



FEB 20 2019

Ms. Julia Bonardi  
E&J Gallo Winery  
PO Box 1130  
Modesto, CA 95353

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)**  
**Facility Number: N-3386**  
**Project Number: N-1183449**

Dear Ms. Bonardi:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is for the installation of one wine storage tank.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate 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 Authority 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. Nick Peirce, Permit Services Manager, at (209) 557-6400.

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

**Samir Sheikh**  
Executive Director/Air Pollution Control Officer

**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
Tel: (209) 557-6400 FAX: (209) 557-6475

**Central Region (Main Office)**  
1990 E. Gettysburg Avenue  
Fresno, CA 93726-0244  
Tel: (559) 230-6000 FAX: (559) 230-6061

**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585

**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
Wine Storage Tank

Facility Name: E&J Gallo Winery  
Mailing Address: PO Box 1130  
Modesto, CA 95353  
Contact Person: Julia Bonardi (Sr. Environmental Specialist)  
Telephone: (209) 341-4298  
E-Mail: [julia.bonardi@ejgallo.com](mailto:julia.bonardi@ejgallo.com)  
Application #(s): N-3386-544-0  
Project #: N-1183449  
Deemed Complete: November 19, 2018

Revised Date: February 11, 2019  
Engineer: Wai-Man So  
Lead Engineer: James Harader

---

## **I. Proposal**

E&J Gallo Winery (hereinafter Gallo) is requesting Authority to Construct (ATC) for the installation of one 20,500 gallon stainless steel wine tank. This new tank is solely used for wine storage. The draft ATC is included in Appendix A.

Gallo possesses a 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 Authority to Construct. Gallo must apply to administratively amend their Title V permit.

## **II. Applicable Rules**

Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)  
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 4603 Storage of Organic Liquids (5/19/05)  
Rule 4694 Wine Fermentation and Storage Tanks (12/15/05)  
Rule 4695 Brandy Aging and Wine Aging Operations (9/17/09)  
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 600 Yosemite Boulevard, in Modesto, 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**

Gallo 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.

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. 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. The new tank addressed under this project will be used strictly for wine storage.

### **V. Equipment Listing**

N-3386-544-0: 20,500 GALLON NOMINAL STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK #231) WITH PRESSURE/VACUUM VALVE AND INSULATION

In addition, per District practice, for new winery tank installations, the nominal tank size and dimensions are included on the ATC provided by the applicant. Upon completion of construction, Gallo will perform an actual tank capacity measurement on the tank, which will establish the as built gauge rating of the tank. The equipment description of the Permit to Operate will then be administratively updated with the gauge rating of the tank. The following condition will be included on the ATC to assure continued compliance:

- The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 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 the wine storage tank 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.

## **VII. General Calculations**

### **A. Assumptions**

- VOC (ethanol) is the only pollutant emitted from the wine storage operation.
- Maximum ethanol content in the tank is 21.0% volume (per applicant).
- Maximum average annual ethanol content in the tank is 21.0% volume (per applicant).
- Daily throughput is 20,500 gallons (per applicant).
- Annual throughput is 7,300,000 gallons (per applicant).
- The emissions from the storage of wine are determined using EPA's Tanks 4.0.9d program. The emission estimates provided by the Tanks 4.0 model represents the combined loss of ethanol (VOC) and water from the tank (per applicant).
- Other assumptions will be stated as each is made.

### **B. Emission Factors**

The VOC emission from the tank is calculated using EPA's Tanks 4.0.9d program. Therefore, a separate emission factor is not necessary.

### **C. Calculations**

#### **1. Pre-Project Potential to Emit (PE1)**

Since this is a new emissions unit, PE1 = 0 for all pollutants.

#### **2. Post-Project Potential to Emit (PE2)**

The applicant is proposing to install one wine storage tank. EPA's Tanks 4.0.9d program is used to determine vapor emissions (ethanol and water mixture) using a custom chemical database for the wine with the maximum average annual ethanol concentration and the maximum ethanol concentration, each of 21.0% volume, and the daily and annual average storage temperature of 77.3°F and 61.6°F, respectively at the Northern Region

of the San Joaquin Valley. See chemical database information and the Tanks 4.0.9d program reports in Appendix B of this document.

As listed in the chemical database, the average molecular weight (AMW) of the vapor from this mixture is 29.25 lb/mole for 21.0% ethanol. VOCs (ethanol) emissions are determined as follows:

$$\text{AMW} = y_a \times \text{MW}_a + (1 - y_a) \times \text{MW}_w,$$

Where,

AMW = Average Molecular Weight, 29.25 (lb/mole)

$y_a$  = Molar fraction of ethanol,

$\text{MW}_a$  = Molecular weight of ethanol, 46.02 (lb/mole)

$\text{MW}_w$  = Molecular weight of water, 18.02 (lb/mole)

Solving for the molar fraction of ethanol,

$$\begin{aligned} y_a &= [\text{AMW} - \text{MW}_w] \div [\text{MW}_a - \text{MW}_w] \\ &= [29.25 - 18.02] \div [46.02 - 18.02] \\ &= 0.4011 \end{aligned}$$

The daily and annual emission rates can be determined using the following equations:

$$\text{Daily PE} = [(\text{Daily Tank Emission}/31 \text{ day}) \div \text{AMW}] \times y_a \times \text{MW}_a$$

$$\text{Annual PE} = [\text{Annual Tank Emission} \div \text{AMW}] \times y_a \times \text{MW}_a$$

#### Daily Emissions:

To estimate the worst-case daily emissions, the "Net Throughput" entry on the Tanks model is set equal to 635,500 gallons (20,500 gallons (one tank turnover) per day x 31 days during the month of July) for the model run. Note that July is considered to be the hottest month in San Joaquin Valley.

Per Tanks 4.0.9d's report, the monthly emission from the tank is summarized below:

$$\text{Monthly PE (ethanol and water emissions)} = 320.25 \text{ lb/month}$$

The daily emission is calculated as follow, dividing the month of July emissions by the number of days in the month, of 31 days.

$$\begin{aligned} \text{Daily PE (ethanol and water emissions)} &= 320.25 \text{ lb/month} \div 31 \text{ day/month} \\ &= 10.33 \text{ lb/day} \end{aligned}$$

As calculated above, the molar fraction of ethanol in this mixture with maximum ethanol concentration of 21.0 % volume, is equal to  $y_a = 0.4011$ .

$$\begin{aligned} \text{Daily PE (ethanol)} &= \{[\text{Daily PE (ethanol and water)}/\text{AMW}] \times \text{ya} \times \text{MW}_a\} \\ &= \{[10.33/29.25] \times 0.4011 \times 46.02\} \\ &= 6.5 \text{ lb-ethanol/day (lb-VOC/day)} \end{aligned}$$

Annual Emissions:

Per Tanks 4.0.9d's report, the annual emission from the tank is summarized below:

$$\text{Annual PE (ethanol and water emissions)} = 535.24 \text{ lb/year}$$

$$\begin{aligned} \text{Annual PE (ethanol)} &= \{[\text{Annual PE (ethanol and water)}/\text{AMW}] \times \text{ya} \times \text{MW}_a\} \\ &= \{[535.24/29.25] \times 0.4011 \times 46.02\} \\ &= 338 \text{ lb-ethanol/year (lb-VOC/year)} \end{aligned}$$

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

Pursuant to District Rule 2201, the 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 (AER) that have occurred at the source, and which have not been used on-site.

