San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

JUN 08 2017

Mr. Joe Porter
The Wine Group
17000 E. Highway 120
Ripon, CA 95366

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-956
Project # N-1170757

Dear Mr. Porter:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The proposed project is to install sixteen 61,000 gallon (each) wine storage tanks.

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

If you have any questions, please contact Mr. Nick Peirce, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Wine Storage Tanks

Facility Name:	The Wine Group, Inc.	Date:	May 30, 2017
Mailing Address:	17000 E. Highway 120 Ripon, CA 95366	Engineer:	Jag Kahlon
		Lead Engineer:	Nick Peirce
Contact Person:	Joe Porter		
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E-Mail:	joe.porter@thewinegroup.com		
Application #(s):	N-956-335-0 through '-350-0		
Project #:	N-1170757		
Deemed Complete:	March 15, 2017		

I. Proposal

The Wine Group is requesting Authority to Construct (ATC) permits for the installation of sixteen 61,000-gallon (each) wine tanks. These tanks are solely dedicated to wine storage operation.

The Wine Group received their Title V Permit for this stationary source on September 9, 2015. This modification can be classified as a Title V significant modification pursuant to Rule 2520, Sections 3.20 and 3.29, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the ATC permits. The Wine Group must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC permits issued with this project.

The draft permits are included in **Appendix A** of this document.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (2/18/16)
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 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4623 Storage of Organic Liquids (5/19/05)
Rule 4694 Wine Fermentation and Storage Tanks (12/15/05)
Rule 4695 Brandy Aging and Wine Aging Operations (9/17/09)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)

California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 17000 E. Highway 120 in Ripon, 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

The Wine group 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.

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

Note that the proposed new tanks in this project are solely dedicated to wine storage operation.

V. Equipment Listing

The Wine Group is proposing to install 16 identical new winery tanks. The facility has also requested that each tank equipment description contain a unique identifier number.

N-956-335-0 through -350-0:	61,000 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK I.D X) EQUIPPED WITH PRESSURE/VACUUM VALVE AND INSULATION

Upon completion of construction, the wine group will perform an actual tank capacity measurement for each tank to establish the as built gauge capacity of each tank. The equipment description of the Permit to Operate will then be administratively updated by including gauge capacity of each tank. The following condition will be included in each permit:

- The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201]

VI. Emission Control Technology Evaluation

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

VII. General Calculations

A. Assumptions

- The proposed tanks will only be used for red and/or white wine storage.
- Maximum ethanol content of stored wine is 23.9% (proposed by the applicant)
- The maximum daily wine storage throughput will not exceed twice the nominal tank capacity of each tank.
- The maximum throughput for each tank would be 6,400,000 gallons/year.

B. Emission Factors

Operation	EF (lb-VOC/1,000 gal of wine)		Source
	Daily	Annual	
Wine storage (Red/White)	0.366	0.213	District FYI -114 (6/13/12) – See **Appendix E**

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since each tank is a new emissions unit, PE1 =0 for VOC emissions.

2. Post Project Potential to Emit (PE2)

PE2 = (0.366 lb-VOC/1,000 gal)(61,000 gal)(2 turnovers/day)
= 44.7 lb-VOC/day/tank

PE2 = (0.213 lb-VOC/1,000 gal)(6,400,000 gal)
= 1,363 lb-VOC/yr/tank

For 16 storage tanks,

PE2 = (1,363 lb-VOC/yr/tank)(16 tanks)
= 21,808 lb-VOC/yr

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) 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. The potential emissions for each permit unit are taken from previous permitting actions.

SSPE1 (lb/year)					
Permit #	**NO_x**	**SO_x**	**PM_{10}**	**CO**	**VOC**
N-956-6-6	2,418	527	1,451	16,264	879
N-956-8-2	219	240	194	12	4
N-956-9-2	190	56	24	8	5
N-956-235-1	0	0	0	0	318,833
N-956 (Wine storage and/or fermentation tanks)	0	0	0	0	581,212
ERC	0	0	0	0	0
SSPE1	2,827	823	1,669	16,284	900,933

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) 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.

The proposed new wine storage tanks will be a part of the existing facility-wide total wine fermentation and wine storage limit of 581,212 lb-VOC/yr.

SSPE2 (lb/year)					
Permit #	**NO_x**	**SO_x**	**PM_{10}**	**CO**	**VOC**
N-956-6-6	2,418	527	1,451	16,264	879
N-956-8-2	219	240	194	12	4
N-956-9-2	190	56	24	8	5
N-956-235-1	0	0	0	0	318,833
N-956 (Wine storage and/or fermentation tanks)	0	0	0	0	581,212
ERC	0	0	0	0	0
SSPE2	2,827	823	1,669	16,284	900,933

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

Rule 2201 Major Source Determination (lb/year)						
Category	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**
SSPE1	2,827	823	1,669	1,669	16,284	900,933
SSPE2	2,827	823	1,669	1,669	16,284	900,933
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	Yes

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
Category	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	1.4	450.5	0.4	8.1	0.8	0.8
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	Yes	No	No	No	No

As shown above, the facility is an existing PSD major source for at least one pollutant.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

Since the proposed tanks are new emissions 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			
Pollutant	**Project PE2 (lb/year)**	**Threshold (lb/year)**	**SB 288 Major Modification Calculation Required?**
VOC	21,808	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

Step 1
For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	**Total Emissions Increases (lb/yr)**	**Thresholds (lb/yr)**	**Federal Major Modification?**
VOC	21,808	0	Yes

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

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit times the applicable federal offset ratio. As shown above, this project triggers a Federal Major Modification for VOC emissions. Therefore, the federal offsets required for VOC emissions for this project are as follows:

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

Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
N-956-335-0 thru -350-0 (Total all tanks)	0	21,808	21,808
		Net Emission Change (lb/yr):	21,808
		Federal Offset Quantity for all tanks: (NEC * 1.5)	32,712

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

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

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

I. Project Location Relative to Class 1 Area

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

II. Project Emission Increase – Significance Determination

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

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

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

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

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. No changes to the SLC of VOC emissions for wine storage and fermentation operations at the facility are proposed. Therefore, QNEC is equal to zero for each quarter for each permit unit.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install ten new wine storage tanks with each having a PE greater than 2 lb/day for VOC. Therefore, BACT is triggered for each storage tank.

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

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

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

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

d. SB 288/Federal Major Modification

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

2. BACT Guideline

BACT Guideline 5.4.13, applies to wine storage tanks. This guideline is included in **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 Analysis (see **Appendix C**), BACT is satisfied with the following:

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

Each of the proposed wine storage tanks will be equipped with a pressure/vacuum (PV) relief valve and will have insulation to minimize temperature fluctuations. PV relief valve is required to be set within 10% of the maximum allowable working pressure of the tank. Further, the tank is required to be operated in a gas-tight condition. The wine

temperature is required to be maintained at or below 75°F within 60 days of the completion of the fermentation cycle. Therefore, the wine storage tanks meet the BACT requirements for this class and category of operation and no further discussion is required.

The following condition will be included in each permit to ensure compliance with the BACT requirements:

- This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694]

- The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694]

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

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, 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.

Offset Determination (lb/year)					
Category	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE2	2,827	823	1,669	16,284	900,933
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

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)

Pursuant to District Policy APR 1420, *NSR Calculations for Units with Specific Limiting Conditions (3/12/07)*, the quantity of ERCs for a project will be determined by comparing the post project PE, which is the SLC, to the pre project BE for the SLC.

Additionally, the policy states that if the SLC is for a pollutant exceeding the Major Source threshold and any single unit under the SLC is not a Highly-Utilized, Fully-Offset, or Clean Emissions Units, then the sum of the actual emissions from all units in SLC will be used to determine the pre project BE.

All tanks at this facility meet the District's determination of achieved-in-practice BACT (and are thus Clean Emission Units), therefore the pre project BE emissions are equal to the pre project PE emissions ($BE_{SLC} = PE1_{SLC}$).

Based on the information above, the emissions increase to be offset for this project should be calculated as follows:

Emissions Increase (lb/year) = $PE2_{SLC} - BE_{SLC}$

Where: $PE2_{SLC}$ = Post project SLC selected by the facility. For this project, $PE2_{SLC} = PE1_{SLC}$.

BE_{SLC} = 581,212 lb-VOC/year
Emissions Increase (lb/year) = $PE2_{SLC} - BE_{SLC}$
= 581,212 lb-VOC/year – 581,212 lb-VOC/year
= 0 lb-VOC/year

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project triggers Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

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

c.Offset Threshold

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

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	2,827	2,827	20,000 lb/year	No
SO_X	823	823	54,750 lb/year	No
PM_{10}	1,669	1,669	29,200 lb/year	No
CO	16,284	16,284	200,000 lb/year	No
VOC	900,933	900,933	20,000 lb/year	No

As detailed above, the facility is not going from below offset threshold level to above threshold level with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	**SSPE2 (lb/year)**	**SSPE1 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
NO_x	2,827	2,827	0	20,000 lb/year	No
SO_x	823	823	0	20,000 lb/year	No
PM_{10}	1,669	1,669	0	20,000 lb/year	No
CO	16,284	16,284	0	20,000 lb/year	No
VOC	900,933	900,933	0	20,000 lb/year	No

e. Title V Significant Permit Modification

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

2. Public Notice Action

As discussed above, public noticing is required for this project for triggering a federal Major Modification for VOC emissions and due to Title V Significant Permit Modification. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in the local newspaper of general circulation prior to the issuance of the ATC permits under this project.

D. Daily Emission Limits (DELs)

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

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

Proposed Rule 2201 (DEL) Conditions:

- The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]

- The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

- 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 2201 and 4694]

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

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Per Section 4.14 of Rule 2201, ambient air quality analysis (AAQA) shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse the violation of an Ambient Air Quality Standard (AAQS).

This project involves only VOCs (ethanol) for which AAQS does not exist; therefore, AAQA is not performed for this project.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in

compliance or are on a schedule for compliance with all applicable emission limitations and standards.

As discussed in Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. The compliance certification from the facility is included in **Appendix D** of this document.

H. Alternate Siting Analysis

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

Since the current project involves the installation of 16 new wine storage tanks, which represents only a minimal increase (1.3% increase) in the winery's total tank volume and no change to any other facets of the operation. 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. Therefore, 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.

