San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 24 2017

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

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-447
Project # 1171175

Dear Mr. McDougald:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project authorizes the installation of six new wine storage tanks.

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

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

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email
cc: Kim Burns, E & J Gallo Winery (w/enclosure) via email

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Installation of Six New Wine Storage Tanks

Facility Name:	E & J Gallo Winery	Date:	May 19, 2017
Mailing Address:	5610 E. Olive Avenue Fresno, CA 93727	Engineer:	Dustin Brown
		Lead Engineer:	Jerry Sandhu
Contact Person:	Neil McDougald		
Telephone:	(559) 458-2588		
E-Mail:	Neil.McDougald@ejgallo.com		
Application #s:	C-447-345-0 through '-350-0		
Project #:	C-1171175		
Deemed Complete:	April 25, 2017		

I. Proposal

E & J Gallo Winery has requested Authority to Construct (ATC) permits for the installation of six new wine storage tanks. These tanks are currently constructed and operated as permit exempt juice storage tanks at this facility. However, they would now like the ability to store wine in these tanks. Since these tanks were previously permit exempt, they will be treated as new emission units for the purposes of this project.

E & J Gallo Winery received their Title V Permit for this stationary source on December 12, 1997. This modification can be classified as a Title V significant modification pursuant to Rule 2520, Sections 3.20 and 3.29, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authorities to Construct. E & J Gallo Winery must apply to administratively amend their Title V Operating Permit to include the requirements of the ATCs issued with this project.

II. Applicable Rules

District Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
District Rule 2410	Prevention of Significant Deterioration (6/16/11)
District Rule 2520	Federally Mandated Operating Permits (6/21/01)
District Rule 4001	New Source Performance Standards (4/14/99)
District Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
District Rule 4101	Visible Emissions (2/17/05)
District Rule 4102	Nuisance (12/17/92)
District Rule 4623	Storage of Organic Liquids (5/19/05)
District Rule 4694	Wine Fermentation and Storage Tanks (12/15/05)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

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

III. Project Location

This facility is located at 5610 E. Olive Avenue in Fresno, CA.

The District has verified that the equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

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

After transfer of the must (for red or white wine) to the fermentation tank, the must is inoculated with yeast which initiates the fermentation reactions. During fermentation, the yeast metabolizes the sugar in the grape juice, converting it to ethanol and carbon dioxide (CO_2) while releasing heat. Temperature is typically controlled by refrigeration, and is maintained at 45–65 °F for white wine fermentation and 70–95 °F for red wine fermentation. The sugar content of the fermentation mass is measured in °Brix (weight %) and is typically 22–26° for unfermented grape juice, dropping to 4° or less at the end of fermentation. Finished ethanol concentration is approximately 10 to 14 percent by volume. Batch fermentation requires 3-5 days per batch for red wine and 1-2 weeks per batch for white wine. VOCs are emitted during the fermentation process along with the CO_2. The VOCs consist primarily of ethanol along with small quantities of other fermentation byproducts.

Following the completion of fermentation, white wine is transferred directly to storage tanks. Red wine is first directed to the presses for separation of solids and then routed to the storage tanks. Tanks can potentially operate in either: (1) a fermentation operation during which the tank is vented directly to the atmosphere to release the evolved CO_2 byproduct from the fermentation reaction; (2) a storage operation during which the tank is closed to minimize contact with air and refrigerated to preserve the wine; (3) or both fermentation and storage operations. Post-fermentation operations such as cold stabilization, racking, and filtration are conducted in the tanks, resulting in a number of inter-tank transfers during the period between the end of fermentation and bottling or bulk shipment. Storage operations are conducted year-round. VOC emissions occur primarily as a result of the inter-tank transfers which are necessitated by the post fermentation operations.

E & J Gallo Winery is proposing to install six wine storage tanks with this project. The tanks will only be used for wine storage and will not be used for fermentation operations. The tanks will only store wine once the fermentation process is completed in previously permitted tanks operated at this facility.

