

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.1.1\***

Last Update: 10/26/2009

**Boiler: < or = 20.0 MMBtu/hr, Natural Gas or Propane Fired \*RESCINDED\***

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

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.1.2\***

Last Update: 10/26/2009

**Boiler: > 20.0 MMBtu/hr, Natural gas fired, base-loaded or with small load swings. \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.1.3\***

Last Update: 10/26/2009

**Boiler - > 20.0 MMBtu/hr, Natural gas fired, with highly variable loads or high  
turndown ratios. \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.1.4\***

Last Update: 10/26/2009

**Digester Gas Fired Boiler \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.1.5\***

Last Update: 10/26/2009

**Boiler-Dual Fuel for Facilities Requiring Liquid Backup Fuel \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.1.6\***

Last Update: 10/26/2009

**Boiler - Fired with a High-Ammonia Fuel \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.1.7\***

Last Update: 10/26/2009

**Limited Use Boiler - Natural Gas Fired, < 9 Billion Btu/yr \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.1.8\***

Last Update: 10/26/2009

**Biomass-fired Boiler - Grate Systems \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.2.1\***

Last Update: 3/24/2014

**Oilfield Steam Generator (> or =20 MMBtu/hr)**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Gaseous fuel		
SOx	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO <sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO <sub>2</sub> @ 3% O <sub>2</sub>		
PM10	Fired on PUC quality natural gas, commercial propane, and/or commercial LPG; or gaseous fuel treated to remove 95% by weight of sulfur compounds; or treated such that the sulfur content of all fuel streams combined does not exceed 1 gr of sulfur compounds (as S) per 100 dscf; or use of a continuously operating SO <sub>2</sub> scrubber and either achieve 95% by weight control of sulfur compounds or achieve an emission rate of 9 ppmvd SO <sub>2</sub> @ 3% O <sub>2</sub>		
NOx	<ul style="list-style-type: none"> <li>•Units rated 85 MMBtu/hr and fired solely on PUC quality natural gas: 6 ppmvd @ 3% O<sub>2</sub>; or</li> <li>•Units firing on &gt; or = 50% PUC quality natural gas; commercial propane; and/or LPG: 7 ppmvd @ 3% O<sub>2</sub>, except units rated 85 MMBtu/hr and fired solely on PUC quality natural gas; or</li> <li>•Units firing on &lt;50% PUC quality natural gas; commercial propane; and/or LPG: 9 ppmvd @ 3% O<sub>2</sub></li> </ul>	5 ppmvd @ 3% O <sub>2</sub>	
CO	25 ppmvd @ 3% O <sub>2</sub>		

**San Joaquin Valley  
Unified Air Pollution Control District**

CO2e

FEDERAL BACT  
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FEDERAL BACT  
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FEDERAL BACT  
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Federal BACT (40CFR52.21 (b)(23)) for Sources Subject to District Rule 2410 (Prevention of Significant Deterioration)

Variable frequency drive high efficiency electrical motors driving the blower; and  
•When firing on  $\geq 50\%$  PUC quality natural gas, commercial propane, and/or LPG: a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr (HHV) of maximum rated heat input (verified by manufacturer or independent engineering/construction firm) or an overall thermal efficiency rating of 88% (verified by manufacturer or independent engineering/construction firm); or,  
•When firing on  $< 50\%$  PUC quality natural gas, commercial propane, and/or LPG: split flow dual pass water feed configuration, a convection section having at least 128 square feet of heat transfer surface area per MMBtu/hr (HHV) of maximum rated heat input (verified by the manufacturer or independent engineering/construction firm) and at least six inches of castable refractory or an overall thermal efficiency rating of at least 85% (verified by manufacturer or independent engineering/construction firm);

Variable frequency drive high efficiency electrical motors driving the blower; and,  
•When firing on  $\geq 50\%$  PUC quality natural gas, commercial propane, and/or LPG: a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr (HHV) of maximum rated heat input (verified by manufacturer or independent engineering/construction firm) or an overall thermal efficiency rating of 88% (verified by manufacturer or independent engineering/construction firm); or,  
•When firing on  $< 50\%$  PUC quality natural gas, commercial propane, and/or LPG: split flow dual pass water feed configuration, a convection section having at least 128 square feet of heat transfer surface area per MMBtu/hr (HHV) of maximum rated heat input (verified by the manufacturer or independent engineering/construction firm) and at least six inches of castable refractory or an overall thermal efficiency rating of at least 85% (verified by manufacturer or independent engineering/construction firm);

Or other emission reduction technique determined on a case by case basis that meets the requirements of 40 CFR52.21(b)(23)

**1.2.1**

# San Joaquin Valley Unified Air Pollution Control District

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.2.2\***

Last Update: 10/26/2009

**Steam Generator - >20.0 MMBtu/Hr Vertically Oriented w/Counterflow Heat  
Transfer \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.2.3\***

