



DEC 07 2016

Mr. Neil McDougald
E & J Gallo Winery - Fresno
5610 E Olive Ave
Fresno, CA 93727

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-447
Project # C-1133347**

Dear Mr. McDougald:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the modification of twelve wine storage tanks to add red and white wine fermentation operation. The ATCs are being reissued due to a proposed change in the offsetting proposal to identify additional Emission Reduction Credit (ERC) certificate numbers.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Errol Villegas, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,


Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Sayed Sadredin

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Add Fermentation to 12 Wine Storage Tanks

Facility Name: E & J Gallo Winery
Mailing Address: 5610 E Olive Ave
Fresno, CA 93727

Date: March 18, 2015
Revised: November 22, 2016
Engineer: Stanley Tom
Revised By: Robert Gilles
Lead Engineer: Joven Refuerzo

Contact Person: Neil McDougald
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Application #s: C-447-330-1 through -341-1

Project #: C-1133347

Deemed Complete: January 2, 2014

Note: This application review has been revised to update the offsetting proposal (Section VIII, Rule 2201, B.2, page 22 of this document). The applicant has requested the offsetting proposal be revised to identify additional Emission Reduction Credit (ERC) certificates. Therefore, the ATC permits will be reissued to reflect the updated offsetting proposal. The proposed change results in no changes to the quantity of offsets required for any ATC permit.

In addition, the applicant has requested the reissued ATC permits be processed with a Certificate of Conformity (COC). The original public noticing requirements will be duplicated as a result of this action.

I. Proposal

E & J Gallo Winery has requested Authority to Construct (ATC) permits to add fermentation capabilities to twelve (12) 350,000 gallon (or equivalent) wine storage tanks. These tanks will be used for wine storage and fermentation. The facility has proposed to add fermentation capabilities separate from wine storage (authorized in project C-1133313) to prevent delays in construction of the tanks due to ongoing BACT issues associated with wine fermentation operations.

The permits issued in project C-1133313 will be implemented prior to or concurrently with the ATC permits issued in this project. The following sample condition will be listed on the ATC permits in this project to ensure compliance:

- Authority to Construct (ATC) C-447-330-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct. [District Rule 2201]

E & J Gallo Winery received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authorities to Construct. E & J Gallo Winery must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4102	Nuisance (12/17/92)
Rule 4694	Wine Fermentation and Storage Tanks (12/15/05)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 5610 E Olive Avenue in Fresno, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

E & J Gallo Winery produces both red and white table wines, as well as other specialty wine products, from the fermentation of grapes. During the "crush season," typically from late August to late November, both red and white grapes are received by truck and delivered to a crusher-stemmer which serves to crush the grapes and remove the stems. In the case of red wines, the resultant juice (termed "must" and containing the grape skins, pulp, and seeds) is pumped to red wine fermentation tanks for fermentation, a batch process. The red wine fermentation tanks are specifically designed to ferment the must in contact with the skins and to allow the separation of the skins and seeds from the wine after fermentation. In the case of white wines, the must is sent to screens and presses for separation of grape skins and seeds prior to fermentation. After separation of the skins and seeds, the white must is transferred to a fermentation tank. White wine fermentation can be carried out in a tank without design provisions for solids separation since the skins and seeds have already been separated.

After transfer of the must (for red or white wine) to the fermentation tank, the must is inoculated with yeast which initiates the fermentation reactions. During fermentation, the yeast metabolizes the sugar in the grape juice, converting it to ethanol and carbon dioxide (CO₂) while releasing heat. Temperature is typically controlled by refrigeration, and is maintained at

45–65 °F for white wine fermentation and 70–95 °F for red wine fermentation. The sugar content of the fermentation mass is measured in °Brix (weight %) and is typically 22–26° for unfermented grape juice, dropping to 4° or less at the end of fermentation. Finished ethanol concentration is approximately 10 to 14 percent by volume. Batch fermentation requires 3-5 days per batch for red wine and 1-2 weeks per batch for white wine. VOCs are emitted during the fermentation process along with the CO₂. The VOCs consist primarily of ethanol along with small quantities of other fermentation byproducts.

Following the completion of fermentation, white wine is transferred directly to storage tanks. Red wine is first directed to the presses for separation of solids and then routed to the storage tanks. Tanks can potentially operate in either: (1) a fermentation operation during which the tank is vented directly to the atmosphere to release the evolved CO₂ byproduct from the fermentation reaction; (2) a storage operation during which the tank is closed to minimize contact with air and refrigerated to preserve the wine; (3) or both fermentation and storage operations. Post-fermentation operations such as cold stabilization, racking, and filtration are conducted in the tanks, resulting in a number of inter-tank transfers during the period between the end of fermentation and bottling or bulk shipment. Storage operations are conducted year-round. VOC emissions occur primarily as a result of the inter-tank transfers which are necessitated by the post fermentation operations.

V. Equipment Listing

Pre-Project Equipment Description

Permit #	Pre-Project Equipment Description
C-447-330-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3015) WITH PRESSURE/VACUUM VALVE
C-447-331-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3016) WITH PRESSURE/VACUUM VALVE
C-447-332-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3017) WITH PRESSURE/VACUUM VALVE
C-447-333-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3018) WITH PRESSURE/VACUUM VALVE
C-447-334-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3019) WITH PRESSURE/VACUUM VALVE
C-447-335-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3020) WITH PRESSURE/VACUUM VALVE
C-447-336-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3021) WITH PRESSURE/VACUUM VALVE
C-447-337-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3022) WITH PRESSURE/VACUUM VALVE

C-447-338-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3023) WITH PRESSURE/VACUUM VALVE
C-447-339-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3024) WITH PRESSURE/VACUUM VALVE
C-447-340-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3025) WITH PRESSURE/VACUUM VALVE
C-447-341-0	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3026) WITH PRESSURE/VACUUM VALVE

Reissued Authority to Construct Equipment Description

Permit #	Authority to Construct Equipment Description
C-447-330-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3015) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-331-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3016) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-332-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3017) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-333-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3018) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-334-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3019) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-335-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3020) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-336-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3021) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-337-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3022) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

C-447-338-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3023) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-339-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3024) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-340-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3025) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)
C-447-341-1	MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3026) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

Post-Project Equipment Description

Permit #	Post-Project Equipment Description
C-447-330-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3015) WITH PRESSURE/VACUUM VALVE
C-447-331-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3016) WITH PRESSURE/VACUUM VALVE
C-447-332-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3017) WITH PRESSURE/VACUUM VALVE
C-447-333-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3018) WITH PRESSURE/VACUUM VALVE
C-447-334-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3019) WITH PRESSURE/VACUUM VALVE
C-447-335-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3020) WITH PRESSURE/VACUUM VALVE
C-447-336-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3021) WITH PRESSURE/VACUUM VALVE

C-447-337-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3022) WITH PRESSURE/VACUUM VALVE
C-447-338-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3023) WITH PRESSURE/VACUUM VALVE
C-447-339-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3024) WITH PRESSURE/VACUUM VALVE
C-447-340-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3025) WITH PRESSURE/VACUUM VALVE
C-447-341-1	350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 3026) WITH PRESSURE/VACUUM VALVE

As per District policy APR 1035 Flexibility in Equipment Descriptions in ATCs, some flexibility in the final specifications of the equipment is requested. The proposed tanks in this project will be built on-site and most likely will contain slight variations in the tank dimensions which lead to slightly different tank capacities than proposed. These slight tank variations will not cause any change to the tank emissions or tank operation since the tank emissions are calculated based on a throughput limit. Therefore, the permit will specify the nominal tank dimensions and the source will submit to the District the measured tank capacity (known as the gauge volume) once the tank is constructed. The final PTOs will only be issued after the gauge volume for each tank is established. The following sample condition will be listed on the ATCs to ensure compliance:

- The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201]

VI. Emission Control Technology Evaluation

VOCs (ethanol) are emitted from wine storage tanks as a result of both working losses (which occur when the liquid level in the tank changes) and breathing losses (expansion and contraction effects due to temperature variations). The proposed pressure/vacuum valve limits these emissions by requiring the maximum amount of variation in tank pressure before allowing the tank to vent to the atmosphere or allowing air admission to the tank.

The temperature of the fermentation is controlled to maintain an average fermentation temperature not exceeding 95 °F which avoids higher temperatures that might be damaging to the yeast cells and reduces the potential for an out-of-control fermentation reaction in the tank. Temperature control serves to minimize VOC emissions relative to a tank without temperature control since the potential emissions increase with fermentation temperature.

VII. General Calculations

A. Assumptions

Storage

- The proposed tanks will be used for red and white wine fermentation and storage
- Typically, for enclosed tanks with refrigeration and/or insulation (or equivalent) and P/V valves, breathing losses from storage of wine are assumed to be negligible.
- Maximum daily liquid storage temperature = 81.0 °F (per FYI-295)
- Maximum annual liquid storage temperature = 63.3 °F (per FYI-295)
- Storage tank daily maximum ethanol content of stored wine is 23.9% (per applicant)
- Storage tank annual average ethanol content of stored wine is 15% (per applicant)
- Maximum daily storage throughput = 350,000 gallons/day (per tank, per applicant)
- Maximum annual storage throughput = 10,500,000 gallons/year (per tank, per applicant)

Fermentation

- Daily VOC fermentation emissions will be determined using a worst case of one tank turnover per day (per applicant)
- Post-project wine fermentation annual throughput (per tank) = 812,000 gallons per year
- Fermentation emissions will be based upon the worst case red wine emission factors

B. Emission Factors

Storage

Tanks 4.0 will be used to calculate the emissions from the storage tanks.

Fermentation

The following table shows uncontrolled emissions factors for fermentation.

Wine Type	EF (lb-VOC/1,000 gallon of wine)		Source
	Daily	Annual	
White	1.62	2.5	District Practice
Red	3.46	6.2	District Practice

Since all the fermentation tanks can ferment either white or red wine, worst case emissions are calculated using red wine emission factors.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Storage

Two Tanks 4.0 runs have been performed: one using a throughput of 350,000 gallons per day to calculate the daily potential to emit by dividing the month of February emissions by the number of days in the month; and the other using 10,500,000 gallons/year to calculate the annual potential to emit. See project C-1133313 for the Tanks 4.0 runs for each tank.

Pre-Project Potential to Emit (Storage)		
Permit Unit	Daily PE1 (lb-VOC/day)	Annual PE1 (lb-VOC/year)
C-447-330-1	93.1	1,518
C-447-331-1	93.1	1,518
C-447-332-1	93.1	1,518
C-447-333-1	93.1	1,518
C-447-334-1	93.1	1,518
C-447-335-1	93.1	1,518
C-447-336-1	93.1	1,518
C-447-337-1	93.1	1,518
C-447-338-1	93.1	1,518
C-447-339-1	93.1	1,518
C-447-340-1	93.1	1,518
C-447-341-1	93.1	1,518
Total	1,117.2	18,216

Fermentation

Since these are new emissions units, PE1 = 0 (all pollutants) for the fermentation operation in these tanks.

2. Post Project Potential to Emit (PE2)

Storage

There are no proposed changes to the storage emissions. Therefore, PE2 = PE1.

Fermentation

For either red or white wine, the fermentation process takes longer than a day (3 to 5 days for red wine and 10 to 14 days for white wine). Therefore, a maximum of one turnover per day will be used to determine the daily potential to emit.

The daily and annual VOC potential to emit are determined using the red or white wine emissions factor, tank capacity, turnover rate, and the annual throughput as follows:

$$\text{Daily PE2} = \text{EF}_{\text{red}} (\text{lb-VOC}/1,000 \text{ gal}) \times \text{tank capacity (gal/tank)} \times \text{turnover rate (\# tank/day)}$$

$$\text{Annual PE2} = \text{EF}_{\text{red}} (\text{lb-VOC}/1,000 \text{ gal}) \times \text{annual throughput (gal/year)}$$

Post-Project Potential to Emit (Fermentation)							
Permit Unit	Daily EF	Annual EF	Tank Capacity	Turnover Rate	Annual Throughput	Daily	Annual
	(lb-VOC/1,000 gal)		(gallon)	(tank/day)	(gal/year)	(lb/day)	(lb/year)
C-447-330-1	3.46	6.2	350,000	1	812,000	1,211.0	5,034
C-447-331-1			350,000		812,000	1,211.0	5,034
C-447-332-1			350,000		812,000	1,211.0	5,034
C-447-333-1			350,000		812,000	1,211.0	5,034
C-447-334-1			350,000		812,000	1,211.0	5,034
C-447-335-1			350,000		812,000	1,211.0	5,034
C-447-336-1			350,000		812,000	1,211.0	5,034
C-447-337-1			350,000		812,000	1,211.0	5,034
C-447-338-1			350,000		812,000	1,211.0	5,034
C-447-339-1			350,000		812,000	1,211.0	5,034
C-447-340-1			350,000		812,000	1,211.0	5,034
C-447-341-1			350,000		812,000	1,211.0	5,034
Total Annual PE2, lb-VOC/year =							60,408

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

This project only concerns VOC emissions. This facility acknowledges that its VOC emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE1 calculations are not necessary.

