San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUG 01 2013

Mr Dan Martin
E & J Gallo Winery
18000 W River Rd
Livingston, CA 95334

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1237
Project # N-1131615

Dear Mr Martin

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 The applicant proposes the installation of eight (8) 35,000 gallon wine storage tanks and twenty four (24) 56,000 gallon red and white wine fermentation 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 Jim Swaney, Permit Services Manager, at (559) 230-5900

Thank you for your cooperation in this matter

Sincerely,

David Warner
Director of Permit Services

Enclosures

cc Mike Tollstrup, CARB (w/enclosure) via email
cc Gerardo C Rios, EPA (w/enclosure) via email

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Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356 8718
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Central Region (Main Office)
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Southern Region
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Bakersfield, CA 93308 9725
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www valleyair org www healthyairliving com

Newspaper notice for publication in Merced Sun Star and for posting on valleyair org

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NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of E & J Gallo Winery at 18000 W River Rd, Livingston, California. The applicant proposes the installation of eight (8) 35,000 gallon wine storage tanks and twenty four (24) 56,000 gallon red and white wine fermentation tanks

The District's analysis of the legal and factual basis for this proposed action, project #N-1131615, is available for public inspection at http //www valleyair org/notices/public_notices_idx htm and at any District office This will be the public's only opportunity to comment on the specific conditions of the modification If requested, the District will hold a public hearing regarding issuance of this modification For additional information, please contact the District at (559) 230-6000 Written comments on the proposed initial permit must be submitted by September 4, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Wine Storage and Fermentation Tanks

Facility Name	E & J Gallo Winery	Date	July 22, 2013
Mailing Address	18000 W River Rd	Engineer	Stanley Tom
	Livingston, CA 95334	Lead Engineer	Joven Refuerzo
Contact Person	Dan Martin		
Telephone	(209) 394-6211		
Application #(s)	N-1237-662-0 through '693-0		
Project #	N-1131615		
Deemed Complete	June 6, 2013		

I. Proposal

E & J Gallo Winery has requested Authority to Construct (ATC) permits for the installation of eight (8) 35,000 gallon wine storage tanks and twenty four (24) 56,000 gallon red and white wine fermentation tanks

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

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4102	Nuisance (12/17/92)
Rule 4694	Wine Fermentation and Storage Tanks (12/15/05)
CH&SC 41700	Health Risk Assessment
CH&SC 42301 6	School Notice

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

III. Project Location

The facility is located at 18000 W River Rd in Livingston, CA The equipment is not located within 1,000 feet of the outer boundary of a K-12 school Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project

IV. Process Description

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

After transfer of the must (for red or white wine) to the fermentation tank, the must is inoculated with yeast which initiates the fermentation reactions During fermentation, the yeast metabolizes the sugar in the grape juice, converting it to ethanol and carbon dioxide (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 All tanks in the winery typically operate as two separate emissions units (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, and (2) a storage operation during which the tank is closed to minimize contact with air and refrigerated to preserve the wine Post-fermentation operations such as cold stabilization, racking, and filtration are conducted in the tanks, resulting in a number of inter-tank transfers during the period between the end of fermentation and bottling or bulk shipment Storage operations are conducted year-round VOC emissions occur primarily as a result of the inter-tank transfers which are necessitated by the post fermentation operations

V. Equipment Listing

Permit #	Equipment Description
N-1237-662-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 319) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-663-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 320) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-664-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 321) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-665-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 322) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-666-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 323) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-667-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 324) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-668-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 325) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-669-0	35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 326) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT
N-1237-670-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 425), OR EQUIVALENT
N-1237-671-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 426), OR EQUIVALENT
N-1237-672-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 427), OR EQUIVALENT
N-1237-673-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 428), OR EQUIVALENT
N-1237-674-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 429), OR EQUIVALENT
N-1237-675-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 430), OR EQUIVALENT
N-1237-676-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 431), OR EQUIVALENT
N-1237-677-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 432), OR EQUIVALENT

N-1237-678-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 433), OR EQUIVALENT
N-1237-679-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 434), OR EQUIVALENT
N-1237-680-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 435), OR EQUIVALENT
N-1237-681-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 436), OR EQUIVALENT
N-1237-682-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 437), OR EQUIVALENT
N-1237-683-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 438), OR EQUIVALENT
N-1237-684-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 439), OR EQUIVALENT
N-1237-685-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 440), OR EQUIVALENT
N-1237-686-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 441), OR EQUIVALENT
N-1237-687-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 442), OR EQUIVALENT
N-1237-688-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 443), OR EQUIVALENT
N-1237-689-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 444), OR EQUIVALENT
N-1237-690-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 445), OR EQUIVALENT
N-1237-691-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 446), OR EQUIVALENT
N-1237-692-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 447), OR EQUIVALENT
N-1237-693-0	56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 448), OR EQUIVALENT

As per District policy APR 1035 Flexibility in Equipment Descriptions in ATCs, some flexibility in the final specifications of the equipment is requested The proposed tanks in this project will be built on-site and most likely will contain slight variations in the tank dimensions which lead to slightly different tank capacities than proposed These slight tank variations should not have a signficant effect on the tank emissions or tank operation Therefore, the permit will specify the nominal tank dimensions and the source will submit to the District the measured tank capacity (known as the gauge volume) once the tank is constructed The following sample condition will be listed on the permits to ensure compliance

- The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 10 days of the actual tank capacity measurement [District Rule 2201]

VI. Emission Control Technology Evaluation

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

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

VII. General Calculations

A. Assumptions

- All tanks will be classified as either red and white wine storage or red and white wine fermentation

Storage (Permits N-1237-662-0 through '669-0)

- Typically, for enclosed tanks with refrigeration and/or insulation (or equivalent) and P/V valves, breathing losses from storage of wine are assumed to be negligible
- Post-project maximum storage tank liquid storage temperature = 81 0 °F (per FYI-295)
- Post-project annual average storage tank liquid storage temperature = 63 3 °F for all tanks (per FYI-295)
- Storage tank daily maximum ethanol content of stored wine is 23 9% (per applicant)
- Post-project storage tank annual average ethanol content of stored wine is 15% (per applicant)

- Post-project wine storage daily throughput = 35,000 gallons per day (per tank, per applicant)
- Project wine storage annual throughput = 175,000 gallons per year (per tank, per applicant)

Fermentation (Permits N-1237-670-0 through '693-0)

- Daily VOC fermentation emissions will be determined using a worst case of one tank turnover per day (per applicant)
- Post-project wine fermentation annual throughput (per tank) = 570,395 gallons per year
- Fermentation emissions will be based upon the worst case red wine emission factors

B. Emission Factors

Storage (Permits N-1237-662-0 through '669-0)

Tanks 4 0 will be used to calculate the emissions from the new storage tanks

Fermentation (Permits N-1237-670-0 through '693-0)

Uncontrolled emissions factors are taken from District FYI-114, *VOC Emission Factors for Wine Fermentation and Storage Tanks*

Wine Type	EF (lb-VOC/1,000 gallon of wine)		Source
	Daily	Annual	
White	1 62	2 5	FYI-114
Red	3 46	6 2	FYI-114

Since all the fermentation tanks can ferment either white or red wine, worst case emissions factors of red wine will be used to calculate the maximum daily and annual potential emissions

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post Project Potential to Emit (PE2)

Storage (Permits N-1237-662-0 through '669-0)

Two Tanks 4 0 runs have been performed one using a throughput of 35,000 gallons per day to calculate the daily post-project potential to emit by dividing the month of July emissions by the number of days in the month and one using 175,000 gallons/year to calculate the annual post-project potential to emit See Appendix A for the Tanks 4 0 runs for each tank

Permit Unit	Daily PE2 (lb-VOC/day)	Annual PE2 (lb-VOC/year)
N-1237-662-0	3 4	25
N-1237-663-0	3 4	25
N-1237-664-0	3 4	25
N-1237-665-0	3 4	25
N-1237-666-0	3 4	25
N-1237-667-0	3 4	25
N-1237-668-0	3 4	25
N-1237-669-0	3 4	25
Total	27 2	200

Fermentation (Permits N-1237-670-0 through '693-0)

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

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

Daily PE2 = EF_{red} (lb-VOC/1,000 gal) x tank capacity (gal/tank) x turnover rate (# tank/day)
Annual PE2 = EF_{red} (lb-VOC/1,000 gal) x annual throughput (gal/year)

Permit Unit	Daily EF	Annual EF	Tank Capacity	Turnover Rate	Annual Throughput	Daily	Annual
	(lb-VOC/1,000 gal)		(gallon)	(tank/day)	(gal/year)	(lb/day)	(lb/year)
N-1237-670-0	3 46	6 2	56,000	1	570,395	193 8	3,536
N-1237-671-0			56,000		570,395	193 8	3,536
N-1237-672-0			56,000		570,395	193 8	3,536
N-1237-673-0			56,000		570,395	193 8	3,536
N-1237-674-0			56,000		570,395	193 8	3,536
N-1237-675-0			56,000		570,395	193 8	3,536
N-1237-676-0			56,000		570,395	193 8	3,536
N-1237-677-0			56,000		570,395	193 8	3,536

N-1237-678-0			56,000		570,395	193 8	3,536
N-1237-679-0			56,000		570,395	193 8	3,536
N-1237-680-0			56,000		570,395	193 8	3,536
N-1237-681-0			56,000		570,395	193 8	3,536
N-1237-682-0			56,000		570,395	193 8	3,536
N-1237-683-0			56,000		570,395	193 8	3,536
N-1237-684-0			56,000		570,395	193 8	3,536
N-1237-685-0			56,000		570,395	193 8	3,536
N-1237-686-0			56,000		570,395	193 8	3,536
N-1237-687-0			56,000		570,395	193 8	3,536
N-1237-688-0			56,000		570,395	193 8	3,536
N-1237-689-0			56,000		570,395	193 8	3,536
N-1237-690-0			56,000		570,395	193 8	3,536
N-1237-691-0			56,000		570,395	193 8	3,536
N-1237-692-0			56,000		570,395	193 8	3,536
N-1237-693-0			56,000		570,395	193 8	3,536
Total							84,864

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

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

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

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

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

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

5. Major Source Determination

Rule 2201 Major Source Determination

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 following table summarizes the potential VOC emissions from previous permitting actions for this stationary source prior to the proposed project

Project Number	Proposed Permitting Actions	PE (lb-VOC/year)
N-1072605	Applying for In-house PTOs for existing wine storage and fermentation tanks	470,985
N-1110129	Install 2 wine fermentation tanks	8,432
N-1110722	Convert 7 existing grape juice tanks to wine fermentation tanks	15,680
N-1113344	Install 104 wine storage and fermentation tanks	94,430
N-1113395	Install 3 wine storage and fermentation tanks	10,173
N-1113047	Install 2 distilled spirit tanks	188
N-1113864	Install an ethanol evaporator system	7,719
Total		**607,607**

As indicated above, the SSPE VOC emission before the proposal project is calculated to 607,607 pounds per year, equivalent to 303 8 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	303 8
PSD Major Source Thresholds	250
PSD Major Source?	**Yes**

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

6. Baseline Emissions (BE)

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

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

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

otherwise,

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

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

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 (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
VOC	200 + 84,864 = 85,064	50,000	Yes

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

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

NEI = PE2 – BAE

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

Since the units in this project are new, BAE = 0

SB 288 Major Modification Calculation and Determination					
Pollutant	PE2 (lb/yr)	BAE (lb/yr)	NEI (lb/yr)	Thresholds (lb/yr)	SB 288 Major Modification?
VOC	85,064	0	85,064	50,000	Yes

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

8. Federal Major Modification

District Rule 2201 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51 165 and part D of Title I of the CAA SB 288 Major Modifications are not federal major modifications if they meet the criteria of the "Less-Than-Significant Emissions Increase" exclusion

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51 165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51 165 (a)(1)(xxviii) shall be used
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51 165 (a)(1)(xxxv)(A) through (D) shall be used
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51 165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51 165 (a)(6) and (a)(7)
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	0

The Net Emissions Increases (NEI) for purposes of determination of a "Less-Than-Significant Emissions Increase" exclusion will be calculated below to determine if this project qualifies for such an exclusion

Net Emission Increase for New Units (NEI_N)

Per 40 CFR 51 165 (a)(2)(ii)(D) for new emissions units in this project,

$NEI_N = PE2_N - BAE$

Since these are new units, BAE for these units is zero and,

$NEI_N = PE2_N$

where $PE2_N$ is the Post Project Potential to Emit for the new emissions units.

