

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.1.1\***

Last Update: 5/11/2022

**Feed Mill - Dry Grain Transfer from Receiving Pit to Storage, = or > 4,000  
tons/day \*RESCINDED\***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 5.1.2\***

Last Update: 12/30/2021

**Feed Mill - Truck Loadout**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Enclosed loading and 99% control, vented to a baghouse or equivalent		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.1.3\***

Last Update: 5/11/2022

**Grain & Feed Transfer Operation - Transportable Auger \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.1.4\***

Last Update: 5/11/2022

**Receiving and Storage and Operation - Corn, > or = 112 tons/day \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.1.5\***

Last Update: 4/27/2020

**Railcar Receiving Pit - Dry Grain/Products, = or > 1,700 tons/day**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Receiving pit using choke feeding and vented to a baghouse/dust collector	1) Receiving operation housed in an enclosed building or structure with receiving pit using choke feeding and vented to a baghouse/dust collector  2) Receiving operation housed in structure with doors open with receiving pit using choke feeding and vented to a baghouse/dust collector	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.1.6\***

Last Update: 4/20/2020

**Ship Unloading System - Bulk Cottonseed Receiving Hopper**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Receiving hopper vented to 1D-3D cyclone collectors exhausting to a baghouse		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.1.7\***

Last Update: 5/4/2020

**Railcar Unloading - Transportable, Material Conveying Equipment**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	Railcar choke feeding or railcar drop height less than 12 inches, enclosed conveyor vented to a control device with at least 99% control (baghouse or equivalent), and loadout served by a flexible spout. Opacity not to exceed 5%.		1) Pneumatic unloader vented to a control device with at least 99% control (baghouse or equivalent)  2) Receiving pit vented to a control device with at least 99% control (baghouse or equivalent) and loadout served by a flexible spout  3) Receiving pit vented to a 1D-3D cyclone

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.1.8\***

Last Update: 9/27/2021

**Non-Delinted Cottonseed - Truck Loadout Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Visible emissions from the truck loadout operation not to exceed 10% opacity for any 3 minutes in any one hour period	1. Enclosed loadout area vented to pre-cleaning cyclone(s) and a baghouse  2. Enclosed loadout area vented to 1D-3D or equivalent cyclone(s)	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.1\***

Last Update: 5/11/2022

**Almond Hulling - = or > 5 tons/hr \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.2\***

Last Update: 6/14/2022

**Almond Processing - Sizing Operation (In-shell Almonds and Shelled Almond Meats)**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	≥ 99% Control (Fabric Filter Baghouse, Cartridge-Type Dust Collector, or Equivalent)		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.3\***

Last Update: 5/11/2022

**Pistachio Nut Processing - Precleaning Operation, \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.4\***

Last Update: 3/6/2020

**Feed Mill - Grain Grinding, Dry Process**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Baghouse, or equivalent (99% or greater control efficiency)		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.5\***

Last Update: 3/6/2020

**Feed Mill - Grain Cleaner with Aspirator**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Aspirator exhausted to a fabric filter baghouse, or equivalent (99% or greater control efficiency)		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.6\***

Last Update: 5/11/2022

**Feed Mill - High Moisture Grain Pelletizing & Drying Operation \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.7\***

Last Update: 5/11/2022

**Grain Cooler - Feed Mill, Steam Softened for Grain Rolling or \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.2.8\***

Last Update: 5/14/2020

**Propylene Oxide Fumigation - Fumigation Chamber**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	98% Control Efficiency (wet scrubber, flare, or equal)		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.9\***

Last Update: 5/14/2020

**Propylene Oxide Fumigation - Off-Gassing Process\*\***

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC		1) 98% Control Efficiency (Wet Scrubber, or equal)  2) 95% Control Efficiency (Carbon Adsorption or equal)  3) 80% Control Efficiency (Refrigerated vapor condenser, or equal)	

\*\*This operation does not include the initial fumigation operation in the chamber which is covered by Guideline 5.2.8.