4. Post Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

This project only concerns VOC emissions. This facility acknowledges that its VOC emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 Major Source Determination

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination

As stated in Section VII.D.4 of this document, this facility is an existing Rule 2201 major source for VOC emissions. The following table summarizes the potential VOC emissions from a previous permitting action for this stationary source before the proposed project.

Project Number	Proposed Permitting Actions	PE (lb-VOC/year)
C-1071388	Applying for In-house PTOs for existing wine storage and fermentation tanks	389,736,660
Total =		389,736,660

As indicated above, the SSPE VOC emissions before the proposed project is calculated to 389,805,212 pounds per year, equivalent to 194,868 tons per year.

The facility evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21(b)(1)(i). Therefore, the following PSD Major Source threshold for VOC is applicable.

PSD Major Source Determination (tons/year)	
	VOC
Facility PE before Project Increase	194,868
PSD Major Source Thresholds	250
PSD Major Source?	Yes

As shown above, the facility is an existing major source for PSD for VOC. Therefore, the facility is an existing Major Source for PSD.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project, to calculate the QNEC and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

Storage

Clean Emissions Unit, Located at a Major Source

Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

This emissions unit is equipped with a pressure vacuum valve, which meets the requirements for achieved-in-practice BACT. Therefore, BE = PE1.

Fermentation

Since these are new emission units, BE = PE1 = 0 for all pollutants for each unit.

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is a major source for VOC, the project's PE2 is compared to the SB 288 Major Modification Threshold in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
VOC	18,216 + 60,408 = 78,624	50,000	Yes

Since the project's PE2 surpasses the SB 288 Major Modification Threshold for VOC, the Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

$$\text{NEI} = \text{PE2} - \text{BAE}$$

Where: PE2 = the sum of all the PE2s for each permit unit in this project
BAE = for units that are fully offset, the BAE = the PE1 for every unit, otherwise, the BAE is the actual annual emissions averaged over the baseline period for every unit.

The storage tanks have not been in operation, therefore, BAE = 0.

The fermentation tanks are new; therefore BAE = 0.

SB 288 Major Modification Calculation and Determination					
Pollutant	PE2 (lb/year)	BAE (lb/year)	NEI (lb/year)	Threshold (lb/year)	SB 288 Major Modification?
VOC	78,624	0	78,624	50,000	Yes

As demonstrated in the preceding table, this project does constitute an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of title I of the CAA. The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1

The Federal Major Modification Significance Thresholds are from Table 3-1 in section 3.18 of Rule 2201. The significance threshold for VOC is shown in the following table.

Federal Major Modification Significance Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	0

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project. The project increase in emissions was calculated in section VII.C.2 above and is compared to the Federal Major Modification Significance Threshold in the following table.

Federal Major Modification Determination			
Pollutant	Project Increase In Emissions (12 tanks) (lb/year)	Significance Threshold (lb/year)	Federal Major Modification?
VOC	60,408	0	Yes

Since there is an increase in VOC emissions, this project constitutes a Federal Major Modification. Federal Offset quantities are calculated below.

The federal offset quantity is calculated only for the pollutants for which the project is a Federal Major Modification. The federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the Potential-to-Emit after the modification (PE2) minus the Actual Emissions (AE) during the baseline period for each emissions unit multiplied by the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

Federal Offset Quantity Calculation			
Permit #s	Actual Emissions (lb-VOC/year)	Potential Emissions (lb-VOC/year)	Emissions Change (lb-VOC/year)
C-447-330-1 through -341-1	0	60,408	60,408
Net Emission Change (lb/year):			60,408
Federal Offset Quantity (NEC × 1.5):			90,612

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM

- PM₁₀

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase Determination

a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO ₂	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

10. Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	19,656	4,554	15,102

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

a. New emissions units – PE > 2 lb/day

Fermentation

The applicant is proposing to install 12 new wine fermentation tanks with a PE greater than 2 lb/day for VOC. Thus, BACT is triggered for VOC for these emissions units.

b. Relocation of emissions units – PE > 2 lb/day

There are no emissions units being relocated from one stationary source to another, hence BACT is not triggered under this category.

c. Modification of emissions units – AIPE > 2 lb/day

Storage

$$AIPE = PE2 - HAPE$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$HAPE = PE1 \times (EF2/EF1)$$

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$AIPE = PE2 - (PE1 \times (EF2 / EF1))$$

There are no emission factor changes in this project; therefore, EF2 / EF1 = 1.

Adjusted Increase in Permitted Emissions				
Pollutant	PE2 (lb/day)	PE1 (lb/day)	AIPE (lb/day)	BACT Triggered?
VOC	93.1	93.1	0.0	No

As demonstrated above, the AIPE is not greater than 2 lb/day for VOC emissions for any storage tank. Therefore, BACT is not triggered.

d. SB 288/Federal Major Modification

As discussed in VII.C.7 and VII.C.8 above, this project constitutes a SB 288 and Federal Major Modification for VOC emissions. Therefore, BACT is triggered for VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT Guideline 5.4.14 applies to the wine fermentation tanks and is included in Appendix A.

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a top-down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached top-down BACT analysis (Appendix A) BACT has been satisfied with the following:

Fermentation

VOC: Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

Facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, offsets are triggered.

2. Quantity of Offsets Required

As discussed above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds; therefore, offset calculations are required for this project.

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = $(\Sigma[PE2 - BE] + ICCE) \times DOR$, for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Rule 2201

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE)

There are no increases in cargo carrier emissions due to this project.

Storage

Offsets Required (lb/year) = $\Sigma[PE2 - BE] \times DOR$

Offsets Required – Storage		
Permit Unit	Annual PE2 (lb-VOC/year)	Annual BE (lb-VOC/year)
C-447-330-1	1,518	1,518
C-447-331-1	1,518	1,518
C-447-332-1	1,518	1,518
C-447-333-1	1,518	1,518
C-447-334-1	1,518	1,518
C-447-335-1	1,518	1,518
C-447-336-1	1,518	1,518
C-447-337-1	1,518	1,518
C-447-338-1	1,518	1,518
C-447-339-1	1,518	1,518
C-447-340-1	1,518	1,518
C-447-341-1	1,518	1,518
Total	18,216	18,216

Offsets Required (lb/year) = $[18,216 - 18,216] \text{ lb-VOC/year} \times DOR$
= 0 lb-VOC/year

Fermentation

These fermentation tanks are subject to the fermentation emission reduction requirements of Rule 4694 and are considered to be controlled sources subject to a 35% reduction in emissions. The facility is currently performing an annual demonstration that sufficient Certified Emission Reductions (CER) are provided to meet the requirements of Rule 4694 Section 5.1. The CERs are achieved by controlling the emissions from brandy tanks and barrels at a brandy plant in Modesto via an air

handling system and combustion in an RTO (regenerative thermal oxidizer). Both the Fresno location and Livingston location have CERs assigned to each facility (generated from the control of the brandy plant) to cover the uncontrolled fermentation emissions at each facility. The annual compliance emissions report demonstrates the amount of CERs assigned to each facility is at least 35% of the uncontrolled fermentation emissions at each facility. As these tanks are subject to Rule 4694 and the facility is mitigating 35% of the uncontrolled fermentation emissions each year, requiring offsets for 100% of the fermentation emissions in this project would be requiring double mitigation. Therefore, the offsets required for the fermentation emissions in this project will be reduced by 35% and calculated as follows:

$$\text{Offsets Required (lb/year)} = \Sigma[\text{PE2} - \text{BE}] \times (1 - 0.35) \times \text{DOR}$$

Offsets Required – Fermentation		
Permit Unit	Annual PE2 (lb-VOC/year)	Annual BE (lb-VOC/year)
C-447-330-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-331-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-332-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-333-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-334-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-335-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-336-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-337-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-338-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-339-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-340-1	$5,034 \times (1 - 0.35) = 3,272$	0
C-447-341-1	$5,034 \times (1 - 0.35) = 3,272$	0
Total	39,264	0

Each Tank

$$\begin{aligned} \text{Offsets Required (lb/year)} &= [3,272 - 0] \text{ lb-VOC/year} \times \text{DOR} \\ &= 3,272 \text{ lb-VOC/year} \times \text{DOR} \end{aligned}$$

Per Rule 2201 Section 4.5.2, emission offset requirements “For Stationary Sources with a quarterly Potential to Emit which remain constant throughout the year, the amount shall be calculated in pounds per year. For Stationary Sources with quarterly Potential to Emit that is not constant throughout the year, and for Seasonal Sources the amount shall be calculated in pounds per quarter”. Fermentation operations occur during the crush season between August and November in the third and fourth quarter of each calendar year. Therefore, emission offset requirements for the fermentation operation will be equally distributed and assessed in the third and fourth quarter.

Calculating the appropriate quarterly emissions to be offset is as follows:

Quarterly Offset Requirement – Fermentation (Each Tank)				
Pollutant	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)
VOC	0	0	1,636	1,636

Total

For all 12 tanks, the amount of offsets required is as follows:

$$\begin{aligned}\text{Offsets Required (lb/year)} &= [39,264 - 0] \text{ lb-VOC/year} \times \text{DOR} \\ &= 39,264 \text{ lb-VOC/year} \times \text{DOR}\end{aligned}$$

The project is a Federal Major Modification and therefore the offset ratio for VOC is 1.5:1.

Assuming an offset ratio of 1.5:1, the amount of ERCs that need to be withdrawn is:

$$\begin{aligned}\text{Offsets Required (lb/year)} &= 39,264 \text{ lb-VOC/year} \times 1.5 \\ &= 58,896 \text{ lb-VOC/year}\end{aligned}$$

As stated above, fermentation operations occur in the third and fourth quarter of each calendar year. Therefore, emission offset requirements for the fermentation operation will be assessed in the third and fourth quarter.

Calculating the appropriate quarterly emissions to be offset is as follows:

Quarterly Offset Requirement – Fermentation (All 12 Tanks)				
Pollutant	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)
VOC	0	0	29,448	29,448

The applicant has stated that the facility plans to use ERC certificates S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1 (successor to S-4664-1), and S-4744-1 (successor to S-4676-1) to offset the increases in emissions associated with this project. These certificates have available quarterly credits as follows:

Proposed VOC ERC Certificates				
ERC Certificate #	1 st Qtr (lb/qtr)	2 nd Qtr (lb/qtr)	3 rd Qtr (lb/qtr)	4 th Qtr (lb/qtr)
S-4601-1	2,107	2,106	1,527	1,407
C-1229-1	8,075	8,075	8,041	8,040
S-4354-1	16,065	16,065	16,065	16,065
S-4442-1	7,039	7,032	7,025	7,013
S-4381-1	827	771	816	805
S-4480-1	16,946	16,904	16,875	16,857
C-1071-1	23	22	21	20
S-4414-1	2,761	2,761	2,783	2,783
N-0002-1	9	9	26	28
S-4727-1	48,335	48,335	48,335	48,335
S-4744-1	67,500	117,500	117,500	117,500
Total	169,687	219,580	219,014	218,853

As seen above, the facility has sufficient credits to fully offset the quarterly emissions increases associated with this project.

Proposed Rule 2201 (offset) Conditions

- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter – 1,636 lb, and 4th quarter – 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
- ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,

- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in Sections VII.C.7 and VII.C.8, this project is a SB 288 and Federal Major Modification for VOC; therefore, public noticing for SB 288 and Federal Major Modification purposes is required.

b. PE > 100 lb/day

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
VOC (fermentation)	1,211.0	100 lb/day	Yes

Therefore, public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
VOC	> 20,000	> 20,000	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore, public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	Σ PE2 (lb/year)	Σ PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	78,624	18,216	60,408	20,000 lb/year	Yes

As demonstrated above, the SSIPEs for VOC was greater than 20,000 lb/year; therefore, public noticing for SSIPE purposes is required.

