

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Boilers	NOx	VOC
1.1.1.a	Boiler: < or = 20.0 MMBtu/hr, Natural Gas or Propane Fired (> 30 Billion Btu/year)	15 ppmvd @ 3% O ₂ (0.018 lb/MMBtu)	Natural gas with LPG backup or propane fired
1.1.1.b	Boiler: < or = 20.0 MMBtu/hr, Natural Gas or Propane Fired (< 30 Billion Btu/year)	20.0 ppmvd @ 3% O ₂ (0.024 lb/MMBtu)	Natural gas with LPG backup or propane fired
1.1.2	Boiler: > 20.0 MMBtu/hr, Natural gas fired, base-loaded or with small load swings	9.0 ppmvd @ 3% O ₂ (0.0108 lb/MMBtu)	Natural gas fuel with LPG backup
1.1.3	Boiler - > 20.0 MMBtu/hr, Natural gas fired, with highly variable loads or high turndown ratios	15.0 ppmvd @ 3% O ₂ (0.018 lb/MMBtu)	Natural Gas Fired with LPG as a backup fuel
1.1.4	Digester Gas Fired Boiler - < 5 MMBtu/hr	Natural Gas as supplemental fuel	Natural Gas as supplemental fuel
1.1.5	Boiler-Dual Fuel for Facilities Requiring Liquid Backup Fuel	15 ppmvd @ 3% O ₂ for the primary fuel	Natural gas as primary fuel with low sulfur #2 fuel oil (0.05% S by weight or less) as backup fuel
1.1.6	Boiler - Fired with a High-Ammonia Fuel		gaseous fuel
1.1.7	Limited Use Boiler - > 20.0 MMBtu/hr, Natural Gas Fired, < 9 billion Btu/year	30.0 ppmvd @ 3% O ₂ (0.036 lb/MMBtu)	Natural gas fuel with LPG backup

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Steam Generators	NOx	VOC
1.2.1	Steam Generator (> or = 5 MMBtu/hr, Oil Field)	14 ppmvd @ 3% O2	Gaseous fuel
1.2.2.a	Steam Generator - >20.0 MMBtu/Hr Vertically Oriented w/Counterflow Heat Transfer (> 30 Billion Btu/year)	15 ppmvd @ 3% O2(0.018 lb/MMBtu)	Natural Gas or LPG
1.2.2.b	Steam Generator - >20.0 MMBtu/Hr Vertically Oriented w/Counterflow Heat Transfer (< 30 Billion Btu/year)	30.0 ppmvd @ 3% O2 (0.036 lb/MMBtu)	Natural Gas or LPG

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Fluidized-bed Combustors	NOx	VOC
1.3.1	Fluidized-Bed Combustor => 272 MMBtu/hr, Cogeneration Operation, Fired with Delayed Petroleum Coke (DPC)	28 ppmvd (as NO2 corrected to 3% O2), ammonia injection (less than 30 ppmvd ammonia slip) and natural gas and fuel oil as auxiliary fuel)	0.008 lb/MMBtu, natural gas and fuel oil as auxiliary fuel
1.3.2	Fluidized Bubbling Bed Combustor (biomass-fired)	0.10 lb/MMBtu, ammonia injection and natural gas auxiliary fuel	0.02 lb/MMBtu, natural gas auxiliary fuel

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Flares	NOx	VOC
1.4.1	Waste Gas Flare - 15.3 MMBtu/hr, Serving a Tank Vapor Control System	Steam-assisted or air-assisted when steam unavailable	Steam-assisted or air-assisted when steam unavailable
1.4.2	Waste Gas Flare - Incinerating Produced Gas	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable
1.4.3	Landfill Gas Vapor Collection System	0.06 lb-NOx/MMBtu	Flare with a control efficiency of (= or >) 98% or a controlled VOC (measured as methane) of (= or <) 20 ppmv @ 3% O ₂
1.4.4	Digester Gas-Fired Flare	enclosed flare and NOx emissions ≤ 0.06 lb/MMBtu	enclosed flare and VOC emissions ≤ 0.068 lb/MMBtu
1.4.5	Oilfield Waste Gas Incinerator	Natural gas auxiliary fuel	Natural gas auxiliary fuel
1.4.7	Waste Gas Flare - Oilfield Well Drilling and Testing Operation, < 50 MMscf/day	N/A	Elevated Flare with propane fueled pilot light
1.4.8	Refinery Flare	Engineered flare, with air or steam assisted combustion, staged combustion, and/or equivalent District approved controls. Flare shall be equipped with a flare gas recovery system for non-emergency releases.	Engineered flare designed with a VOC destruction efficiency of ≥ 98%. Flare design shall include air or steam assisted combustion, staged combustion, and/or equivalent District approved controls. Flare shall be equipped with a flare gas recovery system non-emergency releases.

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Furnaces	NOx	VOC
1.5.1	Fiberglass Production Furnace, Natural gas fired	Natural gas firing, electric heat boost, Low excess air (< 5%), and use of cullet > 15% annually	Natural gas firing and use of cullet (scrap glass) > 15% annually
1.5.2	Flat Glass Production Float Furnace, Natural Gas Fired	Tier 1 limit in Rule 4354 specific to furnace	gaseous fuel
1.5.4	Metal Melting Crucible/Furnace	Natural gas	Natural gas
1.5.5	Glass Bottle Label Curing Lehr - < 10 MMBtu/hr, Natural Gas Fired	Natural Gas or LPG Fuel	Natural Gas or LPG Fuel
1.5.6	Natural Gas-Fired Metal Heating Furnace	30 ppmv NOx @ 3% O2 at the final stack	30 ppmv NOx @ 3% O2 at the final stack
1.5.7	Glass Furnace Forehearth	natural gas/propane-fired and good combustion practices	natural gas/propane-fired and good combustion practices
1.5.8	Container Glass Production - Container Glass Distributor	Natural gas-fired container glass distributor with good combustion practices, using LPG backup fuel, and NOx emissions of 0.10 lb/MMBtu	Natural gas with LPG backup
1.5.9	Container Glass Production - Furnace	NOx emissions of < or = 1.5 lb/ton of glass pulled	VOC emissions of < or = 0.2 lb/ton of glass pulled
1.5.10	Container Glass Production - Container Glass Lehr	60 ppmv NOx @ 3% O2 or 0.073 lb-NOx/MMBtu	Natural gas with LPG backup