This facility is contiguous with facility N-7478 (E&J Gallo – Spirits), is under common ownership, and shares the same two-digit SIC code. Therefore, pursuant to District Rule 2201, facilities N-3386 and N-7478 are considered to be the same stationary source. The SSPE1 is calculated in Appendix C and present in the following table.

SSPE1 (lb/year)					
Permit Unit/ERC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1 – N-3386	4,304	624	71,484	24,725	83,717
SSPE1 – N-7478	6,603	176	473	5,221	277,199
Total w/o ERC	10,907	800	71,957	29,946	360,916
ERC N-260-3	-	-	-	783	-
ERC N-849-2	125	-	-	-	-
Total <sub>ERC</sub>	125	-	-	783	-
<b>Total SSPE1</b>	<b>11,032</b>	<b>800</b>	<b>71,957</b>	<b>30,729</b>	<b>360,916</b>

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

SSPE2 (lb/year)					
Permit Unit/ERC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1 – N-3386	4,304	624	71,589	24,725	83,717
SSPE1 – N-7478	6,603	176	473	5,221	277,199
ATC N-3386-544-0 (project)					338
Total w/o ERC	10,907	800	71,957	29,946	361,254
ERC N-260-3	-	-	-	783	-
ERC N-849-2	125	-	-	-	-
Total <sub>ERC</sub>	125	-	-	783	-
<b>Total SSPE2</b>	<b>11,032</b>	<b>800</b>	<b>71,957</b>	<b>30,729</b>	<b>361,254</b>

## 5. Major Source Determination

### Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

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:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>
Estimated Facility PE before Project Increase	5.5	180.5	0.4	15	36	36
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

## 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 = PE1 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.

The proposed wine storage tank is a new emissions unit, BE = PE1 = 0.

## 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 Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
VOC	338	50,000	No

As demonstrated in the preceding table, this project does not 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**

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

The applicant proposed to install one new wine storage tank, and as shown in Section VII.C.2 of this document, the PE2 for the new tank is 338 lb-VOC per year.

<b>Federal Major Modification Thresholds for Emission Increases</b>			
<b>Pollutant</b>	<b>Total Emissions Increases (lb/yr)</b>	<b>Thresholds (lb/yr)</b>	<b>Federal Major Modification?</b>
VOC	338	0	Yes

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

**Federal Offset Quantities:**

The Federal offset quantity is only 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 emission unit multiplied by the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

<b>VOC</b>	<b>Federal Offset Ratio</b>		<b>1.5</b>
<b>Permit No.</b>	<b>Actual Emissions (lb/year)</b>	<b>Potential Emissions (lb/year)</b>	<b>Emissions Change (lb/yr)</b>
N-3386-544-0	0	338	338
<b>Net Emission Change (lb/year):</b>			<b>338</b>
<b>Federal Offset Quantity: (NEC * 1.5)</b>			<b>507</b>

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

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

The equipment associated with this project emits only VOC.

**I. Project Emissions Increase - New Major Source Determination**

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

<b>PSD Major Source Determination: Potential to Emit (tons/year)</b>						
	<b>NO<sub>2</sub></b>	<b>VOC</b>	<b>SO<sub>2</sub></b>	<b>CO</b>	<b>PM</b>	<b>PM<sub>10</sub></b>
Total PE from New and Modified Units	0	0.17	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

**10. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix H.

**VIII. Compliance Determination**

**Rule 2201 New and Modified Stationary Source Review Rule**

**A. Best Available Control Technology (BACT)**

**1. BACT Applicability**

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions\*:

- 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 Adjusted Increase in Permitted Emissions (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.

\*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

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

As discussed in Section I above, the applicant is proposing to install one wine storage tank with a PE greater than 2.0 lb/day for VOC. Therefore, BACT for new unit with PE > 2 lb/day purposes is triggered.

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

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

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

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

**d. SB 288/Federal Major Modification**

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute a Federal Major Modification for VOC emissions. Therefore, BACT is triggered for VOC for the new wine storage tank.

**2. BACT Guideline**

BACT Guideline 5.4.13, applies to the wine storage tanks (see **Appendix D**)

**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 (see **Appendix E**), BACT has been satisfied with the following:

VOC: Insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and continuous storage

temperature not exceeding 75°F, achieved within 60 days of completion of fermentation

**B. Offsets**

**1. Offset Applicability**

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	11,032	800	71,957	30,729	361,254
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	Yes

**2. Quantity of Offsets Required**

As seen above, the SSPE2 is greater than the offset thresholds for VOC. Therefore offset calculations will be 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.

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

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 Section 4.8

BE = PE1 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 = HAE

The facility is proposing to install a new emissions unit; therefore BE = 0. Also, there is only one new emissions unit associated with this project and there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

PE2 (VOC) = 338 lb/year  
 BE (VOC) = 0 lb/year  
 ICCE = 0 lb/year

The project is a Federal Major Modification and therefore the offset ratio for VOCs is 1.5:1. The amount of VOC ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([338 - 0] + 0) \times 1.5 \\ &= 338 \times 1.5 \\ &= 507 \text{ lb VOC/year} \end{aligned}$$

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

$$\begin{aligned} \text{Quarterly offsets required (lb/qtr)} &= (507 \text{ lb VOC/year}) \div (4 \text{ quarters/year}) \\ &= 126.75 \text{ lb/qtr} \end{aligned}$$

As shown in the calculation above, the quarterly amount of offsets required for this project, when evenly distributed to each quarter, results in fractional pounds of offsets being required each quarter. Since offsets are required to be withdrawn as whole pounds, the quarterly amounts of offsets need to be adjusted to ensure the quarterly values sum to the total annual amount of offsets required.

To adjust the quarterly amount of offsets required, the fractional amount of offsets required in each quarter will be summed and redistributed to each quarter based on the number of days in each quarter. The redistribution is based on the Quarter 1 having the fewest days and the Quarters 3 and 4 having the most days. The redistribution method is summarized in the following table:

<b>Redistribution of Required Quarterly Offsets</b> (where X is the annual amount of offsets, and $X \div 4 = Y.z$ )				
Value of z	Quarter 1	Quarter 2	Quarter 3	Quarter 4
.0	Y	Y	Y	Y
.25	Y	Y	Y	Y+1
.5	Y	Y	Y+1	Y+1
.75	Y	Y+1	Y+1	Y+1

Therefore the appropriate quarterly emissions to be offset are as follows:

<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>	<u>Total Annual</u>
126	127	127	127	507

The applicant has stated that the facility plans to use ERC certificate S-5025-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-5025-1	61,637	111,629	111,622	111,622

As seen above, the facility has sufficient credits to fully offset the quarterly VOC 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 - 126 lb, 2nd quarter - 127 lb, 3rd quarter - 127 lb, and 4th quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201]
- ERC Certificate Number S-5025-1 (or a certificate split from this certificate) 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]

**3. ERC Withdrawal Calculations**

The applicant must identify the ERC Certificate(s) to be used to offset the increase of VOC emissions for the project. As indicated in previous section, the applicant is proposing to use ERC certificate S-5025-1 to mitigate the increases of VOC emissions associated with this project. See **Appendix F** for detailed ERC Withdrawal Calculations.

