



APR 29 2014

Mr. Mathew Tower
O'Neill Beverages Company, LLC
8418 S. Lac Jac
Parlier, Ca 93654

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # C-629
Project # C-1140372**

Dear Mr. Tower:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The facility is proposing to install four 15,900 gallon distilled spirits storage tanks

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

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

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

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

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

San Joaquin Valley Air Pollution Control District
Authority to Construct
Application Review
 Distilled Spirits Storage Tanks

Facility Name: O'Neill Beverages Company LLC	Date: April 10, 2014
Mailing Address: 8418 S. Lac Jac Avenue	Engineer: Vanesa Gonzalez
Parlier, CA 93654	Lead Engineer: Joven Refuerzo
Contact Person: Matt Towers	
Telephone: (559) 638-3544	
Fax: (559) 638-7148	
Email: mtowers@oneillwine.com	
Application #'s: C-629-559-0 thru -562-0	
Project #: C-1140372	
Deemed Complete: March 5, 2014	

I. PROPOSAL

O'Neill Beverages Company requests Authority to Construct (ATC) permits for four distilled spirits storage tanks. The applicant is proposing to add the distilled spirits storage operation into the existing specific limiting condition (SLC) limit for storage operations listed in permits C-629-436 through 443 of 9,333 lb-VOC/year.

O'Neill Beverages Company received their Title V Permit on September 5, 2002. This modification can be classified as a Title V significant modification pursuant to Rule 2520, Section 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 Authority to Construct. O'Neill Beverages Company must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

II. APPLICABLE RULES

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4694	Wine Fermentation and Storage Tanks (12/15/05)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177:	California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:	CEQA Guidelines

III. PROJECT LOCATION

This facility is located at 8418 S. Lac Jac Road in Parlier, CA.

The District has verified that the equipment is located within 1,000 feet of the outer boundary of a K-12 school. However, as discussed within this document, the proposed distilled spirits storage tanks being installed in this project do not result in an increase in Hazardous Air Pollutant (HAP) emissions. Therefore, in accordance with the California Health and Safety Code, Section 42301.6, a school notice is not required.

IV. PROCESS DESCRIPTION

O'Neill Beverages Company produces distilled alcoholic beverages which are stored and processed in the subject storage tanks. These tanks may hold spirits with ethanol contents up to 100% by volume.

V. EQUIPMENT LISTING

- C-629-559-0: 15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R009) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING
- C-629-560-0: 15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R010) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING
- C-629-561-0: 15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R011) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING
- C-629-562-0: 15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R012) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

VOC's (ethanol) are emitted from distilled spirits 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. When distilled spirits storage tanks are insulated or located in a climate controlled building, breathing losses are considered to be negligible.

VII. GENERAL CALCULATIONS

A. Assumptions

- The maximum operating schedule for this facility is 24 hours/day and 365 days/year.

- The maximum daily distilled spirits storage throughputs were provided by the applicant and the annual distilled spirits storage throughputs will be determined by the applicant in order to ensure that they stay under the existing SLC storage VOC emission limit for the tanks listed in permits C-629-436 through '443 and '559 through '562-0 of 9,333 lb-VOC/year.
- The maximum daily distilled spirits storage throughput = two turnovers per day (per applicant).
- The maximum daily distilled spirits liquid storage temperature = 81.0 °F (mean daily temperature for Fresno in July).
- The maximum ethanol content of the distilled spirits stored in each tank will be set at a worst case of 100% (per applicant).
- Daily breathing losses are assumed to be negligible from the storage operations since all storage tank emissions units being installed by this project are insulated and equipped with a pressure/vacuum relief valve or are being installed inside a completely enclosed building.

B. Emission Factors

Distilled Spirits Storage:

For purposes of calculating actual annual emissions, the annual data from District emissions modelling have been curve-fitted based on an equation of the form $E_f = ap^2 + bp + c$, where $p = \text{vol\% ethanol}$. The constants for the equation are as follows:

Constants for Emission Factor Correlation			
$E_f = ap^2 + bp + c$			
$p = \text{volume percentage ethanol}$			
Southern Region			
Concentration Range	a	b	c
0 to 24%	-0.52083E-4	1.2375E-2	0
>24 to 66%	-0.53995E-4	1.13175E-2	0.02385
>66% to 92%	1.68831E-4	-1.91333E-2	1.06815
>92% to 100%	10.5357E-4	-17.7036E-2	8.11229
Central Region			
Concentration Range	a	b	c
0 to 24%	-0.52083E-4	1.1625E-2	0
>24 to 66%	-0.49990E-4	1.0589E-2	0.02133
>66% to 92%	1.60589E-4	-1.83207E-2	1.016774
>92% to 100%	9.64286E-4	-16.1943E-2	7.43214
Northern Region			
Concentration Range	a	B	c
0 to 24%	-0.45139E-4	1.0880E-2	0
>24 to 66%	-0.47133E-4	1.00285E-2	0.01915
>66% to 92%	1.52535E-4	-1.74484E-2	0.967767
>92% to 100%	6.78571E-4	-10.83857E-2	4.88549

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post-Project Potential to Emit (PE2)

Daily PE (PE2):

Distilled Spirits Storage Operations:

The daily VOC emissions from the storage of distilled spirits in each of these tanks can be determined using the EPA Tanks 4.0 program and the daily spirits storage throughput as proposed by the applicant. See Attachment A for the Tanks 4.0 runs for each tank.

Tank	Maximum Ethanol Content (%)	Throughput (gallons)	Maximum Storage Temperature (°F)	Daily PE2 (lb-VOC/day)
C-629-559-0	100	31,800	81.0	2.5
C-629-560-0	100	31,800	81.0	2.5
C-629-561-0	100	31,800	81.0	2.5
C-629-562-0	100	31,800	81.0	2.5
Total		127,200		10.0

Annual PE (APE2):

Distilled Spirits Storage Operations:

The applicant is proposing to add the distilled spirits storage operations to the existing storage operation SLC of 9,333 lb/year.

Annual VOC PE_{C-629-436- through '443 and 559 through '562} = 9,333 lb/year

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

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

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

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

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

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

5. Major Source Determination

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

6. Baseline Emissions (BE)

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

Pursuant to Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22 of District Rule 2201.

The permit units in this project only emit VOC and therefore the BE determination is only required for this pollutant, as discussed in the following sections:

a. BE VOC

C-629-436-0 through -443-0 Existing Distilled Spirits Storage Tank:

Clean Emissions Unit, Located at a Major Source

Pursuant to Rule 2201, Section 3.12, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the

requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

Existing distilled spirits storage tanks listed in permits C-629-436-0 through -443-0 are equipped with a pressure vacuum relief valve and insulation or equivalent which meet the District's current achieved-in-practice BACT in BACT Guideline 5.4.15 for distilled spirits storage tanks. Therefore, the distilled spirits storage tanks listed in permits C-629-436-0 through -443-0 are Clean Emissions Unit pursuant to District Rule 2201.

$$BE = PE1 = 9,333 \text{ lb-VOC/year}$$

C-629-559-0 through -562-0 New Distilled Spirits Tanks:

Clean Emissions Unit, Located at a Major Source

Since this operation is considered a new emissions unit, BE = 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.*"

The distilled spirits storage tank emission units associated with this project are all new emission units. Post project, the distilled spirits storage emission units will be limited to 9,333 lb-VOC/yr by an SLC. Therefore,

$$PE2_{(\text{Distilled Spirits Storage})} = 9,333 \text{ lb-VOC/year}$$

The emissions units within this project have a total potential to emit for VOC which is not greater than SB 288 Major Modification thresholds (see table below). Therefore, SB 288 Major Modification calculation is not required.