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.10\***

Last Update: 5/8/2003

**Wet Corn Mill - High Moisture Gluten Dryer**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	VOC capture and control with carbon adsorption or biofiltration system	1. VOC capture and control with thermal or catalytic incineration	
SOx	Wet scrubber		
PM10	Cyclone and Wet scrubber in series (or equivalent to 94% efficiency)		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.11\***

Last Update: 6/20/2003

**Rice Mill - Protein Drying and Bagging Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	99% Control Efficiency (Baghouse or equal)		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.12\***

Last Update: 1/23/2013

**Phosphine Fumigation of Nuts, Dried Fruit, Grain, and Beans**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
Phosphine (T-BACT)		Carbon Absorption or Equivalent (95% control)	
Ammonia (NH3)	Stacked Bins, Bins with Plastic Liners, Palletized Stacks, Shipping Containers, Fumigation Chambers, Warehouses, Storage Silos and Stockpiles: use of aluminum phosphide based solid fumigant and/or phosphine cylinder gas and fumigated inside gas tight tarps, gas tight bin liners or a gas tight enclosure	Ammonia Scrubber (98% control)	Use of phosphine gas or a mixture of phosphine gas and carbon dioxide from pressurized cylinders

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.2.13\***

Last Update: 12/28/2010

**Walnut Receiving and Precleaning**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Baffle cyclone or low efficiency cyclone (PM10 control efficiency of 70%)	1. Baghouse dust collector. 2. Enhanced 1D-3D cyclone.	

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.3.1\***

Last Update: 6/15/2020

**Cotton Gin Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Enhanced 1D-3D cyclone collectors, or 1D-3D cyclone collectors with expansion chambers, or rotary drum filter, or equivalent		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.3.2\***

Last Update: 6/30/2000

**Cotton Gin - Natural Gas-Fired Dryer, = or < 8 MMBtu/hr Burner**

<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 cyclone		
NOx	Natural gas/LPG burner (0.1 lb/MMBtu)	1. Natural gas/LPG with ultra Low-NOx Burner (0.011 lb/MMBtu) 2. 1. Natural gas/LPG with Low-NOx Burner (0.024 lb/MMBtu)	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.3.3\***

Last Update: 5/11/2022

**Cotton Seed Delinting \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.3.4\***

Last Update: 5/11/2022

**Vegetable/Cotton Seed Decortication Process, > or = 1400 tons/day  
\*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.3.5\***

Last Update: 4/21/2020

**Kenaf Fiber Processing - Separation Operation, = or > 3.0 MMBtu/hr burner, = or  
> 72 ton raw material/day \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.1\***

Last Update: 6/18/2020

**Fruit Storage and SO<sub>2</sub> Fumigation: = or > 21,760 cu. ft. Fumigation Rooms**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
SO <sub>x</sub>	Pre-cooling and cold storage SO <sub>2</sub> fumigation of fruits using total utilization method of fumigation, and/or "Defrost Cycle" scrubbing		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.4.2\***

Last Update: 6/18/2020

**Fruit Drying and SO<sub>2</sub> Fumigation: = or > 21760 cu. Ft. Fumigation Rooms**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
SO <sub>x</sub>	Packed bed scrubber using recirculated caustic liquid (pH 8 to 10)		

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.3\***

Last Update: 5/11/2022

**Dry Bean Processing - Methyl Bromide Fumigation Chamber, < or = 14,400 cubic feet \*RESCINDED\***

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.4.4\***

Last Update: 4/21/2020

**Fruit Roll Manufacturing - Mixing/Processing, = or > 86,000 lb mash/day  
\*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.5\***

Last Update: 4/30/2020

**Garlic and Onion Seed Processing**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Aspirators and vacuum collectors vented to a baghouse		

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.6\***

Last Update: 4/30/2020

**Garlic Grading Line**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	Fabric Filter Baghouse (99% Control Effectiveness)  or  Hand-picked Garlic with 1D-3D Cyclone (99% Control Effectiveness)		