**C. Public Notification**

**1. Applicability**

Pursuant to District Rule 2201, Section 5.4, 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,

- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
- e. Any project which results in a Title V significant permit modification

**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 an Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

**b. PE > 100 lb/day**

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

**c. Offset Threshold**

Pursuant to District Rule 2201, Section 4.5.3, offset requirements shall be triggered on a pollutant-by-pollutant basis, unless exempted pursuant to Section 4.6, offsets shall be required if the post-project Stationary Source Potential to Emit (SSPE2) equals or exceeds specific threshold levels.

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	11,032	11,032	20,000 lb/year	No
SO <sub>x</sub>	800	800	54,750 lb/year	No
PM <sub>10</sub>	71,957	71,957	29,200 lb/year	No
CO	30,729	30,729	200,000 lb/year	No
VOC	360,916	361,254	20,000 lb/year	No

As detailed above, there were no new 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.

SSSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSSIPE (lb/year)	SSSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	11,032	11,032	0	20,000 lb/year	No
SO <sub>x</sub>	800	800	0	20,000 lb/year	No
PM <sub>10</sub>	71,957	71,957	0	20,000 lb/year	No
CO	30,729	30,729	0	20,000 lb/year	No
VOC	361,254	360,916	338	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

**e. Title V Significant Permit Modification**

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

**2. Public Notice Action**

As discussed above, public noticing is required for this project triggering a Federal Major Modification and Title V significant permit modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC 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 wine storage tank, 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:

- This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201]
- The ethanol content of wine stored in this tank shall not exceed 21.0 percent by volume. [District Rule 2201]
- The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201]
- 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]
- The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. [District Rules 2201 and 4694]
- The maximum wine storage throughput in this tank, calculated on a twelve (12) month rolling basis, shall not exceed 7,300,000 gallons. [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 offset, public notification and daily emission limit requirements of Rule 2201. The following conditions are listed on the permit to operate:

- 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]

- The operator shall maintain records of wine storage throughput, calculated on a rolling 12-month basis. [District Rule 2201]
- 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]
- 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]

#### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

#### **F. Ambient Air Quality Analysis (AAQA)**

An AAQA shall 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, this project involves only VOCs (mainly ethanol) emissions. Since there is no ambient air quality standard (AAQS) for VOCs; 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 Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. Gallo's compliance certification is included in Appendix G.

#### **H. Alternate Siting Analysis**

The current project occurs at an existing facility. The applicant proposes to install one wine storage tank. 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 the installation of only one new wine storage tank, it represents 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**

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. 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. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

This project triggers Federal Major Modification. As a result, the proposed project constitutes a Significant Modification to the Title V permit pursuant to Section 3.29 of this rule.

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 storage tank. Therefore, no further discussion is required.

### **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 storage tank. Therefore, no further discussion is required.

### **Rule 4102 Nuisance**

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of wine storage operation, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

## **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 the only pollutant that will be emitted by the proposed wine tank. 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 the emission unit in this project and a health risk assessment is not necessary. No further risk analysis is required.

## **Rule 4623 Storage of Organic Liquids**

The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids. This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.

Section 4.1.4 states that this rule shall not apply to tanks used in wine fermentation and to store fermentation products, byproducts, and spirits.

The tank in this project is solely used for the storage of wine. Therefore, the requirements of this rule are not applicable to the wine tank within this project. No further discussion is required.

## **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 of VOC per year.

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 tank 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 the tank 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 listed on the permit to ensure compliance with the requirements of this section:

- 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 listed on the permit to ensure compliance with the requirements of this section:

- The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. [District Rules 2201 and 4694]

Every three years, Section 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.

The facility has submitted the required plans to the District and is currently satisfying these requirements. Since, the proposed tank in this project is for wine storage only, and these sections are not applicable to wine storage operations, no further discussion is required.

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 listed on the permit to ensure compliance with the requirements of this section:

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

Section 6.4.1 requires that records be kept for each fermentation batch. The proposed tank is not fermenter; and therefore, this section does not apply.

Section 6.4.2 requires that weekly records be kept of wine volume and temperature in the storage tank. The following condition will be listed on the permit to ensure compliance with the requirements of this section:

- 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.

Since this requirement is for operators mitigation fermentation emission and the proposed tank is only for wine storage operation. This section is not applicable to wine storage tank in this project. Therefore, no further discussion is required.

Compliance with the requirements of this Rule is expected.

### **Rule 4695 Brandy Aging and Wine aging Operations**

The purpose of this rule is to limit volatile organic compound (VOC) emissions from brandy aging and wine aging operations.

Section 4.2 states that this rule shall not apply to wine storage tanks subject to Rule 4694 (Wine Fermentation and Storage Tanks) Section 5.2.

As stated above, the proposed wine storage tank is subject to Rule 4694, Section 5.2, and therefore, the proposed tank is exempt from the requirements of this rule, and no further discussion is required.

### **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)**

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 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; and
- 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.

### **Greenhouse Gas (GHG) Significance Determination**

#### District is a Responsible Agency

It is determined that another agency has prepared an environmental review document for the project. 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). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating greenhouse gas emissions. The District has determined that the applicant is responsible for implementing greenhouse gas mitigation measures, if any, imposed by the Lead Agency.

#### **District CEQA Findings**

The County of Stanislaus (County) is the public agency having principal responsibility for approving the Project. As such, the County served as the Lead Agency for the Project. The County determined the project to be exempt from CEQA according to CEQA Guidelines §15268.

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 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 period, issue ATC N-3386-544-0 subject to the permit conditions on the attached draft ATC in **Appendix A**.

**X. Billing Information**

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-3386-544-0	3020-05-C	20,500 gal tank	\$157

**Appendixes**

- A: Draft ATC
- B: EPA's Tanks 4.0.9d Reports
- C: SSPE1 Calculations
- D: BACT Guideline
- E: BACT Analysis
- F: ERC Withdrawal Calculations
- G: Compliance Certification
- H: Quarterly Net Emissions Change



**APPENDIX A**  
**Draft ATC**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-3386-544-0

**LEGAL OWNER OR OPERATOR:** E & J GALLO WINERY  
**MAILING ADDRESS:** ATTN: JULIA BONARDI - OPS1  
PO BOX 1130  
MODESTO, CA 95353

**LOCATION:** 600 YOSEMITE BLVD  
MODESTO, CA 95354

**EQUIPMENT DESCRIPTION:**

20,500 GALLON NOMINAL STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK #231) WITH PRESSURE/VACUUM VALVE AND INSULATION

**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. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 127 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-5025-1 (or a certificate split from this certificate) 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

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 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.