Compliance is expected with this rule.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment." The proposed project is a Significant Modification to the Title V permit since this project triggers a Federal Major Modification under Rule 2201.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Therefore, compliance is expected with this rule. The following permit conditions will be included in each permit to ensure compliance with this rule:

- This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201]

- Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Rule 4001 New Source Performance Standards (NSPS)

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

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Visible emissions are not expected as a result of these wine storage operations. Therefore, compliance with this rule is expected. Compliance with the requirements of this rule is assured by the following condition in the facility-wide permit N-956-0-2.

- No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (02/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101, and County Rules 401 (in all eight counties in the San Joaquin Valley)]

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected. Compliance with the requirements of this rule is ensured by the following condition, in facility's facility-wide permit N-956-0-2:

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

VOC, as ethanol, is the only pollutant generated by wine storage tanks. Ethanol is not a HAP as defined by Section 44321 of the California Health and Safety Code. Therefore, there are no increases in HAP emissions associated with any emission units in this project and a health risk assessment is not necessary. No further risk analysis is required.

Rule 4623 Storage of Organic Liquids

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

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

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

Rule 4694 Wine Fermentation and Storage Tanks

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

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

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

- The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank,
- The pressure-vacuum relief valve shall operate in accordance with the manufacturer's instructions,

- The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings, and
- The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21.

The following requirement(s) will be included in each permit to ensure compliance with the above section(s):

- 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 requirement(s) will be included in each permit to ensure compliance with the above section(s):

- 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. [District Rule 2201 and 4694]

Every three years, Section 6.1 and 6.2 require facilities with fermentation operations to submit a Three-Year Compliance Plan and a Three-Year Compliance Plan Verification respectively. The proposed tanks in this project are for wine storage only, and since these sections are not applicable to wine storage operations, no further discussion is required.

Section 6.4 requires that records required by this rule be maintained, retained on-site for a minimum of five years, and made available to the APCO upon request.

Section 6.4.1 requires that records be kept for each fermentation batch. These tanks are not fermenters; therefore this section does not apply.

Section 6.4.2 requires that weekly records be kept of wine volume and temperature in each storage tank.

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

The following requirement(s) will be included in each permit to ensure compliance with the above section(s):

- 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 2201 and 4694]

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

Section 6.4.3 requires that all monitoring be performed for any CERs as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained. The requirement is for operators mitigating fermentation emissions. The proposed tanks will be used for wine storage operations. Therefore, this section is not applicable to these tanks.

Compliance is expected with this rule.

Rule 4695 Brandy Aging and Wine Aging Operations

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) and apply to brandy aging and wine aging operations.

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

As stated above the proposed tanks are subject to Rule 4694, Section 5.2., therefore these tanks are exempt from the requirements of this rule.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and

- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

District CEQA Findings

The County of San Joaquin (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 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 and finds that it adequately characterizes the project's potential impact on air quality. In addition, all feasible and cost-effective control measures to reduce potential impacts on air quality resulting from project related stationary source emissions have been applied to the project as part of BACT. Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be reduced. 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 would be reduced to lessen the impacts 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)).

Indemnification Agreement/Letter of Credit Determination

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

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

a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs subject to the permit conditions on the attached draft ATCs in **Appendix A.**

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
N-956-335-0 through '-350 (each)	3020-05-D	61,000 gallons	$203.00

Appendixes

A: Draft ATC
B: BACT Guideline
C: BACT Analysis
D: Compliance Certification
E: Emission Factor

Appendix A
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-956-335-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-1 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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

Arnaud Marjollet, Director of Permit Services
N-956-335-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-336-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-2 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-956-336-0 May 30 2017 11:24AM -- KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-337-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-3 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

N-956-337-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-338-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-4 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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

Arnaud Marjollet, Director of Permit Services
N-956-338-0 May 30 2017 11:24AM – KAHLONJ : Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-339-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-5 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-956-339-0 May 30 2017 11:34AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-340-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-6 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-956-340-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-341-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-7 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

N-956-341-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-342-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-8 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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

Arnaud Marjollet, Director of Permit Services

N-956-342-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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

7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit

15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

16. 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 2201 and 4694] Federally Enforceable Through Title V Permit

17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit

18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. 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-956-343-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-9 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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

Arnaud Marjollet, Director of Permit Services
N-956-343-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-344-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-10 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

N-956-344-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-345-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-11 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-956-345-0 May 30 2017 11:24AM – KAHLONJ . Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-346-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-12 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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

Arnaud Marjollet, Director of Permit Services
N-956-346-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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

7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit

11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit

12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit

15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

16. 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 2201 and 4694] Federally Enforceable Through Title V Permit

17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit

18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. 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-956-347-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-13 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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

Arnaud Marjollet, Director of Permit Services
N-956-347-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-348-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-14 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-956-348-0 May 30 2017 11:24AM – KAHLONJ Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-349-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-15 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-956-349-0 May 30 2017 11:24AM – KAHLONJ : Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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-956-350-0

ISSUANCE DATE: DRAFT

DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
61,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2017-16 WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The nominal tank dimensions are 15.6 feet in diameter and 42 feet in height with a proposed volume of 61,000 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
4. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-956-350-0 May 30 2017 11:24AM -- KAHLONJ : Joint Inspection NOT Required

6. 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
7. 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. [District Rule 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The maximum daily wine storage throughput in this tank shall not exceed twice the nominal capacity of this tank stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total annual VOC emissions from the storage tanks listed under permits N-956-335 through N-956-350, calculated on a rolling 12-month total basis, shall not exceed 21,808 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month total basis, shall not exceed 581,212 pounds. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), a = -0.38194, b = 0.97917 and c = 0. [District Rule 1070] Federally Enforceable Through Title V Permit
15. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
16. 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 2201 and 4694] Federally Enforceable Through Title V Permit
17. On a monthly basis, the permittee shall calculate and record the VOC emissions from the wine storage operation in pounds from the tanks under permits N-956-335 through N-956-350 for the rolling 12-month period including calculation methods and parameters used. The VOC emissions shall be calculated by summing the VOC emissions from the previous 12 months from each tank. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of the 12-month rolling total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. 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

Appendix B
BACT Guideline

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.13*

Last Update: 09/26/2011

Wine Storage Tank - Non-Wood Material**

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)	

**This guideline is applicable to a wine storage tank that is not constructed out of wooden materials.
***Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure ot diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete (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**

Appendix C
BACT Analysis

Top Down BACT Analysis for VOCs from Wine Storage Operations

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.13 identifies 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.

The SJVUAPCD BACT Clearinghouse guideline 5.4.13 identifies technologically feasible BACT for wine storage tanks as follows:

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

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

SJVUAPCD BACT Clearinghouse guideline 5.4.13 does not identify any alternate basic equipment control alternatives.

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

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

Step 4 - Cost Effectiveness Analysis

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

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

Uncontrolled Storage Emissions

The winery is proposing to install 16 new wine storage tanks within this project. Therefore, for the purposes of this cost effectiveness analysis, uncontrolled storage VOC emissions will be set equal to the total VOC emissions allowed from all of the 10 new tanks.

Uncontrolled Storage PE= 21,808 lb-VOC/year

Total Annual Cost

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

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

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

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

Basis of Cost Information:

- The costs for the ductwork and the required clean-in-place (CIP) system are based on information from the 2005 Eichleay Study. The 2005 Eichleay study was used in development of District Rule 4694 Wine Fermentation and Storage Tanks and includes substantial information on the costs and details of the potential application of VOC controls to wineries and addresses many of the technical issues of the general site specific factors for wineries.

- The District performed a cost survey of stainless steel ducting/piping and found that the values stated in the Eichleay report including the cost of inflation (applied as stated below) were less expensive; therefore, as a conservative estimate, the District will use the cost of ducting/piping from the Eichleay report which will include ducting, fittings, bolt up, handle, and install. A summary of the ducting/piping cost survey is included in Attachment C2.

- Eichleay's cost estimate for ducting included the duct, fittings, bolt up, handle and install; therefore, the District did not allow the additional costs for foundations & supports, handling & erection, electrical, piping or painting, as allowed by the EPA Cost Manual.

- The collection system consists of stainless steel place ductwork (stainless steel is required due to food grade product status) with isolation valving, connecting the tanks to a common manifold system which ducts the combined vent to the common control device. The cost of dampers and isolation valving, installed in the ductwork, will be included in the cost estimate.

- A minimum duct size is established at six inches diameter at each tank to provide adequate strength for spanning between supports.

- One of the major concerns of a manifold duct system is microorganisms spoiling the product, and transferring from one tank to another. It is necessary to design into the system a positive disconnect of the ducting system when the tanks are not being filled. There are a number of ways this can be done. In this case, an automatic butterfly valve with a physical spool to disconnect the tank from the duct will be utilized.

- The ducting/piping costs quoted in the Eichleay study are from 2005 and must be adjusted to reflect 2017 prices. An overall inflation amount of 22.89% which was taken from the United States Department of Labor, Bureau of Labor Statistics, Consumer Price Index (CPI) Inflation Calculator and applied to the ducting/piping costs to determine the current 2016 prices: http://www.bls.gov/data/inflation_calculator.htm.

- Main duct is presumed to run 10 feet above the ground floor.

- See Attachment C1 for ducting layout diagrams.