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Food & Ag Products Ovens, etc.	NOx	VOC
1.6.1.a	Tomato Roaster	Operation of burner within manufacturer's specification to minimize Nox emissions	Gaseous fuel
1.6.1.b	Vegetable Roasting Operation	Use of natural gas fuel and operating the burner within manufacturer's specification to minimize NOx emissions	Gaseous fuel
1.6.2	Oven - Tortilla, <= 5 MMBtu/hr	natural gas fired with optional LPG as backup fuel	natural gas fired with optional LPG as backup fuel
1.6.4	Oven - Snack Food	Natural gas and LPG as backup fuel	Natural gas and LPG as backup fuel
1.6.7	Pistachio Roasting Operation	Natural gas fuel	Natural gas fuel
1.6.8	Pistachio Nut Dryer	0.083 lb/MMBtu and natural gas fuel	Natural gas fuel
1.6.11	Dryer - Milk Spray, > or = 20 MMBtu/hr	Low NOx burner fired on natural gas with LPG as backup fuel	Natural gas with LPG as backup fuel
1.6.14	Dehydrator Tunnel - Fruit, Natural Gas Fired	< 0.16 lb/MMBtu	Natural Gas or Propane-Fired Burner
1.6.15	Dryer - Milk Spray, < 20 MMBtu/hr	20 ppmv @ 3% O2	Natural gas or propane
1.6.16	Dryer - Seed Processing, < 20 MMBtu/hr	20 ppmv	Natural gas with LPG backup
1.6.17	Food Preparation Oven, <800 degrees Fahrenheit, = or < 3.7 MMBtu/hr	20 - 30 ppmv @ 3% O2	Natural gas with LPG backup
1.6.19	Meat Smokehouse - Natural Gas-Fired, < or = 2 MMBtu/hr	Natural gas-fired oven/smokehouse with a natural gas-fired smoke generator	Natural gas-fired oven/smokehouse with a natural gas-fired smoke generator
1.6.20	Feather Meal Processing Rotary Dryer - Natural Gas Fired, High Ammonia Environment	Natural gas fired with LPG as a backup fuel	Natural gas fired with LPG as a backup fuel
1.6.21	Flake Cereal Dryer - < 20 MMBtu/hr, Conveyor-fed	30 ppmv @ 3% O2	Natural gas fuel
1.6.22	Wood Drying Kiln	natural gas	natural gas fuel
1.6.23	Pistachio, Almond, and Walnut Dryers (<10 MMBtu/hr and <2,160 hr/yr)	0.06 lb/MMBtu	Natural gas with LPG as backup fuel

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Food & Ag Products Ovens, etc.	NOx	VOC
1.6.24	Commercial Bakery Oven	30 ppmvd @ 3% O2 equivalent to 0.036 lb/MMBtu	VOC capture and 95% control efficiency
1.6.25	Blood Drying Operation	no determination	95% overall capture and control efficiency
1.6.27	Direct-Fired Conveyorized Hotdog Cooking Oven	70.0 ppmvd @ 3% O2 (0.085 lb/MMBtu)	Natural gas fuel

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Industrial Ovens	NOx	VOC
1.7.1	Oven - Polyethylene Curing, = or < 20 MMBtu/hr	Natural Gas or Propane Fuel	Natural Gas or Propane Fuel
1.7.2	Oven - Plastisol curing/fusing, = or < 2.5 MMBtu/hr	Natural gas fuel used in the fusing oven	Plastisol with 2% VOC by weight and natural gas fuel used in the fusing oven
1.7.3	Oven - Parts Cleaning, Burnoff or Burnout	Natural Gas Fuel	99% by weight control

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Petroleum Product Combustion Devices	NOx	VOC
1.8.1	Process Heater - Refinery, = or < 50.0 MMBtu/hr	30.0 ppmvd @ 3% O ₂ (0.036 lb/MMBtu)	good combustion practices
1.8.2	Process Heater - Refinery, > 50 MMBtu/hr	9.0 ppmvd @ 3% O ₂ (0.0108 lb/MMBtu)	Good combustion practices
1.8.3.a	Gas Dehydration - Glycol Reboiler (=> 5 MM scf/year)	Natural gas fired burner	collection and control
1.8.3.b	Gas Dehydration - Glycol Reboiler (< 5 MM scf/year)	Natural gas fired burner	no determination
1.8.4	Heater Treater < 20 MMBtu/hr, Natural Gas Fired	15 ppmv @ 3% O ₂	gaseous fuel and good combustion practices
1.8.5	Process Heater (non-refinery, < or = 20 MMBtu/hr)	12 ppmv @ 3% O ₂	natural gas with LPG backup or propane fired

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 1.0 External Combustion

BACT Code	Misc. Combustion Devices	NOx	VOC
1.9.3	Crematory - Natural Gas Fired	natural gas fuel	natural gas fuel and a secondary combustion chamber (afterburner) => 1600 degrees F
1.9.4	Dryer - Natural Gas Fired, Solvent-Laden Towels, = or < 950 lb towels/day	0.061 lb NOx /MMBtu	Natural gas
1.9.5	Gas Absorption Chiller - Natural Gas Fired,< 20 MMBtu/hr	0.036 lb NOx /MMBtu	Natural gas fuel
1.9.6	Asphalt-Surface-Repair Heater, Propane Fired, < 20 MMBtu/hr	0.15 lb NOx /MMBtu	Gaseous fuel
1.9.7	Auxiliary Burner System, Dryer, Natural Gas Fired,< 20 MMBtu/hr	no determination	Natural gas fuel
1.9.8	Municipal-waste Incinerator - < 750 lb waste/hr feed rate	Natural gas fuel	Multichamber incinerator with afterburner, Starved Air Design (> 1500 degrees Fahrenheit afterburner)
1.9.9	Molded Paper Products Dryer - Natural Gas Fired,< 20 MMBtu/hr	80 ppmv @ 3% O2	Natural gas fuel
1.9.10	Mineral Products Spray Dryer - Natural Gas Fired,< or = 20 MMBtu/hr	20 ppmv NOx @ 3% O2	Natural gas fuel
1.9.12	Transportable Diesel-Fired Nitrogen Vaporizer	diesel fuel achieving 155 ppmv @ 3% O2	0.2 lb/100 gal
1.9.13	Blood Meal Processing Ring Dryer Burner	Natural gas fired with LPG as a backup fuel	Natural gas fired with LPG as a backup fuel
1.9.14	Natural Gas Fired Dryer with High Turndown Ratio	= < 8.9 ppmvd @ 19% O2 (0.1 lb/MMBtu)	Natural gas with LPG backup
1.9.15	Jet Aircraft Fire Training Facility	Use of Natural Gas or LPG/Propane Fuel	Use of Natural Gas or LPG/Propane Fuel

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 2.0 Remediation and Waste Disposal

BACT Code	Soil Remediation	NOx	VOC
2.1.1	Soil Remediation Operation - Thermal Oxidizer	N/A	95% or greater control efficiency
2.1.2	Soil Remediation Operation - I.C. Engine	LPG auxiliary fuel and 3 - way catalytic converter	95% control efficiency
2.1.3	Soil Remediation Operation - Carbon Adsorption	N/A	95% control efficiency
2.1.4	Extracted Soil Remediation using Steam Stripping/Flushing and 4-Stage Carbon Adsorption, > or = 40 tons/hr	N/A	95% Control efficiency
2.1.6	Soil Remediation Operation - Boiler, = or < 4.2 MMBtu/hr	0.036 lb/MMBtu (30 ppmv) when gas firing and 0.048 lb/MMBtu (40 ppmv) when firing diesel backup fuel	95% control efficiency
2.1.7	Soil Remediation Operation - Thermal Soil Desorber	Low NOx burner and natural gas/LPG firing	95% control efficiency

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 2.0 Remediation and Waste Disposal

BACT Code	Waste Disposal	NOx	VOC
2.2.1	Non-hazardous Wastewater Receiving, Treatment, and Impoundment	N/A	Bays used to settle out solids and to skim oil from waste water. Recovered oil pumped to storage tank venting to carbon canisters or drums. Treated wastewater discharged to impoundments for evaporation.
2.2.2	Landfill - VOC-Contaminated Soil	N/A	Daily clean-fill cover (minimum one inch of compacted, District approved soil) onto the exposed VOC contaminated soil.

