San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAR 10 2017

Todd Seely
E & J Gallo Winery
600 Yosemite Blvd
Modesto, CA 95353-1130

RE: Final - Authority to Construct / Certificate of Conformity (Significant Modification)
Facility Number: N-3386
Project Number: N-1162270

Dear Mr. Seely:

The Air Pollution Control Officer has issued the Authority to Construct permits to E & J Gallo Winery for installation of 10 new wine storage tanks, at 600 Yosemite Blvd, Modesto, CA. Enclosed are the Authority to Construct permits and a copy of the notice of final action to be published approximately three days from the date of this letter.

Notice of the District's preliminary decision to issue the Authority to Construct permits was published on January 24, 2017. The District's analysis of the proposal was also sent to CARB and US EPA Region IX on January 19, 2017. All comments received following the District's preliminary decision on this project were considered. The comments and the District's response to each comment are included in the attached application review document.

Also enclosed is an invoice for the engineering evaluation fees pursuant to District Rule 3010. Please remit the amount owed, along with a copy of the attached invoice, within 60 days.

Prior to operating with the modifications authorized by the Authority to Construct, you must submit an application to modify the Title V permit as an administrative amendment in accordance with District Rule 2520, Section 11.5. Application forms have been enclosed for your use. These forms may also be found on the District's website at www.valleyair.org.

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

www.valleyair.org www.healthyairliving.com

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Nick Peirce at (209) 557-6400.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:rg

Enclosures

cc: Tung Le, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email
cc: Noah Garrison, Climate Change Law Foundation (w/enclosure) via email: clearbluefuture@gmail.com
cc: Maya Golden-Krasner, Center for Biological Diversity (w/enclosure) via email: MGoldenKrasner@biologicaldiversity.org
cc: Tom Frantz, Association of Irritade Residents (w/enclosure) via email: tom.frantz49@gmail.com
cc: Elly Benson, Sierra Club (w/enclosure) via email: elly.benson@sierraclub.org

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING℠

Facility # N-3386
E & J GALLO WINERY
ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

AUTHORITY TO CONSTRUCT (ATC)

QUICK START GUIDE

1. **Pay Invoice**: Please pay enclosed invoice before due date.
2. **Modify Your Title V Permit.** Prior to operating the equipment authorized under this ATC, submit an application to modify your Title V permit. See application forms at http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm.
3. **Fully Understand ATC**: Make sure you understand ALL conditions in the ATC prior to construction, modification and/or operation.
4. **Follow ATC**: You must construct, modify and/or operate your equipment as specified on the ATC. Any unspecified changes may require a new ATC.
5. **Notify District**: You must notify the District's Compliance Department, at the telephone numbers below, upon start-up and/or operation under the ATC. Please record the date construction or modification commenced and the date the equipment began operation under the ATC. You may NOT operate your equipment until you have notified the District's Compliance Department. A startup inspection may be required prior to receiving your Permit to Operate.
6. **Source Test**: Schedule and perform any required source testing. See http://www.valleyair.org/busind/comply/source_testing.htm for source testing resources.
7. **Maintain Records**: Maintain all records required by ATC. Records are reviewed during every inspection (or upon request) and must be retained for at least 5 years. Sample record keeping forms can be found at http://www.valleyair.org/busind/comply/compliance_forms.htm.

By operating in compliance, you are doing your part to improve air quality for all Valley residents.

For assistance, please contact District Compliance staff at any of the telephone numbers listed below.

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

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1990 E. Gettysburg Avenue
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www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-512-0 **ISSUANCE DATE:** 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 221) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [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

Arnaud Marjollet, Director of Permit Services
N-3386-512-0 Mar 9 2017 2:42PM – GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-513-0 **ISSUANCE DATE:** 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 222) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-3386-513-0 Mar 9 2017 2:42PM – GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
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11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
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18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-514-0 **ISSUANCE DATE:** 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 223) WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
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4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-3386-514-0 : Mar 9 2017 2:42PM -- GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
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11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
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13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-515-0 **ISSUANCE DATE:** 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 224) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
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5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-3386-515-0 : Mar 9 2017 2:42PM -- GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
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14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-516-0

ISSUANCE DATE: 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 225) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [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

Arnaud Marjollet, Director of Permit Services
N-3386-516-0 Mar 9 2017 2:42PM – GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-517-0

ISSUANCE DATE: 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 226) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [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

Arnaud Marjollet, Director of Permit Services
N-3386-517-0 Mar 9 2017 2:42PM – GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-518-0

ISSUANCE DATE: 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 227) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [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

Arnaud Marjollet, Director of Permit Services
N-3386-518-0 Mar 9 2017 2:42PM -- GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-519-0 **ISSUANCE DATE:** 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 228) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [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

Arnaud Marjollet, Director of Permit Services
N-3386-519-0 : Mar 9 2017 2:47PM -- GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-520-0

ISSUANCE DATE: 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 229) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [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

Arnaud Marjollet, Director of Permit Services
N-3386-520-0 Mar 9 2017 2:42PM – GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-521-0

ISSUANCE DATE: 03/09/2017

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 230) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. 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. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [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

Arnaud Marjollet, Director of Permit Services
N-3386-521-0 : Mar 9 2017 2:42PM -- GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
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16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Installation of 10 Wine Storage Tanks

Facility Name:	E & J Gallo Winery	Date:	March 9, 2017
Mailing Address:	600 Yosemite Blvd Modesto, CA 95354	Engineer: Lead Engineer:	Rupi Gill Nick Peirce
Contact Person:	Todd Seely		
Telephone:	209-341-8779		
Fax:	209-236-7630		
E-Mail:	Todd.seely@ejgallo.com		
Application #(s):	N-3386-512-0 through -521-0		
Project #:	N-1162270		
Deemed Complete:	August 15, 2016		

I. Proposal

E & J Gallo Winery has requested Authority to Construct (ATC) permits for the installation of 10 new wine storage tanks. These tanks will be used strictly for wine storage operations.

E & J Gallo Winery received their Title V Permit for this stationary source on March 19, 2015. This modification can be classified as a Title V significant modification pursuant to Rule 2520, Sections 3.20 and 3.29, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authorities to Construct. E & J Gallo Winery must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC's issued with this project.

II. Applicable Rules

District Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
District Rule 2520	Federally Mandated Operating Permits (6/21/01)
District Rule 4001	New Source Performance Standards (4/14/99)
District Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
District Rule 4101	Visible Emissions (2/17/05)
District Rule 4102	Nuisance (12/17/92)
District Rule 4623	Storage of Organic Liquids (5/19/05)
District Rule 4694	Wine Fermentation and Storage Tanks (12/15/05)
District Rule 4695	Brandy Aging and Wine Aging Operation (09/17/09)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

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

III. Project Location

The facility is located at 600 Yosemite Blvd in Modesto, CA.

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

IV. Process Description

E & J Gallo Winery produces both red and white table wines, as well as other specialty wine products, from the fermentation of grapes. During the "crush season," typically from late August to late November, both red and white grapes are received by truck and delivered to a crusher-stemmer which serves to crush the grapes and remove the stems. In the case of red wines, the resultant juice (termed "must" and containing the grape skins, pulp and seeds) is pumped to red wine fermentation tanks for fermentation, a batch process. The red wine fermentation tanks are specifically designed to ferment the must in contact with the skins and to allow the separation of the skins and seeds from the wine after fermentation. In the case of white wines, the must is sent to screens and presses for separation of grape skins and seeds prior to fermentation.

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

The proposed new tanks in this project consist solely of wine storage tanks.

V. Equipment Listing

E & J Gallo Winery is proposing to install 10 identical new winery tanks. The facility has also requested that each tank equipment description contain a unique identifier number.

N-3386-512-0 through -521-0:	20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK I.D X) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

In addition, per District practice, for new winery tank installations, the nominal tank size and dimensions are included on the ATC provided by the applicant. Upon completion of construction, E & J Gallo Winery will perform an actual tank capacity measurement on each tank which will establish the as built gauge rating of each tank. The equipment description of the Permit to Operate will then be administratively updated with the gauge rating of each tank. The following condition (typical condition shown for these identical tanks) will be included on the each ATC to assure continued compliance:

- The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201]

VI. Emission Control Technology Evaluation

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

VII. General Calculations

A. Assumptions

- The proposed tanks will only be used for red and white wine storage.
- Typically, for enclosed tanks with insulation (or equivalent) and P/V valves, breathing losses from storage of wine are assumed to be negligible.
- Storage tank daily and annual maximum ethanol content of stored wine is 21% (proposed by the applicant)
- The storage tank throughput rates listed in the following table were proposed by E & J Gallo Winery for this project:

Permits	Nominal Tank Size (gallons)	Daily Throughput (gal/day)	Annual Throughput (gal/year)
N-3386-512-0	20,500	20,500	7,300,000
N-3386-513-0	20,500	20,500	7,300,000
N-3386-514-0	20,500	20,500	7,300,000
N-3386-515-0	20,500	20,500	7,300,000
N-3386-516-0	20,500	20,500	7,300,000
N-3386-517-0	20,500	20,500	7,300,000
N-3386-518-0	20,500	20,500	7,300,000

N-3386-519-0	20,500	20,500	7,300,000
N-3386-520-0	20,500	20,500	7,300,000
N-3386-521-0	20,500	20,500	7,300,000

B. Emission Factors

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

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

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

Solving for the molar fraction of ethanol,

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

Where,

$AMW_{21\% \text{ volume ethanol content}}$ = 29.2474 lb/mole (daily basis)
$AMW_{21\% \text{ volume ethanol content}}$ = 29.2474 lb/mole (annual basis
MW_a = Molecular weight of ethanol = 46.02 lb/mole
MW_w = Molecular weight of water = 18.02 lb/mole

Therefore,

y_a = (29.2474 – 18.02)/(46.02 – 18.02) = 0.40 for 21% ethanol mixture (daily basis)

y_a = (29.2474 – 18.02)/(46.02 – 18.02) = 0.40 for 21% ethanol mixture (annual basis)

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

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

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

Where,

E_d = Daily Emission Rate from Tanks 4.0 Program

E_a = Annual Emission Rate from Tanks 4.0 Program

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

Daily PE = (Tanks 4.0 Emission Rate / 29.2474) * 0.40 * 46.02

Daily PE = Tanks 4.0 Emission Rate x 0.629

Annual PE = (Tanks 4.0 Emission Rate / 29.2474) * 0.40 * 46.02

Annual PE = Tanks 4.0 Emission Rate * 0.629

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post Project Potential to Emit (PE2)

Two Tanks 4.0 runs have been performed. One using a daily throughput as listed in the table below to calculate the daily post-project potential to emit by dividing the month of July emissions by the number of days in the month and one using the annual throughput as listed in the table below to calculate the annual post-project potential to emit. See Appendix A for the Tanks 4.0 runs for each tank.

Daily PE2:

Daily Post-Project Potential to Emit				
Permits	**Max Daily Throughput per Tank (gal/day)**	**Tanks 4.0 Daily PE2 per Tank (lb/day)**	**Adjustment for Water Vapor Emissions**	**Total Daily PE2 per Tank (lb/day)**
N-3386-512-0	20,500	10.3	0.629	6.5
N-3386-513-0	20,500	10.3	0.629	6.5
N-3386-514-0	20,500	10.3	0.629	6.5
N-3386-515-0	20,500	10.3	0.629	6.5
N-3386-516-0	20,500	10.3	0.629	6.5
N-3386-517-0	20,500	10.3	0.629	6.5
N-3386-518-0	20,500	10.3	0.629	6.5
N-3386-519-0	20,500	10.3	0.629	6.5
N-3386-520-0	20,500	10.3	0.629	6.5
N-3386-521-0	20,500	10.3	0.629	6.5

Annual PE2:

Daily Post-Project Potential to Emit				
Permits	Max Annual Throughput per Tank (gal/yr)	Tanks 4.0 Daily PE2 per Tank (lb/yr)	Adjustment for Water Vapor Emissions	Total Daily PE2 per Tank (lb/yr)
N-3386-512-0	7,300,000	535	0.629	337
N-3386-513-0	7,300,000	535	0.629	337
N-3386-514-0	7,300,000	535	0.629	337
N-3386-515-0	7,300,000	535	0.629	337
N-3386-516-0	7,300,000	535	0.629	337
N-3386-517-0	7,300,000	535	0.629	337
N-3386-518-0	7,300,000	535	0.629	337
N-3386-519-0	7,300,000	535	0.629	337
N-3386-520-0	7,300,000	535	0.629	337
N-3386-521-0	7,300,000	535	0.629	337
Total Project				**3,370**

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

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 ($Total_{ERC}$).

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

SSPE1 is from most recent project N-1153671 and adding PE1 from most recent In-house PTO project N-1162276 (see Appendix F).

SSPE1 (lb/year)					
Permit Unit/ERC	NO_X	SO_X	PM_{10}	CO	VOC
$SSPE_{N\text{-}1153671\ w/o\ ERC}$	16,370	980	73,006	56,259	354,741
N-3386-508-0	0	0	0	0	737
N-3386-509-0	0	0	0	0	737
N-3386-510-0	0	0	0	0	737
N-3386-511-0	0	0	0	0	22,187
$SSPE1_{w/o\ ERC}$	16,370	980	73,006	56,259	379,139
ERC N-260-3	0	0	0	783	0
ERC N-849-2	125	0	0	0	0
SSPE1	**16,495**	**980**	**73,006**	**57,042**	**379,139**

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 ($Total_{ERC}$).

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

SSPE2 (lb/year)					
Permit Unit/ERC	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
$SSPE1_{w/o\ ERC}$	16,370	980	73,006	56,259	379,139
ATCs N-3386-512 thru -521 (new tanks)	0	0	0	0	3,370
$SSPE2_{w/o\ ERC}$	16,370	980	73,006	56,259	382,509
ERC N-260-3	0	0	0	783	0
ERC N-849-2	125	0	0	0	0
SSPE2	**16,495**	**980**	**73,006**	**57,042**	**382,509**

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

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

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase	8.2	189.6	0.5	28	36.5	36.5
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

Since 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 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	0	50,000	No
SO_x	0	80,000	No
PM_{10}	0	30,000	No
VOC	3,370	50,000	No

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

8. Federal Major Modification

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

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

Step 1

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

Federal Major Modification Thresholds for Emission Increases			
Pollutant	**Total Emissions Increases (lb/yr)**	**Thresholds (lb/yr)**	**Federal Major Modification?**
NO_x*	0	0	No
VOC*	3,370	0	Yes
PM_{10}	0	30,000	No
$PM_{2.5}$	0	20,000	No
SO_x	0	80,000	No

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

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

Federal Offset Quantities:

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

Federal Offset Ratio 1.5

VOC

Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
N-3386-512-0 thru -521-0 (per tanks)	0	337	337
	Net Emission Change per tank (lb/year):		337
	Federal Offset Quantity per tank: (NEC * 1.5)		506
	Federal Offset Quantity for all tanks: (NEC * 1.5)		5060

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

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

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

I. Project Emission Increase – Significance Determination

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

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials

to emit from all new and modified units are below the applicable thresholds, no futher PSD analysis is needed.

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

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

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix E.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

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

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute a Federal Major Modification for VOC emissions. Therefore BACT is triggered for VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT Guideline 5.4.13, applies to wine storage tanks. E & J Gallo Winery is proposing to install 10 new wine storage tanks. Therefore, BACT Guideline 5.4.13 is applicable to these new wine storage tanks (BACT Guideline 5.4.13 included in Appendix 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 is satisfied with the following:

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

Each of the new wine storage tanks being installed within this project is equipped with insulation and a pressure/vacuum valve set to within 10% of the maximum allowable working pressure of the tank; operates in a gas-tight condition and the continuous

storage temperature does not exceed 75 degrees F within 60 days of the completion of the fermentation cycle. Therefore, the wine storage tanks meet the BACT requirements for this class and category of operation and no further discussion is required.
The following condition will be included on each ATC to assure compliance with the BACT requirements:

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

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals 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	16,495	980	73,006	57,042	382,509
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	Yes*	No	Yes

*The offsets are trigger for PM10 but the proposed project does not involve any PM10 emissions.

2. Quantity of Offsets Required

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

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

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

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

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

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

VOC Offsets Required for Wine Storage Tanks without DOR				
Permits	Annual PE2, per Tank (lb/yr)	Annual BE, each (lb/yr)	Offsets Required, per Tank (lb/yr)	Offsets Required for Tank Group (lb/yr)
N-3386-512-0	337	0	337	337
N-3386-513-0	337	0	337	337
N-3386-514-0	337	0	337	337
N-3386-515-0	337	0	337	337
N-3386-516-0	337	0	337	337
N-3386-517-0	337	0	337	337
N-3386-518-0	337	0	337	337
N-3386-519-0	337	0	337	337
N-3386-520-0	337	0	337	337
N-3386-521-0	337	0	337	337
Total Offsets Required without DOR:				**3,370**

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

Permits	Offsets Required, per Tank (lb/yr)	DOR	Total Offsets Required, per Tank (lb/yr)
N-3386-512-0	337	1.5	506
N-3386-513-0	337	1.5	506
N-3386-514-0	337	1.5	506
N-3386-515-0	337	1.5	506
N-3386-516-0	337	1.5	506
N-3386-517-0	337	1.5	506
N-3386-518-0	337	1.5	506
N-3386-519-0	337	1.5	506
N-3386-520-0	337	1.5	506
N-3386-521-0	337	1.5	506
Total Offsets Required with DOR:			**5,060**

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

Quarterly offsets required (lb/qtr) = (506 lb NO_X/year) ÷ (4 quarters/year)
= 126.5 lb/qtr

As shown in the calculation above, the quarterly amount of offsets required for this project, when evenly distributed to each quarter, results in fractional pounds of offsets being required each quarter. Since offsets are required to be withdrawn as whole pounds, the quarterly amounts of offsets need to be adjusted to ensure the quarterly values sum to the total annual amount of offsets required.

To adjust the quarterly amount of offsets required, the fractional amount of offsets required in each quarter will be summed and redistributed to each quarter based on the number of days in each quarter. The redistribution is based on the Quarter 1 having the fewest days and the Quarters 3 and 4 having the most days. The redistribution method is summarized in the following table:

Redistribution of Required Quarterly Offsets (where X is the annual amount of offsets, and X ÷ 4 = Y.z)				
Value of z	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
.0	Y	Y	Y	Y
.25	Y	Y	Y	Y+1
.5	Y	Y	Y+1	Y+1
.75	Y	Y+1	Y+1	Y+1

Therefore the appropriate quarterly emissions to be offset for each tank are as follows:

Quarterly VOC Offsets Required for Each Wine Storage Tank				
Permits	Offsets Required, per Tank (lb/1st qtr)	Offsets Required, per Tank (lb/2nd qtr)	Offsets. Required, per Tank (lb/3rd qtr)	Offsets Required, per Tank (lb/4th qtr)
N-3386-512-0 thru -521-0	126	126	127	127

The applicant has stated that the facility plans to use ERC certificate S-4727-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly NO_X credits as follows:

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #S-4727-1	48,335	48,335	48,335	48,335

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

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201]

- {GC# 1983} ERC Certificate Number S-4727-1 (or a certificate split from this certificate) 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,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

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

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

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

b. PE > 100 lb/day

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

c. Offset Threshold

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	16,495	16,495	20,000 lb/year	No
SO_X	980	980	54,750 lb/year	No
PM_{10}	73,006	73,006	29,200 lb/year	No
CO	57,042	57,042	200,000 lb/year	No
VOC	379,139	382,509	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	16,495	16,495	0	20,000 lb/year	No
SO_X	980	980	0	20,000 lb/year	No
PM_{10}	73,006	73,006	0	20,000 lb/year	No
CO	57,042	57,042	0	20,000 lb/year	No
VOC	382,509	379,139	3,370	20,000 lb/year	No

e. Title V Significant Permit Modification

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

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

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

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

Proposed Rule 2201 (DEL) Conditions:

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

- The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201]

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

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

The following typical daily throughput condition will be included on each of wine storage tank ATCs.

