 1133.2 ^{b)} (12-5-2003)

a) Co-composting is composting where biosolids and/or manure are mixed with bulking agents to produce compost.

b) Not required for design capacity <1,000 tons per year.

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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: Concrete Batch Plant

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Central Mixed, < 5 Cubic Yards/Batch					Water Spray (1988)	
Central Mixed, ≥ 5 Cubic Yards/Batch					Baghouse for Cement Handling and Adequate Moisture in Aggregate (1988)	
Transit-Mixed					Baghouse Venting the Cement Weigh Hopper and the Mixer Truck Loading Station; and Adequate Aggregate Moisture (07-11-97)	

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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: Concrete Blocks and Forms Manufacturing

	Criteria Pollutants					
Rating/Size	VOC	NO_x	SO_x	CO	PM₁₀	Inorganic
All					Baghouse (1988)	

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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: Cotton Gin

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Rotary Drum Filter and Cyclone (1988)	

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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: Crematory

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Secondary Combustion Chamber, ≥ 1500 °F (1990)	Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Secondary Combustion Chamber, ≥ 1500 °F (1990)	

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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: Degreaser – Other

Rating/Size	Criteria Pollutants					
	VOC/ODC	NO _x	SO _x	CO	PM ₁₀	Inorganic
Batch-Loaded or Conveyorized Cold Cleaners	Use of solvents containing 50 grams of VOC or less per liter of material (12-12-97)					
Film Cleaning Machine	Carbon Adsorber (10-20-2000)					
Solvent Spraying ¹⁾ , 1,1,1 Trichloroethane	Carbon Adsorber (1990) and Compliance with 40 CFR 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning (10-20-2000)					
Solvent Spraying ¹⁾ , Other VOCs	Compliance with SCAQMD Rule 1171 (10-20-2000)					

Note: Use of certain halogenated solvents is also subject to 40 CFR 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning

1) This subcategory includes solvent spray booths and remote reservoir cleaners.

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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: Degreaser –Vapor Cleaning, Volatile Organic Compounds

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Batch	<p>Tier 1: Use of an automatically operated airtight or airless cleaning system that emits no more than $[4.3 \times V^{0.6}]$ lb/month of VOCs, where V is the cleaning chamber volume in cubic feet. Use of alternative equipment is allowed provided such equipment is subject to the same emissions limitation (lb/month of VOCs) as calculated above.</p> <p>Tier 2: Use of equipment that does not exceed $[22 \times A]$ lb/month of VOCs, where A is the solvent surface area in square feet, provided it is technically infeasible to use Tier 1 equipment because of part deformation, inherent part pressure, part type or geometry, soil type or amount, cleanliness sensitivity, or other reasons. (4-10-98)</p>					
Conveyorized	Use of a conveyorized vapor degreaser that does not exceed $[17 \times A]$ lb/month of VOCs, where, A is the solvent surface area in square feet (04-10-98)					

Notes:

1. Use of certain halogenated solvents is also subject to 40 CFR 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning
2. Use of VOCs not subject to the above-described NESHAP is also subject to SCAQMD Rule 1122.
3. Any permit applicant may demonstrate that the Tier 1 BACT may not be technologically feasible for the applicant’s permit unit. For batch-loaded vapor degreasing equipment, SCAQMD will consider the following three factors taken together as a whole, as well as any other technical factors presented by the applicant: a) Part Type and Geometry – In that different parts and part geometries lend themselves to different cleaning methods that may be acceptable to achieve proper cleanliness, SCAQMD will consider information presented by the applicant regarding the type and geometry of the part(s) proposed to be cleaned in determining what cleaning technologies are available for the part(s) in question; b) Soil Type and Amount – In that different types and quantities of soils being cleaned from parts lend themselves to different cleaning methods, SCAQMD will consider information presented by the applicant regarding the soil type and soil quantity of the part(s) proposed to be cleaned in determining what cleaning technologies are available for the part(s) in question; c) Cleanliness Sensitivity – In that (i) different parts have different levels of sensitivity to cleanliness (e.g., medical and high technology device parts may need to achieve an extremely high level of cleanliness, whereas standard plumbing supplies may tolerate a lower level of cleanliness), and (ii) the integrity of certain parts may be compromised by exposure to the reduced pressure environment of airless cleaning systems; SCAQMD will consider information presented by the applicant regarding the cleanliness sensitivity of the part(s) proposed to be cleaned in determining what cleaning technologies are available for the part(s) in question.

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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: Detergent Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Solids Handling					Cyclone and Baghouse (07-11-97)	
Spray Dryer		Natural Gas with Low-NO _x Burner (1988)	Natural Gas (1988)		Natural Gas with: - Cyclone and Baghouse; or - Cyclone, Scrubber and Electrostatic Precipitator (1988)	

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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: Drum Reclamation Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Sec. Retention time at ≥ 1400 °F) (1990)	Natural Gas (1990)	Natural Gas (1990)		Natural Gas with After- burner (> 0.3 Sec. Retention Time at ≥ 1400 °F) and Baghouse (1990)	

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

10-20-2000 Rev. 0

7-9-2004 Rev. 1

Equipment or Process: Dry Cleaning

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC/ODC	NO _x	SO _x	CO	PM ₁₀	
Perchloroethylene	Delisted as a VOC. See SCAQMD Rule 1421 – Control of Perchloroethylene Dry Cleaning Operations ¹ (06-13-97)					
Petroleum Solvent ²	Closed Loop, Dry-to-Dry Machine with a Refrigerated Condenser (10-20-2000) or Evaporatively Cooled Condenser (7-9-2004)					

¹ Rule 1421 implements the federal National Emission Standard for Hazardous Air Pollutant for Perchloroethylene Dry Cleaning Facilities (40 Code of Federal Regulations [CFR] 63.320, *et seq*) and the state Airborne Toxic Control Measure (ATCM) for Emissions of Perchloroethylene from Dry Cleaning Operations (17 California of Regulation [CCR] 93109, *et seq*).

²This Equipment may also be subject to AQMD Rule 1102 – Dry Cleaners Using Solvent Other Than Perchloroethylene.

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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 – Kiln

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low NO _x Burner (10-20-2000)	Natural Gas (1988)		Natural Gas (1988)	

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

10-20-2000 Rev. 0
 2-2-2018 Rev. 1

Equipment or Process: Dryer or Oven

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
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 NO _x Burner (10-20-2000)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Tray, Agitated Pan, and Rotary Vacuum Dryers		Natural Gas with Low NO _x 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 ²⁾		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.
2. Does not include food or bakery ovens. See listing for “Food Oven.”

