

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

DRAFT DRAFT DRAFT DRAFT

Best Available Control Technology Guidelines

Part D: BACT Guidelines for Non-Major Polluting Facilities

October 20, 2000 (Revised June 6, 2003; December 5, 2003; July 9, 2004; December 3, 2004; July 14, 2006; October 3, 2008; December 2, 2016; February 2, 2018; February 1, 2019; [February 5, 2021](#))

Deputy Executive Officer Science and Technology Advancement

Matt Miyasato
Chung S. Liu (Retired)

Authors:	Alfonso Baez	Program Supervisor
	Bahareh Farahani	Senior Air Quality Engineer
	Tom Lee, P.E.	Program Supervisor
	Jason Aspell	Assistant Deputy Executive Officer
	Martin Kay, P.E.	Program Supervisor (Retired)
	Howard Lange	Air Quality Engineer II (Retired)
Reviewed By:	Barbara Baird	Chief Deputy Counsel
	Amir Dejbakhsh	Deputy Executive Officer
	William Wong	Principal Deputy District Counsel
	Bhaskar Chandan	Senior Air Quality Engineering Manager
	Andrew Lee	Senior Air Quality Engineering Manager

[\(Retired\)](#)

Deleted: Senior Air Quality Engineer

Deleted: Assistant

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	18
Animal Feed Mfg. – Dry Material Handling	18
Clay, Ceramics and Refractories Handling (Except Mixing)	18
Coal, Coke and Sulfur Handling.....	18
Feed and Grain Handling.....	18
Paper and Fiber Handling	18
Pneumatic Conveying, Except Paper and Fiber.....	18
Railcar Dumper.....	18

Bulk Solid Material Ship Loading.....	19
Non-White Commodities.....	19
White Commodities.....	19
Bulk Solid Material Ship Unloading.....	20
Bulk Cement.....	20
Other Bulk Solid Materials.....	20
Bulk Solid Material Storage.....	21
Coal, Petroleum Coke, Sulfur.....	21
Other Non-White Commodities.....	21
White Commodities.....	21
Storage Tanks and Silos.....	21
Other Open Storage.....	21
Burnoff or Burnout Furnace (Excluding Wax Furnace).....	22
Calciner.....	23
Petroleum Coke.....	23
Other.....	23
Carpet Beating and Shearing.....	24
Catalyst Manufacturing and Regeneration.....	25
Calcining.....	25
Reactor.....	25
Rotary or Spray Dryer.....	25
Regeneration, Hydrocarbon Removal.....	25
Catalyst Solids Handling.....	25
Charbroiler, Chain-driven (conveyorized).....	26
Chip Dryer.....	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

Deleted: Chemical Milling Tanks 27¶
Aluminum and Magnesium 27¶
Nickel Alloys, Stainless Steel and Titanium 27¶

Deleted: Chrome Plating 29¶
Decorative Chrome 29¶
Hard Chrome 29¶

Deleted: 30

Deleted: 30

Deleted: 30

Deleted: 31

Deleted: 32

Deleted: 32

Deleted: 32

Deleted: 33

Deleted: 33

Deleted: 34

Deleted: 34

Transit-Mixed	33	Deleted: 34
Concrete Blocks and Forms Manufacturing	34	Deleted: 35
Cotton Gin	35	Deleted: 36
Crematory	36	Deleted: 37
Degreaser – Other	37	Deleted: 38
Batch-Loaded or Conveyorized Cold Cleaners	37	Deleted: 38
Film Cleaning Machine	37	Deleted: 38
Solvent Spraying	37	Deleted: 38
Degreaser – Vapor Cleaning, Volatile Organic Compounds	38	Deleted: 39
Batch	38	Deleted: 39
Conveyorized	38	Deleted: 39
Detergent Manufacturing	39	Deleted: 40
Solids Handling	39	Deleted: 40
Spray Dryer	39	Deleted: 40
Dry Cleaning	41	Deleted: 42
Perchloroethylene	41	Deleted: 42
Petroleum Solvent	41	Deleted: 42
Dryer – Kiln	42	Deleted: 43
Dryer or Oven	43	Deleted: 44
Carpet Oven	43	Deleted: 44
Rotary, Spray and Flash Dryers	43	Deleted: 44
Tray, Agitated Pan, and Rotary Vacuum Dryers	43	Deleted: 44
Tenter Frame Fabric Dryer	43	Deleted: 44
Other Dryers and Ovens – Direct and Indirect Fired	43	Deleted: 44
Electric Furnace – Pyrolyzing, Carbonizing and Graphitizing	44	Deleted: 45
Electrical Wire Reclamation – Insulation Burn-Off Furnace	45	Deleted: 46
Ethylene Oxide Sterilization	46	Deleted: 47
Aeration	46	Deleted: 47
Quarantine Storage	46	Deleted: 47
Expanded Polystyrene Manufacturing Using Blowing Agent	47	Deleted: 48
Fatty Acid – Fat Hydrolyzing and Fractionation	48	Deleted: 49
Fatty Alcohol	49	Deleted: 50
Fermentation, Beer and Wine	50	Deleted: 51
All Closed Systems	50	Deleted: 51
All Open Systems	50	Deleted: 51
.....	51	Deleted: Fiberglass Operations
		Deleted: 52

Fabrication – Hand and Spray Layup	51	Deleted: 52
Panel Manufacturing.....	51	Deleted: 52
Pultrusion.....	51	Deleted: 52
Fish Reduction.....	51	Deleted: 53
Cooker	51	Deleted: 53
Digester, Evaporator and Acidulation Tank	51	Deleted: 53
Dryer.....	51	Deleted: 53
Meal Handling	51	Deleted: 53
Rendering – Presses, Centrifuges, Separators, Tanks, Etc.....	51	Deleted: 53
Flare.....	53	Deleted: 55
Digester Gas or Landfill Gas from Non-Hazardous Waste Landfill	53	Deleted: 55
Landfill Gas from Hazardous Waste Landfill.....	53	Deleted: 55
Produced Gas.....	57	
Organic Liquid Storage.....	57	
Organic Liquid Loading	57	
Other Flare Gas.....	58	
Flow Coater, Dip Tank and Roller Coater.....	54	Deleted: 56
Food Oven	60	
Foundry Sand Mold – Cold Cure Process	56	Deleted: 58
Fryer – Deep Fat.....	57	Deleted: 59
Fugitive Emission Sources at Natural Gas Plants and Oil and Gas Production Fields	58	Deleted: 60
Compressors, Centrifugal Type	58	Deleted: 60
Compressors, Rotary Type	58	Deleted: 60
Pressure Relief Valves	58	Deleted: 60
Pumps – In Heavy Liquid Service	58	Deleted: 60
Pumps – In Light Liquid Service	58	Deleted: 60
Sampling Connections	58	Deleted: 60
Valves, Fittings, Diaphragms, Hatches, Sight-Glasses, Open-Ended Pipes and Meters in VOC Service	58	Deleted: 60
Fugitive Emission Sources at Organic Liquid Bulk Loading Facilities	59	Deleted: 61
Compressors, Centrifugal Type	Error! Bookmark not defined.	
Compressors, Rotary Type	59	Deleted: 61
Connectors in Gas, Vapor or Light Liquid VOC Service	59	Deleted: 61
Open Ended Valves and Pipes	59	Deleted: 61
Pressure Relief Valves	59	Deleted: 61
Process Valves – Gate, Globe and Ball	59	Deleted: 61
Pumps – In Heavy Liquid Service	59	Deleted: 61

Pumps – In Light Liquid Service	59	Deleted: 61
Sampling Connections	59	Deleted: 61
Fugitive Emission Sources, Other Facilities	60	Deleted: 62
Compressors, Fittings, Open Ended Pipes, Pressure Relief Devices, , Valves, Pumps, Sampling Connections, Diaphragms, Hatches, Sight-Glasses and Meters in VOC Service	60	Deleted: 62
Galvanizing Furnace.....	61	Deleted: 63
Batch Operations	61	Deleted: 63
Continuous Sheet Metal Operations	61	Deleted: 63
Continuous Wire Operations	61	Deleted: 63
Garnetting Equipment	62	Deleted: 64
Gas Turbine	63	Deleted: 65
Natural Gas Fired.....	63	Deleted: 65
Emergency	63	Deleted: 65
Landfill or Digester Gas Fired	64	Deleted: 66
Glass Melting Furnace.....	65	Deleted: 67
Decorator Glass	65	Deleted: 67
Flat Glass	65	Deleted: 67
<u>Glass Screen Printing</u>	<u>651</u>	Deleted: 67
Incinerator – Hazardous Waste	67	Deleted: 69
Incinerator – Infectious Waste.....	68	Deleted: 70
Incinerator – Non-Infectious, Non-Hazardous Waste	69	Deleted: 71
I.C. Engine, Portable	70	Deleted: 72
Compression-Ignition	70	Deleted: 72
Spark Ignition	71	Deleted: 73
I.C. Engine, Stationary, Emergency	73	Deleted: 75
Compression Ignition, Fire Pump.....	73	Deleted: 75
Compression-Ignition, Other	74	Deleted: 76
Spark Ignition	75	Deleted: 78
I.C. Engine, Stationary, Non-Emergency, Non-Electrical Generators	77	Deleted: 80
Landfill or Digester Gas Fired	77	Deleted: 80
I.C. Engine, Stationary, Non-Emergency, Electrical Generator.....	82	
Landfill or Digeter Gas Fired	82	
Jet Engine Test Facility	79	Deleted: 82
Experimental High Altitude Testing	79	Deleted: 82
Experimental Sea Level (Low Altitude) Testing	79	Deleted: 82
Performance Testing	79	Deleted: 82