SB288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
NO _x	0	50,000	No
SO _x	0	80,000	No
PM ₁₀	0	30,000	No
VOC	9,333	50,000	No

8. Federal Major Modification

District Rule 2201, Section 3.17 states that SB 288 major modifications are also federal major modifications unless they qualify for a "Less-Than-Significant Emissions Increase" exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Significance Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	0
NO _x	0
PM ₁₀	30,000
SO _x	80,000

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

Net Emission Increase for New Units (NEI_N)

Per 40 CFR 51.165 (a)(2)(ii)(D) for new emissions units in this project,

$$NEI_N = PE_{2N} - BAE$$

Since the distilled spirits storage tanks are new units, BAE for these units is zero and,

$$NEI_N = PE_{2N}$$

As established under Section VII.7 above,

$$PE_{2N} = 9,333 \text{ lb/year}$$

Thus,

$$NEI_N = PE_{2N} = 9,333 \text{ lb-VOC/year}$$

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

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

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

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Greenhouse gases (GHG): CO₂, N₂O, CH₄, HFCs, PFCs, and SF₆

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

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

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

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

I. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds

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

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)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)							
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀	CO ₂ e
Total PE from New and Modified Units	0	4.7	0	0	0	0	0
PSD Significant Emission Increase Thresholds	250	250	250	250	250	250	100,000
PSD Significant Emission Increase?	N	N	N	N	N	N	N

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

10. Quarterly Net Emissions Change (QNEC)

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

$QNEC_{SLC} = PE2_{SLC} - PE1_{SLC}$, where:

$QNEC_{SLC}$ = Quarterly Net Emissions Change for units covered by the SLC.

$PE2_{SLC}$ = PE2 for all units covered by the SLC.

$PE1_{SLC}$ = PE1 for all units covered by the SLC.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	2,333	2,333	0

VIII. COMPLIANCE

District Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in a SB288 Major Modification or a Federal Major Modification.

*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

Distilled Spirits Storage Operations:

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install four new distilled spirits storage tanks, each with a PE greater than 2 lb/day for VOC emissions. Therefore, BACT is triggered for VOC emissions from each of the new distilled spirits storage tanks.

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. SB288/Federal Major Modification

As discussed in Section VII.C.7 and VII.C.8 above, this project constitutes a Federal Major Modification for VOC emissions; therefore BACT is triggered for VOC for the distilled spirits storage tanks in this project.

2. BACT Guideline

Distilled Spirits Storage Operations:

BACT Guideline 5.4.15, 1st quarter 2012, applies to distilled spirits storage tanks. O'Neill Beverages Company is proposing to install four new distilled spirits storage tanks. Therefore, BACT Guideline 5.4.15 is applicable to the distilled spirits storage tanks (BACT Guideline 5.4.15 included in Attachment B).

3. Top-Down BACT Analysis

In accordance with 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.

Distilled Spirits Storage Operations:

Pursuant to the attached Top-Down BACT Analysis (see Attachment B), BACT is satisfied with the following:

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

Each of the distilled spirits storage tanks operated at this facility is equipped with insulation or operated inside of an enclosed building, is equipped with a PVRV set to within 10% of the maximum allowable working pressure of the tank; and operates in a gas-tight condition. Therefore, the proposed distilled spirits storage tanks meet the BACT requirements for this class and category of operation.

The following conditions will be included on the ATC's to ensure continued compliance with the BACT requirements:

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

B. Offsets

1. Offset Applicability

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.

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

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

2. Quantity of Offsets Required

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

VOC Emissions:

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([9,333 \text{ lb/year} - 9,333] + 0) \times DOR \\ &= 0 \text{ lb-VOC/year} \end{aligned}$$

As demonstrated in the calculation above, the amount of offsets is zero; therefore, offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

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

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications

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

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

b. PE > 100 lb/day

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

c. Offset Threshold

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

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

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

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

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any one pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. $SSIPE = SSPE2 - SSPE1$.

Pollutant	$\Sigma PE2$ (lb/year)	$\Sigma PE1$ (lb/year)	SSIPE (lb/year)
VOC	9,333	0	9,333

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

2. Public Notice Action

As discussed above, public noticing is required for this project for triggering Federal Major Modification for VOC emissions. Therefore, public notice documents will be submitted to the U.S. Environmental Protection Agency (USEPA), California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.16 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, 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.

- The maximum distilled spirits storage throughput in this tank shall not exceed 31,800 gallons per day. [District Rule 2201]
- The daily VOC emissions rate for distilled spirits storage shall not exceed 1.437 pounds per 1,000 gallons. [District Rule 2201]
- Combined annual VOC emissions from all storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall not exceed 9,333 pounds per year. [District Rule 2201]
- Combined annual VOC emissions from storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall be determined as the sum of the emissions for each individual wine and distilled spirits movement based on the volume transferred in each wine and distilled spirits movement and the batch-specific wine and distilled spirits storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201]
- The annual VOC distilled spirits storage emission factor for each distilled 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 distilled spirits throughput; and P is the volume percent ethanol of the distilled spirits being transferred. For concentrations up to and including 24 volume %, $a = 0$, $b = -5.2083E-5$ and $c = 0.011625$. For concentrations greater than 24 volume % up to and including 66 volume% , $a = 0.021334$, $b = 0.01589$ and $c = 0$. For concentrations greater than 66 volume % up to and including 92 volume %, $a = 1.60589$, $b = -1.83207$ and $c = 1.016774$. For concentrations greater than 92 volume % up to and including 100 volume %, $a = 9.64286$, $b = -16.1943$ and $c = 7.43214$. [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. All records shall be retained on site for a period of at least five years and made available to District inspection upon request. The following conditions will be included on the ATC's and PTO's to ensure continued compliance with the recordkeeping requirements:

- Records shall be retained on-site for a minimum of five years and made available for District inspection upon request. [District Rule 1070]
- Daily throughput records, including records of filling and emptying operations, the dates of such operations, the maximum temperature of the stored distilled spirits, the volume percent ethanol in the batch, and the volume of distilled spirits transferred, shall be maintained. [District Rule 2201]

4. Reporting

No reporting is required to demonstrate compliance with District Rule 2201.

F. Ambient Air Quality Analysis

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

G. Compliance Certification

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

H. Alternative Siting Analysis

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

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

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

District Rule 2520 Federally Mandated Operating Permits

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

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

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

District Rule 4001 New Source Performance Standards

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 distilled spirits storage tank operations.

District Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAP's)

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 distilled spirits storage tank operations.

District Rule 4102 Nuisance

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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

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 storage tanks used to store distilled spirits.

Therefore, the requirements of this rule are not applicable to this project.

District Rule 4694 Wine Fermentation and Storage Tanks

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) from the fermentation and bulk storage of wine, or achieve equivalent reductions from alternative emission sources. This rule is applicable to any winery fermenting wine and/or storing wine in bulk containers.

The storage tanks in this project store distilled spirits. Therefore, the requirements of this rule are not applicable to this project.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is located within 1,000 feet of the following school:

School Name: Riverview Elementary School
Address: 8662 S. Lac Jac Avenue
Parlier, CA 93648

However, as discussed within this document, the proposed winery fermentation and storage tanks being installed in this project do not result in an increase in Hazardous Air Pollutant (HAP) emissions. Therefore, in accordance with the California Health and Safety Code, Section 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

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

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

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. RECOMMENDATION

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct permits C-629-559-0 through '562-0 subject to the permit conditions on the attached draft Authority to Construct permits in Attachment E.