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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: Electric Furnace – Pyrolyzing, Carbonizing and Graphitizing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (1988)					

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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: Electrical Wire Reclamation – Insulation Burn-Off Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F); Or Secondary Combustion Chamber (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	Natural Gas (1988)	Natural Gas (1988)		Natural Gas with Baghouse and: - Afterburner ((≥ 0.3 Second Retention Time at ≥ 1400 °F) or - Secondary Combustion Chamber (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	

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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: Ethylene Oxide Sterilization

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Aeration	Recirculation Vacuum Pump-Seal Fluid with Fluid Reservoir Vented to: Chemical Scrubber; or Afterburner (≥ 0.3 second retention time at ≥ 1,400 °F); or Catalytic Afterburner (at ≥ 280 °F) (07-11-97)					
Quarantine Storage	Unvented Enclosure with Internal Circulation Through Activated Carbon Impregnated with Sulfuric Acid (1989)					

Note: Ethylene Oxide Sterilization may also be Subject to 40 CFR 63, Subpart O – Emission Standards for Ethylene Oxide Sterilization Facilities.

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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: Expanded Polystyrene Manufacturing Using Blowing Agent

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	For VOC Emissions: Incineration (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (1990)					

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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: Fatty Acid – Fat Hydrolyzing and Fractionation

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Condenser or Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1300 °F) (10-20-2000)					

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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: Fatty Alcohol

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 second retention time at ≥ 1,400°F) (07-11-97)					

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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: Fermentation, Beer and Wine

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All Closed Systems	Carbon Adsorber (10-20-2000)					
All Open Systems	Scrubber with Approved Liquid Waste Disposal (10-20-2000)					

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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: Fiberglass Operations

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Fabrication – Hand and Spray Layup	Compliance with SCAQMD Rule 1162 (10-20-2000)				Airless Spray Equipment and Spray Booth with Mesh Type Filter (1988)	
Panel Manufacturing	Curing Oven, Impregnation Tables and Mixing Tanks Vented to an Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F). Storage and Holding Tanks Vented to a Carbon Adsorber (1988)	Natural Gas Fired Curing Oven, Electrically Heated Cellophane Oven and Laminating Table (1988)	Natural Gas (10-20-2000)		Natural Gas Fired Curing Ovens, Cellophane Ovens Vented to an Electrostatic Precipitator and Panel Cutting Saw Vented to Baghouse (1988)	
Pultrusion	Styrene Suppressed Resin (1988), and Compliance with SCAQMD Rule 1162 (10-20-2000)					

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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: Fish Reduction

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Cooker	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1988)					
Digestor, Evaporator and Acidulation Tank	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)				Natural Gas with Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1200 °F) (1990)	
Dryer	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)				Natural Gas and Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1990)	
Meal Handling ¹						
Rendering – Presses, Centrifuges, Separators, Tanks, Etc.	Water Condenser and Vent to Dryer Firebox (1988)					

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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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: Flare

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Digester Gas or Landfill Gas from Non-Hazardous Waste Landfill	Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1400 °F, Auto Combustion Air Control, Automatic Shutoff Gas Valve and Automatic Re-Start System (1988)	0.06 lbs/MM Btu (1988)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1400 °F, and Auto Combustion Air Control (1988)	Knockout Vessel (1988)	
Landfill Gas from Hazardous Waste Landfill	Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1500 °F, Auto Combustion Air Control, Automatic Shutoff Gas Valve and Automatic Re-Start System (1988)	0.06 lbs/MM Btu (1988)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1500 °F, and Auto Combustion Air Control (1988)	Knockout Vessel (1988)	

* 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: Flow Coater, Dip Tank and Roller Coater

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
< 36 lbs/day VOC	Compliance with Regulation XI (10-20-2000)					
≥ 36 lbs/day VOC	Coating with Lower VOC Content than Required by Applicable Rules, and Emissions from Coating Area, Flash Off Area, Drying Area, and Oven Vented to Control Device Achieving ≥ 90% Overall Efficiency (1988) Or Super Compliant Materials with ≤ 5% VOC by Weight (10-20-2000)					

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

2-2-2018 Rev. 0

Equipment or Process: Food Oven

Subcategory ¹	Rating/ Size	Criteria Pollutants					Inorganic
		VOC	NO _x	SO _x	CO	PM ₁₀	
Ribbon Burner	> 500°F		60 ppmvd @ 3% O ₂ (2-2-2018)	Natural Gas (2-2-2018)	Compliance with applicable SCAQMD Rules 407 or 1153.1(2-2-2018)	Natural Gas (2-2-2018)	
	≤ 500°F		30 ppmvd @ 3% O ₂ (2-2-2018)	Same as above	Same as above	Same as above	
Other Direct Fired Burner		30 ppmvd @ 3% O ₂ (2-2-2018)					
Infrared Burner		30 ppmvd @ 3% O ₂ (2-2-2018)					
Add-on Control for Bakery Oven processing yeast leavened products with emissions ≥ 30 lb VOC/day		Catalytic oxidizer with 95% overall control efficiency (mass basis); catalyst inlet temperature ≥ 600°F; ceramic prefilter (2-2-2018)	Compliance with SCAQMD Rule 1147 at the time of applicability (2-2-2018)				

(Continued on next page)

¹Indirect Fired units may be subject to Rules 1146 and 1146.1 and BACT for Process Heater

* 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*

Subcategory	Rating/ Size	Criteria Pollutants					Inorganic
		VOC	NO _x	SO _x	CO	PM ₁₀	
Other Burners		Compliance with SCAQMD Rules and Regulations					

* 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: Foundry Sand Mold – Cold Cure Process

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All			Packed Column Scrubber with pH of Solution Maintained at a Minimum of 8.0 (1988)			

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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: Fryer – Deep Fat

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
< 2 MM Btu/hr	Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (10-20-2000)	Natural Gas (1990)	Natural Gas (1990)		Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (10-20-2000)	
≥ 2 MM Btu/hr	Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (10-20-2000)	Natural Gas (1990)	Natural Gas (1990)		Integrated Afterburner/Oil Heater (≥ 0.3 Sec. Retention Time at ≥ 1400 °F), and Electrostatic Precipitator or High Efficiency Mist Eliminator (10-20-2000)	

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

10-20-2000 Rev. 0

12-5-2003 Rev. 1

Equipment or Process: Fugitive Emission Sources at Natural Gas Plants and Oil
and Gas Production Fields