Last Update: 5/1/2004

**Oilfield Steam Generator/TEOR Gas Incinerator ~~\*\*RESCINDED~~ - part of 5/04  
update to guideline 1.2.1\*\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.3.1\***

Last Update: 8/27/2005

**Fluidized-Bed Combustor => 272 MMBtu/hr, Cogeneration Operation, Fired with  
Delayed Petroleum Coke (DPC)**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	0.008 lb/MMBtu, natural gas and fuel oil as auxiliary fuel		
SOx	20.2 ppmvd (as SO <sub>2</sub> corrected to 3% O <sub>2</sub> ) (DPC with 2% sulfur by weight) or lowest sulfur content fuel available when 2% sulfur by weight fuel is not available, Sorbent injection and natural gas and low-sulfur fuel oil (15 ppmvd sulfur or less), as auxiliary fuel	lowest sulfur content DPC fuel available, with Sorbent Injection and scrubber; natural gas and low-sulfur fuel oil (15 ppmvd sulfur or less), as auxiliary fuel	
PM10	0.005 gr/dscf corrected to 12% CO <sub>2</sub> , baghouse, natural gas and low sulfur fuel oil as auxiliary fuel		
NOx	28 ppmvd (as NO <sub>2</sub> corrected to 3% O <sub>2</sub> ), ammonia injection (less than 30 ppmvd ammonia slip) and natural gas and fuel oil as auxiliary fuel)		
CO	natural gas and fuel oil as auxiliary fuel		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.3.2\***

Last Update: 3/12/2012

**Fluidized Bubbling Bed Combustor (biomass-fired) \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.4.1\***

Last Update: 11/7/2016

**Waste Gas Flare - 15.3 MMBtu/hr, Serving a Tank Vapor Control System  
\*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.4.2\***

Last Update: 11/7/2016

**Waste Gas Flare - Incinerating Produced Gas \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.4.3\***

Last Update: 1/12/2021

**Landfill Gas Vapor Collection System**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Use of an enclosed ultra-low NOx flare with a control efficiency of $\geq 98\%$ or a controlled VOC emissions concentration of $\leq 20$ ppmvd @ 3% O <sub>2</sub> (as hexane, equivalent to 0.038 lb-VOC/MMBtu) and a NOx emissions rate of $\leq 0.025$ lb-NOx/MMBtu		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.4.4\***

Last Update: 11/7/2016

**Digester Gas-Fired Flare \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.4.5\***

Last Update: 11/7/2016

**Oilfield Waste Gas Incinerator \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.4.6\***

Last Update: 11/7/2016

**Biogas-Fired Flare: = or > 10.9 MMBtu/hr, Limited Use \* RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.4.7\***

Last Update: 11/7/2016

**Waste Gas Flare - Oilfield Well Drilling and Testing Operation, < 50 MMscf/day  
\*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.4.8\***

Last Update: 11/7/2016

**Refinery Flare \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.5.1\***

Last Update: 8/17/2006

**Fiberglass Production Furnace and Manufacturing Line, Natural Gas-Fired**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Natural gas firing and use of cullet (scrap glass) > 30% annual average; 0.25 lb-VOC/ton		electric furnace with cullet > 30% annual average
SOx	Scrubber, natural gas firing with low sulfur backup fuel oil (< 0.0015% sulfur by weight), and use of cullet > 30% annual average		electric furnace with cullet > 30% annual average
PM10	Electrostatic Precipitator in series with Scrubber (98% CE); 0.25 lb-PM10/ton		
NOx	1.45 lb/ton with no nitrate, 4.0 lb/ton with nitrate (Oxy-fuel natural gas or equivalent) at final stack (including manufacturing line except forehearths)		electric furnace with cullet > 30% annual average
CO	Natural gas firing and use of cullet > 30% annual average; 1.0 lb-CO/ton		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.5.2\***

Last Update: 4/26/2006

**Flat Glass Production Float Furnace**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	< or = 0.028 lb/ton of glass pulled (Natural gas fired Furnace)	Oxidation Catalyst	Electric Furnace
SOx	< or = 2.18 lb/ton of glass pulled (block 24-hour average) and < or = 1.88 lb/ton of glass pulled (30-day rolling average) (Natural gas fired Furnace with Dry Scrubber or Equivalent)	1. < or = 0.3 lb/ton of glass pulled (Natural gas fired Furnace with Dry Scrubber in series with Semi-Wet Scrubber or Equivalent)  2. < or = 0.6 lb/ton of glass pulled (Natural gas fired Furnace with Semi-Wet Scrubber and Supplemental Burner or Equivalent)  3. < or = 1.7 lb/ton of glass pulled (block 24-hour average) and < or = 1.2 lb/ton (30-day rolling average) (Natural gas fired Furnace with Dry Scrubber or Equivalent)	Electric Furnace
PM10	< or = 0.7 lb/ton of glass pulled (Natural gas fired Furnace with Electrostatic Precipitator or Equivalent)		Electric Furnace
NOx	< or = 3.82 lb/ton of glass pulled (block 24-hour average) and < or = 3.6 lb/ton of glass pulled (30-day rolling average) (Natural gas fired Furnace with Selective Catalytic Reduction (SCR) or Equivalent)		Electric Furnace
CO		Oxidation Catalyst	Electric Furnace