X. BILLING INFORMATION

Permit Number	Fee Schedule	Fee Description	Annual Fee
C-629-559-0	3020-05-B	15,900 gallons	\$93
C-629-560-0	3020-05-B	15,900 gallons	\$93
C-629-561-0	3020-05-B	15,900 gallons	\$93
C-629-562-0	3020-05-B	15,900 gallons	\$93

Attachments:

Attachment A, EPA Tanks 4.0 Calculations

Attachment B, BACT Guideline 5.4.15 and Distilled Spirits Storage Tanks Top Down BACT Analysis

Attachment C, Compliance Certification

Attachment D, Certificate of Conformity

Attachment E, Draft ATCs

Attachment A

Tanks 4.0 Calculations

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

Identification

User Identification:	Representative of R0009 thru R0012
City:	Parlier
State:	California
Company:	O'Neil Beverages Co LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Tank located at O'Neill Vintners in a climate controlled building. The tank is not insulated and steel construction. It has a PRV valve.

Tank Dimensions

Shell Height (ft):	16.00
Diameter (ft):	13.00
Liquid Height (ft) :	16.00
Avg. Liquid Height (ft):	15.00
Volume (gallons):	15,886.56
Turnovers:	62.00
Net Throughput(gal/yr):	984,966.49
Is Tank Heated (y/n):	Y

Paint Characteristics

Shell Color/Shade:	Red/Primer
Shell Condition:	Good
Roof Color/Shade:	Red/Primer
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

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

Meteorological Data used in Emissions Calculations: Fresno, California (Avg Atmospheric Pressure = 14.56 psia)

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

Representative of R0009 thru R0012 - Vertical Fixed Roof Tank
Parlier, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Ethyl alcohol	Jul	81.00	81.00	81.00	81.00	1.3100	1.3100	1.3100	46.0700			46.07	Option 2: A=8.321, B=1718.21, C=237.52

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

Representative of R0009 thru R0012 - Vertical Fixed Roof Tank
Parlier, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):							0.0000					
Vapor Space Volume (cu ft):							150.7065					
Vapor Density (lb/cu ft):							0.0104					
Vapor Space Expansion Factor:							0.0000					
Vented Vapor Saturation Factor:							0.9269					
Tank Vapor Space Volume:							150.7065					
Vapor Space Volume (cu ft):							150.7065					
Tank Diameter (ft):							13.0000					
Vapor Space Outage (ft):							1.1354					
Tank Shell Height (ft):							16.0000					
Average Liquid Height (ft):							15.0000					
Roof Outage (ft):							0.1354					
Roof Outage (Cone Roof)												
Roof Outage (ft):							0.1354					
Roof Height (ft):							0.0000					
Roof Slope (ft/ft):							0.0625					
Shell Radius (ft):							6.5000					
Vapor Density												
Vapor Density (lb/cu ft):							0.0104					
Vapor Molecular Weight (lb/lb-mole):							46.0700					
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):							1.3100					
Daily Avg. Liquid Surface Temp. (deg. R):							540.6700					
Daily Average Ambient Temp. (deg. F):							81.8500					
Ideal Gas Constant R												
(psia cuft / (lb-mol-deg R)):							10.731					
Liquid Bulk Temperature (deg. R):							540.6700					
Tank Paint Solar Absorptance (Shell):							0.8900					
Tank Paint Solar Absorptance (Roof):							0.8900					
Daily Total Solar Insulation												
Factor (Btu/sqft day):							2,551.4853					
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:							0.0000					
Daily Vapor Temperature Range (deg. R):							0.0000					
Daily Vapor Pressure Range (psia):							0.0000					
Breather Vent Press. Setting Range(psia):							0.0000					
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):							1.3100					
Vapor Pressure at Daily Minimum Liquid												
Surface Temperature (psia):							1.3100					
Vapor Pressure at Daily Maximum Liquid												
Surface Temperature (psia):							1.3100					
Daily Avg. Liquid Surface Temp. (deg R):							540.6700					
Daily Min. Liquid Surface Temp. (deg R):							540.6700					
Daily Max. Liquid Surface Temp. (deg R):							540.6700					
Daily Ambient Temp. Range (deg. R):							33.5000					
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:							0.9269					
Vapor Pressure at Daily Average Liquid:												
Surface Temperature (psia):							1.3100					

Vapor Space Outage (ft):	1.1354
Working Losses (lb):	76.7260
Vapor Molecular Weight (lb/lb-mole):	46.0700
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	1.3100
Net Throughput (gal/mo.):	82,080.5406
Annual Turnovers:	62.0000
Turnover Factor:	0.6505
Maximum Liquid Volume (gal):	15,886.5563
Maximum Liquid Height (ft):	16.0000
Tank Diameter (ft):	13.0000
Working Loss Product Factor:	1.0000
 Total Losses (lb):	 76.7260

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

Emissions Report for: July

Representative of R0009 thru R0012 - Vertical Fixed Roof Tank
Parlier, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Ethyl alcohol	76.73	0.00	76.73

Attachment B

BACT Guideline 5.4.15 Top Down BACT Analysis for
Distilled Spirits Storage Tanks

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.15*

Last Update 11/2/2011

Distilled Spirits Storage Tank

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Insulation or Equivalent**, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation	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 adsorption or equivalent (90% control); 4) Refrigerated Storage (70% control)	

** Tank 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.

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

Top Down BACT Analysis for VOC Emissions:

Step 1 - Identify all control technologies

Option 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

In industry practice distilled spirits tanks are enclosed, equipped with PVRVs, insulated, and operated to very much the same standards as wine tanks. These design and operational practices are essential for maintaining optimum quality of the stored distilled spirits.

Since the PVRV, "gas-tight" operation, are almost universally employed throughout the industry for purposes other than air pollution control, they are determined to be both "achieved in practice" and "industry standard".

Option 2 – Refrigerated Storage at 40 °F (70% control)

Refrigeration of the distilled spirits to 40 °F substantially lowers the vapor pressure of the ethanol over the solution and results in reduced emissions relative to storage at ambient temperatures. TANKS 4.0 was utilized to compare the emissions from an insulated tank maintained at 75 °F (per the requirements of District Rule 4694 for wine) with those from an insulated tank maintained at 40 °F. Maintaining distilled spirits at 40 °F results in greater than 70% reduction in emissions when compared to storage at 75 °F.

Option 3 – Collection of VOCs and control by absorption (>90% collection & control)

Ethanol is highly soluble in water and thus absorption in water (or other absorbents) using a scrubber is technologically feasible. The draft Technical Assessment Document for Strategies and Costs for Winery Ethanol Emission Control (TAD), developed by in a joint effort by several San Joaquin Valley wineries, states that >90% control can be achieved by absorption but notes that the absorption process will produce ethanol-laden wastewater, requiring either recovery of the ethanol or disposal of the wastewater.

Option 4 – Collection of VOCs and control by carbon adsorption (95% collection and control)

Collection and capture of VOCs on activated carbon is a well-established process for controlling VOCs in the vent streams from enclosed evaporative sources, including ethanol emissions. A VOC removal efficiency of 95% is generally recognized as achievable. As such, it is adaptable from a purely technical standpoint to distilled spirits storage tanks.

Option 5 – Collection of VOCs and control by thermal or catalytic oxidation (>98% collection & control)

Collection and destruction of VOCs with catalytic or thermal oxidation is a well-established process for controlling VOCs in the vent streams from enclosed evaporative sources. A VOC removal efficiency of 98% is generally recognized as achievable. As such, it is adaptable from a purely technical standpoint to distilled spirits storage tanks.

Step 2 - Eliminate Technologically Infeasible Options

All of the options listed above are considered to be feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank	Control Technology	Overall Capture and Control Efficiency
1	Capture of VOCs and thermal or catalytic oxidation	98%
2	Capture of VOCs and carbon adsorption	95%
3	Capture of VOCs and absorption	90%
4	Refrigerated Storage at 40 °F	70%
5	Insulation or Equivalent, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation (Achieved in Practice and Industry Standard)	0%

There are no remaining control technologies for VOC.