Subcategory/Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
Compressors, Centrifugal Type	Seal System with a Higher Pressure Barrier Fluid (04-10-98); and Compliance with SCAQMD Rule 1173 (12-5-2003)					
Compressors, Rotary Type	Enclosed Seal System Connected to Closed Vent System (04-10-98); and Compliance with SCAQMD Rule 1173					
Pressure Relief Valves	Connected to Closed Vent System or Equipped with Rupture Disc if Applicable (4-10-98); and Compliance with SCAQMD Rule 1173 (12-5-2003)					
Pumps – In Heavy Liquid Service	Single Mechanical (4-10-1998); and Compliance with SCAQMD Rule 1173 (12-5-2003)					
Pumps – In Light Liquid Service	Sealless Type if Available and Compatible; or Double or Tandem Seals, and Vented to Closed Vent System (4-10-98); and Compliance with SCAQMD Rule 1173 (12-5-2003)					
Sampling Connections	Closed-Purge, Closed-Loop, or Closed-Vent System (4-10-98); and Compliance with SCAQMD Rule 1173 (12-5-2003)					
Valves, Fittings, Diaphragms, Hatches, Sight-Glasses, Open-Ended Pipes and Meters in VOC Service	Compliance with SCAQMD Rule 1173 (12-5-2003)					

* 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

12-5-2003 Rev. 1

Equipment or Process: Fugitive Emission Sources at Organic Liquid Bulk
 Loading Facilities

Subcategory/Rating/Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM10	Inorganic
Compressors, Centrifugal Type	Seal System with a Higher Pressure Barrier Fluid; < 500 ppmv by USEPA Method 21 with Quarterly I&M Program ¹⁾ (04-10-98)					
Compressors, Rotary Type	Enclosed Seal System Connected to Closed Vent System; < 500 ppmv by USEPA Method 21 with Quarterly I&M Program ¹⁾ (04-10-98)					
Connectors ²⁾ in Gas, Vapor or Light Liquid VOC Service	< 500 ppmv by USEPA Method 21 with Quarterly I&M Program ¹⁾ (04-10-98)					
Open Ended Valves and Pipes	Compliance with SCAQMD Rule 1173 where Applicable (10-20-2000)					
Pressure Relief Valves	Connected to Closed Vent System or Equipped with Rupture Disc if Applicable (4-10-98); and Compliance with AQMD Rule 1173 (10-20-2000)					
Process Valves – Gate, Globe and Ball	Compliance with AQMD Rule 1173, where Applicable (10-20-2000)					
Pumps – In Heavy Liquid Service	Single Mechanical; < 1000 ppmv by USEPA Method 21 with Quarterly I&M (4-10-1998)					
Pumps – In Light Liquid Service	1. Sealless Type if Available and Compatible, or 2. Double or Tandem Seals and Vented to Closed Vent System; < 1000 ppmv by USEPA Method 21 with Approved SCAQMD I&M; <1000 ppmv by USEPA Method 21 with Approved SCAQMD I&M (4-10-98)					
Sampling Connections	Closed-Purge, Closed-Loop, or Closed-Vent System (4-10-98)					

- 1) Quarterly I&M shall be consistent with SCAQMD Rule 1173 and other applicable requirements except that leaks between 500 and 1000 ppmv must be repaired within 14 days after detection.
 2) Connectors include flanges, screwed or other joined fittings

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

10-20-2000 Rev. 0
 12-5-2003 Rev. 1

Equipment or Process: Fugitive Emission Sources, Other Facilities

Subcategory/Rating/Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM10	Inorganic
Compressors, Fittings, Open Ended Pipes, Pressure Relief Devices, , Valves, Pumps, Sampling Connections, Diaphragms, Hatches, Sight-Glasses and Meters in VOC Service	Compliance with Rule 1173, where Applicable by Rule (12-5-2003)					

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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: Galvanizing Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Batch Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1988)		Natural Gas with Baghouse with Lime Coating (1988)	
Continuous Sheet Metal Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1988)		Natural Gas with Packed Column Scrubber Serving the Caustic, Acid Pickling Tanks and/or Metal Preparation Tanks (1988, 2000)	
Continuous Wire Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (1988)		Natural Gas with Noncombustible Covering on Molten Metal Surface, Baghouse, and Packed Column Scrubber Serving the Metal Preparation Tanks (1988, 2000)	

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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: Garnetting Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse or Rotary Drum Filter (1988)	

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

10-20-2000 Rev. 0

12-3-2004 Rev. 1

Equipment or Process: Gas Turbine

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Natural Gas Fired, < 3 MWe		9 ppmvd @ 15% O ₂ (10-20-2000)		10 ppmvd @ 15% O ₂ (10-20-2000)		9 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Natural Gas Fired, ≥ 3 MWe and < 50 MWe		2.5 ppmvd @ 15% O ₂ x <u>efficiency (%)</u> ¹⁾ 34% (6-12-98)		10 ppmvd @ 15% O ₂ (6-12-98)		5.0 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Natural Gas Fired, ≥ 50 MWe	2.0 ppmvd (as methane) @ 15% O ₂ , 1-hour avg. OR 0.0027 lbs/MMBtu (higher heating value) (10-20-2000)	2.5 ppmvd @ 15% O ₂ , 1-hour rolling avg. OR 2.0 ppmvd @ 15 %O ₂ , 3-hour rolling avg. x <u>efficiency (%)</u> ¹⁾ 34% (10-20-2000)		6.0 ppmvd @ 15% O ₂ , 3-hour rolling avg. (10-20-2000)		5.0 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Emergency		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	
Landfill or Digester Gas Fired		25 ppmv, dry, corrected to 15 %O ₂ (1990)	Compliance with Rule 431.1 (10-20-2000)	130 ppmv, dry, corrected to 15 %O ₂ (10-20-2000)	Fuel Gas Treatment for Particulate Removal (1990)	

Notes: 1) The turbine efficiency correction for NOx is limited to 1.0 as a minimum. The turbine efficiency is the demonstrated percent efficiency at full load (corrected to the higher heating value of the fuel) without consideration of any downstream heat recovery (12-3-2004).