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.7\***

Last Update: 4/7/2020

**Sunflower Seeds - Processing with Brine Solution & Roasting \*RESCINDED\***

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.8\***

Last Update: 9/27/2021

**Fruit Fumigation - Ethanol Soaking Tank**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC		1. Wet scrubber with 99% or greater control efficiency 2. Thermal incinerator with 98% or greater control efficiency 3. Biofilter with 90% or greater control efficiency	

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.9\***

Last Update: 4/17/2020

**Tomato Powder Manufacturing**

<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 cyclone with wet scrubber (87% control efficiency)	1) 1D-3D cyclone with venturi wet scrubber (99% control efficiency)  2) 1D-3D cyclone with electrostatic precipitator (95% control efficiency)	

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.10\***

Last Update: 6/28/2004

**Dried Fruit SO<sub>2</sub> Fumigation Operation**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
SO <sub>x</sub>	80% of fumigant absorbed during sulfuring	packed bed scrubber using recirculated caustic liquid (pH 8 to 10)	

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.4.11\***

Last Update: 6/23/2005

**Onion Grading and Packing Line**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
PM10	50% control (1D-1D cyclone)	75% control (2D-2D cyclone) 85% control (2D-3D cyclone) 97% control (1D-3D cyclone vented to a fabric filter assembly) 99% control (fabric filter baghouse)	

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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 5.4.12\***

Last Update: 3/29/2017

**Methyl Bromide Fumigation Chamber < 100,000 lb-CH<sub>3</sub>Br/year\*\***

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Minimize use of fumigant (i.e. use no more than product specifications recommend), and airtight fumigation	1. 99% control (chemical scrubbing) 2. 98% control (thermal or catalytic reduction) 3. 90% control (carbon adsorption) 4. 80% control (condensation refrigeration system)	

\*\*BACT guideline proactively updated on 3/29/2017 to establish new BACT requirements for large scale methyl bromide fumigation operations under BACT guideline 5.4.18.

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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 5.4.13\***

Last Update: 9/7/2018

**Wine Storage Tank - Non-Wood Material\*\***

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Insulation or Equivalent***, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation	<ol style="list-style-type: none"> <li>1. Capture of VOCs and thermal or catalytic oxidation (98% control)</li> <li>2. Capture of VOCs and carbon adsorption (95% control)</li> <li>3. Capture of VOCs and absorption (90% control)</li> <li>4. Capture of VOCs and condensation (70% control)</li> </ol>	

\*\*This guideline is applicable to a wine storage tank that is not constructed out of wooden materials.  
 \*\*\*Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure of diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete (except for fittings) are considered self-insulating.

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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 5.4.14\***

Last Update: 10/6/2009

**Wine Fermentation Tank**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F	<ol style="list-style-type: none"> <li>1. Capture of VOCs and Thermal Oxidation or Equivalent (88% control)</li> <li>2. Capture of VOCs and Carbon Adsorption or Equivalent (86% control)</li> <li>3. Capture of VOCs and Absorption or Equivalent (81% control)</li> <li>4. Capture of VOCs and Condensation or Equivalent (81% control)</li> </ol>	

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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 5.4.15\***

Last Update: 5/6/2020

**Distilled Spirits Storage Tank**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Insulation or Equivalent**, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation	1) Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control)  2) Capture of VOCs and carbon adsorption or equivalent (95% control)  3) Capture of VOCs and absorption or equivalent (90% control)  4) Refrigerated Storage (70% control)	

\*\*Tank may be insulated or stored indoors (in a completely enclosed building except for vents doors and other essential openings) to limit exposure to diurnal temperature variations.