$NEI_N = PE2_N = 200 + 84{,}864$ lb-VOC/year = 85,064 lb-VOC/year

The NEI for this project is thus calculated as follows

$NEI = NEI_N$
NEI = 200 + 84,864 lb-VOC/year = 85,064 lb-VOC/year

The NEI for this project will be greater than the federal Major Modification threshold of 0 lb-VOC/year. Therefore, this project does not qualify for a "Less-Than-Significant Emissions Increase" exclusion and is thus determined to be a Federal Major Modification for VOC

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
- PM10
- Greenhouse gases (GHG). CO2, N2O, CH4, HFCs, PFCs, and SF6

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

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

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

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

I. Project Location Relative to Class 1 Area

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

II. Significance of Project Emission Increase Determination

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

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

CO2 Emissions from Fermentation

Basis

- Project total annual fermentation emissions = 84,864 lb-VOC/year
- Assume all wine produced is white wine (worst case)
- The VOC emission factor is 2 5 lb-VOC per 1,000 gallons of white wine fermented
- Maximum practical ethanol content for wine fermentation is 15 volume percent (higher concentrations have a negative impact on yeast reproduction with death of the yeast occurring at around 18 vol %)
- Molecular weight of ethanol and CO2 are 46 and 44 lb/mole respectively
- The fermentation reaction produces one mole of carbon dioxide for each mole of ethanol produced
- Liquid density for ethanol is 6.61 lb/gal at 60 deg F

Calculation

Maximum Annual Wine Production Based on 100% White Wine'= = 84,864 $\frac{\text{lb-VOC}}{\text{year}}$ – 2 5 $\frac{\text{lb-VOC}}{\text{1000 gallons}}$

Maximum Annual Wine Production Based on 100% White Wine'= = 33,945,600 gallons per year

Maximum Annual Ethanol Production = 33,945,600 $\frac{\text{gal}}{\text{year}}$ x 15% ethanol x 6 61 $\frac{\text{lb-ethanol}}{\text{gallon}}$

Maximum Annual Ethanol Production = 33,657,062 4 lb-ethanol per year

Maximum Annual CO2 Production = 33,657,062 4 $\frac{\text{lb}}{\text{year}}$ x $\frac{\text{1 mole}}{\text{46 lb ethanol}}$ x $\frac{\text{1 mole CO2}}{\text{1 mole ethanol}}$ x $\frac{\text{44 lb CO2}}{\text{mole CO2}}$

Maximum Annual CO2 Production = 32,193,712 lb-CO2 per year

Maximum Annual CO2 Production = 16,097 ton-CO2 per year

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	0	0	0	0	16,097
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

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

10. Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where

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

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Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	0	0	0
SO_X	0	0	0
PM_{10}	0	0	0
CO	0	0	0
VOC	6	0	6

N-1237-670-0 through '693-0

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_X	0	0	0
SO_X	0	0	0
PM_{10}	0	0	0
CO	0	0	0
VOC	884	0	884

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

*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

The applicant is proposing to install eight new wine storage tanks and 24 new wine fermentation tanks with a PE greater than 2 lb/day for VOC Thus BACT is triggered for VOC for these emissions units

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

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

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

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 Section VII C 8 above, this project does constitute a Federal Major Modification for VOC Therefore BACT is triggered for VOC

2. BACT Guideline

BACT Guideline 5 4 13, applies to the wine storage tanks. [Wine Storage Tanks] (Appendix C)

BACT Guideline 5 4 14, applies to the wine fermentation tanks [Wine Fermentation Tanks] (Appendix B)

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 Analyses (Appendix B and C), BACT has been satisfied with the following

Storage

VOC Insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and achieve and maintain a continuous storage temperature not exceeding 75 °F within 60 days of completion of fermentation

Fermentation

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

B. Offsets

1. Offset Applicability

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

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

2. Quantity of Offsets Required

As discussed above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds, therefore offset calculations 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

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/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio

BE = Pre-project Potential to Emit for

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

otherwise,

BE = Historic Actual Emissions (HAE)

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

Storage

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

Offsets Required – Storage		
Permit Unit	Total Annual PE2 (lb-VOC/year)	Annual BE (lb-VOC/year)
N-1237-662-0	25	0
N-1237-663-0	25	0
N-1237-664-0	25	0
N-1237-665-0	25	0
N-1237-666-0	25	0
N-1237-667-0	25	0
N-1237-668-0	25	0
N-1237-669-0	25	0
Total	200	0

Calculating the appropriate quarterly emissions to be offset is as follows

Quarterly Offset Requirement – Each Tank				
Pollutant	1st Qtr (lb/qtr)	2nd Qtr (lb/qtr)	3rd Qtr (lb/qtr)	4th Qtr (lb/qtr)
VOC	6	6	6	7

Fermentation

These fermentation tanks are subject to the fermentation emission reduction requirements of Rule 4694 and are considered to be controlled sources subject to a 35% reduction in emissions The facility is currently performing an annual demonstration that sufficient Certifed Emission Reductions (CER) are provided to meet the requirements of Rule 4694 Section 5 1 The CERs are achieved by controlling the emissions from brandy tanks and barrels at a brandy plant in Modesto via an air handling system and combustion in an RTO (regenerative thermal oxidizer) Both the

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

Offsets Required (lb/year) = Σ[PE2 – BE] x (1 – 0 35) x DOR

Offsets Required – Fermentation		
Permit Unit	Total Annual PE2 (lb-VOC/year)	Annual BE (lb-VOC/year)
N-1237-670-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-671-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-672-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-673-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-674-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-675-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-676-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-677-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-678-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-679-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-680-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-681-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-682-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-683-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-684-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-685-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-686-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-687-0	3,536 x (1 – 0.35) = 2,298	0
N-1237-688-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-689-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-690-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-691-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-692-0	3,536 x (1 – 0 35) = 2,298	0
N-1237-693-0	3,536 x (1 – 0 35) = 2,298	0
Total	55,152	0

Calculating the appropriate quarterly emissions to be offset is as follows

Quarterly Offset Requirement – Each Tank				
Pollutant	1st Qtr (lb/qtr)	2nd Qtr (lb/qtr)	3rd Qtr (lb/qtr)	4th Qtr (lb/qtr)
VOC	574	574	575	575

Total

For all 32 tanks, the amount of offsets required is as follows

Offsets Required (lb/year) = (200 + 55,152) lb-VOC/year x DOR
= 55,352 lb-VOC/year x DOR

The project is a Federal Major Modification and therefore the offset ratio for VOC is 1 5 1

Assuming an offset ratio of 1 5 1, the amount of ERCs that need to be withdrawn is

Offsets Required (lb/year) = 55,352 lb-VOC/year x 1 5
= 83,028 lb-VOC/year

Offset Requirement – All 32 Tanks	
Permit	VOC (lb/year)
Total x DOR	83,028

Calculating the appropriate quarterly emissions to be offset is as follows

Quarterly Offset Requirement – All 32 Tanks				
Pollutant	1st Qtr (lb/qtr)	2nd Qtr (lb/qtr)	3rd Qtr (lb/qtr)	4th Qtr (lb/qtr)
VOC	20,757	20,757	20,757	20,757

The applicant has stated that the facility plans to use ERC certificates S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 to offset the increases in emissions associated with this project The above certificate has available quarterly credits as follows

Proposed VOC ERC Certificates				
ERC Certificate #	1st Qtr (lb/qtr)	2nd Qtr (lb/qtr)	3rd Qtr (lb/qtr)	4th Qtr (lb/qtr)
S-4025-1	44,473	44,472	44,465	44,397
S-4050-1	60,000	60,000	60,000	60,000
S-3808-1	8,098	8,041	8,086	8,086
S-3807-1	11,431	11,424	11,417	11,417
S-3805-1	18,000	18,000	18,000	18,000
C-1189-1	9,357	9,357	9,323	9,323
Total	151,359	151,294	151,291	151,223

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

Proposed Rule 2201 (offset) Conditions

- ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (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]

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- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions 1st quarter - 6 lb, 2nd quarter - 6 lb, 3rd quarter - 6 lb, and fourth quarter - 7 lb These amounts include the applicable offset ratio specified in Rule 2201 Section 4 8 (as amended 4/21/11) for the ERC specified below [District Rule 2201]

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- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions 1st quarter - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb. The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

a New Major Sources, Federal Major Modifications, and SB288 Major Modifications,
b Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant

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

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

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

b. PE > 100 lb/day

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

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO_X	0	100 lb/day	No
SO_X	0	100 lb/day	No
PM_{10}	0	100 lb/day	No
CO	0	100 lb/day	No
VOC	3 4 + 193 8 = 197 2	100 lb/day	Yes

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

c. Offset Threshold

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

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

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

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a 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 SSIPE is compared to the SSIPE Public Notice thresholds in the following table

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	Σ Project PE2 (lb/year)	Σ Project PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	65,192	0	65,192	20,000 lb/year	Yes

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

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required 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

Proposed Rule 2201 (DEL) Conditions

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- The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume [District Rule 2201]
- 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]
- The maximum wine storage throughput in this tank shall not exceed 35,000 gallons per day [District Rule 2201]

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- The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201]
- The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb/day per 1000 gallons of tank capacity [District Rule 2201]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201

3. Recordkeeping

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

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- 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]
- 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]
- All records shall be retained on-site for a period of at least five years and made available for District inspection upon request [District Rules 1070, 2201 and 4694]
- Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201]

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- For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average

fermentation emission reductions (calculated per the emission factors given in District Rule 4694) The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine [District Rules 2201 and 4694]

- The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine ethanol content and throughput rate for storage operations and VOC emission rate for fermentation operations (ethanol percentage by volume, gallons and lb-VOC per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201

F. Ambient Air Quality Analysis

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

G. Compliance Certification

Rule 2201 requires the owner of a new Major Source or a source undergoing a Title I 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 facility is a Federal Major Modification and this project does constitute a Title I modification, therefore this requirement is applicable The facility's compliance certification is included in Appendix D

H. Alternative Siting Analysis

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

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

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

Rule 2410 Prevention of Significant Deterioration

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

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

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit Section 3 29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment "

Section 3 20 5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act Since this project is a Title I modification (i e Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3 29

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

Rule 4001 New Source Performance Standards (NSPS)

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

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

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

Rule 4102 Nuisance

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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

District Rule 4694 Wine Fermentation and Storage Tanks

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

Section 5 1 requires the winery operator achieve Required Annual Emissions Reductions (RAER) equal to at least 35% of the winery's Baseline Fermentation Emissions (BFE) Per the definition of RAER in Section 3 25 of the Rule, the RAER may be achieved by any combination of Fermentation Emission Reductions (FER), Certified Emission Reductions (CER) or District Obtained Emission Reductions (DOER) as established in the facility's District-approved Rule 4694 Compliance Plan, due every three years on December 1st beginning in 2006 The facility has submitted the required plan to the District and is currently satisfying the required emission reductions in the form of Certified Emission Reductions

The following condition listed on the facility-wide permit ensures compliance

- A Three-Year Compliance Plan that demonstrates compliance with the requirements of Section 5 1 of District Rule 4694 (12/15/05) for each year of the applicable compliance period shall be submitted to the District by no later than December 1, 2006, and every three years thereafter on or before December 1 [District Rule 4694]

Section 5 2 places specific restrictions on wine storage tanks with 5,000 gallons or more in capacity when such tanks are not constructed of wood or concrete Section 5 2 1 requires these tanks to be equipped and operated with a pressure-vacuum relief valve meeting all of the following requirements:

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

The following conditions will be listed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity and used for storage to ensure compliance with the requirements of Section 5 2 1

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

Section 5 2 2 requires that the temperature of the stored wine be maintained at or below 75° F The following condition will be placed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity and used for storage to ensure compliance with the requirements of Section 5 2 2

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

Every three years, 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 Section 6 4 3 requires that all monitoring be performed for any Certified Emission Reductions as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained

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

- A Three-Year Compliance Plan that demonstrates compliance with the requirements of Section 5 1 of District Rule 4694 (12/15/05) for each year of the applicable compliance period shall be submitted to the District by no later than December 1, 2006, and every three years thereafter on or before December 1 [District Rule 4694]
- A Three-Year Compliance Plan Verification that demonstrates that the Three-Year Compliance Plan elements are in effect shall be submitted to the District by no later than July 1, 2007, and every three years thereafter on or before July 1 [District Rule 4694, 6 2]
- An Annual Compliance Plan Demonstration that shows compliance with the applicable requirements of this rule shall be submitted to the District by no later than February 1, 2008, and every year thereafter on or before February 1 [District Rule 4694]
- Operators using CER to mitigate fermentation emissions shall perform all monitoring and recordkeeping, as established in their approved Three-Year Compliance Plan, and shall maintain all records necessary to demonstrate compliance [District Rule 4694]

Section 6 4 1 requires that records be kept for each fermentation batch The following condition will be listed on the permits for each fermentation tank to ensure compliance·

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

Section 6 4 2 requires that weekly records be kept of wine volume and temperature in each storage tank The following conditions will be listed on the permit for each storage tank to ensure compliance with the requirements of Section 6 4 2

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

Section 6 4 3 requires that all monitoring be performed for any Certified Emission Reductions as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained The following condition listed on the facility-wide permit ensures compliance

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

Section 6 4 requires that records required by this rule be maintained, retained on-site for a minimum of five years, and made available to the APCO upon request The following conditions will be listed on all permits to ensure compliance

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

California 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

The County of Merced (County) is the public agency having principal responsibility for approving the project As such, the County served as the Lead Agency (CCR §15367) In approving the project, the Lead Agency prepared and adopted a Mitigated Negative Declaration The Lead agency filed a Notice of Determination, stating that the environmental document was adopted pursuant to the provisions of CEQA and concluding that the project would not have a significant effect on the environment

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), (CCR §15381) As a Responsible Agency the District complies with CEQA by considering the environmental document prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project (CCR §15096)

The District has considered the Lead Agency's environmental document Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be below the District's thresholds of significance for criteria pollutants Thus, the District finds that through a combination of project design elements, compliance with applicable District rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have a less than significant impact on air quality 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))

IX. Recommendation

Compliance with all applicable rules and regulations is expected Pending a successful NSR Public Noticing period, issue Authority to Construct permits N-1237-662-0 through '693-0 subject to the permit conditions on the attached draft Authority to Construct permits in Appendix F