2. Public Notice Action

As discussed above, public noticing is required for this project for SB 288 and Federal Major Modification, VOC emissions in excess of 100 lb/day, and SSIPE greater than 20,000 lb/year. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), US Environmental Protection Agency (US EPA), and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC permits for this equipment.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

For all wine storage tank emissions units in this project, the DEL is stated in the form of a daily limit on tank throughput and a maximum ethanol content for wine stored in the tank.

Proposed Rule 2201 (DEL) Conditions

For the proposed wine fermentation and storage tank emission units in this project, the DEL is enforced with the following conditions:

- The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201]
- The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb/day per 1000 gallons of tank capacity. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offsets, public notification, and daily emission limit requirements of Rule 2201. Recordkeeping is also required for winery tanks pursuant to District Rule 4694, *Wine Fermentation and Storage Tanks*. The following conditions will be listed on the permits to ensure compliance:

- The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
- Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
- For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694]
- The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine ethanol content and throughput rate for storage operations and VOC emission rate for fermentation operations (ethanol percentage by volume, gallons and lb-VOC per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694]
- All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]
- Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. However, since this project

involves only VOC and no ambient air quality standard exists for VOC, an AAQA is not required for this project.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a and VIII-Rule 2201-C.1.b, this source is undergoing an SB 288 Major Modification and a Federal Major Modification; therefore, this requirement is applicable. Included in Appendix B is E & J Gallo's compliance certification.

H. Alternative Siting Analysis

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.

In addition to winery tanks, the operation of a winery requires a large number support equipment, services and structures such as raw material receiving stations, crushers, piping, filtering and refrigeration units, warehouses, laboratories, bottling and shipping facilities, and administration buildings.

Since the current project involves only a minimal increase in the winery's total tank volume and no change to any other facets of the operation, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures and facilities on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant.

As demonstrated above, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean

Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to wine fermentation or storage tank operations.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to wine fermentation or storage tank operations.

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of the proposed operations provided the equipment is well maintained. Therefore, the following condition will be listed on each permit to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – Risk Management Policy for Permitting New and Modified Sources specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

Ethanol is not a HAP as defined by Section 44321 of the California Health and Safety Code. Therefore, there are no increases in HAP emissions associated with any emission units in this project; therefore, a health risk assessment is not necessary and no further risk analysis is required.

District Rule 4694 Wine Fermentation and Storage Tanks

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) from the fermentation and bulk storage of wine, or achieve equivalent reductions from alternative emission sources. This rule is applicable to all facilities with fermentation emissions in excess of 10 tons-VOC/year. The storage tank provisions of this rule apply to all tanks with capacity in excess of 5,000 gallons.

Section 5.1 requires the winery operator achieve Required Annual Emissions Reductions (RAER) equal to at least 35% of the winery's Baseline Fermentation Emissions (BFE). Since the proposed tanks will be used for storage only, this section is not applicable; therefore, no further discussion is required.

Section 5.2 places specific restrictions on wine storage tanks with 5,000 gallons or more in capacity when such tanks are not constructed of wood or concrete. Section 5.2.1 requires these tanks to be equipped and operated with a pressure-vacuum relief valve meeting all of the following requirements:

- The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank,
- The pressure-vacuum relief valve shall operate in accordance with the manufacturer's instructions, and
- The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings.
- The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21.

The following conditions will be placed on the permits for stainless steel tanks $\geq 5,000$ gallons in capacity and used for storage to ensure compliance with the requirements of Section 5.2.1:

- This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694]
- The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694]

Section 5.2.2 requires that the temperature of the stored wine be maintained at or below 75° F. The following condition will be placed on the permits for stainless steel tanks $\geq 5,000$ gallons in capacity and used for storage to ensure compliance with the requirements of Section 5.2.2:

- The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694]

Every three years, Sections 6.1 and 6.2 require the facility to submit a Three-Year Compliance Plan and a Three-Year Compliance Plan Verification respectively. Section 6.3 requires that an Annual Compliance Plan Demonstration be submitted to the District no later than February 1 of each year to show compliance with the applicable requirements of the Rule. Section 6.4.3 requires that all monitoring be performed for any Certified Emission Reductions as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained.

The following conditions listed on the facility-wide permit ensure compliance:

- A Three-Year Compliance Plan that demonstrates compliance with the requirements of Section 5.1 of District Rule 4694 (12/15/05) for each year of the applicable compliance period shall be submitted to the District by no later than December 1, 2006, and every three years thereafter on or before December 1. [District Rule 4694]
- A Three-Year Compliance Plan Verification that demonstrates that the Three-Year Compliance Plan elements are in effect shall be submitted to the District by no later than July 1, 2007, and every three years thereafter on or before July 1. [District Rule 4694, 6.2]
- An Annual Compliance Plan Demonstration that shows compliance with the applicable requirements of this rule shall be submitted to the District by no later than February 1, 2008, and every year thereafter on or before February 1. [District Rule 4694]
- Operators using CER to mitigate fermentation emissions shall perform all monitoring and recordkeeping, as established in their approved Three-Year Compliance Plan, and shall maintain all records necessary to demonstrate compliance. [District Rule 4694]

Section 6.4.1 requires that records be kept for each fermentation batch. The following condition will be listed on the permits for each fermentation tank to ensure compliance:

- For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694]

Section 6.4.2 requires that weekly records be kept of wine volume and temperature in each storage tank. The following conditions will be placed on the permit for each storage tank to ensure compliance with the requirements of Section 6.4.2:

- The operator shall determine and record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694]

Section 6.4.3 requires that all monitoring be performed for any Certified Emission Reductions as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained. The following condition listed on the facility-wide permit ensures compliance:

- Operators using CER to mitigate fermentation emissions shall perform all monitoring and recordkeeping, as established in their approved Three-Year Compliance Plan, and shall maintain all records necessary to demonstrate compliance. [District Rule 4694]

Section 6.4 requires that records required by this rule be maintained, retained on-site for a minimum of five years, and made available to the APCO upon request. The following condition will be placed on all permits to ensure compliance:

- All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

District CEQA Findings

The City of Fresno (City) is the public agency having principal responsibility for approving the Project. As such, the City served as the Lead Agency for the project. Pursuant to Section 21157.1 of the California Public Resources Code (California Environmental Quality Act), the

City prepared an Initial Study to evaluate the proposed project in accordance with land use and environmental policies and provisions of the City's General Plan. The City made the following findings and adopted a Finding of Conformity for this project:

- The project is fully within the scope of the Master Environmental Impact Report (MEIR) prepared for the General Plan;
- The project will not generate additional significant environmental effects not previously examined in the MEIR; and
- No new or additional mitigation measures or alternatives are required.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's thresholds of significance for criteria pollutants. Thus, the District concludes that through a combination of project design elements and permit conditions, project specific stationary source emissions will be reduced and mitigated to less than significant levels. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR public noticing and EPA noticing periods, re-issue Authority to Construct permits C-447-330-1 through '341-1 subject to the permit conditions on the attached draft Authority to Construct permits in Appendix C.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
C-447-330-1	3020-05-E	350,000 gallons	\$270.00
C-447-331-1	3020-05-E	350,000 gallons	\$270.00
C-447-332-1	3020-05-E	350,000 gallons	\$270.00
C-447-333-1	3020-05-E	350,000 gallons	\$270.00
C-447-334-1	3020-05-E	350,000 gallons	\$270.00
C-447-335-1	3020-05-E	350,000 gallons	\$270.00
C-447-336-1	3020-05-E	350,000 gallons	\$270.00
C-447-337-1	3020-05-E	350,000 gallons	\$270.00
C-447-338-1	3020-05-E	350,000 gallons	\$270.00
C-447-339-1	3020-05-E	350,000 gallons	\$270.00
C-447-340-1	3020-05-E	350,000 gallons	\$270.00
C-447-341-1	3020-05-E	350,000 gallons	\$270.00

XI. Appendices

- A: BACT Guideline 5.4.14 and Top-Down BACT Analysis
- B: Compliance Certification
- C: Draft Reissued ATC Permits

Appendix A

BACT Guideline 5.4.14 and Top-Down BACT Analysis

Per » B A C T » Bact Guideline.asp?category Level1=5&category Level2=4&category Level3=14&last Update=10 » 6 :

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Best Available Control Technology (BACT) Guideline 5.4.14
Last Update: 10/6/2009

Wine Fermentation Tank

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F	1. Capture of VOCs and Thermal Oxidation or Equivalent (88% control) 2. Capture of VOCs and Carbon Adsorption or Equivalent (86% control) 3. Capture of VOCs and Absorption or Equivalent (81% control) 4. Capture of VOCs and Condensation or Equivalent (81% control)	

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. For background information, see Permit Specific BACT Determinations on [Details Page](#).

Top-Down BACT Analysis for Wine Fermentation VOC Emissions for Permit Units C-447-330-1 through '341-1

Step 1 - Identify All Possible Control Technologies

BACT guideline 5.4.14 (10/6/2009) lists both absorption (scrubber) and condensation systems as technologically feasible options for the control of VOC emission from wine fermentation operations. Since 2009, there has been substantial development of these two control technologies prompting a re-examination of the feasibility of these technologies in this project to determine if the technologies are considered Achieved in Practice. The Achieved in Practice analysis for BACT for wine fermentation tanks is included in Attachment B and is as follows:

The SJVUAPCD BACT Clearinghouse guideline 5.4.14, 1st quarter 2015, identifies technologically feasible BACT for wine fermentation tanks as follows:

- 1) Capture of VOCs and thermal oxidation or equivalent (88% control)
- 2) Capture of VOCs and carbon adsorption or equivalent (86% control)
- 3) Capture of VOCs and absorption or equivalent (81% control)
- 4) Capture of VOCs and condensation or equivalent (81% control)

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank by Control Effectiveness		
Rank	Control	Overall Capture and Control Efficiency ^(*)
1	Capture of VOCs and thermal or catalytic oxidation or equivalent	88% ^(**)
2	Capture of VOCs and carbon adsorption or equivalent	86%
3	Capture of VOCs and absorption or equivalent	81%
4	Capture of VOCs and condensation or equivalent	81%
5	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F	Baseline (Achieved-in-Practice)

(*) Capture efficiency (90%) x removal efficiency for control device.

(**) Following recent District practice, thermal and catalytic oxidation will be ranked together.

Step 4 - Cost Effectiveness Analysis

A cost-effective analysis is performed for each control technology which is more effective than meeting the requirements of option 5 (achieved-in-practice BACT), as proposed by the facility.

Maximum Vapor Flow Rate

Based on the kinetic model provided by the facility, maximum CO₂ production rate for each fermentation tank = 1803.9 scfm.

Maximum Vapor Flow Rate = 1803.9 scfm x 12 fermentation tanks = 21,649 scfm

The submitted kinetic model is based upon a maximum rate 46-hour red wine fermentation with a maximum tank charge of 80% of the nominal tank capacity of 350,000 gallons (280,000 gallons of must fermented). Since the planned operation of the proposed tanks (per E & J Gallo Winery) is the production of commercial premium wines with fermentation cycles of 5-8 days, the 46 hour fermentation basis with maximum fill is a very conservative upper limit of the expected flow rate.

Uncontrolled Fermentation Emissions

For purposes of cost effectiveness analysis, uncontrolled fermentation emissions will be calculated based on the uncontrolled emission factors without consideration of the 35% reduction per Rule 4694 as these are the actual uncontrolled emissions being sent to each control technology option.

Uncontrolled Fermentation PE = $EF_{red} \text{ (lb-VOC/1000 gal)} \times \text{annual throughput (gal/yr)} \times 12 \text{ tanks}$
= 6.2 lb-VOC/1000 gal x 812,000 gal/year x 12 tanks
= 5,034 lb-VOC/year x 12 tanks
= 60,408 lb-VOC/year

Capture of VOCs and condensation (> 81% collection & control)

Design Basis

- The District provided notice to Steven Colome, Sc.D. of EcoPAS that this project was being proposed to allow EcoPAS an opportunity to provide cost information. The District did not receive updated cost information.
- Although the EcoPAS units have not been demonstrated at the scale of operation as proposed by this project, the District will conservatively assume that the proposed equipment and equipment cost proposed by EcoPAS will meet the duty requirements for the project.
- EcoPAS has provided site-specific installation costs for the proposed scope of supply (see project N-1131615 Attachment C). The District will conservatively base the cost effectiveness analysis on these costs with the exception of the following adjustments:
- Engineering costs will be assumed to be 5% of total direct cost exclusive of city/county plan check costs. The District believes that this value reflects a typical minimum for any significant industrial project and believes that this is consistent with standard estimating and good engineering practice.