V. Equipment Listing

E & J Gallo Winery is proposing to install six new wine storage tanks with this project. All six tanks are identical in size and have already been assigned tank identifier numbers by the facility. The proposed equipment descriptions for these new tanks are shown below:

C-447-345-0: 640,000 GALLON NOMINAL (640,353 GALLON GAUGE) STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK 6607) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

C-447-346-0: 640,000 GALLON NOMINAL (640,353 GALLON GAUGE) STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK 6608) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

C-447-347-0: 640,000 GALLON NOMINAL (640,353 GALLON GAUGE) STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK 6615) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

C-447-348-0: 640,000 GALLON NOMINAL (640,353 GALLON GAUGE) STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK 6616) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

C-447-349-0: 640,000 GALLON NOMINAL (640,353 GALLON GAUGE) STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK 6623) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

C-447-350-0: 640,000 GALLON NOMINAL (640,353 GALLON GAUGE) STAINLESS STEEL ENCLOSED TOP WINE STORAGE TANK (TANK 6624) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

VI. Emission Control Technology Evaluation

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

VII. General Calculations

A. Assumptions

- The proposed tanks will only be used for red and white wine storage.
- Typically, for enclosed tanks with insulation (or equivalent) and P/V valves, breathing losses from storage of wine are assumed to be negligible.
- Maximum daily liquid storage temperature = 81.0 °F (proposed by the applicant)
- Maximum annual liquid storage temperature = 63.3 °F (proposed by the applicant)
- Storage tank daily maximum ethanol content of stored wine is 23.9% (proposed by the applicant and worst case District practice)
- Storage tank annual average ethanol content of stored wine is 15% (proposed by the applicant)
- The storage tank throughput rates listed in the following table were proposed by E & J Gallo Winery for this project:

Permits	Nominal Tank Size (gallons)	Daily Throughput (gal/day)	Annual Throughput (gal/year)
C-447-345-0 through '-350-0	640,000	640,353	4,482,471

B. Emission Factors

TANKS 4.0d will be used to calculate the storage emissions from the new tanks. Daily emissions for each tank will be determined using the daily throughput rate listed, the worst-case emission rate for the month of July (per District practice) and the number of days in July, 31. The annual PE for each tank will be determined using the annual throughput rate listed above and the sum of the emissions from all 12 months.

Per District practice, the emission estimates provided by the TANKS 4.0 model represents the combined loss of ethanol (VOC) and water from each tank. To calculate the ethanol (VOC) portion of the emissions, it is first necessary to determine the molar fraction of ethanol (y_a) in the vapor emissions from the tank. This can be calculated from the average molecular weight (AMW) of the vapor as listed on page 2 of the TANKS 4.0 runs in Appendix A. Per the definition of AMW for a binary mixture:

$$AMW = y_a \times MW_a + (1-y_a) \times MW_w$$

Solving for the molar fraction of ethanol,

$$y_a = \frac{AMW - MW_w}{MW_a - MW_w}$$

Where,

$AMW_{23.9\% \text{ volume ethanol content}}$ = 30.34 lb/mole (daily basis)
$AMW_{15\% \text{ volume ethanol content}}$ = 27.13 lb/mole (annual basis
MW_a = Molecular weight of ethanol = 46.02 lb/mole
MW_w = Molecular weight of water = 18.02 lb/mole

Therefore,

y_a = (30.34 – 18.02)/(46.02 – 18.02) = 0.4400 for 23.9% ethanol mixture (daily basis)

y_a = (27.13 – 18.02)/(46.02 – 18.02) = 0.3254 for 15% ethanol mixture (annual basis)

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

$$PE_{daily} = \frac{E_d}{AMW} * y_a * 46.02$$

$$PE_{annual} = \frac{E_a}{AMW} * y_a * 46.02$$

Where,

E_d = Daily Emission Rate from TANKS 4.0 Program
E_a = Annual Emission Rate from TANKS 4.0 Program

Therefore, the daily and annual VOC PE values will be determined using the following equations:

Daily PE = [(TANKS 4.0 Emission Rate for July / 31 days) / 30.34] * 0.4400 * 46.02

Daily PE = (TANKS 4.0 Emission Rate for July / 31 days) x 0.6674

Annual PE = (TANKS 4.0 Emission Rate / 27.13) * 0.3254 * 46.02

Annual PE = TANKS 4.0 Emission Rate * 0.5520

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since these tanks are new emissions units, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

Two TANKS 4.0 runs have been performed, one for daily emissions and one for annual emissions, and are included in Appendix A.

Daily PE2:

Daily PE (lb/day) = (TANKS 4.0 PE for July / 31 days) * Daily Water Vapor Adjustment

Daily Post-Project Potential to Emit				
Permits	**Max Daily Throughput per Tank (gal/day)**	**TANKS 4.0 Daily PE2 per Tank (lb/day)**	**Adjustment for Water Vapor Emissions**	**Total Daily PE2 per Tank (lb/day)**
C-447-345 through '-350 (6 tanks in project)	640,353	393.2	0.6674	262.4

Annual PE2:

Annual PE (lb/year) = TANKS 4.0 PE * Annual Water Vapor Adjustment

Annual Post-Project Potential to Emit					
Permits	**Max Annual Throughput per Tank (gal/year)**	**TANKS 4.0 Annual PE2 per Tank (lb/year)**	**Adjustment for Water Vapor Emissions**	**Total Annual PE2 per Tank (lb/year)**	**Total Annual PE2 for Project (lb/year)**
C-447-345 through '-350 (6 tanks in project)	4,482,471	1,175	0.5520	649	3,894
				Total Annual PE2 for Project:	**3,894**

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

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

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

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

5. Major Source Determination

Rule 2201 Major Source Determination:

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

Rule 2410 Major Source Determination:

The following table summarizes projects that authorized winery tank related operations at this facility that resulted in a potential VOC emission increase prior to the proposed project.