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-1237-662-0	3020-05-C	35,000 gallons	$135
N-1237-663-0	3020-05-C	35,000 gallons	$135
N-1237-664-0	3020-05-C	35,000 gallons	$135
N-1237-665-0	3020-05-C	35,000 gallons	$135
N-1237-666-0	3020-05-C	35,000 gallons	$135
N-1237-667-0	3020-05-C	35,000 gallons	$135
N-1237-668-0	3020-05-C	35,000 gallons	$135
N-1237-669-0	3020-05-C	35,000 gallons	$135
N-1237-670-0	3020-05-D	56,000 gallons	$185
N-1237-671-0	3020-05-D	56,000 gallons	$185
N-1237-672-0	3020-05-D	56,000 gallons	$185
N-1237-673-0	3020-05-D	56,000 gallons	$185
N-1237-674-0	3020-05-D	56,000 gallons	$185
N-1237-675-0	3020-05-D	56,000 gallons	$185
N-1237-676-0	3020-05-D	56,000 gallons	$185
N-1237-677-0	3020-05-D	56,000 gallons	$185
N-1237-678-0	3020-05-D	56,000 gallons	$185
N-1237-679-0	3020-05-D	56,000 gallons	$185
N-1237-680-0	3020-05-D	56,000 gallons	$185
N-1237-681-0	3020-05-D	56,000 gallons	$185
N-1237-682-0	3020-05-D	56,000 gallons	$185
N-1237-683-0	3020-05-D	56,000 gallons	$185
N-1237-684-0	3020-05-D	56,000 gallons	$185
N-1237-685-0	3020-05-D	56,000 gallons	$185
N-1237-686-0	3020-05-D	56,000 gallons	$185
N-1237-687-0	3020-05-D	56,000 gallons	$185
N-1237-688-0	3020-05-D	56,000 gallons	$185
N-1237-689-0	3020-05-D	56,000 gallons	$185
N-1237-690-0	3020-05-D	56,000 gallons	$185
N-1237-691-0	3020-05-D	56,000 gallons	$185
N-1237-692-0	3020-05-D	56,000 gallons	$185
N-1237-693-0	3020-05-D	56,000 gallons	$185

XI. Appendices

A Tanks 4 0 Calculations
B BACT Guideline 5 4 14 and Top Down BACT Analysis
C BACT Guideline 5 4 13 and Top Down BACT Analysis
D Compliance Certification
E Certificate of Conformity
F Draft ATC Permits

Appendix A

Tanks 4.0 Calculations

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

Identification

User Identification	N-1237-662-0 Daily Emissions
City	Livingston
State	California
Company	E & J Gallo Winery
Type of Tank	Vertical Fixed Roof Tank
Description	35,000 gallon stainless steel insulated wine storage tank

Tank Dimensions

Shell Height (ft)	16 00
Diameter (ft)	19 50
Liquid Height (ft)	15 00
Avg Liquid Height (ft)	15 00
Volume (gallons)	33,510 70
Turnovers	365 00
Net Throughput(gal/yr)	12,231,407 18
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 00
Slope (ft/ft) (Cone Roof)	0 10

Breather Vent Settings

Vacuum Settings (psig)	-0 03
Pressure Settings (psig)	0 03

Meterological Data used in Emissions Calculations Fresno, California (Avg Atmospheric Pressure = 14 56 psia)

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

N-1237-662-0 Daily Emissions - Vertical Fixed Roof Tank
Livingston, California

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg	Min	Max	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fract	Vapor Mass Fract	Mol Weight	Basis for Vapor Pressure Calculations
Wine 23 9 % Vol Alcohol	Jan	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Feb	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Mar	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Apr	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	May	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Jun	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Jul	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Aug	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Sep	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Oct	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Nov	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869
Wine 23 9 % Vol Alcohol	Dec	81 00	81 00	81 00	81 00	0 8500	0 8500	0 8500	30 3355			20 45	Option 1 VP70 = 58508 VP80 = 81869

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

N-1237-662-0 Daily Emissions - Vertical Fixed Roof Tank
Livingston, California

Month	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb)	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Vapor Space Volume (cu ft)	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969
Vapor Density (lb/cu ft)	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044
Vapor Space Expansion Factor	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Vented Vapor Saturation Factor	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433
Tank Vapor Space Volume												
Vapor Space Volume (cu ft)	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969
Tank Diameter (ft)	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000
Vapor Space Outage (ft)	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333
Tank Shell Height (ft)	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000
Average Liquid Height (ft)	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000
Roof Outage (ft)	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333
Roof Outage (Cone Roof)												
Roof Outage (ft)	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333
Roof Height (ft)	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000
Roof Slope (ft/ft)	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000
Shell Radius (ft)	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500
Vapor Density												
Vapor Density (lb/cu ft)	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044	0 0044
Vapor Molecular Weight (lb/lb-mole)	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500
Daily Avg Liquid Surface Temp (deg R)	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700
Daily Average Ambient Temp (deg F)	45 7500	51 1000	55 0000	61 2000	68 9500	76 5500	81 8500	80 2500	74 4500	65 2000	53 6000	45 4000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R))	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731
Liquid Bulk Temperature (deg R)	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700
Tank Paint Solar Absorptance (Shell)	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700
Tank Paint Solar Absorptance (Roof)	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700
Daily Total Solar Insulation Factor (Btu/sqft day)	668 1706	1,022 2439	1 488 6308	1,992 7729	2,390 9467	2 566 7143	2,551 4853	2 279 5850	1,860 7886	1 369 9719	851 5527	592 3431
Vapor Space Expansion Factor												
Vapor Space Expansion Factor	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Daily Vapor Temperature Range (deg R)	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Daily Vapor Pressure Range (psia)	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Breather Vent Press Setting Range(psia)	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia)	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia)	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500
Daily Avg Liquid Surface Temp (deg R)	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700
Daily Min Liquid Surface Temp (deg R)	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700
Daily Max Liquid Surface Temp (deg R)	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700	540 6700
Daily Ambient Temp Range (deg R)	16 7000	21 2000	23 2000	27 8000	30 5000	32 3000	33 5000	32 9000	31 3000	29 0000	22 2000	16 6000

Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433	0 9433
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500
Vapor Space Outage (ft)	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333
Working Losses (lb)	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352
Vapor Molecular Weight (lb/lb-mole)	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355	30 3355
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500	0 8500
Net Throughput (gal/mo)	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310	1 019 283 9310
Annual Turnovers	365 0000	365 0000	365 0000	365 0000	365 0000	365 0000	365 0000	365 0000	365 0000	365 0000	365 0000	365 0000
Turnover Factor	0 2489	0 2489	0 2489	0 2489	0 2489	0 2489	0 2489	0 2489	0 2489	0 2489	0 2489	0 2489
Maximum Liquid Volume (gal)	33 510 7046	33,510 7046	33 510 7046	33 510 7046	33 510 7046	33,510 7046	33 510 7046	33 510 7046	33 510 7046	33,510 7046	33 510 7046	33 510 7046
Maximum Liquid Height (ft)	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000
Tank Diameter (ft)	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000
Working Loss Product Factor	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000
Total Losses (lb)	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352	155 7352

$$\frac{155\ 7352}{31}$$

$$= \frac{5\ 0237}{30\ 3355} \times \frac{30.3355 - 18.02}{46.02 - 18.02} \times 46\ 02$$

$$= 3\ 4\ \frac{lb}{day}$$

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

N-1237-662-0 Daily Emissions - Vertical Fixed Roof Tank
Livingston, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Wine 23 9 % Vol Alcohol	1,868 82	0 00	1,868 82

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

Identification

User Identification	N-1237-662-0 Annual Emissions
City	Livingston
State	California
Company	E & J Gallo Winery
Type of Tank	Vertical Fixed Roof Tank
Description	35,000 gallon stainless steel insulated wine storage tank

Tank Dimensions

Shell Height (ft)	16 00
Diameter (ft)	19 50
Liquid Height (ft)	15 00
Avg Liquid Height (ft)	15 00
Volume (gallons)	33,510 70
Turnovers	5 22
Net Throughput(gal/yr)	175,000 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 00
Slope (ft/ft) (Cone Roof)	0 10

Breather Vent Settings

Vacuum Settings (psig)	-0 03
Pressure Settings (psig)	0 03

Meterological Data used in Emissions Calculations Fresno, California (Avg Atmospheric Pressure = 14 56 psia)

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

N-1237-662-0 Annual Emissions - Vertical Fixed Roof Tank
Livingston, California

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F) Avg	Min	Max	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg	Min	Max	Vapor Mol Weight	Liquid Mass Fract	Vapor Mass Fract	Mol Weight	Basis for Vapor Pressure Calculations
Wine 15 0 % Vol Alcohol	Jan	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Feb	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Mar	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Apr	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	May	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Jun	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Jul	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Aug	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Sep	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Oct	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Nov	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865
Wine 15 0 % Vol Alcohol	Dec	63 30	63 30	63 30	63 30	0 4058	0 4058	0 4058	27 1255			19 46	Option 1 VP60 = 35513 VP70 = 50865

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

N-1237-662-0 Annual Emissions - Vertical Fixed Roof Tank
Livingston, California

Month	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb)	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Vapor Space Volume (cu ft)	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969
Vapor Density (lb/cu ft)	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020
Vapor Space Expansion Factor	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Vented Vapor Saturation Factor	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721
Tank Vapor Space Volume												
Vapor Space Volume (cu ft)	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969	398 1969
Tank Diameter (ft)	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000
Vapor Space Outage (ft)	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333
Tank Shell Height (ft)	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000	16 0000
Average Liquid Height (ft)	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000
Roof Outage (ft)	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333
Roof Outage (Cone Roof)												
Roof Outage (ft)	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333	0 3333
Roof Height (ft)	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000
Roof Slope (ft/ft)	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000	0 1000
Shell Radius (ft)	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500	9 7500
Vapor Density												
Vapor Density (lb/cu ft)	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020	0 0020
Vapor Molecular Weight (lb/lb-mole)	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058
Daily Avg Liquid Surface Temp (deg R)	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700
Daily Average Ambient Temp (deg F)	45 7500	51 1000	55 0000	61 2000	68 9500	76 5500	81 8500	80 2500	74 4500	65 2000	53 6000	45 4000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R))	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731	10 731
Liquid Bulk Temperature (deg R)	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700
Tank Paint Solar Absorptance (Shell)	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700
Tank Paint Solar Absorptance (Roof)	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700	0 1700
Daily Total Solar Insulation Factor (Btu/sqft day)	668 1706	1 022 2439	1 488 6308	1 992 7729	2,390 9467	2 566 7143	2 551 4853	2,279 5850	1 860 7886	1,369 9719	851 5527	592 3431
Vapor Space Expansion Factor												
Vapor Space Expansion Factor	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Daily Vapor Temperature Range (deg R)	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Daily Vapor Pressure Range (psia)	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000	0 0000
Breather Vent Press Setting Range(psia)	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600	0 0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia)	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia)	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058
Daily Avg Liquid Surface Temp (deg R)	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700
Daily Min Liquid Surface Temp (deg R)	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700
Daily Max Liquid Surface Temp (deg R)	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700	522 9700
Daily Ambient Temp Range (deg R)	16 7000	21 2000	23 2000	27 8000	30 5000	32 3000	33 5000	32 9000	31 3000	29 0000	22 2000	16 6000

Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721	0 9721
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058
Vapor Space Outage (ft)	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333	1 3333
Working Losses (lb)	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220
Vapor Molecular Weight (lb/lb-mole)	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255	27 1255
Vapor Pressure at Daily Average Liquid Surface Temperature (psia)	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058	0 4058
Net Throughput (gal/mo)	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333	14 583 3333
Annual Turnovers	5 2222	5 2222	5 2222	5 2222	5 2222	5 2222	5 2222	5 2222	5 2222	5 2222	5 2222	5 2222
Turnover Factor	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000
Maximum Liquid Volume (gal)	33 510 7046	33,510 7046	33 510 7046	33 510 7046	33,510 7046	33,510 7046	33 510 7046	33,510 7046	33 510 7046	33 510 7046	33 510 7046	33,510 7046
Maximum Liquid Height (ft)	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000	15 0000
Tank Diameter (ft)	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000	19 5000
Working Loss Product Factor	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000	1 0000
Total Losses (lb)	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220	3 8220

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

N-1237-662-0 Annual Emissions - Vertical Fixed Roof Tank
Livingston, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Wine 15 0 % Vol Alcohol	45 86	0 00	45 86

$$\frac{45.86}{27\ 1255} \times \frac{27.1255 - 18.02}{46\ 02 - 18.02} \times 46.02$$

$$= 25\ \frac{lb}{year}$$

Appendix B

BACT Guideline 5.4.14 and Top Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.14*

Last Update 10/6/2009

Wine Fermentation Tank

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

BACT is the most stringent control technique for the emissions unit and class of source Control techniques that are not achieved in practice or contained in s 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**

Top Down BACT Analysis for Wine Fermentation VOC Emissions for Permit Units N-1237-670-0 through '693-0

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5 4 14, 3rd quarter 2013, identifies achieved in practice BACT for wine fermentation tanks as follows

1) Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F

The SJVUAPCD BACT Clearinghouse guideline 5 4 14, 3rd quarter 2013, identifies technologically feasible BACT for wine fermentation tanks as follows

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

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

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

(*) Capture efficiency (90%) x removal efficiency for control device
(**) Following recent District practice, thermal and catalytic oxidation will be ranked together

Step 4 - Cost Effectiveness Analysis

A cost-effective analysis is performed for each control technology which is more effective than meeting the requirements of District Rule 4694 (achieved-in-practice BACT), as proposed by the facility

Maximum Vapor Flow Rate

Based on the kinetic model provided by the facility, maximum CO2 production rate for each fermentation tank = 288 6 scfm

Maximum Vapor Flow Rate = 288 6 scfm x 24 fermentation tanks = 6,926 scfm

The submitted kinetic model was is based upon a maximum rate 46-hour red wine fermentation with a maximum tank charge of 80% of the nominal tank capacity of 56,000 gallons (44,800 gallons of must fermented) Since the planned operation of the proposed tanks (per E & J Gallo Winery) is the production of commercial premium wines with fermentation cycles of 5-8 days, the 46 hour fermentation basis with maximum fill is a very conservative upper limit of the expected flow rate