Step 4 - Cost Effectiveness Analysis

A cost effectiveness analysis is performed for each control technology which is more effective than achieved-in-practice BACT. The cost-effectiveness analysis will be performed based on the most cost effective approach by installing a common control device for multiple tanks. The four new tanks are part of an SLC with units S-629-436 through -443. The cost effectiveness analysis will be done for the control of all 12 tanks under the SLC.

Tank Configuration

Spirits are produced as the overhead product from a continuous distillation column. The overhead condenser on the tower (evaporative condenser) condenses and subcools the product to 80 °F for rundown to the product collection tanks.

Product Tanks, 392,800 gallon total capacity:

- Qty: 12
- Capacity: Four (new) 15,900 gallon tanks, four 44,800 gallon tanks and four 37,500 gallons tanks.
- Size: 15,900 gallon tank - 13' dia x 16'0" tall
37,500 gallon tank - 21' 11" dia x 16' tall and
44,800 gallon tank - 20' dia x 16' tall
- Spec: Vertical fixed roof (dome), pressure/vacuum valve, insulated, temperature control

Maximum Vapor Flow Rate

Determination of the maximum vapor flow rate from the collection of tanks is calculated by the maximum product transfer rate. The facility stated the maximum design flowrate to transfer liquid spirits using air diaphragm pumps would be 50 GPM.

$$44,800 \text{ gallons} \times \text{min}/50 \text{ gallons} \times 1 \text{ hr}/60 \text{ min} = 14.9 \text{ hours}$$

$$37,500 \text{ gallons} \times \text{min}/50 \text{ gallons} \times 1 \text{ hr}/60 \text{ min} = 12.5 \text{ hours}$$

$$15,900 \text{ gallons} \times \text{min}/50 \text{ gallons} \times 1 \text{ hr}/60 \text{ min} = 5.3 \text{ hours}$$

Therefore, assuming a 15 hour fill rate is conservative.

$$\begin{aligned} \text{Moles of air displaced} &= 44,800 \text{ gallons} \times \text{ft}^3/7.48 \text{ gallons} \times 0.07544 \text{ lb-air}/\text{ft}^3 \times \text{lb-mol}/28.58 \text{ lb} \\ &= 15.81 \text{ lb-mol air} \end{aligned}$$

$$\begin{aligned} \text{Moles of air displaced} &= 37,500 \text{ gallons} \times \text{ft}^3/7.48 \text{ gallons} \times 0.07544 \text{ lb-air}/\text{ft}^3 \times \text{lb-mol}/28.58 \text{ lb} \\ &= 13.23 \text{ lb-mol air} \end{aligned}$$

$$\begin{aligned} \text{Moles of air displaced} &= 15,900 \text{ gallons} \times \text{ft}^3/7.48 \text{ gallons} \times 0.07544 \text{ lb-air}/\text{ft}^3 \times \text{lb-mol}/28.58 \text{ lb} \\ &= 5.6 \text{ lb-mol air} \end{aligned}$$

Per previous project C-1113210, Tanks 4.0 Daily Spirits emissions for the 4 – 44,800 gallon and 4- 37,500 gallon tanks are 618.8 lbs. Per Tanks 4.0 the emissions for the new tanks is 10 lbs.

$$\text{Moles of spirits} = (618.8 \text{ lb} + 10.0 \text{ lb}) \times \text{lb-mol}/46.07 \text{ lb} = 13.64 \text{ lb-mol}$$

$$\text{Total moles} = 13.64 + (15.81 \times 4 \text{ tanks} + 13.23 \times 4 \text{ tanks} + 5.6 \times 4 \text{ tanks}) \text{ lb-mol} = 152.2 \text{ lb-mol}$$

$$\begin{aligned} V &= nRT/P = 152.2 \text{ lb-mol} \times 0.7302 \text{ lb-mol } ^\circ\text{R}/\text{atm ft}^3 \times 520 \text{ } ^\circ\text{R} / 1 \text{ atm} \\ &= 57,791 \text{ ft}^3 \end{aligned}$$

$$\text{Vapor Flow Rate} = 57,791 \text{ ft}^3 \div 15 \text{ hours} \times 1 \text{ hour}/60 \text{ min} = 64.2 \text{ scfm}$$

Uncontrolled Emission Calculation

Assumptions:

- Product tanks = four 15,900 gallon, four 44,800 gallon and four 37,500 gallon tanks (total volume 392,800 gallons), equipped with pressure/vacuum valve, insulated, temperature control
- It is assumed that the spirits are filled and cool to ambient temperature relatively quickly. Breathing losses are considered negligible since the tanks are insulated

Emission Factors:

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

Calculation:

The new distilled spirit tanks will be used for storage. The uncontrolled emissions will be based upon the existing SLC limit of 9,333 lb-VOC/year.

Uncontrolled Emissions = 9,333 lb-VOC/year

Collection System Capital Investment (based on ductwork)

A common feature of all of thermal or catalytic oxidation/carbon adsorption/absorption options is that they require installation of a collection system for delivering the VOCs from the tanks to the common control device. This analysis ignores additional major costs for equipment sterilization systems for ductwork and control device, instrumentation and control systems for isolation of individual tanks in the battery, and site specific factors due to limited plot space (known to be a significant factor at all wineries). Should all these additional cost factors be included, the calculated cost effectiveness would be substantially higher than indicated below.

Collection system to consist of:

- The collection system consists of stainless steel place ductwork (stainless steel is required due to food grade product status) with isolation valving, connecting the eight tanks to a common manifold system which ducts the combined vent to the common control device. The cost of dampers and isolation valving, installed in the ductwork, will be included in the cost estimate.
- A minimum duct size is established at six inches diameter at each tank to provide adequate strength for spanning between supports. The main header is twelve inches diameter to handle the potential for simultaneous venting.
- minimum estimated length 147 feet (based on a two tank layout, 10 feet spacing between tanks, 10 feet spacing between tank and header, and control device located within 100 feet of tank array)

Capital Cost Ductwork

An estimate of straight line duct lengths required was prepared based on a winery layout of four 44,800 gallon, four 37,500 gallon tanks, and 15,900 gallon tanks.

6" Stainless Steel Duct: 933 linear feet
 12" Stainless Steel Duct: 253.5 linear feet

A direct cost estimate for 12 inch diameter stainless steel ductwork, installed in a San Joaquin Valley winery, was taken from Fermenter VOC Emission Control Cost Estimate, prepared by Eichleay Engineering for the Wine Institute in conjunction with development of District Rule 4694. The estimate is based on 2nd quarter 2005 dollars, and includes fittings, miscellaneous duct supports and other materials plus field labor costs required to install the ductwork, but does not include other associated indirect costs such as construction management, engineering, owner's cost, contingency, etc.

Unit installed cost for 6 inch Stainless Steel ducting: \$61.30/linear foot
 Unit installed cost for 12 inch Stainless Steel ducting: \$143.80/linear foot

Installed costs = (\$61.30 linear foot x 933 feet) + (\$143.80 linear foot x 253.5 feet) = \$93,646

Adjusting from 2005 dollars to 2011 dollars (multiply by 1.165, 2.75% inflation/yr).

Installed costs = \$93,646 x 1.165 = \$109,098

Ductwork – Cost Estimate	
Cost Description	Cost (\$)
Direct Costs (DC)	
Direct installation costs	109,098
Total Direct Costs	109,098
Indirect Costs (IC)	
Engineering	0.10 x 109,098 = 10,910
Construction and field expenses	0.05 x 109,098 = 5,455
Contractor fees	0.10 x 109,098 = 10,910
Start-up	0.02 x 109,098 = 2,182
Performance test	0.01 x 109,098 = 1,091
Contingencies	0.03 x 109,098 = 3,273
Total Indirect Costs	33,821
Total Capital Cost (DC + IC)	142,919

Duct Valve Allowance

One of the major concerns of a manifold duct system is microorganisms spoiling the wine, and transferring from one tank to another. It is possible to completely ruin a tank of white win if a few hundred gallons of red wine were back fed through the duct. 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.