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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: Glass Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Decorator Glass		Natural Gas with Low NOx Burner (10-20-2000); Cullet in Raw Material Charged > 80% (1988)			Baghouse (10-20-2000)	
Flat Glass		Natural Gas with Heating Modifications: <ul style="list-style-type: none"> - Excess Oxygen in Ports < 5% - Cullet in Raw Material Charged > 15% - Hot Spot Temperature < 2,700 °F (1988) 	Process Modification: Sulfur Content of Batch Charged < 0.25% by Weight of Total Batch (1988)		Baghouse (10-20-2000)	

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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: Incinerator – Hazardous Waste

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Automatic Combustion Air Control, ≥ 2 Sec. Retention Time and ≥ 1800 °F (1988)	Natural Gas Supplemental Fuel with Selective Non-catalytic Reduction (1988)	Natural Gas Supplemental Fuel and Spray Dryer with Lime Injection (1988)	Automatic Combustion Air Control, ≥ 2 Sec. Retention Time and ≥ 1800 °F (1988)	0.002 gr/dscf at 12% CO ₂ (1988)	

Note: The equipment may also be subject to 40 CFR 264, Subpart O--Incinerators

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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: Incinerator – Infectious Waste

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
≤ 300 lbs/hr	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)	Natural Gas as Auxiliary Fuel (1988)	Natural Gas as Auxiliary Fuel with Wet Scrubber (1988)	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)		
> 300 lbs/hr	Same as Above	Same as Above	Same as Above	Same as Above	0.04 gr/dscf Corrected to 12% CO ₂ , with Enclosed Automatic Feed and Ash Removal System (1988)	

Note: The equipment may also be subject to 40 CFR 60, Subpart Ec--Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction Is Commenced After June 20, 1996

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

10-20-2000 Rev. 0

7-9-2004 Rev. 1

Equipment or Process: Incinerator – Non-Infectious, Non-Hazardous Waste

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
≤ 300 lbs/hr	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1600 °F) (1988)	Natural Gas as Auxiliary Fuel (1988)	Natural Gas as Auxiliary Fuel with Wet Scrubber (1988)	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1600 °F) (1988)	Natural Gas as Auxiliary Fuel with Enclosed Automatic Feed and Fly ash Removal System (1988)	
> 300 lbs/hr and < 750 lbs/hr	Same as Above	Same as Above	Same as Above	Same as Above	0.04 gr/dscf Corrected to 12% CO ₂ , with Enclosed Automatic Feed and Ash Removal System (1988)	
≥ 750 lbs/hr	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)	Same as Above	Same as Above	Multiple Chamber Starved Air Design (≥ 0.5 Sec. Retention Time at ≥ 1800 °F) (1988)	Same as Above	

Note: The equipment may also be subject to 40 CFR 60, Subpart CCCC--Standards of Performance for New Stationary Sources: Commercial and Industrial Solid Waste Incineration Units.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

10-20-2000 Rev. 0
7-14-2006 Rev. 1
12-02-2016 Rev. 2
2-2-2018 Rev. 3

Equipment or Process: I.C. Engine, Portable ¹

		Criteria Pollutants					
Subcategory	Rating/Size	VOC	NO _x	NO _x + NMHC ²	SO _x	CO	PM
Compression-Ignition ³	$50 \leq \text{HP} < 75$			<u>Tier 4 Final:</u> 4.7 grams/kW-hr (3.5 grams/bhp-hr) (12-02-2016)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	<u>Tier 4 Final:</u> 5.0 grams/kW-hr (3.7 grams/bhp-hr) (12-02-2016)	<u>Tier 4 Final:</u> 0.03 grams/kW-hr (0.02 grams/bhp-hr) and CARB ATCM for portable diesel engines ⁴ (12-02-2016)
	$75 \leq \text{HP} < 175$		<u>Tier 4 Final:</u> 0.40 grams/kW-hr (0.30 grams/bhp-hr) (2-2-2018)	<u>Tier 4 Final:</u> NMHC only: 0.19 grams/kW-hr (0.14 grams/bhp-hr) (2-2-2018)		<u>Tier 4 Final:</u> 5.0 grams/kW-hr (3.7 grams/bhp-hr) (2-2-2018)	<u>Tier 4 Final:</u> 0.02 grams/kW-hr (0.01 grams/bhp-hr) and CARB ATCM for portable diesel engines ⁴ (2-2-2018)
	$175 \leq \text{HP} < 750$		<u>Tier 4 Final:</u> 0.40 grams/kW-hr (0.30 grams/bhp-hr) (12-02-2016)	<u>Tier 4 Final:</u> NMHC only: 0.19 grams/kW-hr (0.14 grams/bhp-hr) (12-02-2016)		<u>Tier 4 Final:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (12-02-2016)	<u>Tier 4 Final:</u> 0.02 grams/kW-hr (0.01 grams/bhp-hr) and CARB ATCM for portable diesel engines ⁴ (12-02-2016)

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

Subcategory	Rating/Size	Criteria Pollutants					
		VOC	NO _x	NO _x + NMHC ²	SO _x	CO	PM
Compression-Ignition ³	≥750 HP ⁵		<i>Tier 4 Interim:</i> For Generator Sets > 1200 HP: 0.67 grams/kW-hr (0.50 grams/bhp-hr) For All Engines Except “Generator Sets > 1200 HP”: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (12-02-2016)	<i>Tier 4 Interim:</i> NMHC only: 0.4 grams/kW-hr (0.30 grams/bhp-hr) (12-02-2016)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	<i>Tier 4 Interim:</i> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (12-02-2016)	<i>Tier 4 Interim:</i> 0.10 grams/kW-hr (0.07 grams/bhp-hr) and CARB ATCM for portable diesel engines ⁴ (12-02-2016)
Spark Ignition	All	1.5 grams/bhp-hr, or 240 ppmvd as methane @ 15% O ₂ (4-10-1998)	1.5 grams/bhp-hr, or 80 ppmvd @ 15% O ₂ (4-10-1998)			2.0 grams/bhp-hr, or 176 ppmvd @ 15% O ₂ (4-10-1998)	

Notes:

- 1) BACT for “I.C. Engine, Portable” is determined by deemed complete date of permit application not date of manufacture or installation.
- 2) NMHC + NO_x means the sum of non-methane hydrocarbons and oxides of nitrogen emissions, unless specified as “NMHC only”, which only includes NMHC emissions.
- 3) The engine must be certified by U.S. EPA or CARB to meet the Tier 4 emission requirements of 40 CFR Part 89 – Control of Emissions from New and In-use Nonroad Compression-Ignition Engines shown in the table– or otherwise demonstrate that it meets the Tier 4 emission limits. If, because of the averaging, banking, and trading program, there is no new engine from any manufacturer that meets the above standards, then the engine must meet the family emission limits established by the manufacturer and approved by U.S. EPA. Based on the model year, the CARB Airborne Toxic Control Measure (ATCM) for Portable Diesel Engines (see www.arb.ca.gov/diesel/peatcm/peatcm.htm) requires in-use portable diesel engines to be certified to Tier 1, 2, 3 or 4 by their respective deadlines, all of which have passed. All exceptions allowed in the ATCM are also allowed in this guideline.
- 4) The CARB ATCM also requires in-use portable diesel engines to meet fleet-average PM standards beginning 1/1/2013. The PM limits in the table apply only to filterable PM.
- 5) CARB has extended the Tier 4 Final requirements deadline “until further notice” for Portable, Compression-Ignition Engines for HP ≥ 750.