Uncontrolled Fermentation Emissions

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

Uncontrolled Fermentation PE = EF_{red} (lb-VOC/1000 gal) x annual throughput (gal/yr) x 24 tanks
= 6 2 lb-VOC/1000 gal x 570,395 gal/year x 24 tanks
= 3,536 lb-VOC/year x 24 tanks
= 84,864 lb-VOC/year

Collection System Capital Investment (based on ductwork)

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

Collection system to consist of

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

Capital Cost Ductwork

Connection from tank to main duct = 24 tanks x 25 feet x $61 30/foot = $36,780
Main duct for fermenters = $190,365
Redundant main duct for fermenters = $190,365
Unit installed cost for 6 inch butterfly valve = $2,125/valve x 24 valves x 2 systems = $102,000
Unit installed cost one foot removable spool = $500/tank x 24 tanks x 2 systems = $24,000
Knockout drums = $46,300
Duct support allowance = $4,000/tank x 24 tanks = $96,000
Pipe support allowance 90 foot pipe bridge = $90,000

Total = $36,780 + $190,365 + $190,365 + $102,000 + $24,000 + $46,300 + $96,000 + $90,000
= $775,810

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

Ductwork	
Cost Description	Cost ($)
Duct Estimate (See Duct Sizing Attachment A)	$775,810
Adjusting factor from 2005 dollars to 2013 dollars (2 75% inflation/year)	1 22
Inflation adjusted duct cost	$946,488
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (Ductwork) See Above	$946,488
Instrumentation (not required)	-
Sales Tax 3%	$28,395
Freight 5%	$47,324
Purchased equipment cost	**$1,022,207**
Foundations & supports 8%	$81,777
Handling & erection 14%	$143,109
Electrical 4% (not required)	-
Piping 2% (not required)	-
Painting 1% (not required)	-
Insulation 1% (not required)	-
Direct installation costs	**$224,886**
Total Direct Costs	**$1,247,093**
Indirect Costs (IC)	
Engineering 10%	$102,221
Construction and field expenses 5%	$51,110
Contractor fees 10%	$102,221

Start-up 2%	$20,444
Performance test 1%	$10,222
Contingencies 3%	$30,666
Total Indirect Costs	**$316,884**
Total Capital Investment (TCI) (DC + IC)	**$1,563,977**

Capital Cost Clean-In-Place (CIP) System

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

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

Annualized Capital Costs

Two CIP systems are required for a redundant ducting system

Total capital costs = Ductwork + CIP System (x 2)
= $1,563,977 + $379,960 + $379,960
= $2,323,897

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $\left[\frac{0\ 1(1\ 1)^{10}}{(1\ 1)^{10}-1}\right]$ = 0 163 per District policy, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $2,323,897 x 0 163 = $378,204

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

EcoPAS Analysis

Equipment pricing for the refrigerated condenser option was obtained from EcoPAS which has developed technology of this type specific to the control of fermentation emissions EcoPAS has submitted an analysis to control the 24 fermentation tanks in this project using four proprietary PAS control units Each PAS unit is dedicated to a bay of six fermentation tanks The units operate based on a small backpressure on the tanks and do not require induced draft fans Chilled glycol/water is supplied from the winery central facility for condensing the ethanol vapor

As seen below, EcoPAS has submitted a worst case model which assumes all fermentations are short cycle durations of 2-3 days The fermentations are assumed to be staged in a manner to levelize the combined vapor flow and demonstrates that the full permitted annual capacity of the tanks would be achieved in 79 days of operation

PAS Bay 1 of 4

One PAS Unit Servicing Six 56,000 gallon Fermentation Tanks -(no more than 8 125 tons EtOH permitted from these tanks)

	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7	DAY 8	DAY 9	DAY 10	DAY 11	DAY 12
TANK 1	[illegible]	[illegible]	sanitize	empty	empty	empty	empty	empty	[illegible]	[illegible]	sanitize	empty
TANK 2	soak	[illegible]	10	4	sanitize	empty	empty	empty	soak	6	[illegible]	[illegible]
TANK 3	empty*	load	soak	12	[illegible]	sanitize	empty	empty	empty	load	soak	12
TANK 4	empty	empty	load	soak	[illegible]	10	4	sanitize	empty	empty	load	soak
TANK 5	empty	empty	empty	load	soak	12	8	sanitize	empty	empty	empty	load
TANK 6	empty	empty	empty	empty	load	soak	12	8	sanitize	empty	empty	empty
Daily Brix Redux for 6 tanks combined	[illegible]	[illegible]	1.67	[illegible]	2.33	3.67	[illegible]	1.33	2.00	[illegible]	1.67	2.67
GALLONS Active Fermentation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	44 800	[illegible]
GALLONS Cumulative Fermented	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	253 800	[illegible]	313 600	[illegible]	[illegible]	[illegible]
EtOH Emitted per day POUNDS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	333	[illegible]	167	194	[illegible]	222
Cumulative EtOH Emitted TONS	[illegible]	[illegible]	0.25	[illegible]	0.46	0.6	[illegible]	0.83	0.92	[illegible]	[illegible]	1.13

	DAY 13	DAY 14	DAY 15	DAY 16	DAY 17	DAY 18	DAY 19	DAY 20	DAY 21	DAY 22	DAY 23	DAY 24
TANK 1	empty	empty	empty	empty	[illegible]	8	sanitize	empty	empty	empty	empty	empty
TANK 2	sanitize	empty	empty	empty	soak	6	10	4	sanitize	empty	empty	empty
TANK 3	8	sanitize	empty	empty	empty	load	soak	12	8	sanitize	empty	empty
TANK 4	6	10	4	sanitize	empty	empty	load	soak	6	[illegible]	[illegible]	sanitize
TANK 5	soak	12	8	sanitize	empty	empty	empty	load	soak	12	8	sanitize
TANK 6	load	soak	12	8	sanitize	empty	empty	empty	load	soak	12	[illegible]
Daily Brix Redux for 6 tanks combined	[illegible]	3.67	[illegible]	1.33	[illegible]	2.33	1.67	1.67	[illegible]	3.67	4.00	1.33
GALLONS Active Fermentation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	44 800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GALLONS Cumulative Fermented	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	672 000	[illegible]	[illegible]	[illegible]	[illegible]
EtOH Emitted per day POUNDS	[illegible]	306	[illegible]	[illegible]	167	154	139	222	[illegible]	[illegible]	[illegible]	[illegible]
Cumulative EtOH Emitted TONS	[illegible]	[illegible]	[illegible]	[illegible]	1.75	[illegible]	1.92	2.03	[illegible]	2.21	[illegible]	2.50

[illegible]

[illegible]

*empty [illegible] May be cold [illegible] storage [illegible]

This modeled condition [illegible] of active fermentation

PAS Bay 1 of 4

	DAY 25	DAY 26	DAY 27	DAY 28	DAY 29	DAY 30	DAY 31	DAY 32	DAY 33	DAY 34	DAY 35	DAY 36
TANK 1	[illegible]	8	sanitize	empty	empty	empty	empty	empty	12	8	sanitize	empty
TANK 2	soak	6	10	4	sanitize	empty	empty	empty	soak	6	10	4
TANK 3	empty	load	soak	12	8	sanitize	empty	empty	empty	load	soak	12
TANK 4	empty	empty	load	soak	6	[illegible]	4	sanitize	empty	empty	load	soak
TANK 5	empty	empty	empty	load	soak	12	8	sanitize	empty	empty	empty	load
TANK 6	sanitize	empty	empty	empty	load	soak	12	8	sanitize	empty	empty	empty
Daily Brix Redux for 6 tanks combined	[illegible]	[illegible]	[illegible]	2.67	2.33	[illegible]	4.00	33	[illegible]	[illegible]	[illegible]	2.67
GALLONS Active Fermentation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	134 400	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GALLONS Cumulative Fermented	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 164 800	[illegible]	[illegible]
EtOH Emitted per day POUNDS	[illegible]	[illegible]	[illegible]	[illegible]	94	[illegible]	333	[illegible]	67	94	[illegible]	[illegible]
Cumulative EtOH Emitted TONS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	DAY 37	DAY 38	DAY 39	DAY 40	DAY 41	DAY 42	DAY 43	DAY 44	DAY 45	DAY 46	DAY 47	DAY 48
TANK 1	empty	empty	empty	empty	12	[illegible]	sanitize	empty	empty	empty	empty	empty
TANK 2	sanitize	empty	empty	empty	soak	[illegible]	10	[illegible]	sanitize	empty	empty	empty
TANK 3	8	sanitize	empty	empty	empty	load	soak	12	8	sanitize	empty	empty
TANK 4	[illegible]	10	[illegible]	sanitize	empty	empty	load	soak	6	10	4	sanitize
TANK 5	soak	12	8	sanitize	empty	empty	empty	load	soak	12	8	sanitize
TANK 6	load	soak	12		sanitize	empty	empty	empty	load	soak	12	8
Daily Brix Redux for 6 tanks combined	[illegible]	3.67	4.00	33	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.67	[illegible]	[illegible]
GALLONS Active Fermentation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	44 800
GALLONS Cumulative Fermented	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EtOH Emitted per day POUNDS	[illegible]	[illegible]	333	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	306	333	[illegible]
Cumulative EtOH Emitted TONS	[illegible]	[illegible]	4.11	[illegible]	4.25	[illegible]	4.42	[illegible]	[illegible]	[illegible]	4.94	[illegible]

PAS Bay 1 of 4

	DAY 49	DAY 50	DAY 51	DAY 52	DAY 53	DAY 54	DAY 55	DAY 56	DAY 57	DAY 58	DAY 59	DAY 60
TANK 1	[illegible]	[illegible]	sanitize	empty	empty	empty	empty	empty	[illegible]	[illegible]	sanitize	empty
TANK 2	soak	6	[illegible]	4	sanitize	empty	empty	empty	soak	6	[illegible]	4
TANK 3	empty	load	soak	[illegible]	8	sanitize	empty	empty	empty	load	soak	[illegible]
TANK 4	empty	empty	load	soak	6	[illegible]	[illegible]	sanitize	empty	empty	load	soak
TANK 5	empty	empty	empty	load	soak	[illegible]	8	sanitize	empty	empty	empty	load
TANK 6	sanitize	empty	empty	empty	load	soak	2	[illegible]	sanitize	empty	empty	empty
Daily Brix Redux for 6 tanks combined	[illegible]	[illegible]	[illegible]	1.67	[illegible]	3.67	4.00	[illegible]	2.00	2.33	1.67	2.67
GALLONS Active Fermentation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GALLONS Cumulative Fermented	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1 836 800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EtOH Emitted per day POUNDS	[illegible]	[illegible]	139	222	[illegible]	[illegible]	333	[illegible]	67	[illegible]	[illegible]	222
Cumulative EtOH Emitted TONS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.78	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	DAY 61	DAY 62	DAY 63	DAY 64	DAY 65	DAY 66	DAY 67	DAY 68	DAY 69	DAY 70	DAY 71	DAY 72
TANK 1	empty	empty	empty	empty	[illegible]	[illegible]	sanitize	empty	empty	empty	empty	empty
TANK 2	sanitize	empty	empty	empty	soak	6	[illegible]	[illegible]	sanitize	empty	empty	empty
TANK 3	8	sanitize	empty	empty	empty	load	soak	[illegible]	8	sanitize	empty	empty
TANK 4	6	10	[illegible]	sanitize	empty	empty	load	soak	6	[illegible]	4	sanitize
TANK 5	soak	12	8	sanitize	empty	empty	empty	load	soak	[illegible]	[illegible]	sanitize
TANK 6	load	soak	[illegible]	8	sanitize	empty	empty	empty	load	soak	[illegible]	8
Daily Brix Redux for 6 tanks combined	2.33	3.67	4.00	1.33	[illegible]	2.33	[illegible]	[illegible]	[illegible]	3.67	[illegible]	1.33
GALLONS Active Fermentation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GALLONS Cumulative Fermented	2,060 800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EtOH Emitted per day POUNDS	[illegible]	[illegible]	333	[illegible]	167	[illegible]	[illegible]	222	[illegible]	306	[illegible]	[illegible]
Cumulative EtOH Emitted TONS	[illegible]	6.44	[illegible]	6.67	[illegible]	[illegible]	6.92	7.03	[illegible]	7.25	[illegible]	[illegible]

PAS Bay 1 of 4

	DAY 73	DAY 74	DAY 75	DAY 76	DAY 77	DAY 78	DAY 79
TANK 1	[illegible]	8	sanitize	empty	empty	empty	empty
TANK 2	soak	6	10	4	sanitize	empty	empty
TANK 3	empty	load	soak	12	8	sanitize	empty
TANK 4	empty	empty	load	soak	6	10	[illegible]
TANK 5	empty	empty	empty	empty	empty	empty	empty
TANK 6	sanitize	empty	empty	empty	empty	empty	empty
Daily Brix Redux for 6 tanks combined	2.00	2.33	1.67	[illegible]	2.33	1.67	0.67
GALLONS Active Fermentation	44 800	89 600	44 800	89 600	89 600	44 800	44 800
GALLONS Cumulative Fermented	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EtOH Emitted per day POUNDS	67	154	139	222	194	139	56
Cumulative EtOH Emitted TONS	[illegible]	[illegible]	7.73	[illegible]	7.96	[illegible]	[illegible]

Each PAS unit has a capacity adequate to control the vapor flow from the six dedicated fermentation tanks at a 90 percent capture efficiency as long as the fermentations are appropriately staged to prevent all the tanks from operating at peak fermentation simultaneously Typically the actively fermenting tanks in each bay of six tanks and the PAS unit are connected with quick-disconnect hoses to a central stainless steel header