Capital Cost of Ductwork

Based on the tank layout sketches in Attachment C1, the cost for the tank group(s) proposed in this project is summarized below:

Group 1 (North side):
Connection length from 8 tanks to main duct = 8 tanks x ((42-10) feet + (15.6/2+4/2)) feet x $31.09/foot = $10,397
Piping length from node 1 to 2 = 75.7 feet x $31.09/foot = $2,354
Piping length from node 2 to emissions control = 25 feet x $31.09 = $777
6 inch butterfly valves = $2,125/tank x 8 tanks = $17,000
Removable spool = $500/tank x 8 tanks = $4,000
1 Knockout drum = $23,000 (info from project N-1162270)
Structural support allowance = $23,000 (info from project N-1162270)

Total cost for group 1 of 8 tanks = $80,528

Group 2 (West side):
Connection length from 8 tanks to main duct = 8 tanks x ((42-10) feet + (15.6/2))feet x $31.09/foot = $9,899
Piping length from node 1 to 2 = 150.7 feet x $31.09/foot = $4,685
Piping length from node 2 to emissions control = 200 feet x $31.09 = $6218
6 inch butterfly valves = $2,125/tank x 8 tanks = $17,000

Removable spool = $500/tank x 8 tanks = $4,000
1 Knockout drum = $23,000 (info from project N-1162270)
Structural support allowance = $23,000 (info from project N-1162270)

Total for group 2 of 8 tanks = $87,802

Total Capital Cost for All Tank Groups:

The total capital cost of the ductwork for all tank groups is summarized in the table below:

Tank Groups	Total Ducting Cost Including Support Allowance
Group 1 and 2	$168,330 ($80,528 + $87,802)

Capital Cost of Ductwork for Wine Storage Tanks	
Cost Description	Cost ($)
Combined Duct Estimate for all Tank Groups	$168,330
Adjusting factor for inflation from 2005 dollars to 2016 dollars (22.89% total increase)	1.2289
Inflation adjusted duct cost	$206,861
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (Ductwork) See Above	$206,861
Instrumentation (not required)	-
Sales Tax - 3.31% of base equipment	$6,847
Freight - 5% of base equipment	$10,343
Purchased equipment cost (PEC)	**$224,051**
Foundations & supports 8% (allowance already included in cost estimate)	-
Handling & erection 14% (already included in Eichleay cost estimate)	-
Electrical 4% (not required)	-
Piping 2% (not required)	-
Painting 1% (not required)	-
Insulation 1% of PEC	$2,241
Direct Installation Costs (DIC)	**$2,241**
Total Direct Costs (DC) (PEC + DIC)	**$226,292**
Indirect Costs	
Engineering - 10% of PEC	$22,405
Construction and field expenses - 5% of PEC	$11,203
Contractor Fees - 10% of PEC	$22,405
Start-up - 2% of PEC	$4,481
Performance Test - 1% of PEC	$2,241
Total Indirect Costs (IC)	**$62,735**
Subtotal Capital Investment (SCI) (DC + IC)	**$289,027**
Contingencies – 15% of SCI	$43,354
Total Capital Investment (TCI) (SCI + Contingency)	**$332,381**

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.

CIP system cost is presumed to directly proportional to the length of the ducting system needed for a tank battery. The total duct length for Group 1 tank farm is 435 feet whereas for Group 2 is 494 feet. CIP system cost for a 509 feet ducting system was $75,000 for a tank battery under N-1162270. From this information the CIP system cost for Group 1 and Group 2 are estimated to be $64,096 and $72,790 respectively.

Capital Cost of Clean-In-Place (CIP) System of Ductwork for Wine Storage Tanks	
Cost Description	Cost ($)
Current cost of CIP system (Group 1 and Group 2 tank farm)	$136,886 ($64,096 + $72,790)
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (CIP System) See Above	$136,886
Instrumentation - 10% of base equipment	$13,689
Sales Tax - 3.31% of base equipment	$4,531
Freight - 5% of base equipment	$6,844
Purchased equipment cost (PEC)	**$161,950**
Foundations & supports - 8% of PEC	$12,956
Handling & erection - 14% of PEC	$22,673
Electrical - 4% of PEC	$6,478
Piping – accounted for in ductwork cost	-
Painting - 1% of PEC	$1,620
Insulation - 1% of PEC	$1,620
Direct Installation Costs (DIC)	**$45,347**
Total Direct Costs (DC) (PEC + DIC)	**$207,297**
Indirect Costs	
Engineering - 10% of PEC	$16,195
Construction and field expenses - 5% of PEC	$8,098
Contractor fees - 10% of PEC	$16,195
Start-up - 2% of PEC	$3,239
Performance test - 1% of PEC	$1,620
Total Indirect Costs (IC)	**$45,347**
Subtotal Capital Investment (SCI) (DC + IC)	**$252,644**
Contingencies - 15% of SCI	$37,897
Total Capital Investment (TCI) (SCI + Contingency)	**$290,541**

Annualized Capital Cost

Total capital costs = Ductwork + CIP System
= $332,381 + $290,541
= $622,922

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,

Total Collection System Annualized Capital Investment = $622,922 x 0.163

Total Collection System Annualized Capital Investment = $101,536

Option 1 – Collection of VOCs and control by thermal or catalytic oxidation (88% collection & control)

Thermal or Catalytic Oxidizer Capital Cost

Thermal or Catalytic Oxidation Capital Cost	
Cost Description	Cost ($)
Regenerative Thermal Oxidizer cost (1000 scfm) – 2014 dollar value	$150,000
Installation cost (not included)	-
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (Regenerative Thermal Oxidizer System) See Above	$150,000
Instrumentation - 10% of base equipment	$15,000
Sales Tax - 4.3125% of base equipment	$6,469
Freight - 5% of base equipment	$7,500
Purchased equipment cost (PEC)	**$178,969**
Foundations & supports - 8% of PEC	$14,318
Handling & erection - 14% of PEC	$25,056
Electrical - 4% of PEC	$7,159
Piping - accounted for in ductwork cost	-
Painting - 1% of PEC	$1,790
Insulation - 1% of PEC	$1,790
PCL/Programming – Number of units x $10,000	--
Direct Installation Costs (DIC)	**$50,113**
Total Direct Costs (DC) (PEC + DIC)	**$229,082**
Indirect Costs	
Engineering - 10% of PEC	$17,897
Construction and field expenses - 5% of PEC	$8,948
Contractor fees - 10% of PEC	$17,897
Start-up - 2% of PEC	$3,579
Initial Source Testing – Number of units x $15,000/unit	-
Owner's Cost (No cost data provided)	-
Total Indirect Costs (IC)	**$48,321**
Subtotal Capital Investment (SCI) (DC + IC)	**$277,403**
Contingencies - 15% of SCI	$41,610
Total Capital Investment (TCI) (SCI + Contingency)	**$319,013**

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, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $319,013 x 0.163 = $51,999

Operation and Maintenance Costs

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

The cost analysis is based on EPA Air Pollution Control Cost Manual, Sixth Edition (January 2002), Section 3.2: VOC Destruction Controls, Chapter 2: Incinerators (September 2000), Table 2.10 - Annual Costs for Thermal and Catalytic Incinerators Example Problem. United States Environmental Protection Agency Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina 27711. EPA/452/B-02-001[1].

Thermal Oxidizer Annual Costs			
Direct Annual Cost (DAC)			
Operating Labor			
Operator	0.5 hr/shift	$18.50/hr x 0.5 hr/shift x 2 shift/day x 365 days/year	$6,753
Supervisor	15% of operator		$1,013
Maintenance			
Labor	0.5 h/shift	$18.50/hr x 0.5 hr/shift x 2 shift/day x 365 days/year	$6,753
Materials	100% of labor		$6,753
Utility			
Natural Gas	Not calculated		--
Electricity	Not calculated		--
Total DAC			**$21,270**
Indirect Annual Cost (IAC)			
Overhead	60% of sum of operating, supervisor, maintenance labor & maintenance materials	0.6 x ($2,498 + $375 + $2,498 + $2,498)	$12,762
Administrative	2% TCI		$6,380
Property Taxes	1% TCI		$3,190
Insurance	1% TCI		$3,190
Annual Source	One representative test/year @ $15,000		$15,000
Total IAC			**$40,523**
Annual Cost (DAC + IAC)			**$61,793**

[1] http://epa.gov/ttn/catc/dir1/cs3-2ch2.pdf

Total Annual Cost = Regenerative Thermal Oxidizer System + (Ductwork + CIP System) + Annual Cost
= $51,999 + $101,536 + $61,793
= $215,328

Emission Reductions
Annual Emission Reduction = Uncontrolled Emissions x 0.88
= 21,808 lb-VOC/year x 0.88 x ton/2,000 lb
= 9.6 tons-VOC/year

Cost Effectiveness
Cost Effectiveness = $215,328/year ÷ 9.6 tons-VOC/year
= $22,430/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 (not including electricity and natural gas 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.

Option 2 - Collection of VOCs and control by carbon adsorption (86% collection and control):

Capital Cost for Carbon Adsorption Equipment
Per project N-1152244, budgetary estimate for a 1,000 cfm carbon adsorption system is estimated to be $80,000.

Capital Cost for Carbon for System
Annual Emission Reduction = 21,808 lb-VOC/year x 0.86
= 18,755 lb-VOC/year

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

Carbon required = 18,755 lb-VOC/year x 1/0.20
= 193,775 lb carbon

Per project N-1152244, carbon cost is $1.25/lb of carbon which does not include any delivery or servicing fees.

Annual carbon cost = $1.25/lb x 193,775 lb carbon = $242,219

Carbon Adsorption Capital Cost		
Cost Description	Equipment Cost ($)	Carbon Cost ($)
Carbon Adsorption System Cost	$80,000	-
Water alcohol tank cost (not included)	-	-
Carbon Capital Cost (see above)	-	$242,219
The following cost data is based on the EPA Air Pollution Control Cost Manual, Sixth Edition (January 2002) (EPA/452/B-02-001).		
Direct Costs		
Base Equipment Costs - See Above	$80,000	$242,219
Instrumentation - 10% of base equipment	$8,000	-
Sales Tax - 4.3125% of base equipment	$3,450	$10,446
Freight - 5% of base equipment	$4,000	$12,111
Purchased Equipment Cost (PEC)	**$95,450**	**$264,776**
Foundations & supports - 8% of PEC	$7,636	-
Handling & erection - 14% of PEC	$13,363	-
Electrical - 4% of PEC	$3,818	-
Piping - accounted for in ductwork cost	-	-
Painting - 1% of PEC	$955	-
Insulation - 1% of PEC	$955	-
PCL/Programming – Number of units x $10,000	---	-
Direct installation costs (DIC)	**$26,727**	**$0**
Total Direct Costs (DC) (PEC + DIC)	**$122,177**	**$264,776**
Indirect Costs		
Engineering - 10% of PEC	$9,545	-
Construction and field expenses - 5% of PEC	$4,773	-
Contractor fees - 10% of PEC	$9,545	-
Start-up - 2% of PEC	$1,909	-
Initial Source Testing - $15,000/unit	-	-
Owner's Cost (No cost data provided)	-	-
Total Indirect Costs (IC)	**$25,772**	**$0**
Total Capital Investment (TCI) (DC + IC)	**$147,949**	**$264,776**
Contingencies - 15% of TCI of Equipment Cost	$22,192	-
TCI including Contingencies	**$170,141**	**$264,776**

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, amortizing over 10 years at 10%

Annualized Capital Investment = $170,141 x 0.163 = $27,733

Annualized Cost for Carbon for System

The EPA Air Pollution Control Cost Manual, Sixth Edition (January 2002), Section 3.1: VOC Recapture Controls, Chapter 1: Carbon Adsorbers (September 1999)[2] states, "*A typical life for the carbon is five years. However, if the inlet contains VOCs that are very difficult to desorb, tend to polymerize, or react with other constituents, a shorter carbon lifetime— perhaps as low as two years—would be likely.*"

Assuming the maximum carbon life of five years and a 10% interest rate the capitol recovery cost for the carbon would be:

$$\left[\frac{0.1(1.1)^5}{(1.1)^5-1}\right] = 0.264 \text{ over 5 years at 10\% interest}$$

Annualized Capital Investment for Carbon for System = $264,776 x 0.264 = $69,901

Total Operation and Maintenance Costs

The annual operation and maintenance costs for the carbon adsorption system are based on the information given in the EPA Air Pollution Control Cost Manual, Sixth Edition (January 2002), Section 3.1: VOC Recapture Controls, Chapter 1: Carbon Adsorbers (September 1999)[7]. No value will be given for the ethanol that may be potentially recovered since this ethanol could actually result in additional disposal costs, which will also not be quantified in this analysis.

