Part D, Other BACT Determination

Source Type: **Minor**

Application No.: **15044**

Equipment Category: **Fermentation, Wine**

Equipment Subcategory: **Tanks Closed Top ≤ 30,000 gallons**

Date: **Month day, 2020**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: NoMoVo / EcoPAS	B. MODEL: NMV4-1836 / PAS-100
C. DESCRIPTION: Wine fermentation tanks vented to five (5) wet scrubbers with continuously recycled slurry tank achieving a 67% capture/control efficiency.	
D. FUNCTION: Central Coast Wine Services is a winery that receives and crushes fruit for winemaking, ferments and ages wine, bottles wine, warehouses and ships cases of bottled wine. Also leases space to licensed wineries for winemaking.	
E. SIZE/DIMENSIONS/CAPACITY: 143 closed-top stainless-steel wine fermentation tanks ranging in size from 450 gallons to 21,232 capacity. All tanks with piping manifold to capture and route fermentation exhaust gases to control system.	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: N/A	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
N/A	N/A	N/A
Enter additional burner types, as needed, add extra rows		

H. PRIMARY FUEL: N/A	I. OTHER FUEL: N/A
J. OPERATING SCHEDULE: Hours 24 Days 7 Weeks 32	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: Fermentation season is 223 days per year. Both control systems wet scrubber and chilled tube-in-shell condenser are considered achieved in practice by Santa Barbara APCD.	

2. COMPANY INFORMATION

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

3. PERMIT INFORMATION

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

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O_2, %CO_2, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	67% COMBINED CAPTURE AND CONTROL EFFICIENCY					
Averaging Time						
Correction						

B. OTHER BACT REQUIREMENTS: Over entire fermentation season sample slurry from wet scrubbers and condensate from condensation chillers every 24 hrs and analyze using approved method to determine ethanol volume fraction to be used to quantify captured and controlled ethanol.

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: The system is entirely passive, whereby the release of ethanol gas and moisture from the close-loop wine fermentation tanks is used to drive the exhaust toward the control system

5. CONTROL TECHNOLOGY

A. MANUFACTURER: NoMoVo Wet Scrubber / EcoPAS Chilled Condenser	B. MODEL: NMV4-1836 / PAS-100

C. DESCRIPTION: Release of ethanol from closed top fermentation tanks via piping manifold drives exhaust toward control systems. In wet scrubber, ethanol is captured in a slurry tank. In chilled condenser, ethanol and water vapors are condensed and collected.

D. SIZE/DIMENSIONS/CAPACITY: Five Water Scrubbers 48" L x 24" W x 132" H, 16-22 zones, 100 gal. capacity. One Chiller Condenser 25' L x 24" W x 25" H, 700 lbs Glycol refrigerant.

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO. 15044-02 PC ISSUANCE DATE: 6/5/18
PO NO.: 15044 PO ISSUANCE DATE: 2/5/2019

F. REQUIRED CONTROL EFFICIENCIES: 67% Combined capture and control.

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	67%	___%	___%
NOx	--%	___%	___%
SOx	--%	___%	___%
CO	--%	___%	___%
PM	--%	___%	___%
PM_{10}	--%	___%	___%
INORGANIC	--%	___%	___%

G. CONTROL TECHNOLOGY COMMENTS: Fermentation season is 223 days per year. In accordance with Santa Barbara APCD BACT listing both the wet scrubber and chilled tube-in-shell condenser control systems are considered achieved in practice.

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Monitoring reports submitted for 2018 and 2019 fermentation seasons. Compliance with 67% control efficiency is determined by annual reporting specified in permit condition and weekly reports of daily amount of ethanol captured and controlled from an analysis of the slurry samples.

B. DATE(S) OF SOURCE TEST: 2018 and 2019

C. COLLECTION EFFICIENCY METHOD: CCWS uses an Alcolyzer Wine M/ME analyzer manufactured by Anton Paar (https://www.anton-paar.com/us-en/products/details/alcolyzer-wine-mme-wine-analysis-system/) for their daily ethanol measurements. This instrument uses near infrared spectroscopy (NIR) to determine the alcohol content, and achieves an accuracy of +/- 0.1 %v/v and a repeatability of +/- 0.01 %v/v. On an annual basis, CCWS sends a sample from each capture system to an independent 3rd party lab certified by the Alcohol Tax and Trade Bureau for analysis and compares the results to the Alcolyzer instrument.