Landfill Gas Gathering System	80	Deleted: 83
Latex Manufacturing - Reaction.....	81	Deleted: 84
Lead Melting Furnace	82	Deleted: 85
Pot or Crucible, Non-Refining Operations	82	Deleted: 85
Pot or Crucible, Refining Operations.....	82	Deleted: 85
Reverberatory, Secondary Melting Operations.....	82	Deleted: 85
Lead Oxide Manufacturing – Reaction Pot Barton Process	83	Deleted: 86
Liquid Transfer and Handling	84	Deleted: 87
Marine, Loading	84	Deleted: 87
Tank Truck and Rail Car Bulk Loading, Class A (Rule 462).....	84	Deleted: 87
Tank Truck and Rail Car Bulk Loading, Classes B and C.....	84	Deleted: 87
Gasoline Transfer and Dispensing	84	Deleted: 87
Metal Heating Furnace	85	Deleted: 88
Metallizing Spray Gun	86	Deleted: 89
Mixer, Blender or Mill	87	Deleted: 90
Dry	87	Deleted: 90
Wet	87	Deleted: 90
Nitric Acid Manufacturing	88	Deleted: 91
Non-Metallic Mineral Processing – Except Rock or Aggregate	89	Deleted: 92
Nut Roasting.....	90	Deleted: 93
Roaster	90	Deleted: 93
Handling Equipment.....	90	Deleted: 93
Oil and Gas Production	91	Deleted: 94
Combined Tankage.....	91	Deleted: 94
Wellhead.....	91	Deleted: 94
<u>Open Process Tanks: Chemical Milling (Etching) and Plating.....</u>	<u>91</u>	Deleted: 94
Open Spraying – Spray Gun.....	93	Deleted: 96
Oven (see "Dryer or Oven")		
Perlite Manufacturing System	94	Deleted: 97
Pharmaceutical Manufacturing.....	95	Deleted: 98
Operations Involving Solvents.....	95	Deleted: 98
Solids Handling	95	Deleted: 98
Solids Storage Tanks	95	Deleted: 98
Phosphoric Acid - Thermal Process	96	Deleted: 99
Phthalic Anhydride.....	97	Deleted: 100
Plasma Arc Metal Cutting Torch.....	98	Deleted: 101

> 30 KVA Electrical Input.....	98	Deleted: 101
Polyester Resin Operations - Molding and Casting.....	99	Deleted: 102
Polystyrene Extruder	101	Deleted: 104
Polystyrene Manufacturing	102	Deleted: 105
Powder Coating Booth	103	Deleted: 106
Precious Metal Reclamation.....	104	Deleted: 107
Incineration.....	104	Deleted: 107
Chemical Recovery and Chemical Reactions	104	Deleted: 107
Printing (Graphic Arts).....	105	Deleted: 108
Flexographic	105	Deleted: 108
Letterpress	107	
Lithographic or Offset, Heatset	105	Deleted: 108
Lithographic or Offset, Non-Heatset	106	Deleted: 109
Rotogravure or Gravure—Publication and Packaging.....	106	Deleted: 109
Screen Printing and Drying.....	106	Deleted: 109
Process Heater – Non-Refinery	107	Deleted: 110
Reactor with Atmospheric Vent	108	Deleted: 111
Rendering	109	Deleted: 112
Processing Equipment	109	Deleted: 112
Meal Grinding and Handling System	109	Deleted: 112
Tanks and Miscellaneous Equipment	109	Deleted: 112
Resin Manufacturing	110	Deleted: 113
Continuous Polystyrene Process	110	Deleted: 113
Liquid-Phase, High-Density Polyethylene Slurry Process.....	110	Deleted: 113
Liquid-Phase Polypropylene Process.....	110	Deleted: 113
Other Resin Manufacturing	110	Deleted: 113
Rock – Aggregate Processing.....	111	Deleted: 114
Rocket Engine Test Cell.....	112	Deleted: 115
Rubber Compounding – Banbury Type Mixer.....	113	Deleted: 116
Sand Handling System with Shakeout and/or Muller in System.....	115	
Sewage Treatment Plants	115	Deleted: 118
Smokehouse.....	116	Deleted: 119
Soil Vapor Extraction – Thermal/Catalytic Oxidization (Natural Gas – burner only).....	119	
Solder Leveling –Hot Oil or Hot Air.....	118	Deleted: 121
Solvent Reclamation.....	119	Deleted: 122
Spray Booth.....	120	Deleted: 123

Automotive, Down-Draft Type.....	120	Deleted: 123
Other Types	120	Deleted: 123
Steel Melting Furnace	122	Deleted: 125
Electric Arc.....	122	Deleted: 125
Induction	122	Deleted: 125
Storage Tanks - Liquid	123	Deleted: 126
Asphalt.....	123	Deleted: 126
External Floating Roof	123	Deleted: 126
Fixed Roof	123	Deleted: 126
Fuming Sulfuric Acid.....	123	Deleted: 126
Grease or Tallow.....	123	Deleted: 126
Internal Floating Roof.....	123	Deleted: 126
Sulfuric Acid.....	123	Deleted: 126
Underground.....	123	Deleted: 126
Surfactant Manufacturing.....	124	Deleted: 127
Tank – Grease or Tallow Processing.....	125	Deleted: 128
Thermal Oxidizer (Afterburner), Catalytic Oxidizer – Natural Gas Fired	126	
Tire Buffer.....	127	Deleted: 130
Vegetable Oil Purification.....	128	Deleted: 131
Vinegar Manufacturing	129	Deleted: 132
Wastewater System	130	Deleted: 133
Oil/Water Separator	130	Deleted: 133
Other Equipment.....	130	Deleted: 133
Wax Burnoff Furnace	131	Deleted: 134
Wood Processing Equipment	132	Deleted: 135
Woodworking	133	Deleted: 136
Pneumatic Conveyance System	133	Deleted: 136
Zinc Melting Furnace	134	Deleted: 137
Crucible or Pot.....	134	Deleted: 137
Reverberatory, Non-Sweating Operations	134	Deleted: 137
Reverberatory, Sweating Operations	134	Deleted: 137
Rotary, Sweating Operations	134	Deleted: 137

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)	

* 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: Air Stripper – Ground Water Treatment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Carbon Adsorber, Thermal Oxidizer, or Catalytic Oxidizer (10-20-2000)					

* 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

2-1-2019 Rev 1

Equipment or Process: Aluminum Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Crucible or Pot		≤60 ppm Compliance with Rule 1147 (2-1-2019)	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		≤60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Same as above. (10-20-2000)	
Reverberatory, Non-Sweating ≥ 5 MM BTU/HR		Natural Gas with Low NO _x 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)	≤60 ppm Compliance with Rule 1147 (2-1-2019)	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 NO _x 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

* 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: Ammonium Bisulfate and Thiosulfate Production

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Packed Column Scrubber with Heat Exchanger and Mist Eliminator (1990)	Packed Column Scrubber for NH ₃ (1990)

* 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: Asbestos Machining Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Air Cleaning Equipment (40 CFR Part 61 Subpart M) (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: Asphalt Batch Plant

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All		Natural Gas with Low NOx Burner ≤ 33 ppmvd @ 3% O ₂ (10-20-2000)			Baghouse (1990)	

Deleted: NEED COST-EFFECTIVENESS

* 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: Asphalt Roofing Line

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All		Natural Gas (1990)	Natural Gas (1990)		Natural Gas with High Velocity Filter and Mist Eliminator (1990)	

* 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: Asphaltic Day Tanker

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Fiberglass or Steel Wool Filter (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: Auto Body Shredder

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Baghouse with Water Sprays in Hammermill (1988)	

* 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: Ball Mill

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Baghouse (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: Beryllium Machining Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					High Efficiency Particulate Air Filter and Compliance with 40CFR Part 61, Subpart D (1988)	

* 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; 10-03-2008 Rev. 1; 12-02-2016 Rev. 2

2-1-2019 Rev. 3

Equipment or Process: Boiler

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

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

* 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	NOx ¹	SOx	CO	PM ₁₀	
Oil Fired ³		Compliance with 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 Rules 1146 and 1146.1 (12-02-2016)		Compliance with Rules 1146 and 1146.1 (12-02-2016)		
Landfill Gas Fired, < 75 MMBTU/Hr		Compliance with 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 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)	

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

- 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 NOx 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-NOx 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	NOx	SOx	CO	PM ₁₀	
All	Afterburner or Secondary Combustion Chamber with ≥0.3 Second Retention Time at ≥1,400°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
2-1-2019 Rev 1

Equipment or Process: Brass Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Crucible, ≤ 300 Lbs/Hr Process Rate		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas, Charge Clean Metal Only and Maintain Slag Cover Over Entire Melt Surface (1990)	
Crucible, > 300 Lbs/Hr Process Rate		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas, with Baghouse (1990)	
Reverberatory or Rotary, Non- Sweating		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Reverberatory or Rotary, Sweating	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1990)	60 ppm Compliance with Rule 1147 (2-1-2019)	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)	

* 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*

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	NOx	SOx	CO	PM10	
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 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)	

Deleted: SCAQMD

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	NOx	SOx	CO	PM10	
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	NOx	SOx	CO	PM10	
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	NOx	SOx	CO	PM10	
Coal, Petroleum Coke, Sulfur					Enclosed Storage in Compliance with 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)	

Deleted: SCAQMD

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.

