



FEB 26 2013

Ms. Kim Burns
E & J Gallo
18000 River Road
Livingston, CA 95334

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1237
Project # N-1122834**

Dear Ms. Burns:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. The applicant is requesting that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. E & J Gallo Winery is proposing the installation of a new 90 MMBtu/hr natural gas-fired boiler and the removal of an existing 90 MMBtu/hr natural gas-fired boiler (unit -3).

After addressing any EPA comments made during the 45-day comment period, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

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

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

Enclosures

c: Derek Fukuda, Permit Services

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



FEB 26 2013

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1237
Project # N-1122834**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for E & J Gallo located at 18000 River Road in Livingston, which has been issued a Title V permit. E & J Gallo is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. E & J Gallo Winery is proposing the installation of a new 90 MMBtu/hr natural gas-fired boiler and the removal of an existing 90 MMBtu/hr natural gas-fired boiler (unit -3).

Enclosed is the engineering evaluation of this application with a copy of the proposed Authority to Construct # ATC N-1237-607-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

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c: Derek Fukuda, Permit Services

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FEB 26 2013

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-1237
Project # N-1122834**

Dear Mr. Tollstrup:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. The applicant is requesting that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. E & J Gallo Winery is proposing the installation of a new 90 MMBtu/hr natural gas-fired boiler and the removal of an existing 90 MMBtu/hr natural gas-fired boiler (unit -3).

Enclosed is the engineering evaluation of this application with a copy of the proposed Authority to Construct # ATC N-1237-607-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 30-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

Enclosures

c: Derek Fukuda, Permit Services

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Executive Director/Air Pollution Control Officer

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Modesto Bee

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

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of E & J Gallo for its winery located at 18000 River Road in Livingston, California. E & J Gallo Winery is proposing the installation of a new 90 MMBtu/hr natural gas-fired boiler and the removal of an existing 90 MMBtu/hr natural gas-fired boiler (unit - 3).

The District's analysis of the legal and factual basis for this proposed action, project #N-1122834, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. There will be increases in NO_x, SO_x, PM₁₀, CO, and VOC emissions associated with this proposed action. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested by the public, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.

San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
(Replacement Natural Gas-Fired Boiler)

Facility Name:	E&J Gallo Winery	Date:	January 29, 2013
Mailing Address:	18000 River Road Livingston, CA 95334	Engineer:	Derek Fukuda
Contact Person:	Kim Burns	Lead Engineer:	Joven Refuerzo
Telephone:	(559) 458-2457		
Fax:	(559) 458-2605		
E-Mail:	Kim.burns@ejgallo.com		
Application #(s):	N-1237-607-0		
Project #:	N-1122834		
Deemed Complete:	September 5, 2012		

I. Proposal

E & J Gallo Winery is applying for an Authority to Construct (ATC) permit for the installation of a 90 MMBtu/hr natural gas-fired boiler at its Livingston facility. In addition, the facility has stated that the boiler in this project will replace an existing 90 MMBtu/hr natural gas-fired boiler, Permit to Operate (PTO) N-1237-3-8 (see Appendix B). Therefore, this project will be processed as a Stationary Source Project as defined in District Rule 2201, Section 3.40. The following condition will be added to the permit to ensure the PTO N-1237-3-8 is cancelled as a result of the implementation of the ATC issued in this project:

- Within 90 days of startup of the equipment authorized by this Authority to Construct, Permit to Operate N-1237-3-8 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]

E & J Gallo Winery received their Title V Permit on July 6, 2000. 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. E & J Gallo Winery 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 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)

Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators and Process Heaters – Phase II (8/21/03)
Rule 4306	Boilers, Steam Generators and Process Heaters – Phase III (3/17/05)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177:	California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:	CEQA Guidelines

III. Project Location

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

IV. Process Description

E&J Gallo Winery operates a natural gas-fired boiler used to produce hot water and steam used in their wine production operation.

The maximum operating schedule use for Potential to Emit calculation is 24 hr/day, 7 days/week, and 52 weeks/year.

V. Equipment Listing

Existing Boiler to Be Surrendered:

N-1237-3-8: 90 MMBTU/HR NATURAL GAS-FIRED NEBRASKA MODEL NS-E63 BOILER WITH A TODD COMBUSTION MODEL SV545FGX LOW NOX BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM

New Boiler to be Installed:

N-1237-607-0: 90 MMBTU/HR VICTORY ENERGY OPERATIONS (VEO) MODEL J-VE-540 NATURAL GAS-FIRED BOILER WITH A LOW-NO_x BURNER, A FLUE GAS RECIRCULATION (FGR) SYSTEM, A NATIONWIDE SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, AND A NO_x AND O₂ IN-STACK EMISSION MONITORING SYSTEM (REPLACEMENT FOR PERMIT N-1237-3)

VI. Emission Control Technology Evaluation

Emissions from natural gas-fired boilers include NO_x, CO, VOC, PM₁₀, and SO_x.

NO_x is the major pollutant of concern when burning natural gas. NO_x formation is either due to thermal fixation of atmospheric nitrogen in the combustion air (thermal NO_x) or due to conversion of chemically bound nitrogen in the fuel (fuel NO_x). Due to the low fuel nitrogen content of natural gas, nearly all NO_x emissions are thermal NO_x. Formation of thermal NO_x is affected by four furnace zone factors: (1) nitrogen concentration, (2) oxygen concentration, (3) peak temperature, and (4) time of exposure at peak temperature.

Flue gas recirculation (FGR) reduces NO_x emissions by recirculating a percentage of the exhaust gas back into the windbox. This reduces the oxygen concentration in the air-fuel mixture and regulates the combustion process, lowering the combustion temperature. The lowered availability of oxygen in conjunction with lowered combustion temperature reduces the formation of NO_x.

The boiler is equipped with a Selective Catalytic Reduction System (SCR). Selective Catalytic Reduction systems selectively reduce NO_x emissions by injecting ammonia (NH₃) into the exhaust gas stream upstream of a catalyst. Nitrogen oxides, NH₃, and O₂ react on the surface of the catalyst to form molecular nitrogen (N₂) and H₂O. SCR is capable of over 90 percent NO_x reduction. Titanium oxide is the SCR catalyst material most commonly used, though vanadium pentoxide, noble metals, or zeolites are also used. The ideal operating temperature for a conventional SCR catalyst is 600 to 750 °F. Exhaust gas temperatures greater than the upper limit (750 °F) will cause NO_x and NH₃ to pass through the catalyst unreacted. Ammonia slip will be limited to 10 ppmvd @ 3% O₂ for the boiler.

VII. General Calculations

A. Assumptions

Unit N-1237-3-8:

- The maximum operating schedule is 24 hours per day.
- The unit is fired solely on PUC regulated natural gas.
- Annual fuel usage is limited to 30 billion Btu/year (current permit)
- Natural Gas Heating Value: 1,000 Btu/scf. (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F. (40 CFR 60, Appendix B)

Unit N-1237-607-0:

- The maximum operating schedule is 24 hours per day and 8,760 hours per year.
- The unit is fired solely on PUC regulated natural gas.
- Natural Gas Heating Value: 1,000 Btu/scf. (District Practice)
- F-Factor for Natural Gas: 8,578 dscf/MMBtu corrected to 60°F. (40 CFR 60, Appendix B)
- Total duration of start-up time will not exceed 3.0 hr/day, nor 2.0 hr/start-up event. (Per Applicant)
- Total duration of shut-down time will not exceed 2.0 hr/day, nor 2.0 hr per shutdown event. (Per Applicant)

B. Emission Factors

Unit N-1237-3-8:

Pollutant	Emission Factors		Source
NO _x	0.036 lb-NO _x /MMBtu	30 ppmvd NO _x (@ 3%O ₂)	Current Permit
SO _x	0.00285 lb-SO _x /MMBtu		District Policy APR 1720
PM10	0.005 lb-PM10/MMBtu		Current Permit
CO	0.148 lb-CO/MMBtu	200 ppmvd CO (@ 3%O ₂)	Current Permit
VOC	0.0028 lb-VOC/MMBtu		Current Permit

Unit N-1237-607-0:

Pollutant	Steady State Emission Factors		Source
NO _x	0.006 lb-NO _x /MMBtu	5 ppmvd NO _x (@ 3%O ₂)	Per Applicant
SO _x	0.00285 lb-SO _x /MMBtu		District Policy APR 1720
PM10	0.0076 lb-PM10/MMBtu		AP-42 (07/98) Table 1.4-1
CO	0.148 lb-CO/MMBtu	200 ppmvd CO (@ 3%O ₂)	Per Applicant
VOC	0.0027 lb-VOC/MMBtu		Per Applicant
NH ₃		10 ppmvd NH ₃ (@ 3%O ₂)	Per Applicant

Pollutant	Startup/Shutdown Emission Factors	Source
NO _x	0.83 lb-NO _x /hr	Per Applicant

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Unit N-1237-3-8:

The potential to emit for the boiler is calculated as follows:

Daily Pre Project Potential to Emit				
Pollutant	Emissions Factors (lb/MMBtu)	Heat Input (MMBtu/hr)	Hours Per Day	Daily PE1 (lb/day)
NO _x	0.036	90	24	77.8
SO _x	0.00285	90	24	6.2
PM10	0.005	90	24	10.8
CO	0.148	90	24	319.7
VOC	0.0028	90	24	6.0

Annual Pre Project Potential to Emit			
Pollutant	Emissions Factors (lb/MMBtu)	Annual Heat Input (MMBtu/year)	Annual PE1 (lb/year)
NO _x	0.036	30,000	1,080
SO _x	0.00285	30,000	86
PM10	0.005	30,000	150
CO	0.148	30,000	4,440
VOC	0.0028	30,000	84

Unit N-1237-607-0:

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

2. Post Project Potential to Emit (PE2)

Unit N-1237-3-8:

This unit is being surrendered as a result of this project; therefore PE2 = 0 for all pollutants.

Unit N-1237-607-0:

NO_x Emissions:

The highest NO_x emission rate occurs when operating the boiler in startup and shutdown modes for the maximum permitted time during each day. Startup and shutdown emissions are limited to 5.0 hr/day (3.0 hours startup + 2.0 hours shutdown) and 0.83 lb-NO_x/hr. Therefore, daily startup and shutdown emissions will be equal to:

$$\text{Startup/Shutdown NO}_x = 0.83 \text{ lb/hr} \times 5.0 \text{ hr/day} = 4.15 \text{ lb-NO}_x$$

Daily steady-state NO_x emissions for the remaining 19 hours of the day will be based on the 90 MMBtu/hr boiler rating and an emissions factor of 0.006 lb-NO_x/MMBtu.

$$\text{Steady State NO}_x = 19 \text{ hr/day} \times 0.006 \text{ lb/MMBtu} \times 90 \text{ MMBtu/hr} = 10.26 \text{ lb-NO}_x$$

$$\text{Total Daily Emissions} = 4.15 \text{ lb-NO}_x + 10.26 \text{ lb-NO}_x = \mathbf{14.4 \text{ lb-NO}_x/\text{day}}$$

$$\text{Total Annual Emissions} = 14.4 \text{ lb-NO}_x/\text{day} \times 365 \text{ days/year} = \mathbf{5,256 \text{ lb-NO}_x/\text{year}}$$

Ammonia (NH₃) Emissions from SCR:

The proposed daily NH₃ emissions can be calculated as follows:

$$PE = \text{ppm} \times MW \times (2.64 \times 10^{-9}) \times ff \times BR \times [20.9 / (20.9 - O_2\%)] \times 24 \text{ hour/day}$$

Where:

- ppm is the emission concentration in ppmvd @ 3% O₂
- MW is the molecular weight of the pollutant (MW_{NH₃} = 17 lb/lb-mol)
- 2.64 x 10⁻⁹ is one over the molar specific volume (lb/MMscf, at 60 °F)
- ff is the F-factor for natural gas (8,578 scf/MMBtu, at 60 °F)
- BR is the rating of the boiler (MMBtu/hr)
- O₂ is the stack oxygen content to which the emission concentrations are corrected (3%)

$$\begin{aligned} \text{NH}_3 \text{ PE (lb/day)} &= 10 \times 17 \times (2.64 \times 10^{-9}) \text{ (lb-mol/MMscf)} \times 8,578 \text{ (scf/MMBtu)} \times \\ &90 \text{ (MMBtu/hr)} \times [20.9 / (20.9 - 3.0)] \times 24 \text{ (hour/day)} \\ &= \mathbf{9.7 \text{ lb-NH}_3\text{/day}} \end{aligned}$$

$$\begin{aligned} \text{NH}_3 \text{ PE (lb/year)} &= (9.7 \text{ lb-NH}_3\text{/day}) \times (365 \text{ day/year}) \\ &= \mathbf{3,541 \text{ lb-NH}_3\text{/year}} \end{aligned}$$

SO_x, PM₁₀, CO, and VOC Emissions:

Sample Calculations:

$$\text{Daily PE} = (\text{Emissions Factor}) \times (\text{Heat Input}) \times (\text{Hours Per Day})$$

$$\text{Annual PE} = (\text{Emissions Factor}) \times (\text{Heat Input}) \times (\text{Hours Per Year})$$

Daily Post Project Potential to Emit (PE2)				
Pollutant	Emissions Factors (lb/MMBtu)	Heat Input (MMBtu/hr)	Hours Per Day	Daily PE2 (lb/day)
SO _x	0.00285	90	24	6.2
PM ₁₀	0.0076	90	24	16.4
CO	0.148	90	24	319.7
VOC	0.0027	90	24	5.8

Annual Post Project Potential to Emit (PE2)				
Pollutant	Emissions Factors (lb/MMBtu)	Heat Input (MMBtu/hr)	Hours Per Year	Annual PE2 (lb/year)
SO _x	0.00285	90	8,760	2,247
PM10	0.0076	90	8,760	5,992
CO	0.148	90	8,760	116,683
VOC	0.0027	90	8,760	2,129

Total Post Project Potential Emissions:

Post Project Potential to Emit (PE2)		
Pollutant	Daily PE2 (lb/day)	Annual PE2 (lb/year)
NO _x	14.4	5,256
SO _x	6.2	2,247
PM10	16.4	5,992
CO	319.7	116,683
VOC	5.8	2,129
NH3	9.7	3,541

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

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

The SSPE1 can be calculated by adding the PE1 from all units with valid ATCs or PTOs and the sum of the ERCs that have been banked at the source and which have not been used on-site (Total_{ERC}).

$$SSPE1_{Total} = SSPE1_{Permit\ Unit} + Total_{ERC}$$

This facility acknowledges that its VOC emissions are already above the Offset and Major Source Thresholds; therefore, SSPE calculations for VOC are not necessary and permit units that only emit VOC will not be shown in the SSPE calculations below.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-1237-1-2	0	0	0	0	-
N-1237-3-8	1,080	86	150	4,440	-
N-1237-4-13	12,994	3,760	6,570	194,472	-
N-1237-5-2	0	0	528	0	-
N-1237-6-3	0	0	73	0	-
N-1237-7-2	0	0	0	0	-
N-1237-8-2	0	0	0	0	-
N-1237-9-2	0	0	0	0	-
N-1237-10-2	0	0	0	0	-
N-1237-12-2*	3,942	431	262	552	-
N-1237-17-2	0	0	657	0	-
N-1237-480-3	0	0	14	0	-
N-1237-596-0	0	0	99	0	-
N-1237-601-0	0	0	7	0	-
N-1237-602-0	0	0	115	0	-
N-1237-603-0	0	0	115	0	-
SSPE _{1Permit Unit}	18,016	4,277	8,590	199,464	> 20,000
ERC N-2-2	19,838	0	0	0	-
ERC N-2-3	0	0	0	407,020	-
Total _{ERC}	19,838	0	0	407,020	-
Pre-Project SSPE (SSPE1)	37,854	4,277	8,590	606,484	> 20,000

* N-1237-12-2

Emissions from the 3 MMBtu/hr LPG-fired incinerator are shown below:

NO_x = 0.15 lb/MMBtu x 3 MMBtu/hr x 8760 hr/year = 3,942 lb/year
 SO_x = 0.0164 lb/MMBtu x 3 MMBtu/hr x 8760 hr/year = 431 lb/year
 PM₁₀ = (0.0044 lb/MMBtu x 3 MMBtu/hr x 8760 hr/year) = 116 lb/year
 CO = 0.021 lb/MMBtu x 3 MMBtu/hr x 8760 hr/year = 552 lb/year

Emissions from the material handling are shown below:

PM₁₀ = 0.076 lb/ton x 5.25 tons/day x 365 days/year = 146 lb/year

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

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

The SSPE2 can be calculated by adding the PE2 from all units with valid ATCs or PTOs and the sum of the ERCs that have been banked at the source and which have not been used on-site (Total_{ERC}).

$$SSPE2_{Total} = SSPE2_{Permit\ Unit} + Total_{ERC}$$

Post-Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
N-1237-1-2	0	0	0	0	-
N-1237-4-13	12,994	3,760	6,570	194,472	-
N-1237-5-2	0	0	528	0	-
N-1237-6-3	0	0	73	0	-
N-1237-7-2	0	0	0	0	-
N-1237-8-2	0	0	0	0	-
N-1237-9-2	0	0	0	0	-
N-1237-10-2	0	0	0	0	-
N-1237-12-2	3,942	431	262	552	-
N-1237-17-2	0	0	657	0	-
N-1237-480-3	0	0	14	0	-
N-1237-596-0	0	0	99	0	-
N-1237-601-0	0	0	7	0	-
N-1237-602-0	0	0	115	0	-
N-1237-603-0	0	0	115	0	-
N-1237-607-0	5,256	2,247	5,992	116,683	-
SSPE2_{Permit Unit}	22,192	6,438	14,432	311,707	> 20,000
ERC N-2-2	19,838	0	0	0	-
ERC N-2-3	0	0	0	407,020	-
Total_{ERC}	19,838	0	0	407,020	-
Post-Project SSPE (SSPE2)	42,030	6,483	14,432	718,727	> 20,000

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

As seen in Section VII.C.3 & VII.C.4 above, this facility contains ERCs that have been banked at the source and which have not been used on-site; therefore, an adjusted Stationary Source Potential to Emit (SSPE_{Permit Unit}) will be used to determine major source status.

Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Adjusted SSPE1 _{Permit Unit}	18,016	4,277	8,590	199,464	> 20,000
Adjusted SSPE2 _{Permit Unit}	22,192	6,438	14,432	311,707	> 20,000
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	Yes	Yes

As seen in the table above, the facility is an existing Major Source for VOC emissions and will remain a Major Source for VOC. Also seen in the table above, the facility is becoming a Major Source for NO_x and CO emissions as a result of this project.

Rule 2410 Major Source Determination:

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

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

As indicated above, the SSPE VOC emission before the proposal project is calculated to 607,607 pounds per year, equivalent to 303.8 tons per year.

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

PSD Major Source Determination (tons/year)	
	VOC
Facility PE before Project Increase	303.8
PSD Major Source Thresholds	250
PSD Major Source?	Yes

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

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

N-1237-3-8:

a. BE NO_x

Unit Located at a Non-Major Source

As shown in Section VII.C.5 above, the facility is a major source for NO_x emissions.

Highly-Utilized Emissions Unit, located at a Major Source

Based on fuel usage records submitted by the facility (see Appendix G), the permit unit's fuel usage for the past two years is well below 80% of their permitted limit. Therefore, this unit is not considered as a Highly Utilized Emissions Unit for NO_x emissions.

Fully Offset Emissions Unit, located at a Major Source

Offsets have not previously been provided for this permit unit. Therefore, pursuant to District Rule 2201, this permitted unit is not considered as a Fully Offset Emissions Unit.

Clean Emissions Unit, Located at a Major Source

Pursuant to Rule 2201, 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 (AIP) BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

This permit unit is equipped with a low NO_x burner which is permitted at 30 ppmv NO_x @ 3% O₂. Currently there is no applicable BACT Guideline for this permit. However, based on District practice, AIP BACT for boilers is the applicable standard schedule emission limit in District Rule 4320. For this permit unit, the applicable District Rule 4320 emission limit is 9 ppmv NO_x @ 3% O₂ (Table 1, Category E. Units, from any Category, that were installed prior to January 1, 2009 and limited by a Permit to Operate to an annual heat input > 1.8 billion Btu/year but ≤ 30 billion Btu/year). Since this permit unit does not meet this emission limit, it is not considered a Clean Emissions Unit for NO_x emissions.

Since this permit unit does not meet the definitions of a highly utilized emissions unit, a fully offset emissions unit, or a clean emissions unit, BE = HAE.

For the determining Historical Actual Emissions (HAE), the applicant has provided the quarterly fuel usage for this unit for 2008 through 2012. The District will also use the applicable NO_x emissions limit from District Rule 4320 (9 ppmv @ 3% O₂) to calculate the HAE. The average quarterly emissions for all records from the past 5 years, and the eight consecutive quarter (two years) average emissions will be calculated in the table below. Whichever eight consecutive quarter average emissions is closest to the average of all quarters will be chosen as the baseline period used to determine the HAE.

Historical Actual Emissions				
Quarter	Fuel Usage (MMBtu)	Emission Factor (lb/MMBtu)	Emissions (lb/qtr)	Avg. Emissions from Previous 8 Quarters (lb/qtr)
2008 (1 st qtr)	0	0.011	0.0	-
2008 (2 nd qtr)	0	0.011	0.0	-
2008 (3 rd qtr)	13,213	0.011	145.3	-
2008 (4 th qtr)	5,802	0.011	63.8	-
2009 (1 st qtr)	0	0.011	0.0	-
2009 (2 nd qtr)	0	0.011	0.0	-
2009 (3 rd qtr)	14,329	0.011	157.6	-
2009 (4 th qtr)	5,973	0.011	65.7	54.1
2010 (1 st qtr)	1,507	0.011	16.6	56.1
2010 (2 nd qtr)	637	0.011	7.0	57.0
2010 (3 rd qtr)	6,776	0.011	74.5	48.2
2010 (4 th qtr)	9,855	0.011	108.4	53.7
2011 (1 st qtr)	0	0.011	0.0	53.7
2011 (2 nd qtr)	0	0.011	0.0	53.7
2011 (3 rd qtr)	4,251	0.011	46.8	39.9
2011 (4 th qtr)	2,048	0.011	22.5	34.5
2012 (1 st qtr)	1,949	0.011	21.4	35.1
2012 (2 nd qtr)	1,946	0.011	21.4	36.9
Total Quarterly Average			41.7	--

As seen in the table above, the average quarterly emissions the 4th quarter in 2009 to the 3rd quarter in 2011 is closest to the total average of all quarters. This two year period will be the Baseline Period for HAE calculations.

Baseline Emissions (lb/year)					
	1 st qtr	2 nd qtr	3 rd qtr	4 th qtr	Total (lb/year)
4 th qtr 2009 – 3 rd qtr 2010	65.7	16.6	7.0	74.5	164
4 th qtr 2010 – 3 rd qtr 2011	108.4	0	0	46.8	155
Average					160

Based on the information shown above, the average annual NO_x emissions during the Baseline Period are 160 lb/year.

BE = HAE = 160 lb NO_x/year

b. BE SO_x and PM₁₀

Unit Located at a Non-Major Source

As shown in Section VII.C.5 above, the facility is not a major source for SO_x or PM₁₀ emissions.

Therefore Baseline Emissions BE=PE1.

BE = PE1 = 86 lb SO_x/year

BE = PE1 = 150 lb PM₁₀/year

c. BE CO and VOC

Unit Located at a Non-Major Source

As shown in Section VII.C.5 above, the facility is a major source for CO and VOC emissions.

Clean Emissions Unit, Located at a Major Source

Pursuant to Rule 2201, 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.

This permit unit is fired on natural gas. Pursuant to Guideline 1.1.2 which has since been rescinded, Achieved-in-Practice BACT for CO and VOC emissions is the use of natural gas fuel with LPG as backup. This unit is currently limited to fire only on natural gas fuel; therefore, this boiler is a Clean Emission Unit for CO and VOC emissions and the baseline CO and VOC emissions for this unit is equal to PE1.

This emissions unit is solely fired on PUC quality natural gas, which meets the requirements for achieved-in-practice BACT for the past five years. Therefore, BE=PE1.

BE = PE1 = 4,440 lb CO/year

BE = PE1 = 84 lb VOC/year

Baseline Emissions for Unit N-1237-3-8:

Baseline Emissions (Unit N-1237-3-8)	
Pollutant	BE (lb/year)
NO _x	160
SO _x	86
PM10	150
CO	4,440
VOC	84

N-1237-607-0:

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

7. SB 288 Major Modification

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

Since this facility is a major source for (NO_x and VOC), the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	5,256	50,000	No
VOC	2,129	50,000	No

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

8. Federal Major Modification

As discussed in Section VII.C.5 above, the facility is not a Major Source for SO_x or PM₁₀ emissions; therefore, the project does not constitute a Federal Major Modification for SO_x or PM₁₀ emissions. Additionally, since the facility is not a major source for PM₁₀, it is not a major source for PM_{2.5}.

District Rule 2201, Section 3.18 states that Federal Major Modifications are the same as “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal major modifications if they meet the criteria of the “Less-Than-Significant Emissions Increase” exclusion.