N-3386-512 through '-521 (20,500 gallon storage tanks):

- The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201]

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

- The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

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

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

- Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]

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

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

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

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

G. Compliance Certification

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

H. Alternate Siting Analysis

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

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

Since the current project involves the installation of 10 new wine storage tanks, it represents only a minimal increase in the winery's total tank volume and no change to any other facets of the operation, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures and facilities on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

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

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 permit conditions will be added to the permits to ensure compliance with this rule:

- {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]

- {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]

Rule 4001 New Source Performance Standards (NSPS)

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

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

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

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Visible emissions are not expected as a result of these wine

storage operations. Therefore, compliance with this rule is expected. Compliance with the requirements of this rule is assured by the following condition, currently included as condition 22 on E & J Gallo Winery's facility wide permit N-3386-0-4:

- No air contaminants shall be discharged into the atmosphere for a period or periods aggregating more than 3 minutes in any one hour which is as dark or darker than Ringelmann #1 or equivalent to 20% opacity and greater, unless specifically exempted by District Rule 4101 (2/17/05). If the equipment or operation is subject to a more stringent visible emission standard as prescribed in a permit condition, the more stringent visible emission limit shall supersede this condition. [District Rule 4101]

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected. Compliance with the requirements of this rule is ensured by the following condition, currently included as condition 41 on E & J Gallo Winery's facility wide permit N-3386-0-4:

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

Rule 4623 Storage of Organic Liquids

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

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

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

Rule 4694 Wine Fermentation and Storage Tanks

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

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

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

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

The following conditions will be placed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity and used for storage to assure compliance with the requirements of Section 5.2.1:

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

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

Section 5.2.2 requires that the temperature of the stored wine be maintained at or below 75° F. The following condition will be placed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity and used for storage (permit units N-3386-512-0 through -521-0) to ensure compliance with the requirements of Section 5.2.2:

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

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

Section 6.4 requires that records required by this rule be maintained, retained on-site for a minimum of five years, and made available to the APCO upon request. The following conditions will be placed on all permits to ensure compliance:

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

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

Section 6.4.2 requires that weekly records be kept of wine volume and temperature in each storage tank. The following conditions will be placed on the permit for each storage tank to ensure compliance with the requirements of Section 6.4.2:

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

Section 6.4.3 requires that all monitoring be performed for any CERs as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained. Since this requirement is for operators mitigation fermentation emission and the proposed tanks are only for wine storage operations, this section is not applicable to wine tanks in this project. Therefore, no further discussion is required.

Rule 4695 Brandy Aging and Wine Aging Operations

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

Section 4.2 states that this rule shall not apply to wine storage tanks subject to Rule 4694 (Wine Fermentation and Storage Tanks) Section 5.2. As stated above the proposed tanks are subject to Rule 4694, Section 5.2., therefore these tanks are exempt from the requirements of this rule.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

Indemnification Agreement/Letter of Credit Determination

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

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

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

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs N-3386-512-0 through -521-0 subject to the permit conditions on the attached draft ATCs in **Appendix G**.

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
N-3386-512-0 through '-521	3020-05-C	20,500 gallon	$149.00

Appendixes

A: Tanks 4.0 Calculations
B: FYI-295 – Modeling of Emissions for Wine and Distilled Spirits Storage Tanks Using Tanks 4.0d
C: BACT Guideline 5.4.13 and Top Down VOC BACT Analysis for Wine Storage Tanks
D: E & J Gallo Winery Statewide Compliance Certification
E: Quarterly Net Emissions Change (QNEC) Calculations
F: SSPE1 Information
G: Draft ATC's
H: Public Comments
I: District Responses

APPENDIX A

TANKS 4.0 Calculations

Daily Calculations

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

Identification		
User Identification:	N-3386-512-0 TO -521-0	
City:	Modesto	
State:	California	
Company:	E & J Gallo	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	20,500 Gallon Wine Storage Tank	
Tank Dimensions		
Shell Height (ft):		40.00
Diameter (ft):		9.25
Liquid Height (ft) :		40.00
Avg. Liquid Height (ft):		40.00
Volume (gallons):		20,500.00
Turnovers:		31.00
Net Throughput(gal/yr):		635,500.00
Is Tank Heated (y/n):	Y	
Paint Characteristics		
Shell Color/Shade:	White/White	
Shell Condition	Good	
Roof Color/Shade:	White/White	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.66
Slope (ft/ft) (Cone Roof)		0.65
Breather Vent Settings		
Vacuum Settings (psig):		0.00
Pressure Settings (psig)		0.00

Meterological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

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

N-3386-512-0 TO -521-0 - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Wine 21.0 % Vol Alcohol	Jul	77.30	77.30	77.30	77.30	0.7237	0.7237	0.7237	29.2474			20.11	Option 1: VP70 = .55917 VP80 = .78451

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

N-3386-512-0 TO -521-0 - Vertical Fixed Roof Tank
Modesto, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb)							0.0000					
Vapor Space Volume (cu ft):							37.1843					
Vapor Density (lb/cu ft):							0.0037					
Vapor Space Expansion Factor:							0.0000					
Vented Vapor Saturation Factor:							0.9792					
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):							37.1843					
Tank Diameter (ft):							9.2500					
Vapor Space Outage (ft):							0.5533					
Tank Shell Height (ft):							40.0000					
Average Liquid Height (ft):							40.0000					
Roof Outage (ft):							0.5533					
Roof Outage (Cone Roof)												
Roof Outage (ft):							0.5533					
Roof Height (ft):							1.6600					
Roof Slope (ft/ft):							0.0500					
Shell Radius (ft):							4.6250					
Vapor Density												
Vapor Density (lb/cu ft):							0.0037					
Vapor Molecular Weight (lb/lb-mole):							29.2474					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							0.7237					
Daily Avg. Liquid Surface Temp. (deg. R):							536.9700					
Daily Average Ambient Temp. (deg. F):							77.5500					
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):							10.731					
Liquid Bulk Temperature (deg. R):							536.9700					
Tank Paint Solar Absorptance (Shell):							0.1700					
Tank Paint Solar Absorptance (Roof):							0.1700					
Daily Total Solar Insulation Factor (Btu/sqft day)							2,698.0000					
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:							0.0000					
Daily Vapor Temperature Range (deg. R):							0.0000					
Daily Vapor Pressure Range (psia):							0.0000					
Breather Vent Press. Setting Range(psia):							0.0000					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							0.7237					
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):							0.7237					
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):							0.7237					
Daily Avg. Liquid Surface Temp. (deg R):							536.9700					
Daily Min. Liquid Surface Temp. (deg R):							536.9700					
Daily Max. Liquid Surface Temp. (deg R):							536.9700					
Daily Ambient Temp. Range (deg. R):							33.5000					
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:							0.9792					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							0.7237					
Vapor Space Outage (ft):							0.5533					

Working Losses (lb):	320.2530
Vapor Molecular Weight (lb/lb-mole):	29.2474
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.7237
Net Throughput (gal/mo.):	635,500.0000
Annual Turnovers:	31.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	20,500.0000
Maximum Liquid Height (ft):	40.0000
Tank Diameter (ft):	9.2500
Working Loss Product Factor:	1.0000
Total Losses (lb):	320.2530

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

Emissions Report for: July

N-3386-512-0 TO -521-0 - Vertical Fixed Roof Tank
Modesto, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Wine 21.0 % Vol Alcohol	320.25	0.00	320.25

Annual Calculations

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

Identification

User Identification:	20.5 K Tanks (Annual Emissions)
City:	Modesto
State:	California
Company:	E & J Gallo
Type of Tank:	Vertical Fixed Roof Tank
Description:	N-3386-512 TO -521-0, N1162270, Stainless steel, insulated, wine storage tank. Cone top with PRV valve. A total of 10 tanks. ID 221 thru 230

Tank Dimensions

Shell Height (ft):		40.00
Diameter (ft):		9.25
Liquid Height (ft) :		40.00
Avg. Liquid Height (ft):		40.00
Volume (gallons):		20,500.00
Turnovers:		356.10
Net Throughput(gal/yr):		7,300,000.00
Is Tank Heated (y/n):	Y	

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone	
Height (ft)		1.65
Slope (ft/ft) (Cone Roof)		0.65

Breather Vent Settings

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

Meterological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

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

20.5 K Tanks (Annual Emissions) - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Wine 21.0 % Vol Alcohol	Jan	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Feb	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Mar	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Apr	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	May	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Jun	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Jul	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Aug	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Sep	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Oct	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Nov	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917
Wine 21.0 % Vol Alcohol	Dec	61.60	61.60	61.60	61.60	0.4196	0.4196	0.4196	29.2474			20.11	Option 1: VP60 = .39305 VP70 = .55917

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

20.5 K Tanks (Annual Emissions) - Vertical Fixed Roof Tank
Modesto, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vapor Space Volume (cu ft):	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603
Vapor Density (lb/cu ft):	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022
Vapor Space Expansion Factor:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vented Vapor Saturation Factor:	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603	36.9603
Tank Diameter (ft):	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500
Vapor Space Outage (ft):	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500
Tank Shell Height (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Average Liquid Height (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Roof Outage (ft):	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500
Roof Outage (Cone Roof)												
Roof Outage (ft):	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500
Roof Height (ft):	1.6500	1.6500	1.6500	1.6500	1.6500	1.6500	1.6500	1.6500	1.6500	1.6500	1.6500	1.6500
Roof Slope (ft/ft):	0.6500	0.6500	0.6500	0.6500	0.6500	0.6500	0.6500	0.6500	0.6500	0.6500	0.6500	0.6500
Shell Radius (ft):	4.6250	4.6250	4.6250	4.6250	4.6250	4.6250	4.6250	4.6250	4.6250	4.6250	4.6250	4.6250
Vapor Density												
Vapor Density (lb/cu ft):	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022	0.0022
Vapor Molecular Weight (lb/lb-mole):	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196
Daily Avg. Liquid Surface Temp. (deg. R):	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700
Daily Average Ambient Temp. (deg. F):	45.0000	50.5000	54.0500	59.3000	66.7000	73.3000	77.6500	76.8000	72.7000	64.5500	53.0500	44.9500
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731
Liquid Bulk Temperature (deg. R):	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700
Tank Paint Solar Absorptance (Shell):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	597.0000	939.0000	1,458.0000	2,004.0000	2,435.0000	2,684.0000	2,688.0000	2,368.0000	1,907.0000	1,315.0000	782.0000	536.0000
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Daily Vapor Temperature Range (deg. R):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Daily Vapor Pressure Range (psia):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Breather Vent Press. Setting Range(psia):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196
Daily Avg. Liquid Surface Temp. (deg R):	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700
Daily Min. Liquid Surface Temp. (deg R):	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700
Daily Max. Liquid Surface Temp. (deg R):	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700	521.2700
Daily Ambient Temp. Range (deg. R):	16.0000	20.4000	22.9000	27.2000	29.8000	31.6000	33.5000	32.2000	30.4000	27.5000	20.7000	15.7000
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879	0.9879
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196
Vapor Space Outage (ft):	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500	0.5500

Working Losses (lb):	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035
Vapor Molecular Weight (lb/lb-mole):	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474	29.2474
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196	0.4196
Net Throughput (gal/mo.):	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333	608,333.3333
Annual Turnovers:	356.0976	356.0976	356.0976	356.0976	356.0976	356.0976	356.0976	356.0976	356.0976	356.0976	356.0976	356.0976
Turnover Factor:	0.2509	0.2509	0.2509	0.2509	0.2509	0.2509	0.2509	0.2509	0.2509	0.2509	0.2509	0.2509
Maximum Liquid Volume (gal):	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000	20,500.0000
Maximum Liquid Height (ft):	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000	40.0000
Tank Diameter (ft):	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500	9.2500
Working Loss Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035	44.6035

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

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

20.5 K Tanks (Annual Emissions) - Vertical Fixed Roof Tank
Modesto, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Wine 21.0 % Vol Alcohol	535.24	0.00	535.24

APPENDIX B

FYI-295 – Modeling of Emissions for Wine and Distilled Spirits Storage Tanks Using Tanks 4.0d

FYI-295

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

DATE: August 9, 2011 (Revised 6/12/12)

TO: Permit Services Staff

FROM: Dennis Roberts

SUBJECT: Modeling of Emissions for Wine and Distilled Spirits Storage Tanks Using Tanks 4.0d

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I. OVERVIEW

Winery tank operations generally consist of two separate emissions units; 1) fermentation and 2) storage of wine and spirits. Any particular tank may be permitted to perform one or both of these operations. Emissions from storage operations are estimated by modeling the tank operation using U.S. EPA Tanks 4.0 software. Emissions from fermentation operations are estimated using emission factors which have been previously developed. The emissions from each emission unit are then appropriately combined to yield the Potential to Emit for the tank (permit unit).

This document provides guidance for using Tanks 4.0d for purposes of estimating VOC emissions from vertical fixed-roof tanks storing wine, distilled spirits or any other wine and ethanol mixture. Section III is an illustrative PE calculation for a new winery tank which is permitted for both fermentation and storage. Support documentation for methods is provided in the Appendices.

II. WINE AND SPIRITS STORAGE TANKS

Emissions estimates for wine and spirits storage tanks are based on modeling the tank operation using the EPA's Tanks 4.0d software. The modeling method utilizes Tanks 4.0 software along with a data base of ethanol/water vapor-equilibrium data developed by The Wine Institute.

Storage tanks perform several functions in the winery:

- Facilitation of post-fermentation processing operations for wine such as racking, filtration, malolactic fermentation and bottling. In this role, the typical storage tank is filled and emptied several times per year and functions as a process vessel.
- Storage of wine between processing operations up to the final operation of bottling. In this role, the tank is often static and the objective is to avoid degradation of the wine by both minimizing the wine temperature and the exposure of the wine to air.
- Storage of distilled ethanol. The material is often referred to as "high proof" and is used in blending operations to fortify wine products. Some facilities may operate a distillation operation to produce brandy and or high proof and the tanks are used to store the product prior to use or shipment.

- Fermentation: Storage tanks may also be used as fermentation tanks. If a storage tank is also used for fermentation operations the fermentation emissions must be calculated separately by methods presented in this document.

Emissions from storage tanks consist of both working losses and breathing losses. The former losses occur as a result of the displacement of the vapor space of the tank into the atmosphere which occurs during tank filling operations and is primarily a function of tank throughput and the temperature and ethanol content of the wine. Breathing losses are the result of diurnal heating and cooling, caused by the effect of ambient conditions on the contents of the tank. For a well-insulated tank breathing losses are assumed to be negligible since the insulation (typically 3-4 inches polyurethane foam) significantly reduces heat gain/loss by the liquid in the tank. Installation of non-insulated tanks in a climate-controlled building is considered equivalent to insulation since the tank is isolated from solar radiation and wind effects as well as being maintained in a constant temperature environment. Thus breathing losses are considered to be negligible for this case as well.

The validity of Tanks 4.0 for emissions modeling of storage tanks is recognized by both the District and the US EPA. Although the software has been widely used by the District for modeling VOC emissions from tanks containing organic liquids such as hydrocarbons (e.g., oilfield production and storage tanks), its use for tanks which store highly non-ideal solutions such as ethanol/water mixtures requires the development of empirical vapor-equilibrium data for the specific fluid. Ethanol water mixtures do not conform to either Raoult's Law or Henry's law (except for over limited ranges of dilute ethanol concentration) and therefore the accurate estimation of vapor-equilibrium properties of these mixtures using pure component properties is complex. The alternative is the use of empirical data along with suitable interpolation formulas.

The Wine Institute has developed a data base for ethanol/water mixtures based on interpolation of empirical data given in the International Critical Tables. The data base provides information on vapor pressure and other mixture properties for the two phase binary ethanol/water mixture for all concentrations from 0.1% to 99.9% alcohol. It has been put in an Access file format suitable for input directly into the EPA Tanks 4.0d Model. The data base has been provided for use both by the District and by wineries for purposes of estimating wine storage tank emissions. This insures that storage tank emission calculations using the Tanks 4.0d model will be uniform and consistent among all parties. The basis and assumptions of the data base have been reviewed by the District and the data base was found to be both a good representation of the empirical data given in the International Critical Tables and to be in the correct format for use in Tanks 4.0d. The basis, assumptions and conventions for use of the data base are given in Appendix A.

The following discussion provides a guide to the use of Tanks 4.0d for modeling emissions from tanks containing ethanol/water mixtures. It is assumed that the reader is generally familiar with the use of Tanks 4.0 for modeling storage tanks (see the Tanks 4.0 User Manual and the EPA document "Tanks Software Frequent Questions" at http://www.epa.gov/ttnchie1/faq/tanksfaq.html for general use of the software). The following discussion will only address the specific considerations required for ethanol-water mixtures:

A. Applicability of Tanks 4.0:

1. Winery tanks are almost exclusively vertical tanks with fixed roofs. The discussion will be restricted to this type.
2. Tanks 4.0 will be typically used to calculate the Potential to Emit (PE) for one of the following storage tank scenarios:

   - Temperature controlled tank which is either insulated or located inside a climate controlled building : Applicable to all insulated wine and brandy storage tanks with an operating temperature limitation on the permit. This category may be encountered for new tank installations are not being installed under an existing Specific Limiting Condition (SLC). Certain categories of storage tanks may be operated under continuous refrigeration such that the maximum temperature may be limited to less than ambient. Establishing a maximum temperature on the permit which is less than ambient results in reduced potential emissions and reduced requirements for offsets. The combined effect of limiting the maximum temperature and the use of insulation (or installing the tank in a temperature-controlled building) results in reduced working loss emissions and zero breathing loss emissions.

   Non-temperature controlled tank which is either insulated or located inside a climate controlled building : Applicable to all insulated wine and brandy storage tanks without an operating temperature limitation on the permit. Although most wine storage operations utilize refrigeration at certain times to maintain wine quality, most tanks are utilized to perform certain post fermentation operations on the wine during which it is undesirable to chill the wine and the tank operation is therefore subject to ambient temperature. Although these tanks may be refrigerated at some point as required by wine processing requirements, since there is no temperature limit on the permit, it is conservatively assumed the bulk liquid temperature is set by ambient conditions. However, since the tank is insulated, it is assumed that the internal temperatures are relatively uniform such that liquid surface temperatures in the tank are approximately the same as the bulk liquid temperature. The result of this assumption is that the tank model only indicates working losses while breathing losses are calculated as zero. The majority of existing winery tanks which were originally permitted as in-house PTO's fall into this category.

   - Non-temperature controlled tank which is neither insulated nor located inside a climate controlled building (unheated tank): Applicable to all non-insulated wine and brandy storage tanks without an operating temperature limitation. Most wine storage operations utilize refrigeration to maintain quality. However, since there is no temperature limit on the permit it is conservatively assumed the tank temperatures are set by ambient conditions. Since the tank is not insulated, both working and breathing losses will occur. Emissions calculated in this manner could represent uncontrolled emissions for any tank since the effects of insulation and temperature control would not be considered

Note that any tank installed in a building which is not climate-controlled is conservatively to be an outdoor installation.