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 3.0 Internal Combustion Engines

BACT Code	Emergency IC Engines	NOx	VOC
3.1.1	Emergency Diesel IC Engine, <175 hp	Certified emissions of 6.9 g/bhp-hr or less	Positive crankcase ventilation
3.1.2	Emergency Diesel I.C. Engine (= or > 175 hp and < 400 hp)	Certified NOx emissions of 6.9 g/bhp-hr or less.	Positive crankcase ventilation
3.1.3	Emergency Diesel I.C. Engine = or > 400 hp	Certified emissions of 6.9 g/bhp-hr or less	Positive crankcase ventilation
3.1.4	Emergency Diesel I.C. Engine Driving a Fire Pump	Certified NOx emissions of 6.9 g/bhp-hr or less	Positive crankcase ventilation [unless it voids the Underwriters Laboratories (UL) certification]
3.1.5	Emergency Gas Fired I.C. Engine - < 132 hp, Rich Burn	natural gas fuel	Positive crankcase ventilation (PCV)
3.1.6	Emergency Gas Fired I.C. Engine > or = 132 hp, Rich Burn	Natural gas, LPG or propane as fuel	Positive Crankcase Ventilation(PCV), and natural gas, LPG, or propane as fuel
3.1.8	Emergency Gas-Fired IC Engine - > or = 250 hp, Lean Burn	1.5 g/bhp-hr	1.0 g/bhp-hr

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 3.0 Internal Combustion Engines

BACT Code	Limited/Special Use Engines	NOx	VOC
3.2.1	Diesel I.C. Engine - > 449 hp, used for testing of crankcase emission controls	NOx emissions of 7.2 grams/hp-hr or less OR Turbocharger with intercooler or aftercooler and timing retarded 4° relative to standard timing	PCV or 90% crankcase control device
3.2.2	Limited Use (1,000 hr/yr max) Diesel-Fired IC Engine - Located at a Stationary Source, non-emergency, non-Transportable, and not used to drive an electrical generator	6.9 grams/bhp-hr	Catalytic filter; thermal oxidizer, or equal
3.2.4	Transportable and Multi-location Diesel I.C. Engine	Certified NOx emissions of 6.9g/bhp-hr or less	Positive Crankcase Ventilation (PCV) or Crankcase Control Device that is at least 90% efficient
3.2.5	Diesel I.C. Engine - Used for starting a Gas Turbine	Certified NOx emissions of 6.9g/bhp-hr or less	Positive Crankcase Ventilation (PCV) or Crankcase Control Device that is at least 90% efficient
3.2.7	Diesel-Fired IC Engine - Low Use (= or < 1,000 hr/yr max)	Certified NOx emissions of 6.9g/bhp-hr or less.	Positive crankcase ventilation(PCV).
3.2.8	Limited Life (1,000 hr total max life) Diesel-Fired IC Engine - < 600 bhp, and Not Used to Drive an Electrical Generator	Certified NOx emissions of 7.2 g/bhp-hr or less OR Turbocharger with intercooler or aftercooler and timing retarded 4 deg relative to standard timing OR Turbocharger with intercooler or aftercooler and injection timing not to be greater than 16 deg BTDC (this option may be used if it is consistent with District policy GEAR 16-1, "Determination of Injection Timing Retard for Diesel IC Engines", dated 08/14/96)	Positive crankcase ventilation(PCV)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 3.0 Internal Combustion Engines

BACT Code	Fulltime IC Engines	NOx	VOC
3.3.1	Diesel Fired IC Engine - < 600 hp, Transportable Metal Contaminated Soil Processing Operation	NOx emissions of 7.2 g/hp-hr or less	Positive crankcase ventilation or 90% crankcase control device(PCV)
3.3.12	Fossil Fuel Fired IC Engine > 50 hp	9 ppmvd @ 15% O2, 0.15 g/bhp-hr, or 0.5 lb/MW/hr	25 ppmvd @15% O2, 0.15 g/bhp-hr, or 0.5 lb/MW-hr
3.3.13	Waste Gas Fired IC Engine - > 50 hp	50 ppmvd @ 15% O2, 0.6 g/bhp-hr, or 1.9 lb/MW-	130 ppmvd @ 15% O2,0.6 g/bhp/hr, or 1.9 lb/MW-hr
3.3.14	Full-time Rich-burn IC Engine, Syngas-fueled	9 ppmvd at 15% O2	25 ppmvd at 15% O2

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 3.0 Internal Combustion Engines

BACT Code	Gas Turbines	NOx	VOC
3.4.1	Gas Turbine - = or > 47 MMBtu/hr, Variable Load, Without Heat Recovery	8 ppmvd @ 15% O2 (Steady State) and 12 ppmv @ 15% O2 (Transitional State)	0.007 lb/MMBtu
3.4.2	Gas Turbine - = or > 50 MW, Uniform Load, with Heat Recovery	2.5 ppmv dry @ 15% O2 (1-hr average, excluding startup and shutdown)	2.0 ppmv @ 15% O2
3.4.3	Gas Turbine with Heat Recovery (= > 3 MW and = < 10 MW)	2.5 ppmv @ 15% O2, based on a three-hour	2.0 ppmv @ 15% O2, based on a three-hour average
3.4.4	Limited Use (< 877 hours per year) Gas Fired Turbine = or < 26 MW, without Heat Recovery	25 ppmvd @ 15% O2	PUC quality natural gas with fuel oil #2 as backup.
3.4.6	Gas Turbine - > 10 MW and < 50 MW, Uniform Load, with Heat Recovery	2.5 ppmvd @ 15% O2, based on a three-hour rolling average	2.0 ppmvd @ 15% O2
3.4.7	Gas Turbine - = or > 50 MW , Uniform Load, without Heat Recovery	5.0 ppmvd @ 15% O2, based on a three-hour average	2.0 ppmvd @ 15% O2, based on a three-hour average
3.4.8	Gas Turbine - < 50 MW, Uniform Load, Without Heat Recovery	5.0 ppmvd @ 15% O2, based on a three-hour average	2.0 ppmvd @ 15% O2, based on a three-hour average
3.4.9	Gas Turbine - < 3 MW, Uniform Load, With or Without Heat Recovery	9.0 ppmvd @ 15% O2, based on a three-hour average	5.0 ppmvd @ 15% O2, based on a three-hour average
3.4.10	Oxy-Fuel Combustor Powering a Steam Turbine, Power Output < 3 MW, without Heat Recovery, Uniform and Variable Load, Research Facility	5.3 ppmvd @ 15% O2, equivalent to 0.3 lb/MW-hr	5.0 ppmv @ 15% O2, equivalent to 0.1 lb/MW-hr