Unit installed cost for 6 inch butterfly valve = \$2,125/valve

Unit installed cost one foot removable spool = \$500/tank

Base costs = (\$2,125/valve x 12 tanks) + (\$500/tank x 12 tanks) = \$31,500

Duct Valve – Cost Estimate	
Cost Description	Cost (\$)
Direct Costs (DC)	
Base Equipment Costs (Duct Valves)	31,500
Instrumentation	$0.10 \times 31,500 = 3,150$
Sales Tax	$0.03 \times 31,500 = 945$
Freight	$0.05 \times 31,500 = 1,575$
Purchased equipment cost	37,170
Foundations & supports	$0.08 \times 37,170 = 2,974$
Handling & erection	$0.14 \times 37,170 = 5,204$
Electrical	$0.04 \times 37,170 = 1,487$
Piping	$0.02 \times 37,170 = 1,859$
Painting	$0.01 \times 37,170 = 372$
Insulation	$0.01 \times 37,170 = 372$
Direct installation costs	12,268
Total Direct Costs	49,438
Indirect Costs (IC)	
Engineering	$0.10 \times 37,170 = 3,717$
Construction and field expenses	$0.05 \times 37,170 = 186$
Contractor fees	$0.10 \times 37,170 = 3,717$
Start-up	$0.02 \times 37,170 = 743$
Performance test	$0.01 \times 37,170 = 371$
Contingencies	$0.03 \times 37,170 = 1,115$
Total Indirect Costs	9,849
Total Capital Cost (DC + IC)	59,287

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.

An allowance of \$200,000 for a CIP system at a vapor flow rate of 184 scfm was determined in project C-1110475.

To compare the cost and size of a 184 scfm CIP system to the subject 64.2 scfm CIP system, the six-tenths rule of thumb is used.

$$\text{Cost } 64.2 \text{ scfm CIP system} = \text{Cost } 184 \text{ scfm CIP system} \times \left(\frac{64.2 \text{ scfm}}{184 \text{ scfm}} \right)^{0.6}$$

$$\begin{aligned} \text{Base Cost } 54.7 \text{ scfm CIP system} &= \$200,000 \times (64.2 \div 184)^{0.6} \\ &= \$106,331/\text{year} \end{aligned}$$

Clean-In-Place System – Cost Estimate	
Cost Description	Cost (\$)
Direct Costs (DC)	
Base Equipment Costs (CIP System)	106,331
Instrumentation	0.10 x 106,331 = 10,633
Sales Tax	0.03 x 106,331 = 3,190
Freight	0.05 x 106,331 = 5,317
Purchased equipment cost	125,471
Foundations & supports	0.08 x 125,471 = 10,037
Handling & erection	0.14 x 125,471 = 17,566
Electrical	0.04 x 125,471 = 5,018
Piping	0.02 x 125,471 = 2,509
Painting	0.01 x 125,471 = 1,255
Insulation	0.01 x 125,471 = 1,255
Direct installation costs	37,640
Total Direct Costs	163,111
Indirect Costs (IC)	
Engineering	0.10 x 125,471 = 12,547
Construction and field expenses	0.05 x 125,471 = 6,274
Contractor fees	0.10 x 125,471 = 12,547
Start-up	0.02 x 125,471 = 2,509
Performance test	0.01 x 125,471 = 1,254
Contingencies	0.03 x 125,471 = 3,764
Total Indirect Costs	38,895
Total Capital Cost (DC + IC)	202,006

$$\begin{aligned}
 \text{Total costs} &= \text{Ductwork} + \text{Duct Valve} + \text{CIP System} \\
 &= \$142,919 + \$59,287 + \$202,006 \\
 &= \$404,212
 \end{aligned}$$

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

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

Therefore,

$$\text{Annualized Capital Investment} = \$404,212 \times 0.163 = \$65,887$$

Option 2 – Refrigerated Storage at 40 °F

Design Basis

- A common refrigeration system will be installed for the twelve tanks.
- The refrigeration system will be a packaged single-stage vapor-compression system.
- Minimum refrigeration capacity will allow cooling the twelve tanks from 75 °F to 40 °F once the product enters the tanks. As shown above the filling rate for these tanks is 50 gpm.

Based on a specific heat capacity of 1.0 Btu/lb-°F and cooling one tank from 75 °F to 40 °F, the capacity required for the refrigeration system would be:

$$\begin{aligned}
 \text{Refrigeration Capacity} &= 50 \text{ gal/min} \times 12 \text{ tanks} \times 8.34 \text{ lb/gal} \times 1.0 \text{ Btu/lb-}^\circ\text{F} \times (75 \text{ }^\circ\text{F} - 40 \text{ }^\circ\text{F}) \\
 &\quad \times 60 \text{ min/hr} \times 1 \text{ ton-hr refrigeration/12,000 Btu}
 \end{aligned}$$

$$\text{Refrigeration Capacity} = 875.7 \text{ tons}$$

Capital Cost

The EPA Air Pollution Control Manual, Section 3, Chapter 2, Table 2.5, provides costs for single stage vapor compression systems up to 100 tons capacity at a condensation temperature of 40 °F. Conservatively, using the purchase price for a 100 ton unit yields:

$$\text{Refrigeration System Cost} = \$140,000$$

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

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

Therefore,

$$\text{Annualized Capital Investment} = \$140,000 \times 0.163 = \$22,820$$

To compare the cost and size of a 100 ton condenser to the subject 875.7 ton condenser, the six-tenths rule of thumb is used.

$$\text{Annualized Costs } 875.7 \text{ ton} = \text{Annualized Costs } 100 \text{ ton} \times \left(\frac{875.7 \text{ ton}}{100 \text{ ton}} \right)^{0.6}$$

$$\begin{aligned} \text{Annualized Costs } 875.7 \text{ ton} &= \$22,820 \times (875.7 \div 100)^{0.6} \\ &= \$83,894/\text{year} \end{aligned}$$

Total Annual Cost = \$83,894

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Uncontrolled Emissions} \times 0.70 \\ &= 9,333 \text{ lb-VOC/year} \times 0.70 \\ &= 6,533.1 \text{ lb-VOC/year} \\ &= 3.267 \text{ tons-VOC/year} \end{aligned}$$

$$\begin{aligned} \text{Cost Effectiveness} &= \$83,894/\text{year} \div 3.267 \text{ tons-VOC/year} \\ &= \$25,679/\text{ton-VOC} \end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the required condenser alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC.

Option 3 – Collection of VOCs and control by absorption

One scrubber will be required sized at the maximum vapor flow rate of 64.2 scfm.

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

Adjusting from 2003 dollars to 2012 dollars (multiply by 1.25, 2.75% inflation/yr).

Water scrubber (750 cfm) capital cost = \$108,500 x 1.25 = \$135,625

$$\text{Capital Costs } 64.2 \text{ cfm} = \text{Capital Costs } 750 \text{ cfm} \times \left(\frac{64.2 \text{ cfm}}{750 \text{ cfm}} \right)^{0.6}$$

$$\begin{aligned} \text{Capital Costs } 64.2 \text{ cfm} &= \$135,625 \times (64.2 \div 750)^{0.6} \\ &= \$31,033 \end{aligned}$$

A scrubber water 10,000 gallon collection tank is provided which has enough capacity to allow a full truck load of material to be transported and some free board. It is estimated this tank will cost about \$20,000. This number is added to the scrubber cost. \$10,000 dollar Class I Division I, Group D allowance is added to the estimate to explosion proof the electrical system.