Due to the high concentration ethanol collected by the PAS unit (80-100 proof), the unit is self-sterilizing and CIP is not normally required throughout the season However, if required, the PAS unit and central header may be flushed with sterilizing chemicals through the hose connections EcoPAS indicates a CIP system is not required

An 80-100 proof liquor is produced from the unit and delivered to stainless steel drums When filled, the drums are transferred and pumped into a holding tank for purposes of sale or internal use

E & J Gallo Winery Analysis

E & J Gallo Winery has provided operating data for a existing group of twenty-four 56,000 gallon fermentation tanks for purposes of characterizing the proposed operation and the potential requirements for control devices Per E & J Gallo Winery, the data demonstrates that all six fermenters in a grouping could be active at the same time and one control device per six fermenters would be insufficient to handle the vapor flow The facility also contends greater than 4 PAS units would be required to handle the vapor flow under worst case scenarios

The operating data provided by E & J Gallo Winery is an excerpt from the facility's 2012 production for similar fermenters (see table in document received by email on June 21, 2013) The above data was for newly constructed tanks that had not been operated during a harvest season

E & J Gallo Winery has indicated the tanks in this project are being designed for commercial premium wines so fermentation cycles are 5-8 days However, depending on the wine type the fermentation period could be very aggressive and completed in 2-3 days

Per the facility, there are two possible configurations for this control option One, is installing one control device dedicated to each tank Two, is installing one control device sized to serve all fermentation vessels with appropriate duct work, valving, and CIP If the option of installing one control device dedicated to each tank, the fire code requires everything within a 25 foot radius from the control device to meet Class I, Division II Fire Code standards for explosivity Per E & J Gallo Winery, while this cost has not been estimated as a clear system design has not been established, it can be assumed this cost would be substantial

The facility has also stated the control devices themselves will need to be cleaned in the event of a foam over These events occur multiple times per year and a CIP system to protect and properly clean and sanitize the control devices must be factored into the analysis

The facility has indicated the condensers cannot be simply tied into the existing ammonia or glycol system The current systems at the facility are fully utilized and the facility would need to perform an appropriate system design to accurately cost the cooling system

E & J Gallo Winery has indicated additional evaluation is required pertaining to the EcoPAS fermentation cycle model to determine if this scenario could be likely encountered in the field As well, the facility states evaluation of safety issues associated with managing and moving high-proof alcohol collected in drums is required Mobility of the condensers requires examination in a large industrial setting

Finally, E & J Gallo Winery has stated grapes may not arrive in the quantities planned and tanks may be filled in groups at one time causing them to reach peak fermentation at the same time with variations in the fill quantity and stacking of the fermenter In addition, sometimes there are desires to ferment certain lots at different temperatures These considerations are driven by conditions in the field including weather, availability of labor, and transportation equipment and by wine style and market demands

In summary, E & J Gallo Winery has indicated the following items will need to be analyzed in greater detail regarding the EcoPAS condenser system

- Number of units to control the fermentation tanks based on vapor flow rate
- EcoPAS fermentation cycle model to determine if feasible in the field
- Safety issues pertaining to movement of high-proof alcohol drums
- CIP requirement for this technology
- Duct sizing for red fermentation (12 inch diameter piping may be insufficient)
- Cost for cooling system installation
- Mobility issues for the EcoPAS system in a large industrial setting
- Instrumentation, grounding, and electrical dampers allowance
- Control device retrofit to comply with fire protection standards
- Collection and control efficiency of the EcoPAS technology

District Analysis

Taking into consideration the information and comments provided by EcoPAS and E & J Gallo Winery, the District will analyze the EcoPAS system for cost effectiveness on the following basis

District analysis of the operating data supplied by Gallo indicates

- Based on the operating data for twenty-four 56,000 gallon fermenters provided by E & J Gallo Winery, from 9/18/12 through 9/24/12, 18 of the set of 24 tanks were in operation simultaneously (75% utilization)
- Assuming that 4 PAS units would be specified for controlling these 24 tanks consistent with EcoPAS's preliminary design, it can be shown that not more than 5 of the 6 tanks assigned to any single device would be required to be active at any time and that the timing of initiation of all fermentations within any particular control grouping would be at least one day apart

- All fermentations were 4 days duration or longer with an average of 5 3 days, more than twice the 46 hour fermentation basis of the maximum flow rate value, indicating that peak flow from each the fermentations listed was significantly below the peak fermentation flow rate of 288 scfm given by the E & J Gallo Winery kinetic model
- The fermentation fill ranged from 28% to 59% with an average of 49%, significantly below the 80% basis used to establish the peak flow of 288 scfm per fermenter This results in a further significant reduction in the expected peak flow from each tank
- The operating data represent operations which were conducted for production considerations and not to levelize the flow to common control devices Peak combined vapor flow could be reduced with effective planning of fermentation operations based on type of fermentation with minimal impact on production

Given that E & J Gallo Winery has indicated 5-8 day fermentations are how the tanks in this project are being designed (yet depending on the wine type the fermentation period could be 2-3 days), it is reasonable to conclude that the four condenser units proposed by EcoPAS would be adequate to control the 24 new tanks Therefore, for purposes of this analysis, the District will base the capital investment analysis on 4 condenser units.

Consistent with EcoPAS technology, CIP is assumed to not be required (based on comments provided by EcoPAS) This is the most conservative assumption for the cost analysis However, further research will need to be performed to analyze the validity of this assumption

A charge for the glycol system capital cost will be included in the analysis

Design Basis

- The EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001) is used for this analysis with modifications to account for project-specific conditions
- Equipment pricing budgetary estimate provided by EcoPAS
- A ductwork system is not required for EcoPAS technology
- Instrumentation allowance of $2,000 per PAS unit has been included for a pressure transmitter and a temperature transmitter for monitoring pressure of the collection header and vent stream and temperature from the PAS unit.
- Sales tax = 8 225% based on California location
- Foundations and supports not required – unit is supported from either a tank or the piperack structure Equipment price includes required attachments and clips
- Handling and Erection is taken to be 8% of Purchased Equipment Cost based on common conditions, however, site modification costs may vary
- The PAS unit does not require any pumps, fans, or motors
- Insulation and painting are not required
- Operating labor is estimated based on 1 operator hour per day and 3 shifts per day per operating unit over a 90 day crush season and an hourly cost of $18 50 per hour
- An allowance for annual maintenance cost was included as 1% of Total Capital Investment
- The cost of a chiller system has been annualized and the annualized cost is estimated at $270 per ton of recovered ethanol based on approximately $85 per ton energy charge at

$0 13/kWh and $100 per ton capital charge for the central chilled water facility (based on a District analysis of annualized costs for a 100 ton mechanical chiller)

- Recovered ethanol (assume 80 proof liquor for worst case scenario) is estimated at approximately 28,844 gallons per year (84,864 lb/year (uncontrolled fermentation emissions) x 0 90 x gal/6 62 lb – 0 40) EcoPAS has indicated the value of the recovered ethanol is $25 per gallon as a 60 proof alcohol spirit However, E & J Gallo Winery has indicated the highest value for this product would be $2 71 per gallon assuming the alcohol can be used for internal brandy production (which has not been demonstrated in practice to be true) This represents the facilities internal cost for distilling material alcohol and does not include additional processing If the alcohol cannot be used internally, E & J Gallo Winery has indicated the product has no value outside the organization and would in fact incur a disposal cost resulting in a value less than $0 per gallon E & J Gallo Winery has proposed to value the recovered alcohol at a conservative value of $2 71 per gallon until it can be proven in practice to have a greater value

Capital Cost Refrigerated Condenser

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

Capital Cost = $475,318

Adjusted Capital Cost = $475,318 x [(6 2 lb-VOC/1,000 gal x 570,395 gal/year) − (6 2 lb-VOC/1,000 gal x 436,800 gal/year)]$^{0\,6}$
= $557,853

Total Adjusted Capital Cost = $557,853 x 4 units
= $2,231,412

Condensation	
Cost Description	Cost ($)
Cost of Refrigerated Condenser system (4 PAS Units)	$2,231,412
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (Condenser) See Above	$2,231,412
Instrumentation ($2,000 per unit)	$8,000
Sales Tax 8 225% (included)	-
Freight (included)	-
Purchased equipment cost	**$2,239,412**
Foundations & supports (not required)	-
Handling & erection 8%	$179,153
Electrical (not required)	-
Piping 2%	$44,788
Painting (not required)	-
Insulation (not required)	-
Direct installation costs	**$223,941**
Total Direct Costs	**$2,463,353**
Indirect Costs (IC)	
Engineering 10%	$223,941
Construction and field expenses 5%	$111,971
Contractor fees 10%	$223,941
Start-up 2%	$44,788
Performance test 1%	$22,394
Contingencies 3%	$67,182
Total Indirect Costs	**$694,217**
Total Capital Investment (TCI) (DC + IC)	**$3,157,570**

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $\left[\frac{0\ 1(1.1)^{10}}{(1.1)^{10}-1}\right]$ = 0 1627, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $3,157,570 x 0 1627 = $513,880

Annual Costs

Annual Costs			
Direct Annual Cost (DC)			
Operating Labor			
Operator	1 hr/shift x 3 shifts/day x 4 units x 90 days = 1,080 hr/year	$18 50/h	$19,980
Supervisor	15% of operator		$1,998
Maintenance			
Labor	1% of TCI		$31,576
Chiller (Glycol)			
	84,864 lb/year (uncontrolled fermentation emissions) x 0.81 − 2000	$270/ton EtOH	$9,280
Utility			
Electricity		$0 102/kWh	$0
Total DC			$62,834
Indirect Annual Cost (IC)			
Overhead	60% of Labor Cost	0 6 x ($19,980 + $1,998 + $31,576)	$32,132
Administrative	2% TCI		$53,841
Property Taxes	1% TCI		$31,576
Insurance	1% TCI		$31,576
Total IC			$149,125
Recovery Credits (RC)			
80 Proof Recovered	84,864 lb/year (uncontrolled fermentation emissions) x 0 81 x gal/6 62 lb – 0 40	$2 71/gal 80 Proof EtOH	$70,349
Annual Cost (DC + IC – RC)			**$141,610**

Total Annual Cost = Condenser System + Annual Cost
= $513,880 + $141,610
= $655,490 (with Recovery Credits)

Emission Reductions

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

Annual Emission Reduction = Fermentation Emissions x 0 81
= 84,864 lb-VOC/year x 0 81
= 68,740 lb-VOC/year
= 34 4 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $655,490/year − 34 4 tons-VOC/year
= $19,072/ton-VOC (with Recovery Credits)

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

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

NohBell Corporation Analysis

Equipment pricing for the water scrubber control option was obtained from NohBell Corporation NohBell Corporation has submitted an analysis to control the 24 fermentation tanks in this project using 13 proprietary mobile NoMoVo control units One mobile NoMoVo unit is placed next to each actively fermenting tank Each NoMoVo unit consists of a scrubber unit and a pump/refrigeration skid which serves to cool and circulate the scrubber solution The units operate based on a small backpressure on the tanks and do not require induced draft fans

Each unit has a capacity rating sufficient to accommodate the project stated maximum carbon dioxide vapor flow based on red wine fermentation The proposed system is sized to allow simultaneous utilization of up to 50 percent of the tanks (12 NoMoVo units) under the worst case scenario that the maximum rate fermentation operates in two days An additional 13th "swing" unit is provided to facilitate the operation For managed lower vapor flow rate fermentations, the units may be coupled to multiple tanks for control of fermentation emission and tank utilization up to 100 percent is possible A fermentation sequence was analyzed for six of the tanks which assumes all fermentations are short cycle durations of 2-3 days The fermentations are staged in a manner to levelize the combined flow and demonstrates that the full permitted annual capacity of the tanks would be achieved in 79 days of operation

Each NoVoMo unit is connected to the fermentation tank with a quick-disconnect hose The scrubber liquid is transferred batch-wise to a holding tank when the concentration reaches ten percent and the scrubber holding tank is recharged with fresh water Each batch is 35-50 gallons and is transferred to a mobile pony tank which is in turn pumped to a fixed storage tank for further use or truck shipment The ten percent ethanol produced from each scrubber is suitable for delivery to an ethanol distillery for recovery as high-proof alcohol

NohBell Corporation indicates that based on operating experience, CIP is not normally required throughout the season due to the concentration of ethanol collected in the NoVoMo unit (10%) and the acidity of the solution However, if required, the NoMoVo unit may be flushed with sterilizing chemicals through the hose connections NohBell Corporation has indicated a CIP system is not required

E & J Gallo Winery Analysis

As previously mentioned, E & J Gallo Winery has provided operating data for an existing group of twenty-four 56,000 gallon fermentation tanks for purposes of characterizing the proposed operation and the potential requirements for control devices (see table in document received by email on June 21, 2013)

The facility has indicated the fermentation length and number of units required requires further evaluation as all fermentations could be in operation simultaneously based on grape availability, type of wine being produced, etc as explained in the condenser control option

Per the facility, based on the operating data provided, there are two possible configurations for this control option One, is installing one control device dedicated to each tank Two, is installing one control device sized to serve all fermentation vessels with appropriate duct work, valving, and CIP

The facility has also stated the control devices themselves will need to be cleaned in the event of a foam over. These events occur multiple times per year and a CIP system to protect and properly clean and sanitize the control devices must be factored into the analysis

In summary, E & J Gallo Winery has indicated the following items will need to be analyzed in greater detail regarding the NoMoVo scrubber system

- Number of units to control the fermentation tanks based on vapor flow rate
- CIP requirement for this technology
- Duct sizing for red fermentation (12 inch diameter piping may be insufficient)
- Mobility issues for the NoMoVo system in a large industrial setting
- Instrumentation allowance
- Wastewater disposal costs