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

10-20-2000 Rev. 0
 6-6-2003 Rev. 1
 12-3-2004 Rev. 2
 7-14-2006 Rev. 3
 10-3-2008 Rev. 4
 12-02-2016 Rev. 5

Equipment or Process: I.C. Engine, Stationary, Emergency ¹

Subcategory	Rating/Size	Criteria Pollutants					
		NMHC or VOC	NOx	NOx + NMHC ²	SOx	CO	PM
Compression Ignition, Fire Pump ^{3,4}	50 ≤ HP < 100			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 4.7 grams/kW-hr (3.5 grams/bhp-hr) (10-03-2008)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (SCAQMD Rule 431.2). (6-6-2003)	Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) <u>Tier 3:</u> 0.40 grams/kW-hr (0.30 grams/bhp-hr) (10-03-2008)
	100 ≤ HP < 175			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 4.0 grams/kW-hr (3.0 grams/bhp-hr) (10-03-2008)		Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) <u>Tier 3:</u> 0.30 grams/kW-hr (0.22 grams/bhp-hr) (10-03-2008)

(Continued on next page)

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

Subcategory	Rating/Size	Criteria Pollutants					
		NMHC or VOC	NO _x	NO _x + NMHC ²	SO _x	CO	PM
Compression Ignition, Fire Pump ^{3,4} (continued)	175 ≤ HP < 750			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 4.0 grams/kW-hr (3.0 grams/bhp-hr): (10-03-2008)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (SCAQMD Rule 431.2). (6-6-2003)	Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) <u>Tier 3:</u> 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
	≥750 HP			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 2:</u> 6.4 grams/kW-hr (4.8 grams/bhp-hr) (10-03-2008)		Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 2:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 2:</u> 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
Compression-Ignition, Other ^{3,4}	50 ≤ HP < 100			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 4.7 grams/kW-hr (3.5 grams/bhp-hr) (10-03-2008)		Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) <u>Tier 3:</u> 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)

(Continued on next page)

* 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*

Subcategory	Rating/Size	Criteria Pollutants					
		NMHC or VOC	NOx	NOx + NMHC ²	SOx	CO	PM
Compression-Ignition, Other ^{3,4} (continued)	100 ≤ HP < 175			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 4.0 grams/kW-hr (3.0 grams/bhp-hr) (10-03-2008)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) <u>Tier 3:</u> 0.30 grams/kW-hr (0.22 grams/bhp-hr) (10-03-2008)
	175 ≤ HP < 300			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 4.0 grams/kW-hr (3.0 grams/bhp-hr) (10-03-2008)		Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) <u>Tier 3:</u> 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
	300 ≤ HP < 750			Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 4.0 grams/kW-hr (3.0 grams/bhp-hr) (7-14-2006)		Compliance with SCAQMD Rule 1470 (12-02-2016) <u>Tier 3:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (7-14-2006)	Compliance with SCAQMD Rule 1470 (12-3-2004) <u>Tier 3:</u> 0.20 grams/kW-hr (0.15 grams/bhp-hr) (7-14-2006)

(Continued on next page)

* 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*

Subcategory	Rating/Size	Criteria Pollutants					
		NMHC or VOC	NOx	NOx + NMHC ²	SOx	CO	PM
Compression-Ignition, Other ^{3,4} (continued)	≥750 HP			Compliance with SCAQMD Rule 1470 (12-02-2016) Tier 2: 6.4 grams/kW-hr (4.8 grams/bhp-hr) (10-03-2008)	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule 431.2). (6-6-2003)	Compliance with SCAQMD Rule 1470 (12-02-2016) Tier 2: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Compliance with SCAQMD Rule 1470 (12-3-2004) Tier 2: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
Spark Ignition ⁵	< 130 HP	VOC: 1.5 grams/bhp-hr (10-20-2000)	1.5 grams/bhp-hr (10-20-2000)		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	2.0 grams/bhp-hr (10-20-2000)	See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)
	≥ 130 HP	VOC: 1.0 grams/bhp-hr ⁶ (12-02-2016)	1.5 grams/bhp-hr (10-20-2000)		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	2.0 grams/bhp-hr (10-20-2000)	See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)

- 1) An emergency engine is an engine which operates as a temporary replacement for primary mechanical or electrical power sources during periods of fuel or energy shortage or while a primary power source is under repair. This includes fire pumps, emergency electrical generation and other emergency uses.
- 2) NMHC + NOx means the sum of non-methane hydrocarbons and oxides of nitrogen emissions.
- 3) SCAQMD restricts operation of emergency compression-ignition engines to 50 hours per year, or less if required by Rule 1470, for maintenance and testing and a maximum of 200 hours per year total operation. For engines used to drive standby generators, operation beyond 50 hours per year for maintenance and testing is allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage provided that the electrical grid operator or electric utility has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a control area that is subject to the rotating outage.

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Best Available Control Technology (BACT) Guidelines for Non-Major Polluting Facilities*

- 4) The engine must be certified by U.S. EPA or CARB to meet the Tier 1, 2 or 3 emission requirements of 40 CFR Part 89 – Control of Emissions from New and In-use Nonroad Compression-Ignition Engines shown in the table– or otherwise demonstrate that it meets the Tier 1, 2 or 3 emission limits. If, because of the averaging, banking, and trading program, there is no new engine from any manufacturer that meets the above standards, then the engine must meet the family emission limits established by the manufacturer and approved by U.S. EPA. The PM limits apply only to filterable PM.
- 5) SCAQMD restricts operation of emergency spark-ignition engines to 50 hours per year for maintenance and testing and a maximum of 200 hours per year total operation. Emergency spark-ignition engines may be used in a Demand Response Program, however the engine will require additional evaluation and may be subject to more stringent regulatory requirements. Since some requirements are based upon the California Airborne Toxic Control Measure for Stationary Compression Ignition Engines, applicants are referred to Title 17, Section 93115.3 of the California Code of Regulations for possible exemptions.
- 6) VOC limit is based on the requirement listed in Table 1 of 40 CFR 60 Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

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

12-02-2016 Rev. 0
 2-2-2018 Rev. 1

Equipment or Process: I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
> 50 bhp	Compliance with SCAQMD Rule 1110.2 (12-02-2016)	Compliance with SCAQMD Rule 1110.2 (12-02-2016)	See Clean Fuels Policy in Part C of the BACT Guidelines (12-02-2016)	Compliance with SCAQMD Rule 1110.2 (12-02-2016)	See Clean Fuels Policy in Part C of the BACT Guidelines (12-02-2016) Compliance with Rule 1470 (12-02-2016)	
Landfill or Digester Gas Fired ¹	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 431.1 (12-02-2016)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)		

1) For the adoption of this new listing, the requirements for this subcategory were transferred directly from the existing requirements under “I.C. Engine, Stationary, Non-Emergency.” The requirements are not new, but the date listed was updated to reflect the date of adoption of the new listing.