Carbon Adsorption Annual Costs			
Direct Annual Cost (DAC)			
Operating Labor			
Operator	0.5 hr/shift	$18.50/hr x 0.5 hr/shift x 2 shifts/day x 365 days/year	$6,753
Supervisor	15% of		$1,013
Maintenance			
Labor	0.5 h/shift	$18.50/hr x 0.5 hr/shift x 2 shifts/day x 365 days/year	$6,753
Materials	100% of labor		$6,753
Utility			
Steam	Not included at this time		$0
Cooling Water	Not included at this time		$0
Electricity	Not included at this time		$0
Total DC			**$21,270**
Indirect Annual Cost (IAC)			
Overhead	60% of sum of operating, supervisor, maintenance labor & maintenance materials	0.6 x ($6753 + $1013 + $6,753 + $6,753)	$12,762
Administrative	2% TCI (equipment cost + carbon cost)		$8,698
Property Taxes	1% TCI (equipment cost + carbon cost)		$4,349
Insurance	1% TCI (equipment cost + carbon cost)		$4,349
Annual Source	One representative test/year @ $15,000		$15,000
Total IC			**$45,158**
Annual Cost (DAC + IAC)			**$66,428**

[2] EPA Air Pollution Control Cost Manual, Sixth Edition (January 2002), Section 3.1: VOC Recapture Controls, Chapter 1: Carbon Adsorbers (September 1999). United States Environmental Protection Agency Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina 27711. EPA/452/B-02-001. http://epa.gov/ttn/catc/dir1/cs3-1ch1.pdf.

Total Annual Cost = Carbon Adsorption Capital Cost + (Ductwork + CIP System) + Annual Cost
= ($27,733+$69,901)+ $101,536 + $66,428
= $265,598

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.86
= 21,808 lb-VOC/year x 0.86 x ton/2,000 lb
= 9.4 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions
= $265,598/year ÷ 9.4 tons-VOC/year
= $28,255/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.

Option 3 - Collection of VOCs and Control by Absorption/Scrubber (81% collection & control):

Design Basis

- Recovered ethanol storage tank = $40,000 for group 1 and group 2 tank (Cost taken from project N-1152244)
- Connected electrical load is 2.5 horsepower which is assumed to operate continuously for 365 days (Cost taken from project N-1152244, storage operation is presumed to be a year-round operation).
- Electric power cost = $0.1579/kWh (Cost taken from project N-1152244)
- Since the EPA Control Cost Manual does not contain a section for wet scrubbers controlling VOCs, conservatively, the costs in addition to the base equipment costs, will be estimated from the Wet Scrubbers for Particulate Matter control from the EPA Control Cost Manual.

Equipment Cost Scrubber

The cost of scrubber is estimated to be $230,000 per information in project N-1152244.

Scrubber Capital Cost	
Cost Description	Cost ($)
Scrubber System	$230,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (Scrubber Systems) See Above	$230,000
Instrumentation - 10% of base equipment	$23,000
Sales Tax - 4.3125% of base equipment	$9,919
Freight - 5% of base equipment	$11,500
Purchased equipment cost (PEC)	**$274,419**
Foundations & supports – 6% of PEC	$16,465
Handling & erection - 40% of PEC	$109,768
Electrical - 1% of PEC	$2,744
Piping - accounted for in ductwork cost	-
Painting - 1% of PEC	$2,744
Insulation - 3% of PEC	$8,233
PCL/Programming – Number of units x $10,000	-
Recovered Ethanol Storage Tank (installed) ($40,000)	$40,000
Direct Installation Costs (DIC)	**$179,954**
Total Direct Costs (DC) (PEC + DIC)	**$454,373**
Indirect Costs	
Engineering - 10% of PEC	$27,442
Construction and field expenses - 10% of PEC	$27,442
Contractor fees - 10% of PEC	$27,442
Start-up - 1% of PEC	$2,744
Initial Source Testing - $15,000/unit	$15,000
Owner's Cost (No cost data provided)	-
Total Indirect Costs (IC)	**$100,070**
Subtotal Capital Investment (SCI) (DC + IC)	**$554,443**
Contingencies - 15% of SCI	$83,166
Total Capital Investment (TCI) (SCI + Contingency)	**$637,609**

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 = $637,609 x 0.163 = $103,930

Wastewater Disposal Costs

Additionally, the water scrubber will generate ethanol-laden wastewater containing 8.8 tons-ethanol annually (21,808 lb/year (uncontrolled fermentation emissions) x 0.81 ÷ 2000). Assuming a 10% solution, approximately 26,586 gallons of waste water (8.8 ton-ethanol x 2000 lb/ton x gal/6.62 lb ÷ 0.10) will be generated annually. Per Project C-1133347, an allowance of $0.08 per gallon (not including inflation) is applied for disposal costs.

Annual disposal costs = 26,586 gallons x $0.08/gallon = $2,149.

Total Operation and Maintenance Costs

Scrubber Annual Costs			
Direct Annual Cost (DAC)			
Operating Labor			
Operator	0.5 hr/shift	$18.50/hr x 0.5 hr/shift x 2 shift/day x 365 days/year	$6,753
Supervisor	15% of operator		$1,013
Maintenance			
Labor	0.5 h/shift	$18.50/hr x 0.5 hr/shift x 2 shift/day x 365 days/year	$6,753
Materials	100% of labor		$6,753
Utility			
Natural Gas			$0
Electricity	2.5 hp x 0.746 kW/hp x 365 days/year x 24 hr/day = 16,337 kWh/yr	$0.1579/kWh	$2,580
Waste water	Calculated above		$2,149
Total DAC			**$26,001**
Indirect Annual Cost (IAC)			
Overhead	60% of sum of operating, supervisor, maintenance labor & maintenance materials	0.6 x ($6753 + $1013 + $6,753 + $6,753)	$12,762
Administrative	2% TCI		$12,752
Property Taxes	1% TCI		$6,376
Insurance	1% TCI		$6,376
Annual Source Test	One representative test/year @ $15,000		$15,000
Total IAC			**$53,266**
Annual Cost (DAC + IAC)			**$79,267**

Total Annual Cost = Scrubber System + (Ductwork + CIP System) + Annual Cost
= $103,930 + $101,536 + $79,267
= $284,733

Emission Reductions

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

Annual Emission Reduction = Uncontrolled Emissions x 0.81
= 21,808 lb-VOC/year x 0.81/2,000 lb
= 8.8 lb-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $284,733/year ÷ 8.8 tons-VOC/year
= $32,356/ton-VOC

The analysis demonstrates that the annualized purchase cost of the water scrubber, 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.

Option 4 - Capture of VOCs and Condensation (81% collection & control):

Based on the information available in EcoPAS's March 28, 2016 under project N-1152244, fifty 60,000 gallon (each) requires 12 PAS-100 units for a total condenser expenditure of $2,340,000. Presuming that EcoPAS can be installed on storage tanks, the condenser cost for 4 PAS-100 units needed for sixteen 60,000 gallon (each) would be around $780,000 (12 x 16/50 = 4 PAS-100 units, $2,340,000x4/12 = $780,000). The other direct and indirect costs will be taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).

Condensation	
Cost Description	Cost ($)
Cost of Refrigerated Condenser system	$780,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (Condenser) See Above	$780,000
Instrumentation - 10% of base equipment	$78,000
Sales Tax - 4.3125% of base equipment	$33,638
Freight - 5% of base equipment	$39,000
Purchased equipment cost (PEC)	**$930,638**
Foundations & supports - 14% of PEC	$130,289
Handling & erection - 8% of PEC	$74,451
Electrical - 8% of PEC	$74,451
Piping - accounted for in ductwork cost	-
Painting - 1% of PEC	$9,306
Insulation - 10% of PEC	$93,064
PCL/Programming – Number of units x $10,000	-
Direct installation costs (DIC)	**$381,561**
Total Direct Costs (DC) (PEC + DIC)	**$1,312,199**
Indirect Costs	
Engineering - 10% of PEC	$93,064
Construction and field expenses - 5% of PEC	$46,532
Contractor fees - 10% of PEC	$93,064
Start-up - 2% of PEC	$18,613
Source Testing - 4 units x $15,000/unit	$60,000
Total Indirect Costs (IC)	**$311,273**
Subtotal Capital Investment (SCI) (DC + IC)	**$1,623,472**
Contingencies - 15% of SCI	$243,521
Total Capital Investment (TCI) (SCI + Contingency)	**$1,866,993**

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, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $1,866,993 x 0.163 = $304,320

Total Operation and Maintenance Costs

Condensation Annual Costs			
Direct Annual Cost (DAC)			
Operating Labor			
Operator	0.5 hr/shift	$18.50/hr x 0.5 hr/shift x 3 shift/day x 365 days/year x 4 units	$40,515
Supervisor	15% of operator		$6,077
Maintenance			
Labor	0.5 h/shift	$18.50/hr x 0.5 hr/shift x 3 shift/day x 365 days/year x 4 units	$40,515
Materials	100% of labor		$40,515
Chiller (Glycol)			
Not included at this time			-
Utility (Electricity)			
Not included at this time			-
Total DAC			**$127,622**
Indirect Annual Cost (IAC)			
Overhead	60% of sum of operating, supervisor, maintenance labor & maintenance materials	0.6 x ($40,515 + $6,077 + $40,515 + $40,515)	$76,573
Administrative	2% TCI		$37,340
Property Taxes	1% TCI		$18,670
Insurance	1% TCI		$18,670
Total IAC			**$151,253**
Annual Cost (DAC + IAC)			**$278,875**

Total Annual Cost = Condenser System+ (Ductwork + CIP System) + Annual Costs
= $304,320 + $101,536 + $278,875
= $684,731

Emission Reductions

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

Annual Emission Reduction = Uncontrolled Emissions x 0.81
= 21,808 lb-VOC/year x 0.81/2,000 lb
= 8.8 lb-VOC/year

Cost Effectiveness
Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $684,731/year ÷ 8.8 tons-VOC/year
= $77,810/ton-VOC

The analysis demonstrates that the annualized purchase cost of the refrigerated condenser 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.