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.3\***

Last Update: 4/8/1996

**Existing flat glass furnace with a 3R system and a backup thermal De-NOx system**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC		1. ESP and Catalytic Oxidizer 2. 3.4 ppmv @ 15% O2 dry (as Methane)	
CO		1. ESP and Catalytic Oxidizer 2. 112 ppmv @ 15% O2 dry	

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.4\***

Last Update: 5/18/2020

**Metal Melting Crucible/Furnace \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.5\***

Last Update: 10/19/2000

**Glass Bottle Label Curing Lehr - < 10 MMBtu/hr, Natural Gas Fired**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	Natural Gas or LPG Fuel		

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.6\***

Last Update: 10/15/2014

**Metal Heat Treatment Oven\*\***

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	50 ppmvd @ 3% O2 (0.061 lb/MMBtu) and use natural gas fuel	5 ppmvd @ 3% O2 (0.006 lb/MMBtu) with the use of an SCR System***	Use of electric furnace

\*\*BACT will be established on a case-by-case basis to assure the lowest achievable emission rate, taking into account unique facility characteristics.

\*\*\*Use of SCR system is feasible only when the unit's exhaust temperature is greater than or equal to 500 'F.

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.7\***

Last Update: 8/17/2006

**Glass Furnace Forehearth**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	natural gas/propane-fired and good combustion practices		electric forehearth
SOx	natural gas/propane-fired and good combustion practices		electric forehearth
NOx	natural gas/propane-fired and good combustion practices		electric forehearth

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.8\***

Last Update: 6/19/2006

**Container Glass Production - Container Glass Distributor**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC			Electric glass distributor
SOx			Electric glass distributor
PM10			Electric glass distributor
NOx	Natural gas-fired container glass distributor with good combustion practices, using LPG backup fuel, and NOx emissions of 0.10 lb/MMBtu		Electric glass distributor
CO	Natural gas-fired container glass distributor with good combustion practices, using LPG backup fuel, and CO emissions of 0.084 lb/MMBtu		Electric glass distributor

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.9\***

Last Update: 12/9/2014

**Container Glass Melting Furnace**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	0.02 lb-VOC/ton of glass pulled, except during periods of startup, shutdown and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		Electric Furnace
SOx	<p>1. Oxy-fuel fired furnaces while processing material where &gt; or = 25.0 percent of the total cullet is mixed color cullet: 0.99 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.</p> <p>2. All other Container Glass Furnaces: 0.8 lb-SOx/ton of glass pulled on a rolling 30-day average; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.</p>		Electric Furnace
PM10	0.45 lb-PM10/ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		Electric Furnace
NOx	1.3 lb-NOx/ton of glass pulled on a rolling 30-day average, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		Electric Furnace
CO	0.20 lb-CO/ton of glass pulled, except during periods of startup, shutdown, and idling; And compliance with District Rule 4354 requirements for startup, shutdown, and idling.		Electric Furnace



## San Joaquin Valley Unified Air Pollution Control District

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 1.5.10\***

Last Update: 10/9/2018

**Container Glass Annealing Lehr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Utilize PUC quality natural gas fuel with LPG as backup fuel		Electric Annealing Lehr
SOx	Utilize PUC quality natural gas fuel with LPG as backup fuel		Electric Annealing Lehr
PM10	Utilize PUC quality natural gas fuel with LPG as backup fuel		Electric Annealing Lehr
NOx	Utilize burner system with 60 ppmvd NOx @ 3% O2 or 0.073 lb-NOx/MMBtu fired on PUC quality natural gas, and LPG as backup fuel		Electric Annealing Lehr
CO	Utilize burner system with 20 ppmv CO @ 3% O2 or 0.015 lb-CO/MMBtu fired on PUC quality natural gas, and LPG as backup fuel		Electric Annealing Lehr

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.5.11\***

Last Update: 5/21/2020

**Container Glass Production - Mold Swabbing Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Using best management practices and the judicious use of mold swabbing material (< or = 0.211 lb of material per ton of glass produced) with PM10 emissions of 0.19 lb/ton of glass formed		