Total scrubber capital costs = \$31,033 + \$20,000 + \$10,000 = \$61,033

The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).

Water Scrubber – Cost Estimate	
Cost Description	Cost (\$)
Direct Costs (DC)	
Base Equipment Costs (Water Scrubber)	61,033
Instrumentation	0.10 x 61,033 = 6,103
Sales Tax	0.03 x 61,033 = 1,831
Freight	0.05 x 61,033 = 3,052
Purchased equipment cost	72,019
Foundations & supports	0.08 x 72,019 = 5,762
Handling & erection	0.14 x 72,019 = 10,083
Electrical	0.04 x 72,019 = 2,881
Piping	0.02 x 72,019 = 1,440
Painting	0.01 x 72,019 = 720
Insulation	0.01 x 72,019 = 720
Direct installation costs	21,606
Total Direct Costs	93,625
Indirect Costs (IC)	
Engineering	0.10 x 72,019 = 7,201
Construction and field expenses	0.05 x 72,019 = 3,601
Contractor fees	0.10 x 72,019 = 7,201
Start-up	0.02 x 72,019 = 1,440
Performance test	0.01 x 72,019 = 720
Contingencies	0.03 x 72,019 = 2,161
Total Indirect Costs	22,324
Total Capital Cost (DC + IC)	115,949

Annualized Capital Investment = Total Capital Cost x Amortization Factor

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

Therefore,

$$\text{Annualized Capital Investment} = \$115,949 \times 0.163 = \$18,900$$

Additionally, the water scrubber will generate ethanol-laden wastewater containing 4.2 tons-ethanol annually. Assuming a 2% solution, approximately 63,444 gallons of waste water (4.2 ton-ethanol/year x 2000 lb/ton x gal/6.62 lb ÷ 0.02) will be generated annually. Per estimate in Sonoma Technologies study, an allowance of \$0.25 per gallon is applied for disposal costs

$$\text{Annual disposal costs} = 63,444 \text{ gallons} \times \$0.25/\text{gallon} = \$15,861$$

$$\text{Total Annual Cost} = \$65,887 + \$18,900 + \$15,861 = \$100,648$$

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Uncontrolled Emissions} \times 0.90 \\ &= 9,333 \text{ lb-VOC/year} \times 0.90 \\ &= 8,399.7 \text{ lb-VOC/year} \\ &= 4.2 \text{ tons-VOC/year} \end{aligned}$$

$$\begin{aligned} \text{Cost Effectiveness} &= \$100,648/\text{year} \div 4.2 \text{ tons-VOC/year} \\ &= \$23,964/\text{ton-VOC} \end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the required water scrubber and collection system ductwork equipment alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC.

Option 5 – Collection of VOCs and control by carbon adsorption

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Uncontrolled Emissions} \times 0.95 \\ &= 9,333 \text{ lb-VOC/year} \times 0.95 \\ &= 8,866.4 \text{ lb-VOC/year} \\ &= 4.43 \text{ tons-VOC/year} \end{aligned}$$

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

$$\begin{aligned} \text{Carbon required} &= 4.43 \text{ tons-VOC/year} \times 2000 \text{ lb/ton} \times 1/0.20 \\ &= 44,332 \text{ lb carbon} \end{aligned}$$

$$\text{Carbon capital cost} = \$1.00/\text{lb} = \$1.00/\text{lb} \times 44,332 \text{ lb carbon} = \$44,332$$

The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).

Carbon Adsorption – Cost Estimate	
Cost Description	Cost (\$)
Direct Costs (DC)	
Base Equipment Costs (Carbon Material)	44,332
Instrumentation	0.10 x 44,332 = 4,433
Sales Tax	0.03 x 44,332 = 1,330
Freight	0.05 x 44,332 = 2,217
Purchased equipment cost	52,312
Foundations & supports	0.08 x 52,312 = 4,185
Handling & erection	0.14 x 52,312 = 7,324
Electrical	0.04 x 52,312 = 2,092
Piping	0.02 x 52,312 = 1,046
Painting	0.01 x 52,312 = 523
Insulation	0.01 x 52,312 = 523
Direct installation costs	15,693
Total Direct Costs	68,005
Indirect Costs (IC)	
Engineering	0.10 x 52,312 = 5,231
Construction and field expenses	0.05 x 52,312 = 2,616
Contractor fees	0.10 x 52,312 = 5,231
Start-up	0.02 x 52,312 = 1,046
Performance test	0.01 x 52,312 = 523
Contingencies	0.03 x 52,312 = 1,569
Total Indirect Costs	16,216
Total Capital Cost (DC + IC)	84,221

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

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

Therefore,

$$\text{Annualized Capital Investment} = \$84,221 \times 0.163 = \$13,707$$

Operation and Maintenance Cost

The operation and maintenance cost for this carbon adsorption system will only include the cost of the service to remove and replace the saturated carbon canisters.

A representative from United States Filter Corporation stated that carbon adsorption systems are able to control about 20% of their weight in VOC's. As shown above, the annual carbon requirement would be 44,332 pounds. A typical recommended system consists of 2-8,000 pound canisters connected in series. In order to ensure no breakthrough, a service would be required every time the primary system becomes saturated. Therefore, a service would be required six times per year (44,332 lb/yr/8,000 lb/canister).

Pursuant to the cost estimate received from United States Filter Corporation, the cost of the service to remove and replace a saturated carbon canister is \$8,720 per unit. This cost would include removal and replacement of the spent unit, packaging of the unit, shipping of the unit to the reactivation facility and reactivation of the unit.

Therefore, the annual service cost can be calculated as follows:

$$\begin{aligned} \text{Service Cost} &= \text{Occurrence (service/year)} \times \text{Cost (\$/service)} \\ \text{Service Cost} &= 6 \text{ services/year} \times \$8,720 \text{ /service} = \$52,320/\text{year} \end{aligned}$$

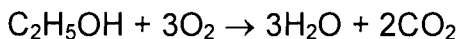
$$\text{Total Annual Cost} = \$65,887 + \$13,707 + \$52,320 = \$131,914/\text{year}$$

$$\begin{aligned} \text{Cost Effectiveness} &= \$131,914/\text{year} \div 4.43 \text{ tons-VOC/year} \\ &= \$29,777/\text{ton-VOC} \end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the required carbon and collection system ductwork equipment alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC.

Option 6 – Collection of VOCs and control by thermal or catalytic oxidation

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



One thermal oxidizer will be required sized at the maximum vapor flow rate of 62.4 scfm.

Baker Furnace provided a quote for a 50 scfm thermal oxidizer at a capital cost of \$37,700 (2009 dollars).

Adjusting from 2009 dollars to 2011 dollars (multiply by 1.055, 2.75% inflation/yr).