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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 5.4.16\***

Last Update: 5/13/2020

**Ethanol Evaporator 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) Capture of VOCs and refrigerated condensation or equivalent (99% control)  2) Capture of VOCs and thermal or catalytic oxidation or equivalent (>95% control)  3) Capture of VOCs and refrigerated absorption or equivalent (95% control)	

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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 5.4.17\***

Last Update: 9/18/2019

**Wine Storage Tank - Wood Material**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Maintain wine temperature in the tank at or below 75 degrees F, achieved within 60 days of completion of fermentation	1. 98% overall control (properly designed capture system vented to a regenerative thermal oxidizer or equal)  2. 95% overall control (properly designed capture system vented to a carbon adsorption system or equal)  3. 80% overall control (properly designed capture system vented to a scrubber system or equal)  4. 70% overall control (properly designed capture system vented to a condensation system 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 5.4.18\***

Last Update: 3/29/2017

**Methyl Bromide Fumigation Chamber > or = 100,000 lb-CH<sub>3</sub>Br/year**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	86% control (carbon adsorption)	1. 99% control (chemical scrubbing) 2. 98% control (thermal or 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 5.5.1\***

Last Update: 1/15/2003

**Snack Chip Steam-heated Conditioning Units - Fryer and De-oiler**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		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).	
PM10	75% control (Oil Mist Eliminator or equal)	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).	

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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 5.5.2\***

Last Update: 4/21/2020

**Tortilla Chip Line - Ambient Air Cooler, = or < 3300 lb/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 5.5.3\***

Last Update: 6/10/2020

**Candy Panning (Engrossing) Operation\*\***

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		1) 98% or greater overall control (100% capture with permanent total enclosures designed in accordance with EPA Method 204 and at least 98% destruction using regenerative thermal oxidizer, catalytic oxidizer, carbon adsorption or equivalent overall control technology  2) 90% or greater overall control (100% capture with permanent total enclosures designed in accordance with EPA Method 204 and at least 90% destruction using bio filter or equivalent overall control technology	

\*\*A process in which candy center is coated to a desired thickness with a mixture of sugar syrup, coloring, flavoring etc. in a rotating pan.

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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 5.5.4\***

Last Update: 7/1/2020

**Candy Polishing Operation\*\***

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	At least 98% overall control (100% capture with permanent total enclosures designed in accordance with EPA Method 204 and 98% control using regenerative thermal oxidizer, catalytic oxidizer) or equivalent overall control achieving technology		

\*\*A process in which a final color coat and/or glaze is applied and the candy exterior is polished to a shiny finish.

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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 5.6.1\***

Last Update: 4/21/2020

**Yeast Fermenter \*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 5.6.2\***

Last Update: 2/17/2004

**Animal Feed Supplement Manufacturing - Palm Oil & Calcium Oxide Process**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	wet scrubber or equivalent technology achieving >= 70% control efficiency	1. 98% control (thermal incineration or equal) 2. Biofiltration system	
PM10	wet scrubber or equivalent technology achieving >= 90% control efficiency		

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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 5.6.3\***

Last Update: 6/7/2002

**Animal Feed Supplements - Steam-Heated Molasses Cooker**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	95% control efficiency (Natural gas fired thermal oxidizer, or equal)	95% control efficiency (Wet scrubber with a chlorine dioxide scrubbing media, or equal)	
PM10	95% control efficiency (Natural gas fired thermal oxidizer, or equal)	95% control efficiency (Particulate scrubber, 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 5.6.4\***

Last Update: 1/8/2004

**Bakery Waste Products Dryer**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	thermal/catalytic incineration		
PM10	precleaning cyclone(s) served by thermal/catalytic incinerator	electrostatic precipitator	

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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 5.6.5\***

Last Update: 2/1/2006

**Broiler House \*\* Moved to 5.7.1\*\***

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>19% control</p> <p>1) completely enclosed mechanical ventilated broiler housing with evaporative cooling pads, mixing fans, and a computer control system using thermostats, sensors, and timers to control environmental conditions; all birds fed in accordance with NRC or other District-approved guidelines; houses completely cleaned out at least twice per year; and all mortality removed from houses twice per day</p> <p>OR</p> <p>2) acidifying litter amendments; all birds fed in accordance with NRC or other District-approved guidelines; and all mortality removed from houses twice per day</p>	<p>1) 98% control (capture and thermal incineration)</p> <p>2) 95% control (capture and catalytic incineration)</p> <p>3) 95% control (capture and carbon adsorption)</p> <p>4) 80% control (capture and biofiltration)</p>	