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.5.12\***

Last Update: 7/7/2020

**Secondary Aluminum Melting: Sweat Furnace, Holding Furnace and Reverb  
Furnace**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Sweat Furnaces: Afterburner (≥0.3 sec retention time at ≥1,400°F) or secondary combustion chamber  Holding and Reverb Furnaces (non-sweating): None		
SOx	Use natural gas fuel		
PM10	Sweat Furnaces: Use of natural gas fuel, afterburner with 1400°F chamber temperature, and a baghouse with fabric filters  Holding and Reverb Furnaces (non-sweating): Use of natural gas fuel and a baghouse with fabric filters		
Nox	Sweat Furnaces: 50 ppmvd @ 3% O2 (Use of Low-NOx Burners)  Holding Furnaces: 40 ppmvd @ 3% O2 (Use of Low-NOx Burners)  Reverb Furnaces (non-sweating): 53 ppmvd @ 3% O2 (Use of Low-NOx Burners)	Sweat, Holding, and Reverb Furnaces: 1) 6.0 ppmvd @ 3% O2 (Use of Low-NOx Burners and Selective Catalytic Reduction)  2) 12.0 ppmvd @ 3% O2 (Use of Low-NOx Burners and Regenerative Selective Catalytic Reduction)  3) 30 ppmvd @ 3% O2 (Use of Low-NOx Burners and Selective Non-Catalytic Reduction)	Use of Electric Furnaces
CO	Use natural gas fuel	1) 5 ppmvd @ 3% O2, Oxidation catalyst or equivalent control;  2) 50 ppmvd @ 3% O2	Use of Electric Furnaces

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.5.13\***

Last Update: 3/7/2016

**Aluminum Diecasting Furnace**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Reverb Furnaces (non-sweating):  Use of "clean charge" without addition of any flux, and the use of natural gas fuel in the furnace.	Reverb Furnaces (non-sweating):  Use of baghouse and natural gas fuel in the furnace	
NOx	Reverb Furnaces (non-sweating):  53 ppmvd @ 3% O2 (0.0643 lb/MMBtu) with the use of Low-NOx Burners	Reverb Furnaces (non-sweating):  1. 6.0 ppmvd @ 3% O2 (0.0073 lb/MMBtu) with use of Low-NOx Burners and Selective Catalytic Reduction  2. 12.0 ppmvd @ 3% O2 (0.0146 lb/MMBtu) with use of Low-NOx Burners and Regenerative Selective Catalytic Reduction  3. 30 ppmvd @ 3% O2 (0.0364 lb/MMBtu) with use of Low-NOx Burners and Selective Non-Catalytic Reduction	Use of Electric Furnaces

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.1\***

Last Update: 4/14/2020

**Vegetable Dry Roasting Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOX	60 ppmv @ 3% O2 (equivalent to 6.5 ppmv @ 19% O2 or 0.073 lb- NOX/MMBtu)	9 ppmv @ 3% O2 (equivalent to 1.0 ppmv @ 19% O2 or 0.011 lb-NOX /MMBtu) or less with Selective Catalytic Reduction	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.2\***

Last Update: 4/20/2020

**Oven - Tortilla, <= 5 MMBtu/hr \*RESCINDED\***

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

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.3\***

Last Update: 2/21/2020

**Snack Chip Fryer with Indirect-Fired Heat Transfer System**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	<p>COMBUSTION EMISSIONS: Use PUC quality natural gas fuel with LPG/Propane as backup fuel</p> <p>FRYING PROCESS EMISSIONS: None</p>	<p>FRYING PROCESS EMISSIONS: 1) 85% control (combined VOC and PM control by thermal oxidizer, or equal); 2) 80% control (combined VOC and PM control by carbon adsorber, or equal)</p>	
SOx	Use PUC quality natural gas fuel with LPG/Propane as backup fuel		
PM10	<p>COMBUSTION EMISSIONS: Use PUC quality natural gas fuel with LPG/Propane as backup fuel</p> <p>FRYING PROCESS EMISSIONS: 75% control (oil mist eliminator or equal)</p>	<p>FRYING PROCESS EMISSIONS: 1) 85% control (combined VOC and PM control by thermal oxidizer, or equal); 2) 80% control (combined VOC and PM control by carbon adsorber, or equal)</p>	
NOx	<p>9 ppmvd @ 3% O2 for units greater than 5 MMBtu/hr to less than or equal to 20 MMBtu/hr</p> <p>7 ppmvd @ 3% O2 for units greater than 20 MMBtu/hr</p>		
CO	100 ppmvd @ 3% O2		

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



San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.4\***

Last Update: 6/16/1999

**Oven - Snack Food**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
SOx	Natural gas and LPG as backup fuel		
PM10	Natural gas and LPG as backup fuel		
NOx	Natural gas and LPG as backup fuel	Selective Catalytic Reduction	
CO	Natural gas and LPG as backup fuel	Catalytic Oxidation	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.5\***

Last Update: 4/20/2020

**Cornnut (tm) cooker \*RESCINDED\***

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

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.6\***

Last Update: 4/20/2020

**Peanut Roasting Operation \*RESCINDED\***

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

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.7\***

Last Update: 1/27/1994

**Pistachio Roasting Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Natural gas fuel		
SOx	Natural gas fuel		
PM10	Fabric Filter Baghouse	After burner with 0.3 sec retention time @ 1400 F	
NOx	Natural gas fuel		