* 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*

2-2-2018 Rev. 0

Equipment or Process: I.C. Engine, Stationary, Non-Emergency, Electrical Generators ¹

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
> 50 bhp	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	See Clean Fuels Policy in Part C of the BACT Guidelines (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	See Clean Fuels Policy in Part C of the BACT Guidelines (2-2-2018) Compliance with Rule 1470 (2-2-2018)	
Landfill or Digester Gas Fired	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)	Compliance with SCAQMD Rule 431.1 (2-2-2018)	Compliance with SCAQMD Rule 1110.2 (2-2-2018)		

1) This BACT listing was adapted from the previous “I.C. Engine, Stationary, Non-Emergency,” Part D BACT listing.

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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: Jet Engine Test Facility

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Experimental High Altitude Testing					Venturi Scrubber with Water Spray in Exhaust (1988)	
Experimental Sea Level (Low Altitude) Testing ¹						
Performance Testing ¹						

1) At the date of the last revision for this category, there was no Achieved In Practice BACT Determination for this subcategory. Technologically Feasible options listed in historic SCAQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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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: Landfill Gas Gathering System

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Compliance with SCAQMD Rule 1150.1 - Control of Gaseous Emissions from Municipal Solid Waste Landfills (10-20-2000)					

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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: Latex Manufacturing - Reaction

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Catalytic Incinerator and Caustic Scrubber (1988)					

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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: Lead Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Pot or Crucible, Non-Refining Operations		Natural Gas (1990)	Natural Gas (1990)		Natural Gas and Melt only Sows, Pigs, Ingots or Clean Scrap (1990)	
Pot or Crucible, Refining Operations		Natural Gas (1990)	Natural Gas with Scrubber; or Natural Gas with Sulfur Free Refining Agents (1990)		Natural Gas with Baghouse (1990)	
Reverberatory, Secondary Melting Operations		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas with Scrubber (1990)		Natural Gas with Baghouse (1990)	

Note: Some secondary lead smelting operations must also comply with the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subpart X.

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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: Lead Oxide Manufacturing – Reaction Pot Barton Process

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas (1988)	Natural Gas (1988)		Natural Gas with Baghouse (1988)	

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

10-20-2000 Rev. 0

12-02-2016 Rev.1

Equipment or Process: Liquid Transfer and Handling

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Marine, Loading	For VOC Emissions: Vapor Collection System Vented to Incinerator (1990)					
Tank Truck and Rail Car Bulk Loading, Class A (SCAQMD Rule 462)	Compliance with SCAQMD Rule 462 (0.08 Lbs/1000 Gals) (10-20-2000)					For Ammonia: Bottom Loading with Vapor Collection System Vented to Packed Column Scrubber (10-20-2000)
Tank Truck and Rail Car Bulk Loading, Classes B and C (SCAQMD Rule 462)	Bottom Loading with Vapor Collection System Vented to: - Incinerator; or - Compression/absorption with Tail Gas Vented to Incinerator; or - Refrigeration System; or - Carbon Adsorption system and Compliance with SCAQMD Rule 462 (10-20-2000)					Same as Above
Gasoline Transfer and Dispensing	Compliance with Rule 461 (12-02-2016)					

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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: Metal Heating Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low NO _x Burner ≤ 50 ppmvd at 3% O ₂ , dry. (10-20-2000)	Natural Gas(1990)			Natural Gas(1990)

Note: This category includes metal aging, annealing, forging, heat treating, and homogenizing.

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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: Metallizing Spray Gun

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Water Wash Spray Booth or Scrubber (1988)	

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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: Mixer, Blender or Mill

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Dry					Baghouse (07-11-97)	
Wet	Carbon Adsorber; or Refrigerated Condenser; or Afterburner (VOC Emissions Only); or Vapor Recovery (07-11-97)				Baghouse if Dry Ingredients are Added (07-11-97)	Packed Column Scrubber (07-11-97)

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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: Nitric Acid Manufacturing

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All		Catalytic Reduction Furnace (07-11-97)				

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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: Non-Metallic Mineral Processing – Except Rock or Aggregate

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse for Enclosed Operations Water Fog Spray for Open Operations (1988)	

- Notes:
1. Non-metallic Minerals are minerals such as rock salt, sodium compounds, pumice, gilsonite, talc and pyrophyllite, boron, barite, fluorspar, feldspar, diatomite, perlite, vermiculite, mica, carbon black, silicon and kyanite.
 2. This category includes conveying, size reduction and classification.

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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: Nut Roasting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Roaster		Natural Gas (1988)			Afterburner (≥ 0.3 second Retention Time at ≥ 1,400°F) (10-20-2000)	
Handling Equipment					Baghouse (10-20-2000)	

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

10-20-2000 Rev. 0

12-02-2016 Rev. 1

Equipment or Process: Oil and Gas Production

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Combined Tankage	All Tanks Vented to: - Vacuum Gas Gathering System; or - Positive Pressure Gas Gathering System; or - Incinerator or Firebox (1988) Compliance with SCAQMD Rules 1148 and 1148.1 (12-02-2016)					
Wellhead	All Wellheads Vented to: - Vacuum Gas Gathering System; or - Positive Pressure Gas Gathering System; or - Incinerator or Firebox (10-20-2000) Compliance with SCAQMD Rules 1148 and 1148.1 (12-02-2016)					

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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: Open Spraying – Spray Gun

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Compliance with Regulation XI (10-20-2000)				Compliance with Regulation XI (10-20-2000)*	

* The open spraying must be conducted in a spray booth where feasible.