* 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
2-1-2019 Rev 1

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 ≥1,400°F Achieved within 15 Minutes of Primary Burner Ignition (07-11-97)	Compliance with Rule 1147 (2-1-2019)	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

BACT Guidelines - Part D

22

Burnoff or Burnout Furnace (Excluding Wax Furnace)

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

10-20-2000 Rev. 0
2-1-2019 Rev 1

Equipment or Process: Calciner

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Petroleum Coke	Afterburner (≥ 0.3 Second Retention Time at ≥ 1400 °F) (1988)	Compliance with Rule 1147 (2-1-2019)	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		Compliance with Rule 1147 (2-1-2019)	Natural Gas (1988)		Natural Gas with 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: Carpet Beating and Shearing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					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: 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)	

* 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: Charbroiler, Chain-driven (conveyorized)

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Catalytic Oxidizer (12-12-97)				Catalytic Oxidizer (12-12-97)	

* 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

Deleted: Equipment or Process:

...

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

BACT Guidelines - Part D

27

~~Charbroiler, Chain-driven (conveyorized)~~

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

* 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

10-20-2000 Rev. 0

Equipment or Process: Circuit Board Etcher

Deleted: Equipment or Process:

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)	

* 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: Cleaning Compound Blender

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Baghouse or Wet Centrifugal Collector or Cyclone (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
2-1-2019 Rev. 1
[2-5-2021 Rev. 2](#)

Equipment or Process: Coffee Roasting

Subcategory/ Rating/Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM ₁₀	Inorganic
Roaster, < 110,000 BTU/Hr			Natural Gas (1988)		Natural Gas (1988)	
Roaster, ≥ 110,000 BTU/Hr	Afterburner ¹ (0.3 Sec Retention Time at 1200 °F) (1990)		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 ²						
Handling Equipment, ≥ 1,590 Lbs/Hr All					Cyclone (1990)	

Deleted: Compliance with Rule 1147¶
(2-1-2019)

Deleted: Compliance with Rule 1147¶
(2-1-2019)¶

Deleted: ¹

1) [Gaseous process emissions from roasting operations which are ducted to a thermal oxidizer or catalytic oxidizer as control technology will be subject to the NOx requirements of thermal oxidizer or catalytic oxidizer BACT listing in Part D. \(2-5-2021\)](#)
2) 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 [South Coast AQMD](#) BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

Deleted: SCAQMD

* 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*

12-5-2003 Rev. 0
2-1-2019 Rev. 1

Equipment or Process: Composting

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic (Ammonia)
	VOC	NO _x	SO _x	CO	PM ₁₀	
Co-composting ^{a)}	Compliance with Rule 1133.2 ^{b)} (12-5-2003)					Compliance with Rule 1133.2 ^{b)} (12-5-2003)
Greenwaste composting	Compliance with Rule 1133.3 (2-1-2019)					Compliance with Rule 1133.3 (2-1-2019)

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

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

* 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: Concrete Batch Plant

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	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)	

* 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: Concrete Blocks and Forms Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					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: Cotton Gin

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Rotary Drum Filter and Cyclone (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

2-1-2019 Rev. 1

Equipment or Process: Crematory

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Secondary Combustion Chamber, ≥ 1500 °F (1990)	60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas with Secondary Combustion Chamber, ≥ 1500 °F (1990)	

* 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: Degreaser – Other

Rating/Size	Criteria Pollutants					Inorganic
	VOC/ODC	NOx	SOx	CO	PM ₁₀	
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 Rule 1171 (10-20-2000)					

Deleted: SCAQMD

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.

* 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: Degreaser –Vapor Cleaning, Volatile Organic Compounds

Rating/Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM ₁₀	Inorganic
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 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, [South Coast AQMD](#) 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, [South Coast AQMD](#) 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 questions; b) Soil Type and Amount – In that different types and quantities of soils being cleaned from parts lend themselves to different cleaning methods, [South Coast AQMD](#) 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; [South Coast AQMD](#) 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.

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

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

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	NOx	SOx	CO	PM ₁₀	
Solids Handling					Cyclone and Baghouse (07-11-97)	
Spray Dryer		Natural Gas with Low-NOx Burner (1988)	Natural Gas (1988)		Natural Gas with: - Cyclone and Baghouse; or - Cyclone, Scrubber and Electrostatic Precipitator (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: 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)	

* 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
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 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)					

Deleted: SCAQMD

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.

* 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

2-1-2019 Rev 1

Equipment or Process: Dryer – Kiln

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All ¹		Compliance with Rule 1147 (2-1-2019)	Natural Gas (1988)		Natural Gas (1988)	

¹Does not include digester gas or landfill gas fired units

* 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
2-2-2018 Rev. 1
2-1-2019 Rev. 2

Equipment or Process: Dryer or Oven

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Carpet Oven		30 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas (1990)	
Rotary, Spray and Flash Dryers ¹⁾		Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas with Baghouse (1990)	
Tray, Agitated Pan, and Rotary Vacuum Dryers		Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas (1990)	
Tenter Frame Fabric Dryer		30 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)	
Other Dryers and Ovens – Direct and Indirect Fired ^{2,3}		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.”
3. Does not include digester gas or landfill gas units.

* 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: Electric Furnace – Pyrolyzing, Carbonizing and Graphitizing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Afterburner (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (1988)					

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

BACT Guidelines - Part D

44

Electric Furnace – Pyrolyzing, Carbonizing
and Graphitizing

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)	

* 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: Ethylene Oxide Sterilization

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Aeration	Recirculation Vacuum Pump-Seal Fluid with Fluid Reservoir Vented to: Chemical Scrubber; or Afterburner (≥ 0.3 second retention time at $\geq 1,400^{\circ}\text{F}$); or Catalytic Afterburner (at $\geq 280^{\circ}\text{F}$) (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.

* 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: Expanded Polystyrene Manufacturing Using Blowing Agent

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	For VOC Emissions: Incineration (≥ 0.3 Sec. Retention Time at ≥ 1400 °F) (1990)					

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

BACT Guidelines - Part D

47

Expanded Polystyrene Manufacturing Using
Blowing Agent

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)					

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

BACT Guidelines - Part D

48

Fatty Acid – Fat Hydrolyzing and
Fractionation

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	NOx	SOx	CO	PM ₁₀	
All	Afterburner (≥ 0.3 second retention time at ≥ 1,400°F) (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
[2-5-2021 Rev. 2](#)

Equipment or Process: Fermentation, Beer and Wine

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All Closed Systems	Carbon Adsorber (10-20-2000)					
All Open Systems	Scrubber with Approved Liquid Waste Disposal (10-20-2000)					
<u>Wine Fermentation Tanks: Closed-Top < 30,000 gallons capacity of each tank in system (2-5-2021)</u>	<u>Water Scrubber or Chiller Condenser with 67.0% combined capture and control efficiency averaged over length of fermentation season (mass balance basis)</u>					

* 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
2-1-2019 Rev. 1
[2-5-2021 Rev. 2](#)

Deleted: 10-20-2000 Rev. 0
Equipment or Process:

Equipment or Process: Fish Reduction

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Cooker	Scrubber with Chlorinated Solution (≤ 20 ppmv Cl ⁻ Outlet Conc., ≥ 0.6 Sec. Retention Time and ≤ 200 °F Outlet Temp.) (1988)					
Digester, 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)					

Deleted: Compliance with Rule 1147
(2-1-2019)

Deleted: Compliance with Rule 1147
(2-1-2019)

Deleted: Compliance with Rule 1147
(2-1-2019)

* 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*

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 [South Coast AQMD](#) BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

Deleted: SCAQMD

* 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
[2-5-2021 Rev. 2](#)

Equipment or Process: Flare

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	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) Compliance with Rule 1118.1 (Landfill gas only) (2-5-2021)	0.06 lbs/MM Btu (1988) Compliance with Rule 1118.1 (2-5-2021)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1400 °F, and Auto Combustion Air Control (1988) Compliance with Rule 1118.1 (Landfill gas only) (2-5-2021)	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) Compliance with Rule 1118.1	0.06 lbs/MM Btu (2020) Compliance with Rule 1118.1 (2-5-2021)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1500 °F, and Auto Combustion Air Control (1988) Compliance with Rule 1118.1 (2-5-2021)	Knockout Vessel (1988)	
Produced Gas (2-5-2021)	Compliance with Rule 1118.1	Compliance with Rule 1118.1		Compliance with Rule 1118.1		
Organic Liquid Storage (2-5-2021)		Compliance with Rule 1118.1		Compliance with Rule 1118.1		
Organic Liquid Loading (2-5-2021)		Compliance with Rule 1118.1		Compliance with Rule 1118.1		
Other Flare Gas (2-5-2021)		Compliance with Rule 1118.1				

Deleted: .