Option 5 - Insulation, PVRV, "Gas-Tight" Tank Operation, and Storage Temperature not Exceeding 75 deg F, Achieved within 60 days of Completion of Fermentation):
The only remaining control option in step 3 above has been deemed AIP for this class and category of source and per the District BACT policy is required regardless of the cost. Therefore, a cost effectiveness analysis is not required.

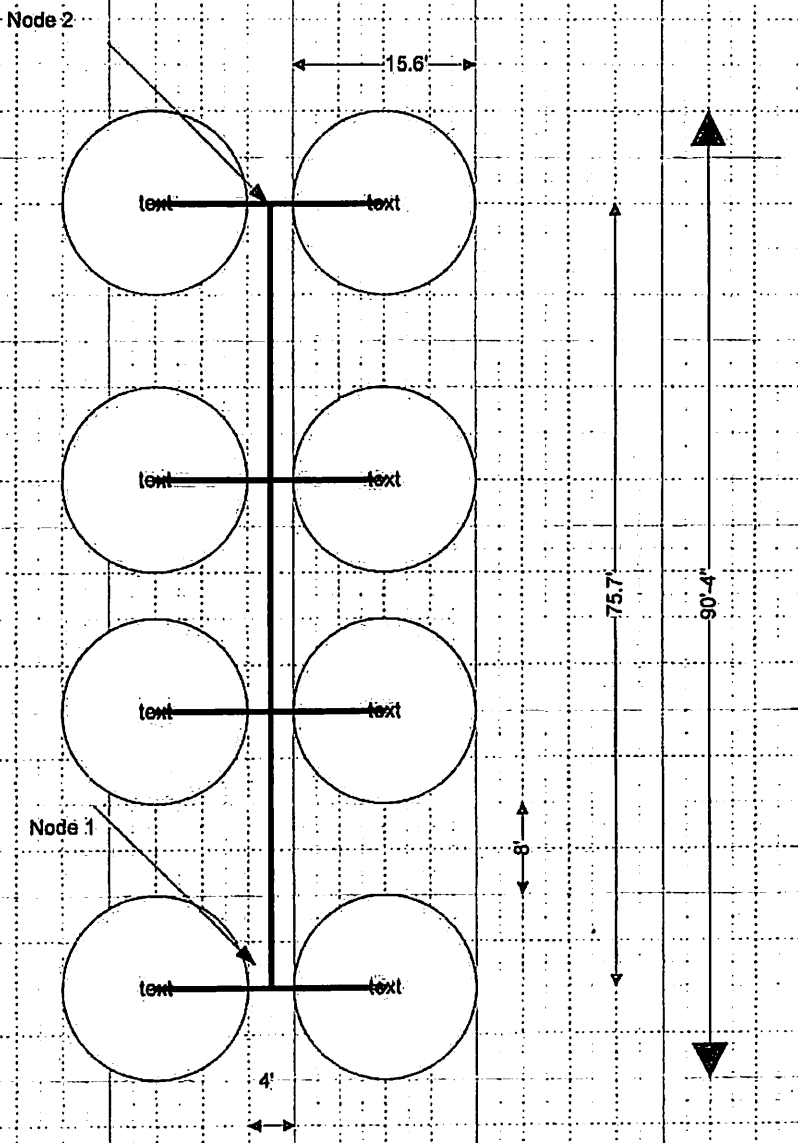
Step 5 – Select BACT

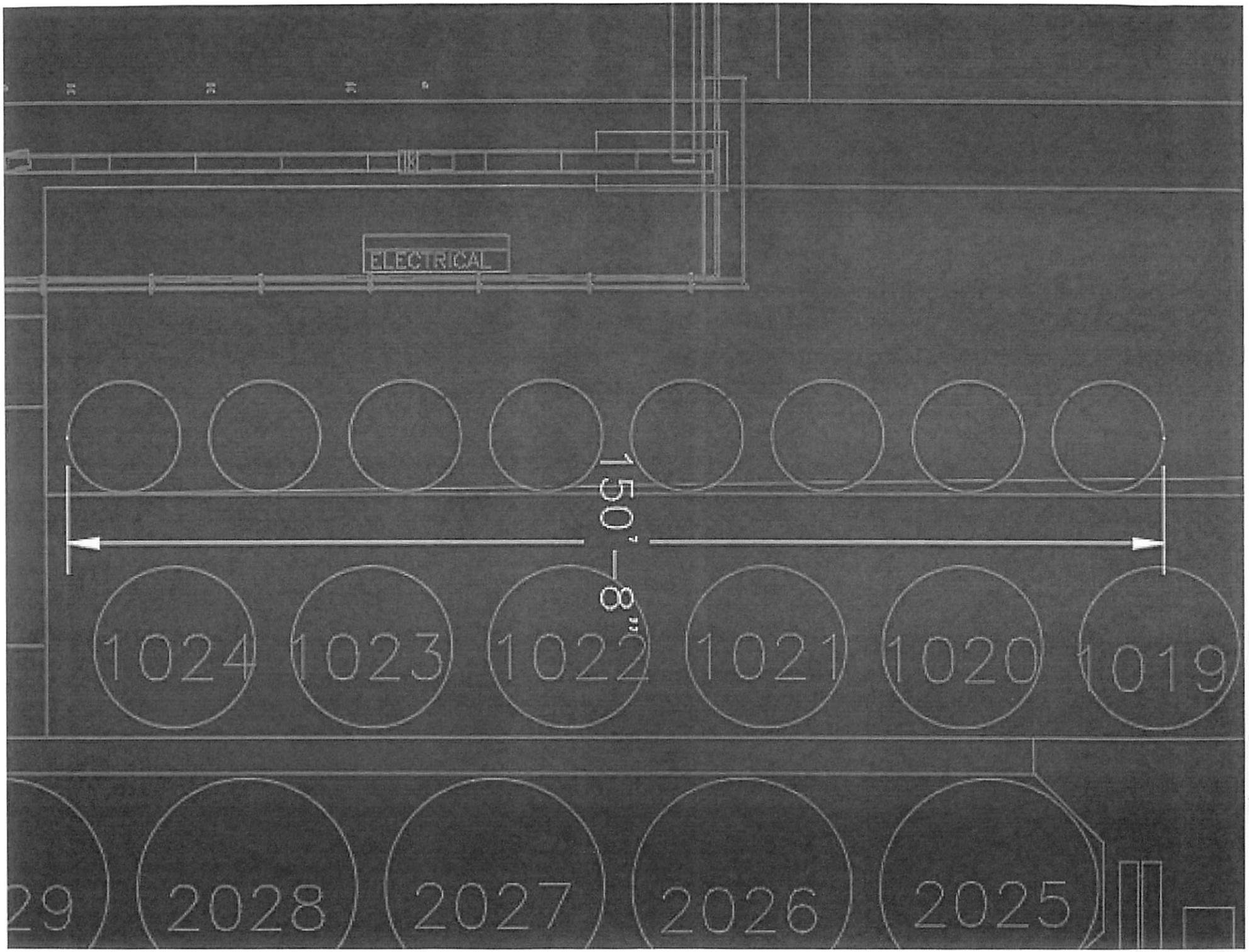
All identified feasible options with control efficiencies higher than the option proposed by the facility have been shown to not be cost effective. Each of these wine storage tanks is already equipped and/or operated in a manner that complies with Option 5, insulated tank, pressure/vacuum valve set within 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. These BACT requirements will be placed in each ATC as enforceable conditions.

Attachment C1

Ducting Layout Diagrams

Group 1 (North)




ELECTRICAL
150'-8"
1024
1023
1022
1021
1020
1019
29
2028
2027
2026
2025

Attachment C2

Comparison of Stainless Steel Ducting Costs

Ducting/Piping Cost Comparison

Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	28"
Eichleay - Ducting/Piping Only $/Foot	-	--	--	$23.17	$38.59	$54.00	$62.00	$65.50	$69.00	$86.00	$92.00	$99.00	$106.00	$119.00
Eichleay - Ducting/Piping Only $/Foot Including 21.93% for Inflation	--	--	--	$28.25	$47.05	$65.84	$75.60	$79.86	$84.13	$104.86	$112.18	$120.71	$129.25	$145.10
Average of District Cost Survey in $/Foot	$15.49	$30.85	$27.67	$44.13	$37.50	$33.13	$93.75	$181.70	$216.50	$189.02	$308.40	--	$193.99	--

Ducting/Piping Costs based on Eichleay Report

Note: Minimum of 6" Diameter for Structural Support														
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	28"
Ducting/Piping Only $/Foot	--	--	--	$23.17	$38.59	$54.00	$62.00	$65.50	$69.00	$86.00	$92.00	$99.00	$106.00	$119.00
Ducting + Fittings, Bolt Up, Handling, & Install $/Foot	--	--	--	$62.17	$103.25	$144.33	$143.83	$174.17	$204.52	$251.38	$309.38	$306.44	$397.67	$476.73
Ducting + Fittings, Bolt Up, Handling, & Install $/Foot	--	--	--	$62.17	$103.25	$144.33	$143.83	$174.17	$204.52	$251.38	$309.38	$306.44	$397.67	$476.73

Supplier: Grainger (http://www.grainger.com) **Location: Fresno, CA and Ceres, CA**

Schedule 10													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	$229.50	$387.75	$587.50	--	--	--	--		--	--	--	--	--
Length (feet)	10	10	10	--	--	--	--		--	--	--	--	--
Price/Foot ($)	$22.95	$38.78	$58.75	--	--	--	--		--	--	--	--	--