3. To calculate both daily and annual PE:

   - Daily PE is based on maximum daily throughput, maximum ethanol % and the maximum temperature (if stated on the permit), occurring during July (hottest average monthly temperature for the San Joaquin Valley).

   Annual PE is based on maximum annual throughput, maximum allowed annual average ethanol % and maximum temperature if stated on the permit. In lieu of average annual ethanol %, the maximum allowed ethanol % can be used, yielding a conservatively higher emission value. Annual storage operations are assumed to be averaged over the full year.

4. When a tank is used for multiple products and has a permit limit for each, e.g., wine and spirits storage, a separate model is prepared for each product and the sum of the emissions from all model runs represents the total PE for the tank.

5. In addition to PE calculations, Tanks 4.0 can be used to calculate Historical Actual Emissions (HAE) for wine storage tanks based on either the maximum permitted temperature or actual temperature as measured for each wine movement through the tank and the actual ethanol concentration for each wine movement.

B. Establish the Ethanol/Water Chemical Data Base

1. Select data base

   Before starting an emissions model for an ethanol/water tank, you must first establish access to the ethanol/water chemical data base. To access the Chemical Database for ethanol/water, start Tanks 4.0 and select "Change Data Base Locations" from the "File" menu. Select "Browse" from the pop up window for tank data base, go to G/PER/Tanks 4.0-Wine and then select the data base file "WI Rev 7.6 Tank.mdb".

2. Print a data base report for the specific mixture to be modeled

   The data base properties for the specific ethanol/water mixture to be modeled should be printed prior to starting a model run on Tanks 4.0. This has two purposes: 1) the report provides a record of the mixture properties used for the calculations and 2) the report provides the value of the average molecular weight of the vapor which will be used in the final speciation calculation for the model. To print a data report, select "Data" from the main menu and go to Data/Chemical/Export/Print.

C. Tanks 4.0 Input

After initiating a tank model, note that input is required for five different tabs: 1) *Identification, 2) Physical Characteristics, 3) Site Selection, 4) Tank Contents and 5) Monthly Calculations.*

Identification Tab: No special considerations for ethanol/water storage are required for this tab.

Physical Characteristics Tab:

- For square or rectangular tanks which are common in some wineries, input a diameter which gives an equivalent circular cross sectional area.
- For "Net Throughput" enter the proposed annual throughput in gallons per year for purposes of modeling annual PE for the tank. When modeling daily emissions, input the maximum daily throughput x 31 at this location (the model for daily emissions will assume that the maximum daily throughput occurs each day throughout July and Tanks 4.0 will directly determine monthly emissions for July on that basis. Daily PE will then be determined by dividing the July monthly emissions by the 31 days in July).
- For "Is tank heated?" select "yes" if the tank is insulated and then set the vacuum and pressure settings to zero per software recommendation. If the is not insulated, select "no" and input the pressure/vacuum settings.
- For insulated tanks, select "white/good" for both the tank walls and roof since most winery tanks are white (Note that for tanks which are insulated, the contents are assumed to be uniform in temperature and therefore the selection of the tank color and condition has no impact on the emission estimate). For non-insulated tanks, select "diffuse aluminum/good" in order to conservatively simulate a possibly unpainted stainless steel tank.
- For inputting tank roof geometries other than dome or cone, refer to the EPA FAQs document at http://www.epa.gov/ttnchie1/faq/tanksfaq.html.
- Since most wine storage operations strive to maintain the liquid height as high as possible to avoid oxygen contact with the wine, the average and maximum liquid heights may be set approximately equal to the tank wall height if no other basis is provided by the applicant (Note that if the tank is insulated, the contents are assumed to be uniform in temperature and the values for average and maximum liquid height in the tank have no impact on the emissions estimate).

Site Selection Tab:

- Select a location corresponding to the region of the facility. For San Joaquin Valley, the Tanks 4.0 data base includes only Bakersfield, Fresno and Stockton which should be adequately representative of facilities located in the District's Southern, Central and Northern Regions respectively.

Tank Contents Tab:

- For "Chemical Category of Liquid", select "Organic Liquids"
- For "Single or Multi-Component Liquid" select 'Multiple".

- For "Speciation Option" select "None". (Note that using a speciation option causes the software to calculate the emissions of individual components. It does this by assuming Raoult's law is applicable, using pure component properties – not applicable to ethanol/water mixtures).
- For "Mixture Name" select the entry from the database corresponding to the ethanol contents of the tank. For annual PE estimates, select either the allowed average annual ethanol concentration or the maximum allowed ethanol concentration, rounded to the nearest 0.1 %. For daily PE estimates, select only the maximum allowed ethanol concentration. Note that all entries in the data base are listed in the form "Wine XX.X % Vol Alcohol" although technically the maximum ethanol content for wine is 24% with higher concentration reflecting the "spirits or liquors" category. Selecting a mixture for the run will result in a pop-up window asking if you are sure you want to speciate this organic liquid – click "OK" (I'm not sure why Tanks 4.0 does this since you have previously selected "None" for the speciation question).
- Specify "Average Liquid Surface Temperature", "Minimum Liquid Surface Temperature", "Maximum Liquid Surface Temperature" and "Bulk Liquid Temperature" as follows:
    1. Temperature controlled tank which is either insulated or located inside a climate controlled building: Input the maximum allowed tank temperature for each entry (same value for all four inputs - note that due the effects of insulation, the temperature of the contents is assumed to be uniform).
    2. Non-temperature controlled tank which is either insulated or located inside a climate controlled building: It is assumed that the calculated average bulk liquid temperature (for the specific site as calculated by Tanks 4.0 for an unheated tank) is applicable for each entry (same value for all four inputs - note that due to the effects of insulation, the temperature of the contents is assumed to be uniform). To determine annual emissions for locations represented by Bakersfield input 64.4 °F for all four entries; for Fresno input 63.3 °F for all four entries; for Stockton input 61.6 °F for all four entries. To determine daily emissions for locations represented by Bakersfield input 83.1 °F for all four entries; for Fresno input 81.0 °F for all four entries; for Stockton input 77.3 °F for all four entries (the mean daily temperature for July is assumed for each location).
    3. Non-temperature controlled tank which is neither insulated nor located inside a climate controlled building (unheated tank): Since the tank will have been specified as not heated, Tanks 4.0 will calculate all temperatures based on the site selection. After selecting the appropriate site on the *Site Selection* tab, go to the *Tank Contents* tab and click the "Calculate Mixture Properties" button.
- Based on selection of the mixture, Tanks 4.0 will input the remaining information on vapor pressure and molecular weight per the data base for the selected mixture.

Monthly Calculations Tab:

- For Daily emissions models, check only July and click the "Distribute Throughput" button.
- For annual emissions models, check all months and click the "Distribute Throughput" button.

D. Run Annual PE Emissions Model Report

1. With the tank model configured for annual emissions (maximum annual throughput listed for "Net Throughput" on the "Physical Characteristics" tab and all months checked on the "Monthly Calculations" tab with the throughput evenly distributed in all months, click "Run Report".
2. Select "Detailed" for report type and "monthly" for time basis and click OK.
3. The last page of the emissions report will list the estimated annual emissions from the tank. Note that the listed values are the combined emissions for ethanol and water (not the ethanol emissions from the tank). The listed values have to be speciated to determine the daily VOC emissions.

E. Run Daily PE Emissions Model Report

1. With the tank model configured for daily emissions (31 x maximum daily throughput listed for "Net Throughput" on the "Physical Characteristics" tab and only July checked on the "Monthly Calculations" tab with the throughput all occurring in July, click "Run Report".
2. Select "Detailed" for report type and "monthly" for time basis and click OK.
3. The last page of the emissions report will list the estimated emissions from the tank for the month of July assuming the maximum daily throughput occurs each day of July. Note that the listed values are the combined emissions for ethanol and water (not the ethanol emissions from the tank). The listed values have to be converted to a daily emission basis and then speciated to determine the daily VOC emissions.

F. Speciate the Tanks 4.0 Emissions Estimates to Determine the VOC (ethanol) Emissions:

The annual emission estimate provided by the Tanks 4.0 model working + breathing loss) represents the combined loss of ethanol and water from the tank. To calculate the ethanol portion of the emissions, it is first necessary to determine the molar fraction of ethanol (y_a) in the vapor emissions from the tank. This can be calculated from the average molecular weight (AMW) of the vapor as given on the previously printed chemical data report (the AMW is also listed on page 2 of the detailed emissions report). Per the definition of AMW for a binary mixture:

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

Solving for the molar fraction of ethanol,

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

Where,

MW_a = Molecular weight of ethanol = 46.02 lb/mole
MW_w = Molecular weight of water = 18.02/lb/mole

The ethanol emissions may then be calculated,

$$PE_{annual} = \frac{\text{Annual Tank Loss}}{AMW} \times y_a \times MW_a$$

$$PE_{daily} = \frac{\text{July Tank Loss}}{31 \text{ days} \times AMW} \times y_a \times MW_a$$

III. SAMPLE PE CALCULATION

(Combined fermentation and wine storage tank)

General Calculations

A. Assumptions

- The tank is used for both wine storage and wine fermentation.
- The tank dimensions are 15' dia x 40' H with an internal volume of 52,876 gallons.
- Maximum annual storage throughput is 5,000,000 gallons per year per the applicant.
- Maximum daily storage throughput is one tank volume at maximum fill height.
- Maximum wine production by fermentation is 150,000 gallons white wine per year.
- The tank is temperature controlled to maintain a maximum temperature of 40 °F.
- The tank is insulated.
- Maximum allowed average annual ethanol content in the tank is 12 volume percent.
- Maximum ethanol content in the tank is 16 volume percent.
- The storage tank emissions will be determined by modeling the tank with Tanks 4.0d software in conformance with the District's Policy (FYI -295) for modeling emissions from ethanol/water storage tanks.
- The emission estimates from Tanks 4.0d represent combined ethanol/water losses from the tank which must be speciated to determine the ethanol emissions.
- Annual Potential to Emit is the sum of the calculated PE for the storage operations emission unit and the calculated PE for the fermentation operations emission unit.
- Daily Potential to Emit is the greater of the calculated PE for the storage operations emission unit and the calculated PE for the fermentation operations emission unit.

- Molecular weight of ethanol = MW_a = 46.02 lb/mole
- Molecular weight of water = MW_w = 18.02 lb/mole

B. Emission Factors

Per the fermentation emission factors presented in District's FYI-114:

Wine Fermentation Emission Factors		
Emission Factor	Red Wine	White Wine
Daily PE (lb-VOC/day per 1,000 gallons tank capacity)	3.46	1.62
Annual PE (lb-VOC/year per 1,000 gallons fermentation production)	6.2	2.5

Storage tank emissions will be modeled in Tanks 4.0d and no emission factors are necessary.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post Project Potential to Emit (PE2)

Storage Tank Operation

Appendix C presents the chemical data report from the District's data base for 12 volume % and 16 volume % ethanol (maximum average annual and maximum ethanol concentration respectively). As listed, the average molecular weight of the vapor from this mixture is 25.97 lb/mole for 12% ethanol and 27.47 lb/mole for 16% ethanol.

Appendix D is the Tanks 4.0 model report for the annual emissions from the tank. As indicated, maximum annual loss from the tank (E_a) is:
E_a = 234 lb/year (combined annual ethanol and water loss from the tank)

Appendix E is the Tanks 4.0 model report for determining the daily PE. As indicated, maximum daily loss from the tank (E_d) is:

E_d = 5.9 lb/day (combined annual ethanol and water loss from the tank)

The annual emission estimates provided by the Tanks 4.0 model represent the combined loss of ethanol and water from the tank. To calculate the ethanol portion of the emissions, it is first necessary to determine the molar fraction of ethanol (y_a) in the vapor emissions from the tank. This can be calculated from the average molecular weight (AMW) of the vapor as given on the previously printed chemical data report. Per the definition of AMW for a binary mixture:

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

Solving for the molar fraction of ethanol,

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

Where,

MW_a = Molecular weight of ethanol = 46.02 lb/mole
MW_w = Molecular weight of water = 18.02/lb/mole
Therefore,

$y_a = (25.97 - 18.02)/(46.02 - 18.02) = 0.2839$ for 12% ethanol mixture

$y_a = (27.47 - 18.02)/(46.02 - 18.02) = 0.3375$ for 16% ethanol mixture

The annual PE emissions may then be calculated based on 12% ethanol,

$$PE_{annual} = \frac{E_a}{AMW} \times y_a \times MW_a$$

$$PE_{annual} = 234/25.97) \times 0.2839 \times 46.02 = 118 \text{ lb-VOC/year}$$

The daily emissions may then be calculated based on 16% ethanol,

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

$$PE_{daily} = (5.9/27.47) \times 0.3375 \times 46.02 = 3.3 \text{ lb-VOC/day}$$

Fermentation Tank Emissions (white wine only)

PE_{daily} = 1.62 lb-VOC/1000 gallons capacity x 52,875 gal capacity

PE_{daily} = 85.7 lb-VOC/day

PE_{annual} = 2.5 lb-VOC/1000 gallons throughput x 150,000 gal/year throughput

PE_{annual} = 375 lb-VOC/year

Post Project Potential to Emit (PE2)						
	Storage		**Fermentation**		**Total**	
	Daily Emissions (lb/day)	Annual Emissions (lb/year)	Daily Emissions (lb/day)	Annual Emissions (lb/year)	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO_X	0	0	0	0	0	0
SO_X	0	0	0	0	0	0
PM_{10}	0	0	0	0	0	0
CO	0	0	0	0	0	0
VOC	3.3	118	85.7	375	85.7	493

APPENDIX A

ASSUMPTIONS AND METHODS FOR DEVELOPMENT OF THE TANKS 4.0D CHEMICAL DATA BASE FOR ETHANOL/WATER MIXTURES

ASSUMPTIONS AND METHODS FOR DEVELOPMENT OF THE TANKS 4.0D CHEMICAL DATA BASE FOR ETHANOL/WATER MIXTURES

1) To use Tanks 4.0d for modeling of storage tank emissions, the vapor-liquid equilibrium characteristics of the material in the tank must be defined. Since ethanol-water solutions are generally not ideal, is necessary to utilize empirical data in this regard. The Wine Institute has developed this data base using data on the partial pressure of ethanol-water solutions taken from the International Critical Table (see Attachment 1)

2) As shown in Attachment 1, experimental partial pressure data over the full range of concentrations are given at various temperatures for both ethanol and water in mmHg. Values of P_A (partial pressure of water) and P_B (partial pressure of ethanol) are listed. For purposes of the data base, nomenclature will be revised to refer to the partial pressure of water as P_w and the partial pressure of ethanol a P_a. Applying Dalton's Law of Partial Pressures, the following relationships are obtained:

   $P = P_a + P_w$

   And

   $Y_a = Pa/P$
   $Y_w = Pw/P$

   Where, "P" is the total vapor pressure of the solution and Y_a and Y_w are the mole fractions of ethanol and water in the equilibrium vapor phase respectively.

   Since the ethanol-water system is highly non-ideal, it is necessary to utilize the "vapor weight specification" option (option1) in Tanks 4.0 for purposes of inputting vapor-liquid equilibrium data. For a given ethanol-water solution (concentration), the following information must be input to the chemical data base in Tanks 4.0:

   Solution name (e.g., "12 vol % ethanol/water ")
   Average molecular weight of the liquid
   Density of the liquid, lb/gallon
   Average molecular weight of the vapor
   Vapor pressure of the liquid (psia) at 40, 50, 60, 70, 80, 90 and 100 °F.

   Specification of the above data points requires that the data given in the International Critical Tables be interpolated.

3) To perform the interpolation, the partial pressures of ethanol and water at the Tanks 4.0d standard temperatures of 40, 50, 60, 70, 80, 90 and 100 °F are first determined by interpolation of the partial pressure data (mm Hg) given in the International Critical Tables at 20 °C (68 °F) and 40 °C (104 °F) (copy attached). The interpolation method is based on taking the log of the pressure to be a linear function of 1/(T+460) when using degree Rankin or 1(T+273) when using degrees Kelvin as recommended in the International Critical Tables. For standard temperatures below 68 °F (40, 50 and 60 °F), an Excel trend function is used to perform the extrapolation based on the values interpolated for 70, 80, and 90 and 100 oF. The result of this step yields tabulated values of the partial pressure of ethanol and water

for mixture concentrations of 0, 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 weight% ethanol at each of the standard temperatures listed above.

4) The vapor pressure of each of the various mixture concentrations at the standard temperatures are then determined as the sum of the partial pressure of water and alcohol according to Dalton's Law. The result of this step yields tabulated values of the total vapor pressure of alcohol and water for mixture concentrations of 0, 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 weight % ethanol at each of the standard temperatures listed above.

5) Since the volumetric properties of ethanol-water are also highly non-ideal, the density of each of the mixtures is determined by interpolation from data given in Table No. 6 of the Gauging Manual of the Alcohol and Tobacco Tax and Trade Bureau (Attachment 2). Given the density and weight % alcohol and the vapor mole fractions (calculated as stated above per Dalton's Law), the average molecular weight of the liquid and vapor can be calculated for each of the listed concentrations. Completion of this step results in a complete set of data suitable for inputting into the "vapor weight specification" of Tanks 4.0 for mixture concentrations of 0, 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 weight%.

6) A set of standard vapor pressures and other data required for input to Tanks 4.0d are then determined for all ethanol concentrations between 0 and 100% at increments of 0.1 volume percent by linear interpolation between the values previously established at 0, 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 weight% ethanol. For each intermediate concentration,

   - The density is established by linear interpolation of the data in Table 6 and the liquid mole fraction and the average molecular weight of the liquid are determined

   - The total vapor pressures of the particular mixture at the standard temperatures of 40, 50, 60, 70, 80, 90 and 100 °F are determined by linear interpolation of the vapor pressure values established for 0, 10, 20, 30, 40, 50, 60, 70, 80, 90 and 100 weight% alcohol based upon vapor mole fraction.

   - The vapor mole fraction of alcohol is determined by interpolation of the mole fraction values established (x-y values) and the average molecular weight of the vapor is calculated at each of the standard temperatures..

7) The resulting data base consists of the following for each concentration between 0 and 100% at increments of 0.1 volume percent:

Liquid density lb/gal:	As interpolated from Table 6 (Tanks 4.0d input)
Liquid average molecular weight:	As calculated for specific mixture (Tanks 4.0d input)
Standard vapor pressures:	As interpolated for specific mixture (Tanks 4.0d input)
Vapor average molecular weight:	Average value from values interpolated at each standard temperature (Tanks 4.0d input)
Mole fraction alcohol in vapor:	Average value from values interpolated at each standard temperature (required for final manual calculation of ethanol emissions))

Attachment 1 to Appendix A

Ethanol-Water Data from International Critical Tables

C_7H_{14}

Methylcyclohexane (Mix.)