Deleted: (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	NOx	SOx	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)					

* 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: Food Oven

Subcategory ¹	Rating/ Size	Criteria Pollutants					Inorganic
		VOC	NOx	SOx	CO	PM10	
Ribbon Burner	> 500°F		60 ppmvd @ 3% O ₂ (2-2-2018)	Natural Gas (2-2-2018)	Compliance with applicable 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 Rule 1147 at the time of applicability (2-2-2018)				

Deleted: SCAQMD

Deleted: SCAQMD

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*

10-20-2000 Rev. 0

Equipment or Process: Foundry Sand Mold – Cold Cure Process

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All			Packed Column Scrubber with pH of Solution Maintained at a Minimum of 8.0 (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
2-1-2019 Rev 1

Equipment or Process: Fryer – Deep Fat

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Integrated Afterburner/Oil Heater < 2 MM Btu/hr	≥ 0.3 Sec. Retention Time at ≥ 1400 °F (2-1-2019)	Natural Gas (1990)	Natural Gas (1990)		≥ 0.3 Sec. Retention Time at ≥ 1400 °F	
Integrated Afterburner/Oil Heater ≥ 2 MM Btu/hr	≥ 0.3 Sec. Retention Time at ≥ 1400 °F (2-1-2019)	Natural Gas (1990)	Natural Gas (1990)		≥ 0.3 Sec. Retention Time at ≥ 1400 °F, and Electrostatic Precipitator or High Efficiency Mist Eliminator (10-20-2000) (2-1-2019)	
Non-Integrated Direct and In-Direct Oil Heater (Steam, Thermal Fluid Heater and burner exhaust gases)		60 ppm Compliance with Rule 1147 (2-1-2019)				

Deleted: SCAQMD

* 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 Natural Gas Plants and Oil
and Gas Production Fields

Subcategory/Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
Compressors, Centrifugal Type	Seal System with a Higher Pressure Barrier Fluid (04-10-98); and Compliance with Rule 1173 (12-5-2003)					
Compressors, Rotary Type	Enclosed Seal System Connected to Closed Vent System (04-10-98); and Compliance with Rule 1173					
Pressure Relief Valves	Connected to Closed Vent System or Equipped with Rupture Disc if Applicable (4-10-98); and Compliance with Rule 1173 (12-5-2003)					
Pumps – In Heavy Liquid Service	Single Mechanical (4-10-1998); and Compliance with 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 Rule 1173 (12-5-2003)					
Sampling Connections	Closed-Purge, Closed-Loop, or Closed-Vent System (4-10-98); and Compliance with Rule 1173 (12-5-2003)					
Valves, Fittings, Diaphragms, Hatches, Sight-Glasses, Open-Ended Pipes and Meters in VOC Service	Compliance with Rule 1173 (12-5-2003)					
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)					

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

* 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, 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 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 South Coast AQMD I&M; <1000 ppmv by USEPA Method 21 with Approved South Coast AQMD 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 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

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

* 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, Other Facilities

Subcategory/Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
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)					

* 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: 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)	

* 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: Garnetting Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Baghouse or Rotary Drum Filter (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

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)		With Add-On Controls: 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)		With Add-On Controls: 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)		With Add-On Controls: 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)	

* 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*

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 NO_x 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).

* 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: 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)	

* 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*

[2-5-2021 Rev. 0](#)

Equipment or Process: Glass Screen Printing

<u>Subcategory/ Rating/Size</u>	<u>Criteria Pollutants</u>					<u>Inorganic</u>
	<u>VOC</u>	<u>NO_x</u>	<u>SO_x</u>	<u>CO</u>	<u>PM₁₀</u>	
<u>Flat Glass</u>	<u>Compliance with Rule 1145 or use of Rule 1145 compliant UV/EB or water-based coatings</u>					

* 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: 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

* 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: 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

* 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
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.

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

BACT Guidelines - Part D

69

Incinerator – Non-Infectious, Non-Hazardous Waste

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](#)

7-14-2006 Rev. 2

12-02-2016 Rev. 3

2-2-2018 Rev. 4

Deleted: 1

Deleted: 2

Deleted: 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 ≤ 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 ≤ 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 ≤ 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)

* 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*

		Criteria Pollutants					
Subcategory	Rating/Size	VOC	NOx	NOx + NMHC ²	SOx	CO	PM
(Continued on next page)							
Compression-Ignition ³	≥750 HP ⁵		<u>Tier 4 Interim:</u> 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)	<u>Tier 4 Interim:</u> 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)	<u>Tier 4 Interim:</u> 3.5 grams/kW-hr (2.6 grams/bhp-hr) (12-02-2016)	<u>Tier 4 Interim:</u> 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% O2 (4-10-1998)	1.5 grams/bhp-hr, or 80 ppmvd @ 15% O2 (4-10-1998)			2.0 grams/bhp-hr, or 176 ppmvd @ 15% O2 (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 + NOx 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

* 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*

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 \geq 750.

* 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
 6-6-2003 Rev. 1
 12-3-2004 Rev. 2
 7-14-2006 Rev. 3
 10-3-2008 Rev. 4
 12-2-2016 Rev. 5
 2-1-2019 Rev. 6

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

Deleted: ¶
 ¶

		Criteria Pollutants						
Subcategory	Rating/Size	NMHC or VOC	NO _x	NO _x + NMHC ²	SO _x	CO	PM	
Compression Ignition, Fire Pump ^{3,4}	50 ≤ HP < 100			Compliance with Rule 1470 (12-02-2016) Tier 3: 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 (Rule 431.2). (6-6-2003)	Compliance with Rule 1470 (12-02-2016) Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with Rule 1470 (12-3-2004) Tier 3: 0.40 grams/kW-hr (0.30 grams/bhp-hr) (10-03-2008)	Deleted: SCAQMD Deleted: SCAQMD Deleted: SCAQMD Deleted: SCAQMD
	100 ≤ HP < 175			Compliance with Rule 1470 (12-02-2016) Tier 3: 4.0 grams/kW-hr (3.0 grams/bhp-hr) (10-03-2008)		Compliance with Rule 1470 (12-02-2016) Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with Rule 1470 (12-3-2004) Tier 3: 0.30 grams/kW-hr (0.22 grams/bhp-hr) (10-03-2008)	Deleted: SCAQMD Deleted: SCAQMD Deleted: SCAQMD
Compression Ignition, Fire Pump ^{3,4} (continued)	175 ≤ HP < 750			Compliance with Rule 1470 (12-02-2016) Tier 3:	Diesel fuel with a sulfur content no greater than 0.0015% by weight (Rule	Compliance with Rule 1470 (12-02-2016) Tier 3:	Compliance with Rule 1470 (12-3-2004) Tier 3:	Deleted: SCAQMD Deleted: SCAQMD Deleted: SCAQMD Deleted: SCAQMD

* 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*

		Criteria Pollutants					
Subcategory	Rating/Size	NMHC or VOC	NO _x	NO _x + NMHC ²	SO _x	CO	PM
				4.0 grams/kW-hr (3.0 grams/bhp-hr): (10-03-2008)	431.2). (6-6-2003)	3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
	≥750 HP			Compliance with Rule 1470 (12-02-2016) Tier 2: 6.4 grams/kW-hr (4.8 grams/bhp-hr) (10-03-2008)		Compliance with Rule 1470 (12-02-2016) Tier 2: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Compliance with Rule 1470 (12-02-2016) Tier 2: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
Compression-Ignition, Other ^{3,4}	50 ≤ HP < 100			Compliance with Rule 1470 (12-02-2016) Tier 3: 4.7 grams/kW-hr (3.5 grams/bhp-hr) (10-03-2008)		Compliance with Rule 1470 (12-02-2016) Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with Rule 1470 (12-3-2004) Tier 3: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
Compression-Ignition, Other ^{3,4} (continued)	100 ≤ HP < 175			Compliance with Rule 1470 (12-02-2016) Tier 3: 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 Rule 1470 (12-02-2016) Tier 3: 5.0 grams/kW-hr (3.7 grams/bhp-hr) (10-03-2008)	Compliance with Rule 1470 (12-3-2004) Tier 3: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (2-01-2019)
	175 ≤ HP < 300			Compliance with Rule 1470 (12-02-2016)		Compliance with Rule 1470 (12-02-2016)	Compliance with Rule 1470 (12-3-2004)

Deleted: SCAQMD
Deleted: SCAQMD
Deleted: SCAQMD

Deleted: SCAQMD
Deleted: SCAQMD
Deleted: SCAQMD

Deleted: SCAQMD
Deleted: SCAQMD
Deleted: SCAQMD

Deleted: SCAQMD
Deleted: SCAQMD
Deleted: SCAQMD

* 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*

		Criteria Pollutants					
Subcategory	Rating/Size	NMHC or VOC	NOx	NOx + NMHC ²	SOx	CO	PM
				Tier 3: 4.0 grams/kW-hr (3.0 grams/bhp-hr) (10-03-2008)		Tier 3: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Tier 3: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (10-03-2008)
	300 ≤ HP < 750			Compliance with Rule 1470 (12-02-2016) Tier 3: 4.0 grams/kW-hr (3.0 grams/bhp-hr) (7-14-2006)		Compliance with Rule 1470 (12-02-2016) Tier 3: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (7-14-2006)	Compliance with Rule 1470 (12-3-2004) Tier 3: 0.20 grams/kW-hr (0.15 grams/bhp-hr) (7-14-2006)
Compression-Ignition, Other ^{3,4} (continued)	≥ 750 HP			Compliance with 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 Rule 1470 (12-02-2016) Tier 2: 3.5 grams/kW-hr (2.6 grams/bhp-hr) (10-03-2008)	Compliance with 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	2.0 grams/bhp-hr (10-20-2000)	See Clean Fuels Policy in Part C of the BACT Guidelines

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

* 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
					(10-20-2000)		(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) [South Coast AQMD](#) 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.
- 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) [South Coast AQMD](#) 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