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

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Dry Cleaners	NOx	VOC
4.1.2	Petroleum Solvent Dry Cleaning	N/A	dry-to-dry machine vented to vapor control device

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Motor Vehicle Coating	NOx	VOC
4.2.1	Automotive Spray Painting Operation, < 5.0 MMBtu/hr	Natural gas or LPG fired burner	HVLP spray guns, coatings, cleaning materials, and solvents compliant with District Rule 4612
4.2.2	Group II Vehicles Spray Painting Operation - Vehicles requiring a Color Match	N/A	Use coatings with a VOC content of 3.5 lb/gal (less water and exempt compounds) or less, and Pretreatment Wash Primers with a VOC content of 6.0 lb/gal (less water and exempt compounds) or less, HVLP (or equivalent) spray equipment, and using an enclosed spray gun cleaning system
4.2.3	Mobile Equipment Coating Operation - Multiple Location, <= 20,000 lb-VOC/year	N/A	Coatings and cleaning materials, and solvents compliant with District Rule 4612, HVLP spray gun
4.2.4	Trailer Coating Operation	N/A	Using topcoats with a low VOC content (2.8 lb/gal less water and exempt compounds) and pretreatment wash primers with a low VOC content (6.0 lb/gal less water and exempt compounds)
4.2.5	Limited Aircraft Coating Operation - Maintenance and Refinishing of Metal Parts on Aircraft, < 20 Gallons/day.	N/A	Use of Coating compliant with Rule 4605, HVLP application equipment, and an enclosed gun cleaner, or equal.
4.2.6	Aerospace Parts Coating Operation	N/A	The use of an enclosed gun cleaner and coatings with a VOC content (less water and exempt compounds) lower than the following: Primers < 6.4 lb VOC/gal Topcoats < 5.2 lb VOC/gal
4.2.7	Aerospace and Metal Parts Coating Operating - Solid Film Lubricant for computer, medical specialty, and aerospace metal parts and products	N/A	Solvent-based solid film lubricant coating with a VOC content of 6.44 lb/gal (less water and exempt compounds), or lower.

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Motor Vehicle Coating	NOx	VOC
4.2.8	Recreational Marine Vessel (Pleasure Craft) Coating	N/A	Use of materials with VOC contents (less water and exempt compounds) as indicated, or lower: - antifouling coatings: aluminum substrate: 440 g/l, - other substrates: 330 g/l, - high gloss coatings: 340 g/l - extreme high gloss coatings: 490 g/l - pretreatment wash primers: 420 g/l - primers: 340 g/l - all other coatings: 340 g/l
4.2.10	Motor Vehicle Chassis Coating Operation -Electrodeposition with a Curing Oven.	N/A	95 % control system serving coating tank and curing oven

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Metal Parts and Products Coating	NOx	VOC
4.3.1	Metal Parts and Products Coating - Air Dried (excluding specialty coating as defined in Rule 4603)	N/A	Coatings with a VOC content of 2.8 lb/gal or less; HVLP (or equivalent) spray equipment; and an enclosed spray gun cleaning system
4.3.2	Metal Parts and Products Coating - Heat Dried	N/A	HVLP guns, the use of an enclosed gun cleaner & coatings compliant with District Rule 4603
4.3.3	Metal Product Coating - Metal Rod Dip Coating, Air-Dried, = or > 150 gallons/month coating	N/A	Dip coating with low VOC content of 3.5 lb/gallon (less water and exempt compounds), Dip tank covered when not in use
4.3.5	Metal Parts and Products Coating Operations (using specialty coatings as defined by Rule 4603)	N/A	Using coatings with a VOC content of 3.5 lb/gal (less water and exempt compounds) or less, using HVLP spray equipment (or other application methods listed in Rule 4603), and using an enclosed spray gun cleaning system
4.3.6	Metal Products Coating - Shipping/Storage Containers	N/A	Coating with a VOC content of 2.8 lb/gal (less water and exempt compounds) or less; HVLP (or equivalent) spray equipment
4.3.7	Powder Coating Operation = or >1.5 MMBtu/hr	Natural gas fired fusing oven	Low-VOC Coating (< 1.5% VOC by weight) and Natural gas fired fusing oven
4.3.8	Metal Product Coating - Large Steel Structures, < 64 lbVOC/day, Outdoor Coating Operation	N/A	Use of coatings with a VOC content (less water and exempt compounds) as indicated, or lower: - for General Coating: 2.5 lb/gal, - for General Coating, when the ambient temperature is at or below 60 F: 2.8 lb/gal, and - for Specialty Coatings - Extreme Performance or High-Gloss 3.5 lb/gal and use of an HVLP spray gun or equivalent application method.
4.3.9	Metal Product Coating - Large Steel Structures, = or < 64 lb VOC/day, Indoor Operation	N/A	Coating with a low VOC content (2.5 lb/gal less water and exempt compounds) and HVLP spray gun or equivalent application method.

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Metal Parts and Products Coating	NOx	VOC
4.3.10	Metal Products Coating - Sheet Metal for Can Manufacturing, Major Source for VOC	20 ppmv @ 3% O ₂	VOC capture and thermal incineration
4.3.11	Metal Products Coating - Touch-up, 6.2 lb VOC/day	N/A	Coating with 1.9 lb VOC/gal (less water and exempt compounds), HVLP gun
4.3.12	Metal Products Coating - High Gloss, Air-Dried, = or < 30 lb/day Facility-wide VOC coating emissions	N/A	HVLP spray guns, coatings compliant with Rule 4603 and enclosed paint gun cleaners
4.3.13	Metal Products Coating - Metal Frames and Exterior Wooden Wall Panels for Modular Buildings	N/A	Metal frames: use of Rule 4603 compliant coatings Exterior wooden wallpanels: use of Rule 4606 compliant coatings (This control is Achieved in Practice only for facilities subject to Rule 4603/4606)
4.3.14	Side Seam Stripe Spray Coating Operation for 3-Piece Metal Can Manufacturing at a Facility-wide Can Manufacturing Rate of >= 180,000 Can/hr	N/A	VOC capture and control system at the side seam stripe coater with a fume hood (71% capture efficiency) and the curing tunnel exhaust stack all vented to a thermal or catalytic oxidizer (70% overall control efficiency).
4.3.15	Dip Coating of Steel Joists	N/A	Use of coatings with a maximum VOC content of 3.32 lb/gal for coatings with a viscosity, as applied, of less than or equal to 45.6 centistokes at 78 F and an average dry-film thickness of less than or equal to 2.0 mils, or 2.8 lb/gal for coatings with a viscosity, as applied, of more than 45.6 centistokes at 78 For an average dry-film thickness of greater than 2.0 mils with no additional control
4.3.17	"Bright Dip" Aluminum Surface Finishing Operation	97% capture and 70% control	N/A