Project	Proposed Permitting Action	PE Increase (lb-VOC/year)
C-1133347	Addition of wine fermentation service to 12 existing wine storage tanks	60,408
C-1133313	Install 12 wine storage tanks	18,216
C-1123332	Install 32 wine storage tanks	20,576
C-1110475	Install 24 wine storage tanks	11,088
C-1095403	Original permitting of 33 existing distilled spirits and brandy storage tanks	80,171
C-1053464 and C-1071388	Original permitting of 198 existing wine fermentation and storage tanks	389,716[1]
	Total:	**580,175**

[1] The facility-wide VOC emission calculations for these 198 tanks were performed under project C-1071388. In that project, the wine fermentation and storage throughput rates were listed as follows: red wine fermentation = 27,620,847 gal/year; white wine fermentation = 36,757,186 gal/year; and wine storage = 64,378,033. The VOC emission factors for each type of wine service are in units of lb-VOC/1,000 gallons. However, when the calculations were performed in this project, the "per 1,000 gallon" portion of the VOC emission factor was not used in determining the final VOC emission value. Therefore, the 389,715,867 lb-VOC/year emission value calculated for the 198 wine fermentation and storage tanks in that project has been divided by 1,000 and corrected to 389,716 lb-VOC/year for the purposes of this PSD major source determination.

As indicated above, the SSPE for VOC emissions solely from their winery tank related operations prior to the proposed project is calculated to be 580,195 pounds per year, equivalent to 290.1 tons per year.

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

PSD Major Source Determination (tons/year)	
	VOC
Facility PE before Project Increase	290.1
PSD Major Source Thresholds	250
Existing PSD Major Source?	**Yes**

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

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.

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

7. SB 288 Major Modification

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

As discussed in Section VII.C.5 above, this facility is a major source for VOC emissions; therefore, 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?**
NO_x	0	50,000	No
SO_x	0	80,000	No
PM_{10}	0	30,000	No
VOC	3,894	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, 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.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	**Total Emissions Increases (lb/yr)**	**Thresholds (lb/yr)**	**Federal Major Modification?**
NO_x*	0	0	No
VOC*	3,894	0	Yes
PM_{10}	0	30,000	No
$PM_{2.5}$	0	20,000	No
SO_x	0	80,000	No

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

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 times the applicable federal offset ratio. As shown above, this project triggers a Federal Major Modification for VOC emissions. Therefore, the federal offsets required for VOC emissions for this project are as follows:

VOC **Federal Offset Ratio** **1.5**

Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
C-447-345-0 through C-447-350-0	0	3,894	3,894
		Net Emission Change (lb/year):	3,894
		Federal Offset Quantity: (NEC * 1.5)	5,841

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

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

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM_{10}

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no futher PSD analysis is needed.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)					
	NO_2	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15
PSD Significant Emission Increase?	N	N	N	N	N

As demonstrated above, because the post-project total potentials to emit from all new and modified emission units are below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 and no further discussion 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 D.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. 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 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 seen in Section VII.C.2 above, the applicant is proposing to install six new wine storage tanks, each with a PE greater than 2 lb/day for VOC emissions. Therefore, BACT is triggered for VOC emissions from each tank since the PEs are greater than 2 lb/day.

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 all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT Guideline 5.4.13, applies to wine storage tanks. E & J Gallo Winery is proposing to install six new wine storage tanks. Therefore, BACT Guideline 5.4.13 is applicable to these new wine storage tanks (BACT Guideline 5.4.13 included in Appendix B).

3. Top-Down BACT Analysis

Pursuant to the attached Top-Down BACT Analysis (see Appendix B), BACT is 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.

Each of the new wine storage tanks being installed within this project is equipped with insulation and a pressure/vacuum valve set to within 10% of the maximum allowable working pressure of the tank; operates in a gas-tight condition and the continuous storage temperature does not exceed 75 degrees F within 60 days of the completion of the fermentation cycle. Therefore, the wine storage tanks meet the BACT requirements for this class and category of operation and no further discussion is required.