Deleted: SCAQMD

Deleted: SCAQMD

* 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*

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	NOx	SOx	CO	PM10	
> 50 bhp	Compliance with Rule 1110.2 (12-02-2016)	Compliance with Rule 1110.2 (12-02-2016)	See Clean Fuels Policy in Part C of the BACT Guidelines (12-02-2016)	Compliance with 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 Rule 1110.2 (2-2-2018)	Compliance with Rule 1110.2 (2-2-2018)	Compliance with Rule 431.1 (12-02-2016)	Compliance with Rule 1110.2 (2-2-2018)		

Deleted: SCAQMD
Deleted: SCAQMD
Deleted: SCAQMD

Deleted: SCAQMD
Deleted: SCAQMD
Deleted: SCAQMD
Deleted: SCAQMD

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

BACT Guidelines - Part D

77

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

Formatted: Underline
Formatted: Underline

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 Rule 1110.2 (2-2-2018)	Compliance with Rule 1110.2 (2-2-2018)	See Clean Fuels Policy in Part C of the BACT Guidelines (2-2-2018)	Compliance with 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 Rule 1110.2 (2-2-2018)	Compliance with Rule 1110.2 (2-2-2018)	Compliance with Rule 431.1 (2-2-2018)	Compliance with Rule 1110.2 (2-2-2018)		

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

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

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	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 [South Coast AQMD](#) BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

Deleted: SCAQMD

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
All	Compliance with Rule 1150.1 - Control of Gaseous Emissions from Municipal Solid Waste Landfills (10-20-2000)					

Deleted: SCAQMD

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

BACT Guidelines - Part D

80

Landfill Gas Gathering System

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
All	Catalytic Incinerator and Caustic Scrubber (1988)					

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

Formatted: Underline

Formatted: Underline

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

10-20-2000 Rev. 0
2-1-2019 Rev. 1

Equipment or Process: Lead Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Pot or Crucible, Non-Refining Operations		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas and Melt only Sows, Pigs, Ingots or Clean Scrap (1990)	
Pot or Crucible, Refining Operations		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas with Scrubber; or Natural Gas with Sulfur Free Refining Agents (1990)		Natural Gas with Baghouse (1990)	
Reverberatory, Secondary Melting Operations		60 ppm Compliance with Rule 1147 (2-1-2019)	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.

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

Formatted: Underline

Formatted: Underline

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)	

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

Formatted: Underline

Formatted: Underline

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 (Rule 462)	Compliance with 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 (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 Rule 462 (10-20-2000)					Same as Above
Gasoline Transfer and Dispensing	Compliance with Rule 461 (12-02-2016)					

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Formatted: Underline

Formatted: Underline

* 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: 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.

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
All					Water Wash Spray Booth or Scrubber (1988)	

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	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)

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

Formatted: Underline

Formatted: Underline

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					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All		Catalytic Reduction Furnace (07-11-97)				

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	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.

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

Formatted: Underline

Formatted: Underline

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)	

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	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 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 Rules 1148 and 1148.1 (12-02-2016)					

Deleted: SCAQMD

Deleted: SCAQMD

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

Formatted: Underline

Formatted: Underline

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

10-20-2000 Rev. 0
2-5-2021 Rev. 1

Equipment or Process: Open Process Tanks:
Chemical Milling (Etching)
and Plating

		<u>Criteria Pollutants</u>					
<u>Subcategory/</u> <u>Rating/Size</u>		<u>VOC</u>	<u>NOx</u>	<u>SOx</u>	<u>CO</u>	<u>PM₁₀</u>	<u>Inorganic</u>
<u>Plating</u>	<u>Decorative Chrome</u>					<u>Packed Scrubber and</u> <u>Mist Suppressant</u> <u>(1988) (10-20-2000)</u> <u>Compliance with</u> <u>Rule 1469</u> <u>(2-5-2021)</u>	
	<u>Hard Chrome</u>					<u>Packed Scrubber and</u> <u>Mist Suppressant</u> <u>(1988) (10-20-2000)</u> <u>Compliance with</u> <u>Rule 1469</u> <u>(2-5-2021)</u>	

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 South Coast AQMD BACT Guidelines for this subcategory require cost effective analyses before they can be listed in these current Guidelines.

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

Formatted: Underline

Formatted: Underline

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

Equipment or Process: Open Spraying – Spray Gun**

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	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.

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
All		Natural Gas with Low NOx Burner (10-20-2000)	Natural Gas (10-20-2000)		Baghouse (1988)	

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	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 Rule 1103 and 40 CFR 63 Subpart GGG – National Emission Standards Pharmaceuticals Production. (7-9-2004)

Deleted: SCAQMD

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

BACT Guidelines - Part D

95

Pharmaceutical Manufacturing

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
All					Fiber Mist Filter, Electrostatic Precipitator, or Packed Scrubber with Mist Eliminator (07-11-97)	

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
All					Afterburner (≥0.3 Second Retention Time at ≥1,400°F) or Water Cooled Condenser (07-11-97)	

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
> 30 KVA Electrical Input					Water Table and Nozzle Water Shroud; or Electrostatic Precipitator (1988)	

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

Formatted: Underline

Formatted: Underline

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

10-20-2000 Rev. 0

Deleted: Equipment or Process:

...

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

BACT Guidelines - Part D

99

Plasma Arc Metal Cutting Torch

Formatted: Underline

Formatted: Underline

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

10-20-2000 Rev. 0
2-5-2021 Rev. 11

Equipment or Process: Polyester Resin
Operations

<u>Subcategory/ Rating/Size</u>	<u>Criteria Pollutants</u>					<u>Inorganic</u>
	<u>VOC</u>	<u>NOx</u>	<u>SOx</u>	<u>CO</u>	<u>PM₁₀</u>	
<u>Fabrication – Hand and Spray Layup</u>	<u>Compliance with Rule 1162 (10-20-2000)</u>				<u>Airless Spray Equipment and Spray Booth with Mesh Type Filter (1988)</u>	
<u>Molding and Casting</u>	<u>Compliance with Rule 1162 and Use of Aqueous Emulsion Cleaner or Acetone for Clean-Up to Maximum Extent Possible (1988/10-20-2000)</u>					
<u>Panel Manufacturing</u>	<u>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)</u>	<u>Natural Gas Fired Curing Oven, Electrically Heated Cellophane Oven and Laminating Table (1988)</u>	<u>Natural Gas (10-20-2000)</u>		<u>Natural Gas Fired Curing Ovens, Cellophane Ovens Vented to an Electrostatic Precipitator and Panel Cutting Saw Vented to Baghouse (1988)</u>	
<u>Pultrusion</u>	<u>Styrene Suppressed Resin (1988), and Compliance with Rule 1162 (10-20-2000)</u>					

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

Formatted: Underline

Formatted: Underline

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	NOx	SOx	CO	PM ₁₀	
All					Electrostatic Precipitator or Fiber Mist Filter (07-11-97)	

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

Formatted: Underline

Formatted: Underline

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					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Water Cooled Condenser (07-11-97)					

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

Formatted: Underline

Formatted: Underline

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

10-20-2000 Rev. 0
2-5-2021 Rev. 1

Equipment or Process: Powder Coating Booth

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
≤ 37 Lbs/Day Throughput					Pocket or Bag-Type Filters (10-20-2000)	
≥ 37 Lbs/Day Throughput					<u>1. Baghouse (>99%);</u> <u>or</u> <u>2. Cartridge Filters</u> <u>(≥99%); or</u> <u>3. HEPA Filters</u> <u>(≥99.97%)</u> (1988/10-20-2000) <u>(2-5-2021)</u>	

Deleted: <

Deleted: ≥

Deleted: Powder Recovery System with a Cyclone Followed by a Baghouse or Cartridge /Dust Collector or HEPA Filters (≥ 99% efficiency)¶

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

Formatted: Underline

Formatted: Underline

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)				

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

Formatted: Underline

Formatted: Underline

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
 2-1-2019 Rev 4

Equipment or Process: Printing (Graphic Arts)

Subcategory	Criteria Pollutants					
	VOC	NOx	SOx	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 Rules 1130 and 1171 (2-2-2018)					
<u>Alternatively</u>	For add-on control required by Rule 1130(c)(5) or other <u>South Coast AQMD</u> requirement: EPA M. 204 Permanent Total Enclosure (100% collection) vented to <u>thermal oxidizer</u> with 95% overall control efficiency; Combustion Chamber: Temp ≥ 1500°F ¹ , Retention Time > 0.3 seconds (2-2-2018)	Compliance with <u>Thermal Oxidizer BACT requirements</u>		<u>Compliance with Thermal Oxidizer BACT requirements</u>		
Letterpress	Compliance with 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 Rules 1130 and 1171 (2-2-18) <u>Oven Vented to a thermal oxidizer (≥ 0.3 Sec. Retention Time at ≥ 1400 °F; 95% Overall Efficiency) (10-20-2000)</u>	<u>Compliance with Thermal Oxidizer BACT requirements</u>		<u>Compliance with Thermal Oxidizer BACT requirements</u>	Venting to a <u>thermal oxidizer</u> (≥ 0.3 sec. Retention Time at ≥ 1400 °F) (10-20-2000) (2-1-2019)	

Deleted: SCAQMD

Deleted: Control

Deleted: SCAQMD

Deleted: District

Deleted: SCAQMD Rule 1147 at time of applicability (2-2-2018)

Deleted: afterburner

Deleted: SCAQMD

Deleted: an afterburner

Deleted: SCAQMD

Deleted: Control

Formatted: Underline

Formatted: Underline

* 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					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Lithographic or Offset, Non-Heatset	Low VOC Fountain Solution ($\leq 8\%$ by Vol. VOC); Low VOC (≤ 100 g/l) Blanket and Roller Washes; Oil-Based or UV-Curable Inks; and Compliance with Rules 1130 and 1171. (2-1-2019)					
Rotogravure or Gravure—Publication and Packaging	Compliance with Rules 1130 and 1171 (10-20-2000)					
Screen Printing and Drying	Compliance with Rules 1130.1 and 1171; or use of Rule 1130.1 and 1171 compliant UV/EB or water-based inks/coatings. (2-2-2018).					