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Wood Parts and Products Coating	NOx	VOC
4.4.1	Wood Products Coating Operation - Non-Continuous Batch Coating	N/A	Utilizing HVLP or equivalent application equipment and using coatings compliant with District Rule 4606
4.4.2	Wood Products Coating Operation - Continuously-fed Booth, = or < 5000 square feet material coated/day	N/A	Rule 4606 compliant coatings and application equipment
4.4.3	Wood Products Coating Operation - Custom Replica Furniture, < or = 400 lb VOC/day	N/A	Use of coating(s) with a VOC content (less water and exempt compounds) as indicated, or lower: - For Sanding Sealers and Clear Topcoats: 5.7 lb/gal - For High-solids Stain and Pigmented Coatings: 5.0 lb/gal and use of HVLP application equipment, or equivalent method, and a enclosed spray gun cleaner if using a VOC containing solvent.
4.4.4	Wood Products Coating Operation - Exterior Wooden Wall Panels for Modular Buildings	N/A	Utilizing HVLP application equipment or other application methods listed in District Rule 4606 and using coatings compliant with District Rule 4606 (only for those facilities subject to Rule 4606)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Misc. Coating	NOx	VOC
4.5.1	Paper Roll-Coating - Heatset	N/A	Use of coatings/inks with a VOC content compliant with Rule 4607 (Graphic Arts)[This control is achieved-in-practice only for facilities subject to District Rule 4607]
4.5.3	Coating Operation - Fiberglass Utility Poles, = or > 90 lb/day of VOC emissions	N/A	Low VOC coatings - 10% VOC by wt, HVLP application equipment, enclosed equipment cleanup or water based detergent
4.5.4	Plastic Parts and Products Coating	N/A	The use of HVLP spray guns, an enclosed gun cleaner, and low-VOC coatings (2.8 lb VOC/gal, as applied, less water and exempt solvents)
4.5.5	Coating Operation - Small Concrete Products	N/A	Use of material(s) with a VOC content (less water and exempt compounds) as indicated, or lower: - For Glossy finish: 2.8 lb/gal - For Matte Finish: 1.7 lb/gal - For Waterproofing Sealer: 3.3 lb/gal and use of HVLP application equipment, or equivalent
4.5.6	Coating Operation - Clay-based, Cat Litter, Heat Dried	N/A	Use of low VOC coating (0.69lb/gal (less water and exempt compounds) or less)
4.5.8	Weatherproofing Coating Application (Electronic Components)	N/A	Dip coating and the use of weather proofing coatings with VOC contents of 6.9 lb/gal or less (as applied, less water and exempt compounds)
4.5.9	Vinyl Window and Patio Door Assembly Glazing Table	N/A	utilize glazing material with VOC content, excluding water and exempt compounds, equal to or less than 15 g/l (0.125 lb/gal)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Fuel Dispensing	NOx	VOC
4.6.1	Motor Vehicle Gasoline Storage and Dispensing Operation	N/A	CARB certified Phase I and Phase II vapor recovery systems
4.6.3	Motor Vehicle Gasoline Storage and Dispensing Operation - Bulk plants with Diesel fuel switch loading	N/A	CARB certified 95% effective Vapor Recovery
4.6.4	Non-Motor Vehicle Fuel Storage and Dispensing Operation	N/A	CARB certified Phase I Vapor Recovery System
4.6.5	Aviation Fuel Dispensing Facility	N/A	CARB certified Phase I vapor recovery system

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Printing & Graphic Arts	NOx	VOC
4.7.1	Offset Lithographic Printing - Publication Printing, High-end Graphics, Heatset using with a Drying Oven	Natural gas fuel used in the drying oven	Using low VOC fountain solutions and inks compliant with District Rule 4607 (Graphic Arts) (This control is achieved in practice only for facilities subject to Rule 4607.)
4.7.2	Offset Lithographic Printing - Non-heat set Press	N/A	Using materials with the following VOC contents: less than 5% VOC by weight for inks (less water and exempt compounds) and less than 6% by volume for fountain solutions; for high end graphics, less than 30% VOC by weight for inks (less water and exempt compounds) and less than 8% by volume for fountain solutions
4.7.3	Flexographic Printer/Gluer - Corrugated Box	N/A	The use of inks with VOC content not exceeding 0.3 lb/gal (less water and exempts solvents) and the use of adhesives not exceeding 0.06 lb/gal (less water and exempt solvents)
4.7.4	Flexographic Printer - Corrugated Boxes, High-End Graphics and Metallic Inks for Porous Substrates	natural gas fuel	The use of inks with a VOC content not exceeding 1.1 lb/gal (less water & exempt compounds) for high-end graphics and use of inks with a VOC content not exceeding 2.5 lb/gal (less water & exempt compounds) for metallic inks
4.7.5	Flexographic printing - Heatset inks on low-porosity glossy paper and plastic film	N/A	Inks with a VOC content of = or < 2.5 lb/gal (less water and exempt compounds)
4.7.6	Screen Printer with natural gas-fired dryer	N/A	Use of inks with a VOC content compliant with Rule 4607 (Graphic Arts) [This control is achieved in practice only for facilities subject to District Rule 4607]
4.7.7	Screen Print - Ultraviolet (UV) Coating with Curing Lamp(s)	N/A	UV curing unit using inks with a VOC content not to exceed 3% by weight (less water and exempt compounds).

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Printing & Graphic Arts	NOx	VOC
4.7.9	Flexographic Printer - High-end graphics printing on Clay coated Paper, = or < 23 tons VOC/year	N/A	Using materials with a VOC content, less water and exempt compounds, as indicated, or lower <ul style="list-style-type: none"> • for metallic inks: 3.3 lb/gal • for non-metallic inks: 1.0 lb/gal • varnish: 0.63 lb/gal and practicing evaporation minimization methods, which include keeping all solvents and solvent-laden cloths/papers, not in active use, in closed containers.
4.7.10	Printing Plate Manufacturing	N/A	Use of processor solvents with a VOC content, less water and exempt compounds, of 7.3 lb/gal, or lower, and Practicing evaporation minimization methods, which include keeping all solvents and solvent-laden cloths/papers, not in active use, in closed containers.
4.7.11	Rotogravure Printing Operation	N/A	Inks with a VOC content of < 2.5 lb/gal (Less water and exempt compounds)
4.7.12	Flexographic Printing - High-end graphics, Heat-set Inks, on High-Porosity Material	N/A	Use of coating(s) with a VOC content (less water and exempt compounds) as indicated, or lower: <ul style="list-style-type: none"> - Fluorescent Inks: 2.5 lb/gal. - Thermal Inks: 0.3 lb/gal. - Other Inks: 2.4 lb/gal.
4.7.13	Glass and Plastic Bottle Printing – Heat-dried	N/A	Using materials with a VOC content, less water and exempt compounds, as indicated, or lower <ul style="list-style-type: none"> • High-end graphics, screen printing: 3.3 lb/gal • High-end graphics, non-screen printing: 2.5 lb/gal • Non-high-end graphics: 3% by weight (UV-cured inks). And practicing evaporation minimization methods, which include keeping all solvents and solvent-laden cloths/papers, not in active use, in closed containers.