B = $C_{11}H_{20}$ 1-Methyldecahydronaphthalene
P at 20° (123)

B = $C_{11}H_{20}$ 2-Methyldecahydronaphthalene
P at 20° (123)

B = $C_{12}H_{22}$ 1, 6-Dimethyldecahydronaphthalene
P at 20° (123)

B = $C_{12}H_{22}$ 2, 6-Dimethyldecahydronaphthalene
P at 20° (123)

C_7H_{14}

Methylcyclohexane

B = $C_{11}H_{20}$ 1-Methyldecahydronaphthalene
P at 20° (123)

B = $C_{11}H_{20}$ 2-Methyldecahydronaphthalene
P at 20° (123)

B = $C_{12}H_{22}$ 1, 6-Dimethyldecahydronaphthalene
P at 20° (123)

B = $C_{12}H_{22}$ 2, 6-Dimethyldecahydronaphthalene
P at 20° (123)

C_8H_{16}

1, 3-Dimethylcyclohexane

B = $C_{11}H_{20}$ 2-Methyldecahydronaphthalene
P at 20° (123)

B = $C_{11}H_{20}$ 1-Methyldecahydronaphthalene
P at 20° (123)

B = $C_{12}H_{22}$ 1, 6-Dimethyldecahydronaphthalene
P at 20° (123)

B = $C_{12}H_{22}$ 2, 6-Dimethyldecahydronaphthalene
P at 20° (123)

(b) Aqueous Systems

B = HCl, v. p. 289, 293, 301, 351
B = HBr, v. p. 288, 306, 301
B = HI, v. p. 288, 306
B = NO_2, v. p. 288, 302, 351
B = H_2SO_4, v. p. 293, 302

B = NH_3 (124); cf. (144)

The total vapor pressure for any composition and for any temperature between 0 and 60°C may be computed with the aid of the empirical equations

$$\theta = \frac{T}{1 + 0.703(1 - x_B^2)}$$

and

$$s = (x_B + 0.05)^{1/2}(1.34_7 - 2.92x_B + 1.77x_B^2)$$

in which T is the absolute temperature of the solution of composition $100x_B$ mols % NH_3, and θ is the absolute temperature at which pure liquid NH_3 (q. v.) has the same vapor pressure as the solution.

The partial vapor pressure of H_2O (0-60°) may be computed from the empirical relations:

$p_A = (1 - a)x_A p_0$
$a = 0.1x_B$ for $x_B < 0.53$
$a = 0.055x_B$ for $x_B > 0.53$

p_0 = the vapor pressure of pure H_2O at the same temperature. v. also p. 290 and 302.

B = HNO_3, v. p. 301 and 308
B = H_3PO_4, v. p. 303
B = HCN, v. p. 261 and 305

B = CH_2O Formaldehyde (84)
p_B in mm

t° \ Wt. % B	1	5	10	15	20	25	30	35
0		(0.037)	0.074	0.096	0.120	0.141	0.164	
20		(0.19)	0.301	0.491	0.600	0.714	(0.83)	
35	(0.13)	0.601	1.150	1.53	1.90	2.28	2.670	2.65
45		(1.30)	2.21	3.11	3.80	4.38	5.14	5.72

B = CH_2O_2 Formic acid, v. p. 354

B = CH_4O Methyl alcohol (119)
p in mm (± ca. 0.9)

$100x_B$	p_A	p_B
	39.9°	
0	54.7	0
11.90	50.2	66.1
17.85	38.6	76.6
21.07	37.3	85.2
27.31	35.8	100.6
31.06	34.9	109.8
40.1	32.8	127.7
47.0	31.5	141.6
55.8	27.3	158.4
65.9	21.7	185.9
86.0	10.1	225.2
100	0	260.7
	64.2°	
0	186.4	0
22.17	106.9	210.1
27.40	102.9	240.2
33.21	96.6	272.1
39.30	91.7	301.9
47.08	84.8	330.6
56.5	70.9	373.7
69.9	57.8	430.4
76.5	43.8	496.6
86.9	30.1	526.0
100	0	600.3

B = $C_2H_4O_2$ Acetic acid, v. p. 308

B = C_2H_6O Ethyl alcohol (53, 37, 119, 109); cf. (27, 60)

Log p_A or log p_B for any given composition is a linear function of $\frac{1}{t + 273.1}$ between any two values in the following table.

Wt. % B	p_A	p_B
	20°	
0	17.5	0.0
10	16.5	(9.7)
20	15.9	(12.6)
30	15.1	(17.1)
40	14.7	20.7
50	14.6	23.5
60	14.1	25.6
70	13.1	29.0
80	11.3	31.2
90	7.6	35.6
95	1.9	42.8
100	0.0	43.6
	40°	
0	54.3	0.0
10	51.6	23.9
20	47.6	43.6
30	46.2	51.7
40	45.0	62.5
50	44.1	68.3
60	42.0	74.8
70	40.6	83.8
80	35.0	91.8
90	24.7	109.4
95	11.5	126.0
100	0.0	134
	65°	
0	187	0.0
10	110.7	50.8
20	104.4	94.4
30	100.6	114.8
40	95.8	130.8
50	97.3	142.6
60	94.6	155.6
70	89.1	172.0
80	77.6	192.9
90	52.5	233.0
95	34.3	262.4
100	0.0	283
	78°	
0	327	0
10	276	144.0
20	261	218.0
30	264	259.2
40	245	305
50	241	335
60	236	365
70	224	405
80	191.4	454
90	130.8	527
95	94.7	626
100	0.0	667

B = C_3H_6O Acetone (114); cf. (142)
p in mm (± 4)

$100x_B$	25°	30°	45°	60°
	p_A*			
0.0	23	31	71	149
3.33	23	34	76	149
7.20	27	24	70	143
11.7	25	30	60	134
17.1	24	34	71	145
23.6	22	29	62	129
31.8	23	26	57	136
42.0	23	29	59	110
55.4	19	20	47	102
73.7	17	21	46	97
100	0	0	0	0
	p_B*			
0.0	0	0	0	0
3.33	33	47	101	190
7.20	77	96	193	342
11.7	105	134	258	443
17.1	126	167	292	495
23.6	146	182	329	553
31.8	152	184	346	585
42.0	164	215	365	634
55.4	182	226	400	672
73.7	192	236	423	711
100	229	267	505	860

* For data at 35, 45, 50, 60°, v. (114).

B = $C_3H_6O_2$ Propionic acid
P in mm (± 2) (60)

$100x_B$	7.48	29.1	48.2
P_{25}	18	17	16
P_{40}	52	51	47
P_{65}	147	143	130
P_{80}	353	355	315
P_{100}	706	700	687

For additional data, see (60).

B = $C_3H_6O_2$ Methyl acetate 56.1°, p in mm (74); cf. (147)
v. also p. 361, 365

$100x_B$	p_A	p_B
65*	121	633
75	111	654
80	96	678
90	78	693
100	0	760

* Saturated solution.

B = C_3H_8O n-Propyl alcohol (110); cf. (57, 60)
v. also p. 363
p in mm (± 1)

$100x_B$	p_A	p_B
	30.8°	
0	33.3	0
4.66	29.8	10.3
10.77	30.8	17.2
20.02	28.5	19.5

Attachment 2 to Appendix A

Table No. 6 of the Gauging Manual of the Alcohol and Tobacco Tax and Trade Bureau, U.S. Department of the Treasury (27 CFR Part 30)

TABLE No. 6

SHOWING

RESPECTIVE VOLUMES OF ALCOHOL AND WATER AND THE SPECIFIC GRAVITY IN BOTH AIR AND VACUUM OF SPIRITUOUS LIQUOR

(Prepared by the National Bureau of Standards and based on information published in Bulletin of the Bureau of Standards, Vol. 9, No. 3, pages 327-474, Oct. 16, 1913)

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TABLE No. 6

RESPECTIVE VOLUMES OF ALCOHOL AND WATER AND SPECIFIC GRAVITY

Proof	Alcohol	Water	Specific gravity in air	Specific gravity in vacuo
	Volume	Volume		
1	0.50	99.53	0.99925	0.99935
2	1.00	99.05	.99850	.99850
3	1.50	98.58	.99775	.99770
4	2.00	98.12	.99705	.99700
5	2.50	97.65	.99630	.99630
6	3.00	97.19	.99559	.99556
7	3.50	96.71	.99487	.99488
8	4.00	96.24	.99418	.99419
9	4.50	95.78	.99349	.99350
10	5.00	95.31	.99281	.99282
11	5.50	94.85	.99214	.99215
12	6.00	94.39	.99149	.99150
13	6.50	93.93	.99084	.99085
14	7.00	93.48	.99021	.99022
15	7.50	93.01	.98959	.98960
16	8.00	92.55	.98898	.98899
17	8.50	92.09	.98837	.98838
18	9.00	91.63	.98778	.98779
19	9.50	91.15	.98719	.98720
20	10.00	90.72	.98660	.98661
21	10.50	90.27	.98601	.98602
22	11.00	89.81	.98543	.98544
23	11.50	89.36	.98485	.98487
24	12.00	88.90	.98428	.98430
25	12.50	88.45	.98372	.98374
26	13.00	88.00	.98317	.98319
27	13.50	87.55	.98263	.98264
28	14.00	87.10	.98208	.98210
29	14.50	86.66	.98155	.98157
30	15.00	86.20	.98102	.98104
31	15.50	85.75	.98049	.98051
32	16.00	85.30	.97996	.97998
33	16.50	84.85	.97944	.97946
34	17.00	84.40	.97893	.97895
35	17.50	83.95	.97842	.97844
36	18.00	83.50	.97792	.97794
37	18.50	83.06	.97742	.97744
38	19.00	82.61	.97692	.97694
39	19.50	82.16	.97643	.97645
40	20.00	81.72	.97594	.97596
41	20.50	81.27	.97544	.97546
42	21.00	80.82	.97493	.97496
43	21.50	80.38	.97442	.97445
44	22.00	79.93	.97391	.97395
45	22.50	79.49	.97340	.97344
46	23.00	79.05	.97289	.97293
47	23.50	78.60	.97237	.97241
48	24.00	78.14	.97185	.97189
49	24.50	77.69	.97132	.97137
50	25.00	77.24	.97080	.97084

RESPECTIVE VOLUMES OF ALCOHOL AND WATER AND SPECIFIC GRAVITY

Proof	Alcohol	Water	Specific gravity in air	Specific gravity in vacuum
	Volume	Volume		
51	25. 50	76. 79	0. 97047	0. 97081
52	26. 00	75. 54	.96974	.96978
53	26. 50	75. 50	.96920	.96924
54	27. 00	76. 44	.96866	.96870
55	27. 50	74. 39	.96811	.96815
56	28. 00	74. 43	.96756	.96760
57	28. 50	74. 09	.96700	.96704
58	29. 00	73. 92	.96644	.96648
59	29. 50	73. 17	.96587	.96591
60	30. 00	72. 72	.96530	.96534
61	30. 50	72. 26	.96471	.96475
62	31. 00	71. 81	.96413	.96416
63	31. 50	71. 35	.96353	.96356
64	32. 00	70. 89	.96291	.96294
65	32. 50	70. 43	.96230	.96234
66	33. 00	69. 97	.96165	.96170
67	33. 50	69. 51	.96101	.96105
68	34. 00	69. 05	.96036	.96041
69	34. 50	68. 59	.95970	.95975
70	35. 00	68. 12	.95903	.95908
71	35. 50	67. 66	.95835	.95840
72	36. 00	67. 19	.95765	.95770
73	36. 50	66. 72	.95695	.95700
74	37. 00	66. 25	.95622	.95628
75	37. 50	65. 78	.95551	.95556
76	38. 00	65. 31	.95476	.95482
77	38. 50	64. 84	.95402	.95408
78	39. 00	64. 37	.95325	.95332
79	39. 50	63. 90	.95250	.95256
80	40. 00	63. 42	.95172	.95176
81	40. 50	62. 95	.95094	.95100
82	41. 00	62. 47	.95014	.95020
83	41. 50	61. 99	.94934	.94940
84	42. 00	61. 52	.94852	.94858
85	42. 50	61. 04	.94770	.94776
86	43. 00	60. 56	.94687	.94693
87	43. 50	60. 08	.94603	.94609
88	44. 00	59. 59	.94518	.94524
89	44. 50	59. 11	.94431	.94438
90	45. 00	58. 63	.94344	.94351
91	45. 50	58. 14	.94256	.94263
92	46. 00	57. 66	.94167	.94174
93	46. 50	57. 17	.94077	.94084
94	47. 00	56. 68	.93985	.93991
95	47. 50	56. 19	.93894	.93901
96	48. 00	55. 70	.93801	.93808
97	48. 50	55. 21	.93707	.93714
98	49. 00	54. 72	.93613	.93619
99	49. 50	54. 22	.93518	.93523
100	50. 00	53. 73	.93418	.93428

TABLE No. 6

RESPECTIVE VOLUMES OF ALCOHOL AND WATER AND SPECIFIC GRAVITY

Proof	Alcohol	Water	Specific gravity in air	Specific gravity in vacuum
	Volume	Volume		
101	50. 50	58. 24	0. 93329	0. 93378
102	51. 00	58. 74	. 93282	. 93330
103	51. 50	59. 25	. 93135	. 93181
104	52. 00	59. 75	. 93039	. 93087
105	52. 50	60. 25	. 92993	. 93041
106	53. 00	60. 76	. 92892	. 92940
107	53. 50	61. 26	. 92790	. 92788
108	54. 00	61. 76	. 92718	. 92765
109	54. 50	62. 26	. 92613	. 92662
110	55. 00	62. 76	. 92492	. 92540
111	55. 50	63. 26	. 92380	. 92515
112	56. 00	63. 76	. 92280	. 92410
113	56. 50	64. 26	. 92205	. 92105
114	57. 00	64. 76	. 91999	. 91999
115	57. 50	65. 24	. 91882	. 91892
116	58. 00	65. 74	. 91774	. 91784
117	58. 50	66. 23	. 91695	. 91675
118	59. 00	66. 72	. 91655	. 91585
119	59. 50	67. 22	. 91444	. 91485
120	60. 00	67. 71	. 91333	. 91364
121	60. 50	68. 20	. 91291	. 91232
122	61. 00	68. 69	. 91109	. 91120
123	61. 50	69. 18	. 90998	. 91007
124	62. 00	69. 67	. 90892	. 90803
125	62. 50	70. 16	. 90769	. 90779
126	63. 00	70. 66	. 90653	. 90564
127	63. 50	71. 14	. 90538	. 90549
128	64. 00	71. 62	. 90422	. 90434
129	64. 50	72. 11	. 90306	. 90318
130	65. 00	72. 60	. 90190	. 90202
131	65. 50	73. 08	. 90073	. 90085
132	66. 00	73. 57	. 89955	. 89967
133	66. 50	74. 05	. 89836	. 89848
134	67. 00	74. 54	. 89717	. 89729
135	67. 50	75. 02	. 89597	. 89609
136	68. 00	75. 50	. 89476	. 89488
137	68. 50	75. 99	. 89355	. 89368
138	69. 00	76. 47	. 89233	. 89245
139	69. 50	76. 95	. 89109	. 89122
140	70. 00	77. 43	. 88985	. 88998
141	70. 50	77. 91	. 88860	. 88873
142	71. 00	78. 38	. 88738	. 88751
143	71. 50	78. 86	. 88612	. 88625
144	72. 00	79. 34	. 88485	. 88498
145	72. 50	79. 82	. 88358	. 88372
146	73. 00	80. 29	. 88230	. 88244
147	73. 50	80. 76	. 88102	. 88116
148	74. 00	81. 24	. 87973	. 87987
149	74. 50	81. 71	. 87844	. 87856
150	75. 00	82. 19	. 87714	. 87726

TABLE No. 6

RESPECTIVE VOLUMES OF ALCOHOL AND WATER AND SPECIFIC GRAVITY

Proof	Alcohol	Water	Specific gravity in air	Specific gravity in vacuum
	Volumes	Volumes		
151	75.50	27.56	0.87683	0.87507
152	76.00	27.13	.87450	.87465
153	76.50	26.50	.87217	.87232
154	77.00	26.07	.87184	.87099
155	77.50	25.54	.87060	.87003
156	78.00	25.01	.86814	.86920
157	78.50	24.47	.86279	.86792
158	79.00	23.95	.86641	.86656
159	79.50	23.40	.86508	.86518
160	80.00	22.87	.86304	.86380
161	80.50	22.38	.86225	.86241
162	81.00	21.90	.86051	.86100
163	81.50	21.20	.85945	.85959
164	82.00	21.72	.85801	.85817
165	82.50	20.18	.85658	.85674
166	83.00	19.64	.85515	.85531
167	83.50	19.10	.85389	.85386
168	84.00	18.56	.85222	.85240
169	84.50	18.01	.85076	.85093
170	85.00	17.48	.84927	.84944
171	85.50	16.92	.84777	.84794
172	86.00	16.37	.84625	.84643
173	86.50	15.82	.84471	.84490
174	87.00	15.27	.84317	.84336
175	87.50	14.72	.84162	.84181
176	88.00	14.18	.84006	.84025
177	88.50	13.61	.83848	.83867
178	89.00	13.06	.83698	.83707
179	89.50	12.49	.83126	.83545
180	90.00	11.93	.83462	.83382
181	90.50	11.37	.83106	.83216
182	91.00	10.80	.83029	.83049
183	91.50	10.24	.82868	.82879
184	92.00	9.67	.82685	.82706
185	92.50	9.09	.82509	.82530
186	93.00	8.52	.82330	.82351
187	93.50	7.94	.82149	.82170
188	94.00	7.36	.81963	.81984
189	94.50	6.77	.81775	.81796
190	95.00	6.18	.81582	.81603
191	95.50	5.59	.81385	.81407
192	96.00	4.99	.81184	.81206
193	96.50	4.39	.80979	.81001
194	97.00	3.78	.80770	.80792
195	97.50	3.17	.80555	.80577
196	98.00	2.55	.80333	.80356
197	98.50	1.93	.80101	.80127
198	99.00	1.29	.79866	.79890
199	99.50	.66	.79620	.79643
200	100.00	.00	.79365	.79390

Appendix B

Chemical Data Reports

TANKS 4.0
Chemical Data Report

Chemical Name Category	CAS	Molecular Weight Liquid	 Vapor	Density*	Vapor Pressure (psia) at Temperature (degrees F) 40	 50	 60	 70	 80	 90	 100	Constants for Antoine's Equation Use 1: degrees C Use 2: degrees K A	 B	 C	NIOSH (ppm)	ASTM Slope
Wine 12.0 % Vol Alcohol Organic Liquids		46.05	25.87	8.21	0.18	0.23	0.31	0.40	0.55	0.82	1.22					

TANKS 4.0
Chemical Data Report

Chemical Name Category	CAS	Molecular Weight Liquid	Molecular Weight Vapor	Density*	Vapor Pressure (psia) at Temperature (degrees F) 40	50	60	70	80	90	100	Constants for Antoine's Equation Line 1: degrees C Line 2: degrees K A	B	C	RVP (psia)	ASTM Slope
Wine [illegible] % Vol Alcohol Organic Liquids		[illegible]	27.47	[illegible]	0.17	0.25	0.38	0.52	0.72	1.02	1.40					

Appendix C

Annual Emission Model Report

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

Identification	
User Identification:	Annual Emissions
City:	Modesto
State:	California
Company:	
Type of Tank:	Vertical Fixed Roof Tank
Description:	Annual Evaporation Model Runs
Tank Dimensions	
Shell Height (ft):	40.00
Diameter (ft):	15.00
Liquid Height (ft) :	40.00
Avg. Liquid Height (ft):	40.00
Volume (gallons):	52,976.00
Turnovers:	94.58
Net Throughput(gal/yr):	5,009,680.00
Is Tank Heated (y/n):	Y
Paint Characteristics	
Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good
Roof Characteristics	
Type:	Cone
Height (ft)	2.80
Slope (ft/ft) (Cone Roof)	0.27
Breather Vent Settings	
Vacuum Setting (psig):	0.00
Pressure Setting (psig)	0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