# San Joaquin Valley Unified Air Pollution Control District

NH3                      55% control    80% control (capture and biofiltration)

1) completely enclosed mechanical ventilated broiler housing with evaporative cooling pads, mixing fans, and a computer control system using thermostats, sensors, and timers to control environmental conditions; all birds fed in accordance with NRC or other District-approved guidelines; houses completely cleaned out at least twice per year; and all mortality removed from houses twice per day

OR

2) acidifying litter amendments; all birds fed in accordance with NRC or other District-approved guidelines; and all mortality removed from houses twice per day

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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 5.7.1\***

Last Update: 6/22/2022

**Poultry Broiler House**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	1.a) Enclosed housing with mechanical ventilation and computerized control of environmental conditions using sensors, or b) Use of acidifying litter amendments; AND 2. Comply with applicable District Rule 4570 Feed and Housing Mitigation Measures; AND 3. Houses completely cleaned out at least twice per year; AND 4. All mortality removed from houses at least once per day	1.98% Overall Capture and Control (Thermal/Catalytic Incineration with a Concentrator) 2.95% Overall Capture and Control (Carbon Adsorption) 3.80% Overall Capture and Control (Biofiltration) 4.70% Overall Capture and Control (Wet Scrubber)	
PM10	Use of the following broiler house design and management practices: 1. Weatherproof housing structure, AND 2. Minimum disturbance of manure/litter, AND 3. Covered manure/litter piles	1.99% Overall Capture and Control (Cyclones followed by Electrostatic Precipitator or Baghouse) 2.95% Overall Capture and Control: (Cyclones Followed by Wet Scrubber) 3.60% Overall Capture and Control (High Efficiency Cyclones)	
Ammonia (NH3)	1.a) Enclosed housing with mechanical ventilation and computerized control of environmental conditions using sensors, or b) Use of acidifying litter amendments; AND 2. Comply with applicable District Rule 4570 Feed and Housing Mitigation Measures; AND 3. Houses completely cleaned out at least twice per year; AND 4. All mortality removed from houses at least once per day	1.80% Overall Capture and Control (Biofiltration or Wet Scrubber)	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.7.2\***

Last Update: 2/5/2013

**Poultry Layer House**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	19% control - completely enclosed mechanically ventilated layer housing with evaporative cooling pads, mixing fans, and a computer control system; belt manure aeration/drying and removal system with manure removal at least twice per week; all birds fed in accordance with NRC or other District-approved guidelines; and all mortality removed from houses once per day.	1) 98% control - Thermal Incineration 2) 95% control - Catalytic Incineration 3) 95% control - Carbon Adsorption 4) 80% control – Biofiltration	
PM10	50% control - completely enclosed mechanically ventilated layer housing with evaporative cooling pads, mixing fans, and a computer control system; and belt manure aeration/drying and removal system with manure removal at least twice per week.	1) 99% control - Electrostatic Precipitator 2) 99% control - Baghouse 3) 95% control - Wet Scrubber 4) 60% control - High Efficiency Cyclones	
NH3	55% control - completely enclosed mechanically ventilated layer housing with evaporative cooling pads, mixing fans, and a computer control system; belt manure aeration/drying and removal system with manure removal at least twice per week; all birds fed in accordance with NRC or other District-approved guidelines; and all mortality removed from houses once per day.	1) 99% control - Wet Scrubber 2) 80% control - Biofiltration	

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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 5.7.3\***