Samir Sheikh, Executive Director / APCO

**Arnaud Marjolle, Director of Permit Services**

N-3386-544-0 Feb 5 2019 11:46AM - SOW Joint Inspection NOT Required

5. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 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
6. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
7. 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
8. 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
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The ethanol content of wine stored in this tank shall not exceed 21.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage throughput in this tank, calculated on a twelve (12) month rolling basis, shall not exceed 7,300,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
13. 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
14. 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
15. The operator shall maintain records of wine storage throughput, calculated on a rolling 12-month basis. [District Rule 2201] Federally Enforceable Through Title V Permit
16. 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

DRAFT

**APPENDIX B**  
**EPA Tanks 4.0.9d Reports**

# TANKS 4.0 Chemical Data Report

Chemical Name Category	CAS	Molecular Weight		Vapor Pressure (psia) at Temperature (degrees F)					Constants for Antoine's Equation					
		Liquid	Vapor	Density*	40	50	60	70	80	90	100	A	B	C
Wine 21.0 % Vol Alcohol Organic Liquids		20.11	29.25	8.14	0.19	0.27	0.39	0.56	0.78	1.09	1.49			

Line 1: degrees C

Line 2: degrees K

REID

(psia)

ASTM

Slope

## TANKS 4.0.9d Emissions Report - Detail Format Tank Identification and Physical Characteristics

**Identification**

User Identification: E&J Gallo Winery - T#231 - Daily  
 City: Modesto  
 State: California  
 Company: E&J Gallo Winery  
 Type of Tank: Vertical Fixed Roof Tank  
 Description: 20,500 gallon, SS insulated located outdoor - 21%

**Tank Dimensions**

Shell Height (ft): 40.00  
 Diameter (ft): 9.25  
 Liquid Height (ft): 40.00  
 Avg. Liquid Height (ft): 40.00  
 Volume (gallons): 20,500.00  
 Turnovers: 31.00  
 Net Throughput(gal/yr): 635,500.00  
 Is Tank Heated (y/n): Y

**Paint Characteristics**

Shell Color/Shade: White/White  
 Shell Condition: Good  
 Roof Color/Shade: White/White  
 Roof Condition: Good

**Roof Characteristics**

Type: Cone  
 Height (ft): 1.65  
 Slope (ft/ft) (Cone Roof): 0.65

**Breather Vent Settings**

Vacuum Settings (psig): 0.00  
 Pressure Settings (psig): 0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Liquid Contents of Storage Tank**

**E&J Gallo Winery - T#231 - Daily - Vertical Fixed Roof Tank**  
**Modesto, California**

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Wine 21.0 % Vol Alcohol	JUL	77.30	77.30	77.30	77.30	0.7237	0.7237	0.7237	29.2474			20.11	Option 1: VP70 = .56917 VP80 = .78451





Working Losses (lb)	320.2530
Vapor Molecular Weight (lb/lb-mole):	29.2474
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.7237
Net Throughput (gal/mo):	635,500.0000
Annual Turnovers:	31.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	20,500.0000
Maximum Liquid Height (ft):	40.0000
Tank Diameter (ft):	9.2500
Working Loss Product Factor	1.0000
Total Losses (lb):	320.2530



**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Individual Tank Emission Totals**

**Emissions Report for: July**

**E&J Gallo Winery - T#231 - Daily - Vertical Fixed Roof Tank**  
**Modesto, California**

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Wine 21.0 % Vol Alcohol	320.25	0.00	320.25



**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Tank Identification and Physical Characteristics**

**Identification**

User Identification:	E&J Gallo Winery - T#231 - Annual
City:	Modesto
State:	California
Company:	E&J Gallo Winery
Type of Tank:	Vertical Fixed Roof Tank
Description:	20,500 gallon, SS insulated located outdoor - 21%

**Tank Dimensions**

Shell Height (ft):	40.00
Diameter (ft):	9.25
Liquid Height (ft) :	40.00
Avg. Liquid Height (ft):	40.00
Volume (gallons):	20,500.00
Turnovers:	356.10
Net Throughput(gal/yr):	7,300,000.00
Is Tank Heated (y/n):	Y

**Paint Characteristics**

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

**Roof Characteristics**

Type:	Cone
Height (ft)	1.65
Slope (ft/ft) (Cone Roof)	0.65

**Breather Vent Settings**

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Liquid Contents of Storage Tank**

**E&J Gallo Winery - T#231 - Annual - Vertical Fixed Roof Tank**  
**Modesto, California**

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol Weight	Basis for Vapor Pressure Calculations
		Avg	Min	Max.		Avg	Min	Max					
Wine 21.0 % Vol Alcohol	Jan	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Feb	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Mar	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Apr	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	May	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Jun	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Jul	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Aug	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Sep	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Oct	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Nov	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917
Wine 21.0 % Vol Alcohol	Dec	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	28.2474			20.11	Option 1 VP60 = 39305 VP70 = 55917

TANKS 4.0.9d  
Emissions Report - Detail Format  
Detail Calculations (AP-42)

E&J Gallo Winery - T#231 - Annual - Vertical Fixed Roof Tank  
Modesto, California

Table with columns for Month (January to December) and various emission parameters such as Standing Losses, Vapor Space Volume, Vapor Density, Vapor Space Expansion Factor, Tank Vapor Space Volume, Tank Diameter, Vapor Space Outage, Tank Shell Height, Average Liquid Height, Roof Outage, Vapor Density, Vapor Molecular Weight, Vapor Pressure, Surface Temperature, Daily Average Ambient Temp, Ideal Gas Constant, Liquid Bulk Temperature, Tank Paint Solar Absorptance, Daily Total Solar Insolation, Vapor Space Expansion Factor, Vapor Pressure, Vapor Pressure at Daily Average Liquid Surface Temperature, Vapor Pressure at Daily Minimum Liquid Surface Temperature, Vapor Pressure at Daily Maximum Liquid Surface Temperature, Daily Avg Liquid Surface Temp, Daily Min Liquid Surface Temp, Daily Max Liquid Surface Temp, Daily Ambient Temp, Vented Vapor Saturation Factor, Vapor Space Expansion Factor, Vapor Pressure, Vapor Pressure at Daily Average Liquid Surface Temperature, Vapor Pressure at Daily Minimum Liquid Surface Temperature, Vapor Pressure at Daily Maximum Liquid Surface Temperature, Daily Avg Liquid Surface Temp, Daily Min Liquid Surface Temp, Daily Max Liquid Surface Temp, Daily Ambient Temp, Working Losses, Vapor Molecular Weight, Vapor Pressure, Vapor Pressure at Daily Average Liquid Surface Temperature, Vapor Pressure at Daily Minimum Liquid Surface Temperature, Vapor Pressure at Daily Maximum Liquid Surface Temperature, Daily Avg Liquid Surface Temp, Daily Min Liquid Surface Temp, Daily Max Liquid Surface Temp, Daily Ambient Temp, Turnover Factor, Maximum Liquid Volume, Tank Diameter, Working Loss Product Factor, and Total Losses.