Supplier: Stockton Pipe and & Supply Inc (http://www.stocktonpipe.net) **Location: Stockton, CA**

Note: Sizes over 12" Diameter need to be ordered from Mill													
0.109" thickness tube or Schedule 10 Pipe													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	--	--	--	--	--	$700.00	$840.00	--	--	--	--	--	$3,159.60
Length (feet)	--	--	--	--	--	20	20	--	--	--	--	--	20
Price/Foot ($)	--	--	--	--	--	$35.00	$42.00	--	--	--	--	--	$157.98

Supplier: Valley Iron Inc (http://www.stocktonpipe.net) **Location: Fresno, CA**

Note: Sch 10 T-304 20'													
Schedule 10 Pipe													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Length (feet)	--	--	20	20	20	20	--	--	--	--	--	--	--
Price/Foot ($)	--	--	$10.75	$16.90	$26.00	$33.90	--	--	--	--	--	--	--

Supplier: Del Paso Pipe & Steel Inc. (http://www.delpasopipeandsteel.com/) Location: Sacramento, CA

Schedule 5/10 Pipe.													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price Quote: $9/lb												–	
Estimated Price/Foot	–	–	–	–	–	–	$217.00	$250.00	$286.00	$322.00	$432.00	–	–

Supplier: Hayward Pipe & Supply Co. Inc (http://www.haywardpipe.com/) Location: Hayward, CA

Note: large diamter pipe ships from Texas. FREIGHT NOT QUOTED - Additional Shipping Costs apply													
Schedule 10 Pipe													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	–	–	–	–	–	–	$1,540.00	$2,268.00	$2,940.00	$3,276.00	$3,696.00	–	–
Length (feet)	–	–	–	–	–	–	20	20	20	20	20	–	–
Price/Foot ($)	–	–	–	–	–	–	$77.00	$113.40	$147.00	$163.80	$184.80	–	–

Supplier: OnlineMetals.com (http://www.onlinemetals.com/) Location: Nearest Warehouse - Los Angeles, CA

Schedule 10 Pipe													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	$79.28	$108.97	$160.34	$288.00	$520.00	–	–	–	–	–	–	–	–
Length (feet)	8	8	8	8	8	–	–	–	–	–	–	–	–
Price/Foot ($)	$9.79	$13.62	$20.04	$36.00	$65.00	–	–	–	–	–	–	–	–
Welded Stainless Tube 304/304L (2" OD, 0.12" Wall; 3" OD, 0.12" Wall; 6", 0.12")													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	$109.86	$321.34	–	$628.16	–	–	–	–	–	–	–	–	–
Length (feet)	8	8	–	8	–	–	–	–	–	–	–	–	–
Price/Foot ($)	$13.73	$40.17	–	$78.52	–	–	–	–	–	–	–	–	–

Supplier: Lone Star Supply Co Location: Dickinson, TX

Note: Additional shipping costs													
Schedule 10 Welded Pipe													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price/Foot ($)	–	–	$16.45	$19.60	$21.50	$30.50	$39.00	–	–	$81.25	–	–	$230.00

Supplier: Global Technology and Engineering Location: Excelsior Springs, MO

Note: Additional shipping Costs													
11 Gauge Tubing													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	–	–	$226.58	$487.40	–	–	–	–	–	–	–	–	–
Length (feet)	–	–	7	7	–	–	–	–	–	–	–	–	–
Price/Foot ($)	–	–	$32.37	$69.63	–	–	–	–	–	–	–	–	–

All suppliers	$30.85	$44.13	70%	
Only suppliers that have both 3" and 6"	$30.85	$57.26	54%	33.50034

Appendix D
Compliance Certification

March 10, 2017

Mr. Nick Peirce
San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto CA 95356-8718

Subject: Compliance Statement for "The Wine Group, LLC" dba Franzia Winery – N956

Dear Mr. Peirce:

In accordance with Rule 2201, Section 4.15, "Additional Requirements for New Major Sources and Federal Major Modifications," The Wine Group, LLC, is pleased to provide this compliance statement regarding the currently proposed winery project N-1170757.

All major stationary sources in California owned or operated by The Wine Group, LLC dba Franzia Winery, or by any entity controlling, controlled by, or under common control with Franzia Winery, and which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards. These sources include one or more of the following facilities:

- Franzia Winery, 17000 E. Highway 120, Ripon, CA 95366

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

Please contact me if you have any questions regarding this certification.

Sincerely,

Chuck Mitten
Manager, Franzia Winery
17000 E. Hwy 120, Ripon, CA 95366

San Joaquin Valley
Unified Air Pollution Control District

HEALTHY AIR LIVING

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

X] SIGNIFICANT PERMIT MODIFICATION
[ ] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: The Wine Group, LLC dba Franzia Winery	FACILITY ID: N – 956
1. Type of Organization:[X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: The Wine Group, LLC dba Franzia Winery	
3. Agent to the Owner: Chuck Mitten	

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

(CM) 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).

(CM) 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.

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

(CM) 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.

(CM) For minor modifications, this application meets the criteria for use of minor permit modification procedures pursuant to District Rule 2520.

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

Chuck Mitten — Signature of Responsible Official

2/28/17 — Date

CHUCK MITTEN — Name of Responsible Official (please print)

PLANT MANAGER — Title of Responsible Official (please print)

Appendix E
Emission Factor

FYI-114

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

DATE: March 8, 2007 (Revised 09/14/09) (Revised 8/10/11) (Revised 6/13/12)

TO: Permit Services Staff

FROM: Dennis Roberts

SUBJECT: VOC Emission Factors for Wine Fermentation and Storage Tanks

Winery tank operations generally consist of two separate emissions units; 1) fermentation and 2) storage of wine and spirits. Any particular tank may be permitted to perform one or both of these operations. The emissions from each emission unit are appropriately combined to yield the Potential to Emit for the tank (permit unit).

Emissions from fermentation operations are estimated using emission factors which have been developed based on a recognized fermentation model and are presented herein. For wine storage operations, emissions can be determined in general by modeling the storage tank operation using the EPA's Tanks 4.0 software (modeling procedures and an ethanol/water data base have been established as described in FYI-295 *(Modeling Emissions from Wine Storage Tanks)*. However, the majority of wine storage tanks located in the District are insulated storage tanks which do not have a requirement for refrigeration (ambient storage temperature). For this classification of tank the storage emission factor, as calculated by the Tanks 4.0 model, is a function of ethanol content only. For this case the tabular emission factors presented herein are applicable (note that storage tanks which are un-insulated and/or which have NSR limits on the tank operating temperature should be estimated by the emissions modeling per FYI-295).

Wine Storage Tanks

Wine storage tanks perform two functions in the winery:

- Facilitation of post-fermentation processing operations such as racking, filtration, malolactic fermentation and bottling. In this role, the typical storage tank is filled and emptied several times per year with the wine being transferred from tank to tank. Many of these operations occur prior to chilling of the wine. Emissions from such operations are "working losses" which occur as a result of the displacement of the vapor space of the tank into the atmosphere during the filling operations. For insulated tanks (or tanks installed in a climate-controlled building), working losses are a function only of the ethanol content, the ambient temperature and the tank throughput.

- Static storage of wine between processing operations up to the final operation of bottling. In this operation, a common objective is to avoid oxidation of the wine by both minimizing the wine temperature and the exposure of the wine to air. In such cases, the wine may be maintained at a temperature below ambient, often in the range of 35-40 ^{o}F, however, since the tank cannot be always maintained at this temperature due to processing considerations, the lower temperatures are not an NSR condition on the permit . Also, the tanks are typically maintained at as high a liquid level as possible to minimize contact with oxygen. Emissions from static storage are

"breathing losses" which are the result of diurnal heating and cooling caused by the effect of daily variations in atmospheric conditions on the contents of the tank. For a well-insulated tank, equipped with a pressure/vacuum relief valve per the requirements of District Rule 4694, breathing losses are considered to be negligible since the insulation serves to maintain a relatively uniform temperature inside the tank while the pressure/vacuum valve serves to contain small internal variations, preventing escape of vapor to the atmosphere.

Table 1 presents emission factors for wine and spirits storage in ambient temperature tanks (non-refrigerated), equipped with insulation and/or located in a climate-controlled building. The tabular values have been developed using the District's emissions modeling procedure for wine and spirits tanks (see FYI-295). As shown, different emission factors are presented for tanks located in the three different regions of the District based upon higher ambient temperatures in the southern part of the Central Valley. All factors represent working losses only since breathing losses are considered negligible as discussed above. Emission factors for concentrations not listed in Table 1 may be interpolated from the table.

Table 1: Emission Factors for Wine and Spirits Storage Tanks by Region in the San Joaquin Valley
lb-VOC per 1,000 gallons of throughput