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Printing & Graphic Arts	NOx	VOC
4.7.14	Flexographic UV Printing - High End Printing of Labels, Tags, and Forms**	N/A	Use of coating with a VOC content (less water and exempt compounds) as indicated , or lower: <ul style="list-style-type: none"> • For UV-cured Coatings: 1% VOC by Weight, and evaporative minimization methods, which include keeping all solvents and solvent-laden cloths/papers, not in active use, in close containers.
4.7.15	Flexographic Printing - Corrugated boxes, Low-endgraphics printing, = or < 50.4 lb VOC/day	N/A	Use of coating with a VOC content (less water and exempt compounds) as indicated, or lower: - 0.3 lb/gal and evaporative minimization methods, which include keeping all solvents and solvent-laden cloths/papers, not in active use, in closed containers.
4.7.16	Rotogravure Printing Operation Low Porosity Substrate - High End Graphics	N/A	inks, coatings, and adhesives with a VOC content of <= 30% (less water and exempt compounds)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Resin, Fiberglass & Plastic Products	NOx	VOC
4.8.1	Polyester Resin Products - Fiberglass Boat Manufacturing = < 120 gal resin/day	N/A	Low VOC resin (< or = 35% by wt), airless spray gun or hand layup or equivalent, non-VOC containing cleanup solvents
4.8.5	Polyester Resin Products - Chop Spray, Spray, and Hand Lay-Up, < or = 600 gallons resin/day	N/A	Low-VOC resin compliant with District Rule 4684
4.8.7	Fiberglass Products Manufacturing - Fiberglass Mat Dryer and Curing Oven	Natural gas with LPG as a secondary fuel.	98% control efficiency
4.8.8	Polyester Resin Application - Boat & Marine Vessel Repair Operations (Pleasure Crafts Only)	N/A	use of specialty resins and gel coats containing no more than 48% monomer by weight.
4.8.9	Fiberglass Products Manufacturing - Fiberglass Mat Forming	N/A	Low VOC Resin (containing less than 0.25% formaldehyde and less than 0.45% methanol) and White water (containing less than 0.1% VOC).
4.8.10	Expandable Polystyrene (EPS) Molding Operation -Pre-expander unit, = or < 20 Tons/day	N/A	Capture and Thermal Oxidation
4.8.12	Expanded Polystyrene (EPS) Products - Reclaim Extrusion Line	N/A	95% control efficiency
4.8.13	Polyethylene Foam Extrusion Operation	N/A	95% control efficiency
4.8.14	Expanded Polystyrene Products - Fluff Storage Silo, = or < 18 tons of foam/day	N/A	90% capture and 95% destruction efficiency
4.8.15	Existing Polystyrene Foam Sheet Extrusion Operation – Using VOC Blowing Agents to Produce Food Service Products.	N/A	95% destruction efficiency
4.8.17	Polyethylene Products Manufacturing - Rotational Molding	N/A	Mold Release Agents with VOC content not exceeding 6.5 lb/gal (less water and exempt compounds).

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Resin, Fiberglass & Plastic Products	NOx	VOC
4.8.18	Expanded Polystyrene Foam Products - Vertical Water-quenched extruder; Food-grade products.	N/A	Total emissions of 0.94lb VOC/100 lb of raw material processed.
4.8.19	Fiberglass-reinforced Composite Products – Pultruded, heat set resin products.	N/A	Use of polyester resins with 35% monomer by weight, or less, and Use of epoxy-based resins with 1% VOC by weight, or less, and Use of a covered, resin-product cooling bath.
4.8.20	Phenolic Urethane Products - No-Bake Mold Manufacturing	N/A	VOC content of the binder not to exceed 0.07 lb VOC/lb of binder.
4.8.21	Corrosion-Resistant Polyester Resin Application - Metal Products, < 75 gallons/day	N/A	Use of corrosion-resistant resin containing no more than 48% monomer by weight, mechanical non-atomizing resin application, enclosed gun cleaner
4.8.22	Polyisocyanurate Free Rise and Restrained Rise Lines	N/A	90% capture and 95% control of manufacturing emissions
4.8.23	Finished Product Storage Area	N/A	uncontrolled
4.8.24	Fiberglass Mold Manufacturing (Tooling) Operation	N/A	non-atomizing application for polyester resins, gel coat application equipment compliant with District Rule 4684, and tooling resins ad gel coats with a monomer content not exceeding 48%

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Adhesives	NOx	VOC
4.9.1	Adhesives Application Operation - Tire Retreading	N/A	Use of adhesives with a VOC content of 5.2 lb/gal (less water and exempt compounds) or less
4.9.2	Adhesive Application Operation - Rubber Parts and Products, Brush Applied	N/A	Using adhesives with a VOC content of 7.0 lb/gal or less (less water and exempt compounds)
4.9.3	Adhesive Application Process - Foam Products	N/A	Adhesives with a VOC content of = or < 1.0lb/gallon (less water and exempt compounds)
4.9.4	Adhesive Application Process - Non-Porous Materials, Specialty Contact Adhesives, Spray Application	N/A	Using adhesives with a VOC content of 540 grams/liter or less (less water and exempt compounds) until July 1, 2000. Using adhesives with a VOC content of 400 grams/liter or less (less water and exempt compounds) after July 1, 2000.
4.9.5	Adhesive Application Process - Wooden case manufacturing	N/A	Use of adhesives with a VOC content compliant with Rule 4653(Adhesives) [This is achieved in practice only for those facilities subject to District Rule 4653.]
4.9.6	Paper Carton Manufacturing - Printing and Adhesive Application	N/A	Adhesive with a VOC content of = or < 5.7 lb/gal (excluding water and exempt compounds) and Inks with a VOC content of = or < 2.5 lb/gal (excluding water and exempt compounds)
4.9.7	Corrugated PVC Sheet Products - Special Contact Adhesive, Roller Applied	N/A	PVC welding adhesive compliant with District Rule 4653
4.9.8	Adhesive Application Process – Wooden Door Assembly, Roller applied	N/A	Use of an adhesive with a VOC content of 5.0grams/liter (less water and exempt compounds), or less.
4.9.9	Adhesive Application Process - Vinyl Door and Window Assembly, Non-Spray Applied	N/A	Use of adhesive with VOC content of 3.0 g/l (less water and exempt compounds), or less for automated adhesive application and assembly processes 2) Use of adhesive with VOC content of 76.5 g/l (less water and exempt compounds), or less for manually applied adhesive operations when assembling custom window assemblies