D. COLLECTION EFFICIENCY PARAMETERS: Sample of slurry or condensate every 24 hours when venting actively fermenting tanks.

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

7. ADDITIONAL SCAQMD REFERENCE DATA

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

Santa Barbara APCD BACT Determination for Wine Fermentation Tanks: Closed-Top ≤30,000 gallons (June 5, 2018)

Central Coast Wine Services, 2717 Aviation Way, Suite 101, Santa Maria, CA

Chiller Condenser Info
Manufacturer: EcoPAS Chiller Condenser System
Model: PAS-100

Operation Schedule:	24	hr/day	223 days/yr
Capture & Control Efficiency:	67	%	
Life	15	years	
Interest rate:	4	%	

Capital Cost

Equipment	$	282,321
Direct Installation	$	229,152
Indirect Installation	$	53,218
Total Capital	$	564,691

Operating Cost

Direct & Indirect	$	35,902
Total Average Annual	$	35,902

PVF		11.118
Present Value of Capital Costs	$	564,691
Present Value of Annual Costs (15 years @ 4%)	$	399,172
Total 15-Year Capital Cost	$	963,863

Emissions reduction (tons/year)		**7.5**
Emissions reduction (tons/Life)		113
Cost per ton of ROG reduction	$	8,568

MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**30,231**	**AVERAGE 2nd Qtr 2018**
	COST EFFECTIVE		
	$	*90,694*	**INCREMENTAL 2nd Qtr 2018**

Notes:
- Calculations were based on cost info provided by control equipment suppliers EcoPASI /NoMoVo and SBCAPCD
- Emissions were based on SBCAPCD Winery Calculation spreadsheet found online at https://www.ourair.org/wineries/
- Maximum allowed cost effectiveness was based on 2nd quarter 2018 Marshall & Swift inde›
- Incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and current BACT
- In accordance with H&SC 40440(c) the proposed MSBACT must be less than the District's established Incremental cost-effectiveness value

Santa Barbara APCD BACT Determination for Wine Fermentation Tanks: Closed-Top≤30,000 gallons (June 5, 2018)

Central Coast Wine Services, 2717 Aviation Way, Suite 101, Santa Maria, CA

Water Scrubber Info

Manufacturer: NoMoVo water scrubber
Model: NMV4-1836

Operation Schedule:	24	hr/day	223 days/yr
Capture & Control Efficiency:	67	%	
Life	15	years	
Interest rate:	4	%	

Capital Cost

Equipment	$	295,851
Direct Installation	$	137,409
Indirect Installation	$	66,003
Total Capital	$	499,263

Operating Cost

Direct & Indirect	$	39,540
Total Average Annual	$	39,540

PVF		11.118
Present Value of Capital Costs	$	499,263
Present Value of Annual Costs (15 years @ 4%)	$	439,621
Total 15-Year Capital Cost	$	938,884

Emissions reduction (tons/year)		**7.5**	
Emissions reduction (tons/Life)		113	
Cost per ton of ROG reduction	$	8,346	
MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**30,231**	**AVERAGE 2nd Qtr 2018**
	COST EFFECTIVE		
	$	*90,694*	**INCREMENTAL 2nd Qtr 2018**

Notes:

- Calculations were based on cost info provided by control equipment suppliers EcoPASI /NoMoVo and SBCAPCD
- Emissions were based on SBCAPCD Winery Calculation spreadsheet found online at https://www.ourair.org/wineries/
- Maximum allowed cost effectiveness was based on 2nd quarter 2018 Marshall & Swift index
- Incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and current BACT
- In accordance with H&SC 40440(c) the proposed MSBACT must be less than the District's established Incremental cost-effectiveness value