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

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

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
NO _x	0
VOC	0

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

Since this project consists of both existing and new emissions units, the “hybrid test” specified in 40 CFR(a)(2)(ii)(F) is applicable and requires that the NEI determination be based on the sum of the individual NEI determinations for existing emissions units (NEI_E) and new emissions units (NEI_N) pursuant to 40 CFR(a)(2)(ii)(C) and (D) respectively. Therefore,

$$NEI = NEI_E + NEI_N$$

Net Emission Increase for Existing Units (NEI_E)

Per 40 CFR 51.165 (a)(1)(xxviii) and 40 CFR 51.165 (a)(2)(ii)(C) for all existing units,

$$NEI_E = PAE - BAE$$

where,

BAE = Baseline Actual Emissions which are the actual emissions created by the project during the baseline period. The BAE are calculated pursuant to 40 CFR 51.165 (a)(1)(xxxv)(A) through (D).

The baseline period was determined to be the 4th quarter 2009 to 3rd quarter 2011 in Section VII.C.6 of this evaluation. The facility provided the following data as the historical fuel use for the boiler listed in permit N-1237-3.

Permit N-1237-3 Historical Natural Gas Usage (MMBtu)					
Year	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	Total
2009	-	-	-	5,973	-
2010	1,507	637	6,776	9,855	-
2011	0	0	4,251	-	-
Average	753.5	318.5	5,513.5	7,914	14,499.5

The boiler listed in permit N-1237-3 is subject to a NO_x emissions limit of 9 ppmv @ 3% O₂ (District Rule 4320, Table 1, Category E). This value will be used to determine the BAE for NO_x. VOC emission factor is taken from the current PTO.

Baseline Actual Emissions (N-1237-3)						
NO _x	0.011	(lb/MMBtu) x	14,499.5	(MMBtu/yr) =	159	(lb/yr)
VOC	0.0028	(lb/MMBtu) x	14,499.5	(MMBtu/yr) =	41	(lb/yr)

$$BAE (NO_x) = 159 \text{ lb-NO}_x/\text{year}$$

$$BAE (VOC) = 41 \text{ lb-VOC}/\text{year}$$

PAE = Projected Actual Emissions which are the post-project projected actual emissions of the existing units in this project pursuant to 40 CFR 51.165 (a)(1)(xxviii).

The boiler listed in permit N-1237-3 will be taken out of service with the installation of the new boiler in this project. Therefore, PAE = 0.

$$PAE (NO_x) = 0 \text{ tons-NO}_x/\text{year}$$

$$PAE (VOC) = 0 \text{ tons-VOC}/\text{year}$$

NEI_E is thus calculated as follows:

$$NEI_E = PAE - BAE$$

$$NEI_E (\text{NO}_x) = 0 - 159 \text{ lb-NO}_x/\text{year} = -159 \text{ lb-NO}_x/\text{year}$$

$$NEI_E (\text{VOC}) = 0 - 41 \text{ lb-VOC}/\text{year} = -41 \text{ lb-VOC}/\text{year}$$

Net Emission Increase for New Units (NEI_N)

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

$$NEI_N = PE2_N - BAE$$

$$BAE = 0 \text{ for the new unit therefore } NEI_N = PE2_N$$

$$NEI_N (\text{NO}_x) = 5,256 \text{ lb/year}$$

$$NEI_N (\text{VOC}) = 2,129 \text{ lb/year}$$

The NEI for this project is thus calculated as follows:

$$NEI = NEI_E + NEI_N$$

$$NEI (\text{NO}_x) = 5,256 - 159 \text{ lb-NO}_x/\text{year} = 5,097 \text{ lb-NO}_x/\text{year}$$

$$NEI (\text{VOC}) = 2,129 - 41 \text{ lb-VOC}/\text{year} = 2,088 \text{ lb-VOC}/\text{year}$$

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

9. Rule 2410 – Prevention of Significant Deterioration

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. Project Location Relative to Class 1 Area

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

II. Significance of Project Emission Increase Determination

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

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

Greenhouse Gas Emissions Evaluation

The potential greenhouse gas emissions from the operation of the new natural gas-fired boiler are calculated in Appendix F.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	2.6	1.1	58.3	2.9	2.9	46,129
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a new 90 MMBtu/hr natural gas-fired boiler with a PE greater than 2 lb/day for NO_x, SO_x, PM₁₀, CO, and VOC. BACT is triggered for NO_x, SO_x, PM₁₀, VOC, and CO since the PEs are greater than 2 lbs/day.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does constitute a Federal Major Modification for NO_x and VOC emissions. Therefore BACT is triggered for NO_x and VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

The District adopted District Rule 4320 on October 16, 2008. The NO_x emission limit requirements in District Rule 4320 are lower than the limits contained within BACT Guideline 1.1.2 which has since been rescinded; therefore a project specific BACT analysis will be performed to determine BACT for this project. District Rule 4320 limits natural gas boilers with heat input ratings greater than 20 MMBtu/hr to 7 ppmv @ 3% O₂. Since this emission limit is required by the rule, it will be considered the Achieved in Practice control technology for the BACT analysis. District Rule 4320 also contains an enhanced schedule option that allows applicants additional time to meet the requirements of the rule. The enhanced schedule NO_x emission limit requirement is 5 ppmv @ 3% O₂. Since this is an enhanced option in the rule, it will be considered the Technologically Feasible control technology for the BACT analysis. (See Appendix C)

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see Appendix C), BACT has been satisfied with the following:

- NO_x: 5 ppmvd @ 3% O₂ (0.006 lb/MMBtu)
- SO_x: PUC regulated natural gas fuel
- PM₁₀: PUC regulated natural gas fuel
- CO: 200 ppmvd @ 3% O₂ (0.147 lb/MMBtu)
- VOC: Natural gas fuel with LPG backup

B. Offsets

1. Offset Applicability

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

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

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	42,030	6,483	14,432	718,727	>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	No	No	Yes	Yes

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for NO_x, CO, and VOC with an SSPE2 greater than the offset thresholds. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year for NO_x, CO, and VOC are calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

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

The project is a Federal Major Modification for NO_x and VOC emissions; therefore the correct offset ratio for NO_x and VOCs is 1.5:1.

BE = PE1 for:

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

otherwise,

BE = HAE

NO_x Offset Calculations:

The BE's for the two units in this project were calculated in Section VII.C.6 above. Also, there are two emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

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

$$\begin{aligned} \text{PE2 (NO}_x\text{)} &= (\text{PE2 unit -3}) + (\text{PE2 unit -607}) \\ &= (0 \text{ lb/year}) + (5,256 \text{ lb/year}) \\ &= 5,256 \text{ lb/year} \end{aligned}$$

$$\begin{aligned} \text{BE (NO}_x\text{)} &= (\text{BE unit -3}) + (\text{BE unit -607}) \\ &= (160 \text{ lb/year}) + (0 \text{ lb/year}) \\ &= 160 \text{ lb/year} \end{aligned}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([5,256 - 160] + 0) \times \text{DOR} \\ &= 5,096 \text{ lb NO}_x\text{/year} \times \text{DOR} \end{aligned}$$

Quantity of Offsets Required before DOR					
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total</u>
	(lb/qtr)	(lb/qtr)	(lb/qtr)	(lb/qtr)	(lb/year)
NO _x	1,274	1,274	1,274	1,274	5,096

Assuming an offset ratio of 1.5:1, the amount of NO_x ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 5,096 \times 1.5 \\ &= 7,644 \text{ lb NO}_x\text{/year} \end{aligned}$$

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

Quantity of Offsets Required after DOR					
	<u>1st Quarter</u> (lb/qtr)	<u>2nd Quarter</u> (lb/qtr)	<u>3rd Quarter</u> (lb/qtr)	<u>4th Quarter</u> (lb/qtr)	<u>Total</u> (lb/year)
NO _x	1,911	1,911	1,911	1,911	7,644

The applicant has stated that the facility plans to use ERC certificates N-2-2, N-849-2, N-1061-2, N-1010-2, N-1011-2, N-1012-2 to offset the increases in NO_x emissions associated with this project. The above Certificates have available quarterly NO_x credits as follows:

Offset Proposal				
	<u>1st Quarter</u> (lb/qtr)	<u>2nd Quarter</u> (lb/qtr)	<u>3rd Quarter</u> (lb/qtr)	<u>4th Quarter</u> (lb/qtr)
ERC #N-2-2	2,587	2,434	7,175	7,642
ERC #N-849-2	0	14	111	0
ERC #N-1061-2	9,980	9,980	10,939	9,979
ERC #N-1010-2	2,500	2,500	2,500	2,500
ERC #N-1011-2	625	625	625	625
ERC #N-1012-2	545	545	545	545
Total	16,237	19,098	21,895	21,291

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

CO Offset Calculations:

Pursuant to District Rule 2201, Section 4.6.1, emission offsets shall not be required for the increases in carbon monoxide in attainment areas if the applicant demonstrates to the satisfaction of the APCO, that the Ambient Air Quality Standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards.

The Ambient Air Quality Analysis performed for this project (Appendix D) demonstrates that the increase in CO emissions does not result in a violation of any of the Ambient Air Quality Standards. Therefore, the facility is exempt from providing offsets for the increase in CO emissions associated with this project.

VOC Offset Calculations:

The BE's for the two units in this project were calculated in Section VII.C.6 above. Also, there are two emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

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

$$\begin{aligned} \text{PE2 (VOC)} &= (\text{PE2 unit -3}) + (\text{PE2 unit -607}) \\ &= (0 \text{ lb/year}) + (2,129 \text{ lb/year}) \\ &= 2,129 \text{ lb/year} \end{aligned}$$

$$\begin{aligned} \text{BE (VOC)} &= (\text{BE unit -3}) + (\text{BE unit -607}) \\ &= (84 \text{ lb/year}) + (0 \text{ lb/year}) \\ &= 84 \text{ lb/year} \end{aligned}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([2,129 - 84] + 0) \times \text{DOR} \\ &= 2,045 \text{ lb VOC/year} \times \text{DOR} \end{aligned}$$

Quantity of Offsets Required before DOR					
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total</u>
	(lb/qtr)	(lb/qtr)	(lb/qtr)	(lb/qtr)	(lb/year)
VOC	512	511	511	511	2,045

Assuming an offset ratio of 1.5:1, the amount of VOC ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= 2,045 \times 1.5 \\ &= 3,068 \text{ lb VOC/year} \end{aligned}$$

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

Quantity of Offsets Required after DOR					
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>	<u>Total</u>
	(lb/qtr)	(lb/qtr)	(lb/qtr)	(lb/qtr)	(lb/year)
VOC	767	767	767	767	3,068

The applicant has stated that the facility plans to use ERC certificates N-2-1, S-3892-1, S-3807-1, and S-3808-1 to offset the increases in VOC emissions associated with this project. The above Certificates have available quarterly VOC credits as follows:

Offset Proposal				
	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
	(lb/qtr)	(lb/qtr)	(lb/qtr)	(lb/qtr)
ERC #N-2-1	9	9	26	28
ERC #S-3892-1	78,997	78,997	78,996	78,991
ERC #S-3807-1	11,431	11,424	11,417	11,417
ERC #S-3808-1	8,098	8,041	8,096	8,086
Total	98,535	98,471	98,535	98,522

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

Offset Conditions:

- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 512 lb, 2nd quarter - 511 lb, 3rd quarter - 511 lb, and fourth quarter - 511 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/19/02). [District Rule 2201]
- Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter - 1,274 lb, 2nd quarter - 1,274 lb, 3rd quarter - 1,274 lb, and fourth quarter - 1,274 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/19/02). [District Rule 2201]
- ERC Certificate Numbers N-2-1, S-3892-1, S-3807-1, S-3808-1, N-2-2, N-849-2, N-1061-2, N-1010-2, N-1011-2, or N-1012-2 (or a certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

As demonstrated in VII.C.7, this project is an SB 288 or Federal Major Modification. Therefore, public noticing for SB 288 or Federal Major Modification purposes is required.

b. PE > 100 lb/day

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

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	14.4	100 lb/day	No
SO _x	6.2	100 lb/day	No
PM ₁₀	16.4	100 lb/day	No
CO	319.7	100 lb/day	Yes
VOC	5.8	100 lb/day	No

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

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	37,854	42,030	20,000 lb/year	No
SO _x	4,277	6,483	54,750 lb/year	No
PM ₁₀	8,590	14,432	29,200 lb/year	No
CO	606,484	718,727	200,000 lb/year	No
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 SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	42,030	37,854	4,176	20,000 lb/year	No
SO _x	6,483	4,277	2,206	20,000 lb/year	No
PM ₁₀	14,432	8,590	5,842	20,000 lb/year	No
CO	718,727	606,484	112,243	20,000 lb/year	Yes
VOC	> 20,000	> 20,000	2,045	20,000 lb/year	No

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

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

- {4355} The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320]
- Except during start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 5 ppmvd NO_x @ 3% O₂ or 0.006 lb-NO_x/MMBtu; 0.00285 lb-SO_x/MMBtu; 0.0076 lb-PM₁₀/MMBtu; 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu); or 0.0027 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
- During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 0.83 lb-NO_x/hr; 0.00285 lb-SO_x/MMBtu; 0.0076 lb-PM₁₀/MMBtu; 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu); or 0.0027 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]
- The total duration of start-up time shall not exceed 3.0 hours per day. [District Rules 2201, 4305, 4306, and 4320]
- The total duration of shutdown time shall not exceed 2.0 hours per day. [District Rules 2201, 4305, 4306, and 4320]
- Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]
- The ammonia emissions shall not exceed 10 ppmvd @ 3% O₂. [District Rule 4102]

E. Compliance Assurance

1. Source Testing

The boiler is subject to the source testing requirements of District Rule 4320. The source testing requirements will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

2. Monitoring

The boiler is subject to the monitoring requirements of District Rule 4320. Therefore, the monitoring requirements will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

3. Recordkeeping

The boiler is subject to the recordkeeping requirements of District Rule 4320. Therefore, the recordkeeping requirements will be discussed in Section VIII, *District Rule 4320*, of this evaluation.