**TANKS 4.0.9d**  
**Emissions Report - Detail Format**  
**Individual Tank Emission Totals**

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

E&J Gallo Winery - T#231 - Annual - Vertical Fixed Roof Tank  
Modesto, California

Components	Losses(lbs)		Total Emissions
	Working Loss	Breathing Loss	
Wine 21.0 % Vol Alcohol	535.24	0.00	535.24



**APPENDIX C**  
**SSPE1 Calculations**

SSPE1 Calculations

N-3386

Permit Unit	Pollutant (lb/year)				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-3386-1-11	1,022	256	1,278	21,024	256
N-3386-2-9	330	86	420	1,050	81
N-3386-3-8	983	255	679	1,967	259
N-3386-5-4	0	0	3,696	0	0
N-3386-10-4	0	0	0	0	698
N-3386-13-4	0	0	0	0	0
N-3386-16-4	0	0	0	0	0
N-3386-17-4	0	0	0	0	0
N-3386-23-7	107	0	6	135	16
N-3386-26-4	89	0	3	64	24
N-3386-27-3	710	1	11	74	32
N-3386-28-5	324	0	15	185	49
N-3386-31-2	0	0	0	0	0
N-3386-33-2 thru -430-2 and -467-2	0	0	0	0	32,160
N-3386-469-3	0	0	225	0	633
N-3386-470-3	0	0	0	0	703
N-3386-471-3	0	0	0	0	703
N-3386-472-3	0	0	0	0	703
N-3386-473-3	0	0	0	0	703
N-3386-474-1	0	0	613	0	0
N-3386-475-1	0	0	64,509	0	0
N-3386-485-1	0	0	0	0	1,481
N-3386-487-0	0	0	0	0	3,208
N-3386-488-0	0	0	0	0	3,204
N-3386-489-0	0	0	0	0	3,190
N-3386-490-0	0	0	0	0	3,197
N-3386-491-0	0	0	0	0	3,205
N-3386-492-0	0	0	0	0	3,194
N-3386-493-1	138	0	4	32	5
N-3386-494-0	0	0	0	0	502
N-3386-495-0	0	0	0	0	502
N-3386-498-0	0	0	0	0	2,997
N-3386-499-0	0	0	0	0	2,998
N-3386-500-0	0	0	0	0	3,034
N-3386-501-0	0	0	0	0	3,005
N-3386-502-0	0	0	0	0	3,034
N-3386-503-0	0	0	0	0	3,037
N-3386-504-1	22	1	9	42	6
N-3386-505-0	0	0	0	0	440
N-3386-506-0	3	0	5	44	32
N-3386-507-1	576	25	11	108	108

N-3386-508-0	0	0	0	0	737
N-3386-509-0	0	0	0	0	737
N-3386-510-0	0	0	0	0	737
N-3386-511-0	0	0	0	0	737
ATC N-3386-512-0	0	0	0	0	337
ATC N-3386-513-0	0	0	0	0	337
ATC N-3386-514-0	0	0	0	0	337
ATC N-3386-515-0	0	0	0	0	337
ATC N-3386-516-0	0	0	0	0	337
ATC N-3386-517-0	0	0	0	0	337
ATC N-3386-518-0	0	0	0	0	337
ATC N-3386-519-0	0	0	0	0	337
ATC N-3386-520-0	0	0	0	0	337
ATC N-3386-521-0	0	0	0	0	337
ATC N-3386-536-0	0	0	0	0	0
ATC N-3386-537-0	0	0	0	0	0
ATC N-3386-538-0	0	0	0	0	0
ATC N-3386-539-0	0	0	0	0	0
<b>Total w/o ERC</b>	<b>4,304</b>	<b>624</b>	<b>71,484</b>	<b>24,725</b>	<b>83,717</b>

The above emission profiles were obtained from different engineering evaluation documents, which project numbers are summarized in the following table.

<b>Permit Units</b>	<b>Engineering Evaluation – Project Number</b>
N-3386-1-11, -5-4 thru -31-2	N-1094803
N-3386-2-9 & -3-8	N-1113046
N-3386-5-4 & -6-4	N-1094803
N-3386-10-4	N-1143444
N-3386-13-4, thru -31-2	N-1094803
N-3386-33-2 thru -430-2 & -467-2	N-1130542 (N-1094803 & N-1053430)
N-3386-469-3	N-1094803 (and N-1074322)
N-3386-470-3 thru -473-3	N-1162751
N-3386-474-1 and -475-1	N-1111118
N-3386-476-1 thru -483-1	N-1111273
N-3386-484-0	N-1132554
N-3386-485-1	N-1133147
N-3386-486-0	N-1141739
N-3386-487-0 thru -492-0	N-1142783
N-3386-493-0	N-1143553
N-3386-494-0 thru -503-0	N-1150520
N-3386-504-1	N-1152774
N-3386-505-0	N-1153167
N-3386-506-1	N-1153170
N-3386-507-1	N-1153671
N-3386-508-0 thru -511-0	N-1162276
ATC N-3386-512-0 thru -521-0	N-1162270
ATC N-3386-536-0 thru -539-0	N-1173812

This facility has the following emissions reduction credits that have occurred at the source, and which have not been used on-site:

ERC Certificate	Quantity (lb)
N-260-3	783 lb-CO
N-849-2	125 lb-NOx

N-7478

Permit Unit	Pollutant (lb/year)				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
N-7478-1-5	2,628	75	200	2,208	89,556
ATC N-7478-2-7	3,504	100	266	2,943	123,280
N-7478-3-4	0	0	0	0	4,931
N-7478-4-3	471	1	7	70	32
N-7478-5-2	0	0	0	0	101
N-7478-6-2	0	0	0	0	139
N-7478-7-2	0	0	0	0	216
N-7478-8-2	0	0	0	0	273
N-7478-9-2	0	0	0	0	23
N-7478-10-2	0	0	0	0	23
N-7478-11-2	0	0	0	0	296
N-7478-12-2	0	0	0	0	4,136
N-7478-13-2	0	0	0	0	4,111
N-7478-14-2	0	0	0	0	3,145
N-7478-15-2	0	0	0	0	3,123
N-7478-16-2	0	0	0	0	3,138
N-7478-17-2	0	0	0	0	3,133
N-7478-18-2	0	0	0	0	3,148
N-7478-19-2	0	0	0	0	3,139
N-7478-20-2	0	0	0	0	3,148
N-7478-21-2	0	0	0	0	3,134
N-7478-22-2	0	0	0	0	3,139
N-7478-23-2	0	0	0	0	3,153
N-7478-24-2	0	0	0	0	3,155
N-7478-25-2	0	0	0	0	5,643
N-7478-26-3	0	0	0	0	2,465
N-7478-27-3	0	0	0	0	2,465
N-7478-28-3	0	0	0	0	87
N-7478-29-3	0	0	0	0	87
N-7478-30-3	0	0	0	0	87
N-7478-31-3	0	0	0	0	87
N-7478-32-3	0	0	0	0	87
N-7478-36-0	0	0	0	0	1,493
N-7478-37-0	0	0	0	0	1,493
N-7478-38-0	0	0	0	0	1,493
N-7478-39-0	0	0	0	0	40

<b>Total w/o ERC</b>	<b>6,603</b>	<b>176</b>	<b>473</b>	<b>5,221</b>	<b>277,199</b>
----------------------	--------------	------------	------------	--------------	----------------

The above emission profiles were obtained from different engineering evaluation documents, which project numbers are summarized in the following table.