Applicability:	1. Vertical Fixed-Roof tank, insulated or located in climate-controlled building 2. Ambient temperature storage					
	Southern Region		Central Region		Northern Region	
Vol %	Annual	Daily	Annual	Daily	Annual	Daily
2	0.016	0.029	0.015	0.027	0.014	0.024
4	0.033	0.062	0.032	0.057	0.030	0.051
6	0.052	0.099	0.050	0.092	0.047	0.081
8	0.074	0.141	0.071	0.130	0.067	0.116
10	0.098	0.187	0.094	0.173	0.088	0.154
12	0.125	0.239	0.120	0.221	0.112	0.196
14	0.143	0.273	0.137	0.252	0.128	0.223
16	0.159	0.302	0.153	0.280	0.143	0.248
18	0.176	0.334	0.169	0.310	0.159	0.275
20	0.195	0.368	0.187	0.341	0.175	0.303
22	0.215	0.404	0.207	0.375	0.194	0.333
24	0.237	0.443	0.227	0.412	0.213	0.366
26	0.251	0.470	0.242	0.436	0.227	0.388
28	0.264	0.494	0.254	0.458	0.238	0.408
30	0.278	0.518	0.267	0.481	0.251	0.428
32	0.293	0.544	0.281	0.506	0.264	0.450
34	0.308	0.572	0.296	0.531	0.278	0.473
36	0.324	0.600	0.312	0.559	0.293	0.498
38	0.335	0.620	0.323	0.577	0.303	0.514
40	0.347	0.640	0.334	0.595	0.313	0.530
42	0.358	0.660	0.345	0.614	0.324	0.546
44	0.371	0.681	0.357	0.634	0.335	0.565
46	0.384	0.703	0.370	0.655	0.348	0.584
48	0.396	0.724	0.381	0.674	0.359	0.602
50	0.405	0.738	0.390	0.688	0.367	0.615
52	0.415	0.754	0.400	0.703	0.376	0.628
54	0.425	0.770	0.410	0.718	0.386	0.642
56	0.436	0.788	0.420	0.734	0.396	0.657
58	0.447	0.805	0.431	0.751	0.406	0.673
60	0.455	0.818	0.438	0.764	0.413	0.684
62	0.462	0.832	0.446	0.777	0.420	0.695
64	0.471	0.847	0.454	0.790	0.427	0.708
66	0.479	0.863	0.462	0.805	0.435	0.721
68	0.489	0.879	0.471	0.820	0.443	0.735
70	0.497	0.896	0.479	0.836	0.451	0.748
72	0.507	0.914	0.488	0.853	0.460	0.763
74	0.517	0.933	0.498	0.871	0.468	0.779
76	0.527	0.954	0.508	0.890	0.478	0.796
78	0.539	0.976	0.519	0.910	0.489	0.814
80	0.552	1.000	0.531	0.932	0.500	0.833
82	0.566	1.025	0.545	0.955	0.513	0.855
84	0.581	1.052	0.559	0.981	0.526	0.877
86	0.598	1.083	0.576	1.010	0.542	0.903
88	0.617	1.120	0.595	1.044	0.559	0.934
90	0.639	1.161	0.616	1.082	0.579	0.967
92	0.663	1.206	0.639	1.124	0.601	1.004
94	0.694	1.261	0.669	1.175	0.629	1.050
96	0.742	1.339	0.715	1.249	0.673	1.118
98	0.786	1.409	0.757	1.315	0.714	1.179
100	0.838	1.534	0.807	1.437	0.762	1.278

For purposes of calculating actual annual emissions, the annual data in Table 1 have been curve-fitted based on an equation of the form $E_f = ap^2 + bp + c$, where p = vol% ethanol (e.g., 20% = 0.20). The constants for the equation are as follows:

Constants for Emission Factor Correlation $E_f = ap^2 + bp + c$ p = volume percentage ethanol			
Southern Region			
Concentration Range	**a**	**b**	**c**
0 to 24%	-0.45139	1.0958	0
>24 to 66%	-0.47357	1.0088	0.019486
>66% to 92%	1.5279	-1.7467	0.97149
>92% to 100%	6.7857	-10.819	4.8713
Central Region			
Concentration Range	**a**	**b**	**c**
0 to 24%	-0.45139	1.0542	0
>24 to 66%	-0.45117	0.96968	0.018554
>66% to 92%	1.5254	-1.7662	0.96812
>92% to 100%	6.4286	-10.223	4.6016
Northern Region			
Concentration Range	**a**	**b**	**c**
0 to 24%	-0.38194	0.97917	0
>24 to 66%	-0.42159	0.91316	0.016237
>66% to 92%	1.3799	-1.5774	0.87906
>92% to 100%	6.6071	-10.651	4.8061

The mathematical correlation for concentrations up to 24% provides a slightly conservative estimate of the emission factor relative to the data in Table 1 based on smoothing the impact of the linear interpolation process employed in development of the ethanol/water data base used for modeling wine tank emissions in EPA Tanks 4.0. Mathematical correlations for concentrations greater than 24% are based on a least square analysis of the data in Table 1.

Use of Table I and correlations to estimate emissions insulated wine storage tank subject to ambient temperature is demonstrated by the following examples:

Example 1 (wine storage tank with daily and annual throughput limits and maximum ethanol content) – estimate the potential to emit for an insulated 100,000 gallon nominal capacity steel storage tank to store wine with maximum concentration of 14 vol% ethanol . Maximum daily throughput is one tank turn or 100,000 gallons/day. Maximum annual throughput will be 600,000 gallons per year. The tank will be installed in a facility located in the Southern Region.

For a storage tank located in the Southern Region and handling up to 14% ethanol, the annual emission factor is 0.143 lb-VOC/1000 gallons throughput and the daily emission factor is 0.273 lb-VOC/1000 gallons throughput.

Daily PE = 100,000 gallons/day x 0.273 lb-VOC/1000 gallons = 27.3 lb-VOC/day

Annual PE = 600,000 gallons/year x 0.143 lb-VOC/1000 gallons = 86 lb-VOC/year

DEL conditions for this example would be:

- *Ethanol content of wine in this tank shall not exceed 14.0 percent by volume. [District Rule 2201]*
- *Tank throughput shall not exceed either of the following limits: 100,000 gallons in any one day or 600,000 gallons per year. [District Rule 2201]*

Example 2 (wine and spirits storage tank subject to a daily throughput limit and an SLC limit on annual emissions)– – estimate the potential to emit for an insulated 100,000 gallon nominal capacity steel storage tank to store spirits with maximum concentration of 80 vol% ethanol. Maximum allowed annual emissions for the tanks in the SLC are 10,000 lb/year. Maximum daily throughput is one tank turn or 100,000 gallons/day. The tank will be installed in a facility located in the Northern Region.

For a storage tank located in the Northern Region and handling up to 80% ethanol, the daily emission factor is 0.833 lb-VOC/1000 gallons throughput. Since the annual emissions are constrained by the SLC, an annual emission factor is not needed for the PE calculation but will be placed on the permit for purposes of demonstrating annual compliance on an ongoing basis. Since the ethanol concentration can vary from 0% to 80%, three separate correlation equations are required to cover the potential range:

For concentration p = 0 – 24%: $E_f = ap^2 + bp + c$

a = -0.38194
b = 0.97917
c = 0

For concentration p = 24% < p < 66%: $E_f = ap^2 + bp + c$

a = -0.42159
b = 0.91316
c = 0.016237

For concentration p = 66% < p < 80%: $E_f = ap^2 + bp + c$

a = 1.3799
b = -1.5774
c = 0.87906

Daily PE = 100,000 gallons/day x 0.833 lb-VOC/1000 gallons = 83.3 lb-VOC/day

DEL conditions for this example would be:

- *Ethanol content of wine or spirits in this tank shall not exceed 80.0 percent by volume. [District Rule 2201]*
- *Tank throughput shall not exceed 100,000 gallons in any one day. [District Rule 2201]*
- *Combined annual VOC emissions from all wine storage operations under permit units X-XXXX-XXX through X-XXXX-XXX shall not exceed 10,000 pounds per year. [District Rule 2201]*
- *Combined annual VOC emissions from wine storage operations under permit units X-XXXX-XXX through X-XXXX-XXX shall be determined as the sum of the emissions for each individual wine movement based on the volume transferred in each wine movement and the batch-specific wine storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201]*
- *The annual VOC wine storage emission factor for each wine or spirits ethanol content shall be calculated using the following equation: EF = a * P^2 + b*P + c; where EF is the VOC emission factor in pounds of VOC per 1000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume %,* a = -0.38194, b = 0.97917 and c = 0. *For concentrations greater than 24 volume % up to and including 66 volume%* , a = -0.42159, b = 0.91316 and c = 0.016237. *For concentrations greater than 66 volume % up to and including 80 volume %,* a = 1.3799, b = -1.5774 and c = 0.87906. *[District Rule 2201]*

Wine Fermentation Tanks

During the wine fermentation process, sugar in the grape juice reacts with yeast to form alcohol (ethanol) and carbon dioxide (CO_2) gas. Ethanol is emitted into the atmosphere through evaporation. According to Williams and Boulton[1], the only important mechanism for ethanol loss is equilibrium evaporation into the escaping CO_2 stream. The physical entrainment of ethanol droplets in the CO_2 gas is insignificant in modern enclosed fermentation vessels. These researchers' model indicates that as fermentation temperature increases, ethanol loss increases exponentially. Since red wines are fermented at significantly higher temperatures than white wine, a different emission factor is required for each case.

Annual Fermentation Emission Factors

The California Air Resources Board (CARB) has established annual emission factors for fermentation of both red and white wines, based on the computer model developed by Williams and Boulton. The emission factors were developed for purposes of emission

[1] L.A. Williams and R. Boulton, Modeling and Prediction of Evaporative Ethanol Loss During Wine Fermentation, American Journal of Enology and Vitriculture, 32:234-242, (1983).

inventory estimation and represent a typical wine fermentation operation based on average fermentation temperatures and average initial sugar concentrations (°Brix) and are presented in Emissions Inventory Procedural Manual, Section 5.1, Air Resources Board, 1997. These factors have been adopted by the District in Rule 4694, *Wine Fermentation and Storage Tanks*. The established factors are as follows:

Red Wine Fermentation:	6.2 lb-VOC/1000 gallons fermented per year (78 °F fermentation temperature, 21.8 °Brix)
White Wine Fermentation:	2.5 lb-VOC/1000 gallons fermented per year (58 °F fermentation temperature, 20.4 °Brix)

Daily Fermentation Emission Factors

The District has developed factors for daily Potential to Emit using the previously-referenced research by Williams and Boulton (see Appendix A). To ensure the factors represent true Potential to Emit, the daily emission factors were developed based on typical maximum fermentation temperatures and starting sugar concentrations rather than average values:

Red Wine Fermentation:	3.46 lb-VOC/1000 gallons tank capacity per day (85 °F fermentation temperature, 22.5 °Brix)
White Wine Fermentation:	1.62 lb-VOC/1000 gallons tank capacity per day (70 °F fermentation temperature, 22.5 °Brix)

Example 3 (fermentation tank) - estimate the daily and annual potential to emit for a 200,000 gallon nominal capacity fermentation tank to exclusively ferment red wine. Maximum fermentation throughput will be 900,000 gallons red wine per year. The tank will not be used for storage.

Daily $PE_{fermentation}$ = 3.46 lb-VOC/day per 1000 gallons nominal tank capacity x 200 Mgal nominal

Daily $PE_{fermentation}$ = 692.1 lb/day

Daily PE = Daily $PE_{fermentation}$ = 692.1 lb/day

Annual PE = 6.2 lb-VOC per 1000 gallons fermented x 900 Mgal/year = 5,580 lb-VOC/yr

Example 5 (fermentation and storage tank) - estimate the daily and annual potential to emit for a 100,000 gallon nominal capacity fermentation tank to ferment red wine. Maximum fermentation throughput will be 450,000 gallons red wine per year. The tank will also be used for storage identical with example 1:

In this case,

Daily PE = the larger of either Daily $PE_{fermentation}$ or Daily $PE_{storage}$

And.