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.8\***

Last Update: 3/13/2015

**Nut and Seed Column Dryer**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<ul style="list-style-type: none"> <li>1) Natural gas, or</li> <li>2) LPG for operations with no access to a natural gas fuel source</li> </ul>		
SOx	<ul style="list-style-type: none"> <li>1) PUC quality natural gas, or</li> <li>2) LPG for operations with no access to a PUC quality natural gas fuel source</li> </ul>		
PM10	<ul style="list-style-type: none"> <li>1) Natural gas, or</li> <li>2) LPG for operations with no access to a natural gas fuel source</li> </ul>		
NOx	<ul style="list-style-type: none"> <li>1) Low NOx burner and natural gas @ 0.0832 lb-NOx/MMBtu, or</li> <li>2) Low NOx burner and LPG @ 0.1248 lb-NOx/MMBtu for operations with no access to a natural gas fuel source</li> </ul>		

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.9\***

Last Update: 10/30/1996

**Dryer - Almond Processing, < 10 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx		Low NOx burner (utilizing stage combustion technology)	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.10\***

Last Update: 7/30/1998

**Oven - Wheat Drying, < or = 10 MMBtu/hour**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	1D- 3D Cyclones		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.11\***

Last Update: 5/9/2019

**Direct-Fired Dairy Products Spray Dryer**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Use of PUC quality natural gas fuel with LPG as backup fuel		
SOx	Use of PUC quality natural gas fuel with LPG as backup fuel		
PM10	Use of a baghouse/dust collector and PUC quality natural gas fuel with LPG as backup fuel		
NOx	Use of a 2.2 ppmv NOx @ 19% O2 (equivalent to 20 ppmv NOx @ 3% O2 or 0.0243 lb-NOx/MMBtu) low NOx burner (or equivalent) fired on PUC quality natural gas with LPG as backup fuel	Use of a 1.0 ppmv NOx @ 19% O2 (equivalent to 9 ppmv NOx @ 3% O2 or 0.0109 lb-NOx/MMBtu) ultra low NOx burner (or equivalent) fired on PUC quality natural gas with LPG as backup fuel	
CO	Use of a 42 ppmv CO @ 19% O2 (equivalent to 387 ppmv CO @ 3% O2 or 0.286 lb-CO/MMBtu) burner (or lower) fired on PUC quality natural gas with LPG as backup fuel		

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



San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.12\***

Last Update: 4/22/1999

**Dryer - Whey, Filtermat, < 50 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10		1. Venturi Scrubber 2. Wet Dynamic Scrubber 3. Cyclonic Collector	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.13\***

Last Update: 11/17/2020

**Dehydrator - Vegetable, Continuous Process \*RESCINDED\***

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.14\***

Last Update: 5/18/1998

**Dehydrator Tunnel - Fruit, Natural Gas Fired**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
SOx	Natural Gas, LPG Gas Fuel, or Propane as fuel	1. Wet Scrubber with 85% SOX control	Electrical Heater
NOx	Natural Gas or Propane-Fired Burner (<0.16 lb/MMBtu)	1. Natural Gas or Propane-Fired Ultra Low NOx burner (<0.012 lb/MMBtu) 2. Natural Gas-Fired or Propane-Fired Low NOx burner (<0.060 lb/MMBtu)	Electrical Heater

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.16\***

Last Update: 8/26/1999

**Dryer - Seed Processing, < 20 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	20 ppmv Low NOx burner fired on natural gas with LPG as backup fuel	9 ppmv NOx @ 3% O2 Selective Catalytic Reduction, Low Temperature Oxidation, or equal.	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.17\***

Last Update: 4/20/2020

**Food Preparation Oven, <800 degrees Fahrenheit, = or < 3.7 MMBtu/hr  
\*RESCINDED\***

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.18\***

Last Update: 4/20/2020

**Chicken Fryer - Natural Gas-Fired, Continuous Process, = or < 7 tons/hr  
\*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.19\***

Last Update: 4/20/2020

**Meat Smokehouse - Natural Gas-Fired, < or = 2 MMBtu/hr \*RESCINDED\***

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.20\***

Last Update: 7/11/2001

**Feather Meal Processing Rotary Dryer - Natural Gas Fired, High Ammonia Environment**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Natural gas fired with LPG as a backup fuel		
SOx	Natural gas fired with LPG as a backup fuel.		
PM10	Natural gas fired with LPG as a backup fuel		
NOx		1. 9 ppmvd @ 3% oxygen (Selective Catalytic Reduction system) 2. 30 ppmvd @ 3% oxygen (Low NOx burner system)	