Last Update: 11/23/2011

**Turkey House**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	19% Control -  1) Feeding animals in accordance with applicable NRC guidelines; AND 2) House design and management practices including (a) weatherproof housing structure, (b) dry manure/litter management, (c) daily inspection of water pipes and drinkers, and (d) daily removal of mortality; AND 3) Use of acidifying litter amendments per manufacturer recommendations	1. 98% Control (Capture and Thermal Incineration)  2. 95% Control (Capture and Catalytic Incineration)  3. 95% Control (Capture and Carbon Adsorption)  4. 80% Control (Capture and Biofiltration)	
PM10	5% Control - House design and management practices including (a) weatherproof housing structure, (b) minimum disturbance of manure/litter, and (c) covering manure/litter stockpiles	1. 98% Control (Capture and Cyclones followed by Electrostatic Precipitator)  2. 95% Control (Capture and Cyclones followed by Baghouse)  3. 80% Control (Capture and Cyclones followed by Wet Scrubber)  4. 50% Control (Capture and Cyclones)	
NH3	55% Control -  1) Feeding animals in accordance with applicable NRC guidelines; AND 2) House design and management practices including (a) weatherproof housing structure, (b) dry manure/litter management, (c) daily inspection of water pipes and drinkers, and (d) daily removal of mortality; AND 3) Use of acidifying litter amendments per manufacturer recommendations	80% Control (Capture and Biofiltration)	

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.1\***

Last Update: 12/18/2013

**Milking Parlor**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Flush/Spray before, after, or during milking each group of cows	1) Enclosure of milk parlor with biogas vented to incinerator with 95% control  2) Enclosure of milk parlor with biogas vented to biofilter with minimum 80% control	
NH3	Flush/Spray before, after, or during milking each group of cows		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.2\***

Last Update: 12/18/2013

**Cow Housing - Freestall and Saudi-Style Barns**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>1) Concrete feed lanes and walkways;</p> <p>2) Flushing the lanes and walkways for the mature cows (milk and dry cows) four times per day and flushing lanes and walkways for the remaining animals once per day (or for dairies that cannot use a flush system, Scraping lanes and walkways for mature cows with an automatic scraper (or equivalent) four times per day and cleaning lanes and walkways for support stock (heifers) at least once per day);</p> <p>3) Feeding all animals in accordance with National Research Council (NRC) or other District-approved guidelines;</p> <p>4) Properly sloping exercise pens (minimum of 3% slope where the available space for each animal is 400 square feet or less and minimum of 1.5% where the available space for each animal is more than 400 square feet per animal) or managing corrals to maintain a dry surface;</p> <p>5) Scraping exercise pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions; and</p> <p>6) Rule 4570 Measures</p>		
PM10	<p>1) Concrete feed lanes and walkways;</p> <p>2) Scraping exercise pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions</p>		

## San Joaquin Valley Unified Air Pollution Control District

NH3

- 1) Concrete feed lanes and walkways;
- 2) Flushing the lanes and walkways for the mature cows (milk and dry cows) four times per day and flushing lanes and walkways for the remaining animals once per day (or for dairies that cannot use a flush system, Scraping lanes and walkways for mature cows with an automatic scraper (or equivalent) four times per day and cleaning lanes and walkways for support stock (heifers) at least once per day);
- 3) Feeding all animals in accordance with National Research Council (NRC) or other District-approved guidelines;
- 4) Properly sloping exercise pens (minimum of 3% slope where the available space for each animal is 400 square feet or less and minimum of 1.5% where the available space for each animal is more than 400 square feet per animal) or managing corrals to maintain a dry surface; and
- 5) Scraping exercise pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions;

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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 5.8.3\***

Last Update: 3/17/2015

**Cow Housing - Open Corrals**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>1) Concrete feed lanes and walkways;</p> <p>2) Flushing the lanes and walkways for the mature cows (milk and dry cows) four times per day and flushing lanes and walkways for the remaining animals once per day (or for dairies that cannot use a flush system, Scraping lanes and walkways for mature cows with an automatic scraper (or equivalent) four times per day and cleaning lanes and walkways for support stock (heifers) at least once per day);</p> <p>3) Feeding all animals in accordance with National Research Council (NRC) or other District-approved guidelines;</p> <p>4) Properly sloping corrals (minimum of 3% slope where the available space for each animal is 400 square feet or less and minimum of 1.5% where the available space for each animal is more than 400 square feet per animal) or managing corrals to maintain a dry surface;</p> <p>5) Scraping corrals and exercise pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions; and</p> <p>6) Rule 4570 Measures (only for facilities subject to Rule 4570)</p>		