The following condition will be included on each ATC to assure compliance with the BACT requirements:

- 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]

B. Offsets

1. Offset Applicability

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.

This project only involves VOC emissions. The following table compares the post-project facility-wide annual VOC emissions in order to determine if offsets will be required for this project.

Pollutant	SSPE2 (lb/yr)	Offset Threshold Levels (lb/yr)	Offsets Required?
VOC	> 20,000	20,000	Yes

2. Quantity of Offsets Required

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

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post Project Potential to Emit, (lb/yr)
BE = Baseline Emissions, (lb/yr)
ICCE = Increase in Cargo Carrier Emissions, (lb/yr)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

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

Offsets Required (lb/yr) = Σ[PE2 – BE] x DOR

VOC Offsets Required for Wine Storage Tanks without DOR				
Permits	Annual PE2, per tank (lb/yr)	Annual BE, per tank (lb/yr)	Offsets Required, per Tank (lb/yr)	Offsets Required for Project (lb/yr)
C-447-345 through '-350 (six tanks in project)	649	0	649	3,894
			Total Offsets Required without DOR:	3,894

In accordance with Rule 2201, Section 4.8.1, the DOR for NOx and VOC offsets for projects that trigger federal major modifications shall be 1.5:1. As shown in Section VII.C.8, this project triggers a federal major modification for VOC emissions. Therefore, the DOR will be 1.5:1 and the total amount of VOC ERCs that need to be withdrawn for this project is:

VOC Offsets Required for Wine Storage Tanks with DOR			
Permits	Offsets Required for Project (lb/yr)	DOR	Total Offsets Required for Project with DOR (lb/yr)
C-447-345 through '-350 (six tanks in project)	3,894	1.5	5,841

The facility has requested that the amount of offsets required for this project be split among the six new storage tanks. Since all of the new storage tanks are the same size and have the same throughput and emission rates, the amount of offsets required for each tank can be determined as follows:

Offsets Required Per Tank (lb/yr) = Total Offsets Required for Project (lb/year) / 6 Tanks
Offsets Required Per Tank (lb/yr) = 5,841 lb/yr / 6 Tanks

Offsets Required Per Tank = 973.5 lb/yr

Calculating the appropriate quarterly emissions to be offset for each storage tank is as follows:

Quarterly Offsets Required (lb/qtr) = Total Offsets Required per Tank lb-VOC/yr ÷ 4 qrt/yr

Quarterly VOC Offsets Required for Each Wine Storage Tank			
Permits	Total Offsets Required, per Tank (lb/yr)	Quarters/year	Total Offsets Required, per Tank (lb/qtr)
C-447-345 through '-347	973	4	243.25
C-447-348 through '-350	974	4	243.5

As shown in the table 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 Quarter 1 having 90 days, Quarter 2 having 91 days, and Quarters 3 and 4 having 92 days. Therefore, the appropriate quarterly emissions to be offset for each tank are as follows:

Quarterly VOC Offsets Required for Each Wine Storage Tank				
Permits	Offsets Required, per Tank (lb/1st qtr)	Offsets Required, per Tank (lb/2nd qtr)	Offsets. Required, per Tank (lb/3rd qtr)	Offsets Required, per Tank (lb/4th qtr)
C-447-345	243	243	243	244
C-447-346	243	243	243	244
C-447-347	243	243	243	244
C-447-348	243	243	244	244
C-447-349	243	243	244	244
C-447-350	243	243	244	244
Total	**1,458**	**1,458**	**1,461**	**1,464**

The applicant has stated that the facility plans to use their primary ERC certificate S-4744-1 to offset the increases in VOC emissions associated with this project. They have also requested to list ERC Certificates C-1404-1, S-4442-1, S-4727-1, S-4751-1, S-4769-1, S-4773-1, or S-4780-1 as secondary certificates to offset the increases in VOC emissions associated with this project. The above +certificates have available quarterly VOC credits as follows[2]:

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #S-4744-1	67,500	117,500	117,500	117,500
ERC #C-1404-1	4,409	4,405	4,252	4,131
ERC #S-4442-1	6,862	6,852	0	0
ERC #S-4727-1	31,955	31,908	31,898	31,871
ERC #S-4751-1	13,522	13,570	7,249	7,260
ERC #S-4769-1	2,761	2,761	1,087	1,083
ERC #S-4773-1	827	771	56	41
ERC #S-4780-1	16,794	16,752	4,054	2,387

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:

The following condition will be included on each ATC for these six new wine storage tanks:

- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 243 lb, 2nd quarter - 243 lb, 3rd quarter - 244 lb, and fourth quarter - 244 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 Numbers S-4744-1, C-1404-1, S-4442-1, S-4727-1, S-4751-1, S-4769-1, S-4773-1, or S-4780-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

[2] The available credit values listed below only show the credits available from each certificate that are not currently reserved for other ATC projects in the District's permit database.