Part D, South Coast AQMD BACT Determination

Source Type: **Minor**

Application No.: **507874**

Equipment Category: **Glass Screen Printing**

Equipment Subcategory: **Flat Glass UV Ink**

Date: **Month Day, 2020**

1. EQUIPMENT INFORMATION

A. MANUFACTURER:	B. MODEL:
C. DESCRIPTION: Flat Glass UV ink Screen Printing Carousel with 8 stations.	
D. FUNCTION: Head West, Inc. manufactures art mirrors and frames. Plain sheets of glass with mirror backing coating as loaded on an automated screen printing carousel using Rule 1134 compliant UV inks exclusively.	
E. SIZE/DIMENSIONS/CAPACITY: 183 BHP, four cycle, lean burn, 6 cylinders	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: N/A	
G. BURNER INFORMATION: N/A	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
Enter additional burner types, as needed, add extra rows	Rated heat input of single burner, in btu/hr	Number of burners

H. PRIMARY FUEL: Electricity	I. OTHER FUEL: Supplementary or standby fuels
J. OPERATING SCHEDULE: Hours 24 HRS//DAY 7 DAYS/WEEK 52 WKS/YR	
K. EQUIPMENT COST: Enter sum of all Cost Factors in Table 6 of SCAQMD BACT Guidelines	
L. EQUIPMENT INFORMATION COMMENTS: Per Rule 219(h)(1)((A) and (C) screen printing carousel using exclusively UV inks is exempt from permit.	

2. COMPANY INFORMATION

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

3. PERMIT INFORMATION

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

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O_2, %CO_2, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	USE OF RULE 1145 COMPLIANT UV INKS AS ALTERNATE BACT COMPLIANCE					
Averaging Time						
Correction						

B. OTHER BACT REQUIREMENTS: Use of Rule 1145 compliant low VOC UV inks as alternative BACT compliance. Concise description of the BACT requirements for each regulated contaminant from the equipment, other than the requirements list in Section 4(A).

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

D. EMISSION INFORMATION COMMENTS: Facility is exclusively using Rule 1145 compliant low VOC UV inks for their flat glass screen printing operations. Although not applicable to all glass coatings, this case specific operation is a well-established achieved in practice example.

5. CONTROL TECHNOLOGY

A. MANUFACTURER: : Low VOC UV Inks	B. MODEL:

C. DESCRIPTION Rule 1145 compliant UV inks with low VOC content which qualify as Super Compliant Materials (≤ 50 g VOC/l) per Rule 109 and in compliance with Rule 1130.1.

D. SIZE/DIMENSIONS/CAPACITY: An appropriate size parameter such as rated heat input, usable volume, rated filter efficiency, and/or one more characteristic dimensions.

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO. PC ISSUANCE DATE: Click here to enter a date.
PO NO.: PO ISSUANCE DATE: Click here to enter a date.

F. REQUIRED CONTROL EFFICIENCIES: Tier 4 Final standards

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM_{10}	___%	___%	___%
INORGANIC	___%	___%	___%

G. CONTROL TECHNOLOGY COMMENTS: Exclusively using Rule 1145 compliant low VOC UV inks for their flat glass screen printing operations. Although not applicable to all glass coatings, this case specific operation is a well-established achieved in practice example.

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Recordkeeping of material safety data sheets and use of Rule 1145 compliant low VOC UV inks.

B. DATE(S) OF SOURCE TEST: N/A

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: Enter source test results for each criteria contaminant or precursor (mass emissions, concentrations or efficiencies) if they differ from the requirements previously listed. As previously requested in Section 4, identify any corrections or averaging times

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

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 000268	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: 10
D. RECLAIM FAC? YES ☐ NO ☒	E. TITLE V FAC: YES ☐ NO ☒	F. SOURCE TEST ID(S):
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