<b>Permit Units</b>	<b>Engineering Evaluation – Project Number</b>
N-7478-1-5	N-1162753 (N-1062294 & N-1094803)
N-7478-2-7	N-1182276
N-7478-3-4	N-1121902
N-7478-4-3	N-1093232
N-7478-5-2 thru -25-2	N-1113336
N-7478-26-3 thru -27-3	N-1121092
N-7478-28-3 thru -32-3	N-1162753
N-7478-36-0 thru -38-0	N-1133328
N-7478-39-0	N-1162753

This facility has no available emissions reduction credits that have occurred at the source, and which have not been used on-site.

**Total SSPE1 for this stationary source**

The pre-project stationary source potential to emit (SSPE1) values for facilities N-3386 and N-7478 are summarized in the following table.

**SSPE1**

<b>Facility</b>	<b>Pollutant (lb/year)</b>				
	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>CO</b>	<b>VOC</b>
N-3386	4,304	624	71,484	24,725	83,7177
N-7478	6,603	176	473	5,221	277,199
<b>Total w/o ERC</b>	<b>10,907</b>	<b>800</b>	<b>71,957</b>	<b>29,946</b>	<b>360,909</b>
ERC N-260-3	0	0	0	783	0
ERC N-849-2	125	0	0	0	0
<b>Total w/ ERC</b>	<b>11,032</b>	<b>800</b>	<b>71,957</b>	<b>30,729</b>	<b>360,916</b>

**APPENDIX D**  
**BACT Guideline**



SJVAPCD  
 Best Available Control Technology (BACT) Guideline 5.4.13\*  
 Last Update 09/07/2018

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

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Insulation or Equivalent***, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation.	1. Capture of VOCs and thermal or catalytic oxidation (98% control) 2. Capture of VOCs and carbon adsorption (95% control) 3. Capture of VOCs and absorption (90% control) 4. Capture of VOCs and condensation (70% control)	

\*\* This guideline is applicable to a wine storage tank that is not constructed out of wooden materials.

\*\*\* Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure of diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete and wood (except for fittings) are considered self-insulating.

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**

**APPENDIX E**  
**BACT Analysis**

## Top-Down BACT Analysis for VOCs from Wine Storage Operations

### Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.13 identifies the following Achieved in Practice and Technologically Feasible BACT options for wine storage tanks:

- 1) Insulation or Equivalent\*\*, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation. (Achieved in Practice)
- 2) Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control)
- 3) Capture of VOCs and carbon adsorption or equivalent (95% control)
- 4) Capture of VOCs and absorption or equivalent (90% control)
- 5) Capture of VOCs and condensation or equivalent (70% control)

*\*\*Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure to diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete and wood (except for fittings) are considered self-insulating.*

### 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 & Control Efficiency
1	Capture of VOCs and thermal or catalytic oxidation	98% <sup>(*)</sup>
2	Capture of VOCs and carbon adsorption	95%
3	Capture of VOCs and absorption	90%
4	Capture of VOCs and condensation	70%
5	Insulation or Equivalent, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation	Baseline (Achieved-in-Practice)

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

#### **Step 4 - Cost Effectiveness Analysis**

A cost effective analysis must be performed for all control options that have not been determined to be achieved in practice in the list from Step 3 above, in the order of their ranking, to determine the cost effective option with the lowest emissions.

District BACT Policy APR 1305 establishes annual cost thresholds for imposed control based upon the amount of pollutants reduced by the controls. If the cost of control is at or below the threshold, it is considered a cost effective control. If the cost exceeds the threshold, it is not cost effective and the control is not required. Per District BACT Policy, the maximum cost limit for VOC reduction is \$17,500 per ton of VOC emissions reduced.

#### Uncontrolled VOC Emissions from the Storage Tanks

Gallo proposes to install one wine storage tank. Therefore, for the purposes of this cost effectiveness analysis, uncontrolled storage VOC emissions is equal to the VOC emissions from the new tank.

Uncontrolled Storage PE = 338 lb-VOC/year (equivalent to 0.17 ton-VOC/year)

#### Total Annual Cost

Total Annual Cost = Cost of Control System + Annual Operating Cost + Ducting/Piping/CIP

The Total Annual Cost is the cumulative total of capital cost of control device, annual operating cost, plus the cost of ducting/piping/CIP. As a first step, if just using the partial cost of the ductwork plus CIP system is sufficient to show that the control option is not cost effective, additional cost may not be needed for the calculation purposes for this project.

#### Collection System Capital Investment (based on ductwork and clean-in-place system)

A common feature of all thermal oxidation/carbon adsorption/absorption or condensation options is that they require installation of a collection system for delivering the VOCs from the tanks to the common control device(s).

#### **Basis of Cost Information:**

- The costs for the ductwork and the required clean-in-place (CIP) system are based on information from the 2005 Eichleay Study. The 2005 Eichleay study was used in development of District Rule 4694 Wine Fermentation and Storage Tanks and includes substantial information on the costs and details of the potential application of VOC controls to wineries and addresses many of the technical issues of the general site specific factors for wineries.
- The District performed a cost survey of stainless steel ducting/piping and found that the values stated in the Eichleay report including the cost of inflation (applied as stated below) were less expensive; therefore, as a conservative estimate, the District will use the cost of ducting/piping from the Eichleay report which will include ducting, fittings, bolt up, handle, and install. A summary of the ducting/piping cost survey is included in Appendix E2.

- Eichleay's cost estimate for ducting included the duct, fittings, bolt up, handle and install; therefore, the District did not allow the additional costs for foundations & supports, handling & erection, electrical, piping or painting, as allowed by the EPA Cost Manual.
- The collection system consists of stainless steel place ductwork (stainless steel is required due to food grade product status) with isolation valving, connecting the 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.
- One of the major concerns of a manifold duct system is microorganisms spoiling the product, and transferring from one tank to another. It is necessary to design into the system a positive disconnect of the ducting system when the tanks are not being filled. There are a number of ways this can be done. In this case, an automatic butterfly valve with a physical spool to disconnect the tank from the duct will be utilized.
- The ducting/piping costs quoted in the Eichleay study are from 2005 and must be adjusted to reflect 2018 prices. An overall inflation amount of 32.61% which was taken from the United States Department of Labor, Bureau of Labor Statistics, Consumer Price Index (CPI) Inflation Calculator and applied to the ducting/piping costs to determine the current 2018 prices: [http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm).
- See Attachment E1 for tank farm ducting layout.