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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: Perlite Manufacturing System

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low NO _x Burner (10-20-2000)	Natural Gas (10-20-2000)		Baghouse (1988)	

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

10-20-2000 Rev. 0

7-9-2004 Rev. 1

Equipment or Process: Pharmaceutical Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Operations Involving Solvents	Afterburner (≥0.3 second Retention Time at ≥1,400°F), Refrigerated Condenser, or Carbon Adsorber (07-11-97)					
Solids Handling					Baghouse (07-11-97)	
Solids Storage Tanks					Baghouse or Vent Filter (07-11-97)	

Note: This equipment may also be subject to SCAQMD Rule 1103 and 40 CFR 63 Subpart GGG – National Emission Standards Pharmaceuticals Production. (7-9-2004)

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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: Phosphoric Acid - Thermal Process

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Fiber Mist Filter, Electrostatic Precipitator, or Packed Scrubber with Mist Eliminator (07-11-97)	

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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: Phthalic Anhydride

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Afterburner (≥0.3 Second Retention Time at ≥1,400°F) or Water Cooled Condenser (07-11-97)	

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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: Plasma Arc Metal Cutting Torch

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
> 30 KVA Electrical Input					Water Table and Nozzle Water Shroud; or Electrostatic Precipitator (1988)	

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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: Polyester Resin Operations - Molding and Casting

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All	Compliance with SCAQMD's Rule 1162 and Use of Aqueous Emulsion Cleaner or Acetone for Clean-Up to Maximum Extent Possible (1988/10-20-2000)					

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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: Polystyrene Extruder

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Electrostatic Precipitator or Fiber Mist Filter (07-11-97)	

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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: Polystyrene Manufacturing

Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
All	Water Cooled Condenser (07-11-97)					

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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: Powder Coating Booth

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
< 37 Lbs/Day Throughput					Pocket or Bag-Type Filters (10-20-2000)	
≥ 37 Lbs/Day Throughput					Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge Dust Collector or HEPA Filters (≥ 99% efficiency) (1988/10-20-2000)	

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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: Precious Metal Reclamation

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Incineration		Natural Gas (1988)	Natural Gas (1988)		Natural Gas with Baghouse and: - Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F); or -Secondary Combustion Chamber (≥ 0.3 sec. Retention Time at ≥ 1400° F) (1988)	
Chemical Recovery and Chemical Reactions		3-Stage NO _x Reduction Scrubber (07-11-97)				

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

10-20-2000 Rev. 0
 12-5-2003 Rev. 1
 7-14-2006 Rev 2
 2-2-2018 Rev 3

Equipment or Process: Printing (Graphic Arts)

Subcategory	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
Flexographic	Inks with ≤ 1.5 Lbs VOC/Gal, Less Water and Less Exempt Compounds (1990); or use of UV/EB or water-based inks/coatings ≤ 180 g VOC/L. Compliance with SCAQMD Rules 1130 and 1171 (2-2-2018)					
Control	For add-on control required by SCAQMD Rule 1130(c)(5) or other District requirement: EPA M. 204 Permanent Total Enclosure (100% collection) vented to RTO with 95% overall control efficiency; Combustion Chamber: Temp ≥ 1500°F ¹ , Retention Time > 0.3 seconds (2-2-2018)	Compliance with SCAQMD Rule 1147 at time of applicability (2-2-2018)				
Letterpress	Compliance with SCAQMD Rules 1130 and 1171 (12-5-2003)					
Lithographic or Offset, Heatset	Low VOC Fountain Solution (≤ 8% by Vol. VOC); Low VOC (≤ 100 g/l) Blanket and Roller Washes; Oil-Based or UV-Curable Inks; and Compliance with SCAQMD Rules 1130 and 1171 (7-14-2006) (2-2-18)					
Control	Oven Venting to an Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F; 95% Overall Efficiency) (10-20-2000)					

(Continued on next page)

* 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*

Subcategory	Criteria Pollutants					
	VOC	NO_x	SO_x	CO	PM₁₀	Inorganic
Lithographic or Offset, Non-Heatset	Same As Above					
Rotogravure or Gravure— Publication and Packaging	Compliance with SCAQMD Rules 1130 and 1171 (10-20-2000)					
Screen Printing and Drying	Compliance with SCAQMD Rules 1130.1 and 1171; or use of Rule 1130.1 and 1171 compliant UV/EB or water-based inks/coatings. (2-2-2018).					

1) or temperature demonstrating equivalent overall control efficiency in a District-approved source test.

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

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

Equipment or Process: Process Heater – Non-Refinery

Subcategory/Rating/ Size	Criteria Pollutants					Inorganic
	VOC	NO _x ¹⁾	SO _x	CO	PM ₁₀	
Natural Gas or Propane Fired, < 20 MM Btu/hr		Compliance with SCAQMD Rules 1146 or 1146.1 (12-02-2016)	Natural Gas (10-20-2000)	≤50 ppmv for firetube type, ≤ 100 ppmv for watertube type, dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	
Natural Gas or Propane Fired, ≥ 20 MM Btu/hr		Compliance with SCAQMD Rules 1146 or 1146.1 (12-02-2016)	Natural Gas (10-20-2000)	Same as above. (10-20-2000)	Natural Gas (10-20-2000)	<u>With SCR:</u> ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ <u>With LTO:</u> ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)

- 1) Rules 1146 and 1146.1 require that boilers rated >2 and <75 MMBtu/hr meet 9 ppm NO_x beginning 1/1/2012 for some categories, that natural gas-fired boilers rated at ≥75 MMBtu/hr meet 5 ppm by 1/1/2015 (except boilers at schools and universities), that natural-draft boilers rated >2 and ≤10 MMBtu/hr with unsealed combustion chambers meet 12 ppm by 1/1/2014, and that boilers firing landfill or digester gas meet 25 or 15 ppm, respectively, by 1/1/15 (all ppm are dry, corrected to 3% O₂). Electric utility boilers, refinery boilers rated >40 MMBtu/hr and sulfur plant reaction boilers rated ≥ 5 MMBtu/hr are excluded; and there are exceptions for low-use boilers and boilers that met a 12-ppm limit prior to 9/5/08. Applicants are advised to review these rules for further details.
- 2) A higher NO_x limit may be allowed for facilities required to have a standby fuel, where use of a clean standby fuel is not possible and an ultra low-NO_x burner is not available.

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

10-20-2000 Rev. 0
 12-5-2003 Rev. 1

Equipment or Process: Reactor with Atmospheric Vent ^{a)}

Rating/Size	Criteria Pollutants					Inorganic
	VOC/ODC	NO _x	SO _x	CO	PM ₁₀	
All	- Carbon Adsorber; or - Afterburner (VOC Only); or - Refrigerated Condenser; or - Scrubber with Approved Liquid Waste Disposal (VOC only) (1990)					

a) Also see “Resin Manufacturing” and “Surfactant Manufacturing”. (12-5-2003)

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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: Rendering

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Processing Equipment ¹⁾					Vent to Afterburner or Boiler Fire Box (≥ 0.3 sec. Retention Time at ≥ 1200 °F) (1988)	
Meal Grinding and Handling System					Enclosed Grinding and Screening Operation with Mechanical Conveyors Transporting Meal (1988)	
Tanks and Miscellaneous Equipment					Maintain Internal Temperature Below 140 °F (1988)	

1) Processing equipment includes crax pressing, filtering, centrifuging, evaporators, cookers, dryers, and grease and blood processing.