- The EcoPAS cost for Permits and Testing (\$10,000) is considered adequate to cover building department costs only, including plan check and building permit fees. Due to the unsteady state operation of fermentation tanks, initial source testing is expected to be a significant technical operation with significant expense, conducted over the fermentation cycle rather than the typical three 30-minute steady state measurements. An additional cost of \$15,000 per unit will be assumed for initial source testing.
- EcoPAS has estimated a cost of \$98,100 to cover administrative cost and contingency for the project. The District's analysis will consider these items separately as "Owner's Cost" (administrative) and "Project Contingency".
- Owner's Cost: The District considers a value of \$100,000 as a minimum value to cover the project management, internal engineering, and operations planning required to implement a significant new process technology of this scale in a commercial winery.
- Project Contingency: Good engineering practice and accepted norms of the engineering industry, when applied to a conceptual estimate of this type, require a project contingency exceeding 20%. Contingencies less than 10% are only achieved when preliminary engineering has been completed (all major equipment fully specified and firm quotations received with approved piping and instrumentation diagrams, plot plans and equipment layouts) plus a preliminary design basis and/or preliminary design sketches with material take-off for all significant cost components of the project. Contingencies less than 5% are only applicable to projects for which all engineering is completed and approved for construction. Based on this discussion, the District will apply a conservative project contingency of 20% to the estimated capital investment for this project.
- E & J Gallo Winery has indicated that, consistent with their current plant and corporate operating philosophy, programmable logic controls and data logging as well as integration with existing digital control systems will be required for any fermentation control system installed. The District has added an allowance of \$10,000 per unit to cover the expected hardware and programming cost of this item.
- Operating labor is estimated based on 1 operator hour per day and 3 shifts per day per operating unit over a 90 day crush season and an hourly cost of \$18.50 per hour.
- An allowance for annual maintenance cost was included as 1% of Total Capital Investment.
- The cost of a chiller system has been annualized and the annualized cost is estimated at \$270 per ton of recovered ethanol based on approximately \$85 per ton energy charge at \$0.13/kWh and \$100 per ton capital charge for the central chilled water facility (based on a District analysis of annualized costs for a 100 ton mechanical chiller).
- Annual source testing will be required. It is assumed that only one representative unit will require testing each year. An annual charge of \$15,000 has been included.
- EcoPAS has indicated the value of the recovered ethanol is \$25 per gallon as a 60 proof alcohol spirit. However, E & J Gallo Winery has indicated the highest value for this product would be \$[REDACTED] per gallon assuming the alcohol can be used for internal brandy production (which has not been demonstrated in practice to be true). This represents the facilities internal cost for distilling material alcohol and does not include additional processing. If the alcohol cannot be used internally, E & J Gallo Winery has indicated the product has no value outside the organization and would in fact incur a disposal cost resulting in a value less than \$0 per gallon. E & J Gallo Winery has proposed to value the recovered alcohol at a conservative value of \$[REDACTED] per gallon until it can be proven in practice to have a greater value.

Equipment Cost Refrigerated Condenser

Pricing for the EcoPAS units will be based on pricing previously received from EcoPAS LLC for District Project N-1131615.

In project N-1131615, EcoPAS sized one condenser to handle six 56,000 gallon tanks (total volume of 336,000 gallons) with a combined flow rate of 1,731.6 scfm (288.6 scfm x 6 tanks) and a combined VOC emission rate of 21,216 lb-VOC/year (3,536 lb-VOC/year x 6 tanks). The EcoPAS condenser proposed was not actually capable of actually handling the maximum flowrate but depended instead on the operational diversity of the six connected tanks to result in an actual combined peak flow less than the maximum since all six tanks would not achieve peak design flow simultaneously. Each tank in this project has a capacity of 350,000 gallons, a flow rate of 1,803.9 scfm, and an emission rate of 5,034 lb-VOC/year. Since it is a single tank with no operational diversity as mentioned above, the control device must be actually sized to handle the full rated flow. Therefore, using the capital cost of one condenser sized for the operation in project N-1131615 would be conservative as that condenser would be undersized to handle each tank in this project. As a conservative assumption, for this BACT analysis one condenser will serve each individual tank.

As quoted by EcoPAS, based on supply of 4 PAS units each sized to control six (6) 56,000-gallon tanks, the price per condenser is estimated at \$475,318 each. The estimated price includes shipping and California sales tax.

Equipment Cost= \$475,318

In this project, one condenser will serve each of the twelve tanks,

Total Equipment Cost = \$475,318 x 12 units
= \$5,703,816

All other costs (direct, indirect, and annual) will be taken from project N-1131615 and will be considered conservative for this project as there are more condenser units (12 units) assumed for this BACT analysis compared to project N-1131615 (4 units).

Condensation	
Cost Description	Cost (\$)
Cost of Refrigerated Condenser system (12 PAS Units)	\$5,703,816
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs (DC)	
Base Equipment Costs (Condenser) See Above	\$5,703,816
Instrumentation (included)	-
Sales Tax 3% (included)	-
Freight (included)	-
Purchased equipment cost	\$5,703,816
Labor (per EcoPAS estimate)	\$81,600
Installation Expense (per EcoPAS estimate)	\$59,175
Subcontracts (per EcoPAS estimate)	\$18,000
PLC/Programming	\$40,000
Direct installation costs	\$198,775
Total Direct Costs (TDC)	\$5,902,591
Indirect Costs (IC)	
Engineering (5% of TDC)	\$295,130
Permits (Building Department) (Allowance)	\$10,000
Initial Source Testing (12 units x \$15,000/unit)	\$180,000
Owner's Cost (Allowance)	\$100,000
Total Indirect Cost (TIC)	\$585,130
Subtotal Capital Investment (SCI = TDC + TIC)	\$6,487,721
Project Contingency (20% of SCI)	\$1,297,544
Total Capital Investment (TCI) (TDC + TIC + Contingency)	\$7,785,265

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

$$\text{Amortization Factor} = \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.1627, \text{ amortizing over 10 years at 10\%}$$

Therefore,

$$\text{Annualized Capital Investment} = \$7,785,265 \times 0.1627 = \$1,267,016$$

Annual Costs

Annual Costs			
Direct Annual Cost (DC)			
Operating Labor			
Operator	1 hr/shift x 3 shifts/day x 12 units x 90 days = 3,240 hr/year	\$18.50/h	\$59,940
Supervisor	15% of operator		\$8,991
Maintenance			
Labor	1% of TCI		\$77,853
Chiller (Glycol)			
	60,408 lb/year (uncontrolled fermentation emissions) x 0.81 ÷ 2000	\$270/ton EtOH	\$6,606
Utility			
Electricity		\$0.102/kWh	\$0
Total DC			\$59,758
Indirect Annual Cost (IC)			
Overhead	60% of Labor Cost	0.6 x (\$59,940 + \$8,991 + \$77,853)	\$88,070
Administrative	2% TCI		\$155,705
Property Taxes	1% TCI		\$77,853
Insurance	1% TCI		\$77,853
Annual Source	One representative test/year @ \$15,000		\$15,000
Total IC			\$414,481
Recovery Credits (RC)			
80 Proof Recovered	60,408 lb/year (uncontrolled fermentation emissions) x 0.81 x gal/6.62 lb ÷ 0.40	\$█/gal 80 Proof EtOH	\$█
Annual Cost (DC + IC – RC)			\$█

Total Annual Cost = Condenser System + Annual Cost
= \$1,267,016 + \$█
= \$█ (with Recovery Credits)

Emission Reductions

EcoPAS has indicated the PAS unit is capable of achieving a capture and control efficiency of 90%. However, the District's current BACT Guideline identifies a combined capture and control efficiency of 81% for condensation technology. The capture and control efficiency of 81% will be used in this analysis as the value of 90% has yet to be shown to be feasible.

Annual Emission Reduction = Fermentation Emissions x 0.81
= 60,408 lb-VOC/year x 0.81
= 48,930 lb-VOC/year
= 24.465 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

$$\begin{aligned}\text{Cost Effectiveness} &= \$ \text{[REDACTED]}/\text{year} \div 24.465 \text{ tons-VOC/year} \\ &= \$ \text{[REDACTED]}/\text{ton-VOC (with Recovery Credits)}\end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the refrigerated condenser system and annual costs alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Collection of VOCs and control by absorption (> 81% collection & control)

Design Basis

- The District provided notice to Andrew Fedak of NohBell Corporation to allow NohBell Corporation an opportunity to provide cost information. The District did not receive updated cost information; therefore, the NohBell equipment pricing and capital investment requirements developed for District Project N-1131615 (Gallo Livingston) will be factored as required to develop a cost effectiveness analysis for this project.
- Although the NoMoVo units have not been demonstrated at the scale of operation as proposed by this project, the District will conservatively assume that the proposed equipment and equipment cost proposed by NohBell will meet the duty requirements for the project.
- The District will consider the average control efficiency of the unit to be 81% for purposes of this project, consistent with the District's BACT Guideline for this class and category.
- The EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001) is used for this analysis with modifications to account for project-specific conditions.
- Instrumentation allowance of \$2,000 per NoMoVo unit has been included for a pressure transmitter and a temperature transmitter for monitoring pressure of the collection header and vent stream and temperature from the NoMoVo unit.
- Sales tax = 3%
- Foundations and supports: not required – unit is supported from either a tank or the pipe rack structure. Equipment price includes required attachments and clips.
- Since the units are mobile which are ready for operation upon delivery, Handling and Erection is taken to be 2% of Purchased Equipment Cost as an allowance for pre-commissioning.
- Piping is taken to be 1% of Purchased Equipment Cost based on the only requirements being Tee fittings for the tank discharge.
- Gallo has indicated that, consistent with their current plant and corporate operating philosophy, programmable logic controls and data logging as well as integration with existing digital control systems will be required for any fermentation control system installed. The district has added an allowance of \$10,000 per unit to cover the expected hardware and programming cost of this item.
- Insulation and painting are not required.
- Recovered ethanol storage tank = \$40,000 (installed)
- Due to the unsteady state operation of fermentation tanks, initial source testing is expected to be a significant technical operation with significant expense, conducted over the fermentation cycle rather than the typical three 30-minute steady state measurements. An additional cost of \$15,000 per unit will be assumed for initial source testing.
- Engineering costs will be assumed to be 5% of total direct cost exclusive of city/county plan check costs. The District believes that this value reflects a typical minimum for any significant industrial project and believes that this is consistent with standard estimating and good engineering practice.
- An allowance of \$10,000 will be added to cover plan check and building permit fees.
- Owner's Cost: The District considers a value of \$100,000 as a minimum value to cover the project management, internal engineering and operations planning required to implement a significant new process technology of this scale in a commercial winery.

- Project Contingency: Good engineering practice and accepted norms of the engineering industry, when applied to a conceptual estimate of this type, require a project contingency exceeding 20%. Contingencies less than 10% are only achieved when preliminary engineering has been completed (all major equipment fully specified and firm quotations received, approved piping and instrumentation diagrams, plot plans and equipment layouts) plus a preliminary design basis and/or preliminary design sketches with material take-off for all significant cost components of the project. Contingencies less than 5% are only applicable to projects for which all engineering is completed and approved for construction. Based on this discussion, the District will apply a conservative project contingency of 20% to the estimated capital investment for this project.
- Operating labor is estimated based on 2 operator hours per day per operating unit over a 90 day crush season and an hourly cost of \$18.50 per hour.
- An allowance for annual maintenance cost was included as 1% of Total Capital Investment.
- Connected electrical load for each unit is 2.5 horsepower which is assumed to operate continuously for 90 days.
- Electric power cost = \$0.102/kWh (see regenerative thermal oxidizer Top Down BACT Analysis section below)
- Captured ethanol is recovered as a 10% solution suitable for disposal to an ethanol distillery at a cost of \$0.08 per gallon.
- Annual source testing will be required. It is assumed that only one representative unit will require testing each year. An annual charge of \$15,000 has been included.

Equipment Cost Scrubber

Pricing for the NoMoVo units will be based on pricing previously received from NohBell Corporation for District Project N-1131615.

In project N-1131615, NohBell Corporation sized 18 scrubbers to handle twenty-four (24) 56,000 gallon tanks (total volume of 1,344,000 gallons) with a combined flow rate of 6,926.4 scfm (288.6 scfm x 24 tanks) and a combined VOC emission rate of 84,864 lb-VOC/year (3,536 lb-VOC/year x 24 tanks). Each tank in this project has a capacity of 350,000 gallons, a flow rate of 1,803.9 scfm, and an emission rate of 5,034 lb-VOC/year. Therefore, using the equipment cost of 18 scrubbers sized for the operation in project N-1131615 would be conservative as those scrubbers would be undersized to handle the tanks in this project. As a conservative assumption, for this BACT analysis 18 scrubbers will serve the 12 fermentation tanks.