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

1) or temperature demonstrating equivalent overall control efficiency in a [South Coast AQMD](#)-approved source test.

Deleted: District

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

Formatted: Underline

Formatted: Underline

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

10-20-2000 Rev. 0
10-03-2008 Rev. 1
12-02-2016 Rev. 2
2-1-2019 Rev. 3

Equipment or Process: Process Heater – Non-Refinery

Subcategory/Rating/ Size	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM ₁₀	Inorganic
Natural Gas or Propane Fired, >2 and < 20 MM Btu/hr		Compliance with 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 Rules 1146 (2-1-2019)	Natural Gas (10-20-2000)	Same as above. (10-20-2000)	Natural Gas (10-20-2000)	With SCR: ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ With LTO: ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)

Deleted: SCAQMD

Deleted: SCAQMD

* 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: Reactor with Atmospheric Vent ^{a)}

Rating/Size	Criteria Pollutants					Inorganic
	VOC/ODC	NO _x	SO _x	CO	PM ₁₀	
All	<ul style="list-style-type: none"> - 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)

* 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: Rendering

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	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.

* 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*

12-5-2003 Rev. 0

Equipment or Process: Resin Manufacturing

Subcategory	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
Continuous Polystyrene Process	Compliance with 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 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 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 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)					

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: SCAQMD

* 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: Rock – Aggregate Processing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	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)	

* 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: 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)	

* 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: Rubber Compounding – Banbury Type Mixer

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					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: Sand Handling System with Shakeout and/or Muller in System

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					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: Sewage Treatment Plants

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	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)			

* 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: 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)	

* 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*

2-1-2019 Rev. 0

Equipment or Process: Soil Vapor Extraction – Thermal/Catalytic Oxidation (Natural Gas – burner only)

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	.	Compliance with Rule 1147.				

* 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: Solder Leveling –Hot Oil or Hot Air

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Electrostatic Precipitator (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: Solvent Reclamation

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Refrigerated or Water Cooled Condenser (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
2-1-2019 Rev 1
[2-5-2021 Rev. 1](#)

Equipment or Process: Spray Booth

Subcategory/ Rating/Size	Criteria Pollutants					
	VOC	NO _x	SO _x	CO	PM ₁₀	Inorganic
Fully-enclosed , Down-Draft Type, < 667 Lbs/Month of VOC Emissions (2-5-2021)	Compliance with Applicable Regulation XI Rules (10-20-2000)	If booth has a Make-up Air Unit or a Heater; Compliance with Rule 1147 (2-5-2021)			Dry Filters or Waterwash (1990)	
Other Types, < 1170 Lbs/Month of VOC Emissions	Compliance with Applicable Regulation XI Rules (10-20-2000)	If booth has a Make-up Air Unit or a Heater; Compliance with Rule 1147 (2-5-2021)			Same as Above (1990)	
Fully-enclosed , Down-Draft Type, ≥ 22 Lbs/Day of VOC Emissions (2-5-2021)	- Compliance with Applicable Regulation XI Rules, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or - Use of Super Compliant Materials (≤50 grams of VOC per liter of material): or - Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction (10-20-2000)	If booth has a Make-up Air Unit or a Heater; Compliance with Rule 1147 (2-5-2021)			Same as Above (1990)	

Deleted: Automotive

Deleted: SCAQMD

Deleted: SCAQMD

Deleted: Automotive

Deleted: SCAQMD

Deleted: <

Deleted: 5% VOC by weight

* 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*

Other Types, ≥ 1170 Lbs/Month of VOC Emissions	- Compliance with Applicable Regulation XI Rules, and VOC Control System with ≥ 90% Collection Efficiency and ≥ 95% Destruction Efficiency, or - Use of Super Compliant Materials (<50 grams of VOC per liter of material); or - Use of Low-VOC Materials Resulting in an Equivalent Emission Reduction (10-20-2000)	If booth has a Make-up Air Unit or a Heater; Compliance with Rule 1147 (2-5-2021)			Same as Above (1990)	
Enclosed with automated spray nozzles for wood cabinets, < 1170 Lbs/Month of VOC Emissions (2-5-2021)	Compliance with Rule 1136 or use of Rule 1136 compliant UV/EB or water-based coatings.	If booth has a Make-up Air Unit or a Heater; Compliance with Rule 1147				

Deleted: Same as Above

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

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

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

10-20-2000 Rev. 0

Equipment or Process: 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)	

* 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: Storage Tanks - Liquid

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

* 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*

12-5-2003 Rev. 0

Equipment or Process: Surfactant Manufacturing

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All	Compliance with 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)					

Deleted: SCAQMD

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

* 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: 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)	

* 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*

2-1-2019 Rev. 0
[2-5-2021 Rev. 1](#)

Equipment or Process: Thermal Oxidizer (Afterburner, [Regenerative Thermal Oxidizer, and Thermal Recuperative Oxidizer](#)) and Catalytic Oxidizer – Natural Gas Fired**

Deleted:),

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
Regenerative Thermal Oxidizer (2-5-2021)		30 ppmvd @ 3% O₂ (Burner emissions only)		400 ppmvd @ 3% O₂ (Burner emissions only)		
Other Types		30 ppmvd @ 3% O ₂ (Burner emissions only)				

** Does not include tank degassing, soil vapor extraction, and vapor incinerators where vapors are directed into the burner or into a combustion chamber.

* 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: Tire Buffer

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All					Cyclone and Water Spray at Rasp (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: Vegetable Oil Purification

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Scrubber and Barometric Condenser (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: Vinegar Manufacturing

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM ₁₀	
All	Scrubber with South Coast AQMD - and Sanitation District- Approved Liquid Disposal (1988)					

Deleted: SCAQMD

* 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: Wastewater System

Subcategory	Criteria Pollutants					
	VOC	NOx	SOx	CO	PM ₁₀	Inorganic
Oil/Water Separator	Cover and Vent to Vapor Disposal System (1988); and Compliance with Rule 1176 (12-5-2003)					
Other Equipment	Compliance with Rule 1176 if Applicable by Rule ^{a)} (12-5-2003)					

a) Not required for sanitary sewer system.

Deleted: SCAQMD

Deleted: SCAQMD

* 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: 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)	

* 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: Wood Processing Equipment

Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
All					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*

12-5-2003 Rev. 0

Equipment or Process: Woodworking

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

Deleted: SCAQMD

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

* 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
2-1-2019 Rev 1

Equipment or Process: Zinc Melting Furnace

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NO _x	SO _x	CO	PM ₁₀	
Crucible or Pot		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Natural Gas with Ingot and/or Clean Scrap Charge Only, or Baghouse (1988/2000)	
Reverberatory, Non-Sweating Operations		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Same as Above (10-20-2000)	
Reverberatory, Sweating Operations		60 ppm Compliance with Rule 1147 (2-1-2019)	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		60 ppm Compliance with Rule 1147 (2-1-2019)	Natural Gas (1990)		Same as Above (1990)	

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



Part D, Other BACT Determination

Source Type: **Minor**
 Application No.: **15044**
 Equipment Category: **Fermentation, Wine**
 Equipment Subcategory: **Tanks Closed Top ≤ 30,000 gallons**
 Date: **February 5, 2021**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: NoMoVo / EcoPAS	B. MODEL: NMV4-1836 / PAS-100
C. DESCRIPTION: Wine fermentation tanks vented to five (5) wet scrubbers with continuously recycled slurry tank achieving a 67% capture/control efficiency.	
D. FUNCTION: Central Coast Wine Services is a winery that receives and crushes fruit for winemaking, ferments and ages wine, bottles wine, warehouses and ships cases of bottled wine. Also leases space to licensed wineries for winemaking.	
E. SIZE/DIMENSIONS/CAPACITY: 143 closed-top stainless-steel wine fermentation tanks ranging in size from 450 gallons to 21,232 capacity. All tanks with piping manifold to capture and route fermentation exhaust gases to control system.	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: N/A	
G. BURNER INFORMATION	
TYPE	INDIVIDUAL HEAT INPUT
N/A	N/A
Enter additional burner types, as needed, add extra rows	
H. PRIMARY FUEL: N/A	I. OTHER FUEL: N/A
J. OPERATING SCHEDULE: Hours 24 Days 7 Weeks 32	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: Fermentation season is 223 days per year. Both control systems wet scrubber and chilled tube-in-shell condenser are considered achieved in practice by Santa Barbara APCD.	