## San Joaquin Valley Unified Air Pollution Control District

PM10

- 1) Concrete feed lanes and walkways;
  - 2) Scraping of open corrals every two weeks using a pull-type scraper in the morning hours except when prevented by wet conditions;
  - 3) Shade structures in open corrals;
  - 4) Feeding heifers in corrals near dusk (within 1 hour of dusk); and
  - 5) Windbreaks controlling dust from corrals (when feasible, supported by soil conditions, and there is adequate space at existing facilities); or
  - 6) An alternative measure with equivalent PM control (e.g. sprinkling/water application over at least 25% of the corral surface or average corral surface moisture content (wet-based)  $\geq 16\%$ ) may be applied as a replacement for the previous measures
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# San Joaquin Valley Unified Air Pollution Control District

NH3

- 1) Concrete feed lanes and walkways;
- 2) Flushing the lanes and walkways for the mature cows (milk and dry cows) four times per day and flushing lanes and walkways for the remaining animals once per day (or for dairies that cannot use a flush system, Scraping lanes and walkways for mature cows with an automatic scraper (or equivalent) four times per day and cleaning lanes and walkways for support stock (heifers) at least once per day);
- 3) Feeding all animals in accordance with National Research Council (NRC) or other District-approved guidelines;
- 4) Properly sloping corrals (minimum of 3% slope where the available space for each animal is 400 square feet or less and minimum of 1.5% where the available space for each animal is more than 400 square feet per animal) or managing corrals to maintain a dry surface; and
- 5) Scraping corrals and exercise pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions;

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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 5.8.4\***

Last Update: 3/17/2015

**Cow Housing - Loafing Barns**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	<p>1) Concrete feed lanes and walkways;</p> <p>2) Flushing the lanes and walkways for the mature cows (milk and dry cows) four times per day and flushing lanes and walkways for the remaining animals once per day (or for dairies that cannot use a flush system, Scraping lanes and walkways for mature cows with an automatic scraper (or equivalent) four times per day and cleaning lanes and walkways for support stock (heifers) at least once per day);</p> <p>3) Feeding all animals in accordance with National Research Council (NRC) or other District-approved guidelines;</p> <p>4) Properly sloping corrals (minimum of 3% slope where the available space for each animal is 400 square feet or less and minimum of 1.5% where the available space for each animal is more than 400 square feet per animal) or managing corrals to maintain a dry surface;</p> <p>5) Scraping pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions; and</p> <p>6) Rule 4570 Measures</p>		



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PM10

1) Concrete feed lanes and walkways;

2) Scraping exercise pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions;

3) Windbreaks controlling dust from corrals (when feasible, supported by soil conditions, and there is adequate space at existing facilities); or

4) An alternative measure with equivalent PM control (e.g. sprinkling/water application over at least 25% of the corral surface or average corral surface moisture content (wet-based)  $\geq 16\%$ ) may be applied as a replacement for the previous measures

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## San Joaquin Valley Unified Air Pollution Control District

NH3

- 1) Concrete feed lanes and walkways;
- 2) Flushing the lanes and walkways for the mature cows (milk and dry cows) four times per day and flushing lanes and walkways for the remaining animals once per day (or for dairies that cannot use a flush system, Scraping lanes and walkways for mature cows with an automatic scraper (or equivalent) four times per day and cleaning lanes and walkways for support stock (heifers) at least once per day);
- 3) Feeding all animals in accordance with National Research Council (NRC) or other District-approved guidelines;
- 4) Properly sloping corrals (minimum of 3% slope where the available space for each animal is 400 square feet or less and minimum of 1.5% where the available space for each animal is more than 400 square feet per animal) or managing corrals to maintain a dry surface;
- 5) Scraping pens every two weeks using pull-type scraper in the morning hours except when prevented by wet conditions.