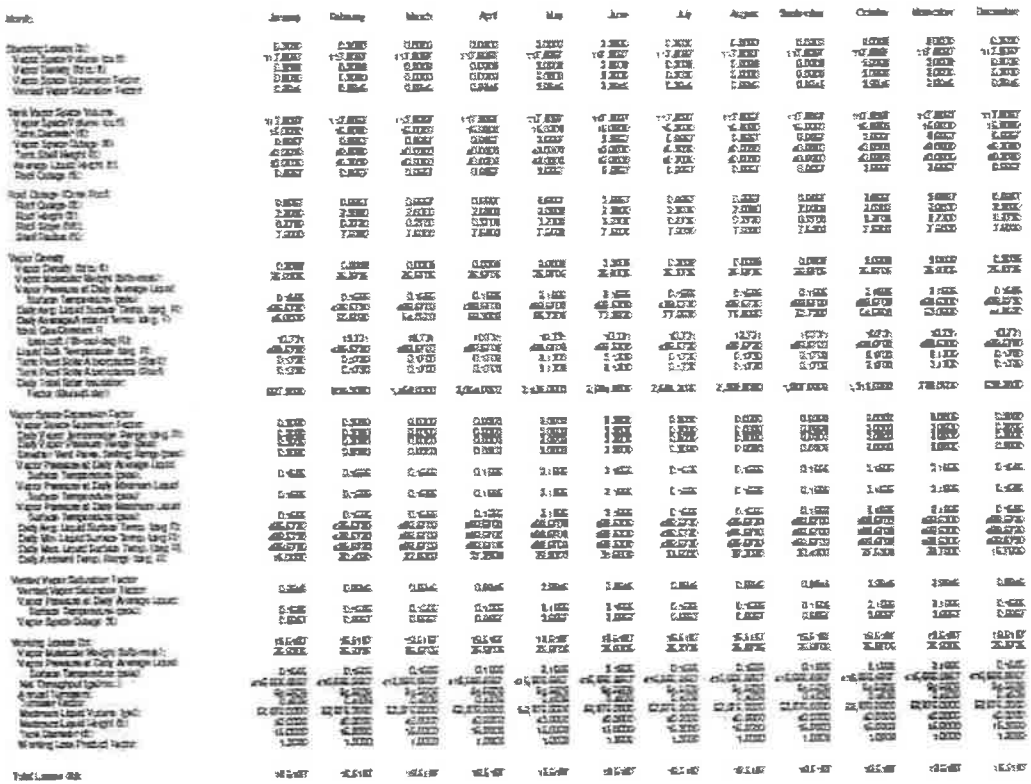
TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Annual Emissions - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Wine 12.0% Vol Alcohol	Jan	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Feb	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Mar	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Apr	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	May	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Jun	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Jul	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Aug	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Sep	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Oct	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Nov	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]
Wine 12.0% Vol Alcohol	Dec	60.00	60.00	60.00	60.00	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	Option 1: VP60 = [illegible] VP70 = [illegible]

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

Annual Emissions - Vertical Fixed Roof Tank
Modesto, California



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

Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December

Annual Emissions - Vertical Fixed Roof Tank
Modesto, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Wine (2.0 % Vol Alcohol	234.22	0.00	234.22

Appendix D

Daily Emission Model Report

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

Identification		
User Identification:	Daily Emissions	
City:	Modesto	
State:	California	
Company:		
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Daily Emission Model Runs	
Tank Dimensions		
Shell Height (ft):		40.00
Diameter (ft):		15.00
Liquid Height (ft) :		40.00
Avg. Liquid Height (ft):		40.00
Volume (gallons):		52,878.00
Turnovers:		1.00
Net Throughput(gal/yr):		52,878.00
Is Tank Heated (y/n):	Y	
Paint Characteristics		
Shell Color/Shade:	White/White	
Shell Condition	Good	
Roof Color/Shade:	White/White	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		2.00
Slope (ft/ft) (Cone Roof)		0.27
Breather Vent Settings		
Vacuum Settings (psig):		0.00
Pressure Settings (psig)		0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

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

Daily Emissions - Vertical Fixed Roof Tank
Modesto, California

Vertex/Component	Month	Daily Liquid Surf. Temperature (Deg F) Avg.	Min.	Max.	Liquid Bulk Temp (Deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
[illegible]	Jul	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]

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

Daily Emissions - Vertical Fixed Roof Tank
Modesto, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):												
Vapor Space Volume (cu ft):												
Vapor Density (lb/cu ft):												
Vapor Space Expansion Factor:												
Vented Vapor Saturation Factor:												
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):												
Tank Diameter (ft):												
Vapor Space Outage (ft):												
Tank Shell Height (ft):												
Average Liquid Height (ft):												
Roof Outage (ft):												
Roof Outage (Cone Roof:												
Roof Outage (ft):												
Roof Height (ft):												
Roof Slope (ft/ft):												
Shell Radius (ft):												
Vapor Density												
Vapor Density (lb/cu ft):												
Vapor Molecular Weight (lb/lb-mole):												
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):												
Daily Avg. Liquid Surface Temp. (deg. R):												
Daily Average Ambient Temp. (deg. F):												
Ideal Gas Constant R												
(psia cuft / (lb-mol-deg R)):												
Liquid Bulk Temperature (deg. R):												
Tank Paint Solar Absorptance (Shell):												
Tank Paint Solar Absorptance (Roof):												
Daily Total Solar Insulation												
Factor (Btu/sqft day):												
Vapor Space Expansion Factor:												
Vapor Space Expansion Factor:												
Daily Vapor Temperature Range (deg. R):												
Daily Vapor Pressure Range (psia):												
Breather Vent Press. Setting Range (psia):												
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):												
Vapor Pressure at Daily Minimum Liquid												
Surface Temperature (psia):												
Vapor Pressure at Daily Maximum Liquid												
Surface Temperature (psia):												
Daily Avg. Liquid Surface Temp. (deg R):												
Daily Min. Liquid Surface Temp. (deg R):												
Daily Max. Liquid Surface Temp. (deg R):												
Daily Ambient Temp. Range (deg. R):												
Vented Vapor Saturation Factor:												
Vented Vapor Saturation Factor:												
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):												
Vapor Space Outage (ft):												
Working Losses (lb):												
Vapor Molecular Weight (lb/lb-mole):												
Vapor Pressure at Daily Average Liquid												
Surface Temperature (psia):												
Net Throughput (gal/mo.):												
Annual Turnovers:												
Turnover Factor:												
Maximum Liquid Volume (gal):												
Maximum Liquid Height (ft):												
Tank Diameter (ft):												
Working Loss Product Factor:												
Total Losses (lb):												

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

Emissions Report for: July

Daily Emissions - Vertical Fixed Roof Tank
Modesto, California

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Wine 16.0 % Vol Alcohol	5.89	0.00	5.89

Appendix C

BACT Guideline 5.4.13 and Top Down VOC BACT Analysis for Wine Storage Tanks

Per » B A C T » Bact Guideline.asp?category Level1=5&category Level2=4&category Level3=13&last Update=9 » 26 :

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Best Available Control Technology (BACT) Guideline 5.4.13
Last Update: 9/26/2011

Wine Storage Tank - Non-Wood Material**

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	1. Insulation or Equivalent***, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation.	1. Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control) 2. Capture of VOCs and carbon adsorption or equivalent (95% control) 3. Capture of VOCs and absorption or equivalent (90% control) 4. Capture of VOCs and condensation or equivalent (70% control)	

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

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

This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on Details Page.

Top Down BACT Analysis for VOCs from Wine Storage Operations

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.13 identifies achieved in practice BACT for wine storage tanks as follows:

1. Insulation or Equivalent**, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation.

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

2. Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control)
3. Capture of VOCs and carbon adsorption or equivalent (95% control)
4. Capture of VOCs and absorption or equivalent (90% control)
5. Capture of VOCs and condensation or equivalent (70% control)

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

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

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank by Control Effectiveness		
Rank	Control	Overall Capture and Control Efficiency
1	Capture of VOCs and thermal oxidation or equivalent	98%*
2	Capture of VOCs and carbon adsorption or equivalent	95%
3	Capture of VOCs and absorption (scrubber) or equivalent	90%
4	Capture of VOCs and condensation or equivalent	70%
5	Insulation or Equivalent, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation	Baseline (Achieved-in-Practice)

* Following recent District practice, thermal and catalytic oxidation will be ranked together.

Step 4 - Cost Effectiveness Analysis

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

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

Uncontrolled Storage Emissions

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

Uncontrolled Storage PE= 3,370 lb-VOC/year

Total Annual Cost

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

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

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

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

Basis of Cost Information:

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

- The District performed a cost survey of stainless steel ducting/piping and found that the values stated in the Eichleay report including the cost of inflation (applied as stated below) were less expensive; therefore, as a conservative estimate, the District will use the cost of ducting/piping

from the Eichleay report which will include ducting, fittings, bolt up, handle, and install. A summary of the ducting/piping cost survey is included in Appendix C2.

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

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

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

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

- The ducting/piping costs quoted in the Eichleay study are from 2005 and must be adjusted to reflect 2016 prices. An overall inflation amount of 21.93% which was taken from the United States Department of Labor, Bureau of Labor Statistics, Consumer Price Index (CPI) Inflation Calculator and applied to the ducting/piping costs to determine the current 2016 prices: http://www.bls.gov/data/inflation_calculator.htm.

- See Attachment C1 for ducting layout diagrams and ducting cost estimates.

Capital Cost of Ductwork

As detailed in the tank layout sketches and the ductwork cost calculations included in Attachment C1, the cost for each tank group is summarized below:

Connection from 8 tanks to main duct = 8 tanks x 39.29 feet x $31.09/foot = $9,772
Connection from 2 tanks to main duct = 2 tanks x 37.63 feet x $31.09/foot = $2,340
Main duct for storage tanks = $3,776
Unit installed cost for 6 inch butterfly valve = $2,125/valve x 10 valves x 1 system = $21,250
Unit installed cost one foot removable spool = $500/tank x 10 tanks x 1 system = $5,000
1 Knockout drum = $23,000
Duct support allowance = $25,000

Total for 10 tanks = $9,772 + $2,340 + $3,776 + $21,250 + $5,000 + $23,000 + $25,000
= $90,138

Total Capital Cost for All Tank Groups:

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

Tank Group	Total Ducting Cost Including Support Allowance
Total	$90,138

Capital Cost of Ductwork for Wine Storage Tanks	
Cost Description	Cost ($)
Combined Duct Estimate for all Tank Groups (See Duct Sizing in Attachment C1)	$90,138
Adjusting factor for inflation from 2005 dollars to 2016 dollars (21.93% total increase)	1.2193
Inflation adjusted duct cost	$109,905
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (Ductwork) See Above	$109,905
Instrumentation (not required)	-
Sales Tax - 3.31% of base equipment	$3,638
Freight - 5% of base equipment	$5,495
Purchased equipment cost (PEC)	**$119,038**
Foundations & supports 8% (allowance already included in cost estimate)	-
Handling & erection 14% (already included in Eichleay cost estimate)	-
Electrical 4% (not required)	-
Piping 2% (not required)	-
Painting 1% (not required)	-
Insulation 1% of PEC	$1,190
Direct Installation Costs (DIC)	**$1,190**
Total Direct Costs (DC) (PEC + DIC)	**$120,228**
Indirect Costs	
Engineering - 10% of PEC	$11,904
Construction and field expenses - 5% of PEC	$5,952
Contractor Fees - 10% of PEC	$11,904
Start-up - 2% of PEC	$2,381
Performance Test - 1% of PEC	$1,190
Total Indirect Costs (IC)	**$33,331**

Subtotal Capital Investment (SCI) (DC + IC)	**$153,559**
Contingencies – 15% of SCI	$23,034
Total Capital Investment (TCI) (SCI + Contingency)	**$176,593**

Capital Cost Clean-In-Place (CIP) System

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

Capital Cost of Clean-In-Place (CIP) System of Ductwork for Wine Storage Tanks	
Cost Description	Cost ($)
Current cost of CIP system	$75,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (CIP System) See Above	$75,000
Instrumentation - 10% of base equipment	$7,500
Sales Tax - 3.31% of base equipment	$2,483
Freight - 5% of base equipment	$3,750
Purchased equipment cost (PEC)	**$88,733**
Foundations & supports - 8% of PEC	$7,099
Handling & erection - 14% of PEC	$12,423
Electrical - 4% of PEC	$3,549
Piping – accounted for in ductwork cost	-
Painting - 1% of PEC	$ 887
Insulation - 1% of PEC	$ 887
Direct Installation Costs (DIC)	**$24,845**
Total Direct Costs (DC) (PEC + DIC)	**$113,578**
Indirect Costs	
Engineering - 10% of PEC	$8,873
Construction and field expenses - 5% of PEC	$4,437
Contractor fees - 10% of PEC	$8,873
Start-up - 2% of PEC	$1,775
Performance test - 1% of PEC	$ 887
Total Indirect Costs (IC)	**$24,845**
Subtotal Capital Investment (SCI)	**$138,423**

(DC + IC)	
Contingencies - 15% of SCI	$20,763
Total Capital Investment (TCI) (SCI + Contingency)	**$159,186**

Annualized Capital Cost

Total capital costs = Ductwork + CIP System
= $176,593 + $159,186
= $335,779

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

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

Therefore,

Total Collection System Annualized Capital Investment = $335,779 x 0.163

Total Collection System Annualized Capital Investment = $54,732

Option 1 - Collection of VOCs and Control by Thermal or Catalytic Oxidation (98% collection & control):

Total Annual Cost

The applicant has provided capital cost estimate for add on control device as well as the ducting/piping/CIP.

Total Annual Cost = Ductwork + CIP System
= $54,732

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.98
= 3,370 lb-VOC/year x 0.98
= 3,303 lb-VOC/year
= 1.65 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $54,732/year ÷ 1.65 tons-VOC/year
= $33,171/ton-VOC

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

Option 2 - Collection of VOCs and control by carbon adsorption (95% collection and control):

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= $54,732

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.95
= 3,370 lb-VOC/year x 0.95
= 3,202 lb-VOC/year
= 1.6 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $54,732/year ÷ 1.6 tons-VOC/year
= $34,208/ton-VOC

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

Option 3 - Collection of VOCs and Control by Absorption/Scrubber (90% collection & control):

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= $54,732

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.90
= 3,370 lb-VOC/year x 0.90
= 3,033 lb-VOC/year
= 1.5 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $54,732/year ÷ 1.5 tons-VOC/year
= $36,488/ton-VOC

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

Option 4 - Capture of VOCs and Condensation (70% collection & control):

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= $54,732

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.70
= 3,370 lb-VOC/year x 0.70
= 2,359 lb-VOC/year
= 1.18 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $54,732/year ÷ 1.18 tons-VOC/year
= $46,383/ton-VOC

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

Option 5 - Insulation, PVRV, "Gas-Tight" Tank Operation, and Storage Temperature not Exceeding 75 deg F, Achieved within 60 days of Completion of Fermentation):

The only remaining control option in step 3 above has been deemed AIP for this class and category of source and per the District BACT policy is required regardless of the cost. Therefore, a cost effectiveness analysis is not required.

Step 5 – Select BACT

All identified feasible options with control efficiencies higher than the option proposed by the facility have been shown to not be cost effective. Each of these wine storage tanks is already equipped and/or operated in a manner that complies with Option 5, insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and achieve and maintain a continuous storage temperature not exceeding 75°F within 60 days of completion of fermentation. These BACT requirements will be placed on the ATC as enforceable conditions.

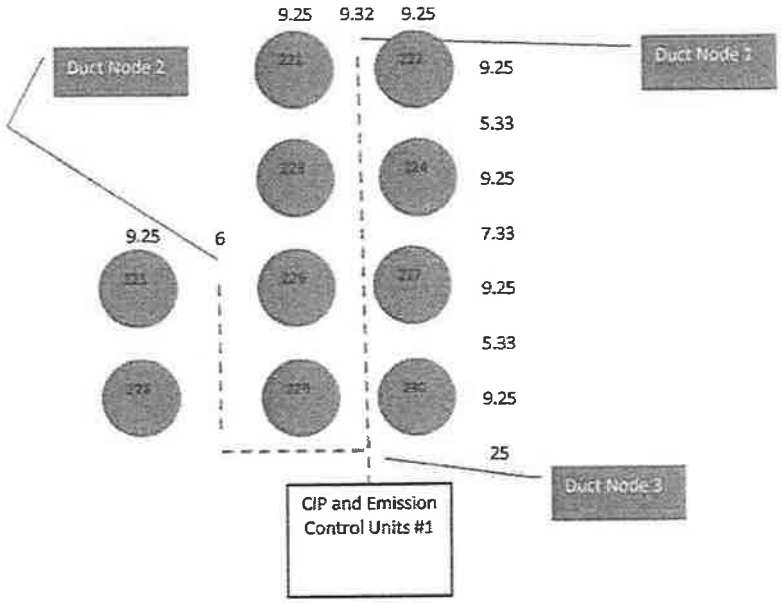
Attachment C1

Ducting Layout Diagrams and
Ducting Cost Estimates

Tanks are for storage only.

The tanks in this diagram are graphically shown as the same size for convenience of the spread sheet layout. The numbers in the cells around the tank layout reflect spacing and tank dimensions from the data base and layout Auto Cad files. Only the main duct between the tanks are shown. The connections from the tank to the main duct are priced out in the duct cost tabs. Total tanks in this sketch 10

Red dashed line is the most probable duct routing. Blue call out boxes show where a duct intersects with another duct or where a duct begins.



Nominal duct size is the smallest duct size for which we have pricing. The adjusted duct size is the size that was selected for the calculated flow. This size was not set smaller than 3 inches to maintain some structural rigidity in the duct piping system. The adjust price is based on a ratio of the duct sized based on flow to the closest nominal size for which we have pricing. (Circumference Size 1/Circumference Size 2)

Comments	Connection Length from Tanks to Main Ducts (Main is about 10 feet from floor)	Number of Tanks	Total Length of Connection Piping in Feet	Design Duct Velocity from Eichleay Feet/Second	Gas Flow Rate Storage Fill in CFM for One Tank	Duct size from tank to main diameter inches	Nominal Duct Size diameter in inches (See comments)	Number of Tanks to connect	Valve and Spool Isolation Components Allocation at Each Tank from Previous Work	Adjusted Duct Size Inches	Cost Per Foot from Eichleay (See Comments)	Cost of Ducting for Main Duct
20500 Gallon Tank	39.29	8.00	314.28	40.00	4.38	0.58	6.00	8.00	$21,000	3.00	$31.09	$30,770
20500 Gallon Tank	37.63	2.00	75.25	40.00	4.38	0.58	6.00	2.00	$5,250	3.00	$31.09	$7,589

Main Ducting Sizing	Beginning Node	Ending Node	Number of tanks feeding ending node	Tanks Pumping. This is set at 50%	Gas Flows CFM	Design Duct Velocity from Eichleay Feet/Second	Duct size main diameter inches	Nominal Duct Size diameter in inches (See comments)	Total Length of Piping in Feet Connecting Nodes	Adjusted duct Size Diameter Inches	Cost Per Foot from Eichleay (See Comments)	Cost of Ducting for Main Duct
	1	3	8.00	4	17.53	40.00	1.16	6	55	3.00	$31.09	$1,721
	2	3	2.00	1	4.38	40.00	0.58	6	41	3.00	$31.09	$1,278
	3	Emissions	10.00	5	21.91	40.00	1.29	6	25	3.00	$31.09	$777
Knock Out Drum Eichleay												$23,000
Structural Support Allowance												$25,000
											Total	**$90,135**

Eichleay used $46,000. Due to the low flows and the small wine tank size, this has been cut to $23,000.