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



San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.21\***

Last Update: 4/20/2020

**Flake Cereal Dryer - < 20 MMBtu/hr, Conveyor-fed \*RESCINDED\***

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.22\***

Last Update: 7/1/2020

**Wood Drying Kiln**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Natural gas (good operating practice and maintenance)	1) 98% or greater capture and control (thermal oxidizer, catalytic oxidizer or equivalent)  2) 95% or greater capture and control (carbon adsorption, provided the contaminated air stream does not contain any ingredient that could combust as a result of adsorption to carbon or equivalent)	
SOx	Natural gas (good operating practice and maintenance)		
PM10	Natural gas (good operating practice and maintenance)		
Nox	Natural gas (good operating practice and maintenance)	1) $\leq 10$ ppmvd @ 3% O <sub>2</sub> (equivalent to 0.012 lb/MMBtu or less)  2) $\leq 15$ ppmvd @ 3% O <sub>2</sub> (equivalent to 0.018 lb/MMBtu or less)	
CO	Natural gas (good operating practice and maintenance)	$\leq 25$ ppmvd @ 3% O <sub>2</sub>	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.23\***

Last Update: 7/10/2007

**Pistachio, Almond, and Walnut Dryers (<10 MMBtu/hr and <2,160 hr/yr)**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Natural gas with LPG as backup fuel		
SOx	PUC quality natural gas with LPG as backup fuel		
PM10	Natural gas with LPG as backup fuel		
NOx	0.06 lb/MMBtu, natural gas-fired with low NOx burner	1) 0.012 lb/MMBtu, natural gas-fired with low NOx burner 2) 0.024 lb/MMBtu, natural gas-fired with low NOx burner	
CO	Natural gas with LPG as backup fuel		

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.24\***

Last Update: 12/30/2020

**Commercial Bakery Oven**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Overall 98% capture and control efficiency with the use of thermal/catalytic incineration (or equivalent) with NOx emissions ≤ 60 ppmvd @ 3% O2 (0.073 lb-NOx/MMBtu) for thermal/catalytic incinerator units rated equal to or greater than 0.325 MMBtu/hr, and CO emissions of 800 ppmvd @ 3% O2 (or less) for thermal/catalytic incinerator units		
SOx	Use PUC quality natural gas fuel		
PM10	Use PUC quality natural gas fuel		
Nox	30 ppmvd @ 3% O2 equivalent to 0.036 lb/MMBtu and use of PUC quality natural gas fuel	Use of low Temperature – Selective Catalytic Reduction	Electric Oven
CO	800 ppmvd @ 3% O2 and use of PUC quality natural gas fuel		

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.25\***

Last Update: 4/18/2012

**Blood Drying Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	90% Overall Capture and Control Efficiency (Incineration at 1,200 F for not less than 0.3 seconds, or equal)	95% Overall capture and Control Efficiency (Incineration at 1,600 F for not less than 0.5 seconds, or equal)	
PM10	1.15 lb-PM10/ton of dried blood	0.579 lb-PM10/ton of dried blood	
NH3	0.6 lb-NH3/ton of dried blood (Venturi Scrubber vented to Packed Bed Scrubber, thermal oxidizer, or equal)	If a thermal oxidizer is used and the oxidation of NH3 results in more than 2.0 lb/day of NOx emissions, then the use of a wet scrubber for NH3 removal prior to the thermal oxidizer is considered feasible. (environmentally beneficial option)	
H2S		If a thermal oxidizer is used and the oxidization of H2S results in more than 2.0 lb/day of SOx emissions, then the use of a wet scrubber for H2S removal prior to the thermal oxidizer is considered feasible. (environmentally beneficial option)	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.26\***

Last Update: 3/25/2008

**Rotary Kiln Dryer for Poultry Litter\* Processing**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		<ol style="list-style-type: none"> <li>1. thermal oxidizer</li> <li>2. catalytic oxidizer</li> <li>3. biotrickling filter</li> <li>4. wet scrubber</li> </ol>	
PM10	baghouse or equal technology		
NH3		<ol style="list-style-type: none"> <li>1. catalytic oxidizer</li> <li>2. wet scrubber</li> <li>3. biotrickling filter</li> </ol>	

For the purposes of this guideline, poultry litter is defined as a mixture of poultry manure and bedding material such as rice hulls

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.28\***

Last Update: 7/2/2012

**Direct-Fired Conveyorized Hotdog Cooking Oven**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Oven vented to a regenerative thermal oxidizer (or an equivalent control system with at least 70% control efficiency)		
PM10	Oven vented to a regenerative thermal oxidizer (or an equivalent control system)		
NOx	70.0 ppmvd @ 3% O2 (0.085 lb/MMBtu) and natural gas fuel	1) 9.0 ppmvd @ 3% O2 using ultra-low Nox burner system, or equivalent control technology  2) 20.0 ppmvd @ 3% O2 using ultra-low or low-Nox burner system, or equivalent control technology	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.6.29\***

Last Update: 7/12/2012

**Indirect-fired Impingement Meatball Cooking Oven**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Cooking chamber exhaust vented to a wet scrubber (rotoclone) and regenerative thermal oxidizer system (or an equivalent control with at least 70% control efficiency)		
PM10	Cooking chamber exhaust vented to a wet scrubber (rotoclone) and regenerative thermal oxidizer system (or an equivalent control system)		
Nox	80.0 ppmvd @ 3% O2 (0.097 lb/MMBtu)	1) 8.0 ppmvd @ 3% O2 (0.010 lb/MMBtu) Selective Catalytic Reduction, or equal	