Part D, South Coast AQMD BACT Determination

Source Type: **Minor**

Application No.: **450588/450591**

Equipment Category: **Spray Booth, Enclosed**

Equipment Subcategory: **Wood Cabinets, UV Coatings**

Date: **Month Day, 2020**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Cattinair	B. MODEL: Rotoclean 68
C. DESCRIPTION: Computerized multi spray nozzle machine in enclosed ventilated spray booth using exclusively Rule 1136 compliant UV coatings. Spray-painted wood cabinet parts are continuously moved via conveyor to electric UV curing oven.	
D. FUNCTION: Excel Cabinets manufactures wood cabinets for tract homes and apartment builders.	
E. SIZE/DIMENSIONS/CAPACITY: Spray Machine, Enclosed Spray Booth 9'-0" W x 8'-10" L x 5'-0" H, with 16 spray nozzles, three 36" x 96" exhaust filters and one 1 H.P. exhaust fan.	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 55 KW	
G. BURNER INFORMATION:	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
N/A	N/A	N/A

H. PRIMARY FUEL: ELECTRIC Primary Fuel burned in combustion chamber	I. OTHER FUEL: ELECTRIC
J. OPERATING SCHEDULE: Hours 16 hrs//day 6 days/week 52 wks/yr	
K. EQUIPMENT COST: Enter sum of all Cost Factors in Table 6 of SCAQMD BACT Guidelines	
L. EQUIPMENT INFORMATION COMMENTS: UV Curing Oven, Cattinair, 6'-0" W x 12'-0" L x 5'-0" H, with two UV lamps, 55 KW, ½ H.P. exhaust fan, 1 ½ H.P. recirculating fan.	

2. COMPANY INFORMATION

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

3. PERMIT INFORMATION

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

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O_2, %CO_2, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit	USE OF RULE 1136 COMPLIANT UV COATINGS AS ALTERNATE BACT COMPLIANCE					
Averaging Time						
Correction						

B. OTHER BACT REQUIREMENTS: Use of Rule 1136 compliant low VOC UV coatings as alternative BACT compliance.

C. BASIS OF THE BACT/LAER DETERMINATION: Other (add comment)

D. EMISSION INFORMATION COMMENTS: Facility is exclusively using low VOC UV coatings for their wood cabinet coating operations. Although not applicable to all wood coatings, this case specific operation is a well-established achieved in practice example.

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Low VOC UV Coatings	B. MODEL:

C. DESCRIPTION: Rule 1136 compliant UV coatings VOC content of 0.137 lb/gal and 0.161 lb/gal. These UV coatings qualify as Super Compliant Materials (≤ 50 g VOC/l) per Rule 109 and in compliance with Rule 1136.

D. SIZE/DIMENSIONS/CAPACITY: N/A

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO.: N/A PC ISSUANCE DATE: N/A

PO NO.: N/A PO ISSUANCE DATE: N/A

F. REQUIRED CONTROL EFFICIENCIES: Tier 4 Final standards

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	___%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM_{10}	___%	___%	___%
INORGANIC	___%	___%	___%

G. CONTROL TECHNOLOGY COMMENTS : Use of low VOC UV coatings as alternative BACT compliance.

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Recordkeeping of material safety data sheets and use of Rule 1136 compliant low VOC UV coatings.

B. DATE(S) OF SOURCE TEST: N/A

C. COLLECTION EFFICIENCY METHOD: N/A

D. COLLECTION EFFICIENCY PARAMETERS: N/A

E. SOURCE TEST/PERFORMANCE DATA: N/A

F. TEST OPERATING PARAMETERS AND CONDITIONS: N/A

G. TEST METHODS (SPECIFY AGENCY): N/A

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

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 044000	B. CCAT: Click here to enter text.	C. APPLICATION TYPE CODE: 10
D. RECLAIM FAC? YES ☐ NO ☒	E. TITLE V FAC: YES ☐ NO ☒	F. SOURCE TEST ID(S):
G. SCAQMD SOURCE SPECIFIC RULES: 1136		
H. HEALTH RISK FOR PERMIT UNIT		