District Analysis

District analysis of the operating data supplied by E & J Gallo Winery indicates that based on the operating data for twenty-four 56,000 gallon fermenters provided by E & J Gallo Winery, 20 of the set of 24 tanks were in operation simultaneously Therefore the proposed system must include sufficient NoMoVo units for operation of 20 tanks

Given that E & J Gallo Winery has indicated 5-8 day fermentations are the most realistic scenario for the proposed new tanks, consistent with the operating data supplied, the District's opinion is that it is reasonable to conclude that 20 NoMoVo units will be adequate to control the 24 new tanks Therefore, for purposes of this analysis, the District will base the capital investment analysis on 20 NoMoVo units with 20 pump/refrigeration skids

Consistent with NoMoVo technology, the duct work, valving, and CIP are assumed to not be required (based on comments provided by NohBell) This is the most conservative assumption for the cost analysis However, further research will need to be performed to analyze the validity of this assumption

Design Basis

- The EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001) is used for this analysis with modifications to account for project-specific conditions
- Equipment pricing budgetary estimate provided by NohBell Corporation.
- Instrumentation allowance of $2,000 per NoMoVo unit has been included for a pressure transmitter and a temperature transmitter for monitoring pressure of the collection header and vent stream and temperature from the NoMoVo unit
- Sales tax = 8 225% based on California location
- Foundations and supports not required – unit is supported from either a tank or the piperack structure Equipment price includes required attachments and clips
- Since the units are mobile which are ready for operation upon delivery, Handling and Erection is taken to be 2% of Purchased Equipment Cost as an allowance for pre-commissioning
- Piping is taken to be 1% of Purchased Equipment Cost based on the only requirements being Tee fittings for the tank discharge
- Insulation and painting are not required
- Recovered ethanol storage tank = $40,000 (installed)
- Operating labor is estimated based on 2 operator hours per day per operating unit over a 90 day crush season and an hourly cost of $18 50 per hour
- An allowance for annual maintenance cost was included as 1% of Total Capital Investment
- Connected electrical load for each unit is 2 5 horsepower which is assumed to operate continuously for 90 days
- Electric power cost = $0 102/kWh (see regenerative thermal oxidizer Top Down BACT Analysis section below)
- Captured ethanol is recovered as a 10% solution suitable for disposal to an ethanol distillery at a cost of $0 08 per gallon

Capital Cost Scrubber

Pricing for the NoMoVo units, each sized to handle the rated maximum flow stated by E & J Gallo Winery, was provided by NohBell Corporation

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

The above value was quoted by the vendor to control fermentation tanks each with a potential to emit of 2,708 lb-VOC/year (6 2 lb/1,000 gal x 436,800 gal/year) The vendor has indicated the capital cost should be adjusted based upon VOC emissions sent to the control device Therefore, using the six-tenths rule of thumb, the adjusted capital cost is calculated as follows

$$\text{Adjusted Capital Cost} = \$67{,}500 \times [(6\ 2\ \text{lb-VOC}/1{,}000\ \text{gal} \times 570{,}395\ \text{gal/year}) - (6\ 2\ \text{lb-VOC}/1{,}000\ \text{gal} \times 436{,}800\ \text{gal/year})]^{0\ 6}$$
$$= \$79{,}221$$

Total Adjusted Capital Cost = $79,221 x 20 units
= $1,584,420

Scrubber	
Cost Description	Cost ($)
Refrigerated Scrubber System (21 NoVoMo Units)	$1,584,420
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (Scrubber System) See Above	$1,584,420
Instrumentation ($2,000 per unit)	$40,000
Sales Tax 8 225%	$130,319
Freight (included)	-
Purchased equipment cost	**$1,754,739**
Foundations & supports (not required)	-
Handling & erection 2%	$35,095
Electrical 1%	$17,547
Piping 1%	$17,547
Painting (not required)	-
Insulation (not required)	-
Recovered Ethanol Storage Tank (installed)	$40,000
Direct installation costs	**$110,189**
Total Direct Costs	**$1,864,928**
Indirect Costs (IC)	
Engineering 5%	$87,737
Construction and field expenses 2%	$35,095
Contractor fees 2%	$35,095
Start-up 1%	$17,547
Performance test 1%	$17,547
Contingencies 3%	$52,642
Total Indirect Costs	**$245,663**
Total Capital Investment (TCI) (DC + IC)	**$2,110,591**

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $\left[\frac{0\ 1(1\ 1)^{10}}{(1\ 1)^{10}-1}\right]$ = 0 1627, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $2,110,591 x 0 1627 = $343,489

Wastewater Disposal Costs

Additionally, the water scrubber will generate ethanol-laden wastewater containing 34 4 tons-ethanol annually (84,864 lb/year (uncontrolled fermentation emissions) x 0 81 − 2000) Assuming a 10% solution, approximately 103,837 gallons of waste water (34 4 ton-ethanol x 2000 lb/ton x gal/6 62 lb ÷ 0 10) will be generated annually Per NohBell Corporation, an allowance of $0 08 per gallon is applied for disposal costs

Annual disposal costs = 103,837 gallons x $0 08/gallon = $8,307

Annual Costs

Annual Costs			
Direct Annual Cost (DC)			
Operating Labor			
Operator	2 hr/day x 20 units x 90 days = 3,600 hr/year	$18 50/h	$66,600
Supervisor	15% of operator		$10,490
Maintenance			
Labor	1% of TCI		$21,106
Wastewater Disposal			
	10% Solution = 103,455 gal	$0 08/gal	$8,307
Utility			
Electricity	20 units x 2 5 hp x 0 746 kW/hp x 2,160 hr/yr = 80,525 kWh/yr	$0 102/kWh	$8,214
Total DC			$114,717
Indirect Annual Cost (IC)			
Overhead	60% of Labor Cost	0 6 x ($66,600 + $10,490 + $21,106)	$58,918
Administrative	2% TCI		$42,212
Property Taxes	1% TCI		$21,106
Insurance	1% TCI		$21,106
Total IC			$143,342
Annual Cost (DC + IC)			**$258,059**

Total Annual Cost = Scrubber System + Annual Cost
= $343,489 + $258,059
= $601,548

Emission Reductions

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

Annual Emission Reduction = Fermentation Emissions x 0 81
= 84,864 lb-VOC/year x 0 81
= 68,740 lb-VOC/year
= 34 4 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost – Annual Emission Reductions

Cost Effectiveness = $601,548/year ÷ 34 4 tons-VOC/year
= $17,502/ton-VOC

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

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

Water scrubber (750 cfm) capital cost = $108,500 (per 2003 budgetary pricing obtained by Sonoma Technologies)

The Carbon Containment hardware is about equal to the scrubber hardware A tank is needed for the steam regenerated carbon bed It is likely two beds will be needed to be able to be on line with one bed while the other is being regenerated

The carbon bed operated with steam to regenerate the bed produces a water alcohol mixture The waste stream or disposal costs have not been analyzed in this project

Carbon Capital Cost

Annual Emission Reduction = Fermentation Emissions x 0 86
= 84,864 lb-VOC/year x 0 86
= 72,983 lb-VOC/year
= 36 5 tons-VOC/year

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

Carbon required = 36 5 tons-VOC/year x 2000 lb/ton x 1/0 20
= 364,915 lb carbon

Carbon capital cost = $1 00/lb = $1 00/lb x 364,915 lb carbon = $364,915

Carbon Adsorption	
Cost Description	Cost ($)
Carbon Adsorption cost (taken from Scrubber cost above 2003 dollars)	$108,500
Adjusting factor from 2003 dollars to 2013 dollars (2 75% inflation/year)	1 275
Inflation adjusted Carbon Adsorption cost	$138,338
Gas flow rate scfm	6,926
Size adjusted Carbon Adsorption cost [138,338 x (6,926−750)$^{0\ 6}$]	$525,042
Water alcohol tank cost	$40,000
Size adjusted Carbon Adsorption + water alcohol tank cost	$565,042
Carbon Capital Cost (see above)	$364,915
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (Carbon Adsorption System + Carbon) See Above	$929,957

Instrumentation 10%	$92,996
Sales Tax 3%	$27,899
Freight 5%	$46,498
Purchased equipment cost	**$1,097,350**
Foundations & supports 8%	$87,788
Handling & erection 14%	$153,629
Electrical 4%	$43,894
Piping 2%	$21,947
Painting 1%	$10,974
Insulation 1%	$10,974
Direct installation costs	**$329,206**
Total Direct Costs	**$1,426,556**
Indirect Costs (IC)	
Engineering 10%	$109,735
Construction and field expenses 5%	$54,868
Contractor fees 10%	$109,735
Start-up 2%	$21,947
Performance test 1%	$10,974
Contingencies 3%	$32,921
Total Indirect Costs	**$340,180**
Total Capital Investment (TCI) (DC + IC)	**$1,766,736**

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $\left[\frac{0\ 1(1\ 1)^{10}}{(1\ 1)^{10}-1}\right]$ = 0 163 per District policy, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $1,766,736 x 0 163 = $287,528

Total Annual Cost

Total Annual Cost = Carbon Adsorption System + Ductwork + CIP System
= $287,528 + $378,204
= $665,732

Emission Reductions

Annual Emission Reduction = Fermentation Emissions x 0 86
= 84,864 lb-VOC/year x 0 86
= 72,983 lb-VOC/year
= 36 5 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost – Annual Emission Reductions

Cost Effectiveness = $665,732/year – 36 5 tons-VOC/year
= $18,243/ton-VOC

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

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

The balanced chemical equation for combustion of ethanol is shown below

$C_2H_5OH + 3O_2 \rightarrow 3H_2O + 2CO_2$

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

Thermal or Catalytic Oxidation	
Cost Description	Cost ($)
5,700 cfm Regenerative Thermal Oxidizer cost (2005 dollars)	$279,000
Adjusting factor from 2005 dollars to 2013 dollars (2 75% inflation/year)	1 22
Inflation adjusted Regenerative Thermal Oxidizer cost	$340,380
Gas flow rate scfm	6,926
Size adjusted Regenerative Thermal Oxidizer cost [340,380 x (6,926 – 5,700)$^{0.6}$]	$382,586
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (Regenerative Thermal Oxidizer System) See Above	$382,586
Instrumentation 10%	$38,259
Sales Tax 3%	$11,478
Freight 5%	$19,129
Purchased equipment cost	**$451,452**
Foundations & supports 8%	$36,116
Handling & erection 14%	$63,203
Electrical 4%	$18,058
Piping 2%	$9,029
Painting 1%	$4,515
Insulation 1%	$4,515
Direct installation costs	**$135,436**
Total Direct Costs	**$586,888**
Indirect Costs (IC)	
Engineering 10%	$45,145
Construction and field expenses 5%	$22,573

Contractor fees 10%	$45,145
Start-up 2%	$9,029
Performance test 1%	$4,515
Contingencies 3%	$13,544
Total Indirect Costs	**$139,951**
Total Capital Investment (TCI) (DC + IC)	**$726,839**

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $\left[\frac{0.1(1.1)^{10}}{(1\ 1)^{10}-1}\right]$ = 0 163 per District policy, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $726,839 x 0 163 = $118,290

Operation and Maintenance Costs

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

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

heat of combustion -dHc = 20276 Btu/lb
Daily VOC emissions rate = 193 8 lb/day
Blower flow rate = 6,926 scfm
= 9,973,440 ft^3/day

-dh(c) = 193 8 lb/day x 20276 Btu/lb / 9,973,440 ft^3/day
= 0 394 Btu/ft^3

Assuming the waste gas is principally air, with a molecular weight of 28 97 and a corresponding density of 0 0739 lb/scf, the heat of combustion per pound of incoming waste gas is

-dh(c) = 0 394 Btu/ft^3 / 0 0739 lb/ft^3
= 5 33 Btu/lb

Fuel Flow Requirement

$$Q(fuel) = \frac{Pw*Qw*\{Cp*[1\ 1Tf-Tw-0\ 1Tr]-[-dh(c)]\}}{P(ef) * [-dh(m) - 1\ 1\ Cp * (Tf - Tr)]}$$

Where
Pw = 0 0739 lb/ft^3
Cp = 0 255 Btu/lb-°F
Qw = 6,926 scfm
-dh(m) = 21,502 Btu/lb for methane
Tr = 77°F assume ambient conditions
P(ef) = 0 0408 lb/ft^3 m, methane at 77°F, 1 atm
Tf = 1600°F
Tw = 1150°F
-dh(c) = 5 33 Btu/lb

$$Q = \frac{0\ 0739*6926*\{0\ 255*[1\ 1*1600-1150-0\ 1*77]-5\ 33\}}{0\ 0408*[21502 - 1\ 1*0\ 255*(1600 - 77)]}$$

= 75,882 33/859 9 = 88 25 ft^3/min

Fuel Costs

The cost for natural gas shall be based upon the average price of natural gas sold to "Commercial Consumers" in California for the years 2011 and 2012 [1]

2012 = $8 28/thousand ft^3 total monthly average
2011 = $7 13/thousand ft^3 total monthly average
Average for two years = $7 705/thousand ft^3 total monthly average

Fuel Cost = 88 25 cfm x 1440 min/day x 365 day/year x $7 705/1000 ft^3
= $357,390/year

Electricity Requirement

$$\text{Power}_{fan} = \frac{1\ 17*10^{-4}\ Qw*\ \Delta P}{\in}$$

Where
ΔP = Pressure drop Across system = 4 in H_2O
$\in$ = Efficiency for fan and motor = 0 6
Qw = 6,926 scfm

$$\text{Power}_{fan} = \frac{1\ 17*10^{-4}*6{,}926\ cfm*\ 4\ in\ H_2O}{0\ 60}$$

= 5 40 kW

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

Electricity Costs

Average cost of electricity to commercial users in California [2]
2012 = $0 1023
2011 = $0 1012
AVG = $0 102