Attachment C2

Comparison of Stainless Steel Ducting Costs

Ducting/Piping Cost Comparison

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

Ducting/Piping Costs based on Eichleay Report

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

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

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

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

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

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

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

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

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

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

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

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

Schedule 10 Pipe													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	$78.28	$108.97	$160.34	$288.00	$520.00	–	–	–	–	–	–	–	–
Length (feet)	8	8	8	8	8	–	–	–	–	–	–	–	–
Price/Foot ($)	$9.79	$13.62	$20.04	$36.00	$65.00	–	–	–	–	–	–	–	–
Welded Stainless Tube 304/304L (2" OD, 0.12" Wall; 3" OD, 0.12" Wall; 6", 0.12")													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price ($)	$109.86	$321.34	–	$628.16	–	–	–	–	–	–	–	–	–
Length (feet)	8	8	–	8	–	–	–	–	–	–	–	–	–
Price/Foot ($)	$13.73	$40.17	–	$78.52	–	–	–	–	–	–	–	–	–

Supplier: Lone Star Supply Co **Location: Dickinson, TX**

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

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

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

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

Appendix D

E & J Gallo Winery Statewide Compliance Certification

E&J Gallo Winery

December 22, 2016

Mr. Rupi Gill
San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto CA, 95356

Subject: Compliance Statement for E&J Gallo Winery - Modesto

Dear Mr. Gill

In accordance with Rule 2201, Section 4.15 "Additional Requirements for New Major Sources and Federal Major Modifications," E&J Gallo Winery – Modesto is pleased to provide this compliance statement regarding its proposed (10) Wine Storage Tanks project N-1162270.

All major stationary sources in California owned or operated by E&J Gallo Winery – Modesto, or by any entity controlling, controlled by, or under common control with E&J Gallo Winery – Modesto, and which are subject to emission limitations, are in compliance or on schedule for compliance with all applicable emission limitations and standards. These sources include the following facility:

E&J Gallo Winery; 600 Yosemite Blvd. Modesto, CA 95354

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

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

Sincerely,

William Stewart

William Stewart
Vise President – Modesto Operations

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

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

COMPANY NAME: E&J Gallo Winery	FACILITY ID: N- 3386
1. Type of Organization: { X } Corporation { } Sole Ownership { } Government { } Partnership { } Utility	
2. Owner's Name: E&J Gallo Winery	
3. Agent to the Owner: Mathew Hart	

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

(WS) 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).

(WS) 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.

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

(WS) 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.

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

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

William Stewart — 12/13/16

Signature of Responsible Official — Date

William Stewart

Name of Responsible Official (please print)

Vice President of Operations

Title of Responsible Official (please print)

Appendix E

Quarterly Net Emissions Change (QNEC) Calculations

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. Since these tanks are all new emission units, the QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

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

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

N-3386-512-0 through '-521 (20,500 gallon storage tanks):

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year
= 337 lb/year ÷ 4 qtr/year
= 84.25 lb VOC/qtr

$PE1_{quarterly}$ = $PE1_{annual}$ ÷ 4 quarters/year
= 0 lb/year ÷ 4 qtr/year
= 0 lb VOC/qtr

Quarterly NEC [QNEC]			
Pollutant	**PE2 (lb/qtr)**	**PE1 (lb/qtr)**	**QNEC (lb/qtr)**
VOC	84.25	0	84.25

Appendix F

SSPE1 Information

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 is taken as the SSPE2 from Project N-1153170 and summarized below:

SSPE1 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
SSPE1 – N-3386	9,191	779	72,522	50,930	77,548
SSPE1 – N-7478	6,603	176	473	5,221	277,085
Total w/o ERC	15,794	955	72,995	56,151	354,633
ERC N-260-3	0	0	0	783	0
ERC N-849-2	125	0	0	0	0
SSPE1	15,919	955	72,995	56,934	354,633

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.

SSPE2 (lb/year)					
Permit Unit	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2 – N-3386	9,191	779	72,522	50,930	77,548
SSPE2 – N-7478	6,603	176	473	5,221	277,085
ATC N-3386-507-0	576	25	11	108	108
Total w/o ERC	16,370	980	73,006	56,259	354,741
ERC N-260-3	0	0	0	783	0
ERC N-849-2	125	0	0	0	0
SSPE2	16,495	980	73,006	57,042	354,741

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.

Permit Unit	Daily EF	Annual EF	Tank Capacity	Turnover rate	Turnover rate	Daily	Annual
	(lb-VOC/1,000 gal)		(gallon)	(tank/day)	(tank/yr)	(lb/day)	(lb/yr)
N-3386-508-0	0.318	0.185	10,919	1	365	3.5	737
N-3386-509-0	0.318	0.185	10,920	1	365	3.5	737
N-3386-510-0	0.318	0.185	10,918	1	365	3.5	737
N-3386-511-0	0.318	0.185	328,577	1	365	104.5	22,187

VIII. Compliance Determination

Rule 2020 Exemptions

The District began permitting winery operations and equipment on August 21, 2005, since each of these tanks was installed and has been operated since this date. Therefore, a permit was not required at the time of installation. Per Section 9 of this rule, the owner or operator of an emissions unit that was exempt from written permits at the time of installation, which becomes subject to the provisions of District Rule 2010 (Permits Required) through loss of exemption, but shall not be subject to District Rule 2201 (New and Modified Stationary Source Review Rule) unless such time that the emissions unit is modified or replaced.

Rule 2201 New and Modified Stationary Source Review Rule

An emission unit that was installed at a time when permits were not required is exempt from the District Rule 2201 for the initial permitting action (per District Rule 2020, Section 9.0). Therefore, as shown above, these units are not subject to the requirements of this Rule.

Rule 2410 Prevention of Significant Deterioration

The provisions of this rule shall apply to any source and the owner or operator of any source subject to any requirements under Title 40 Code of Federal Regulations (40 CFR) Part 52.21 as incorporated into this rule.

Per engineering evaluation under District project N-1153671, the facility is not an existing major source for PSD for any pollutant. In addition, greenhouse gases are not expected from the proposed wine storage operations Therefore, the proposed project is not subject to the requirements of this rule and no further discussion is required.

Rule 2520 Federally Mandated Operating Permits

Per Section 6.4.4 of this rule, the existing tanks involved in this project will be incorporated into the facility's Title V permit during the next Title V permit renewal.

Rule 4001 New Source Performance Standards (NSPS)

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

Appendix G

Draft ATCs N-3386-512-0 through '-521-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-512-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 221) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

N:\3386-512-0 Dec 15 2016 1:40PM -- GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved.. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-3386-513-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 222) EQUIPPED WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
N-3386-513-0 : Dec 15 2016 1:46PM – GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-514-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 223) WITH INSULATION AND PRESSURE/VACUUM RELIEF VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-3386-514-0 : Dec 15 2016 1:40PM -- GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-515-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 224) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-3386-515-0 Dec 16 2016 1:46PM -- GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-516-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 225) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-3386-516-0 Dec 15 2016 1:48PM - GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-517-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 226) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

N-3386-517-0 Dec 15 2016 1:46PM – GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-518-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 227) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-3386-518-0 Dec 15 2016 1:46PM – GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
15. The operator shall maintain records of the calculated rolling 12-month wine ethanol content and storage throughput rate (ethanol percentage by volume and gallons per rolling 12-month period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-519-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 228) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-3386-519-0 : Dec 15 2018 1:46PM – GILLR : Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694] Federally Enforceable Through Title V Permit
10. The weighted annual average ethanol content of wine stored in this tank, calculated on a rolling 12-month basis, shall not exceed 21 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The maximum wine storage throughput in this tank shall not exceed 20,500 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. The maximum wine storage emissions in this tank, calculated on a rolling 12-month basis, shall not exceed 337 lb-VOC/year (equivalent to 7,300,000 gallons of wine throughput per year). [District Rule 2201] Federally Enforceable Through Title V Permit
13. The operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
14. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
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16. If the throughput or ethanol content calculated for any rolling 12-month period exceeds the annual throughput or ethanol content limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the throughput or ethanol content limits for that rolling 12-month period will be deemed to have occurred so long as the calendar year throughput and ethanol content are below the annual throughput and ethanol content limitations. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-520-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 229) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 126 lb, 2nd quarter - 126 lb, 3rd quarter - 127 lb, and fourth quarter - 127 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16). [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC Certificate Numbers S-4727-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. This tank shall be used exclusively for wine storage operations only and not for fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

N-3386-520-0 Dec 15 2015 1:46PM – GILLR Joint Inspection NOT Required

6. The nominal tank dimensions are 9.25 feet in diameter and 40 feet in height with a proposed volume of 20,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-3386-521-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
20,500 GALLON NOMINAL STAINLESS STEEL WINE STORAGE TANK (TANK 230) WITH INSULATION AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
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Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
N-3386-521-0 Dec 15 2016 1:45PM – GILLR Joint Inspection NOT Required

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Appendix H

Public Comments

Climate Change Law Foundation

SIERRA CLUB FOUNDED 1892

February 23, 2017

Via Email

Mr. Arnaud Marjollet
Director of Permit Services
San Joaquin Valley APCD
34946 Flyover Court
Bakersfield, CA 93308

Re: Comments on Proposed Authority to Construct for E & J Gallo Winery, District Facility No. N-3386, Project No. 1162270 (Applications N-3386-512-0 through -521-0)

Dear Mr. Marjollet:

I am writing on behalf of Climate Change Law Foundation, Association of Irritated Residents ("AIR"), Center for Biological Diversity ("the Center"), and Sierra Club (collectively, "Environmental Groups"), to submit comments on the San Joaquin Valley Air Pollution Control District's ("Air District's") proposed Authority to Construct / Certificate of Conformity for E & J Gallo Winery (District Facility No. N-3386, Project No. 1162270). The Authority to construct is for installation of 10 new wine tanks. (Applications N-3386-512-0 through -521-0.) Unfortunately, the Air District's Authority to Construct relies on invalid emissions reduction credits ("ERCs") for VOCs. Given existing unhealthy air quality that already places San Joaquin Valley residents at risk for chronic respiratory illnesses, emergency room visits, missed school days, medical bills, and potentially premature death, and given the harmful air pollution in the Central Valley that is exacerbating climate change impacts, the District must revise or reject the proposed Authority to Construct in accord with our comments below.

A. Emission Reduction Credit Certificate S-4727-1 is Invalid

ERC S-4727-1, for VOC reduction, states that it was issued for "[i]ncineration of the Fluid Coker exhaust in the CO boiler."[1] The authority to construct for the identified CO boiler was issued on January 12, 1976, and operation of the CO boiler began in May 1977.[2] However, under 40 C.F.R. § 51.165(a)(3)(ii)(C)(*1*)(*ii*), "in no event may credit be given for shutdowns that occurred

[1] *See e.g.*, Emission Reduction Credit Certificate No. 2007148/501 (July 15, 1986) (Exhibit 1).
[2] *See* Letter, Raymond E. Menebroker, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987) (Exhibit 2).

before August 7, 1977." As the U.S. EPA explained in comments on the proposed banking credit application in 1987:

> The reductions occurred prior to August 7, 1977 and are therefore too old to be granted credit. EPA has previously advised the District that banking credit may not be awarded for any reductions which occurred prior to the Clean Air Act Amendments of August 7, 1977 . . . EPA will not recognize these reductions as valid offsets for any source wishing to purchase these ERCs for offsetting purpose.[3]

Further, both the U.S. EPA and the California Air Resources Board ("CARB") pointed out in comments on the original application for banking credit that the credit was invalid because the application was submitted beyond the required time limits—a completed application for the banking credit was not submitted until October 1985, almost ten years after the reduction occurred.[4]

To this end, the proposed emissions credit comes from a shutdown or curtailment that occurred nearly four decades ago. Under District Rule 2201 and 2301, emission reductions used as ERCs must be "real, enforceable, quantifiable, surplus, and permanent." (Air District Rule 2201 § 3.2.1; Rule 2301 § 4.1.2.) Given the many changes that have occurred at the refinery since 1977, this decades-old reduction is no longer "real" and will not actually offset projected air emissions. As U.S. EPA noted even ten years after the event:

> the reductions from the installation of the CO boiler are quite old. The burden is on the District to verify in its analysis that these reductions have not been assumed elsewhere (in the emissions inventory, the latest [air quality management plan], the attainment demonstration) and therefore are indeed surplus. In all likelihood, these reductions are <u>not surplus</u> since they occurred so long ago and probably are already reflected in the District's records and plans. The District must verify that these reductions are not credited elsewhere.[5]

However, the Air District did not provide U.S. EPA with verification that these reductions had not been credited elsewhere. U.S. EPA previously warned that "any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action."[6] Because ERC S-4727-1 is invalid and "subject to federal enforcement action" if used, the Air District may not employ it to offset the project's VOC emissions here.

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[3] Letter, David P. Howecamp, EPA, to Leon Hebertson, KCAPCD, (July 17, 1987) (Exhibit 3).
[4] *See id.*; Letter, Raymond E. Menebroker, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987).
[5] Letter, David Howecamp, EPA, to Leon Hebertson, KCAPCD, (July 17, 1987).
[6] *Id.*

1. The U.S. EPA Has Previously Objected to Use of the Proposed ERC

AIR, the Center, and Sierra Club previously filed comments to the Air District,[7] and subsequently a petition to the U.S. EPA,[8] objecting to use of ERCs including S-3663-1 in a matter involving an ATC for Alon U.S.A. Energy Inc. to expand a crude rail terminal at the company's Bakersfield, CA refinery. ERC S-3663-1 was issued from the same source, "[i]ncineration of the Fluid Coker exhaust in the CO boiler," as was ERC S-4727-1. The Petition objected to use of ERC S-3663-1 on the same grounds as presented here for ERC S-4227-1—that no credit may be given for shutdowns that occurred before August 7, 1977, that the application for banking credit was submitted beyond required time limits, and that the District had not verified the credits were "real" and had not been credited elsewhere.

On December 21, 2016, U.S. EPA granted the Petition in part, and objected to the Air District's use of multiple ERCs, including S-3663-1. U.S. EPA found "that the [Air] District did not provide sufficient responses to significant comments [by AIR, the Center, and Sierra Club], and therefore the record is inadequate for the EPA to . . . determine whether Alon obtained the necessary offsets as required. . . ."[9] U.S. EPA directed the Air District to "review its determination and the record with respect to the ERCs at issue in the Petition and provide a record to adequately support its determination" that the challenged credits are valid. Unless and until such time as the Air District provides a record to validate use of ERCs issuing from "[i]ncineration of the Fluid Coker exhaust in the CO boiler," it must consider use of any such ERC, including S-4227-1, to be invalid.

---

[7] Letter, Elizabeth Forsyth, Earthjustice, to Arnaud Marjollet, SJVACD, (November 19, 2014) (Exhibit 4).

[8] Petition to Object to Issuance of Authority to Construct / Certificate of Conformity for the Alon Bakersfield Crude Oil Flexibility Project (December 16, 2014) ("Petition") (Exhibit 5).

[9] U.S. EPA, Order Granting in Part a Petition for Objection to Permit, Petition No. IX-2014-15 (December 21, 2016) (Exhibit 6).

Conclusion

For the foregoing reasons, Environmental Groups respectfully request that the Air District revise the proposed Authority to Construct and associated Certificate of Conformity to include valid emissions reduction credits and controls. Please do not hesitate to contact us with any questions you might have.

Sincerely,

Noah Garrison
Climate Change Law Foundation
548 Market Street #11200
San Francisco, CA 94104
clearbluefuture@gmail.com
415-602-6223

Tom Frantz, President
Association of Irritated Residents
29389 Fresno Ave
Shafter, CA 93263
tom.frantz49@gmail.com
661-910-7734

Maya Golden-Krasner
Center for Biological Diversity
P.O. Box 1476
La Cañada Flintridge, CA 91012
MGoldenKrasner@biologicaldiversity.org
213-215-3729

Elly Benson
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612
elly.benson@sierraclub.org
415-977-5723

KERN COUNTY AIR POLLUTION CONTROL DISTRICT

EMISSION REDUCTION CREDIT CERTIFICATE

2700 "M" Street, Suite 275
Bakersfield, CA 93301
(805) 861-3682

William J. Roddy
Air Pollution Control Officer

ISSUE DATE:	July 23, 1989	CERTIFICATE NO.	2007148/501
EXPIRATION DATE:	July 23, 1991	DATE:	July 15, 1986

EMISSION REDUCTION CERTIFICATE IS HEREBY GRANTED TO:

TEXACO REFINING AND MARKETING, INC.

This Emission Reduction Credit (ERC) can only be used in accordance with Kern County Air Pollution Control District New Source Review Rule (NSR) (Rule 210.1)

ACTUAL HISTORICAL ERC:

Pollutant: Hydrocarbons

Amount: 12,067.20 lbm/day

S	T	R	Location:
28	29S	27E	6500 Refinery Ave., Bakersfield, California

EMISSION REDUCTION CREDIT ACHIEVED BY:

Incineration of the Fluid Coker exhaust in the CO Boiler

Transfer of ownership and all emission reduction credit certificate activity shall be accomplished in accordance with the requirements of Kern County Air Pollution Control District Rule 210.3-Emission Reduction Banking.

Validation Signature:

Doug McCormick
for Manager of Engineering Evaluation

Engr

STATE OF CALIFORNIA

GEORGE DEUKMEJIAN, Governor

AIR RESOURCES BOARD
1102 Q STREET
P.O. BOX 2815
SACRAMENTO, CA 95812

July 17, 1987

RECEIVED
JUL 20 1987
KERN COUNTY AIR POLLUTION CONTROL

Mr. Citron Toy
Chief Air Sanitation Officer
Kern County APCD
1601 H Street, Suite 150
Bakersfield, CA 93301-5199

Dear ~~Mr. Toy~~ Citron:

We have received your June 16, 1987 request for comments on your proposed banking action for emission reductions achieved by Texaco Refining and Marketing, Inc. After reviewing your analysis of the banking proposal, we have several comments. Our comments, as given below, have been discussed with Tom Goff of your staff.

BANKING PROPOSAL DESCRIPTION

Texaco Refining and Marketing, Inc. wishes to bank emission reductions achieved through the installation of a CO boiler on a fluid coker at its Bakersfield refinery. The authority to construct for the CO boiler was issued on January 12, 1976. Operation of the boiler started in May of 1977. According to the provisions of Kern County APCD Rule 210.3, such emission reductions are bankable provided they were achieved after December 28, 1976 and a banking application was submitted before one year had expired since the adoption date of the banking rule, i.e., by April 25, 1984. The proposed banking certificates are for 12,067.2 lbm/day of hydrocarbons and 62,793.6 lbm/day of carbon monoxide.