In addition to the District Rule 4320 recordkeeping requirements, the following requirement will be included on the Authority to Construct:

- The permittee shall maintain daily records of the NO_x and O₂ concentration from the in-stack monitoring system. These records shall be made available for District inspection upon request. [District Rule 2201 and 40 CFR Part 64]
- The permittee shall comply with the record keeping and reporting requirements of 40 CFR part 64.9. [40 CFR Part 64.9]
- Permittee shall maintain daily records of the type and quantity of fuel combusted by the boiler. [District Rules 2201 and 40 CFR 60.48 (c)(g)]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Refer to Appendix D of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

G. Compliance Certification

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

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a 90.0 MMBtu/hr natural gas-fired boiler.

Since the project will provide steam to be used at the same location, 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 on a much greater scale, and would therefore result in a much greater impact.

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); 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. The following conditions will be included on the ATC to ensure continued compliance:

- 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 NSR Rule]

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

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60 Subpart Db Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

NSPS Subpart Db applies to steam generating units that are constructed, reconstructed, or modified after June 19, 1984 and have a maximum design heat input greater than 100 MMBtu/hr.

Boiler N-1237-607-0 is rated less than 100 MMBtu/hr; therefore, Subpart Db does not apply to the boiler.

40 CFR Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

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. 40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction). Subpart Dc has standards for SO_x and PM₁₀. The 90 MMBtu/hr boiler is subject to Subpart Dc requirements.

60.42c – Standards for Sulfur Dioxide

Since coal is not combusted by the boiler in this project, the requirements of this section are not applicable.

60.43c – Standards for Particulate Matter

The boiler is not fired on coal, combusts mixtures of coal with other fuels, combusts wood, combusts mixture of wood with other fuels, or oil; therefore it will not be subject to the requirements of this section.

60.44c – Compliance and Performance Tests Methods and Procedures for Sulfur Dioxide.

Since the boiler in this project is not subject to the sulfur dioxide requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the boiler in this project.

60.45c – Compliance and Performance Test Methods and Procedures for Particulate Matter

Since the boiler in this project is not subject to the particulate matter requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable to the boiler in this project.

60.46c – Emission Monitoring for Sulfur Dioxide

Since the boiler in this project is not subject to the sulfur dioxide requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the boiler in this project.

60.47c – Emission Monitoring for Particulate Matter

Since the boiler in this project is not subject to the particulate matter requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable to the boiler in this project.

60.48c – Reporting and Recordingkeeping Requirements

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

- (1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

The design heat input capacity and type of fuel combusted at the facility will be listed on the unit's equipment description. No conditions are required to show compliance with this requirement.

- (2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel mixture of fuels under §60.42c or §40.43c.

This requirement is not applicable since the unit is not subject to §60.42c or §40.43c.

- (3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

The facility has not proposed an annual capacity factor; therefore one will not be required.

- (4) Notification if an emerging technology will be used for controlling SO₂ emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator

This requirement is not applicable since the unit will not be equipped with an emerging technology used to control SO₂ emissions.

Section 60.48 c (g) states that the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The following conditions will be added to the permit to ensure compliance with this section.

- A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rules 2201 and 40 CFR 60.48 (c)(g)]
- Permittee shall maintain daily records of the type and quantity of fuel combusted by the boiler. [District Rules 2201 and 40 CFR 60.48 (c)(g)]

Section 60.48 c (i) states that all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. District Rule 4320 requires that records be kept for five years.

40 CFR Part 64:

Except for back-up utility units that are exempt under paragraph (b)(2), Section 64.2 states that the requirements of this subpart shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a Part 70 or 71 permit if the unit satisfies all of the following criteria:

- 1) the unit must have an emission limit for the pollutant;
- 2) the unit must have add-on controls for the pollutant; these are devices such as flue gas recirculation (FGR), baghouses, catalytic oxidizers, etc; and
- 3) the unit must have a pre-control potential to emit of greater than the major source thresholds.

Pollutant	Major Source Threshold (lb/year)
VOC	20,000
NO _x	20,000
CO	200,000
PM ₁₀	140,000
SO _x	140,000

The permit for this boiler contains emission limits for NO_x, CO, VOC, PM₁₀ and SO_x emissions. However, this boiler is not equipped with any add on control devices for CO, VOC, PM₁₀ or SO_x emissions. Therefore, the CAM requirements of 40 CFR 64 are not applicable for these pollutants.

This boiler is equipped with a selective catalytic reduction (SCR) system and a flue gas recirculation (FGR) system. Both of these systems provide control for NO_x emissions. Typically the District assumes that an SCR system in combination with an FGR system will achieve a minimum of 90% control for the NO_x emissions generated in a natural gas fired boiler. Therefore, the uncontrolled NO_x emission rate from this boiler can be determined using the emission factor and maximum heat input rating of the boiler and the control efficiency of the SCR and FGR systems.

NO_x Emissions:

- Controlled Emission Factor = 0.006 lb/MMBtu
- Heat Input Rating = 90 MMBtu/hr
- Maximum Operating Schedule = 8,760 hours/year
- SCR + FGR System Control Efficiency = 90%

$$\text{Annual Uncontrolled PE} = \frac{[0.006 \text{ lb/MMBtu} \times 90 \text{ MMBtu/hour} \times 8,760 \text{ hours/year}]}{(1 - 0.90)}$$

$$\text{Annual Uncontrolled PE} = 47,304 \text{ lb/year}$$

As shown above, the uncontrolled PE for NO_x emissions is greater than the major source thresholds. Therefore, the boiler is subject to the requirements of 40 CFR 64.

This boiler is equipped with a selective catalytic reduction (SCR) system. SCR does not control CO or VOC emissions. The boiler will not be equipped with an oxidation catalyst.

§64.3 - Monitoring Design Criteria

This section specifies the design criteria for the CAM system. Paragraph (a) (General criteria) requires that the CAM system be designed to obtain data for one or more appropriate

indicators of emission control system performance and requires the owner to establish appropriate ranges or designated conditions for the selected indicators such that operation within the ranges provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions.

As shown above, the natural gas fired boiler is served by a selective catalytic reduction (SCR) system. A Selective Catalytic Reduction (SCR) system operates as an external control device where flue gases and a reagent, in this case ammonia, are passed through an appropriate catalyst. Ammonia, will be injected upstream of the catalyst where it reacts and reduces NO_x, over the catalyst bed, to form elemental nitrogen and other by-products.

E&J Gallo Winery has chosen to satisfy CAM requirements by installing in-stack NO_x and O₂ analyzers upstream of the stack sampling locations used during source testing. The in-stack analyzers will take NO_x and O₂ measurements at least once each day that the boiler operates. The post-project potential to emit for NO_x for the boiler is 5,256 lb per year which is below the major source threshold. Therefore, in-stack monitoring of NO_x once per day is sufficient. The following conditions will be added to the permit to ensure compliance with their monitoring requirements.

- The permittee shall take readings of the NO_x concentration and O₂ percent, by volume, using the in-stack monitoring system at least once per each day that the boiler operates. [District Rule 2201 and 40 CFR Part 64.9]
- During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NO_x and O₂ concentrations. The permittee shall maintain records of the portable analyzer readings including the date(s) and reason the in-stack monitoring system was not operating. [District Rule 2201 and 40 CFR 64]
- The permittee shall compare the NO_x and O₂ concentrations from the in-stack monitoring system with the concentration of NO_x and O₂ readings from calibration gas cylinders for NO_x and O₂ at least once during each month that the boiler operates. The permittee shall maintain these comparison readings and these records shall be available for District inspection upon request. [District Rule 2201 and 40 CFR 64]

Paragraph (b) (*Performance criteria*) requires the owner or operator to establish and maintain the following:

- Specifications to ensure that representative data are collected

In addition to the in-stack NO_x and O₂ analyzers, a computerized central processing unit (CPU) will be installed where the NO_x and O₂ analyzer readings will be downloaded and saved for archiving. Therefore, sufficient data will be collected for the boiler to ensure it is operating in compliance to justify the once daily readings as representative normal operating conditions.

- Verification procedures for startup of new monitoring equipment
- Quality assurance and control practices to ensure continuing validity of data

Periodic NO_x source testing is required at least once every 36 months and monitoring of the NH₃ slip with Draeger tubes is performed at least once per month. These periodic direct emission measurements ensure that the boiler and the SCR system are operating properly. In addition, the boiler is serviced and/or tuned in accordance with the manufacturer's recommendations.

- Data collection frequency and procedures

E&J Gallo Winery will be required to measure and record the NO_x and O₂ readings from this boiler at least once daily. These records shall be maintained by the facility and shall be made available upon request.

Paragraph (c) (*Evaluation factors*). In designing monitoring to meet the requirements of this section, the owner or operator shall take into account site-specific factors including the applicability of existing monitoring equipment and procedures, the ability of the monitoring to account for process and control device operational variability, the reliability and latitude built into the control technology, and the level of actual emissions relative to the compliance limitation.

No additional site specific information will need to be accounted for in the design of the proposed CAM system.

Paragraph (d) (*Special criteria for the use of continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS) or predictive emission monitoring system (PEMS)*)

A CEMS, COMS, or PEMS is not necessary or required for the subject emission unit. Therefore, the requirements of this section are not applicable and no further discussion is required.

§64.4 - Submittal Requirements

This section specifies submittal requirements for the owner or operator which ensure the CAM system will comply with the design criteria of §64.3. E&J Gallo Winery has submitted a complete CAM system proposal that specifies the parameters to be monitored in accordance with §64.3 above. Therefore, E&J Gallo Winery has satisfied the requirements of the submittal requirements of this section.

§64.5 - Deadlines for Submittals

This section specifies required timing for submittals required under §64.4.

Large pollutant-specific emissions units (those with controlled emissions exceeding major source thresholds) are required to make the submittals as a part of the initial Title V permit application where the application has either not been filed or has not been deemed complete. Where the initial Title V permit has been issued without implementation of 40 CFR 64, the owner or operator must make the required submittals as a part of a subsequent application for any significant permit revision. If the required information is not submitted by either of these deadlines, it must be submitted as a part of the application for the Title V permit renewal.

For *other pollutant-specific emissions units*, the required submittal deadline is the application for Title V permit renewal. E&J Gallo Winery has submitted their CAM proposal with their Title V renewal application. Therefore, E&J Gallo Winery has satisfied the submittal deadline requirements of this section.

§64.6 - Approval of Monitoring

This section stipulates the following:

- A requirement that the permitting authority act to approve the proposed monitoring by confirming that the monitoring submitted complies with the requirements of §64.3.
- An allowance for the permitting authority to condition the approval based on collecting additional data on the indicators to be monitored, including performance or compliance testing.
- The minimum conditions that must be placed on the permit in the event that the proposed monitoring is approved by the permitting authority including a milestone schedule for completion of any conditional approval actions required by the owner or operator, such as installations, testing, or verification of operational status.
- Actions required by the permitting authority in the event that the proposed monitoring is not approved.

The CAM submittal requirements and stipulations for approval of such submittals pursuant to §64.4, §64.5, and §64.6 have been completed in conjunction with the application and review process for this Title V permit application. Therefore, E&J Gallo Winery is in compliance with the requirements of this section.

§64.7 - Operation of Approved Monitoring

This section stipulates the following:

- Requirements that the owner or operator 1) commence the monitoring upon receipt of a Title V permit that includes such monitoring, 2) properly maintain the monitoring system, and 3) conduct all monitoring in a continuous mode with the exception of outage periods associated with monitor malfunction and repair and with quality assurance and control activities.
- Actions required by the owner or operator in response to excursions or exceedances.
- A requirement for the owner or operator to document any need for improved monitoring based upon either an identification of a failure of the monitoring system to identify an excursion or exceedance or upon the results of compliance or performance testing that identifies a need to modify the monitoring.