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.5\***

Last Update: 12/18/2013

**Cow Housing - Area for Baby Calves (0-3 months)**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	1) Flushing or scraping to remove manure from the cow housing areas for the baby calves at least once per week; and  2) Feeding baby dairy calves in accordance with National Research Council (NRC) or other District-approved guidelines		
PM10	Calf Hutches (≥ 75% Control)		
NH3	1) Flushing or scraping to remove manure from the cow housing areas for the baby calves at least once per week; and  2) Feeding baby dairy calves in accordance with National Research Council (NRC) or other District-approved guidelines		

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.8.6\***

Last Update: 12/18/2013

**Liquid Manure Handling - Lagoon/Storage Pond**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Anaerobic treatment lagoon designed according to NRCS Guideline, and solids removal/separation system (mechanical separator(s) or settling basin(s)/weeping wall(s))	1) Aerobic treatment lagoon or mechanically aerated lagoon;  2) Covered lagoon digester vented to a control device with minimum 95% control	
NH3	All animals fed in accordance with NRCS or other District-approved guidelines		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.7\***

Last Update: 12/18/2013

**Liquid Manure Handling - Liquid/Slurry Land Application**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Irrigation of crops using liquid/slurry manure from the secondary lagoon/holding/storage pond preceded by an uncovered anaerobic treatment lagoon designed to meet Natural Resources Conservation Service (NRCS) standards	1) Irrigation of crops using liquid manure from an aerobic treatment lagoon or mechanically aerated lagoon (95% VOC control efficiency)  2) Irrigation of crops using liquid manure from a holding/storage pond after being treated in a covered lagoon/digester (80% VOC control efficiency)	
NH3	All animals fed in accordance with NRCS or other District-approved guidelines		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.8\***

Last Update: 12/18/2013

**Solid Manure Handling - Storage/Separated Solids Piles**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
NH3	All animals fed in accordance with NRCS or other District-approved guidelines		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.9\***

Last Update: 12/18/2013

**Solid Manure Handling - Land Application**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Rapid incorporation of solid manure into the soil after land application	<p>1a) Land Application of Solid Manure Processed by Either an Open or Enclosed Negatively-Aerated Static Pile (ASP) Vented to a biofilter (or equivalent) <math>\geq 80\%</math> destruction efficiency With Rapid Incorporation of the Manure Into the Soil After Land Application;</p> <p>1b) Land Application of Solid Manure Processed by In-Vessel/Enclosed Negatively-Aerated Static Piles vented to biofilter <math>\geq 80\%</math> destruction efficiency;</p> <p>2) Land Application of Solid Manure Processed by Open Negatively-Aerated Static Piles vented to biofilter <math>\geq 80\%</math> destruction efficiency;</p> <p>3) Land Application of Solid Manure Processed by an Open Negatively-Aerated Static Piles (ASP) (With Thick Layer of Bulking Agent or Equivalent) With Rapid Incorporation of the Manure Into the Soil After Land Application</p>	
NH3	Rapid incorporation of solid manure into the soil after land application, and all animals fed in accordance with NRCS or other District-approved guidelines		

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San Joaquin Valley  
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**Best Available Control Technology (BACT) Guideline 5.8.10\***

Last Update: 12/18/2013

**Feed Storage and Handling - Silage Piles**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	District Rule 4570 Measures for Silage		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.11\***

Last Update: 12/18/2013

**Feed Storage and Handling - Feed/TMR**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	District Rule 4570 Measures for Feed/TMR		

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San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.8.12\***

Last Update: 8/2/2018

**Dairy Manure Digester with Backup/Emergency Flare**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	Open flare (98% control efficiency)	Ultra-low emissions (ULE) enclosed flare (99% control efficiency)	

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