Electricity Cost = 5 40 kW x 24 hours/day x 365 days/year x $0 102/kWh = $4,825/year

Total Utility Costs

Annual Cost (Data from Annual Costs for Thermal and Catalytic Incinerators, Table 3 10 – OAQPS Control Cost Manual, Fourth Edition)

Annual Cost			
Operator	0 5 h/shift	$18 5/h x 0 5 h x 365 days/yr	$3,376
Supervisor	15% of operator		$506
Maintenance			
Labor	0 5 h/shift	$18 5/h x 0 5 h x 365 days/yr	$3,376
Material	100% of labor		$3,376
Utility			
Natural Gas			$357,390
Electricity			$4,825
Indirect Annual Cost (IC)			
Overhead	60% of Labor Cost	0 6 x ($3,376 + $506 + $3,376)	$4,355
Administrative Charge	2% TCI		$14,537
Property Taxes	1% TCI		$7,268
Insurance	1% TCI		$7,268
Total Annual Cost			**$406,277**

Total Annual Cost

Total Annual Cost = Regenerative Thermal Oxidizer System + Ductwork + CIP System + Annual Cost
= $118,290 + $378,204 + $406,277
= $902,771

Emission Reductions

Annual Emission Reduction = Fermentation Emissions x 0 88
= 84,864 lb-VOC/year x 0 88
= 74,680 lb-VOC/year
= 37 3 tons-VOC/year

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

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $902,771/year – 37 3 tons-VOC/year
= $24,177/ton-VOC

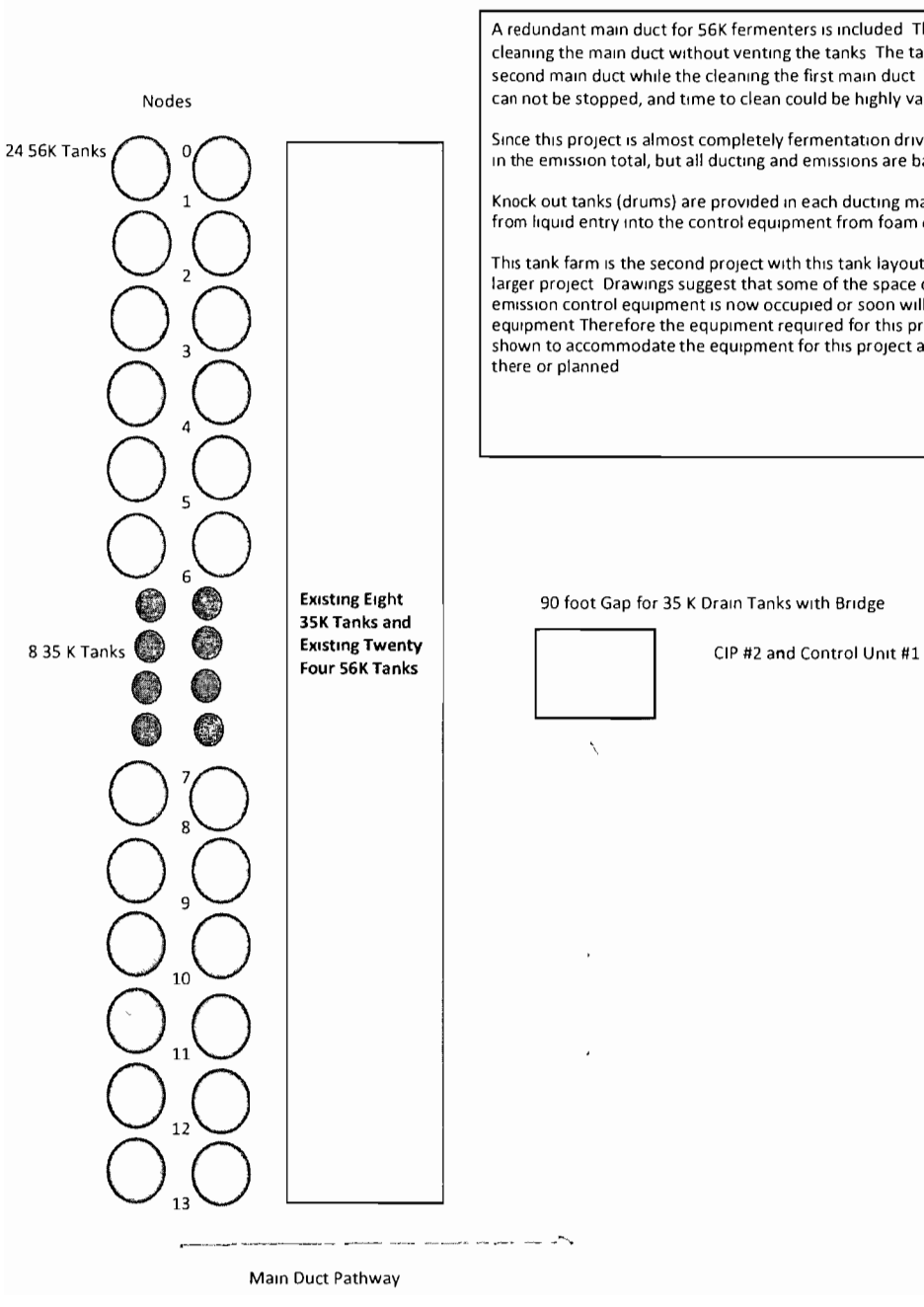
The analysis demonstrates that the annualized purchase cost of the regenerative thermal oxidizer system, collection system ductwork and CIP equipment, and annual costs alone results in a cost effectiveness which exceeds the District's Guideline of $17,500/ton-VOC Therefore this option is not cost-effective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

Step 5 – Select BACT

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

Attachment A

Duct Sizing Analysis



A redundant main duct for 56K fermenters is included This provides the capabilities of cleaning the main duct without venting the tanks The tanks would be switched to the second main duct while the cleaning the first main duct This is required since fermentation can not be stopped, and time to clean could be highly variable depending on dirt load

Since this project is almost completely fermentation driven, storage emission are considered in the emission total, but all ducting and emissions are based on red fermentation

Knock out tanks (drums) are provided in each ducting main to protect the control device from liquid entry into the control equipment from foam overs, or over filling

This tank farm is the second project with this tank layout The first layout was a part of a larger project Drawings suggest that some of the space orginally alocated for CIP and emission control equipment is now occupied or soon will be by other tanks and other equipment Therefore the equpiment required for this project needed to be located as shown to accommodate the equipment for this project and other new construction either there or planned

All 35K and 56K tanks connection ducst to the main duct Note The 35K only have a connection duct to the main duct A separate storage main duct is not provided	Tank Farm Nominal Size	Beginning Node	Ending Node	Length Between Nodes	From Tank to Main Duct Length Feet	Design Duct Velocity from Eichleay Feet/Second	Fementation CFM at maximum CO2 rate from kinetic model (80 Deg F)	Duct size from tank to main diameter inches	Nominal Duct Size diameter in inches	Number of Tanks feeding Ending Node	Number of Tanks to connect	Total feet	Cost Per Foot from Eichleay	Cost	Comments Conections From Tank to Main Duct
	N/A	N/A	N/A	N/A	25	40	289	4 70	6 00		32	800	$61 00	$48 800	
	56 000	0	1	25	0	40	577	6 64	8 00	2		25	$103 00	$2 575	
	56 000	1	2	25	0	40	1 154	9 39	10 00	4		25	$144 00	$3 600	
	56 000	2	3	25	0	40	1 732	11 50	12 00	6		25	$144 00	$3 600	
	56,000	3	4	25	0	40	2 309	13 28	14 00	8		25	$174 00	$4 350	
	56 000	5	6	25	0	40	2 886	14 85	16 00	10		25	$204 00	$5 100	
	56 000	6	7	90	0	40	3 463	16 27	18 00	12		90	$251 00	$22,590	Gap in Tank Farm
	56 000	8	9	25	0	40	4,040	17 57	18 00	14		25	$251 00	$6,275	
	56 000	9	10	25	0	40	4 618	18 78	20 00	16		25	$309 00	$7 725	
	56 000	10	11	25	0	40	5 195	19 92	20 00	18		25	$309 00	$7 725	
	56,000	11	12	25	0	40	5 772	21 00	22 00	20		25	$309 00	$7 725	
	56 000	12	13	25	0	40	6 349	22 02	24 00	22		25	$397 00	$9 925	
	56 000	13	End at CIP	50	0	40	6 926	23 00	24 00	24		275	$397 00	$109 175	
													Sum	$190,365	

Connection duct to Main Duct	$48 800	
Redundant Main Duct for CIP on Fermenters Only	$190 365	
Knock drums (7000 gallons) for foam overs on fermenters	$46 300	Eichleay
Ducting Isloation Components for all tanks with redundant main (X2)	$168 000	Previous Work

The main process pipe ways have not been completely designed but some modification is anticipated to support the large ducts

An allowance of $4000 dollars per tank has been added to the estimate for duct support structure	$128,000
Allowance 90 Pipe bridge for 90 foot gap in 56K tank farm	$90 000

This is for (24) 56K (8) 35K and (2) 68K Tanks

Ducting Cost		$643,830
Support Allowance		$218 000
	Total	$861 830

Appendix C

BACT Guideline 5.4.13 and Top Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.13*

Last Update 10/6/2009

Wine Storage Tank

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	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	1 Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control) 2 Capture of VOCs and carbon adsorption or equivalent (95% control) 3 Capture of VOCs and absorption or equivalent (90% control) 4 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 ot 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 s 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**

Top Down BACT Analysis for Wine Storage VOC Emissions for Permit Units N-1237-662-0 through '669-0

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5 4 13, 3rd quarter 2013, identifies achieved in practice BACT for wine storage tanks as follows

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
   ***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*

The SJVUAPCD BACT Clearinghouse guideline 5 4 13, 3rd quarter 2013, identifies technologically feasible BACT for wine storage tanks as follows

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)

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank by Control Effectiveness		
Rank	Control	Overall Capture and Control Efficiency
1	Capture of VOCs and thermal or catalytic oxidation or equivalent	98%
2	Capture of VOCs and carbon adsorption or equivalent	95%
3	Capture of VOCs and absorption or equivalent	90%
4	Capture of VOCs and condensation or equivalent	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)

Step 4 - Cost Effectiveness Analysis

A cost-effective analysis is performed for each control technology which is more effective than meeting the requirements of District Rule 4694 plus tank insulation (achieved-in-practice BACT), as proposed by the facility

Collection System Capital Investment (based on ductwork)

A common feature of all thermal or catalytic 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

Collection system to consist of

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

Capital Cost Ductwork

Connection from tank to main duct = 8 tanks x 25 feet x $61 30/foot = $12,260
Unit installed cost for 6 inch butterfly valve = $2,125/valve x 8 valves = $17,000
Unit installed cost one foot removable spool = $500/tank x 8 tanks = $4,000
Knockout drum = $46,300
Duct support allowance = $4,000/tank x 8 tanks = $32,000
Pipe support allowance 90 foot pipe bridge = $90,000

Total = $12,260 + $17,000 + $4,000 + $46,300 + $32,000 + $90,000 = $201,560

Ductwork	
Cost Description	Cost ($)
Duct Estimate from Eichleay Study 2005 Data	$201,560
Adjusting factor from 2005 dollars to 2013 dollars (2 75% inflation/year)	1 22
Inflation adjusted duct cost	$245,903
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (Ductwork) See Above	$245,903
Instrumentation 10%	$24,590
Sales Tax 3%	$7,377
Freight 5%	$12,295

Purchased equipment cost	**$290,165**
Foundations & supports 8%	$23,213
Handling & erection 14%	$40,623
Electrical 4%	$11,607
Piping 2%	$5,803
Painting 1%	$2,902
Insulation 1%	$2,902
Direct installation costs	**$87,050**
Total Direct Costs	**$377,215**
Indirect Costs (IC)	
Engineering 10%	$29,017
Construction and field expenses 5%	$14,508
Contractor fees 10%	$29,017
Start-up 2%	$5,803
Performance test 1%	$2,902
Contingencies 3%	$8,705
Total Indirect Costs	**$89,952**
Total Capital Investment (TCI) (DC + IC)	**$467,167**

Capital Cost Clean-In-Place (CIP) System

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

Clean-In-Place (CIP) System	
Cost Description	Cost ($)
Current cost of CIP system	$200,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001)	
Direct Costs (DC)	
Base Equipment Costs (CIP System) See Above	$200,000
Instrumentation 10%	$20,000
Sales Tax 3%	$6,000
Freight 5%	$10,000
Purchased equipment cost	**$236,000**
Foundations & supports 8%	$18,880
Handling & erection 14%	$33,040
Electrical 4%	$9,440
Piping 2%	$4,720
Painting 1%	$2,360
Insulation 1%	$2,360
Direct installation costs	**$70,800**
Total Direct Costs	**$306,800**

Indirect Costs (IC)	
Engineering 10%	$23,600
Construction and field expenses 5%	$11,800
Contractor fees 10%	$23,600
Start-up 2%	$4,720
Performance test 1%	$2,360
Contingencies 3%	$7,080
Total Indirect Costs	**$73,160**
Total Capital Investment (TCI) (DC + IC)	**$379,960**

Annualized Capital Costs

Total capital costs = Ductwork + CIP System
= $467,167 + $379,960
= $847,127

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $\left[\frac{0.1(1\ 1)^{10}}{(1.1)^{10}-1}\right]$ = 0 163 per District policy, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $847,127 x 0 163 = $137,866

Capture of VOCs and condensation (> 70% collection & control)