COMMENTS

1. Timing of Application Submittal: The District's analysis of the banking proposal indicates the initial application to bank these emission reductions was submitted by the previous refinery owner, Tosco Corporation, on April 24, 1984. The application consisted of a single-page application form and a one-page letter with a request to bank all previously affected emission reductions. This application was rejected by the District on the same day because no documentation of emission reductions was submitted with the application. A follow-up application by Tosco Corporation was not submitted until October 25, 1985. The first application was not substantially complete based on the "List and Criteria Identifying Information Required of Applicants Seeking an Authority to Construct from the Kern County Air Pollution Control District" contained in the District's rules and regulations. The second application, upon which this proposed action is based, was not submitted within the allowable time limits stated in Section C.4(b) of Kern County APCD Rule 210.3, and, therefore, should be considered invalid.

2. Permanence and Enforcability of Emission Reductions: If the District chooses to grant the banking certificates, we believe that the permanence and enforcability of emission reductions can more optimally be accomplished by adding a periodic source testing requirement to conditions on the permit for the CO boiler.

Thank you for this opportunity to comment. If you have any questions regarding our comments please contact Genevieve Shiroma, Manager of the Industrial Projects Section at (916) 322-8267.

Sincerely,

Raymond E. Menebroker, Chief
Project Review Branch
Stationary Source Division

cc: Wayne Blackard, EPA

Engr

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco, Ca. 94105

17 JUL 1987

17 JUL 1987

FILE: NSE 4

Dr. Leon Hebertson
Air Pollution Control Officer
Kern County APCD
1601 H Street, Suite 150
Bakersfield, CA 93301

Dear Dr. Hebertson:

This is in response to the request for public comment regarding the proposed issuance of an ERC Banking Certificate to Texaco Refining & Marketing, Inc., dated June 9, 1987, resulting from the installation of a CO boiler on a fluid coker. The ERC Banking Certificate is for 2202 T/Y of non-methane hydrocarbons and for 11,460 T/Y of CO. EPA has reviewed the proposal and the District's analysis. Following is a list of our concerns and our objections to the approval of this ERC Banking Certificate.

(1) SURPLUS

The reductions from the installation of the CO boiler are quite old. The burden is on the District to verify in its analysis that these reductions have not been assumed elsewhere (in the emissions inventory, the latest AQMP, the attainment demonstration) and therefore are indeed surplus. In all likelihood, these reductions are not surplus since they occurred so long ago and probably are already reflected in the District's records and plans. The District must verify that these reductions are not credited elsewhere.

(2) PERMANENCE

There is a requirement in the Enforceability section of the banking application analysis which states: "When the fluid coker CO boiler goes down for annual inspection, the fluid coker must be curtailed or shutdown to result in compliance with the 112 lbm/hr. HC and 500 lbm/hr. CO emission limits proposed to validate the claimed ERC." This requirement does not appear in the permit itself, or in the conclusion section of the banking approval notice. This requirement would have to appear in the permit to ensure enforceability and permanence of the reductions.

(3) RACT

There is no RACT analysis for determining which reductions are eligible for emission reduction credits beyond RACT.

(4) DATE REDUCTIONS OCCURRED

The reductions occurred prior to August 7, 1977 and are therefore too old to be granted credit. EPA has previously advised the District that banking credit may not be awarded for any reductions which occurred prior to the Clean Air Act Amendments of August 7, 1977. The fact that Kern County's banking rule allows credit prior to that date was cited as a deficiency in the Kern banking rule. EPA will not recognize these reductions as valid offsets for any source wishing to purchase these ERCs for offsetting purposes.

In addition, these reductions occurred prior to the December 28, 1976, baseline adjustment date that is required in the District's NSR rule since the ATC was issued prior to that date.

(5) TIMING

The complete application for banking credit was submitted well beyond the required time limits. It is not reasonable to accept the company's rationale for the delay.

(6) STATUS OF BANKED ERCs

If the District issues the banking certificate to Texaco, any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action.

For the reasons stated above, EPA does not support the issuance of ERCs to Texaco for the emission reductions associated with the installation of the CO boiler in 1976. A banking certificate for these emission reductions should not be issued.

If your have any further questions you can contact me or have your staff contact Wayne Blackard at (415) 974-8249.

Sincerely,

Thomas W. Powell for

David P. Howekamp
Director
Air Management Division

cc: ARB, Att: Ray Menebroker, ARB
Texaco Refining & Marketing, Inc.

EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

November 19, 2014

Via Email

Arnaud Marjollet
Director of Permit Services
San Joaquin Valley APCD
34946 Flyover Court
Bakersfield, CA 93308

Dear Mr. Marjollet:

I am writing to submit comments on the San Joaquin Valley Air Pollution Control District's ("District") proposed Authority to Construct for the Alon Bakersfield Crude Flexibility Project ("Project") proposed by Paramount Petroleum Corporation and its parent Alon U.S.A. Energy Inc. (collectively, "Alon"). These comments are submitted on behalf of Association of Irritated Residents, Center for Biological Diversity, and Sierra Club. The organizations represent thousands of members and supporters in California and the San Joaquin Valley ("Valley") who are deeply concerned about skyrocketing crude-by-rail imports from the mid-continent into the state. As a result of this project, millions of barrels of volatile Bakken crude oils will be hauled through California's most sensitive areas and treacherous passages, ultimately ending up in our most pollution-burdened communities, including the Valley, for intensive refining.

The Project entails a five-fold increase in the Alon Bakersfield Refinery's ("Refinery") capacity to import crude oil from 40 tank cars per day to 208 tank cars per day, or up to 63.1 million barrels of crude per year (over 173,000 barrels per day). This influx of cheap, mid-continent crudes, including Bakken crude from North Dakota, will allow the shuttered Refinery to reopen and run at full capacity, processing 70,000 barrels of crude oil per day. Restarting the Refinery – which has been mostly idle since 2008 – will significantly increase harmful air pollution that will only exacerbate the poor air quality and respiratory illnesses that plague San Joaquin Valley communities already unfairly burdened with industrial pollution. Further, the massive ramp-up in crude imports will significantly increase greenhouse gas emissions and the risk of catastrophic accidents and oil spills along the rail transport route.

Unfortunately, the District's preliminary decision on the Authority to Construct does not meet New Source Review requirements under District Rule 2201. It fails to consider and apply Best Available Control Technology ("BACT") to the Project's new emissions units or those units undergoing major modifications, including new and modified floating roof tanks, new boilers, and new pumps and compressors. These units are expected to emit significant levels of oxides of nitrogen ("NOx") and volatile organic compounds ("VOC"), which result in the formation of ozone, for which the Valley is already in "extreme" nonattainment. Given existing unhealthy air quality that already exacts an enormous toll on Valley residents in the form of chronic respiratory illnesses, emergency room visits, premature death, missed school days, medical bills,

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lost wages, and reduced worker productivity, the application of BACT to these new and modified units is imperative.

The emissions offsets analysis for the proposed Authority to Construct must also be revised to comply with Rule 2201. The analysis fails to properly calculate the emissions increase that must be offset because it erroneously relies on a 2008 baseline that does not represent normal non-operational conditions at the Refinery. In addition, it severely underestimates the Project's VOC emissions, by relying on flawed assumptions about the crude oils that will be stored and processed at the Refinery. The analysis also improperly exempts from emissions offset requirements existing heaters that will be retrofitted and relies on invalid emissions reduction credits ("ERCs") for all other emissions increases. The failure to properly offset the Project's emissions increases will only result in further deterioration of the Valley's air and put attainment of air quality standards further out of reach.

In sum, the District must correct the Project's BACT and emissions offset analyses and revise the proposed Authority to Construct in accordance with our comments below.

I. The Authority to Construct Fails to Apply BACT.

The proposed Authority to Construct fails to apply BACT to new floating roof tanks, boilers, and compressors and pumps, despite the District's determination that BACT is triggered for each of these units. BACT is "the most stringent emission limitation or control technique of the following": "[a]chieved in practice for such category and class of source;" "[c]ontained in any State Implementation Plan approved by the Environmental Protection Agency for such category and class of source"; "[c]ontained in an applicable federal New Source Performance Standard"; or "[a]ny other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source." Rule 2201, section 3.10. Generally, BACT is required for new or modified emissions units that result in emissions exceeding certain thresholds. *See generally* Rule 2201, section 4.0.

A. Stricter Volatile Organic Compound Control Systems and Geodesic Domes Must Be Applied to the Floating Roof Tanks.

The Authority to Construct does not apply BACT on floating roof tanks that store volatile substances, such as Bakken crude. The new tanks' VOC emissions will be subject to "95% control of VOC emissions, through use of primary metal shoe seal with secondary wiper, or equivalent." Authority to Construct Application Review, Crude Oil Flexibility Project ("Application Review"), p. 38. The Bay Area Air Quality Management District ("BAAQMD"), however, has determined that a "[v]apor recovery system w/ an overall system efficiency > *98%*" is "technologically feasible" and "cost effective."[1] (emphasis added). The District must revise the

[1] The BAAQMD BACT Guidelines are available at http://hank.baaqmd.gov/pmt/bactworkbook/. Relevant portions are attached as Exhibit A.

top-down BACT analysis taking into account the availability of control systems that are 98%-efficient.

The Authority to Construct also fails to require geodesic domes to reduce VOC emissions from floating roof tanks. These domes on floating roof tanks are feasible, satisfy best available control technology, and are widely used. The BAAQMD BACT Guidelines specify that "a dome is required for tanks that meet all of the following: 1) capacity greater than or equal to 19,815 gallons [approximately 629 barrels] 2) located at a facility with greater than 20 tpy VOC emissions since the year 2000 and 3) storing a material with a vapor pressure equal to or greater than 3 psia (except for crude oil tanks that are permitted to contain more than 97% by volume crude oil)." Ex. A. The 250,000-barrel external floating roof tanks are 397 times the volume of the BAAQMD threshold and will certainly exceed a vapor pressure of 3psia when storing light crude oils, such as Bakken, Eagle Ford, and Permian Basin crude oils.

Over 10,000 aluminum domes have been installed on petrochemical storage tanks in the United States.[2] For example, at the ExxonMobil Torrance Refinery, the refinery

> completed the process of covering all floating roof tanks with geodesic domes to reduce volatile organic compound (VOCs) emissions from facility storage tanks in 2008. By installing domes on our storage tanks, we've reduced our VOC emissions from these tanks by 80 percent. These domes, installed on tanks that are used to store gasoline and other similar petroleum-derived materials, help reduce VOC emissions by blocking much of the wind that constantly flows across the tank roofs, thus decreasing evaporation from these tanks.[3]

A similar project to increase crude storage capacity, recently proposed at the Phillips 66 Los Angeles Carson Refinery, required external floating roof tanks with geodesic domes to store crude oil with an RVP of 11.[4] The Negative Declaration for this project assumed these tanks would store crude oil with a TVP <11 psi.[5] The RVP would be even higher. The ConocoPhillips

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[2] M. Doxey and M. Trinidad, Aluminum Geodesic Dome Roof for Both New and Tank Retrofit Projects, Materials Forum, v. 30, 2006, available at: http://www.materialsaustralia.com.au/lib/pdf/Mats.%20Forum%20page%20164_169.pdf (Exhibit B).

[3] Torrance Refinery: An Overview of our Environmental and Social Programs, 2010, available at: http://www.exxonmobil.com/NA-English/Files/About_Where_Ref_TorranceReport.pdf (Exhibit C).

[4] See, e.g., Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project, September 6, 2013, Table 1-1, Draft Negative Declaration, available at http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/draftnd-p66storage.pdf (Exhibit D).

[5] *Ibid.*

Wilmington Refinery added a geodesic dome to an existing oil storage tank to satisfy BACT.[6] Similarly, Chevron proposed[7] to use domes on several existing tanks to mitigate VOC emission increases at its Richmond Refinery.[8] The U.S. Department of Justice CITGO Consent Decree required a geodesic dome on a gasoline storage tank at the Lamont, Texas refinery.[9] Further, numerous vendors have provided geodesic domes for refinery tanks.[10]

These numerous applications of geodesic domes to control VOC emissions from refinery storage tanks satisfy the "achieved in practice" test for BACT. Thus, geodesic domes must be required to satisfy BACT for the new and modified storage tanks under SJVAPCD Rule 2201.

Finally, because VOC emissions have been severely underestimated, *see* section III below, the potential amount of emissions to be reduced by the above VOC-controls is much greater than what the District's initial emissions estimates might indicate. A revised BACT analysis must rely on corrected VOC-emissions figures to provide an accurate assessment of the cost-effectiveness of these emissions controls.

B. The BACT Analysis for the New Boilers Is Incomplete.

The BACT analysis for the three new boilers is flawed, failing to demonstrate that NOx, carbon monoxide ("CO"), and hydrogen sulfide emissions will be reduced to the extent feasible.

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[6] SCAQMD Letter to G. Rios, December 4, 2009, available at: http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/$FILE/ATTTOA6X.pdf/ID%20800363%20ConocoPhillips%20Wilmington%20-%20EPA%20Cover%20Letter%20%20-AN%20501727%20501735%20457557.pdf (Exhibit E).

[7] City of Richmond, Chevron Refinery Modernization Project, Environmental Impact Report, Volume 1: Draft EIR, March 2014 (Chevron DEIR), available at: http://chevronmodernization.com/project-documents/.

[8] Chevron DEIR, Chapter 4.3, available at: http://chevronmodernization.com/wp-content/uploads/2014/03/4.3_Air-Quality.pdf (Exhibit F).

[9] CITGO Petroleum Corp. Clean Air Act Settlement, available at: http://www2.epa.gov/enforcement/citgo-petroleum-corporation-clean-air-act-settlement (Exhibit G).

[10] See, e.g., Aluminum Geodesic Dome, available at: http://tankaluminumcover.com/Aluminum-Geodesic-Dome; Larco Storage Tank Equipments, available at: http://www.larco.fr/aluminum_domes.html; Vacono Dome, available at: http://www.easyfairs.com/uploads/tx_ef/VACONODOME_2014.pdf; Peksay Ltd., available at: http://www.peksay.info/oil_terminals/geodesic_domes.htm; United Industries Group, Inc., available at: http://www.thomasnet.com/productsearch/item/10039789-13068-1008-1008/united-industries-group-inc/geodesic-aluminum-dome-roofs/ (Exhibit H).

1. NOx Selective Catalytic Reduction

With respect to the boilers' NOx emissions, the District's Application Review concludes that 6 ppmv at 3% O2 using low-NOx burners is BACT. The top-down BACT analysis, however, rules out the application of selective catalytic reduction ("SCR") (which would achieve 5 ppmv NOx at 3% O2), because the cost of reducing emissions using this technology does not meet the District's cost-effectiveness threshold of $24,500 per ton. Application Review, PDF 478-79. The District's calculations show that the cost-effectiveness is only $58,198 per ton. *Ibid.* These calculations, however, do not explain or justify the underlying assumptions, precluding a meaningful assessment of the cost-effectiveness analysis. For example, the calculations state that an equipment life of 10 years is assumed. But in Alon's original application and BACT analysis for the project, Alon assumed a 20-year equipment life. *See* Ex. J. Indeed, the "capital recovery factor"$(i[1+i]^n/[1+i]^n-1)$ used in Alon's analysis is much lower (0.0944) than the one used by the District (0.1627). EPA's Air Pollution Control Cost Manual also provides an example calculation of SCR cost-effectiveness using a 20-year equipment life and 7% interest rate, resulting in a cost recovery factor of 0.0944.[11] Using this lower capital recovery factor in the District's calculations results in a much more cost-effective emissions reduction of $33,757.44 per ton. However, as explained further below, the 7% interest rate is outdated and a 20-year lifetime is not realistic.

In a March 2014 presentation by the South Coast Air Quality Management District ("SCAQMD") concerning the cost-effectiveness of SCR for refineries, the SCAQMD's analysis (using the same levelized cash flow method used by the District) assumed a 4% interest rate and 25-year life of the equipment.[12] These assumptions are more realistic than Alon's or the District's. Alon's financial reports indicate that it is capable of securing capital at an interest rate lower than 4%.[13] And as explained by refinery expert Dr. Phyllis Fox in comments on a cost-effectiveness analysis of SCR in a similar context, "[f]or these types of analyses, the Office of Management and Budget ("OMB") directs that a real interest rate be used [i.e., adjusted to

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[11] EPA Pollution Control Cost Manual, Sixth Edition (January 2002), available at http://www.epa.gov/ttncatc1/dir1/c_allchs.pdf (Exhibit K).

[12] *See* NOx RECLAIM Working Group Meeting, March 18, 2014, p. 13, available at http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/regxx/reclaimwgm031814.pdf?sfvrsn=2 (Exhibit L).

[13] *See* Alon U.S.A. Energy, Inc., Form 10-K for Fiscal Year 2013, March 2014, PDF 79, 92 available at http://www.sec.gov/Archives/edgar/data/1325955/000132595514000013/alj-20131231x10k.htm (Exhibit M); Alon U.S.A. Energy, Inc., Form 10-Q, 9/30/2014, available at http://quote.morningstar.com/stock-filing/Quarterly-Report/2014/9/30/t.aspx?t=XNYS:ALJ&ft=10-Q&d=acdd8e2f9a21686b6e4d53b46613845b, p. 10 (noting interest rate swap agreements resulting in average fixed interest rate of 0.25% in 2014; 0.60% in 2015; 1.47% in 2016; 2.35% in 2017; 3.09% in 2018 and 3.28% thereafter); *id.*, p. 16 (noting recent loan agreement at annual rate of LIBOR plus 3.75% margin) (Exhibit N [PDF 18, 30]).

remove the effects of inflation and to reflect the real costs of funds to the borrower]. When the [EPA] Cost Control Manual was developed, the real interest rate was 7%. However, the latest real interest rate for cost-effectiveness analyses published by OMB is 1.9% for a 30-year period."[14] Thus, even a 4% interest rate is highly conservative.

With respect to the equipment lifetime, ample evidence indicates that SCR typically has a lifetime of 30 years or more. A study of the economic risks from SCR operation at the Detroit Edison Monroe power plant, for example, used 30 years as the anticipated lifetime.[15] Further, in EPA's response to comments on the approval of a final rule determining that SCR was the "best available retrofit technology" and "most cost-effective" technology for the San Juan Generating Station, a coal-fired power plant in New Mexico, EPA justified a 30-year lifetime of the SCR assumed in its cost-effective analysis:

> The lifetime of an SCR, which is a metal frame packed with catalyst modules, is equal to the lifetime of the boiler, which might easily be over 60 years. *The lifetime of a retrofit SCR is generally set equal to the remaining useful life of the facility.* The record is silent on the remaining useful life of the [San Jaun Generating Station] units. Further, USGS studies of the coal reserves upon which the [San Juan Generating Station] relies indicate that the local coal supply is adequate to support a remaining useful life of 30 years. Many utilities routinely specify 30+ year lifetimes in requests for proposal and to evaluate proposals. In fact, an analysis prepared by [Black & Veatch] for another facility assumed a 40 year SCR lifetime. And finally, Sargent & Lundy assumed a design life of 30 years for the nearby Navajo Generating Station which burns a similar coal. We conclude there is nothing in the record to support a 20 year lifetime for the SCR and believe a 30 year lifetime is justified.[16]

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[14] Fox, Phyllis, Report on Hydrogen Cyanide Emissions From Fluid Catalytic Cracking Units (October 28, 2014), pp. 23-24 (Exhibit O), citing OMB Circular No. A-94, Appendix C, Revised February 7, 2014, available at: http://www.whitehouse.gov/sites/default/files/omb/memoranda/2014/m-14-05.pdf (Exhibit P). Dr. Fox's resume is attached as Exhibit Q.