Annual PE = Annual $PE_{fermentation}$ + Annual $PE_{storage}$

Calculating the Daily PE:

Daily $PE_{fermentation}$ = 3.46 lb-VOC/day per 1000 gallons nominal tank capacity x 100 Mgal nominal

Daily $PE_{fermentation}$ = 346.0 lb-VOC/day

From example 1,

Daily $PE_{storage}$ = 27.3 lb-VOC/day

Therefore,

Daily PE = 346.0 lb/day

Calculating the Annual PE:

Annual $PE_{fermentation}$ = 6.2 lb-VOC per 1000 gallons fermented x 450 Mgal/year = 2,790 lb-VOC/yr

From example 1,

Annual $PE_{storage}$ = 97 lb-VOC/year

Therefore,

Annual PE = 2,790 + 97 = 2,887 lb/year

Appendix A

Daily Emission Factor for Wine Fermentation

Appendix A

The emission factor for daily PE is based on the following:

- Estimation of maximum daily fermentation emissions is based on Figure 7 from the Williams and Boulton work referenced in the body of this document.
- Maximum red wine fermentation temperature is assumed to be 85 °F.
- Maximum white wine fermentation temperature is assumed to be 70 °F.
- Maximum working capacity of a red wine fermenter is 80% of tank maximum capacity.
- Maximum working capacity of a white wine fermenter is 95% of tank maximum capacity.

Figure 7 from Williams and Boulton indicates the ethanol emission rate (mg per hour per liter of wine) versus time for various fermentation temperatures. The total emissions in mg per liter of wine for any time period is the area under the curve. Thus, for any given temperature, figure 7 can be graphically integrated over the 24 hour period during which maximum emissions occur. A copy of figure 7 is attached which indicates the integration interval for red wine (85 °F) and for white wine (70 °F). Results of integration of Figure 7 are presented in the following table:

Graphical Integration Results to Determine Daily Fermentation Emission Factor from Figure 7 of Williams and Boulton

	Red Wine	White Wine
Maximum 24 hour Emissions (mg/liter of wine per day)	518.6	203.9
Maximum 24 hour Emissions (1b/1000 gallons of wine per day)	4.33	1.70
Maximum Batch Size (% of Tank Capacity)	80%	95%
Daily Emission Factor (lb/1000 gallons tank capacity per day)	3.46	1.62

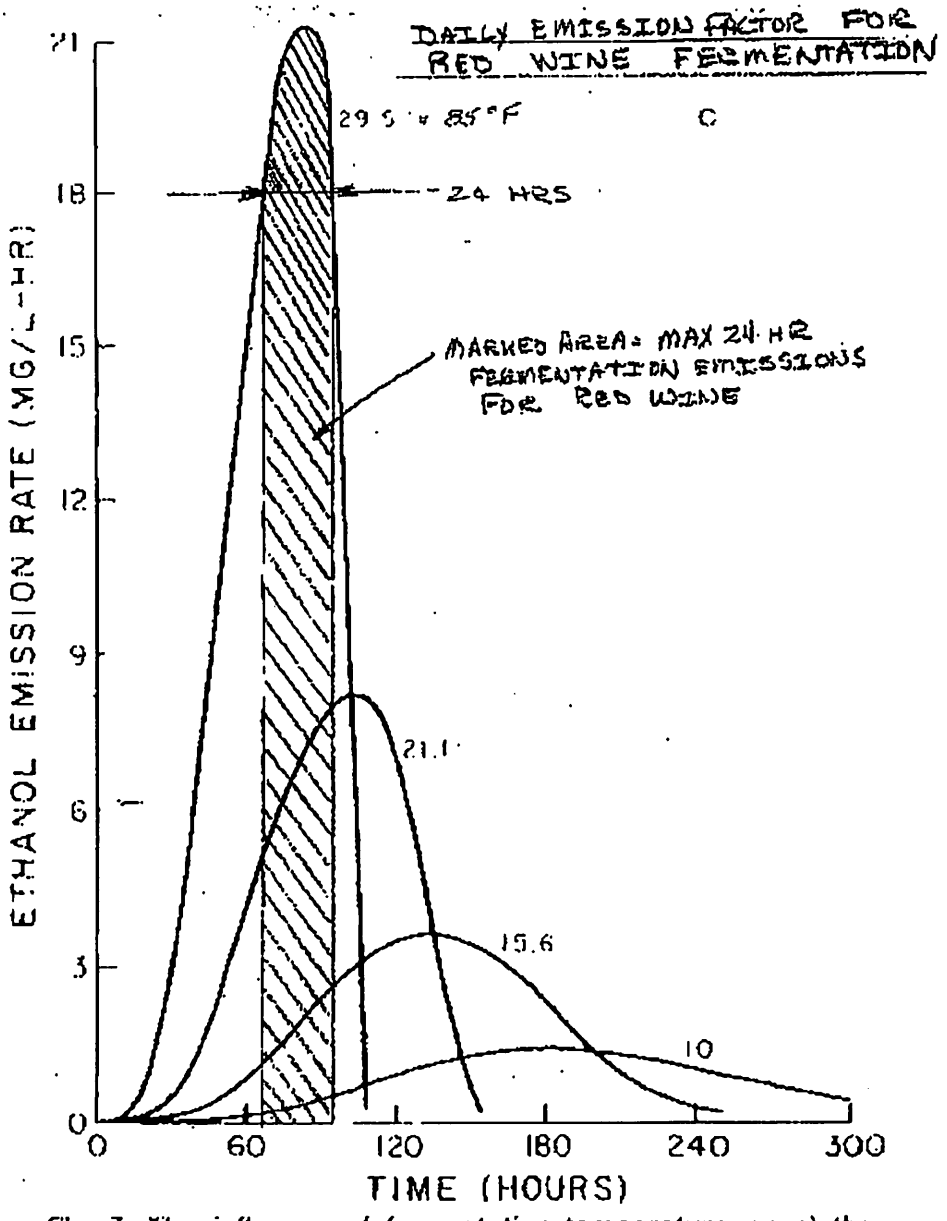


Fig. 7. The influence of fermentation temperature on a) the fermentation rate, b) the vapor phase ethanol concentration, and c) the rate of ethanol emission. (Initial sugar content of 22.5°Brix, isothermal fermentation at indicated temperature.)

Appendix A

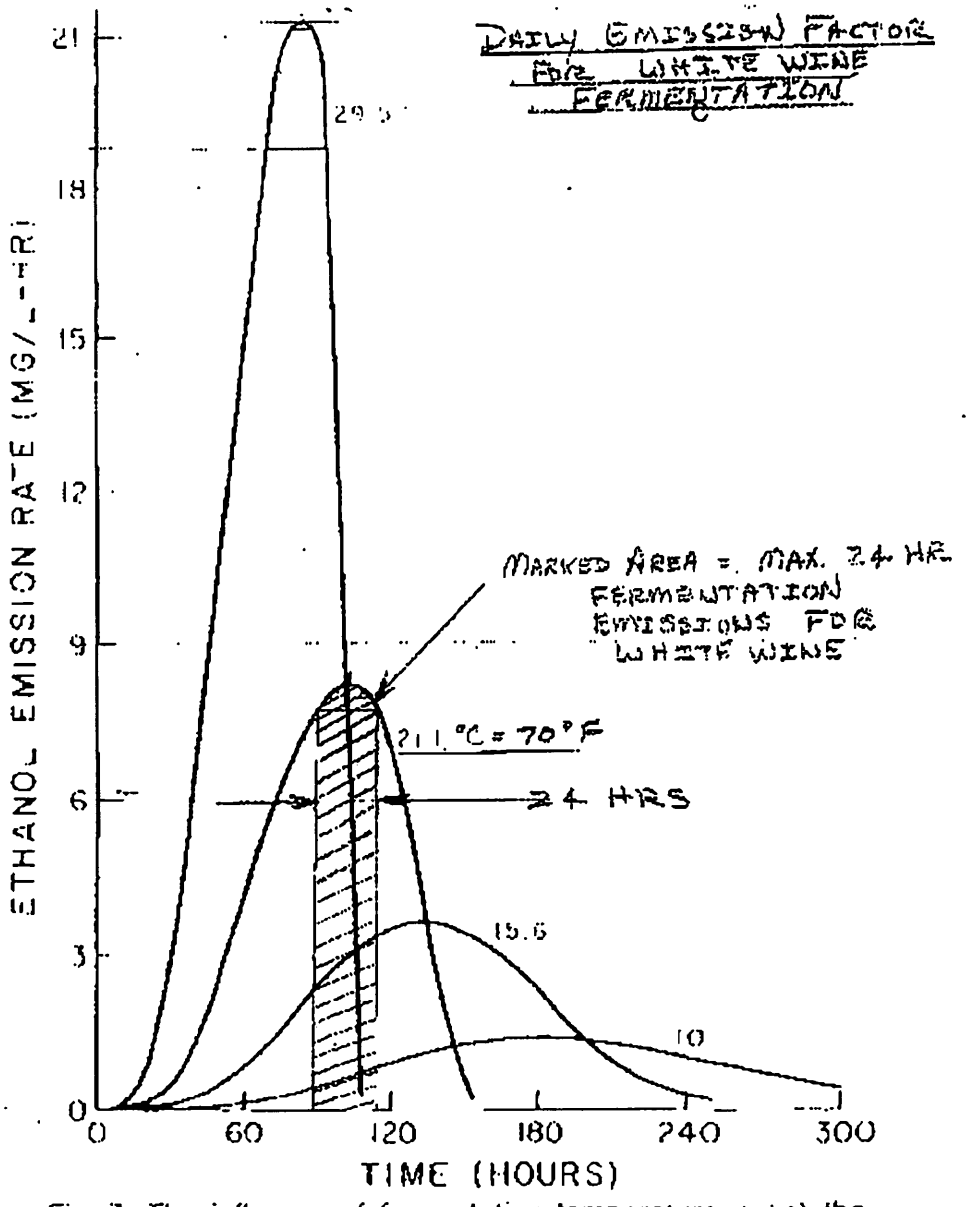


Fig. 7. The influence of fermentation temperature on a) the fermentation rate, b) the vapor phase ethanol concentration, and c) the rate of ethanol emission. (Initial sugar content of 22.5°Brix, isothermal fermentation at indicated temperature.)