The following condition will be included on the ATC permit to ensure compliance with this section:

- The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR 64]

§64.8 - Quality Improvement Plan (QIP) Requirements

This section stipulates that the Administrator or the permitting authority may require that the facility develop and implement a QIP in the event of a determination of a need for improved monitoring pursuant to §64.7. §64.8 also identifies the minimum elements required in the QIP, and requires that the facility implement the QIP as expeditiously as possible, with implementation not exceeding 180 days after the date that the need for implementation was identified unless the permitting authority is notified.

The following condition will be included on the ATC permit to ensure compliance with this section:

- If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR 64]

§64.9 - Reporting and Recordkeeping Requirements

This section stipulates the minimum reporting and recordkeeping requirements for facilities subject to 40 CFR 64.

The following conditions will be included on the ATC permit to ensure compliance with this section:

- The permittee shall maintain daily records of the NO_x and O₂ concentration from the in-stack monitoring system. These records shall be made available for District inspection upon request. [District Rule 2201 and 40 CFR 64]
- The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR 64.9]

§64.10 - Savings Provisions

This section states that the purpose of 40 CFR 64 is to require, as a part of the issuance of a Title V permit, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of 40 CFR 64. In addition, §64.10 states that nothing in 40 CFR 64 shall excuse an owner or operator from any other requirements of federal, state or local law or restrict or abrogate the authority of the Administrator or of the permitting authority.

Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringelmann 1 or equivalent to 20% opacity. A permit condition will be listed on the permit as follows:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Therefore, compliance with District Rule 4101 requirements is expected.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected. A permit condition will be listed on the permit as follows:

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (Appendix D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
N-1237-607-0	0.007 per million	No

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District’s thresholds for triggering T-BACT requirements; therefore, compliance with the District’s Risk Management Policy is expected.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District’s significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix D of this report, the emissions increases for this project was determined to be less than significant.

The following condition will be added to the permit to ensure compliance with the District’s Health Risk Assessment:

- A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 °F, equivalent to

$$\text{Corrected F - factor} = \left(\frac{8,710 \text{ dscf}}{\text{MMBtu}} \right) \times \left(\frac{60^\circ \text{ F} + 459.6}{68^\circ \text{ F} + 459.6} \right) = 8,578 \frac{\text{dscf}}{\text{MMBtu}} \text{ at } 60^\circ \text{ F}$$

PM10 Emission Factor: 0.0076 lb-PM10/MMBtu
 Percentage of PM as PM10 in Exhaust: 100%
 Exhaust Oxygen (O₂) Concentration: 3%
 Excess Air Correction to F Factor = $\frac{20.9}{(20.9 - 3)} = 1.17$

$$GL = \left(\frac{0.0076 \text{ lb - PM}}{\text{MMBtu}} \times \frac{7,000 \text{ grain}}{\text{lb - PM}} \right) / \left(\frac{8,578 \text{ ft}^3}{\text{MMBtu}} \times 1.17 \right)$$

$$GL = 0.0053 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Therefore, compliance with District Rule 4201 requirements is expected and a permit condition will be listed on the permit as follows:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

District Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO₂, NO₂, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to ≤ 0.1 gr/scf. According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

District Rule 4301 Limits			
Pollutant	NO ₂	Total PM	SO ₂
ATC #N-1237-607-0 (lb/hr)	0.6	0.7	0.3
Rule Limit (lb/hr)	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

District Rule 4304 Equipment Tuning Procedure for Boilers, Steam Generators and Process Heaters

This rule includes tune-up requirements for boilers. Boiler tuning is not required if monitoring the emissions with a portable analyzer. E&J Gallo Winery has chosen to monitor emissions monthly using a portable analyzer. Therefore, compliance with this Rule is not required.

District Rule 4305 Boilers, Steam Generators, and Process Heaters – Phase II

The boiler is subject to District Rule 4305, *Boilers, Steam Generators and Process Heaters – Phase 2*. In addition, each boiler is also subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3* and District Rule 4320, *Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*.

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4305 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4305.

District Rule 4306 Boilers, Steam Generators, and Process Heaters – Phase III

The boiler is subject to District Rule 4306, *Boilers, Steam Generators and Process Heaters – Phase 3*. In addition, the boiler is also subject to *District Rule 4320, Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*.

Since emissions limits of District Rule 4320 and all other requirements are equivalent or more stringent than District Rule 4306 requirements, compliance with District Rule 4320 requirements will satisfy requirements of District Rule 4306.

District Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr

The boiler is subject to District Rule 4320 requirements pursuant to Section 2.0 of District Rule 4320.

Section 5.2, NO_x and CO Emissions Limits

Section 5.2 requires NO_x and carbon monoxide (CO) emissions shall not exceed the limits specified in the following table. All ppmv emission limits specified in this section are referenced at dry stack gas conditions and 3.00 percent by volume stack gas oxygen.

The boiler is rated greater than 20 MMBtu/hr; thus, the applicable emission limit category is Section 5.2, Table 1, Category B, from District Rule 4320.

Rule 4320 Emissions Limits		
Category	Operated on gaseous fuel	
	NO_x Limit	CO Limit
B. Units with a total rated heat input > 20.0 MMBtu/hr, except for Categories C through G units (Standard Schedule)	7 ppmv or 0.008 lb/MMBtu	400 ppmv

The boiler will be limited to 5 ppmvd NO_x and 200 ppmvd CO, all corrected to 3% O₂. Thus, compliance with the District Rule 4320 NO_x and CO emission limits is expected. The following permit condition will be added to the permit to ensure compliance with this section:

- Except during start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 5 ppmvd NO_x @ 3% O₂ or 0.006 lb-NO_x/MMBtu; 0.00285 lb-SO_x/MMBtu; 0.0076 lb-PM₁₀/MMBtu; 200 ppmvd CO @ 3% O₂ (equivalent to 0.148 lb-CO/MMBtu); or 0.0027 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320]

Section 5.3, Annual Fee Calculation

Annual Fees are required if an emissions unit will not be meeting the emission limits in Section 5.2 of this rule. Since the proposed boiler will each meet the emissions limits of Section 5.2, the annual fee requirements are not applicable.

Section 5.4, Particulate Matter Control Requirements

Section 5.4.1 of this rule requires the operator to comply with one of the following requirements:

1. Fire the boiler exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;
2. Limit fuel sulfur content to no more than five grains of total sulfur per one hundred (100) standard cubic feet;
3. Install and properly operate an emission control system that reduces SO₂ emissions by at least 95% by weight; or limit exhaust SO₂ to less than or equal to 9 ppmv corrected to 3.0% O₂;

The boiler is solely fired on PUC-regulated natural gas. Therefore, the use of PUC-regulated gas meets the PM₁₀ requirements of this section. The following permit condition will be added to the permit to ensure compliance with this section:

- {4355} The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320]

Section 5.5, Low Use

The boiler's annual heat input will exceed the 1.8 billion Btu heat input per calendar year criteria limit addressed by this section. Thus, the requirements of Section 5.5 are not applicable.

Section 5.6, Startup and Shutdown Provisions

Section 5.6 states that on and after the full compliance deadline in Section 5.0, the applicable emission limits of Sections 5.2 Table 1 and 5.5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified in Sections 5.6.1 through 5.6.5

Section 5.6.1 states that the duration of each startup or each shutdown shall not exceed two hours, except as provided in Section 5.6.3.

Section 5.6.2 states that the emission control system shall be in operation and emissions shall be minimized insofar as technologically feasible during start-up or shutdown. The following condition will be added to the permit to ensure compliance with these two sections:

- Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]

Section 5.6.3 states that notwithstanding the requirement of Section 5.6.1, an operator may submit an application for a Permit to Operate condition to allow more than two hours for each start-up or each shutdown provided the operator meets all of the conditions specified in Sections 5.6.3.1 through 5.6.3.3. The facility has not proposed startup or shutdown durations

greater than two hours per occurrence; therefore the requirements in this section are not applicable.

Section 5.6.4 applies to the modification of PTO's. Since the boiler in this project is a new permit unit, the requirements of this section are not applicable.

Section 5.6.5 applies to the replacement of a permit unit. Since the boiler in this project is a new permit unit, the requirements of this section are not applicable.

Section 5.7, Monitoring Provisions

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 emissions limits shall either install and maintain Continuous Emission Monitoring (CEM) equipment for NO_x, CO and O₂, or install and maintain APCO-approved alternate monitoring.

For boiler N-1237-607-0, the facility will use pre-approved alternate monitoring scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO_x, CO, and O₂ exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer. The following conditions will be incorporated into the permit in order to ensure compliance with the requirements of the proposed alternate monitoring plan:

- The permittee shall monitor and record the stack concentration of NO_x, CO, NH₃, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. NH₃ monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]
- If the NO_x, CO or NH₃ concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following one hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306, and 4320]

- All NO_x, CO, O₂ and NH₃ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4102, 4305, 4306, and 4320]
- The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃ and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) the method of determining the NH₃ emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4102, 4305, 4306, and 4320]

Section 5.7.6 outlines requirements for monitoring SO_x emissions. For units that are complying with Section 5.4.1.1 or 5.4.1.2 of this Rule, the facility must provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permit to Operate. This boiler is complying using Sections 5.4.1.1 or 5.4.1.2.

This unit is fired on PUC-Regulated natural gas. Therefore, the following requirement will be included on the permit to comply with the SO_x emissions monitoring requirement:

- {4356} Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320]

Section 5.8, Compliance Determination

Section 5.8.1 states that the operator of any unit shall have the option of complying with either the applicable heat input, in lb/MMBtu, emission limits or the concentration, in ppmv, emission limits specified in Section 5.2. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling). The following permit condition will be added to the permit to ensure compliance with this section:

- The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]

Section 5.8.2 states that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is

shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. The following permit condition will be added to the permit to ensure compliance with this section:

- All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition. [District Rules 4305, 4306, and 4320]

Section 5.8.3 applies to units equipped with CEMS. The boiler in this project is not equipped with CEMS, therefore the requirements of this section are not applicable.

Section 5.8.4 states that for emissions monitoring pursuant to Sections 5.7.1, and 6.3.1 using a portable NO_x analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five readings evenly spaced out over the 15-consecutive-minute period. The following permit condition will be added to the permit to ensure compliance with this section:

- All NO_x, CO, O₂ and NH₃ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4102, 4305, 4306, and 4320]

Section 5.8.5 states that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. The following permit condition will be added to the permit to ensure compliance with this section:

- For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320]

Section 6.1, Recordkeeping

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO upon request. Failure to maintain records or information contained in the records that demonstrate non-compliance with the applicable requirements of this rule shall constitute a violation of this rule.

The following condition will be listed on the permit to ensure compliance:

- All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320]

Section 6.1.2 requires that the operator of a unit subject to Section 5.5 shall record the amount of fuel use at least on a monthly basis. Since the boiler is not subject to the requirements listed in Section 5.5, Section 6.1.2 requirements are not applicable.

Section 6.1.3 requires that the operator of a unit subject to Section 5.5.1 or 6.3.1 shall maintain records to verify that the required tune-up and the required monitoring of the operational characteristics have been performed. This boiler is not subject to Sections 5.5.1 or 6.3.1. Therefore, the requirements of this section do not apply.

Section 6.1.4 requires that the operator of a unit with startup or shutdown provisions keep records of the duration of the startup or shutdowns. The following condition will be listed on the permit:

- Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320]

Section 6.1.5 requires that the operator of a unit fired on liquid fuel during PUC-quality natural gas curtailment periods record the sulfur content of the fuel, amount of fuel used, and duration of the natural gas curtailment period. The boiler is not fired on liquid fuels. Therefore, the requirements of this section do not apply.

Section 6.2, Test Methods

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
NO _x	ppmv	EPA Method 7E or ARB Method 100
NO _x	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O ₂	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2 or 19
Stack Gas Moisture Content	%	EPA Method 4

The following permit conditions will be listed on the permit:

- Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]
- NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320]
- CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320]
- Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306, and 4320]
- Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 4102]

Section 6.3, Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.2 not less than once every 12 months. Upon demonstrating compliance on two consecutive compliance source tests, the source test may be deferred for up to thirty-six months. The following conditions will be included on the permit:

- Source testing to measure NO_x, CO, and NH₃ emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320]

- Source testing to measure natural gas combustion NO_x, CO, and NH₃ emissions from this unit shall be conducted at least once every twelve months. After demonstrating compliance on two consecutive annual source tests when unit is fired on natural gas, the unit shall be tested not less than once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve months. [District Rules 2201, 4102, 4305, 4306, and 4320]

Conclusion

Compliance with District Rule 4320 requirements is expected.

District Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1

This rule applies to boilers, steam generators, and process heaters at NO_x Major Sources that are not located west of Interstate 5 in Fresno, Kings, or Kern counties. If applicable, the emission limits, monitoring provisions, and testing requirements of this rule are satisfied when the unit is operated in compliance with Rule 4306. Therefore, compliance with this rule is expected.

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO₂, on a dry basis averaged over 15 consecutive minutes.