As quoted by NohBell, based on supply of 18 NoMoVo units each sized to control twenty-four (24) 56,000-gallon tanks, the price per scrubber is shown below.

NoMoVo v4.0-18 Reactor Units = \$60,000 each
NoMoVo v2.0 Portable Pumping Skids = \$7,500 each
Total = \$60,000 + \$7,500 = \$67,500

Total Equipment Cost = \$67,500 x 18 units
= \$1,215,000

Scrubber	
Cost Description	Cost (\$)
Refrigerated Scrubber System (18 NoMoVo Units)	\$1,215,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs (DC)	
Base Equipment Costs (Scrubber System) See Above	\$1,215,000
Instrumentation (\$2,000 per unit)	\$40,000
Sales Tax 3%	\$36,450
Freight (included)	-
Purchased equipment cost	\$1,291,450
Foundations & supports (not required)	-
Handling & erection 2%	\$25,829
Electrical 1%	\$12,915
Piping 1%	\$12,915
Painting (not required)	-
Insulation (not required)	-
PLC & Programming	\$180,000
Recovered Ethanol Storage Tank (installed)	\$40,000
Direct installation costs	\$271,659
Total Direct Costs (TDC)	\$1,563,109
Indirect Costs (IC)	
Engineering (5% of TDC)	\$78,155
Construction and field expenses (2% of TDC)	\$31,262
Permits (Building Department) (Allowance)	\$10,000
Contractor fees (2% of TDC)	\$31,262
Start-up (1% of TDC)	\$15,631
Source Testing (18 units x \$15,000/unit)	\$270,000
Owner's Cost (Allowance)	\$100,000
Total Indirect Costs (TIC)	\$536,310
Subtotal Capital Investment (SCI = TDC + TIC)	\$2,099,419
Project Contingency (20% of SCI)	\$419,884
Total Capital Investment (TCI) (TDC + TIC + Contingency)	\$2,519,303

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

$$\text{Amortization Factor} = \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.1627, \text{ amortizing over 10 years at 10\%}$$

Therefore,

$$\text{Annualized Capital Investment} = \$2,519,303 \times 0.1627 = \$410,005$$

Wastewater Disposal Costs

Additionally, the water scrubber will generate ethanol-laden wastewater containing 30.2 tons-ethanol annually (60,408 lb/year (uncontrolled fermentation emissions) $\times$ 0.81 $\div$ 2000). Assuming a 10% solution, approximately 91,251 gallons of waste water (30.2 ton-ethanol $\times$ 2000 lb/ton $\times$ gal/6.62 lb $\div$ 0.10) will be generated annually. Per NohBell Corporation, an allowance of \$0.08 per gallon is applied for disposal costs.

$$\text{Annual disposal costs} = 91,251 \text{ gallons} \times \$0.08/\text{gallon} = \$7,300$$

Annual Costs

Annual Costs			
Direct Annual Cost (DC)			
Operating Labor			
Operator	2 hr/day $\times$ 18 units $\times$ 90 days = 3,240 hr/year	\$18.50/h	\$59,940
Supervisor	15% of operator		\$8,991
Maintenance			
Labor	1% of TCI		\$26,065
Wastewater Disposal			
	10% Solution = 91,251 gal	\$0.08/gal	\$7,300
Utility			
Electricity	18 units $\times$ 2.5 hp $\times$ 0.746 kW/hp $\times$ 2,160 hr/yr = 72,511 kWh/yr	\$0.102/kWh	\$7,396
Total DC			\$109,692
Indirect Annual Cost (IC)			
Overhead	60% of Labor Cost	0.6 $\times$ (\$59,940 + \$8,991 + \$26,065)	\$56,998
Administrative	2% TCI		\$52,129
Property Taxes	1% TCI		\$26,065
Insurance	1% TCI		\$26,065
Annual Source Test	One representative test/year @ \$15,000		\$15,000
Total IC			\$176,257
Annual Cost (DC + IC)			\$285,949

$$\begin{aligned} \text{Total Annual Cost} &= \text{Scrubber System} + \text{Annual Cost} \\ &= \$410,005 + \$285,949 \\ &= \$695,954 \end{aligned}$$

Emission Reductions

The District's BACT Guideline identifies an overall collection and control efficiency of 81% for absorption systems.

$$\begin{aligned}\text{Annual Emission Reduction} &= \text{Fermentation Emissions} \times 0.81 \\ &= 60,408 \text{ lb-VOC/year} \times 0.81 \\ &= 48,930 \text{ lb-VOC/year} \\ &= 24.5 \text{ tons-VOC/year}\end{aligned}$$

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

$$\begin{aligned}\text{Cost Effectiveness} &= \$695,954/\text{year} \div 24.5 \text{ tons-VOC/year} \\ &= \$28,446/\text{ton-VOC}\end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the water scrubber and annual costs alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC. Therefore, this option is not cost-effective and will not be considered for this project.

Collection of VOCs and control by carbon adsorption (> 86% collection and control)

Collection System Capital Investment (based on ductwork)

A potential common feature of all thermal or catalytic oxidation/carbon adsorption options when configured as a large single control device controlling many tanks is that they require installation of a collection system for delivering the VOCs from the tanks to the common control device. Therefore, the requirements and cost of such a collection system will be considered separately.

Collection system to consist of:

- The collection system consists of stainless steel plate ductwork (stainless steel is required due to food grade product status) with isolation valving, connecting twelve tanks to a common manifold system which ducts the combined vent to the common control device. The cost of dampers and isolation valving, installed in the ductwork, will be included in the cost estimate.
- A minimum duct size is established at six inches diameter at each tank to provide adequate strength for spanning between supports. The main header is twelve inches diameter to handle the potential for simultaneous venting. The main header duct size of twelve inches may be insufficient for red wine fermentation but will be utilized as a worst case scenario.

Capital Cost Ductwork

Connection from tank to main duct = 12 tanks x 702 feet x \$144/foot = \$101,088

Main duct for fermenters = \$145,056

Redundant main duct for fermenters = \$246,144

Unit installed cost for 6 inch butterfly valve = \$2,125/valve x 12 valves x 2 systems = \$51,000

Unit installed cost one foot removable spool = \$500/tank x 12 tanks x 2 systems = \$12,000

Knockout drums = \$46,300

Duct support allowance = \$150,000

Total = \$101,088 + \$145,056 + \$246,144 + \$51,000 + \$12,000 + \$46,300 + \$150,000
= \$751,588

Instrumentation and electrical (grounding and dampers) may be required but will be excluded as a worst case scenario (based on comments provided by the emission control device vendors).

Ductwork	
Cost Description	Cost (\$)
Duct Estimate (See Duct Sizing Attachment A)	\$751,588
Adjusting factor from 2005 dollars to 2014 dollars (2.75% inflation/year)	1.2475
Inflation adjusted duct cost	\$937,606
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs (DC)	
Base Equipment Costs (Ductwork) See Above	\$937,606
Instrumentation (not required)	-
Sales Tax 3%	\$28,128
Freight 5%	\$46,880
Purchased equipment cost	\$1,012,614
Foundations & supports 8%	\$81,009
Handling & erection 14%	\$141,766
Electrical 4% (not required)	-
Piping 2% (not required)	-
Painting 1% (not required)	-
Insulation 1% (not required)	-
Direct installation costs	\$222,775
Total Direct Costs	\$1,235,389
Indirect Costs (IC)	
Engineering 10%	\$101,261
Construction and field expenses 5%	\$50,631
Contractor fees 10%	\$101,261
Start-up 2%	\$20,252
Performance test 1%	\$10,126
Contingencies 3%	\$30,378
Total Indirect Costs	\$313,909
Total Capital Investment (TCI) (DC + IC)	\$1,549,298

Capital Cost Clean-In-Place (CIP) System

A ducting system on a tank farm must have this system to maintain sanitation and quality of the product. The cost of operation of the CIP system has not been estimated. Operation of a CIP system, using typical cleaning agents, will raise disposal and wastewater treatment costs. Most likely, these costs will be significant.

Clean-In-Place (CIP) System	
Cost Description	Cost (\$)
Current cost of CIP system	\$200,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs (DC)	
Base Equipment Costs (CIP System) See Above	\$200,000
Instrumentation 10%	\$20,000
Sales Tax 3%	\$6,000
Freight 5%	\$10,000
Purchased equipment cost	\$236,000
Foundations & supports 8%	\$18,880
Handling & erection 14%	\$33,040
Electrical 4%	\$9,440
Piping 2%	\$4,720
Painting 1%	\$2,360
Insulation 1%	\$2,360
Direct installation costs	\$70,800
Total Direct Costs	\$306,800
Indirect Costs (IC)	
Engineering 10%	\$23,600
Construction and field expenses 5%	\$11,800
Contractor fees 10%	\$23,600
Start-up 2%	\$4,720
Performance test 1%	\$2,360
Contingencies 3%	\$7,080
Total Indirect Costs	\$73,160
Total Capital Investment (TCI) (DC + IC)	\$379,960

Annualized Capital Costs

Two CIP systems are required for a redundant ducting system.

$$\begin{aligned}
 \text{Total capital costs} &= \text{Ductwork} + \text{CIP System} \times 2 \\
 &= \$1,563,977 + \$379,960 + \$379,960 \\
 &= \$2,323,897
 \end{aligned}$$

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

$$\text{Amortization Factor} = \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.163 \text{ per District policy, amortizing over 10 years at 10\%}$$

Therefore,

$$\text{Annualized Capital Investment} = \$2,323,897 \times 0.163 = \$378,204$$

Carbon Adsorption

Delivery and installation of a 1,000 cfm blower package for carbon adsorption is \$80,000 - \$85,000 and delivery and installation of a 50 cfm blower package for carbon adsorption is \$20,000 - \$25,000 per David Drewelow of Drewelow Remediation Equipment on February 3, 2015. The combined vapor flow rate for the tanks in this project is 21,649 cfm. A value of \$80,000 for the 1,000 cfm blower package will be used as a conservative estimate.

Carbon Adsorption Capital Cost = \$80,000

The carbon bed operated with steam to regenerate the bed produces a water alcohol mixture. The applicant has provided a cost of \$5,000 for a water alcohol tank. The waste stream or disposal costs have not been analyzed in this project.

Carbon Capital Cost

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Fermentation Emissions} \times 0.86 \\ &= 60,408 \text{ lb-VOC/year} \times 0.86 \\ &= 51,951 \text{ lb-VOC/year} \\ &= 26.0 \text{ tons-VOC/year} \end{aligned}$$

Assume a working bed capacity of 20% for carbon (weight of vapor per weight of carbon)

$$\begin{aligned} \text{Carbon required} &= 26.0 \text{ tons-VOC/year} \times 2000 \text{ lb/ton} \times 1/0.20 \\ &= 259,754 \text{ lb carbon} \end{aligned}$$

David Drewelow also provided a cost of \$1.25/lb of carbon which does not include any delivery or servicing fees.

$$\text{Carbon capital cost} = \$1.25/\text{lb} = \$1.25/\text{lb} \times 259,754 \text{ lb carbon} = \$324,693$$

Carbon Adsorption	
Cost Description	Cost (\$)
Carbon Adsorption cost (see above)	\$80,000
Carbon Capital Cost (see above)	\$324,693
Water alcohol tank cost	\$5,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (Carbon Adsorption System + Carbon) See Above	\$409,693
Instrumentation 10%	\$40,969
Sales Tax 3%	\$12,291
Freight 5%	\$20,485
Purchased equipment cost	\$483,438
Foundations & supports 8%	\$38,675
Handling & erection 14%	\$67,681
Electrical 4%	\$19,338
Piping 2%	\$9,669
Painting 1%	\$4,834
Insulation 1%	\$4,834
Direct installation costs	\$145,031
Total Direct Costs	\$628,469
Indirect Costs (IC)	
Engineering 10%	\$48,344
Construction and field expenses 5%	\$24,172
Contractor fees 10%	\$48,344
Start-up 2%	\$9,669
Performance test 1%	\$4,834
Contingencies 3%	\$14,503
Total Indirect Costs	\$149,866
Total Capital Investment (TCI) (DC + IC)	\$778,335

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

$$\text{Amortization Factor} = \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.163 \text{ per District policy, amortizing over 10 years at 10\%}$$

Therefore,

$$\text{Annualized Capital Investment} = \$778,335 \times 0.163 = \$126,670$$

Total Annual Cost

$$\begin{aligned} \text{Total Annual Cost} &= \text{Carbon Adsorption System} + \text{Ductwork} + \text{CIP System} \\ &= \$126,670 + \$378,204 \\ &= \$504,874 \end{aligned}$$

Emission Reductions

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Fermentation Emissions} \times 0.86 \\ &= 60,408 \text{ lb-VOC/year} \times 0.86 \\ &= 51,951 \text{ lb-VOC/year} \\ &= 26.0 \text{ tons-VOC/year} \end{aligned}$$

Cost Effectiveness

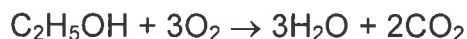
$$\text{Cost Effectiveness} = \text{Total Annual Cost} \div \text{Annual Emission Reductions}$$

$$\begin{aligned} \text{Cost Effectiveness} &= \$504,874/\text{year} \div 26.0 \text{ tons-VOC/year} \\ &= \$19,437/\text{ton-VOC} \end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the carbon adsorption system and collection system ductwork and CIP equipment alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Collection of VOCs and control by thermal or catalytic oxidation
(> 88% collection & control)

The balanced chemical equation for combustion of ethanol is shown below.