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



San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.7.1\***

Last Update: 4/3/2000

**Oven - Polyethylene Curing, = or < 20 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	Natural Gas or Propane Fuel	1. 20 ppmv @ 3% O2 (low-NOx Burner) 2. 30 ppmv @ 3% O2 (low-NOx Burner)	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.7.2\***

Last Update: 8/19/1996

**Oven - Plastisol curing/fusing, = or < 2.5 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Plastisol with ≤ 2% VOC by weight and natural gas fuel used in the fusing oven	Plastisol with ≤ 0.2% VOC by weight and natural gas fuel used in the fusing oven	
NOx	Natural gas fuel used in the fusing oven	Natural gas fuel used in the fusing oven with a Low NOx burner.	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.7.3\***

Last Update: 8/13/1999

**Oven - Parts Cleaning, Burnoff or Burnout**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	99% control (Afterburner with 0.5 sec or greater retention time and operating temperature of 1400 degrees F.)		
SOx	Natural Gas Fuel		
PM10	Natural Gas Fuel		
NOx	Natural Gas Fuel		
CO	Natural Gas Fuel		

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.8.1\***

Last Update: 10/26/2009

**Refinery Heater, fired on refinery fuel gas and/or natural gas (< or = 50 MM  
Btu/hr) ~~\*\*RESCINDED\*\*~~**

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

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.8.2\***

Last Update: 10/26/2009

**Refinery Heater, fired on refinery fuel gas and/or natural gas ( > 50 MM Btu/hr)  
\*\*RESCINDED\*\***

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

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.8.3\***

Last Update: 10/26/2009

**Gas Dehydration - Glycol Reboiler ~~\*\*RESCINDED\*\*~~**

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.8.4\***

Last Update: 10/26/2009

**Heater Treater < 20 MMBtu/hr, Natural Gas Fired \*\*RESCINDED\*\***

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.8.5\***

Last Update: 10/26/2009

**Process Heater (non-refinery, < or = 20 MMBtu/hr) \*\*RESCINDED\*\***

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

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



San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.1\***

Last Update: 1/27/1998

**Metal Parts Washer - Natural Gas-fired**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx		1. Selective catalytic reduction (SCR) 2. Natural gas fuel	1. Electric heater

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.2\***

Last Update: 4/20/2020

**Sulfuric Acid Plant Start-up Heater - < 15 MMBtu/hr \*RESCINDED\***

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.3\***

Last Update: 6/1/2005

**Crematory - Natural Gas Fired**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	natural gas fuel and a secondary combustion chamber (afterburner) => 1600 degrees F		
SOx	natural gas fuel	1. Natural gas with a dry scrubber and a baghouse 2. Natural gas fuel with a wet scrubber	
PM10	natural gas fuel and a secondary combustion chamber (afterburner) => 1600 degrees F	1. Natural gas fuel with baghouse 2. Natural gas fuel with venturi scrubber	
NOx	natural gas fuel	1. 9 ppmv NOx @ 3% O2 (0.011 lb/MMBtu) SCR or equiv.  2. 20 ppmv NOx @ 3% O2 (0.024 lb/MMBtu) Low NOx burner	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.4\***

Last Update: 10/4/1999

**Dryer - Natural Gas Fired, Solvent-Laden Towels, = or < 950 lb towels/day**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		1. VOC capture and control with thermal oxidation. 2. VOC capture and control with catalytic oxidation. 3. VOC capture and control with carbon adsorption.	
NOx	0.061 lb NOx /MMBtu natural gas fired burner	0.025 lb NOx /MMBtu natural gas fired burner	Electrical Dryer
CO	0.348 lb CO/MMBtu natural gas fired burner	0.0375 lb CO/MMBtu natural gas fired burner	Electrical Dryer

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.5\***

Last Update: 10/4/1999

**Gas Absorption Chiller - Natural Gas Fired,  
< 20 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	0.036 lb NOx /MMBtu natural gas fired burner	1. 0.0108 lb NOx /MMBtu (LTO, SCR, or equal) 2. 0.024 lb NOx /MMBtu (Low NOx natural gas fired burner)	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.6\***

Last Update: 1/6/2000

**Asphalt-Surface-Repair Heater, Propane Fired, < 20 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	0.15 lb NOx /MMBtu propane fired burner	0.036 lb NOx /MMBtu Low-NOx burner	
CO	0.021 lb NOx /MMBtu propane fired burner		

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.7\***

Last Update: 3/14/2000

**Auxiliary Burner System, Dryer, Natural Gas Fired,  
< 20 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Natural Gas Fuel		
NOx		1. 9.0 ppmv @ 3% O2 (Low Temperature Oxidation, SCR, or equal) 2. 15 ppmv @ 3% O2 (Low NOx burner, or equal) 3. 20 ppmv @ 3% O2 (Low NOx burner, or equal)	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.8\***