H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

Part D, South Coast AQMD BACT Determination

Source Type: **Minor**

Application No.: **600923**

Equipment Category: **Thermal Oxidizer**

Equipment Subcategory: **Regenerative**

Date: **Month Day, 2020**

1. EQUIPMENT INFORMATION

A. MANUFACTURER: Adwest	B. MODEL: Retox 40.0
C. DESCRIPTION: Fender Musical Instruments is a manufacturer of electric and acoustic guitars.	
D. FUNCTION: Two (2) Regenerative Thermal Oxidizers are used to vent all aspects of the electric and acoustic guitars spray/hand coating operations which are performed in permanent total enclosures.	
E. SIZE/DIMENSIONS/CAPACITY: 6,000,000 Btu/hr natural injection rate, Combustion Chamber 38'-6" L x 14'-0" W x 5'-1" H, and two Ceramic Beds each 18'-0" L x 14'-0" W x 4'-0" H.	
COMBUSTION SOURCES	
F. MAXIMUM HEAT INPUT: 16,000,000 Btu/hr each RTO	
G. BURNER INFORMATION	

TYPE	INDIVIDUAL HEAT INPUT	NUMBER
Maxon Kinedizer LE	Rated heat input of single burner, in btu/hr	1
Enter additional burner types, as needed, add extra rows		

H. PRIMARY FUEL: Natural gas	I. OTHER FUEL: Supplementary or standby fuels
J. OPERATING SCHEDULE: Hours 24 Days 7 Weeks 52	
K. EQUIPMENT COST:	
L. EQUIPMENT INFORMATION COMMENTS: RTO system venting 11 spray rooms, 3 spray booths and 5 conveyorized spray booths.	

2. COMPANY INFORMATION

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

3. PERMIT INFORMATION

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

4. EMISSION INFORMATION

A. BACT EMISSION LIMITS AND AVERAGING TIMES: List all criteria contaminant or precursor emission limits, including facility limits, on the permit(s) that affects the equipment. Include units, averaging times and corrections (%O_2, %CO_2, dry, etc). For VOC, values must include if the concentration is reported as methane, hexane or any other compound. VOC mass emissions should include the molecular weight-to-carbon ratio, if applicable.

	VOC	NOx	SOx	CO	PM OR PM_{10}	INORGANIC
BACT Limit		30 PPMV		400 PPMV		
Averaging Time						
Correction		@ 3% O_2		@ 3% O_2		

B. OTHER BACT REQUIREMENTS: Combustion chamber temperature shall be maintained ≥ 1,500°F. Overall collection and destruction efficiency ≥ 95%.

C. BASIS OF THE BACT/LAER DETERMINATION: Achieved in Practice/New Technology

5. CONTROL TECHNOLOGY

A. MANUFACTURER: Adwest	B. MODEL: Retox 40.0

C. DESCRIPTION: Regenerative Thermal Oxidizer with 16 MM Btu/hr Maxon Kinedizer LE, Low-NOx burner.

D. SIZE/DIMENSIONS/CAPACITY: : 6,000,000 Btu/hr natural injection rate, Combustion Chamber 38'-6" L x 14'-0" W x 5'-1" H, and two Ceramic Beds each 18'-0" L x 14'-0" W x 4'-0" H.

E. CONTROL EQUIPMENT PERMIT INFORMATION:

APPLICATION NO. 600923 PC ISSUANCE DATE: 7/27/18
PO NO.: G59106 PO ISSUANCE DATE: 10/4/2019

F. REQUIRED CONTROL EFFICIENCIES: . Overall collection and destruction efficiency ≥ 95%.

CONTAMINANT	OVERALL CONTROL EFFICIENCY	CONTROL DEVICE EFFICIENCY	COLLECTION EFFICIENCY
VOC	95%	___%	___%
NOx	___%	___%	___%
SOx	___%	___%	___%
CO	___%	___%	___%
PM	___%	___%	___%
PM_{10}	___%	___%	___%
INORGANIC	___%	___%	___%

G. CONTROL TECHNOLOGY COMMENTS: The burners are capable of 16 MM Btu/hr but will be permanently operated at a maximum of 11 MM Btu/hr.