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

12-5-2003 Rev. 0

Equipment or Process: Resin Manufacturing

Subcategory	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Continuous Polystyrene Process	Compliance with SCAQMD Rule 1141: ≤0.12 Pounds VOC per 1000 Pounds Completed Resin Product from Vacuum Devolatilizer and Styrene Recovery Systems (12-5-2003)					
Liquid-Phase, High-Density Polyethylene Slurry Process	Compliance with SCAQMD Rule 1141: ≥98% Reduction from Reactors, Recycle Treaters, Thinning Tanks, Blending Tanks and Product Finishing Section (12-5-2003)					
Liquid-Phase Polypropylene Process	Compliance with SCAQMD Rule 1141: ≥98% Reduction From Organic Resin Reactors, Slurry Vacuum Filter System, Diluent Recovery Section and Product Finishing Section (12-5-2003)					
Other Resin Manufacturing	Compliance with SCAQMD Rule 1141: ≤0.5 Pounds VOC per 1000 Pounds Completed Resin Product, or ≥95% Reduction from Resin Reactors, Thinning Tanks and Blending Tanks (12-5-2003)					

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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: Rock – Aggregate Processing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse Venting Jaw Crushers, Cone Crushers, and Material Transfer Points Adjacent to and after these Items; and Water Sprays at Other Material Transfer Points (1990)	

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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: Rocket Engine Test Cell

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Chemical Packed Scrubber (1988)			Chemical Packed Scrubber and Water Spray in Exhaust with Steam Ejectors (1988)	

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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: Rubber Compounding – Banbury Type Mixer

	Criteria Pollutants					
Rating/Size	VOC	NO_x	SO_x	CO	PM₁₀	Inorganic
All					Baghouse (1988)	

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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: Sand Handling System with Shakeout and/or Muller in System

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (1988)	

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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: Sewage Treatment Plants

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Carbon Adsorber or Scrubbing System, Covers for Primary Raw Sewage Processing, and Digester Gas Incineration or Recovery (1988)		Ferrous Chloride Injection and Caustic Scrubber for Hydrogen Sulfide Removal (1988)			

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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: Smokehouse

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1990)	Steam Heated Smokehouse and Electrically Heated Smoke Generator (1990)		Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1990)	Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1990)	

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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: Solder Leveling –Hot Oil or Hot Air

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Electrostatic Precipitator (1988)	

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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: Solvent Reclamation

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Refrigerated or Water Cooled Condenser (07-11-97)					

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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

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
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.

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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: Steel Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Electric Arc					Baghouse (1988)	
Induction, ≤ 300 Lb. Capacity					Charge Only Ingots or Clean Returns, or Baghouse (10-20-2000)	
Induction, > 300 Lb. Capacity					Baghouse (07-11-97)	

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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: Storage Tanks - Liquid

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Asphalt					Cool Gases to < 120 °F and Vent to a Fiberglass or Steel Wool Filter. (07-11-97)	
External Floating Roof, VP ≤ 11 psia	Category A Tank Seals and Compliance with Rule 463 (10-20-2000)					
Fixed Roof	Vapor Recovery System with an Overall System Efficiency of ≥ 95% (7-11-97)					
Fuming Sulfuric Acid					Scrubber Followed by Fiber Mist Filter; or Water Spray Followed by Fiber Mist Filter (1988)	
Grease or Tallow					Maintain Temperature ≤ 140 °F (1988)	
Internal Floating Roof	Category A Tank Seals and Compliance with Rule 463 (10-20-2000)					
Sulfuric Acid			Caustic Scrubber and Mist Eliminator (1988)			
Underground, > 250 Gallons	≥ 95% Removal Efficiency for VOC (1990)					

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

12-5-2003 Rev. 0

Equipment or Process: Surfactant Manufacturing

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Compliance with SCAQMD Rule 1141.2 ^{a)} : ≤ 0.5 Pounds per 1000 Pounds of Surfactant Product, or ≥ 95% (Wt.) Reduction From All Surfactant Manufacturing Equipment Vented to Atmosphere (12-5-2003)					

a) Does not apply to soap manufacturing operations or facilities that only blend and package surfactants.

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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: Tank – Grease or Tallow Processing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Water Cooled or Atmospheric Condenser and Afterburner (≥ 0.3 sec. Retention Time at ≥ 1200 °F) (1990)	

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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: Tire Buffer

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Cyclone and Water Spray at Rasp (07-11-97)	

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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: Vegetable Oil Purification

Rating/Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM ₁₀	Inorganic
All	Scrubber and Barometric Condenser (1988)					

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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: Vinegar Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Scrubber with SCAQMD- and Sanitation District- Approved Liquid Disposal (1988)					

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

10-20-2000 Rev. 0
 12-5-2003 Rev. 1

Equipment or Process: Wastewater System

Subcategory	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Oil/Water Separator	Cover and Vent to Vapor Disposal System (1988); and Compliance with SCAQMD Rule 1176 (12-5-2003)					
Other Equipment	Compliance with SCAQMD Rule 1176 if Applicable by Rule ^{a)} (12-5-2003)					

a) Not required for sanitary sewer system.

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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: Wax Burnoff Furnace

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All		Natural Gas with Low Nox Burner (1988)]	Natural Gas (1988)		Natural Gas with Afterburner or Secondary Combustion Chamber (≥ 0.3 sec. Retention Time at ≥ 1200° F) (1988)	

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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: Wood Processing Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					Baghouse (1988)	

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

12-5-2003 Rev. 0

Equipment or Process: Woodworking

Subcategory	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Pneumatic Conveyance System					Compliance with SCAQMD Rule 1137 ^{a)} : Baghouse with No Visible Emissions Except During Startup and Shutdown (12-5-2003)	

a) Not required if system vents solely to stand-alone control device or into a closed room.

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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: Zinc Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Crucible or Pot		Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Ingot and/or Clean Scrap Charge Only, or Baghouse (1988/2000)	
Reverberatory, Non-Sweating Operations		Natural Gas (1990)	Natural Gas (1990)		Same as Above (10-20-2000)	
Reverberatory, Sweating Operations		Natural Gas (1990)	Natural Gas (1990)		Natural Gas with Baghouse and: Afterburner (≥ 0.3 sec. Retention Time at ≥ 1400° F); or Secondary Combustion (≥ 0.3 sec. Retention Time at ≥ 1400° F); (1990)	
Rotary, Sweating Operations		Natural Gas (1990)	Natural Gas (1990)		Same as Above (1990)	

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