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Adhesives	NOx	VOC
4.9.10	Adhesive Application for Multi-Wall Packaging Manufacturing	N/A	Adhesives with a VOC content of <= 0.2 lb/gal (excluding water and exempt compounds) for the adhesion of plastic film to porous material adhesives with a VOC content of <= 0.13 lb/gal (excluding water and exempt compounds) for the adhesion of porous materials
4.9.11	Adhesive Application Operation - Bonding of Fiberglass Boat Hulls and Decks, Non-Atomizing Application	N/A	Use of adhesives with VOC content of 80 grams/liter or less (less water and exempt compounds)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Cleaning & Degreasing	NOx	VOC
4.10.2	Cold cleaner/degreaser - Metal Products, Batch Loaded, = or < 1 gal/day solvent usage	N/A	Drainage to Minimize Carryout Emissions, high freeboard ratio
4.10.3	Parts Cleaner - Rubber Parts and Products	N/A	Use of solvents with VOC content (less water and exempt compounds) as indicated, or lower: - for Natural Rubber: 6.3 lb/gal, - for Nitrile, SBR, or chlorobutyl Rubber: 6.71 lb/gal, - for Neoprene Rubber: 7.25 lb/gal and evaporative minimization methods, which include - use of controlled flow dispensers (e.g. squeeze bottles) and - keeping all cloth/papers and solvent, which are not in active use, stored in closed containers.
4.10.5	Medical Grade Silicon Products - Wipe Cleaning Operation	N/A	Use of solvents with VOC content (less water and exempt compounds) of 7.2 lb/gal, or lower, and evaporative minimization methods, which include - use of controlled flow dispensers (e.g. squeeze bottles) and - keeping all cloth/papers and solvent, which are not in active use, stored in closed containers.
4.10.6	Metal Parts, Open-top, Powder Coating Stripping Tank	N/A	Use of solvent with a VOC Content (less water and exempt compounds) of 0.75 lb/gal, or less.
4.10.7	Metal Parts and Products Cleaning - Open-top, Heated, Vapor Degreaser	N/A	95% control (Open top degreaser w/refrigerated freeboard chiller, part movement < 2.2 ft/sec, and holding parts in degreaser until dry, or equal)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Misc. Manufacturing	NOx	VOC
4.11.3	Cardboard Box Laminator	N/A	use of water-based adhesive with a VOC content (less water and exempt compounds) of 0.021 lb/gal or less
4.11.4	Organic Liquid Storage Tanks - Non-petroleum and non-petrochemical facilities, = or < 19,800 gallons capacity	N/A	Pressure/vacuum valve set within 10% of the maximum allowable tank working pressure.
4.11.6	Railcar Unloading - Transfer of Non-petroleum Organic Liquids into Delivery Vehicles	N/A	Bottom loading with vapor recovery system
4.11.7	Solvent-Laden Towel Cleaning - Counting Station, < 950 lb towels/day	N/A	Evaporative loss minimization (Store solvent-laden towels in closed containers).
4.11.10	Circuit Board Manufacturing – Flux Application for Wave Soldering Machine	N/A	Use of flux material(s) with a VOC content of 6.3 lb/gal (less water and exempt compounds), or lower.
4.11.11	Fructose Reclamation System - Process Vent	N/A	Proper operation and maintenance of the reclamation system as recommended by the equipment manufacturer(s)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 4.0 Evaporative Loss Sources

BACT Code	Chemical Processing	NOx	VOC
4.12.1	Chemical Plants - Valves & Connectors	N/A	Leak defined as a reading of methane, in excess of 100ppmv above background when measured at a distance of one(1) cm from the potential source and an Inspection and Maintenance Program pursuant to District Rule 4451
4.12.2	Chemical Plants Pump and Compressor Seals	N/A	Leak defined as a reading of methane, in excess of 500ppmv above background when measured at a distance of one(1) cm from the potential source and an Inspection and Maintenance Program pursuant to District Rule 4452
4.12.4	Ethanol Fermentation Process Tanks Including: Fermentation Tanks and Beerwell Storage Tanks	N/A	99.5% VOC emissions control efficiency (fermentation wet scrubber vented to a CO12 recovery plant with a condenser and a high pressure scrubber; or equivalent)
4.12.5	Emission Units (Excluding Wet Cake Dryer) Involved in the Ethanol Distillation and Wet Cake Process	N/A	95% VOC emissions control efficiency
4.12.6	Ethanol Manufacturing Facility Distillers Dried Grains with Solubles (DDGS) Dryer	33 ppmv NOx @ 3% O2 (0.04 lb-NOx/MMBtu)	98% by weight capture and control

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 5.0 Food and Agriculture Industry

BACT Code	Nut & Grain Processing	NOx	VOC
5.2.6	Feed Mill - High Moisture Grain Pelletizing & Drying Operation	64.2 ppmv @ 3% O2 (0.077lb/MMBtu/hr) Natural gas burner	Natural Gas fuel
5.2.8	Propylene Oxide Fumigation - Fumigation Chamber	N/A	98% Control Efficiency
5.2.10	Wet Corn Mill - High Moisture Gluten Dryer	N/A	VOC capture and control with carbon adsorption or biofiltration system

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 5.0 Food and Agriculture Industry

BACT Code	Cotton & Fiber Processing	NOx	VOC
5.3.2	Cotton Gin - Natural Gas-Fired Dryer, = or < 8 MMBtu/hr Burner	Natural gas/LPG burner(0.1 lb/MMBtu)	Natural gas/LPG fuel

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 5.0 Food and Agriculture Industry

BACT Code	Fruit, Vegetable, Seed Processing, & Equipment	NOx	VOC
5.4.12	Perishable Commodity Methyl Bromide Fumigation Chamber	N/A	minimize use of fumigant (i.e. use no more than product specifications recommend); and air-tight fumigation chamber
5.4.13	Wine Storage Tank	N/A	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
5.4.14	Wine Fermentation Tank	N/A	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F

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

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 5.0 Food and Agriculture Industry

BACT Code	Snack Food Processing	NOx	VOC
5.5.4	Polishing Operation	N/A	95% overall control

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 5.0 Food and Agriculture Industry

BACT Code	Misc. Processes & Equip	NOx	VOC
5.6.1	Yeast Fermenter	N/A	Process controls limiting ethanol formation 75% - 90% control efficiency
5.6.2	Animal Feed Supplement Manufacturing - Palm Oil & Calcium Oxide Process	N/A	70% control efficiency
5.6.3	Animal Feed Supplements - Steam-Heated Molasses Cooker	N/A	95% control efficiency
5.6.4	Bakery Waste Products Dryer	no determination	thermal/catalytic incineration
5.6.5	Broiler House	N/A	19% control

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 6.0 Mineral and Biomass Products

BACT Code	Sand & Gravel Operations	NOx	VOC
6.1.3	Sand Dryer - Fluidized Bed	Natural gas fuel with LPG backup	Natural gas fuel with LPG backup
6.1.5	Rotary Aggregate Dryer - Remote Location Where Commercial Natural Gas is Not Available, (< or =) 15 tons aggregate/hr or (< or =) 22.7 MMBtu/hr burner	LPG fuel	LPG fuel

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 6.0 Mineral and Biomass Products

BACT Code	Portland Concrete	NOx	VOC
6.2.5	Portland Concrete Products Processing – Roof Tile Coating, Continuous Feed Booth	N/A	Use of coating(s) with a VOC content of 0.8lb/gal (less water and exempt compounds), or lower
6.2.7	Concrete Roofing Trim Tile Mold Releasing Oil Application Operation	N/A	use of mold releasing oils with a VOC content not exceeding 0.08 lb VOC/gal (less water and exempt compounds)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 6.0 Mineral and Biomass Products