Using the ideal gas equation and the emission factors presented in Section VII, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = \frac{n RT}{P}$$

With:

N = moles SO₂

T (Standard Temperature) = 60°F = 520°R

P (Standard Pressure) = 14.7 psi

R (Universal Gas Constant) = $\frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}}$

EPA F-Factor for Natural Gas: 8,710 dscf/MMBtu at 68 °F, equivalent to

$$\text{Corrected } F - \text{ factor} = \left(\frac{8,710 \text{ dscf}}{\text{MMBtu}} \right) \times \left(\frac{60^\circ F + 459.6}{68^\circ F + 459.6} \right) = 8,578 \frac{\text{dscf}}{\text{MMBtu}} \text{ at } 60^\circ F$$

Natural Gas Combustion:

$$\frac{0.00285 \text{ lb} - \text{SOx}}{\text{MMBtu}} \times \frac{\text{MMBtu}}{8,578 \text{ dscf}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ R} \times \frac{520^\circ R}{14.7 \text{ psi}} \times \frac{1,000,000 \cdot \text{parts}}{\text{million}} = 1.97 \frac{\text{parts}}{\text{million}}$$

$$\text{Sulfur Concentration} = 1.97 \frac{\text{parts}}{\text{million}} < 2,000 \text{ ppmv (or 0.2\%)}$$

Therefore, compliance with District Rule 4801 requirements is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

Project specific impacts on global climate change were evaluated consistent with the adopted District policy – *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The District's engineering evaluation (this document – Appendix F) demonstrates that the project includes Best Performance Standards (BPS) for each class and category of greenhouse gas emissions unit. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

The following conditions will be added to the permit to ensure the facility meets the requirements of this BPS:

- The boiler shall be equipped with an economizer system that consists of, at a minimum, a single stage economizer section which will recover energy from the boiler flue gas by heat exchange with the boiler feed water. The economizer system shall be designed at maximum boiler firing rate to either 1) reduce the temperature of the economizer flue gas outlet to a value no greater than 20 deg F above the temperature of the boiler feed water at maximum firing rate, or 2) heat the boiler feed water to a temperature which is no less than 30 deg F below the steam temperature at the steam drum, or 3) reduce the final temperature of the boiler's flue gas to a temperature no greater than 200 deg F. [Public Resources Code 21000-21177: California Environmental Quality Act]
- Electric motors driving combustion air fans or induced draft fans shall have an efficiency meeting the standards of the National Electric Manufacturer's Association (NEMA) for "premium efficiency" motors and shall each be operated with a variable speed control or equivalent for control of flow through the fan. [Public Resources Code 21000-21177: California Environmental Quality Act]
- The boiler shall be equipped with an O2 trim system designed to control oxygen content of the stack gases to a maximum of 3% by volume dry basis except during any period where the rate of fuel consumption by the boiler is less than 20% of maximum rated firing. [Public Resources Code 21000-21177: California Environmental Quality Act]
- The boiler shall be designed to limit the recirculation of flue gas to a value not exceeding 10 percent of total flue gas volume while meeting the applicable requirements for control of NOx emissions from the boiler. [Public Resources Code 21000-21177: California Environmental Quality Act]
- The boiler shall be equipped with an automatic boiler blowdown control system which minimizes boiler blowdown while controlling dissolved solids in the boiler water at an optimum level. [Public Resources Code 21000-21177: California Environmental Quality Act]

- The boiler shall be equipped with a flash steam recovery system which will recover flash steam from the blowdown pressure reduction and utilize it for feedwater heating in the deaerator or feedwater heater. [Public Resources Code 21000-21177: California Environmental Quality Act]

District CEQA Findings

The District determined that no other agency has broader discretionary approval power over the project and that the District is the first agency to act on the project, therefore establishing the District as the Lead Agency for the project (CCR §15051(b)). The District's engineering evaluation of the project (this document) determined that compliance with District rules and permit conditions would reduce and mitigate the project's potential air quality impacts to less than significant.

To ensure that the project will have a less than significant impact on all other environmental resources, the following permit conditions will be made a condition of project approval:

- Permittee shall comply with all applicable requirements of the California Department of Fish and Wildlife (CDFW). Permittee shall retain any permits/records deemed necessary by CDFW on-site and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]
- In the event that archaeological/paleontological resources are discovered during ground-disturbing activities, all work within 100 feet of the find shall cease and Permittee shall notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. A qualified archaeologist/paleontologist shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Merced County and the Native American Heritage Commission (NAHC). In addition, should archaeological/paleontological resources be discovered, Permittee shall provide the District a written report in relation to the nature of the find. [Public Resources Code 21000-21177: California Environmental Quality Act]

- In the event that human remains are discovered during ground-disturbing activities; all work within 100 feet of the find shall cease and the discovery shall immediately be reported to the County Coroner (CC) and Native American Heritage Commission (NAHC) for further assessment. Permittee shall identify appropriate measures for treatment or disposition of the remains in consultation with the CC and NAHC. In addition, should human remains be discovered during ground-disturbing activities, Permittee shall provide the District a written report in relation to the nature of the find. [Public Resources Code 21000-21177: California Environmental Quality Act]
- No later than 10 days prior to the start of construction activities, Permittee shall demonstrate compliance with District Rule 4002 (National Emissions Standard for Hazardous Air Pollutants) through the acquisition of an approved Demolition Permit Release. [Public Resources Code 21000-21177: California Environmental Quality Act]
- Permittee shall comply with all applicable requirements of the Merced County Environmental Health Department (MCEHD) and the California Department of Toxic Substances Control (DTSC). Permittee shall retain any permits/records deemed necessary by MCEHD and DTSC and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]
- Permittee shall comply with all applicable Regional Water Quality Control Board (RWQCB) water quality standard and waste discharge regulations. Permittee shall retain any permits/records deemed necessary by the RWQCB on-site and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]
- Permittee shall comply with all applicable Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control (DTSC) requirements. Permittee shall retain any permits/records deemed necessary by the RWQCB and DTSC on-site and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]

The District prepared an Initial Study which demonstrates that through a combination of project design elements, and permit conditions, project specific environmental impacts will be less than significant. A Mitigated Negative declaration and Notice of Intent to Adopt will be prepared and circulated for public review and comment pursuant to CCR §15072 et seq. The issuance of the Authority to Construct (ATC) constitutes the final decision to approve the project and will not be issued until the District has approved the final environmental document. Pursuant to CCR §15075 a Notice of Determination will be filed within five (5) days of the issuance of the ATC.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending successful NSR and COC Public Noticing periods, issue ATC N-1237-607-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-1237-607-0	3020-02-H	90 MMBtu/hr boiler	\$1,030.00

Appendixes

- A: Draft ATC
- B: Existing PTO to Be Surrendered
- C: BACT Analysis
- D: HRA Summary and AAQA
- E: Compliance Certification
- F: CEQA GHG: Project Specific Analysis
- G: Supplemental Information

APPENDIX A

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-1237-607-0

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

LOCATION: 18000 W RIVER RD
LIVINGSTON, CA 95334

EQUIPMENT DESCRIPTION:

90 MMBTU/HR VICTORY ENERGY OPERATIONS (VEO) MODEL J-VE-540 NATURAL GAS-FIRED BOILER WITH A LOW-NOX BURNER, A FLUE GAS RECIRCULATION (FGR) SYSTEM, A NATIONWIDE SELECTIVE CATALYTIC REDUCTION (SCR) SYSTEM, AND A NOX AND O2 IN-STACK EMISSION MONITORING SYSTEM (REPLACEMENT FOR PERMIT N-1237-3)

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. Within 90 days of startup of the equipment authorized by this Authority to Construct, Permit to Operate N-1237-3-8 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 512 lb, 2nd quarter - 511 lb, 3rd quarter - 511 lb, and fourth quarter - 511 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/19/02). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

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DAVID WARNER, Director of Permit Services
N-1237-607-0, Feb 19 2013 1:02PM - FUKUOAD - Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOx emission reduction credits for the following quantity of emissions: 1st quarter - 1,274 lb, 2nd quarter - 1,274 lb, 3rd quarter - 1,274 lb, and fourth quarter - 1,274 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 12/19/02. [District Rule 2201] Federally Enforceable Through Title V Permit
6. ERC Certificate Numbers N-2-1, S-3892-1, S-3807-1, S-3808-1, N-2-2, N-849-2, N-1061-2, N-1010-2, N-1011-2, or N-1012-2 (or a certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
10. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
11. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rules 2201 and 40 CFR 60.48 (c)(g)] Federally Enforceable Through Title V Permit
12. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
13. Except during start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 5 ppmvd NOx @ 3% O2 or 0.006 lb-NOx/MMBtu; 0.00285 lb-SOx/MMBtu; 0.0076 lb-PM10/MMBtu; 200 ppmvd CO @ 3% O2 (equivalent to 0.148 lb-CO/MMBtu); or 0.0027 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
14. During start-up and shutdown, emissions from this unit shall not exceed any of the following limits: 0.83 lb-NOx/hr; 0.00285 lb-SOx/MMBtu; 0.0076 lb-PM10/MMBtu; 200 ppmvd CO @ 3% O2 (equivalent to 0.148 lb-CO/MMBtu); or 0.0027 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
15. The total duration of start-up time shall not exceed 3.0 hours per day. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
16. The total duration of shutdown time shall not exceed 2.0 hours per day. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
17. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
18. The ammonia emissions shall not exceed 10 ppmvd @ 3% O2. [District Rule 4102]
19. Source testing to measure NOx, CO, and NH3 emissions from this unit while fired on natural gas shall be conducted within 60 days of initial start-up. [District Rules 2201, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
20. Source testing to measure natural gas combustion NOx, CO, and NH3 emissions from this unit shall be conducted at least once every twelve months. After demonstrating compliance on two consecutive annual source tests when unit is fired on natural gas, the unit shall be tested not less than once every 36 months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve months. [District Rules 2201, 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
22. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
23. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 108] Federally Enforceable Through Title V Permit
25. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
27. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100 [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
28. Source testing for ammonia slip shall be conducted utilizing BAAQMD Method ST-1B. [District Rule 4102]
29. The permittee shall monitor and record the stack concentration of NO_x, CO, NH₃, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. NH₃ monitoring shall be conducted utilizing Draeger tubes or a District approved equivalent method. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
30. If the NO_x, CO or NH₃ concentrations, as measured by the portable analyzer or the District approved ammonia monitoring equipment, exceed the permitted levels, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer or the ammonia monitoring equipment continue to show emission limit violations after 1 hour of operation following detection, the permittee shall notify the District within the following one hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
31. All NO_x, CO, O₂ and NH₃ emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The NO_x, CO and O₂ analyzer as well as the NH₃ emission monitoring equipment shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
32. The permittee shall maintain records of: (1) the date and time of NO_x, CO, NH₃ and O₂ measurements, (2) the O₂ concentration in percent by volume and the measured NO_x, CO and NH₃ concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, (5) the method of determining the NH₃ emission concentration, and (6) a description of any corrective action taken to maintain the emissions at or below the acceptable levels. [District Rules 4102, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit

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33. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
34. The permittee shall take readings of the NO_x concentration and O₂ percent, by volume, using the in-stack monitoring system at least once per each day that the boiler operates. [District Rule 2201 and 40 CFR 64.9] Federally Enforceable Through Title V Permit
35. During times when the in-stack monitoring system is down for maintenance or repairs, the permittee shall use a District approved portable analyzer to record daily NO_x and O₂ concentrations. The permittee shall maintain records of the portable analyzer readings including the date(s) and reason the in-stack monitoring system was not operating. [District Rule 2201 and 40 CFR 64] Federally Enforceable Through Title V Permit
36. The permittee shall maintain daily records of the NO_x and O₂ concentration from the in-stack monitoring system. These records shall be made available for District inspection upon request. [District Rule 2201 and 40 CFR 64] Federally Enforceable Through Title V Permit
37. The permittee shall compare the NO_x and O₂ concentrations from the in-stack monitoring system with the concentration of NO_x and O₂ readings from calibration gas cylinders for NO_x and O₂ at least once during each month that the boiler operates. The permittee shall maintain these comparison readings and these records shall be available for District inspection upon request. [District Rule 2201 and 40 CFR 64] Federally Enforceable Through Title V Permit
38. The permittee shall comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7. [40 CFR 64] Federally Enforceable Through Title V Permit
39. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR part 64.8. [40 CFR 64] Federally Enforceable Through Title V Permit
40. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR 64.9] Federally Enforceable Through Title V Permit
41. Permittee shall maintain daily records of the type and quantity of fuel combusted by the boiler. [District Rules 2201 and 40 CFR 60.48 (c)(g)] Federally Enforceable Through Title V Permit
42. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
43. The boiler shall be equipped with an economizer system that consists of, at a minimum, a single stage economizer section which will recover energy from the boiler flue gas by heat exchange with the boiler feed water. The economizer system shall be designed at maximum boiler firing rate to either 1) reduce the temperature of the economizer flue gas outlet to a value no greater than 20 deg F above the temperature of the boiler feed water at maximum firing rate, or 2) heat the boiler feed water to a temperature which is no less than 30 deg F below the steam temperature at the steam drum, or 3) reduce the final temperature of the boiler's flue gas to a temperature no greater than 200 deg F. [Public Resources Code 21000-21177: California Environmental Quality Act]
44. Electric motors driving combustion air fans or induced draft fans shall have an efficiency meeting the standards of the National Electric Manufacturer's Association (NEMA) for "premium efficiency" motors and shall each be operated with a variable speed control or equivalent for control of flow through the fan. [Public Resources Code 21000-21177: California Environmental Quality Act]
45. The boiler shall be equipped with an O₂ trim system designed to control oxygen content of the stack gases to a maximum of 3% by volume dry basis except during any period where the rate of fuel consumption by the boiler is less than 20% of maximum rated firing. [Public Resources Code 21000-21177: California Environmental Quality Act]
46. The boiler shall be designed to limit the recirculation of flue gas to a value not exceeding 10 percent of total flue gas volume while meeting the applicable requirements for control of NO_x emissions from the boiler. [Public Resources Code 21000-21177: California Environmental Quality Act]