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= $137,866

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0 70
= 200 lb-VOC/year x 0 70
= 140 lb-VOC/year
= 0 07 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $137,866/year ÷ 0 07 tons-VOC/year
= $1,969,514/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 Guideline of $17,500/ton-VOC Therefore this option is not cost-effective and will not be considered for this project

Collection of VOCs and control by absorption (> 90% collection & control)

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= $137,866

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0 90
= 200 lb-VOC/year x 0 90
= 180 lb-VOC/year
= 0 09 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $137,866/year ÷ 0 09 tons-VOC/year
= $1,531,844/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 Guideline of $17,500/ton-VOC Therefore this option is not cost-effective and will not be considered for this project

Collection of VOCs and control by carbon adsorption (> 95% collection and control)

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= $137,866

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0 95
= 200 lb-VOC/year x 0 95
= 190 lb-VOC/year
= 0 095 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $137,866/year – 0 095 tons-VOC/year
= $1,451,221/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 Guideline of $17,500/ton-VOC Therefore this option is not cost-effective and will not be considered for this project

Collection of VOCs and control by thermal or catalytic oxidation (> 98% collection & control)

The balanced chemical equation for combustion of ethanol is shown below

$C_2H_5OH + 3O_2 \rightarrow 3H_2O + 2CO_2$

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

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= $137,866

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0 98
= 200 lb-VOC/year x 0 98
= 196 lb-VOC/year
= 0 098 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $137,866/year – 0 098 tons-VOC/year
= $1,406,796/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 Guideline of $17,500/ton-VOC Therefore this option is not cost-effective and will not be considered for this project

Step 5 - Select BACT

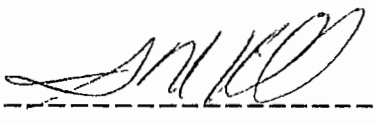
All identified feasible options with control efficiencies higher than the option proposed by the facility have been shown to not be cost effective. The facility has proposed Option 1, insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and achieve and maintain a continuous storage temperature not exceeding 75 ^{0}F within 60 days of completion of fermentation These BACT requirements will be listed on the permits as enforceable conditions

Appendix D

Compliance Certification

N-1237
E&J Gallo Winery-Livingston
Compliance Certification Statement
For Federal Major Permit Modifications
Compliance with District Rule 2201, Section 4.15.2

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



05/07/13

Mr. Steve Kidd
Vice President of Operations

Date

Appendix E

Certificate of Conformity

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[X] Federal Major Permit MODIFICATION
[] MINOR PERMIT MODIFICATION
[] ADMINISTRATIVE AMENDMENT

COMPANY NAME E&J Gallo Winery - Livingston	FACILITY ID N-1237
1 Type of Organization [x] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2 Owner's Name E&J Gallo Winery-Livingston	
3 Agent to the Owner Mr Dan Martin	

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

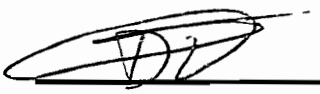
(DM) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s)

(DM) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis

(DM) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted

(DM) Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete

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



Signature of Responsible Official

05/07/13
Date

Mr Dan Martin
Name of Responsible Official (please print)

Plant Manager- Livingston Winery
Title of Responsible Official (please print)

Appendix F

Draft ATC Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-662-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 319) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

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 quantities of emissions 1st quarter - 6 lb, 2nd quarter - 6 lb, 3rd quarter - 6 lb, and fourth quarter - 7 lb Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237-662-0 Jul 29 2013 11 02AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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 The temperature of the stored wine shall be determined and recorded at least once per week For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved [District Rule 4694] Federally Enforceable Through Title V Permit

10 The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

11 The maximum wine storage throughput in this tank shall not exceed 35,000 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 month rolling basis, shall not exceed 175,000 gallons per year [District Rule 2201] Federally Enforceable Through Title V Permit

13 The annual VOC emissions from wine storage in this tank, calculated on a twelve month rolling basis, shall not exceed 25 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

14 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] Federally Enforceable Through Title V Permit

15 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

16 The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

18 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

19 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-663-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 320) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

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

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 663 0 Jul 29 2013 11 02AM - TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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

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10 The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume [District Rule 2201] Federally Enforceable Through Title V Permit

11 The maximum wine storage throughput in this tank shall not exceed 35,000 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 month rolling basis, shall not exceed 175,000 gallons per year [District Rule 2201] Federally Enforceable Through Title V Permit

13 The annual VOC emissions from wine storage in this tank, calculated on a twelve month rolling basis, shall not exceed 25 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

14 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] Federally Enforceable Through Title V Permit

15 Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-664-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 321) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

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

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 664 0 Jul 29 2013 11 02AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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

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10 The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume [District Rule 2201] Federally Enforceable Through Title V Permit

11 The maximum wine storage throughput in this tank shall not exceed 35,000 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 month rolling basis, shall not exceed 175,000 gallons per year [District Rule 2201] Federally Enforceable Through Title V Permit

13 The annual VOC emissions from wine storage in this tank, calculated on a twelve month rolling basis, shall not exceed 25 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

14 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] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-665-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 322) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

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

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-1237 665-0 Jul 29 2013 11 02AM -- TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-666-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 323) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

CONDITIONS

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Seyed Sadredin, Executive Director / APCO

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DAVID WARNER, Director of Permit Services
N 1237-666-0 Jul 29 2013 11 02AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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 The temperature of the stored wine shall be determined and recorded at least once per week For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved [District Rule 4694] Federally Enforceable Through Title V Permit

10 The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume [District Rule 2201] Federally Enforceable Through Title V Permit

11 The maximum wine storage throughput in this tank shall not exceed 35,000 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 month rolling basis, shall not exceed 175,000 gallons per year [District Rule 2201] Federally Enforceable Through Title V Permit

13 The annual VOC emissions from wine storage in this tank, calculated on a twelve month rolling basis, shall not exceed 25 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

14 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] Federally Enforceable Through Title V Permit

15 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

16 The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

18 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

19 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-667-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 324) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

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 quantities of emissions 1st quarter - 6 lb, 2nd quarter - 6 lb, 3rd quarter - 6 lb, and fourth quarter - 7 lb Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director/APCO

DAVID WARNER, Director of Permit Services
N 1237-667-0 Jul 29 2013 11 02AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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 The temperature of the stored wine shall be determined and recorded at least once per week For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved [District Rule 4694] Federally Enforceable Through Title V Permit

10 The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume [District Rule 2201] Federally Enforceable Through Title V Permit

11 The maximum wine storage throughput in this tank shall not exceed 35,000 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 month rolling basis, shall not exceed 175,000 gallons per year [District Rule 2201] Federally Enforceable Through Title V Permit

13 The annual VOC emissions from wine storage in this tank, calculated on a twelve month rolling basis, shall not exceed 25 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

14 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] Federally Enforceable Through Title V Permit

15 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

16 The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

18 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

19 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-668-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 325) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

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 quantities of emissions 1st quarter - 6 lb, 2nd quarter - 6 lb, 3rd quarter - 6 lb, and fourth quarter - 7 lb Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 668 0 Jul 29 2013 11 02AM TOMS Joint Inspection NOT Required

5. The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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 The temperature of the stored wine shall be determined and recorded at least once per week For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved [District Rule 4694] Federally Enforceable Through Title V Permit

10 The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume [District Rule 2201] Federally Enforceable Through Title V Permit

11 The maximum wine storage throughput in this tank shall not exceed 35,000 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 month rolling basis, shall not exceed 175,000 gallons per year [District Rule 2201] Federally Enforceable Through Title V Permit

13 The annual VOC emissions from wine storage in this tank, calculated on a twelve month rolling basis, shall not exceed 25 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

14 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] Federally Enforceable Through Title V Permit

15 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

16 The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

18 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

19 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-669-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
35,000 GALLON INSULATED STAINLESS STEEL WINE STORAGE TANK (TANK 326) WITH PRESSURE/VACUUM VALVE, OR EQUIVALENT

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 quantities of emissions 1st quarter - 6 lb, 2nd quarter - 6 lb, 3rd quarter - 6 lb, and fourth quarter - 7 lb Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237 669-0 Jul 29 2013 11 02AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 19 5 feet in diameter and 16 feet in height with a proposed volume of 35,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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 The temperature of the stored wine shall be determined and recorded at least once per week For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved [District Rule 4694] Federally Enforceable Through Title V Permit

10 The weighted annual average ethanol content of wine stored in this tank, calculated on a twelve month rolling basis, shall not exceed 15 percent by volume [District Rule 2201] Federally Enforceable Through Title V Permit

11 The maximum wine storage throughput in this tank shall not exceed 35,000 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 month rolling basis, shall not exceed 175,000 gallons per year [District Rule 2201] Federally Enforceable Through Title V Permit

13 The annual VOC emissions from wine storage in this tank, calculated on a twelve month rolling basis, shall not exceed 25 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

14 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] Federally Enforceable Through Title V Permit

15 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

16 The operator shall maintain records of the calculated 12 month rolling wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

18 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

19 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-670-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 425), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237-670-0 Jul 29 2013 11 02AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8. The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly). [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-671-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 426), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 671-0 Jul 29 2013 11 03AM - TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records. red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-672-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 427), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237-672-0 Jul 29 2013 11 03AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3.46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S. Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-673-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 428), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 673-0 Jul 29 2013 11 03AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15. Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-674-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 429), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237 674-0 Jul 29 2013 11 03AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-675-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 430), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 675-0 Jul 29 2013 11 03AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

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9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

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11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-676-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 431), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4. ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N-1237-676-0 Jul 29 2013 11 03AM -- TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury; the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-677-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 432), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 677 0 Jul 29 2013 11 03AM - TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-678-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 433), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237 678-0 Jul 29 2013 11 03AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-679-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 434), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director/APCO

DAVID WARNER, Director of Permit Services
N 1237-679-0 Jul 29 2013 11 03AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-680-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 435), OR EQUIVALENT

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

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237 680-0 Jul 29 2013 11 03AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-681-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 436), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5.1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-1237-681-0 Jul 29 2013 11 03AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15. Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-682-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 437), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237-682 0 Jul 29 2013 11 03AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15. Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-683-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 438), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4. ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237-683-0 Jul 29 2013 11 03AM -- TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-684-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 439), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237 684 0 Jul 29 2013 11 03AM -- TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

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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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-685-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 440), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 685-0 Jul 29 2013 11 03AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

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11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-686-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 441), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 686 0 Jul 29 2013 11 03AM – TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury; the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-687-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 442), OR EQUIVALENT

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

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237-687-0 Jul 29 2013 11 03AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9. The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

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11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records. red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-688-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 443), OR EQUIVALENT

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

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237-688 0 Jul 29 2013 11 03AM - TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-689-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 444), OR EQUIVALENT

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

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N-1237-689-0 Jul 29 2013 11 03AM - TOMS Joint Inspection NOT Required

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6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-690-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 445), OR EQUIVALENT

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

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237-690-0 Jul 29 2013 11 03AM – TOMS Joint Inspection NOT Required

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-691-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 446), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

4 ERC Certificate Numbers S-4025-1, S-4050-1, S-3808-1, S-3807-1, S-3805-1, and C-1189-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct [District Rule 2201] Federally Enforceable Through Title V Permit

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

Seyed Sadredin, Executive Director/APCO

DAVID WARNER, Director of Permit Services

N 1237 691-0 Jul 29 2013 11 03AM TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

10 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall be determined by the following formula Annual Fermentation VOC emissions = 2 5 lb-VOC/1,000 gallons x Annual White Wine Production (in gallons) + 6 2 lb-VOC/1,000 gallons x Annual Red Wine Production (in gallons) [District Rule 2201] Federally Enforceable Through Title V Permit

11 The operator shall maintain records of the calculated 12 month rolling wine fermentation throughput rate (gallons per 12 month rolling period, calculated monthly) [District Rule 2201] Federally Enforceable Through Title V Permit

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

13 The permittee shall maintain the following records red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U S Department of the Treasury, the volume of each wine movement, and the calculated 12 month rolling wine throughput rate for fermentation operations (gallons per 12 month rolling period, calculated monthly) [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

14 If the throughput calculated for any rolling 12-month period exceeds the annual throughput 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 limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput is below the annual throughput limitations [District Rule 2201] Federally Enforceable Through Title V Permit

15 Records shall be maintained that demonstrate the date of each year's start of crush season [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-1237-692-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 447), OR EQUIVALENT

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 - 574 lb, 2nd quarter - 574 lb, 3rd quarter - 575 lb, and 4th quarter - 575 lb The quantity of offsets required have been reduced by 35%, as District Rule 4694 Section 5 1 requires this facility to achieve at minimum this level of reduction in their Baseline Fermentation Emissions. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11) [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N 1237 692-0 Jul 29 2013 11 04AM - TOMS Joint Inspection NOT Required

5 The nominal tank dimensions are 22 feet in diameter and 23 feet in height with a proposed volume of 56,000 gallons The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement [District Rule 2201] Federally Enforceable Through Title V Permit

6 {98} No air contaminant shall be released into the atmosphere which causes a public nuisance [District Rule 4102]

7 The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation [District Rule 2201] Federally Enforceable Through Title V Permit

8 The daily VOC emissions for fermentation operations in this tank shall not exceed 3 46 lb per 1000 gallons of tank capacity [District Rule 2201] Federally Enforceable Through Title V Permit

9 The annual VOC emissions from wine fermentation in this tank, calculated on a 12 month rolling basis, shall not exceed 3,536 pounds [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-1237-693-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN EHS MANAGER
18000 W RIVER RD
LIVINGSTON, CA 95334

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:
56,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION TANK (TANK 448), OR EQUIVALENT

CONDITIONS

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N 1237 693-0 Jul 29 2013 11 04AM – TOMS Joint Inspection NOT Required

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