The RTO would be connected by ducts to the tanks themselves. If the tanks were to overfill and send liquid down the duct, damage to the RTO could occur. The presence of significant liquid in the knock out drum would cause a shut down of the RTO until the issue could be corrected. The ducting costs include a knock out drum allowance.

Thermal or Catalytic Oxidizer Capital Cost

A total capital investment cost of \$290,000 and installation cost including freight of \$42,000 for a Regenerative Thermal Oxidizer (RTO) is provided by Adwest Technologies, Inc on September 24, 2014 for an RTO handling 10,000 scfm. Therefore, this cost estimate will be used in this project as a conservative estimate

$$\begin{aligned}\text{Capital Cost} &= \$290,000 + \$42,000 \\ &= \$332,000\end{aligned}$$

Thermal or Catalytic Oxidation	
Cost Description	Cost (\$)
1,000 cfm Regenerative Thermal Oxidizer cost	\$290,000
Installation cost (including freight)	\$42,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs (DC)	
Base Equipment Costs (Regenerative Thermal Oxidizer System) See Above	\$332,000
Instrumentation 10%	\$33,200
Sales Tax 3%	\$9,960
Freight 5% (included)	-
Purchased equipment cost	\$375,160
Foundations & supports 8%	\$30,013
Handling & erection 14%	\$52,522
Electrical 4%	\$15,006
Piping 2%	\$7,503
Painting 1%	\$3,752
Insulation 1%	\$3,752
Direct installation costs	\$112,548
Total Direct Costs	\$487,708

Indirect Costs (IC)	
Engineering 10%	\$37,516
Construction and field expenses 5%	\$18,758
Contractor fees 10%	\$37,516
Start-up 2%	\$7,503
Performance test 1%	\$3,752
Contingencies 3%	\$11,255
Total Indirect Costs	\$116,300
Total Capital Investment (TCI) (DC + IC)	\$604,008

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

$$\text{Amortization Factor} = \left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.163 \text{ per District policy, amortizing over 10 years at 10\%}$$

Therefore,

$$\text{Annualized Capital Investment} = \$604,008 \times 0.163 = \$98,300$$

Operation and Maintenance Costs

The Direct annual costs include labor (operating, supervisory, and maintenance), maintenance materials, electricity, and fuel.

Heat of Combustion for waste gas stream -dh(c):

$$\begin{aligned} \text{Heat of combustion -dHc} &= 20,276 \text{ Btu/lb} \\ \text{Daily VOC emissions rate} &= 1,211.0 \text{ lb/day} \times 12 \text{ tanks} = 14,532.0 \text{ lb/day} \\ \text{Blower flow rate} &= 21,647 \text{ scfm} \\ &= 31,171,680 \text{ ft}^3/\text{day} \end{aligned}$$

$$\begin{aligned} -dh(c) &= 14,532.0 \text{ lb/day} \times 20,276 \text{ Btu/lb} \div 31,171,680 \text{ ft}^3/\text{day} \\ &= 9.45 \text{ Btu/ft}^3 \end{aligned}$$

Assuming the waste gas is principally air, with a molecular weight of 28.97 and a corresponding density of 0.0739 lb/scf, the heat of combustion per pound of incoming waste gas is:

$$\begin{aligned} -dh(c) &= 9.45 \text{ Btu/ft}^3 \div 0.0739 \text{ lb/ft}^3 \\ &= 127.91 \text{ Btu/lb} \end{aligned}$$

Fuel Flow Requirement

$$Q \text{ (fuel)} = \frac{P_w * Q_w * \{C_p * [1.1 T_f - T_w - 0.1 T_r] - [-dh(c)]\}}{P(ef) * [-dh(m) - 1.1 C_p * (T_f - T_r)]}$$

Where

P_w	=	0.0739 lb/ft ³
C_p	=	0.255 Btu/lb-°F
Q_w	=	21,647 scfm
$-dh(m)$	=	21,502 Btu/lb for methane
T_r	=	77 F assume ambient conditions
$P(ef)$	=	0.0408 lb/ft ³ , methane at 77°F, 1 atm
T_f	=	1600°F
T_w	=	1150°F
$-dh(c)$	=	127.91 Btu/lb

$$Q = \frac{0.0739 * 21,647 * \{0.255 * [1.1 * 1,600 - 1,150 - 0.1 * 77] - 127.91\}}{0.0408 * [21,502 - 1.1 * 0.255 * (1,600 - 77)]}$$

$$= 41,075.73 \div 859.9 = 47.77 \text{ ft}^3/\text{min}$$

Fuel Costs

The cost for natural gas shall be based upon the average price of natural gas sold to "Commercial Consumers" in California for the years 2011 and 2012.¹

2012	=	\$8.28/thousand ft ³ total monthly average
2011	=	\$7.13/thousand ft ³ total monthly average
Average for two years	=	\$7.705/thousand ft ³ total monthly average

$$\text{Fuel Cost} = 47.77 \text{ cfm} \times 1440 \text{ min/day} \times 365 \text{ day/year} \times \$7.705/1000 \text{ ft}^3$$

$$= \$193,449/\text{year}$$

Electricity Requirement

$$\text{Power}_{\text{fan}} = \frac{1.17 * 10^{-4} Q_w * \Delta P}{\epsilon}$$

Where

ΔP	=	Pressure drop across system = 4 in. H ₂ O
ϵ	=	Efficiency for fan and motor = 0.6
Q_w	=	21,647 scfm

¹ Energy Information Administration/Natural Gas; Average Price of Natural Gas Sold to Commercial Consumers by State, 2011 - 2012

$$\text{Power}_{\text{fan}} = \frac{1.17 \times 10^{-4} \times 21,647 \text{ cfm} \times 4 \text{ in. H}_2\text{O}}{0.60}$$

$$= 16.88 \text{ kW}$$

Electricity Costs

Average cost of electricity to commercial users in California²:

2012 = \$0.1023

2011 = \$0.1012

AVG = \$0.102

Electricity Cost = 16.88 kW x 24 hours/day x 365 days/year x \$0.102/kWh = \$15,087/year

Total Utility Costs

Annual Cost (Data from: Annual Costs for Thermal and Catalytic Incinerators, Table 3.10 – OAQPS Control Cost Manual, Fourth Edition)

Annual Cost			
Operator	0.5 h/shift	\$18.5/h x 0.5 h x 365 days/yr	\$3,376
Supervisor	15% of operator		\$506
Maintenance			
Labor	0.5 h/shift	\$18.5/h x 0.5 h x 365 days/yr	\$3,376
Material	100% of labor		\$3,376
Utility			
Natural Gas			\$193,449
Electricity			\$15,087
Indirect Annual Cost (IC)			
Overhead	60% of Labor Cost	0.6 x (\$3,376 + \$506 + \$3,376)	\$4,355
Administrative Charge	2% TCI		\$29,451
Property Taxes	1% TCI		\$14,725
Insurance	1% TCI		\$14,725
Total Annual Cost			\$282,426

Total Annual Cost

Total Annual Cost = Regenerative Thermal Oxidizer System + Ductwork + CIP System + Annual Cost
= \$98,300 + \$378,204 + \$282,426
= \$758,930

² Energy Information Administration/Electric Power; Average Retail Price of Electricity to Ultimate Customers by End-Use Sector, by State, 2011 - 2012

Emission Reductions

$$\begin{aligned}\text{Annual Emission Reduction} &= \text{Fermentation Emissions} \times 0.88 \\ &= 60,408 \text{ lb-VOC/year} \times 0.88 \\ &= 53,159 \text{ lb-VOC/year} \\ &= 26.6 \text{ tons-VOC/year}\end{aligned}$$

Cost Effectiveness

$$\text{Cost Effectiveness} = \text{Total Annual Cost} \div \text{Annual Emission Reductions}$$

$$\begin{aligned}\text{Cost Effectiveness} &= \$758,930/\text{year} \div 26.6 \text{ tons-VOC/year} \\ &= \$28,553/\text{ton-VOC}\end{aligned}$$

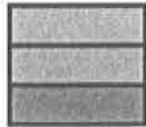
The analysis demonstrates that the annualized purchase cost of the regenerative thermal oxidizer system, collection system ductwork, and CIP equipment, and annual costs alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Step 5 – Select BACT

All identified feasible options with control efficiencies higher than the option proposed by the facility have been shown to not be cost effective. The facility has proposed Option 1, temperature-controlled open top tank with maximum average fermentation temperature of 95 deg F. These BACT requirements will be placed on the permits as enforceable conditions.

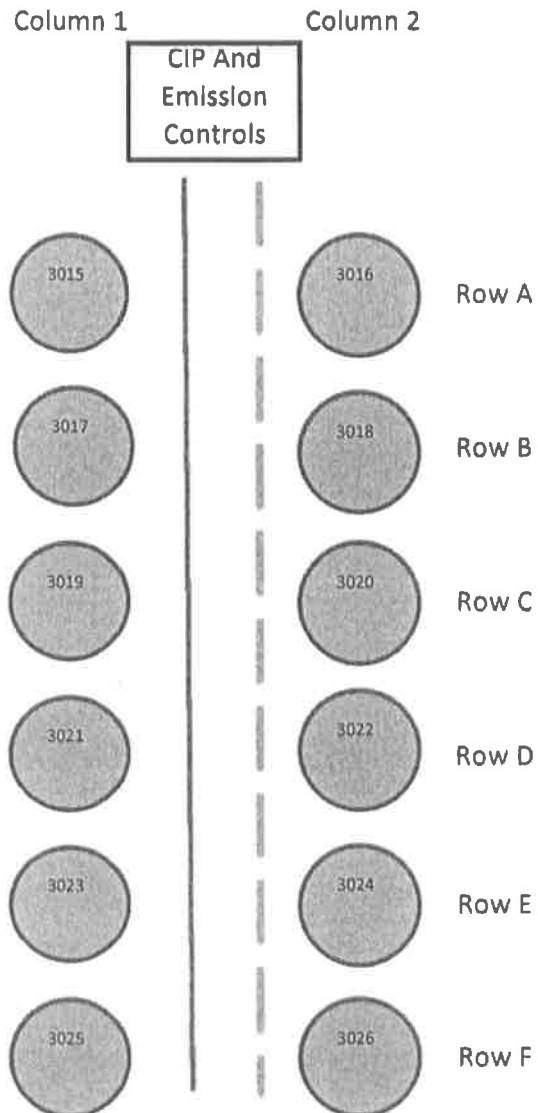
Attachment A

Duct Sizing Analysis



350 K Wine Tanks
Probable Main Duct Routing
Probable Wine Piping Routing

Distance between tanks in feet
50
39
10.8
39
10.8
39
10.8
39
10.8
39
10.8
39



6 inch SS Butterfly	\$2,125
Installed per tank	\$500
1 foot removable spool	

Ducting Cost \$751,589

Attachment B

Achieved in Practice Analysis

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT MEMO

DATE: February 9, 2015 (Revised March 11, 2015)

TO: Dave Warner, Deputy APCO

FROM: Nick Peirce, Permit Services Manager
James Harader, Senior Air Quality Engineer
Jag Kahlon, Air Quality Engineer

SUBJECT: Achieved in Practice Analysis for Emission Control Technologies
Used to Control VOC Emissions from Wine Fermentation Tanks

Introduction

The purpose of this analysis is to determine whether there is any control technologies that can be considered to be Achieved in Practice BACT for controlling fermentation VOC emissions from wine fermentation tanks. If determined to be achieved in practice, the San Joaquin Valley Air Pollution Control District (District) would require the use of such technology for wine fermentation tanks when BACT is triggered, without any consideration of the cost effectiveness of the control technology. The District's achieved in practice BACT is functionally equivalent to Federal EPA's Lowest Achievable Emission Rate requirements outlined in Federal Non-Attainment NSR documents.