#### Capital Cost of Ductwork

As detailed in the tank layout sketches in Attachment E1, the proposed tank will be located very close to the existing tank farms, as a conservative estimate, only the small size pipe, 6" diameter pipe, will need be to use. The ductwork cost for the proposed single wine storage tank is summarized below:

- Connection from tank (231) to main duct (6" Diameter): 43.4 feet x \$62.17/foot = \$2,698
- Connection from main duct to emission control unit: 25 feet x \$62.17/foot = \$1,554
- Ducting Isolation Components for tank:
  - o Unit installed cost for 6 inch butterfly valve: \$2,125/valve x 1 tank = \$2,125
  - o Unit installed cost one foot removable spool: \$500/tank x 1 tank = \$500
- Ducting support allowance:
  - o Ducting support allowance is \$4,000/tank: \$4,000/tank x 1 tank = \$4,000

Total Ductwork Capital cost = \$2,698 + \$1,554 + \$2,125 + \$500 + \$4,000  
= **\$10,877**

<b>Capital Cost of Ductwork for A Single Wine Storage Tank</b>	
Cost Description	Cost (\$)
Total Ductwork cost for all Tanks	\$10,877
Adjusting factor from 2005 dollars to present month in 2018 dollars (32.61% inflation)	1.3261
Inflation adjusted duct cost	\$14,424
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
<b>Direct Costs (DC)</b>	
Base Equipment Costs (Ductwork) See Above	\$14,424
Instrumentation (not estimated)	-
Sales Tax 3.6875% <sup>1</sup> of Base Equipment Costs	\$532
Freight 5% of Base Equipment Costs	\$721
<b>Purchased Equipment Cost (PEC)</b>	<b>\$15,677</b>
Foundations & supports (Included in Base Equipment Costs)	-
Handling & erection (Included in Base Equipment Costs)	-
Electrical (not required)	-
Piping (not required)	-
Painting (not required)	-
Insulation 1% of PEC	\$157
<b>Direct installation costs</b>	<b>\$157</b>
<b>Total Direct Costs</b>	<b>\$15,834</b>
<b>Indirect Costs (IC)</b>	
Engineering 10% of PEC	\$1,568
Construction and field expenses 5% of PEC	\$784
Contractor fees 10% of PEC	\$1,568
Start-up 2% of PEC	\$314
Performance test 1%	\$157
<b>Total Indirect Costs</b>	<b>\$4,391</b>
<b>Subtotal Capital Investment (SCI) (DC + IC)</b>	<b>\$20,225</b>
Contingencies – 15% of SCI	\$3,034
<b>Total Capital Investment (TCI) (SCI + Contingency)</b>	<b>\$23,259</b>

<sup>1</sup> Pollution control equipment may qualify for CA tax partial exemption. The exemption rate is 4.1875%, so the reduced sales tax rate for Stanislaus County equals 3.6875% (7.875% - 4.1875%).

<https://www.boe.ca.gov/lawguides/business/current/blq/vol1/sutr/1525-4.html>  
<http://www.cdtfa.ca.gov/taxes-and-fees/rates.aspx>

Capital Cost for Clean-In-Place (CIP) System

A ducting system on a winery tank farm must have a Clean in Place (CIP) 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. Only one small CIP system is needed for the proposed tank.

<b>Capital Cost of Clean-In-Place (CIP) System for A Single Wine Storage Tank</b>	
Cost Description	Cost (\$)
Cost of CIP system: \$10,000	\$10,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
<b>Direct Costs (DC)</b>	
Base Equipment Costs (CIP System) See Above	\$10,000
Instrumentation - 10% of Base Equipment	\$1,000
Sales Tax - 3.6875% of Base Equipment	\$369
Freight - 5% of Base Equipment	\$500
<b>Purchased Equipment Cost (PEC)</b>	<b>\$11,869</b>
Foundations & supports - 8% of PEC	\$950
Handling & erection - 14% of PEC	\$1,662
Electrical - 4% of PEC	\$475
Piping – accounted for in ductwork cost	-
Painting - 1% of PEC	\$119
Insulation - 1% of PEC	\$119
<b>Direct Installation Costs (DIC)</b>	<b>\$3,325</b>
<b>Total Direct Costs (DC) = (PEC + DIC)</b>	<b>\$15,194</b>
<b>Indirect Costs (IC)</b>	
Engineering - 10% of PEC	\$1,187
Construction and field expenses - 5% of PEC	\$593
Contractor fees - 10% of PEC	\$1,187
Start-up - 2% of PEC	\$237
Performance test - 1% of PEC	\$119
<b>Total Indirect Costs (IC)</b>	<b>\$3,323</b>
<b>Subtotal Capital Investment (SCI) = (DC + IC)</b>	<b>\$18,517</b>
Contingencies - 15% of SCI	\$2,778
<b>Total Capital Investment (TCI) (SCI + Contingency)</b>	<b>\$21,295</b>

Annualized Capital Costs of Ductwork and CIP System for one Wine Storage Tank

$$\begin{aligned}
 \text{Total Capital Cost} &= \text{Ductwork} + \text{CIP System} \\
 &= \$23,259 + \$21,295 \\
 &= \mathbf{\$44,554}
 \end{aligned}$$

The total capital investment is annualized over 10 years assuming 10% interest. The following formula is used to determine the annualized cost:

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,

$$\begin{aligned} \text{Annualized Capital Investment for the ductwork and CIP system} &= \$44,554 \times 0.163 \\ &= \mathbf{\$7,262/\text{year}} \end{aligned}$$

**Option 1 - Capture of VOCs & thermal/catalytic oxidation or equivalent (overall capture & control efficiency of 98%)**

Total Annual Cost

As calculated above, the annualized capital cost for the collection system ductwork equipment alone is \$7,262.

Emissions Reduction:

The amount of VOC emissions controlled for this control option is calculated as follow:

$$\begin{aligned} \text{Controlled VOC emissions} &= 338 \text{ lb-VOC/year} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.98 \\ &= 0.17 \text{ ton-VOC/year} \end{aligned}$$

Cost Effectiveness:

Cost of VOC reduction is calculated as follow:

$$\begin{aligned} \text{Cost of VOC reduction} &= \$7,262/\text{year} \div 0.17 \text{ ton-VOC/year} \\ &= \$42,718/\text{ton-VOC} \end{aligned}$$

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

**Option 2 - Capture of VOCs and carbon adsorption or equivalent (overall capture & control efficiency of 95%)**

Total Annual Cost

As calculated above, the annualized capital cost for the collection system ductwork equipment alone is \$7,262.

Emissions Reduction:

The amount of VOC emissions controlled for this control option is calculated as follow:



$$\begin{aligned}\text{Controlled VOC emissions} &= 338 \text{ lb-VOC/year} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.95 \\ &= 0.16 \text{ ton-VOC/year}\end{aligned}$$

Cost Effectiveness:

Cost of VOC reduction is calculated as follow:

$$\begin{aligned}\text{Cost of VOC reduction} &= \$7,262/\text{year} \div 0.16 \text{ ton-VOC/year} \\ &= \$45,388/\text{ton-VOC}\end{aligned}$$

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

**Option 3 - Capture of VOCs and absorption or equivalent (overall capture & control efficiency of 90%)**

Total Annual Cost

As calculated above, the annualized capital cost for the collection system ductwork equipment alone is \$7,262.