Regenerative thermal oxidizer (50 cfm) capital cost = \$37,700 x 1.055 = \$39,774

$$\text{Capital Costs } 64.2 \text{ cfm} = \text{Capital Costs } 50 \text{ cfm} \times \left(\frac{64.2 \text{ cfm}}{50 \text{ cfm}} \right)^{0.6}$$

$$\begin{aligned} \text{Capital Costs } 64.2 \text{ cfm} &= \$39,774 \times (64.2 \div 50)^{0.6} \\ &= \$46,210 \end{aligned}$$

Operation and Maintenance Costs

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

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

$$\begin{aligned} \text{heat of combustion -dHc} &= 20276 \text{ Btu/lb} \\ \text{Daily VOC emissions rate} &= 9,333 \text{ lb/year} / 365 = 25.6 \text{ lb/day} \\ \text{Blower flow rate} &= 64.2 \text{ scfm} \\ &= 92,448 \text{ ft}^3/\text{day} \end{aligned}$$

$$\begin{aligned} -dh(c) &= 25.6 \text{ lb/day} \times 20276 \text{ Btu/lb} / 92,488 \text{ ft}^3/\text{day} \\ &= 5.6 \text{ Btu/ft}^3 \end{aligned}$$

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

$$\begin{aligned} -dh(c) &= 5.6 \text{ Btu/ft}^3 / 0.0739 \text{ lb/ft}^3 \\ &= 75.8 \text{ Btu/lb} \end{aligned}$$

Fuel Flow Requirement

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

Where	P_w	=	0.0739 lb/ft ³
	C_p	=	0.255 Btu/lb-°F
	Q_w	=	64.2 scfm
	-dh(m)	=	21,502 Btu/lb for methane
	T_r	=	77°F assume ambient conditions
	$P(\text{ef})$	=	0.0408 lb/ft ³ m, methane at 77°F, 1 atm
	T_f	=	1600°F
	T_w	=	1150°F
	-dh(c)	=	75.8 Btu/lb

$$Q = \frac{0.0739 \cdot 64.2 \cdot \{0.255 \cdot [1.1 \cdot 1600 - 1150 - 0.1 \cdot 77] - 75.8\}}{0.0408 \cdot [21502 - 1.1 \cdot 0.255 \cdot (1600 - 77)]}$$

$$= 369.0 / 859.9 = 0.43 \text{ ft}^3/\text{min}$$

Fuel Cost

The cost for natural gas shall be based upon the average price of natural gas sold to "Commercial Consumers" in California for the years 2007 and 2008.¹

2007 = \$10.20/thousand ft³ total monthly average
 2008 = \$11.72/thousand ft³ total monthly average
 Average for two years = \$10.96/thousand ft³ total monthly average

Assumptions:

1 therm = 100,000 Btus
 1,000 ft³ = 10 therms
 Average Rate = \$1.96/therm = \$0.0110/ft³

$$\text{Fuel Cost} = 0.43 \text{ cfm} \times 1440 \text{ min/day} \times 365 \text{ day/yr} \times \$0.0110/\text{ft}^3$$

$$= \$2,486/\text{yr}$$

Electricity Requirement

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

Where

ΔP = Pressure drop Across system = 4 in. H₂O
 ϵ = Efficiency for fan and motor = 0.6
 Q_w = 64.2 scfm

$$\text{Power}_{\text{fan}} = \frac{1.17 \cdot 10^{-4} \cdot 64.2 \text{ cfm} \cdot 4 \text{ in. H}_2\text{O}}{0.60}$$

$$= 0.50 \text{ kW}$$

Average cost of electricity to commercial users in California²:

2008 = \$0.1302
 2009 = \$0.1385
 AVG = \$0.1344

$$\text{Electricity Cost} = 0.050 \text{ kW} \times 24 \text{ hr/day} \times 365 \text{ days/yr} \times \$0.1344/\text{kWh} = \$59/\text{yr}$$

¹ Energy Information Administration/Natural Gas Monthly October 2009; Average Price of Natural Gas Sold to Commercial Consumers by State, 2007 - 2008
² Energy Information Administration/Electric Power Monthly November 2009; Average Retail Price of Electricity to Ultimate Customers by End-Use Sector, by State, 2007 - 2009

The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).

Thermal and Catalytic Incinerator – Cost Estimate	
Cost Description	Cost (\$)
Direct Costs (DC)	
Base Equipment Costs (Incinerator)	46,210
Instrumentation	0.10 x 46,210 = 4,963
Sales Tax	0.03 x 46,210 = 1,489
Freight	0.05 x 46,210 = 2,482
Purchased equipment cost	54,528
Foundations & supports	0.08 x 54,528 = 4,362
Handling & erection	0.14 x 54,528 = 7,634
Electrical	0.04 x 54,528 = 2,181
Piping	0.02 x 54,528 = 1,091
Painting	0.01 x 54,528 = 462
Insulation	0.01 x 54,528 = 462
Direct installation costs	16,192
Total Direct Costs	70,720
Indirect Costs (IC)	
Engineering	0.10 x 54,528 = 5,452
Construction and field expenses	0.05 x 54,528 = 2,726
Contractor fees	0.10 x 54,528 = 4,452
Start-up	0.02 x 54,528 = 1,091
Performance test	0.01 x 54,528 = 545
Contingencies	0.03 x 54,528 = 1,636
Total Indirect Costs	16,902
Total Capital Cost (DC + IC)	87,622

Annualized Capital Investment = Total Capital Cost x Amortization Factor

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

Therefore,

$$\text{Annualized Capital Investment} = \$87,622 \times 0.163 = \$14,282$$

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

Total Annual Cost			
Operator	0.5 h/shift	\$25.92/h	\$4,730
Supervisor	15% of operator		\$710
Maintenance			
Labor	0.5 h/shift	\$28.52	\$5,205
Material	100% of labor		\$5,205
Utility			
Natural Gas			\$2,486
Electricity			\$59
Indirect Annual Cost (IC)			
Overhead	60% of Labor Cost		\$6,387
Administrative Charge	2% TCI		\$1,752
Property Taxes	1% TCI		\$876
Insurance	1% TCI		\$876
Total Annual Cost			\$28,286

$$\text{Total Annual Costs} = \$65,887 + \$14,282 + \$28,286 = \$108,455/\text{year}$$

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Uncontrolled Emissions} \times 0.98 \\ &= 9,333 \text{ lb-VOC/year} \times 0.98 \\ &= 9,146 \text{ lb-VOC/year} \\ &= 4.57 \text{ tons-VOC/year} \end{aligned}$$

$$\begin{aligned} \text{Cost Effectiveness} &= \$108,455/\text{year} \div 4.57 \text{ tons-VOC/year} \\ &= \$23,732/\text{ton-VOC} \end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the required thermal oxidizer and collection system ductwork equipment alone results in a cost effectiveness which exceeds the District's Guideline of \$17,500/ton-VOC.

Step 5 - Select BACT

All identified feasible options with control efficiencies higher than the option proposed by the facility have been shown to not be cost effective. The facility has proposed Option 1, Insulation or Equivalent, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation. These BACT requirements will be placed on the ATCs as enforceable conditions.

Attachment C
Compliance Certification

San Joaquin Valley Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

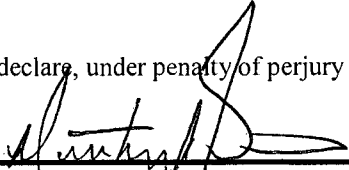
- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE
 MINOR PERMIT MODIFICATION AMENDMENT

COMPANY NAME: O'Neill Beverages Co LLC	FACILITY ID: C 6 29
1. Type of Organization: <input type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Jeff O'Neill	
3. Agent to the Owner: Matt Towers	

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

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

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



 Signature of Responsible Official

2/12/2014

 Date

Matt Towers

 Name of Responsible Official (please print)

Chief Operation Officer

 Title of Responsible Official (please print)

Attachment E

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-629-559-0

LEGAL OWNER OR OPERATOR: O'NEILL BEVERAGES CO LLC
MAILING ADDRESS: 8418 S LAC JAC AVE
PARLIER, CA 93648-9708

LOCATION: 8418 S LAC JAC AVE
PARLIER, CA 93648

EQUIPMENT DESCRIPTION:

15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R009) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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 Rule 2201] Federally Enforceable Through Title V Permit
5. 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 Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum distilled spirits storage throughput in this tank shall not exceed 31,800 gallons per day [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