BACT Code	Asphaltic Concrete	NOx	VOC
6.3.1	Asphaltic Concrete - Drum Mix Plant, = or > 2,000 ton/day or = or > 75.6 MMBtu/hr burner	0.088 lb/MMBtu Low-NOx burner and either natural gas or LPG as the primary fuel.	Natural gas or LPG as a primary fuel; and enclosed hot mix silos and loadout operation vented to the rotary-dryer burner.
6.3.2	Asphalt Treating Unit	N/A	98% by weight control efficiency
6.3.3	Asphaltic Concrete Plant - Batch Mix, = or > 75 MMBtu/hr and = or > 2,000 tons/day of Asphaltic Concrete	Natural gas or LPG fuel with a low Nox burner	Natural gas or LPG fired burner
6.3.5	Asphalt Roofing Shingle Mfg. - Process Heater, = or > 8 MMBtu/hr	30 ppmv @ 3% O ₂ , Natural gas with LPG as backup fuel	Natural gas with LPG as backup fuel
6.3.6	Asphalt Roofing Product Mfg. - Coating Operation, >100 tons/day	N/A	80% capture and control
6.3.7	Asphalt-Based Roofing Products - Mixer	N/A	Operating practices to minimize fugitive VOC emissions (shut off blower when not charging mixer and close hatch when not adding materials)

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 6.0 Mineral and Biomass Products

BACT Code	Composting & Biomass	NOx	VOC
6.4.7	Co-Composting with Biosolids	N/A	ACTIVE PHASE negatively aerated static piles with engineered, under pile, grid aeration system vent to control device with => 80% control efficiency

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 7.0 Petroleum/Gas Industry

BACT Code	Petroleum Production	NOx	VOC
7.1.1	Thermally Enhanced Oil Recovery - Steam Drive Oil Wells	N/A	Vapor control system and inspection and maintenance program with either a) Non-condensables balanced casing vent system tied into tank vapor control system or b) Non-condensables incinerated at steam generator, incinerator, or equal
7.1.2	Thermally Enhanced Oil Recovery - Small Producer, Cyclic Injected Steam Enhanced Oil Well Pilot Test, < or = 10 Cyclic Wells, < or = 180 days of Total Operation	N/A	Closed casing vents and inspection and maintenance of stuffing boxes and polish rods
7.1.3	Petroleum Production - Small Producers, Cyclic Wells, < or = 4 Cyclic Wells	N/A	uncontrolled
7.1.6	Petroleum Production - Sand Removal Basin for Heavy Crude Oil	N/A	sunscreen tarp
7.1.7	Sludge Dewatering, Various Locations	N/A	gas-tight (as defined in Rule 4623) sludge tanks and processing equipment, vented to VOC control system served by carbon adsorption (at least two carbon canisters in series)
7.1.8	Petroleum Production - Mobile Degassing Operation for StorageTank with low H2S content, using an I.C. Engine as a control device	three way catalyst	three way catalyst
7.1.9	Petroleum Production - Mobile Degassing Operation for StorageTank with low H2S content, using a Thermal Oxidizer as a control device	N/A	VOC reduced by at least 98% by weight
7.1.10	Loading Rack/Switch Loading	natural gas or LPG fired pilot and air assist	bottom loading with dry break couplers and vapor collection vented to a thermal incinerator or flare with destruction efficiency => 99%
7.1.13	Petroleum Storage Tank and Pipeline De-Gassing - Mobile Operation	N/A	98% by weight control

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 7.0 Petroleum/Gas Industry

BACT Code	Petroleum Production	NOx	VOC
7.1.14	Light Crude Oil Unloading Rack	N/A	use of dry-break couplers or equivalent on unloading lines with an average disconnect loss of no greater than 10 ml liquid per disconnect, and fugitive components subject to Rules 4409 or 4455 as applicable
7.1.15	Biodiesel/Glycerol Production Operation	N/A	100% capture and 98% control

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 7.0 Petroleum/Gas Industry

BACT Code	Petroleum Refining	NOx	VOC
7.2.2	Petroleum Refining - Valves & Connectors	N/A	Leak defined as a reading of methane, in excess of 100 ppmv above background when measured at a distance of one(1) cm from the potential source and an Inspection and Maintenance Program pursuant to District Rule 4451
7.2.3	Petroleum Refining - Pump and Compressor Seals	N/A	Leak defined as a reading of methane, in excess of 500ppmv above background when measured at a distance of one(1) cm from the potential source and an Inspection and Maintenance Program pursuant to District Rule 4452
7.2.4	Petroleum Refineries and Chemical Plants - Swivel Joints Handling Volatile Organic Compounds, > 20,000 gallons/day throughput	N/A	Inspection and Maintenance program consistent with District Rule 4451 (amended 12/17/92)- 2,300 ppmv, fugitive emission rate
7.2.7	Natural Gas Processing Plant - Valves, Connectors, and Compressor and Pump Seals (Subject to Rule 4403) < or = 100 Million SCF/Day	N/A	Leak defined as a dripping rate of more than three (3) drops per minute of liquid containing VOC or as a reading of methane, in excess of 10,000 ppmv above background when measured per EPA Method 21, for all components, and an Inspection and Maintenance Program pursuant to District Rule 4409
7.2.8	Catalyst Regeneration - Fluid Catalytic Cracking Unit	20 ppmv @ 0% O2 (365 day rolling average) and 40 ppmv @ 0% O2 (7 day rolling average). During startup/shutdown events, operator must comply with a District approved set of workplace practices.	Good combustion practices

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 7.0 Petroleum/Gas Industry

BACT Code	Storage Tanks	NOx	VOC
7.3.1	Petroleum and Petrochemical Production - Fixed Roof OrganicLiquid Storage or Processing Tank, < 5,000 bbl Tank capacity **	N/A	PV-vent set to within 10% of maximum allowable pressure
7.3.2	Petroleum and Petrochemical Production - Fixed Roof OrganicLiquid Storage or Processing Tank, = or > 5,000 bbl Tank capacity **	N/A	99% Control efficiency
7.3.3	Petroleum and Petrochemical Production - Floating Roof Organic Liquid Storage or Processing Tank, = or > 471 bbl Tank capacity, = or > 0.5 psia TVP	N/A	95% control

San Joaquin Valley Unified Air Pollution Control District

Rule 3170 Clean Unit 2006-2010 Achieved in Practice BACT Determinations

Main Category: 8.0 Miscellaneous Sources

BACT Code	Specialty Sources and Operations	NOx	VOC
8.3.3	Standby LPG Fuel Supply System - = or > 30 MMBtu/hr	0.068 lb/MMBtu	99.9% Control efficiency
8.3.5	Satellite thruster testing operation	Chemical packed scrubber serving nitrogen tetroxide transfer operation	N/A
8.3.12	Helicopter Engine Test Cell	Use of JP-8 fuel and good combustion practices.	Use of JP-8 fuel and good combustion practices.
8.3.17	Sulfur Powder Manufacturing (<= 4 MMBtu/hr Gas Generator)	50 ppmv @ 11% O2 natural gas-fired inert gas pneumatic conveyance system	natural gas fuel
8.3.20	On-line Chemical Vapor Deposition Process	N/A	Use of thermal oxidizer