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CONDITIONS CONTINUE ON NEXT PAGE

47. The boiler shall be equipped with an automatic boiler blowdown control system which minimizes boiler blowdown while controlling dissolved solids in the boiler water at an optimum level. [Public Resources Code 21000-21177: California Environmental Quality Act]
48. The boiler shall be equipped with a flash steam recovery system which will recover flash steam from the blowdown pressure reduction and utilize it for feedwater heating in the deaerator or feedwater heater. [Public Resources Code 21000-21177: California Environmental Quality Act]
49. Permittee shall comply with all applicable requirements of the California Department of Fish and Wildlife (CDFW). Permittee shall retain any permits/records deemed necessary by CDFW on-site and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]
50. In the event that archaeological/paleontological resources are discovered during ground-disturbing activities, all work within 100 feet of the find shall cease and Permittee shall notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. A qualified archaeologist/paleontologist shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Merced County and the Native American Heritage Commission (NAHC). In addition, should archaeological/paleontological resources be discovered, Permittee shall provide the District a written report in relation to the nature of the find. [Public Resources Code 21000-21177: California Environmental Quality Act]
51. In the event that human remains are discovered during ground-disturbing activities; all work within 100 feet of the find shall cease and the discovery shall immediately be reported to the County Coroner (CC) and Native American Heritage Commission (NAHC) for further assessment. Permittee shall identify appropriate measures for treatment or disposition of the remains in consultation with the CC and NAHC. In addition, should human remains be discovered during ground-disturbing activities, Permittee shall provide the District a written report in relation to the nature of the find. [Public Resources Code 21000-21177: California Environmental Quality Act]
52. No later than 10 days prior to the start of construction activities, Permittee shall demonstrate compliance with District Rule 4002 (National Emissions Standard for Hazardous Air Pollutants) through the acquisition of an approved Demolition Permit Release. [Public Resources Code 21000-21177: California Environmental Quality Act]
53. Permittee shall comply with all applicable requirements of the Merced County Environmental Health Department (MCEHD) and the California Department of Toxic Substances Control (DTSC). Permittee shall retain any permits/records deemed necessary by MCEHD and DTSC and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]
54. Permittee shall comply with all applicable Regional Water Quality Control Board (RWQCB) water quality standard and waste discharge regulations. Permittee shall retain any permits/records deemed necessary by the RWQCB on-site and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]
55. Permittee shall comply with all applicable Regional Water Quality Control Board (RWQCB) and Department of Toxic Substances Control (DTSC) requirements. Permittee shall retain any permits/records deemed necessary by the RWQCB and DTSC on-site and shall make these permits/records available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]

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APPENDIX B

Existing PTO to Be Surrendered

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-1237-3-8

EXPIRATION DATE: 09/30/2015

EQUIPMENT DESCRIPTION:

90 MMBTU/HR NATURAL GAS-FIRED NEBRASKA MODEL NS-E63 BOILER WITH A TODD COMBUSTION MODEL SV545FGX LOW NOX BURNER AND FLUE GAS RECIRCULATION (FGR) SYSTEM

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District NSR Rule] Federally Enforceable Through Title V Permit
2. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rule 4201 and District Rule 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
3. The unit shall only be fired on PUC-regulated natural gas. [District NSR Rule] Federally Enforceable Through Title V Permit
4. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District NSR Rule, District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
5. Heat input to this unit shall not exceed 30 billion Btu per calendar year. [District NSR Rule, District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
6. Emissions rates from the natural gas-fired unit shall not exceed any of the following limits: 30 ppmv NO_x @ 3% O₂ or 0.036 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.005 lb-PM₁₀/MMBtu, 200 ppmv CO @ 3% O₂ or 0.148 lb-CO/MMBtu, or 0.0028 lb-VOC/MMBtu. [District NSR Rule, District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
7. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
8. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
9. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
10. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
These terms and conditions are part of the Facility-wide Permit to Operate.

11. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
12. CO emissions for source test purposes shall be determined using EPA Method 10 or EPA Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
13. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
14. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
16. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
17. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. Records of monthly and annual heat input of the unit shall be maintained. [District NSR Rule, District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
21. Operator shall provide that fuel hhv be certified by third party fuel supplier or determined annually by: ASTM D 1826-88 or D 1945-81 in conjunction with ASTM D 3588-89 for gaseous fuels. [District Rules 2520, 9.4.2; 4305, 6.2.1; 4306, 6.2.1; and 4351, 6.2.1] Federally Enforceable Through Title V Permit
22. Nitrogen oxide (NO_x) emission concentrations in ppmv referenced at dry stack emissions shall be corrected to 3% O₂ and lb/MMBtu rates shall be calculated as lb NO₂/MMBtu of heat input (hhv). [District Rules 4305, 8.1 & 8.2; 4306, 8.1 & 8.2; and 4351, 8.1 & 8.2] Federally Enforceable Through Title V Permit
23. Operator shall monitor and record for each unit the hhv and cumulative annual use of each fuel. [District Rule 4351, 6.1.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

24. Operator shall maintain copies of fuel invoices and supplier certifications. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District NSR Rule and District Rules 2520, 9.4.2; 4305; and 4306] Federally Enforceable Through Title V Permit
26. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: Rule 405 (Madera), Rule 408 (Fresno), Rule 408.2 (Merced) and 407.2 (Kern, Tulare, Kings, Stanislaus, and San Joaquin); Rule 402 (Madera) and 404 (all seven remaining counties in the San Joaquin Valley); SJVUAPCD Rule 4301. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
27. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following subsumed requirements: Rule 405 (Madera), 408 and 409 (Kern), and 408 (all six remaining counties in the San Joaquin Valley); Rule 404 (Madera) 406 (Fresno), and 407 (all six remaining counties in the San Joaquin Valley); SJVUAPCD Rule 4801. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
28. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rule 4201, 4301, 4305, and 4351. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
29. Compliance with permit conditions in the Title V permit shall be deemed compliance with the following requirements: SJVUAPCD Rule 1081, and County Rules 108 (Kings), 108.1 (Fresno, Merced, San Joaquin, Tulare, Kern, and Stanislaus), and 110 (Madera). [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
30. The requirements of 40 CFR 72.6(b) and 40 CFR 60.40c do not apply to this source. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

APPENDIX C

BACT Analysis

Top-Down BACT Determination for NO_x Emissions

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 1.1.2 (Boiler > 20.0 MMBtu/hr, Natural gas fired, base-loaded or with small load swings) has been rescinded. The District adopted District Rule 4320 on October 16, 2008. The NO_x emission limit requirements in District Rule 4320 are lower than the BACT limits listed in rescinded BACT Guideline 1.1.2; therefore a project specific BACT analysis will be performed to determine BACT for this project.

Rule 4320 limits natural gas boilers with heat input ratings greater than 20 MMBtu/hr to 7 ppmv @ 3% O₂. Since this emission limit is required by the rule, it will be considered the Achieved in Practice control technology for the BACT analysis. District Rule 4320 also contains an enhanced schedule option that allows applicants additional time to meet the requirements of the rule. The enhanced schedule NO_x emission limit requirement is 5 ppmv @ 3% O₂. Since this is an enhanced option in the rule, it will be considered the Technologically Feasible control technology for the BACT analysis.

The SJVUAPCD BACT Clearinghouse Guideline 1.1.2 has been rescinded. Therefore, a new BACT analysis is required. The following are possible control technologies:

- 1) 5 ppmvd @ 3% O₂ - Technologically Feasible
- 2) 7 ppmvd @ 3% O₂ - Achieved in Practice

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

Step 3 – Rank Remaining Control Technologies by Control Efficiency

- 1) 5 ppmvd @ 3% O₂ - Technologically Feasible
- 2) 7 ppmvd @ 3% O₂ - Achieved in Practice

Step 4 – Cost Effectiveness Analysis

The applicant has proposed to limit the NO_x emissions of their boiler to 5 ppmv @ 3% O₂; therefore the applicant is proposing the most effective control technology and a cost effective analysis is not required.

Step 5 - Select BACT

BACT for NO_x emissions from this boiler is NO_x emissions of 5 ppmv @ 3% O₂. The applicant has proposed to install a 5 ppmv @ 3% O₂ low NO_x burner; therefore BACT for NO_x emissions is satisfied.

Top Down BACT Analysis for SOx and PM10 Emissions:

Step 1 - Identify All Possible SOx and PM₁₀ Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 1.1.2 (Boiler > 20.0 MMBtu/hr, Natural gas fired, base-loaded or with small load swings) has been rescinded. The District adopted District Rule 4320 on October 16, 2008. Therefore, a project specific BACT analysis will be performed to determine BACT for this project.

Rule 4320 requires SOx and PM10 control by complying with SOx limits. The rule specified that the sulfur content of the fuel be limited to no more than 5 grains/100 scf, or fire the unit with PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases, or operate an emissions control system that reduces SO2 emissions by at least 95% by weight or limit exhaust SO2 to less than or equal to 9 ppmv corrected to 3.0% O2. The following can be considered BACT and are technologically possible options:

- 1) PUC Natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases. (Achieved in Practice).
- 2) Limit sulfur content of the fuel to no more than 5 grains/100 scf.
- 3) Operate an emissions control system that reduces SO2 emissions by at least 95% by weight or limit exhaust SO2 to less than or equal to 9 ppmv corrected to 3.0% O2

Step 2 - Eliminate Technologically Infeasible Options

All control options are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control effectiveness

- 1) PUC Natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases. (Achieved in Practice).
- 2) Limit sulfur content of the fuel to no more than 5 grains/100 scf.
- 3) Operate an emissions control system that reduces SO2 emissions by at least 95% by weight or limit exhaust SO2 to less than or equal to 9 ppmv corrected to 3.0% O2

Step 4 - Cost Effectiveness Analysis

The applicant has proposed to solely use PUC-regulated natural gas fuel in the boiler. This proposal meets the most stringent emission requirements of BACT. Therefore, BACT is satisfied and a cost effective analysis does not need to be performed.

Step 5 - Select BACT

The applicant is proposing to solely use PUC-regulated natural gas fuel for the boiler. This proposed control satisfies the District's BACT requirement.

Top Down BACT Analysis for CO Emissions:

Step 1 - Identify All Possible CO Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 1.1.2 (Boiler > 20.0 MMBtu/hr, Natural gas fired, base-loaded or with small load swings) has been rescinded. The District adopted District Rule 4320 on October 16, 2008. Therefore, a project specific BACT analysis will be performed to determine BACT for this project.

District Rule 4320 identifies the following technologies:

- 1) 400 ppmvd @ 3% O₂ - Achieved-In-Practice

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 1) 400 ppmvd @ 3% O₂ - Achieved-In-Practice

Step 4 - Cost Effectiveness Analysis

The applicant has proposed a CO emission limit that meets 400 ppmvd @ 3% O₂. Since the applicant has chosen the most effective control technology in step 3, a cost effectiveness analysis is not required.

Step 5 - Select BACT

BACT for CO emissions from this boiler is CO emissions of 400 ppmv @ 3% O₂. The applicant has proposed a CO emission limit of 200 ppmv @ 3% O₂; therefore BACT for CO emissions is satisfied.

Top Down BACT Analysis for VOC Emissions:

Step 1 - Identify All Possible VOC Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 1.1.2 (Boiler > 20.0 MMBtu/hr, Natural gas fired, base-loaded or with small load swings) has been rescinded. The District adopted District Rule 4320 on October 16, 2008. Therefore, a project specific BACT analysis will be performed to determine BACT for this project.