C-629-559-0 : Mar 27 2014 4:12PM -- GONZALEV : Joint Inspection NOT Required

7. Combined annual VOC emissions from all storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall not exceed 9,333 pounds per year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The annual VOC distilled spirits storage emission factor for each distilled 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 distilled spirits throughput; and P is the volume percent ethanol of the distilled spirits being transferred. For concentrations up to and including 24 volume %, $a = -0.52083E-4$, $b = 1.1625E-2$ and $c = 0$. For concentrations greater than 24 volume % up to and including 66 volume% , $a = -0.49990E-4$, $b = 1.0589E-2$ and $c = 0.02133$. For concentrations greater than 66 volume % up to and including 92 volume %, $a = 1.60589E-4$, $b = -1.83207E-2$ and $c = 1.016774$. For concentrations greater than 92 volume % up to and including 100 volume %, $a = 9.64286E-4$, $b = -16.1943E-2$ and $c = 7.43214$. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Combined annual VOC emissions from storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall be determined as the sum of the emissions for each individual wine and distilled spirits movement based on the volume transferred in each wine and distilled spirits movement and the batch-specific wine and distilled spirits storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Daily throughput records, including records of filling and emptying operations, the dates of such operations, the maximum temperature of the stored distilled spirits, the volume percent ethanol in the batch, and the volume of distilled spirits transferred, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The permittee shall maintain records of the combined annual VOC emissions for permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 . [District Rule 2201] Federally Enforceable Through Title V Permit
12. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-629-560-0

LEGAL OWNER OR OPERATOR: O'NEILL BEVERAGES CO LLC
MAILING ADDRESS: 8418 S LAC JAC AVE
PARLIER, CA 93648-9708

LOCATION: 8418 S LAC JAC AVE
PARLIER, CA 93648

EQUIPMENT DESCRIPTION:

15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R0010) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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 Rule 2201] Federally Enforceable Through Title V Permit
5. 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 Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum distilled spirits storage throughput in this tank shall not exceed 31,800 gallons per day [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

DRAFT

DAVID WARNER, Director of Permit Services
C-629-560-0; Mar 27 2014 4:12PM -- GONZALEV : Joint Inspection NOT Required

7. Combined annual VOC emissions from all storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall not exceed 9,333 pounds per year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The annual VOC distilled spirits storage emission factor for each distilled 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 distilled spirits throughput; and P is the volume percent ethanol of the distilled spirits being transferred. For concentrations up to and including 24 volume %, $a = -0.52083E-4$, $b = 1.1625E-2$ and $c = 0$. For concentrations greater than 24 volume % up to and including 66 volume%, $a = -0.49990E-4$, $b = 1.0589E-2$ and $c = 0.02133$. For concentrations greater than 66 volume % up to and including 92 volume %, $a = 1.60589E-4$, $b = -1.83207E-2$ and $c = 1.016774$. For concentrations greater than 92 volume % up to and including 100 volume %, $a = 9.64286E-4$, $b = -16.1943E-2$ and $c = 7.43214$. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Combined annual VOC emissions from storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall be determined as the sum of the emissions for each individual wine and distilled spirits movement based on the volume transferred in each wine and distilled spirits movement and the batch-specific wine and distilled spirits storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Daily throughput records, including records of filling and emptying operations, the dates of such operations, the maximum temperature of the stored distilled spirits, the volume percent ethanol in the batch, and the volume of distilled spirits transferred, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The permittee shall maintain records of the combined annual VOC emissions for permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 . [District Rule 2201] Federally Enforceable Through Title V Permit
12. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-629-561-0

LEGAL OWNER OR OPERATOR: O'NEILL BEVERAGES CO LLC
MAILING ADDRESS: 8418 S LAC JAC AVE
PARLIER, CA 93648-9708

LOCATION: 8418 S LAC JAC AVE
PARLIER, CA 93648

EQUIPMENT DESCRIPTION:

15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R0011) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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 Rule 2201] Federally Enforceable Through Title V Permit
5. 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 Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum distilled spirits storage throughput in this tank shall not exceed 31,800 gallons per day [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

C-629-561-0 : Mar 27 2014 4:12PM - GONZALEV : Joint Inspection NOT Required

7. Combined annual VOC emissions from all storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall not exceed 9,333 pounds per year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The annual VOC distilled spirits storage emission factor for each distilled 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 distilled spirits throughput; and P is the volume percent ethanol of the distilled spirits being transferred. For concentrations up to and including 24 volume %, $a = -0.52083E-4$, $b = 1.1625E-2$ and $c = 0$. For concentrations greater than 24 volume % up to and including 66 volume% , $a = -0.49990E-4$, $b = 1.0589E-2$ and $c = 0.02133$. For concentrations greater than 66 volume % up to and including 92 volume %, $a = 1.60589E-4$, $b = -1.83207E-2$ and $c = 1.016774$. For concentrations greater than 92 volume % up to and including 100 volume %, $a = 9.64286E-4$, $b = -16.1943E-2$ and $c = 7.43214$. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Combined annual VOC emissions from storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall be determined as the sum of the emissions for each individual wine and distilled spirits movement based on the volume transferred in each wine and distilled spirits movement and the batch-specific wine and distilled spirits storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Daily throughput records, including records of filling and emptying operations, the dates of such operations, the maximum temperature of the stored distilled spirits, the volume percent ethanol in the batch, and the volume of distilled spirits transferred, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The permittee shall maintain records of the combined annual VOC emissions for permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 . [District Rule 2201] Federally Enforceable Through Title V Permit
12. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-629-562-0

LEGAL OWNER OR OPERATOR: O'NEILL BEVERAGES CO LLC
MAILING ADDRESS: 8418 S LAC JAC AVE
PARLIER, CA 93648-9708

LOCATION: 8418 S LAC JAC AVE
PARLIER, CA 93648

EQUIPMENT DESCRIPTION:
15,900 GALLON DISTILLED SPIRITS STORAGE TANK (TANK # R0012) WITH PRESSURE/VACUUM VALVE, LOCATED IN A COMPLETELY ENCLOSED BUILDING

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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. 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 Rule 2201] Federally Enforceable Through Title V Permit
5. 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 Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum distilled spirits storage throughput in this tank shall not exceed 31,800 gallons per day [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services

C-629-562-0 - Mar 27 2014 4:12PM - GONZALEV : Joint Inspection NOT Required

7. Combined annual VOC emissions from all storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall not exceed 9,333 pounds per year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The annual VOC distilled spirits storage emission factor for each distilled 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 distilled spirits throughput; and P is the volume percent ethanol of the distilled spirits being transferred. For concentrations up to and including 24 volume %, $a = -0.52083E-4$, $b = 1.1625E-2$ and $c = 0$. For concentrations greater than 24 volume % up to and including 66 volume%, $a = -0.49990E-4$, $b = 1.0589E-2$ and $c = 0.02133$. For concentrations greater than 66 volume % up to and including 92 volume %, $a = 1.60589E-4$, $b = -1.83207E-2$ and $c = 1.016774$. For concentrations greater than 92 volume % up to and including 100 volume %, $a = 9.64286E-4$, $b = -16.1943E-2$ and $c = 7.43214$. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Combined annual VOC emissions from storage operations under permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 shall be determined as the sum of the emissions for each individual wine and distilled spirits movement based on the volume transferred in each wine and distilled spirits movement and the batch-specific wine and distilled spirits storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Daily throughput records, including records of filling and emptying operations, the dates of such operations, the maximum temperature of the stored distilled spirits, the volume percent ethanol in the batch, and the volume of distilled spirits transferred, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The permittee shall maintain records of the combined annual VOC emissions for permit units C-629-436 through C-629-443 and C-629-559-0 through -562-0 . [District Rule 2201] Federally Enforceable Through Title V Permit
12. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

DRAFT