6. DEMONSTRATION OF COMPLIANCE

A. COMPLIANCE DEMONSTRATED BY: Source Test

B. DATE(S) OF SOURCE TEST: December 17, 2018

C. COLLECTION EFFICIENCY METHOD: ---

D. COLLECTION EFFICIENCY PARAMETERS: ---

E. SOURCE TEST/PERFORMANCE DATA: 27.7 ppm NOx @3% O2; 30 ppm CO @3% O2

F. TEST OPERATING PARAMETERS AND CONDITIONS: RTO was operated at normal operating conditions.

G. TEST METHODS (SPECIFY AGENCY): SCAQMD Method 100.1

H. MONITORING AND TESTING REQUIREMENTS:
I. DEMONSTRATION OF COMPLIANCE COMMENTS: Enter comments for additional information for Demonstration of Compliance.

7. ADDITIONAL SCAQMD REFERENCE DATA

A. BCAT: 028000	B. CCAT: 6E	C. APPLICATION TYPE CODE: 20	
D. RECLAIM FAC? YES ☐ NO ☒	E. TITLE V FAC: YES ☐ NO ☒	F. SOURCE TEST ID(S): PR16244	
G. SCAQMD SOURCE SPECIFIC RULES: Click here to enter text.			
H. HEALTH RISK FOR PERMIT UNIT			
H1. MICR: Click here to enter text.	H2. MICR DATE: Click here to enter a date.	H3. CANCER BURDEN: Click here to enter text.	H4. CB DATE: Click here to enter a date.
H5: HIA: Click here to enter text.	H6. HIA DATE: Click here to enter a date.	H7. HIC: Click here to enter text.	H8. HIC DATE: Click here to enter a date.

Cost Effectiveness Calculations for Low NOx burner upgrade on Regenerative Thermal Oxidizer (RTO) - Fender Musical Instrumen

Based on info provided by Fender Musical Instruments on January 2020

Emission reduction:

NOx reduction from 60 ppm (0.070 lbs/MMBtu) to 30 ppm (0.035 lbs/MMBtu) = 0.035 lbs/MMBtu reduction
CO reduction from 2000 ppm allowed under Rule 407 to permit limit of 400 ppm per source test of 12/17/18

Low NOx burner Info
Manufacturer: Adwest
Model: Retox 40.0
Rating/Fuel: 11,000,000 Btu/hr

Operation Schedule:	24 hr/day	6 days/week	52 weeks/year
RTO Average Capacity:	80 %		
Life	10 years		
Interest rate:	4 %		

Capital Cost

Equipment & Installation	$	67,947
Total Capital	$	67,947

Operating Cost

Direct & Indirect	$	7,000
Total Average Annual	$	7,000

PVF		8.11
Present Value of Capital Costs	$	67,947
Present Value of Annual Costs (10 years @ 4%)	$	56,776
Total 10-Year Capital Cost	$	124,723

NOx emissions reductions (lbs/day)		**7**
NOx emissions reduction (tons/10-year life)		**11.5**
CO emissions reductions (lbs/day)		**5760**
CO emissions reduction (tons/10-year life)		**10512**

Cost per ton of NOx reduction	**$**	**10,816**
Cost per ton of CO reduction	**$**	**12**

MSBACT maximum cost effectiveness NOx ($/ton)	**$**	**28,585**	**AVERAGE 2nd Qtr 2018**	**COST EFFECTIVE**
	$	**85,606**	**INCREMENTAL 2nd Qtr 2018**	**COST EFFECTIVE**
MSBACT maximum cost effectiveness CO ($/ton)	**$**	**599**	**AVERAGE 2nd Qtr 2018**	**COST EFFECTIVE**
	$	**1,721**	**INCREMENTAL 2nd Qtr 2018**	**COST EFFECTIVE**

Notes:
- Equipment cost based on data provided by Fender Musical Instruments
- RTO burner is essentially maintenance free (except for the cost of natural gas) since it does not need much tuning.
  However the RTO has many filters and pre-filters along with motors and fan replacement from time to time
- Maximum allowed cost effectiveness was based on 2nd quarter 2018 Marshall & Swift index
- Incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and current BACT
- In accordance with H&SC 40440(c) the proposed MSBACT must be less than the District's established Incremental cost-effectiveness valu