Last Update: 4/20/2020

**Municipal-waste Incinerator - < 750 lb waste/hr feed rate \*RESCINDED\***

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



San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.9\***

Last Update: 2/20/2001

**Molded Paper Products Dryer - Natural Gas Fired,  
< 20 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	80 ppmv @ 3% O2 (standard burner)	1. 9 ppmv @ 3% O2 (Ultra low-NOx Burner, SCR, or equal) 2. 20 ppmv @ 3% O2 (low-NOx burner)	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.10\***

Last Update: 2/2/2001

**Mineral Products Spray Dryer - Natural Gas Fired,  
< or = 20 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	20 ppmv NOx @ 3% O2 (low NOx burner)	15 ppmv NOx @ 3% O2 (low NOx burner)	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.11\***

Last Update: 7/1/2020

**Commercial Laundry Dryer, Natural Gas-Fired - < 5.0 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Use of PUC quality natural gas fuel		
SOx	Use of PUC quality natural gas fuel		
PM10	Use of a lint collector with a control efficiency of ≥ 75% or equivalent and PUC quality natural gas fuel	1) Use of a baghouse with a control efficiency of ≥ 99% or equivalent and PUC quality natural gas fuel  2) Use of a venturi scrubber with a control efficiency of ≥ 90% or equivalent and PUC quality natural gas fuel	
Nox	Use of 30 ppmvd NOx @ 3% O2 (equivalent to 0.0365 lb-NOx/MMBtu) low NOx burner (or equivalent) fired on PUC quality natural gas fuel	Use of 9.2 ppmvd @ 3% O2 (equivalent to 0.0111 lb-NOx/MMBtu) ultra-low NOx burner (or equivalent) fired on PUC quality natural gas fuel	
CO	Use of 114 ppmvd CO @ 3% O2 (equivalent to 0.084 lb-CO/MMBtu) burner (or lower) fired on PUC quality natural gas fuel	Use of 4.6 ppmvd CO @ 3% O2 (equivalent to 0.0034 lb-CO/MMBtu) burner fired on PUC quality natural gas fuel	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.12\***

Last Update: 4/20/2020

**Transportable Diesel-Fired Nitrogen Vaporizer \*RESCINDED\***

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.13\***

Last Update: 10/19/2006

**Blood Meal Processing Ring Dryer Burner**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	Natural gas fired with LPG as a backup fuel	9.0 ppmvd @ 3% O2 (0.011 lb-NOx/MMBtu) low NOx burner system  30 ppmvd @ 3% O2 (0.036 lb-NOx/MMBtu) burner system	

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

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.14\***

Last Update: 2/9/2007

**Natural Gas Fired Dryer with High Turndown Ratio\*\***

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NOx	<= 8.9 ppmvd*** @ 19% O2 (0.1 lb/MMBtu) low NOx burner	4.3 ppmvd @ 19% O2 (0.048 lb/MMBtu) low NOx burner, or equal	Electric Dryer

\*\*For the purpose of this determination, a "high turndown ratio" is one that exceeds the turndown ratio of an ultra-low NOx burner system operating at 2.2 ppmv NOx @ 19% O2 or 1.1 ppmv NOx @ 19% O2.

\*\*\*BACT will be established on a case-by-case basis to assure the lowest achievable emission rate, taking into account unique facility characteristics

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.15\***

Last Update: 4/20/2020

**Jet Aircraft Fire Training Facility \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.16\***

Last Update: 4/26/2016

**Power Oxidizer - VOC Incineration and Power Generation, < or = 35 MMBtu/hr**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	0.0064 lb/MMBtu	0.0055 lb/MMBtu	
NOx	9 ppmvd @ 15% O2 (equivalent to 0.0332 lb/MMBtu or 0.5 lb/MW-hr)	0.8 ppmvd @ 15% O2 (equivalent to 0.0062 lb/MMBtu or 0.1 lb/MW-hr)	

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



San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.9.17\***

Last Update: 1/30/2017

**Stationary Air Curtain Incinerator**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		<ol style="list-style-type: none"> <li>1. Biomass Power Plant</li> <li>2. Landfill</li> <li>3. Composting</li> </ol>
SOx	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		<ol style="list-style-type: none"> <li>1. Biomass Power Plant</li> <li>2. Landfill</li> <li>3. Composting</li> </ol>
PM10	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		<ol style="list-style-type: none"> <li>1. Biomass Power Plant</li> <li>2. Landfill</li> <li>3. Composting</li> </ol>
NOx	Air curtain incinerator (electric powered), complying with visible emissions of 10% opacity or less after start-up (per 40 CFR Part 60 Subpart CCCC, sections 60.2250 and 60.2255)		<ol style="list-style-type: none"> <li>1. Biomass Power Plant</li> <li>2. Landfill</li> <li>3. Composting</li> </ol>

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