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed,
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 above, this project triggers a 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 include new wine storage tank emissions units, which all have daily emissions greater than 100 lb/day for VOC emissions; therefore, public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

Public notification is required if the Pre-Project Stationary Source Potential to Emit (SSPE1) is increased from a level below the offset threshold to a level exceeding the emissions offset threshold, for any pollutant.

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

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

As detailed above, there were no offset 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 Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE1 and SSPE2 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	∑PE2 (lb/year)	∑PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	>20,000 + 3,894	>20,000	3,894	20,000 lb/year	No

As demonstrated above, the SSIPE for VOC was 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 for triggering a Federal Major Modification, a PE of greater than 100 lb/day for each emission unit, and a Title V Significant Permit Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), EPA, and a public notice will be published in the local newspaper of general circulation prior to the issuance of the ATCs for these winery tank modifications.

D. Daily Emission Limits (DELs)

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

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

Proposed Rule 2201 (DEL) Conditions:

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

- The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 15 percent by volume. [District Rule 2201]

- The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694]

- If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201]

- This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201]

The following daily throughput condition will be included on each of the new wine storage tank ATCs:

- The maximum wine storage throughput in this tank shall not exceed 640,353 gallons per day. [District Rule 2201]

In addition, in order for the applicant to be able to demonstrate ongoing compliance with the proposed annual throughput limit for each tank, the following condition will be included on each of the new wine storage tank ATCs:

- The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 649 lb-VOC/year (equivalent to 4,482,471 gallons of wine throughput per year). [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 condition(s) are listed on the permit to operate:

- The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rule 2201]

- 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]

- Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201]

- 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)

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. However, since this project only involves VOC emissions and no ambient air quality standard exists for VOC, an AAQA is not required for this project.

G. Compliance Certification

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

H. Alternate Siting Analysis

District Rule 2201, Section 4.15.1 requires an alternative siting analysis for any project which constitutes a New Major Source or a Federal Major Modification. As shown above, this project triggers a Federal Major Modification. Therefore, an alternative siting analysis must be performed.

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 six new wine storage tanks, 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

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

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. Therefore, this project is not subject to the requirements of Rule 2410 and no further discussion is required.

Rule 2520 Federally Mandated Operating Permits

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

Section 3.20.5 states that a minor permit modification is a permit modification that is not a Federal Major Modification, as defined in Rule 2201[3]. As discussed above, this project triggers a Federal Major Modification. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATCs upon submittal of the Title V administrative amendment application. The following conditions will be included on each ATC and will assure compliance with the requirements of Rule 2520:

- 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]

- 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]

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 tanks. 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 tanks. Therefore, no further discussion is required.

[3] District Rule 2520, Section 3.20.5 actually states that a project shall not constitute a Title I modification, as defined in Rule 2201. In a previous version of Rule 2201, the term Title I modification was replaced with Federal Major Modification. However, at that time, the terminology in Rule 2520 was not updated to reflect the new Rule 2201 terms. Therefore, even though Rule 2520 references that a project triggering a Title I modification does not qualify as a Title V minor modification, it will be replaced with the term Federal Major Modification for the purposes of this project.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Visible emissions are not expected as a result of these wine storage operations. Therefore, compliance with this rule is expected. Compliance with the requirements of this rule is assured by the following condition, currently included as condition 22 on E & J Gallo Winery's facility wide permit C-447-0-3:

- No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101]

Rule 4102 Nuisance

Section 4.0 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 these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected. Compliance with the requirements of this rule is ensured by the following condition, currently included as condition 41 on E & J Gallo Winery's facility wide permit C-447-0-3:

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

VOC emissions, as ethanol, is the only pollutant generated by winery fermentation and storage tanks. Ethanol is not a HAP as defined by Section 44321 of the California Health and Safety Code. Therefore, there are no increases in HAP emissions associated with any emission units in this project 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.

However, Section 4.1.4 provides an exemption for tanks used to store fermentation products, byproducts or spirits. The tanks in this project are used solely for the storage of wine.

Therefore, the requirements of this rule are not applicable to any of the winery tanks within this project.

Rule 4694 Wine Fermentation and Storage Tanks

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

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

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

- The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank,
- The pressure-vacuum relief valve shall operate in accordance with the manufacturer's instructions,
- The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings, and
- 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.