2. COMPANY INFORMATION

A. COMPANY: Central Coast Wine Services	B. FAC ID: 11042
C. ADDRESS: 2717 Aviation Way, Suite 101 CITY: Santa Maria STATE:CA ZIP: 93455	D. NAICS CODE: 312130
E. CONTACT PERSON: Jim Lunt	F. TITLE: General Manager
G. PHONE NO.: (805) 928-9210	H. EMAIL:

3. PERMIT INFORMATION

A. AGENCY: Santa Barbara APCD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Michael Goldman, Manager Engineering Division Santa Barbara APCD	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 6/5/18 P/O NO.: 15044 PO ISSUANCE DATE: 2/5/2019	
E. START-UP DATE: 12/1/2014	
F. OPERATIONAL TIME: 1 ½+ years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (% O ₂ , % CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit	67% COMBINED CAPTURE AND CONTROL EFFICIENCY					
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: Over entire fermentation season sample slurry from wet scrubbers and condensate from condensation chillers every 24 hrs and analyze using approved method to determine ethanol volume fraction to be used to quantify captured and controlled ethanol.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: The system is entirely passive, whereby the release of ethanol gas and moisture from the close-loop wine fermentation tanks is used to drive the exhaust toward the control system						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: NoMoVo Wet Scrubber / EcoPAS Chilled Condenser		B. MODEL: NMV4-1836 / PAS-100	
C. DESCRIPTION: Release of ethanol from closed top fermentation tanks via piping manifold drives exhaust toward control systems. In wet scrubber, ethanol is captured in a slurry tank. In chilled condenser, ethanol and water vapors are condensed and collected.			
D. SIZE/DIMENSIONS/CAPACITY: Five Water Scrubbers 48" L x 24" W x 132" H, 16-22 zones, 100 gal. capacity. One Chiller Condenser 25' L x 24" W x 25" H, 700 lbs Glycol refrigerant.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. 15044-02 PC ISSUANCE DATE: 6/5/18 PO NO.: 15044 PO ISSUANCE DATE: 2/5/2019			
F. REQUIRED CONTROL EFFICIENCIES: 67% Combined capture and control.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	67%	___%	___%
NO _x	--%	___%	___%
SO _x	--%	___%	___%
CO	--%	___%	___%
PM	--%	___%	___%
PM ₁₀	--%	___%	___%
INORGANIC	--%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: Fermentation season is 223 days per year. In accordance with Santa Barbara APCD BACT listing both the wet scrubber and chilled tube-in-shell condenser control systems are considered achieved in practice.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Monitoring reports submitted for 2018 and 2019 fermentation seasons. Compliance with 67% control efficiency is determined by annual reporting specified in permit condition and weekly reports of daily amount of ethanol captured and controlled from an analysis of the slurry samples.
B. DATE(S) OF SOURCE TEST: 2018 and 2019
C. COLLECTION EFFICIENCY METHOD: CCWS uses an Alcolyzer Wine M/ME analyzer manufactured by Anton Paar (https://www.anton-paar.com/us-en/products/details/alcolyzer-wine-mme-wine-analysis-system/) for their daily ethanol measurements. This instrument uses near infrared spectroscopy (NIR) to determine the alcohol content, and achieves an accuracy of +/- 0.1 %v/v and a repeatability of +/- 0.01 %v/v. On an annual basis, CCWS sends a sample from each capture system to an independent 3rd party lab certified by the Alcohol Tax and Trade Bureau for analysis and compares the results to the Alcolyzer instrument.
D. COLLECTION EFFICIENCY PARAMETERS: Sample of slurry or condensate every 24 hours when venting actively fermenting tanks.

E. SOURCE TEST/PERFORMANCE DATA: Since the ATC permit was issued for the CCWS project that established BACT for wine fermentation tanks, have completed two crush seasons (2018 and 2019) with the control technology in place. In 2018 achieved 74.6% control (6,117 lbs ETOH captured), and in 2019 achieved 69.9% control (3,837 lbs ETOH captured), which exceeded the 67% control required by the permit.
F. TEST OPERATING PARAMETERS AND CONDITIONS: Release of ethanol from closed top fermentation tanks via piping manifold drives exhaust toward control systems. In wet scrubber ethanol is captured in a slurry tank. In chilled condenser ethanol and water vapors are condensed and collected
G. TEST METHODS (SPECIFY AGENCY):
H. MONITORING AND TESTING REQUIREMENTS
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Enter comments for additional information for Demonstration of Compliance.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: Click here to enter text.	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: Click here to enter text.	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	F. SOURCE TEST ID(S): Click here to enter text.	
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.



Part D, South Coast AQMD BACT Determination

Source Type: **Minor**
 Application No.: **507874**
 Equipment Category: **Glass Screen Printing**
 Equipment Subcategory: **Flat Glass UV Ink**

Date: **February 5, 2021**

1. EQUIPMENT INFORMATION

A. MANUFACTURER:		B. MODEL:	
C. DESCRIPTION: Flat Glass UV ink Screen Printing Carousel with 8 stations.			
D. FUNCTION: Head West, Inc. manufactures art mirrors and frames. Plain sheets of glass with mirror backing coating as loaded on an automated screen printing carousel using Rule 1134 compliant UV inks exclusively.			
E. SIZE/DIMENSIONS/CAPACITY: Carousel with 12 screen printing stations.			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: N/A			
G. BURNER INFORMATION: N/A			
TYPE	INDIVIDUAL HEAT INPUT		NUMBER
Enter additional burner types, as needed, add extra rows	Rated heat input of single burner, in btu/hr		Number of burners
H. PRIMARY FUEL: Electricity		I. OTHER FUEL: Supplementary or standby fuels	
J. OPERATING SCHEDULE: Hours 24 HRS//DAY 7 DAYS/WEEK 52 WKS/YR			
K. EQUIPMENT COST: Enter sum of all Cost Factors in Table 6 of SCAQMD BACT Guidelines			
L. EQUIPMENT INFORMATION COMMENTS: Per Rule 219(h)(1)(A) and (C) screen printing carousel using exclusively UV inks is exempt from permit.			

2. COMPANY INFORMATION

A. COMPANY: Head West, Inc.		B. FAC ID: 163196	
C. ADDRESS: 15650 S. Avalon Blvd. CITY: Compton STATE: CA ZIP: 90220		D. NAICS CODE: 327215	
E. CONTACT PERSON: Louis Fiderer		F. TITLE: Owner	
G. PHONE NO.: 310-532-5420 X104		H. EMAIL: LFiderer@headwestinc.com	

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: OTHER
C. SCAQMD ENGINEER: Ravi Bhatia	
D. PERMIT INFORMATION: PC ISSUANCE DATE: Click here to enter a date. P/O NO.: N/A PO ISSUANCE DATE: N/A	
E. START-UP DATE: 1/1/2010	
F. OPERATIONAL TIME: 10+ years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O ₂ , %CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx	SOx	CO	PM OR PM ₁₀	INORGANIC
BACT Limit	USE OF RULE 1145 COMPLIANT UV INKS AS ALTERNATE BACT COMPLIANCE					
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: Use of Rule 1145 compliant low VOC UV inks as alternative BACT compliance. Concise description of the BACT requirements for each regulated contaminant from the equipment, other than the requirements list in Section 4(A).						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						
D. EMISSION INFORMATION COMMENTS: Facility is exclusively using Rule 1145 compliant low VOC UV inks for their flat glass screen printing operations. Although not applicable to all glass coatings, this case specific operation is a well-established achieved in practice example.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: : Low VOC UV Inks		B. MODEL:	
C. DESCRIPTION Rule 1145 compliant UV inks with low VOC content which qualify as Super Compliant Materials (≤ 50 g VOC/l) per Rule 109 and in compliance with Rule 1130.1.			
D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. PC ISSUANCE DATE: Click here to enter a date. PO NO.: PO ISSUANCE DATE: Click here to enter a date.			
F. REQUIRED CONTROL EFFICIENCIES: Tier 4 Final standards			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: Exclusively using Rule 1145 compliant low VOC UV inks for their flat glass screen printing operations. Although not applicable to all glass coatings, this case specific operation is a well-established achieved in practice example.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Recordkeeping of material safety data sheets and use of Rule 1145 compliant low VOC UV inks.
B. DATE(S) OF SOURCE TEST: N/A
C. COLLECTION EFFICIENCY METHOD: N/A
D. COLLECTION EFFICIENCY PARAMETERS: N/A
E. SOURCE TEST/PERFORMANCE DATA: Enter source test results for each criteria contaminant or precursor (mass emissions, concentrations or efficiencies) if they differ from the requirements previously listed. As previously requested in Section 4, identify any corrections or averaging times

F. TEST OPERATING PARAMETERS AND CONDITIONS: List any important operating conditions maintained during the source test or normal operations. Examples include, but may not be limited to, pressure differentials across control devices, feed rates, firing rates, temperatures, flow rates, or other parameters used to evaluate the level of operation of the equipment during the test or operations that may affect emissions from the equipment.
G. TEST METHODS (SPECIFY AGENCY): Identify the primary source test methods used and identify the agency (e.g., CARB Method 425).
H. MONITORING AND TESTING REQUIREMENTS: Include any monitoring or testing requirements and their frequency that will be enforced to maintain emission levels reported for the BACT Determination.
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Achieved in Practice operation using Rule 1145 compliant UV inks VOC content of 0 lb/gal and 3.3 lb/gal (Violet Glass 37), EPA Method 24 VOC values for the cured products are less than 1.0%. These UV inks qualify as Super Compliant Materials (≤ 50 g VOC/l) per Rule 109 and in compliance with Rule 1130.1.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 000268	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: 10	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	F. SOURCE TEST ID(S):	
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.