Emissions Reduction:

The amount of VOC emissions controlled for this control option is calculated as follow:

$$\begin{aligned}\text{Controlled VOC emissions} &= 338 \text{ lb-VOC/year} \times 1 \text{ tons-VOC}/2,000 \text{ lb-VOC} \times 0.90 \\ &= 0.15 \text{ ton-VOC/year}\end{aligned}$$

Cost Effectiveness:

Cost of VOC reduction is calculated as follow:

$$\begin{aligned}\text{Cost of VOC reduction} &= \$7,262/\text{year} \div 0.15 \text{ ton-VOC/year} \\ &= \$48,413/\text{ton-VOC}\end{aligned}$$

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

**Option 4 – Capture of VOCs and condensation or equivalent (overall capture & control efficiency of 70%)**

Total Annual Cost

As calculated above, the annualized capital cost for the collection system ductwork equipment alone is \$7,262.

Emissions Reduction:

The amount of VOC emissions controlled for this control option is calculated as follow:

Controlled VOC emissions = 338 lb-VOC/year x 1 tons-VOC/2,000 lb-VOC x 0.70  
= 0.12 ton-VOC/year

Cost Effectiveness:

Cost of VOC reduction is calculated as follow:

Cost of VOC reduction = \$7,262/year ÷ 0.12 ton-VOC/year  
= \$60,517/ton-VOC

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

**Option 5 – Insulation, PVRV, “Gas-Tight” Tank Operation, and Storage Temperature not Exceeding 75 deg F, Achieved within 60 days of Completion of Fermentation**

The only remaining control option in step 3 above has been deemed AIP for this class and category of source and per the District BACT policy is required regardless of the cost. Therefore, a cost effectiveness analysis is not required.

**Step 5 - Select BACT**

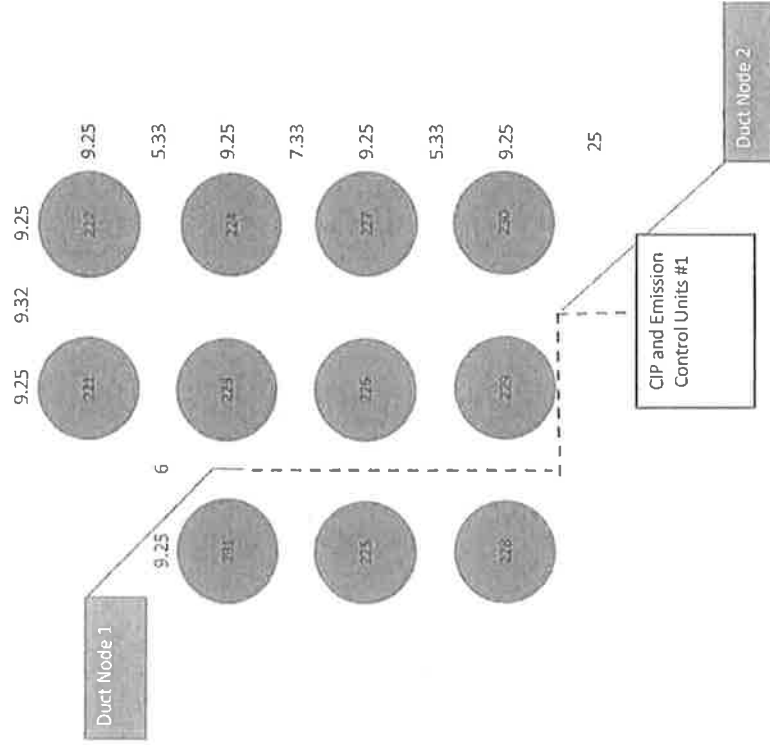
All identified feasible options with control efficiencies higher than the option proposed by the facility are not cost effective. The proposed wine storage tank is insulated and is equipped with pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, and is being operated “gas tight” tank operation. The applicant has proposed to maintain a continuous storage temperature at or below 75°F. Therefore, this proposal complies with the BACT requirements.

**APPENDIX E1**  
**Tank Farm Ducting Layout**

Tanks are for storage only.

The tanks in this diagram are graphically shown as the same size for convenience of the spread sheet layout. The numbers in the cells around the tank layout reflect spacing and tank dimensions from the data base and layout Auto Cad files. Only the main duct between the tank and the Control system are shown. The connections from the tank to the main duct are priced out in the duct cost tabs. Total tanks in this sketch is 11 to show context of tank placement into the tank farm.

**Red dashed line is the most probable duct routing.** Blue call out boxes show where a duct intersects with another duct or where a duct begins.



**APPENDIX E2**  
**Ducting Cost Survey**





**APPENDIX F**  
**ERC Withdrawal Calculations**



VOC	1 <sup>st</sup> Quarter (lb)	2 <sup>nd</sup> Quarter (lb)	3 <sup>rd</sup> Quarter (lb)	4 <sup>th</sup> Quarter (lb)
ERC S-5025-1	61,637	111,629	111,622	111,622
Offsets Required (Includes distance offset ratio)	126	127	127	127
Amount Remaining	61,511	111,502	111,495	111,495
Credits reissued under ERC S-YYYY-1*	61,511	111,502	111,495	111,495

\*Reissued ERC certificate number to be determined upon completing the ERC withdrawal project.

**APPENDIX G**  
**Compliance Certification**



# E&J Gallo Winery

1 November 2018

**Via Email**

Nick Peirce  
San Joaquin Valley Air Pollution Control District  
4800 Enterprise Way  
Modesto California 95356-8718  
[Nick.Peirce@valleyair.org](mailto:Nick.Peirce@valleyair.org)

**Re: Compliance Statement for E&J Gallo Winery Project N-1183449**

Dear Nick and District permitting staff,

In accordance with *District Rule 2201, Section 4.15, 'Additional Requirements for New Major Sources and Federal Major Modifications,'* E&J Gallo Winery is providing this compliance statement regarding its proposed project identified as N-1183449, for the addition of one (1) 20,500-gallon wine storage tank.

All major sources in California owned or operated by E&J Gallo Winery or by any entity controlled by, or under common control with E&J Gallo Winery, and which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable limitations and standards. These sources include the following facility:

E&J Gallo Winery, 600 Yosemite Boulevard, PO Box 1130, Modesto California 95353

Based on information and belief formed after reasonable inquiry, the statements and information in the project application are true, accurate, and complete.

Regards,

William Stewart  
Vice President – Modesto Operations  
E&J Gallo Winery

**APPENDIX H**  
**Quarterly Net Emissions Change (QNEC)**

### 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.

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$$\begin{aligned}
 PE2_{\text{quarterly}} &= PE2_{\text{annual}} \div 4 \text{ quarters/year} \\
 &= 338 \text{ lb/year} \div 4 \text{ qtr/year} \\
 &= 84.5 \text{ lb VOC/qtr}
 \end{aligned}$$

$$\begin{aligned}
 PE1_{\text{quarterly}} &= PE1_{\text{annual}} \div 4 \text{ quarters/year} \\
 &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\
 &= 0 \text{ lb VOC/qtr}
 \end{aligned}$$

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	0	0	0
SO <sub>x</sub>	0	0	0
PM <sub>10</sub>	0	0	0
CO	0	0	0
VOC	84.5	0	84.5