The SJVAPCD BACT Clearinghouse Guideline 1.1.2 identifies the following technologies:

- 1) Natural gas fuel with LPG backup - Achieved-In-Practice

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 1) Natural gas fuel with LPG backup - Achieved-In-Practice

Step 4 - Cost Effectiveness Analysis

The applicant has proposed the use of natural gas. Since the applicant has chosen the most effective control technology in step 3, a cost effectiveness analysis is not required.

Step 5 - Select BACT

BACT for VOC emissions from this boiler is natural gas fuel. The applicant has proposed natural gas fuel; therefore BACT for VOC emissions is satisfied.

APPENDIX D

HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Derek Fukuda – Permit Services
From: Kou Thao – Technical Services
Date: Sep 20, 2012
Facility Name: E&J Gallo
Location: 18000 River Rd Livingston, CA 95334
Application #(s): N-1237-607-0
Project #: N-1122834

A. RMR SUMMARY

RMR Summary			
Categories	NG boiler (Unit 607-0)	Project Totals	Facility Totals
Prioritization Score	4.33E-01	4.33E-01	6.20E-01
Acute Hazard Index	4.27E-04	4.27E-04	4.27E-04
Chronic Hazard Index	6.35E-04	6.35E-04	6.35E-04
Maximum Individual Cancer Risk (10^{-6})	7.25E-09	7.25E-09	7.25E-09
T-BACT Required?	No		
Special Permit Conditions?	No		

Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 607-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

B. RMR REPORT

I. Project Description

Technical Services received a request on September 4, 2021 to perform a Risk Management Review for a proposed installation of a 90.0 MMBtu/hr natural gas boiler.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District's emission factors for Natural Gas Fired external combustion, and were entered into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2005-2009 from Merced to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit-607-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	15.24	Closest Receptor (m)	Business
Stack Diameter. (m)	1.066	Type of Receptor	609.6
Stack Exit Velocity (m/s)	11.20	Max Hours per Year	8760
Stack Exit Temp. (°K)	388.55	Fuel Type	NG
Burner Rating (MMBtu/hr)	90.0		

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀; as well as a RMR. The emission rates used for criteria pollutant modeling were 13.32 lb/hr CO, 0.83 lb/hr NO_x, 0.26 lb/hr SO_x, and 0.68 lb/hr PM₁₀. The engineer supplied the maximum fuel rate for the natural gas boiler used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Natural Gas boiler	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²
PM _{2.5}	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Toxic emissions summary
- D. Prioritization score
- E. AAQA summary
- F. Facility summary

APPENDIX E

Compliance Certification

**San Joaquin Valley
Unified Air Pollution Control District**

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

Federal Major Permit MODIFICATION
 MINOR PERMIT MODIFICATION

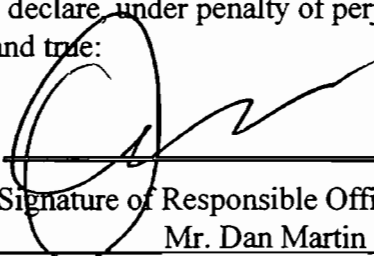
ADMINISTRATIVE
AMENDMENT

COMPANY NAME: E&J Gallo Winery - Livingston	FACILITY ID #N-1237
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: E&J Gallo Winery-Livingston	
3. Agent to the Owner: Mr. Dan Martin	

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

- 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
Mr. Dan Martin

08/15/12

Date

Name of Responsible Official (please print)

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

**Mailing Address: Central Regional Office * 1990 E. Gettysburg Avenue * Fresno, California
93726-0244 * (559) 230-5900 * FAX (559) 230-6061**

**TVFORM-009
Rev: July 2005**

APPENDIX F

CEQA GHG: Project Specific Analysis

GHG Calculations

Basis and Assumptions

- The boiler is fired with natural gas at a rate of 90 MMBtu/hour (HHV)
- The boiler operates 8,760 hours per year and is in commercial/institutional service
- Emission factors and global warming potentials (GWP) are taken from the California Climate Change Action Registry (CCAR), Version 3.1, January, 2009 (Appendix C, Tables C.7 and C.8):

CO2 53.06 kg/MMBtu (HHV) natural gas (116.7 lb/MMBtu)

CH4 0.005 kg/MMBtu (HHV) natural gas (0.011 lb/MMBtu)

N2O 0.0001 kg/MMBtu (HHV) natural gas (0.00022 lb/MMBtu)

GWP for CH4 = 23 lb-CO2(eq) per lb-CH4

GWP for N2O = 296 lb-CO2(eq) per lb-N2O

Calculations

Hourly Emissions

CO2 Emissions = 90 MMBtu/hr x 116.7 lb/MMBtu = 10,503 lb-CO2(eq)/hour

CH4 Emissions = 90 MMBtu/hr x 0.011 lb/MMBtu x 23 lb-CO2(eq) per lb-CH4
= 22.77 lb-CO2(eq)/hour

N2O Emissions = 90 MMBtu/hr x 0.00022 lb/MMBtu x 296 lb-CO2(eq) per lb-N2O
= 5.9 lb-CO2(eq)/hour

Total = 10,503 + 22.77 + 5.9 = 10,531.7 lb-CO2(eq)/hour

Annual Emissions

10,531.7 lb-CO2(eq)/hour x 8,760 hr/year ÷ 2,000 lb/ton = **46,128.8 short tons-CO2(eq)/year**
46,128.8 short tons-CO2e/year x 0.9072 metric tons/short ton = **41,848 metric tons-CO2(eq)/year**

This exceeds the District's threshold of 230 metric tons of CO₂ equivalent. To address the potential increase in GHG emissions, the applicant is proposing to comply with the best performance standard (BPS) developed by the District for boilers.

BPS Analysis

Step 1 - Identify BPS for New Boilers

Class: Gaseous Fuel-Fired Boilers

Category: *New Boilers with Operating Steam Pressure 75 psig and Greater, Fired Exclusively on Natural Gas or LPG*

Best Performance Standards:

Boilers meeting this Best Performance Standard must comply with all four elements of this BPS (items 1, 2, 3 and 4 listed below) where applicable.

1. The boiler shall be either equipped with an economizer system meeting the following design criteria or shall be equipped with an approved alternate heat recovery system which will collectively provide heat recovery from the boiler flue gas which is equivalent:

A. Except for boilers subject to the requirements of items B or C below, the economizer system shall consist of, as a minimum, a single stage economizer section which will recover energy from the boiler flue gas by heat exchange with the boiler feed water. The economizer system shall be designed at maximum boiler firing rate to either 1) reduce the temperature of the economizer flue gas outlet to a value no greater than 20°F above the temperature of the boiler feed water at maximum firing rate, or 2) heat the boiler feed water to a temperature which is no less than 30°F below the steam temperature at the steam drum, or 3) reduce the final temperature of the boiler's flue gas to a temperature no greater than 200°F.

Note: For purposes of this BPS, feedwater temperature is defined as the temperature of the water stream delivered to the boiler from the deaerator or feedwater tank.

B. For boilers with a feedwater temperature greater than or equal to $T_s - 50$, where T_s is the saturation temperature of steam at the steam separator pressure in °F, the steam generator may be designed, in lieu of the requirements of item A above, to achieve a flue gas temperature no greater than the steam saturation temperature (°F at the steam drum operating pressure) plus 100°F.

C. For boilers with rated capacity in excess of 20 MMBtu/hr which have a average water supply temperature which is equal to or less than 150°F, the boiler shall be equipped with an economizer designed to reduce the temperature of the flue gas outlet to a value no greater than 50°F above the water supply temperature when the boiler is operating at maximum firing rate. Note: For purposes of this BPS, water supply temperature is defined as the weighted average temperature of the combined makeup water and the recovered condensate delivered to the boiler upstream of any deaerator or other feedwater preheater but after benefit of any other heat recovery operations which recover waste heat from the boiler by transfer to the boiler water supply (such as boiler blowdown heat recovery).

2. Electric motors driving combustion air fans or induced draft fans shall have an efficiency meeting the standards of the National Electrical Manufacturer's Association (NEMA) for "premium efficiency" motors and shall each be operated with a variable speed control or equivalent for control of flow through the fan.

3. For boilers with rated fired duty in excess of 20 MMBtu/hr and an operating steam pressure of 125 psig or greater, the boiler shall be 1) equipped with an O₂ trim system and be designed to control oxygen content of the stack gases to a maximum of 3 volume % dry basis except during any period where the rate of fuel consumption by the boiler is less than 20% of maximum rated firing and 2) shall be designed to limit the recirculation of flue gas to a value not exceeding 10 percent of total flue gas volume while meeting the applicable requirements for control of NO_x emissions from the boiler.

4. For boilers with rated fired duty in excess of 20 MMBtu/hr and a boiler blowdown rate exceeding 8 % of steam production, the boiler shall be equipped with: 1) an automatic boiler blowdown control system which will minimize boiler blowdown while controlling dissolved solids in the boiler water at an optimum level and 2) a flash steam recovery system which will recover flash steam from the blowdown pressure reduction and utilize it for feedwater heating in the deaerator or feedwater heater.

Step 2 - Select BPS

- The boiler will be equipped with an economizer designed for a 247°F outlet flue gas temperature which is no greater than 20°F above the 227°F feedwater from the deaerator.
- The boiler will be equipped with premium efficiency motors.
- The facility will install an O₂ trim system and will control the stack oxygen content to 3% volume maximum, except during startup and shutdown. The boiler will also feature controls to limit the flue gas recirculation to 10% by volume.
- The boiler blowdown rate exceeds 8% of the steam production. The proposed project will include an automatic boiler blowdown control system to minimize blowdown and control dissolved solids in the boiler water. Additionally, the proposed project will include a flash steam recovery system which will recover the steam from the blowdown pressure reduction and use for feedwater heating in the deaerator or feedwater heater.

Step 3 – BPS Conditions

The following conditions will be included on the permit to ensure compliance with BPS requirements:

- The boiler shall be equipped with an economizer system that consists of, at a minimum, a single stage economizer section which will recover energy from the boiler flue gas by heat exchange with the boiler feed water. The economizer system shall be designed at maximum boiler firing rate to either 1) reduce the temperature of the economizer flue gas outlet to a value no greater than 20 deg F above the temperature of the boiler feed water at maximum firing rate, or 2) heat the boiler feed water to a temperature which is no less than 30 deg F below the steam temperature at the steam drum, or 3) reduce the final temperature of the boiler's flue gas to a temperature no greater than 200 deg F. [Public Resources Code 21000-21177: California Environmental Quality Act]
- Electric motors driving combustion air fans or induced draft fans shall have an efficiency meeting the standards of the National Electric Manufacturer's Association (NEMA) for "premium efficiency" motors and shall each be operated with a variable speed control or equivalent for control of flow through the fan. [Public Resources Code 21000-21177: California Environmental Quality Act]

- The boiler shall be equipped with an O₂ trim system designed to control oxygen content of the stack gases to a maximum of 3% by volume dry basis except during any period where the rate of fuel consumption by the boiler is less than 20% of maximum rated firing. [Public Resources Code 21000-21177: California Environmental Quality Act]
- The boiler shall be designed to limit the recirculation of flue gas to a value not exceeding 10 percent of total flue gas volume while meeting the applicable requirements for control of NO_x emissions from the boiler. [Public Resources Code 21000-21177: California Environmental Quality Act]
- The boiler shall be equipped with an automatic boiler blowdown control system which minimizes boiler blowdown while controlling dissolved solids in the boiler water at an optimum level. [Public Resources Code 21000-21177: California Environmental Quality Act]
- The boiler shall be equipped with a flash steam recovery system which will recover flash steam from the blowdown pressure reduction and utilize it for feedwater heating in the deaerator or feedwater heater. [Public Resources Code 21000-21177: California Environmental Quality Act]

APPENDIX G

Supplemental Information

July 20, 2012

E&J Gallo Winery, Livingston, CA
 N-1237-3-8, Nebraska Boiler
 Quarterly gas use summary

	2008		2009		2010		2011		2012	
	<i>SCF</i>	<i>MMBTU</i>	<i>SCF</i>	<i>MMBTU</i>	<i>SCF</i>	<i>MMBTU</i>	<i>SCF</i>	<i>MMBTU</i>	<i>SCF</i>	<i>MMBTU</i>
QUARTER 1	0	0	0	0	1,471,317	1,507	0	0	1,900,000	1,946
QUARTER 2	0	0	0	0	622,105	637	0	0	1,900,000	1,946
QUARTER 3	12,903,711	13,213	13,992,762	14,329	6,617,087	6,776	4,151,624	4,251	NA	NA
QUARTER 4	5,666,359	5,802	5,833,224	5,973	9,623,872	9,855	2,000,000	2,048	NA	NA
TOTAL	18,570,070	19,016	19,825,986	20,302	18,334,381	18,774	6,151,624	6,299	3,800,000	3,891

NOTE: STANDARD HEATING VALUE OF **1024 BTU/SCF** FOR SCF-MMBTU CONVERSION