Part D, South Coast AQMD BACT Determination

Source Type: **Minor**
 Application No.: **450588/450591**
 Equipment Category: **Spray Booth, Enclosed**
 Equipment Subcategory: **Wood Cabinets, UV Coatings**
 Date: **February 5, 2021**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Cattinair		B. MODEL: Rotoclean 68	
C. DESCRIPTION: Computerized multi spray nozzle machine in enclosed ventilated spray booth using exclusively Rule 1136 compliant UV coatings. Spray-painted wood cabinet parts are continuously moved via conveyor to electric UV curing oven.			
D. FUNCTION: Excel Cabinets manufactures wood cabinets for tract homes and apartment builders.			
E. SIZE/DIMENSIONS/CAPACITY: Spray Machine, Enclosed Spray Booth 9'-0" W x 8'-10" L x 5'-0" H, with 16 spray nozzles, three 36" x 96" exhaust filters and one 1 H.P. exhaust fan.			
COMBUSTION SOURCES			
F. MAXIMUM HEAT INPUT: 55 KW			
G. BURNER INFORMATION:			
TYPE	INDIVIDUAL HEAT INPUT		NUMBER
N/A	N/A		N/A
H. PRIMARY FUEL: ELECTRIC <small>Primary Fuel burned in combustion chamber</small>		I. OTHER FUEL: ELECTRIC	
J. OPERATING SCHEDULE: Hours 16 hrs//day 6 days/week 52 wks/yr			
K. EQUIPMENT COST: Enter sum of all Cost Factors in Table 6 of SCAQMD BACT Guidelines			
L. EQUIPMENT INFORMATION COMMENTS: UV Curing Oven, Cattinair, 6'-0" W x 12'-0" L x 5'-0" H, with two UV lamps, 55 KW, ½ H.P. exhaust fan, 1 ½ H.P. recirculating fan.			

2. COMPANY INFORMATION

A. COMPANY: Excel Cabinets, Inc.		B. FAC ID: 121125	
C. ADDRESS: 225 Jason Court CITY: Corona STATE: CA ZIP: 91729		D. NAICS CODE: 337127	
E. CONTACT PERSON: Holly Baca		F. TITLE: Safety & Risk Manager	
G. PHONE NO.: 951-279-4545 x235		H. EMAIL: hollybaca@excelcabinetsinc.com	

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Emmanuel Quizon	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 12/21/05 P/O NO.: F79880 PO ISSUANCE DATE: 12/21/2005	
E. START-UP DATE: 12/21/2005	
F. OPERATIONAL TIME: 15 years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O ₂ , %CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx	SOx	CO	PM OR PM₁₀	INORGANIC
BACT Limit	USE OF RULE 1136 COMPLIANT UV COATINGS AS ALTERNATE BACT COMPLIANCE					
Averaging Time						
Correction						
B. OTHER BACT REQUIREMENTS: Use of Rule 1136 compliant low VOC UV coatings as alternative BACT compliance.						
C. BASIS OF THE BACT/LAER DETERMINATION: Other (add comment)						
D. EMISSION INFORMATION COMMENTS: Facility is exclusively using low VOC UV coatings for their wood cabinet coating operations. Although not applicable to all wood coatings, this case specific operation is a well-established achieved in practice example.						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Low VOC UV Coatings		B. MODEL:	
C. DESCRIPTION: Rule 1136 compliant UV coatings VOC content of 0.137 lb/gal and 0.161 lb/gal. These UV coatings qualify as Super Compliant Materials (≤ 50 g VOC/l) per Rule 109 and in compliance with Rule 1136.			
D. SIZE/DIMENSIONS/CAPACITY: N/A			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO.: N/A PC ISSUANCE DATE: N/A PO NO.: N/A PO ISSUANCE DATE: N/A			
F. REQUIRED CONTROL EFFICIENCIES: Tier 4 Final standards			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NO _x	___%	___%	___%
SO _x	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS : Use of low VOC UV coatings as alternative BACT compliance.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Recordkeeping of material safety data sheets and use of Rule 1136 compliant low VOC UV coatings.
B. DATE(S) OF SOURCE TEST: N/A
C. COLLECTION EFFICIENCY METHOD: N/A
D. COLLECTION EFFICIENCY PARAMETERS: N/A
E. SOURCE TEST/PERFORMANCE DATA: N/A
F. TEST OPERATING PARAMETERS AND CONDITIONS: N/A
G. TEST METHODS (SPECIFY AGENCY): N/A

H. MONITORING AND TESTING REQUIREMENTS: N/A
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Achieved in practice operation using Rule 1136 compliant UV coatings VOC content of 0.137 lb/gal and 0.161 lb/gal. These UV coatings qualify as Super Compliant Materials (≤ 50 g VOC/l) per Rule 109 and in compliance with Rule 1136.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 044000	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: 10	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	F. SOURCE TEST ID(S):	
G. SCAQMD SOURCE SPECIFIC RULES: 1136			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5. HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.



Part D, South Coast AQMD BACT Determination

Source Type: **Minor**
 Application No.: **600923**
 Equipment Category: **Thermal Oxidizer**
 Equipment Subcategory: **Regenerative**
 Date: **February 5, 2021**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Adwest		B. MODEL: Retox 40.0
C. DESCRIPTION: Fender Musical Instruments is a manufacturer of electric and acoustic guitars.		
D. FUNCTION: Two (2) Regenerative Thermal Oxidizers are used to vent all aspects of the electric and acoustic guitars spray/hand coating operations which are performed in permanent total enclosures.		
E. SIZE/DIMENSIONS/CAPACITY: 6,000,000 Btu/hr natural injection rate, Combustion Chamber 38'-6" L x 14'-0" W x 5'-1" H, and two Ceramic Beds each 18'-0" L x 14'-0" W x 4'-0" H.		
COMBUSTION SOURCES		
F. MAXIMUM HEAT INPUT: 16,000,000 Btu/hr each RTO		
G. BURNER INFORMATION		
TYPE	INDIVIDUAL HEAT INPUT	NUMBER
Maxon Kinedizer LE	Rated heat input of single burner, in btu/hr	1
Enter additional burner types, as needed, add extra rows		
H. PRIMARY FUEL: Natural gas		I. OTHER FUEL: Supplementary or standby fuels
J. OPERATING SCHEDULE: Hours 24 Days 7 Weeks 52		
K. EQUIPMENT COST:		
L. EQUIPMENT INFORMATION COMMENTS: RTO system venting 11 spray rooms, 3 spray booths and 5 conveyORIZED spray booths.		

2. COMPANY INFORMATION

A. COMPANY: Fender Musical Instruments	B. FAC ID: 112956
C. ADDRESS: 311 Cessna Circle CITY: Corona STATE: CA ZIP: 92880	D. NAICS CODE: 324110
E. CONTACT PERSON: Karyn Meissner	F. TITLE: Health & Safety Engineer
G. PHONE NO.: (951) 898-4039	H. EMAIL: kmeissner@fender.com

3. PERMIT INFORMATION

A. AGENCY: South Coast AQMD	B. APPLICATION TYPE: NEW CONSTRUCTION
C. SCAQMD ENGINEER: Rene Loof	
D. PERMIT INFORMATION: PC ISSUANCE DATE: 7/27/18 P/O NO.: G59106 PO ISSUANCE DATE: 10/4/2019	
E. START-UP DATE: 10/24/2018	
F. OPERATIONAL TIME: 2+ years	

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O ₂ , %CO ₂ , dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.						
	VOC	NOx	SOx	CO	PM OR PM ₁₀	INORGANIC
BACT Limit		30 PPMV		400 PPMV		
Averaging Time						
Correction		@ 3% O ₂		@ 3% O ₂		
B. OTHER BACT REQUIREMENTS: Burner emissions only.						
C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology						

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Adwest		B. MODEL: Retox 40.0	
C. DESCRIPTION: Regenerative Thermal Oxidizer with 16 MM Btu/hr Maxon Kinedizer LE, Low-NOx burner.			
D. SIZE/DIMENSIONS/CAPACITY: : 6,000,000 Btu/hr natural injection rate, Combustion Chamber 38'-6" L x 14'-0" W x 5'-1" H, and two Ceramic Beds each 18'-0" L x 14'-0" W x 4'-0" H.			
E. CONTROL EQUIPMENT PERMIT INFORMATION: APPLICATION NO. 600923 PC ISSUANCE DATE: 7/27/18 PO NO.: G59106 PO ISSUANCE DATE: 10/4/2019			
F. REQUIRED CONTROL EFFICIENCIES: . Overall collection and destruction efficiency $\geq 95\%$.			
CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM ₁₀	___%	___%	___%
INORGANIC	___%	___%	___%
G. CONTROL TECHNOLOGY COMMENTS: The combustion chamber temperature shall be maintained at a minimum of 1,500 degrees Fahrenheit whenever the equipment it serves is in operation. The operator shall maintain this equipment to achieve a minimum destruction efficiency of 95 percent and a minimum overall control efficiency of 95 percent for VOC when the basic equipment it serves is in operation. The burners are capable of 16 MM Btu/hr but will be permanently operated at a maximum of 11 MM Btu/hr.			

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test
B. DATE(S) OF SOURCE TEST: December 17, 2018
C. COLLECTION EFFICIENCY METHOD: ---
D. COLLECTION EFFICIENCY PARAMETERS: ---
E. SOURCE TEST/PERFORMANCE DATA: 27.7 ppm NOx @3% O ₂ ; 30 ppm CO @3% O ₂

F. TEST OPERATING PARAMETERS AND CONDITIONS: RTO was operated at normal operating conditions.
G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 100.1
H. MONITORING AND TESTING REQUIREMENTS:
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Enter comments for additional information for Demonstration of Compliance.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT:	B. CCAT: 6E	C. APPLICATION TYPE CODE: 50	
D. RECLAIM FAC? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	E. TITLE V FAC: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	F. SOURCE TEST ID(S): PR18201	
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5. HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.