LAER

The emission control requirement for new Major Sources and Federal Major Modifications in non-attainment areas is that the emission units meet the lowest achievable emission rate (LAER). LAER is the most stringent emission limitation from either of the following:

1. The most stringent emission limitation contained in the implementation plan of any State for such class and category of source; or
2. The most stringent emission limitation achieved in practice by such class or category of source.

In no event can the LAER requirement be less stringent than Federal New Source Performance Standards (NSPS), if there is an NSPS applicable to the type of source being evaluated.

In the case of wine fermentation tanks, the District did not identify any SIP that would require the use of add-on control systems. Therefore, add-on control systems can only be required as LAER for wine fermentation if they are determined to be achieved in practice for the source category.

Achieved in Practice Criteria

The term "achieved in practice" appears to be subject to interpretation since it is not defined in the federal statutes or regulations. As a result, there are few objective regulatory criteria to constrain the form of an achieved in practice determination. The following discussion outlines the achieved in practice criteria that is used by the District for determining LAER.

In a February 28, 1989 memorandum titled "Guidance on Determining Lowest Achievable Emission Rate (LAER), EPA provided the following guidance concerning the economic feasibility of LAER:

Traditionally, little weight has been given to economics in LAER determinations, and this continues to be the case. The extract in your memorandum from the record of the House and Senate discussion of the Clean Air Act (Act) contains the sentence:

"If the cost of a given control strategy is so great that a new major source could not be built or operated, then such a control would not be achievable and could not be required by the Administrator."

We interpret this statement in the record to be used in a generic sense. That is, that no new plants could be built in that industry if emission limits were based on levels achievable only with the subject control technology. However, if some other plant in the same (or comparable) industry uses that control technology, then such use constitutes de facto evidence that the economic cost to the industry of that technology control is not prohibitive. Thus, for a new source in that same industry, LAER costs should be considered only to the degree that they reflect unusual circumstances which, in some manner, differentiate the cost of control for that source from the costs of control for the rest of that industry. These unusual circumstances should be thoroughly analyzed to ensure that they really do represent compelling reasons for not requiring a level of control that similar sources are using. Therefore, when discussing costs, applicants should compare the cost of control for the proposed source to the costs for source(s) already using that level of control.

The statement "*If some other plant in the same (or comparable) industry uses that control technology, then such use constitutes de facto evidence that the economic cost to the industry of that technology control is not prohibitive*" is only true if the plant using that control technology purchased or leased that control technology. Scenarios where the purchase/lease of the control technology was subsidized with grant money, or where the plant allowed the control vendor to operate and test their equipment on-site without actually purchasing/leasing the control technology do not constitute evidence that the economic cost to the industry due to use of that technology control is not prohibitive. Therefore, the District's historical position is that a control technology must have been purchased or leased by the plant in order for that installation of the control technology to be considered as achieved in practice.

EPA Region IX has previously stated that the successful operation of a new control technology for six months constitutes achieved in practice. This position was established in an August 25, 1997 letter from David Howekamp of US EPA Region IX to Moshen Nazemi of South Coast Air Quality Management District. This guidance is reflected in the South Coast Air Quality Management District's BACT Policy, which includes the following criteria for determining whether a control technology is achieved in practice:

Reliability: All control technologies must have been installed and operated reliably for at least six months. If the operator did not require the basic equipment to operate daily, then the equipment must have at least 183 cumulative days of operation. During this period, the basic equipment must have operated: 1) at a minimum of 50% design capacity; or 2) in a manner that is typical of the equipment in order to provide an expectation of continued reliability of the control technology.

For wine fermentation tanks, the District has taken the position that successful operation of a control device for one full fermentation season is satisfactory for qualifying a control as achieved in practice. The requirement of one full fermentation season is considerably more conservative than the 6-month requirement, since the fermentation season typically lasts only two to three months.

The term "successful operation" is not tightly defined. The District considers the following when determining whether a control technology has been successfully operated for achieved in practice BACT determinations:

1. Was the control technology operated in the same manner that would be required by the District if the control technology was required for BACT?
2. How reliable has the control technology been over the life of its use?
3. Has the control technology been verified to perform effectively over the range of operation expected for that type of equipment? Was the effectiveness verified by performance test(s), when possible, or using other performance data?

Other typical considerations that the District considers when making an achieved in practice BACT determination include:

1. Is the control technology commercially available from at least one vendor?
2. On what class and category of source has the control technology been demonstrated?

In summary, the following criteria are used for determining whether a control technology is achieved in practice for wine fermentation:

1. Did the plant using the control technology purchase/lease the equipment? Was that purchase/lease subsidized?
2. Was the control technology operated for at least one fermentation season?
3. Was the control technology operated in the same manner that would be required by the District for BACT purposes?
4. How reliable has the control technology been during its use at the plant?
5. Has the control technology been verified to perform effectively over the range of operation expected for that type of equipment? Was the effectiveness verified by performance test(s), when possible, or other performance data?
6. Is the control technology commercially available from at least one vendor?
7. On what class and category of source has the control technology been demonstrated?

Achieved in Practice Analysis for Known Installations of Wine Fermentation Control Technologies

The following is an analysis of each known installation of an emission control technology to control VOC emissions from wine fermentation tanks and whether that installation can be considered achieved in practice.

Terravant Wine Company (2008 – Current)

Terravant Wine Company submitted an Authority to Construct application for a wine processing facility to the Santa Barbara County Air Pollution Control District (SBCAPCD) on September 20, 2007. The application was deemed complete on October 19, 2007. The fermentation tanks triggered BACT; however, the SBCAPCD evaluation determined BACT to be infeasible. However, this project also triggered offsets and Terravant Wine Company electively proposed to install a packed bed water scrubber with UV/hydrogen peroxide controls to control VOC emissions from the wine fermentation tanks. Proposing the control would reduce VOC emissions to a level below the SBCAPCD offset threshold. The control technology is only required to run sufficiently to reduce emissions to stay below the offset threshold – it is not required to be operated all of the time, as is BACT-required equipment.

The packed bed water scrubber was installed in 2008 and began operation in 2008, with a 95% control efficiency requirement on the Authority to Construct permit. However, in 2008, the unit failed to meet the 95% control efficiency requirement. Prior to the 2009 season, Terravant Wine Company was issued a revised Authority to Construct permit that reduced the control efficiency requirement to 75%. However, the unit has not been able to consistently demonstrate compliance with the 75% control efficiency requirement. The effectiveness of the packed bed scrubber has varied considerably over its life, and has been measured to be as low as 49% control efficiency. During discussions, SBCAPCD staff indicated that this facility has been issued a Notice of Violation for non-compliance with their permitted emission limits and they would not recommend that any wineries use this control technology for the control of fermentation tank emissions, as it has proven to be unreliable. Finally, the control technology used by Terravant Winery is custom designed, and is not a commercially available off-the-shelf type of unit.

The packed bed scrubber technology does not meet the achieved in practice criteria since this control technology has not been operating in compliance with its permit requirements, its effectiveness is highly variable, and the control technology is not commercially available.

EcoPAS, LLC (2009)

EcoPAS conducted testing of their passive alcohol system, which is condensation-based emission control system, at a winery located within the San Luis Obispo County Air Pollution Control District. The purpose of this installation was to conduct full-scale testing of the passive alcohol system on red wine fermentation tanks. The District was unable to verify whether the winery purchased the system.

Since the District could not verify that the winery purchased the control system, this installation doesn't meet the first criteria listed to be considered as achieved in practice. Furthermore, the unit was operated for experimental testing of the control device. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT.

Central Coast Wine Services (2009)

In 2009, Santa Barbara County Air Pollution Control District (SBCAPCD) determined that Central Coast Wine Services (CCWS) was operating without a permit. They required CCWS to submit an application for an Authority to Construct such that the winery would be in compliance with SBCAPCD Rules and Regulations. Based on the emission estimates for the facility, the facility was triggering Best Available Control Technology Requirements and Offsets. At that time, the SBCAPCD determined that BACT, while technologically feasible, was not cost effective. SBCAPCD issued an Authority to Construct/Permit to Operate on June 5, 2009 for the winery.

CCWS was allowed to exceed the offset thresholds during the fall 2009 harvest season in order to test potential control technologies. Three companies were invited to participate in testing of prototype emission control equipment, but only NohBell Corporation elected to install and test fugitive ethanol control equipment.

NohBell Corporation engineered and tested a full scale NoMoVo 1.0 system on a 50 ton tank at the CCWS plant. NoMoVo documents describe the equipment as successful, with full scale trials proceeding. After the 2009 season, NoMoVo documents indicate that CCWS decided to move the plant and equipment.

This installation does not meet the requirements to be considered achieved in practice. First, the facility does not appear to have purchased/leased the control system, nor did they intend to continue operating the system. This is evident by their decision to discontinue use of the system in the following year. Second, no data has been submitted to the District to demonstrate that the unit was continuously operated in the same manner that the District would require the system to operate if it were considered achieved in practice BACT. The purpose of this installation was to perform initial testing and trial runs of the control technology. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Furthermore, the type of records necessary to demonstrate continuous operation of the system was not required by the SBCAPCD permit. Finally, the SBCAPCD permit did not include testing requirements to sufficiently demonstrate the effectiveness of the system.

Kendall Jackson Oakville (2010)

Kendall Jackson Winery belongs to Jackson Family Wines Inc (JFW), and is located in Oakville, California. This winery is in Bay Area Air Quality Management District (BAAQMD). BAAQMD does not require permits for wine fermentation or storage operations. Their Regulation 2, Rule 1, 117.9 and 117.10 has exemptions for wine storage and fermentation operations.

In 2010, NohBell installed a NoMoVo 2.0 system at the Kendall Jackson Winery. The system was connected to a 10,000 gallon fermentation tank and operated on a trial basis during the 2010 crush season. Pursuant to Brian Kosi, Winemaker at Kendall-Jackson Oakville, JFW never purchased the NoMoVo technology. The NoMoVo slurry was treated by the facilities on-site wastewater treatment system.

This installation does not meet the requirements of achieved in practice BACT. First, the system was never owned/leased by the winery. Secondly, the unit was operated for the purposes of testing/trial runs to evaluate the control technology. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Furthermore, BAAQMD does not have any record of source tests occurring during the 2010 crush season; therefore, the effectiveness for this installation was not established.

Kendall Jackson Oakville (2011-2013)

In its 2010 clean air plan, the BAAQMD included a further study measure (FSM 14 – Winery Fermentation) to examine whether ethanol emissions from Bay Area wine production could be cost-effectively reduced. On 9/26/11, the BAAQMD signed a Research Sponsorship Agreement (Contract No. 2011-126) with NohBell to help develop its technology to capture volatile organic compounds emitted by wine fermentation tanks at Kendall Jackson Oakville. The contract states that *"District (BAAQMD) wishes to support NohBell's effort to demonstrate the technology at JFW winery and wishes to verify the function and cost-effectiveness of the technology and acquire data to help DISTRICT (BAAQMD) determine whether the equipment could be cost effectively employed more widely in the wine industry"*. NoMoVo submitted a project budget estimate of \$118,750 for its NoMoVo 2.0 upgrades, pump upgrades, and related work at the plant. The BAAQMD contract promised \$50,000 towards this effort, to be paid in installments directly to NohBell Corporation. Furthermore, Brian Kosi of Kendall-Jackson Oakville confirmed that the facility never purchased the NoMoVo system from NohBell and confirmed that the system has been removed from the site by NohBell.

For 2011, NohBell Corporation planned to conduct trials of the upgraded NoMoVo 2.0 system on 10 fermentation tanks. Six to eight trials were anticipated, operating on 4-6 day cycles. The trial runs were scheduled to be primarily conducted while fermenting red wines. The District was unable to obtain operational data for the 2012 and 2013 fermentation seasons for this equipment. Following the 2013 crush season, the equipment was removed and transferred to Constellation Wines in Monterey, CA.

This installation does not pass the first criteria of LAER, since the facility never owned the system and since the installation and operation of the control technology by NohBell was subsidized by a Research Sponsorship Agreement with BAAQMD. Furthermore, operation of the control technology at this facility was for trials/testing of the effectiveness of the control technology. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Finally, the unit was removed, which indicates that this wasn't intended as a permanent installation. For these reasons, the District does not consider this installation to be achieved in practice.

J. Lohr Vineyard and Winery (2013)

NohBell Corporation has indicated that they operated a NoMoVo system at J. Lohr Winery in Paso Robles during 2013 crush season. The District contacted J. Lohr Winery to obtain more information regarding this installation. J. Lohr Winery personnel stated that they considered this to be a pilot type testing operation. J. Lohr Winery did not purchase or lease the system. The unit operated during the 2013 crush season on fermentation tanks that were processing red wine. After the 2013 crush season, the system was removed and no longer operates at this site. San Luis Obispo Air Pollution Control District (SLOAPCD) had no knowledge that this unit was installed at this winery and no Authority to Construct or permit exemption was issued for this equipment.

This installation does not pass the first criteria of LAER, since the facility never purchased/leased the equipment. Furthermore, operation of the control technology at this facility was for trials/testing of the effectiveness of the control technology at this facility. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Finally, the unit was removed, which indicates that this wasn't intended as a permanent installation. For these reasons, the District does not consider this installation to be achieved in practice.

Constellation Winery dba Gonzales Winery (2013)

During the 2013 crush season, a NoMoVo unit was installed on a 39,000 gallon fermentation tank at Constellation Brands U.S. Operations, Inc. dba Gonzales Winery in Monterey, CA. The control technology was installed and operated as a "pilot operation". Monterey Bay Unified Air Pollution Control District (MBUAPCD) compliance staff noticed the NoMoVo unit operating on-site without authorization from MBUAPCD and issued a notice of violation. Gonzales Winery submitted an Authority to Construct application; however, prior to processing that application, the facility notified MBUAPCD that the equipment had been removed from the site. The equipment operated at the site for a partial season for pilot testing purposes. MBUAPCD could not verify whether Gonzales Winery purchased or leased the equipment.

The District was unable to verify whether Gonzales Winery purchased or leased the NoMoVo unit. Furthermore, operation of the control technology at this facility was for trials/testing of the effectiveness of the control technology at this facility. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Finally, the unit was removed, which indicates that this wasn't intended as a permanent installation. For these reasons, the District does not consider this installation to be achieved in practice.

Vinwood Cellars Kenwood (2013)

The District has found documents indicating that a NoMoVo system was installed on four 15,000 gallon fermentation tanks at Vinwood Cellars Kenwood in Sonoma county, and the system was operated during the 2013 season. District staff attempted to contact Vinwood Cellars; however, the staff at Vinwood Cellars was unable to verify information for this installation. BAAQMD had no knowledge of this installation, as they do not require permits for wine tanks, so they were unable to verify this installation. Furthermore, since this installation was not subject to permit requirements, BAAQMD has no operational history or test data for this site. While BAAQMD administered source tests at Kendall Jackson Oakville winery, they have no records of any source testing of the NoMoVo system at Vinwood Cellars Kenwood.

This installation has not met the requirements of achieved in practice. First, it has yet to be confirmed that the winery actually purchased the NoMoVo system. Second, BAAQMD has no test records to verify the effectiveness of the NoMoVo system at this site. Finally, the operational history of the unit at this site is not available to determine whether it was operated in the same manner as a unit would be if it were installed as BACT.

Central Coast Wine Services (2013)

On August 5, 2013, CCWS electively applied to install a NoMoVo wine emission capture and control system to control ethanol emissions from fermentation activities at their wine center. The existing fermentation tanks at the facility ranged in capacity from 350 gallons to 20,887 gallons. On September 23, 2013, a final ATC (ATC 14257) was issued for the installation of the NoMoVo system, and the unit began operation in September 27, 2013. The installation of this unit allowed CCWS to increase daily wine fermentation while remaining under their existing daily and annual facility-wide VOC emission limits. A Permit to Operate (PTO 14257) was issued on December 13, 2013.

PTO 14257 states: *"The NoMoVo system is optional and may be used at CCWS' discretion"*. Thus, the permit does not require continuous operation of the NoMoVo system. The NoMoVo system is portable. The system can be attached to four or five fermentation tanks at a time via flexible hoses. The facility is allowed to move the NoMoVo system around, as desired, to capture emissions from the tanks where fermentation is taking place. However, there is no requirement to keep the NoMoVo system attached to a tank and operate it for the full fermentation cycle of that tank. Thus, the District was unable to confirm that the unit was operated in the continuous manner that would be required if the District considered NoMoVo to be achieved in practice BACT.

SBCAPCD PTO 14257 does not include a control efficiency requirement, does not include any source testing requirements to verify the control effectiveness of the control system. The effectiveness of the control has only been estimated using the density change of the NoMoVo slurry to estimate the quantity of ethanol capture, and using a theoretical calculation of the quantity of ethanol that would be emitted if the tanks were uncontrolled. Inlet and outlet air quality testing has not been performed for this particular installation.

Finally, the disposal of the NoMoVo slurry is an important consideration when determining the effectiveness of the control system. If the slurry is disposed of in a manner that re-emits the ethanol into the atmosphere, then the effectiveness of the control is diminished. Until August 2014, the CCWS facility disposed of the NoMoVo slurry in their on-site wastewater treatment facility. On August 21, 2014, SBCAPCD sent a letter to CCWS informing them that they have concerns over the treatment of the NoMoVo slurry. Specifically, SBAPCD was concerned about the potential for stripping of ethanol to the atmosphere during the on-site waste water treatment process. The SBCAPCD letter states *"In conclusion, after August 29, 2014, the District will not recognize emission reductions claimed based on the use of any of your NoMoVo systems (existing or new) at the facility until CCWS has a District-approved on-site or off-site ethanol disposal method in place"*. On August 27th, 2014, SBCAPCD approved the disposal of the NoMoVo slurry at Southern California Waste Water, an off-site facility in Santa Paula, California. In November, 2014, a vacuum truck carrying toxic chemicals from an unrelated facility exploded spreading about 1200 gallons of chemical waste including sulfuric acid and highly combustible organic peroxide. Since that incident, Southern California Waste Water has discontinued the acceptance of waste from all of their clients, so this disposal option is no longer available for the waste generated by CCWS.

The waste is now shipped to a distillery, which distills the ethanol and converts it into vehicle fuel. SBCAPCD has yet to approve the disposal of the NoMoVo slurry to the on-site wastewater facility. Consequently, the overall effectiveness of the system, including any ethanol re-emitted into the atmosphere during disposal, has yet to be sufficiently determined.

Since the control technology has not been demonstrated to operate in a manner that would be required by BACT and the overall effectiveness of the control technology has yet to be sufficiently determined, the District does not consider this installation to be achieved in practice.

Central Coast Wine Services (2014)

In 2014, CCWS submitted an Authority to Construct application for the installation of 40 new tanks, ranging in capacity from 7,407 gallons to 20,628 gallons. The proposal triggered BACT. CCWS decided to forego the normal BACT Analysis, and electively proposed to install six NoMoVo systems to control VOC emissions from the tanks, when the tanks were fermenting wine. A final ATC, (ATC 14350) was issued on July 28, 2014 and the tanks were installed for the 2014 season.

Unlike the previous installations of NoMoVo at this facility, the ATC requires use of the NoMoVo system on these tanks while fermentation is taking place, the permit requires a minimum capture and control efficiency, and the permit requires source testing to verify the effectiveness of the NoMoVo system. However, these tanks have yet to be used for fermentation and the effectiveness has yet to be determined for this installation of the NoMoVo system. An email from Richard Mather of CCWS to David Harris of SBCAPCD, dated September 16, 2014, states:

We won't be using the new tanks for fermentation this year, but since our ATC permit only gives us until August 1, 2015 to fulfill the source test plan, we will need to conduct the test this fall before our last fermentation. It would be highly unlikely that we would be conducting fermentation next year before August 1. Since harvest is progressing rapidly, we probably only have several weeks of fermentation left this year.

Since these tanks have yet to be operated for fermenting wine and the effectiveness of the NoMoVo system has yet to be verified for this installation, the District does not consider this installation of the NoMoVo system to be achieved in practice.

Conclusion

None of the installations have met all of the criteria necessary for the control technology to be considered as achieved in practice BACT or federal LAER.

Appendix B

Compliance Certification

C-447
E&J Gallo Winery-Fresno
Compliance Certification Statement
For Federal Major Permit Modifications
Compliance with District Rule 2201, Section 4.15.2

"I certify under penalty of law that all major stationary sources (Title V facilities) operated under my control in California are compliant with all applicable air emissions limitations and standards. The facilities included in this certification statement include the E&J Gallo Winery-Fresno, the E&J Gallo Winery-Livingston, and the E&J Gallo Winery-Modesto."



Mr. Steve Kidd
Vice President of Operations

02/03/14

Date



San Joaquin Valley
Unified Air Pollution Control District



TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- ☒ SIGNIFICANT PERMIT MODIFICATION (Major) ☐ ADMINISTRATIVE
☐ MINOR PERMIT MODIFICATION AMENDMENT

COMPANY NAME: E&J Gallo Winery - Fresno	FACILITY ID: C- 447
1. Type of Organization: ☒ Corporation ☐ Sole Ownership ☐ Government ☐ Partnership ☐ Utility	
2. Owner's Name: E&J Gallo Winery	
3. Agent to the Owner: Mr. Neil McDougald	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- ☒ Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- ☒ Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- ☒ Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Neil K. McDougald
Signature of Responsible Official

9-2-14
Date

Mr. Neil McDougald
Name of Responsible Official (please print)

Plant Manager – Fresno Winery
Title of Responsible Official (please print)

Appendix C

Draft Reissued ATC Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-330-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3015) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-330-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services
C-447-330-1: Nov 22 2016 9:04AM - GILLESR Joint Inspection NOT Required

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-331-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3016) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-331-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services
C-447-331-1 Nov 22 2016 9:04AM -- GILLESR Joint Inspection NOT Required

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-332-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3017) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-332-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

C-447-332-1 Nov 22 2016 9:04AM - GILLES: Joint Inspection NOT Required

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-333-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3018) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-333-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
C-447-333-1 Nov 22 2016 9:04AM - GILLES: Joint Inspection NOT Required

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-334-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3019) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-334-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services
C-447-334-1 : Nov 22 2016 8:04AM -- GILLESR : Joint Inspection NOT Required

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
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10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-335-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3020) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-335-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
C-447-335-1 Nov 22 2016 9:04AM -- GILLESR : Joint Inspection NOT Required

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-336-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3021) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-336-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
C-447-336-1 Nov 22 2016 9:04AM - GILLESB : Joint Inspection NOT Required

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-337-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3022) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-337-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
C-447-337-1 : Nov 22 2016 9:04AM - GILLESR : Joint Inspection NOT Required

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
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12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
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14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-338-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3023) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-338-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
C-447-338-1 : Nov 22 2016 9:04AM - GILLESR : Joint Inspection NOT Required

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-339-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3024) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-339-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services
C-447-339-1 Nov 22 2016 9:04AM - GILLESB - Joint Inspection NOT Required

Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-340-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3025) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-340-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

C-447-340-1 Nov 22 2016 9:04AM - GILLESR - Joint Inspection NOT Required

5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-447-341-1

ISSUANCE DATE: 10/23/2015

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY

MAILING ADDRESS: 5610 E OLIVE AVE
FRESNO, CA 93727

LOCATION: 5610 E OLIVE AVE
FRESNO, CA 93727

EQUIPMENT DESCRIPTION:

MODIFICATION OF 350,000 GALLON (OR EQUIVALENT) INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 3026) WITH PRESSURE/VACUUM VALVE: ADD RED AND WHITE WINE FERMENTATION OPERATION (REISSUED 11/22/2016)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Authority to Construct (ATC) C-447-341-0 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 0 lb, 2nd quarter - 0 lb, 3rd quarter - 1,636 lb, and 4th quarter - 1,636 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

C-447-341-1 : Nov 22 2016 9:04AM -- GILLESB : Joint Inspection NOT Required

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5. ERC Certificate Numbers S-4601-1, C-1229-1, S-4354-1, S-4442-1, S-4381-1, S-4480-1, C-1071-1, S-4414-1, N-0002-1, S-4727-1, and S-4744-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The nominal tank dimensions are 39 feet in diameter and 40 feet in height with a proposed volume of 350,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. When this tank is used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
13. The maximum wine storage throughput in this tank shall not exceed 350,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The maximum wine storage throughput in this tank, calculated on a twelve month rolling basis, shall not exceed 10,500,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 5,034 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula: Annual Fermentation VOC emissions = 2.5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6.2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
18. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
19. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage and fermentation throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
21. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
22. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
23. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume of each wine movement; and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
24. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
25. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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