[15] S.D. Unwin and others, Selective Catalytic Reduction (SCR) System Design and Operations: Quantitative Risk Analysis of Options, Presented at CCPS 17th Annual International Conference: Risk, Reliability, and Security, p. 3, available at: http://www.unwin-co.com/files%5CSCR-Risk-Paper,CCPS-RRS2002.pdf (Exhibit R).

[16] "Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination; Final Rule," 76 Fed. Reg. 52388, 52402 (Aug. 22, 2011), available at http://www.gpo.gov/fdsys/pkg/FR-2011-08-22/pdf/2011-20682.pdf (Exhibit S).

Here, the expected life of the project is 30 years.[17] It is therefore reasonable to assume that the remaining useful life of the facility and of the SCR equipment is at least 30 years.[18]

Using the more realistic assumptions of a 30-year equipment life and a 1.9% real interest rate results in a capital recovery ratio of 0.044 and a cost-effectiveness of $15,748.11 per ton, which meets the District's cost-effectiveness threshold. Even the more conservative assumptions of a 4% interest rate and 25-year lifetime results in a capital recovery ratio of 0.064 and a cost-effectiveness of $22,890.68 per ton, which also meets the District's cost-effectiveness threshold. In light of the above evidence showing that the District's cost figures are inflated, the Air District must reevaluate and revise its BACT analysis using these more realistic assumptions.

2. Low Temperature Oxidation

Low temperature oxidation ("LTO") has achieved emissions controls comparable to that of SCR, but the District's analysis did not consider this technology in its BACT analysis. For example, a 16.4-MMBtu/hr Cleaver Brooks CB700 fire-tube boiler was permitted in February 1992 at 40 ppm NOx at 3% O_2. The boiler was subsequently equipped with LTO in October 1996 as a demonstration project. "The LTO system utilizes ozone to oxidize and control various pollutants, including NOx. The LTO system process includes (1) the recovery of waste heat from the flue gas, (2) the oxidation of NOx and CO, (3) the absorption of higher nitrogen and sulfur oxides formed in a scrubber solution, and (4) removal of ozone slip."[19]

Source tests demonstrated that LTO achieved a NOx limit of 5 ppm at 3% O_2.[20] The SCAQMD's Mobile Source Test Vehicle (MSTV 1) was used to collect and continuously analyze flue gases at the exhaust stack of the LTO system. NOx and CO concentrations were recorded every minute. The analysis of these data shows that NOx concentrations

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[17] Kern County Draft Environmental Impact Report, Alon Bakersfield Refinery Crude Flexibility Project ("DEIR") (May 2014), pp. 4.5-14, 4.5-15, 4.6-59, available at http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_DEIR_Vol1.pdf (Exhibit T).

[18] *See also* Ex. O, pp. 22-23 (Fox report noting SCR is typically designed for a lifetime of 30 years and citing papers indicating SCRs that have been operational since as early as 1986); Selective Catalytic Reduction of NOx From Fluid Catalytic Cracking Case Study: BP Whiting Refinery (April 2002), available at http://www.cormetech.com/brochures/env-03-128%20-%20kunz%200%20Whiting%20Refinery%20FCC.pdf (Exhibit KK [PDF 6, 15, 19]) (indicating SCRs operational since as early as 1986).

[19] South Coast Air Quality Management District, LAER/BACT Determination for Application No. 343185, available at http://www.aqmd.gov/docs/default-source/bact/laer-bact-determinations/other-technologies/laer-bact-determination-259724.pdf?sfvrsn=2 (Exhibit U).

[20] *See* Best Available Control Technology Determination Data Submitted to the California Air Pollution Control Officers Association BACT Clearinghouse, available at http://www.arb.ca.gov/bact/bact1to3.htm (Alta Dena Dairy) (Exhibit V [PDF 23]).

were consistently below 5 ppmvd at 3% O_2,[21] which corresponds to 0.0061 lb/MMBtu.[22] The District's BACT analysis should be revised to take into account the availability of LTO.

3. CO

With respect to CO emissions from boilers, Appendix D contains no top-down BACT analysis showing how the District concluded that an emissions limit of 50 ppmv CO at 3% O2 is BACT. (Application Review p. 38; *see* Appendix D, PDF 477-81). The Air District must revise the analysis to show how this standard was derived.

In addition, lower emission rates are technologically feasible. Oxidation catalysts are used on many combustion sources outside of the refining industry.[23] These catalysts can remove over 90% of the CO and VOCs and represent the top technology for CO and VOC control for refinery heaters and boilers. Assuming uncontrolled CO limits of 10 ppm for large heaters and 50 ppm for small heaters, BACT for CO should be no more than 1 ppmvd (15-minute average) for the large heaters and 5 ppmvd (3-hour average) for the small heaters.

4. Hydrogen Sulfide

Regarding the boilers' sulfur emissions, the District fails to impose any limits on hydrogen sulfide when such controls are feasible. The District's Application Review states that "[n]atural gas with a fuel sulfur content no greater than 5 grains total sulfur/100 scf" constitutes BACT, but makes no mention of a hydrogen sulfide limit. While Alon will meet the total sulfur requirement by firing the new boilers "on PUC regulated natural gas as supplied to them by the utility company," and such gas is limited to a hydrogen-sulfide content of 0.25 grain per 100 standard cubic feet,[24] or 80 ppmv hydrogen sulfide,[25] a lower limit is feasible. The BAAQMD BACT Guidelines have determined that "Natural Gas or Treated Refinery Gas Fuel w/ <.50

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[21] Ex. U.

[22] NOx emission rate (lb/MMBtu) = [[NOx concentration in exhaust gas (ppmvd) × 10E-6 × NOx molecular weight (lb/lb mole) x F factor in dscf/MMBtu]/[specific molar volume of exhaust gas at standard reference temperature (scf/lb mole)]] × [oxygen correction] = [[5 × 10E-6 × 46.01 x 8710] / 385.3][(20.9% / (20.9% - 3%)] = 0.0061 lb/MMBtu.

[23] BASF, Oxidation Catalysts for Power Generation, available at http://www.catalysts.basf.com/p02/USWeb-Internet/catalysts/en/content/microsites/catalysts/prods-inds/stationary-emissions/catco-pow-gen (Exhibit I).

[24] *See* General Order 58-A titled "Standards For Gas Service In The State of California," title 7(a), (b), available at: http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/54827.PDF (Exhibit W).

[25] *See* Santa Barbara County Air Pollution Control District, Frequently Asked Questions, available at: http://www.ourair.org/eng/tech/frequently-asked-questions/ (noting PUC's hydrogen sulfide limit for natural gas is equivalent to 80 ppmv hydrogen sulfide) (Exhibit X).

ppmv Hydrogen Sulfide" is "cost effective" and "technologically feasible." Ex. A. The Authority to Construct must be revised to consider this stricter hydrogen sulfide limit on the new boilers.

C. Stricter Fugitive Emissions Standards for Pumps and Compressors Are Feasible.

For fugitive emissions from pumps and compressors, the District's BACT analysis concludes that a "[l]eak defined as a reading of methane in excess of 500 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455" constitutes BACT. However, this standard does not specify how those emissions will be controlled to ensure leaks do not exceed this limit, and more stringent standards are feasible. Under the BAAQMD BACT Guidelines, a limit of "100 ppm expressed as methane measured using EPA Reference Method" is technologically feasible and cost effective for both compressors and pumps. Ex. A. The District's BACT analysis must be revised to consider this lower fugitive emission standard.

II. The Air District's Calculation of Baseline Emissions Violates District Rule 2201 and Does Not Represent Normal Source Operation

The Air District has chosen the calendar year 2008 as the baseline year for purposes of calculating the project's "increases in stationary source emissions" for emissions offset purposes. *See* Application Review, Appendix F, PDF 491 ("Baseline period taken to be calendar year 2008, in accordance with Rule 2201 section 3.9, as described in the ATC application."). Because this baseline violates District Rule 2201 and does not represent normal source operation, the Air District must revise the Authority to Construct's emissions calculations using a baseline of zero emissions.

In order to determine the refinery's baseline air emissions under the Air District's New and Modified Stationary Source Review Rule, Rule 2201, the Air District has two options applicable here.[26] It may choose either:

> 3.9.1 the two consecutive years of operation immediately prior to the submission date of the Complete Application; or
> 3.9.2 at least two consecutive years within the five years immediately prior to the submission date of the Complete Application if determined by the APCO as more representative of normal source operation. . . .

[26] The other two options under Rule 2201 for calculating the baseline emissions don't apply ("3.9.3 a shorter period of at least one year if the emissions unit has not been in operation for two years and this represents the full operational history of the emissions unit, including any replacement units; or 3.9.4 zero years if an emissions unit has been in operation for less than one year (only for use when calculating AER)."). The emissions units evaluated were either in place for more than one year or newly proposed.

The Authority to Construct application was submitted on October 25, 2013. Thus, under Rule 2201, the Air District could have chosen as the baseline years either (1) October 25, 2011-October 25, 2013; or (2) any two or more consecutive years between October 25, 2008 and October 25, 2013 if the Air District determined these years were more representative or normal source operation. Instead of complying with Rule 2201, however, the Air District erroneously chose the period from January 1, 2008 to December 31, 2008—outside of the timeframe allowed by the rule and shorter than the required period of two consecutive years.

Because no crude refining operations have occurred since December 2008, the Authority to Construct should be revised to reflect a baseline of zero emissions (years 2009-2010) as the most "representative of normal source operation." Conditions at the Refinery have changed dramatically since 2008. Although the plant was designed to refine crude oil, it went into bankruptcy on December 21, 2008 and stopped processing crude and other feedstock; it was still non-operational when purchased by Alon USA in 2010.[27] Following the change in ownership, the plant was refashioned to convert intermediate vacuum gas oil into finished products, rather than process crude oil.[28]

The Refinery only began operating again in this limited capacity in June 2011, after two-and-half years of being shut down.[29] No crude refining operations were resumed.[30] In 2012, gas oil processing operations were "intermittent," only occurring "from June to early November." DEIR, p. 3-19. The average throughput in 2011 and 2012 was only 10,915 and 4,751 bpd, or 15.5% and 6.8% of the Refinery's daily capacity of 70,000 bpd. *Ibid.* Operations were suspended entirely in December 2012.[31] Based on this record, 2008 calendar year operating conditions do not represent the current conditions at the Refinery, and the years the refinery was completely shut down are "more representative of normal source operation." Rule 2201 § 3.9.2.

The Air District has repeatedly recognized that the operation of the refinery more than six years ago is not a representative baseline. On October 14, 2013, the Air District submitted comments on the Notice of Preparation on the DEIR, criticizing Kern County's use of a 2007 baseline as "reflect[ing] the environmental setting in effect 6-7 years ago, which appears to be remote from the conditions in effect at the time the environmental analysis commenced." Ex. CC. Similarly, in response to Alon's request to use years 2007 and 2008 for the purposes of Rule 3170, Chay Thao of the Air District explained in a July 7, 2014 email that:

> [I]n the past, operation of the refinery by the previous owner (Big West) was considerably different than operations under Alon USA. In 2007, the facility was

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[27] *See* Alon USA, Annual Report (Form 10-K) (March 14, 2013), PDF 47 (Exhibit Y).

[28] *See* Alon USA, Quarterly Report (Form 10-Q) (Aug. 8, 2011), PDF 35 (Exhibit Z).

[29] *See* Alon USA, Quarterly Report (Form 10-Q) (May 9, 2012), PDF 33 (Exhibit AA).

[30] *Ibid.*; DEIR, p. 3-19.

[31] Ex. Y, PDF 103; Alon USA, Form 10-Q (May 5, 2014), PDF 11 (noting Alon's California refineries did not process "crude" in 2013 and first quarter of 2014) (Exhibit BB).

> owned by Big West and was processing heavy crude oil to produce gasoline and diesel. Operations were then suspended in 2008 after Big West's bankruptcy. Alon USA purchased the facility in 2010 and then applied for Authority to Construct (ATC) permits to modify the facility to process gas oil, instead of heavy crude oil. This application included modifications to the catalytic reformer #1, amine/fuel gas unit, hydrocracker, depentanizer, and unloading rack to accommodate processing of shipped in gas oil. Piping modifications and installation of two additional loading bays to the unloading rack were also authorized. Alon then commenced operation in 2011 to process gas oil. Since then the facility has only operated intermittently.
>
> Based on these changes, year 2007 and 2008 are not representative of normal source operation and therefore cannot be used for the Baseline Period[.]

See Ex. DD. As the Air District has repeatedly recognized, 2008 is an inappropriate year for baseline calculations as it does not represent normal operations. The Air District should accordingly revise the Authority to Construct to properly reflect that the refinery ceased operating during the baseline period.

III. The Assumptions Regarding the Project's Crude Slate Are Flawed.

The Application Review lists various assumptions used in its calculations of the Project's emissions, but these assumptions are not consistent with the Project's objective to import and process "cost-advantaged" light Bakken crude oil.[32] The District's analysis and the Authority to Construct must be revised to reflect the emissions that will result from the importation, storage, and processing of this crude oil.

The Application Review states that the "[c]rude oil density" of crude that will be unloaded with the new railcar unloading rack is "0.915 g/mL (per Applicant)," but this figure does not represent the worst case in terms of VOC emissions. Application Review at 19; *see also id.* ("All liquids transferred will be conservatively assumed to be light crude oil....").[33] This crude oil density is within the range of heavy crude oil, not light crude oil, which will most likely

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[32] Kern County Final EIR for the Alon Bakersfield Refinery Crude Flexibility Project, vol. 3, Attachment F, PDF 553, available at http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_FEIR_Ch7_RTC.pdf (Exhibit EE) ("The Bakken Region will be the most likely source for crude to be transported to the proposed crude oil rail terminal to be located at the Bakersfield Refinery."); see also id., Attachment E, PDF 489, 528 (discussing Refinery's shift to lighter Bakken crudes); *id.* PDF 519-20 (noting Bakken crude's lower cost making it more attractive to process).

[33] The Application Review fails to note the temperature at which this density occurs. Since density is a function of temperature, it is unclear as to what type of crude oil is actually assumed in the District's analysis.

be unloaded and processed at the Refinery. According to the Transportation Safety Board of Canada's study of crude oil samples taken from the oil train that derailed in Lac-Mégantic, Quebec, Bakken crude can have a density as low as .8165 g/mL.[34] The National Energy Board of Canada defines light crude oil as having a density equal to, or less than, 875.7 kg/m^3 (or .8757 g/mL) while heavy crude oil is defined as having a density greater than this threshold.[35]

In addition, while the Application Review notes that the Reid Vapor Pressure of the crude oil that will be stored in floating roof tanks is assumed to be 9 psia, this figure is not representative of the vapor pressure of Bakken crude oils, which is more volatile than other light crudes, as explained in the attached report by Dr. Phyllis Fox commenting on the final EIR for the Project. *See* Ex. GG at pp. 4-10 and accompanying references to the comment letter. As Dr. Fox explains, Bakken crude oils typically have a higher Reid vapor pressure than other light crude oils, including a Reid Vapor Pressure of up to 15.5 psia, which results in significantly higher emissions of VOCs and toxic air contaminants ("TAC"). The District's emissions analysis must therefore be revised to reflect the higher vapor pressure and VOC and TAC emissions of Bakken crude oil. Moreover, tank inspection and monitoring requirements are too weak to ensure that fugitive emissions from the tanks are adequately controlled. District Rule 4623, section 6.1 only provides for tank inspections "on an annual basis" by the District. There are no other monitoring measures to ensure that the Project's tanks do not exceed the Reid Vapor Pressure assumed in the Air District's analysis and that fugitive emissions will not exceed the limits set forth in the Authority to Construct.

IV. The Retrofit of Existing Heaters Are Not Exempt from Emissions Offsets

The Application Review notes that because three existing heaters are being retrofitted solely to comply with District rules, the heaters are exempt from emissions offset requirements. However, all of the conditions for this exemption are not met in this case. *See* Section 4.6.8 ("For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met…") This includes condition 4.6.8.1, which requires that "[t]here shall be no increase in the physical or operational design of the *existing facility*, except for those changes to the design needed for the installation or modification of the emission control technique itself." (emphasis added). Here, the existing facility will undergo significant changes in its physical and operational design, including an increase in the Refinery's capacity to unload crude at the rail terminal and an increase in its capacity to refine both heavier and lighter crudes.

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[34] Transportation Safety Board of Canada, TSB Laboratory Report LP148/2013, section 2.4, available at http://www.tsb.gc.ca/eng/enquetes-investigations/rail/2013/R13D0054/lab/20140306/LP1482013.asp (Exhibit FF).

[35] *See id.*, section 3.2.5 & notes 42-43 therein.

These changes will result in increased emissions from the existing heaters that are being retrofitted, which must be offset. According to the applicant, at least two of these heaters have been dormant for some time, and under the project, they will be reactivated. *See* Ex. HH (Kern County Environmental Impact Report Appendices noting post-project emissions of 19.44, 9.72, and 22.69 tons per year of CO from existing heaters compared to 0 tons per year under 2007 baseline conditions, and of 3.83, 2.40, and 4.47 tons per year of NOx compared to 0.30 tons per year under baseline conditions)[36]; Ex. II at 19 (Project Application noting heaters 21-H21 and 27-H2 were dormant during baseline period).[37]

V. All of the Emission Reduction Credits Proposed Are Invalid

The Air District has proposed to use emission reduction credit (ERC) certificate numbers S-4334-2, S-3465-5, S-3462-4, S-3458-3, and S-3663-1. Application Review at 46. These emission reductions credits come from three separate shutdowns or curtailments at the facility, all of which occurred decades ago: (1) the 1977 incineration of coker exhaust in the CO boiler—almost four decades ago (ERC S-3458-3, and S-3663-1); (2) the 1983 shutdown of the catalytic cracker, fluid coker, and CO boiler—more than three decades ago (ERC S-4334-2 & S-3465-5); and (3) the shutdown of the tailgas incinerator in 1992—more than two decades ago (ERC S-3462-4). *See* Ex. JJ.

Under District Rule 2201 and 2301, emission reductions used as ERCs must be "real, enforceable, quantifiable, surplus, and permanent." Rule 2201 § 3.2.1; Rule 2301 § 4.1. Given the many changes that have occurred at the refinery since 1977, including the recent shutdown and previous reconfigurations of the refinery, these decades-old reductions are no longer "real" and will not actually offset the refinery's significant projected air emissions. The notion that these shutdown units could still be operational today and "offset" the existing refinery's emissions, after the many reconfigurations and shutdowns that the refinery has undergone, is purely fictional.

Moreover, as explained below, all of the ERC credits are either invalid or may not be employed here. The Air District may not approve the Authority to Construct until valid ERCs are included.

A. The Air District May Not Employ Banked Offsets for NOx and VOC Emissions

The Air District proposes to offset the project's NOx and VOC emissions with ERC S-4334-2, for the 1983 "shutdown of catalytic cracker, fluid coker, & CO boiler," and with ERC S-

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[36] *See* DEIR volume 2, Appendix B, available at http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_DEIR_Vol2%20Cultural%20Redactions.pdf (Exhibit HH).

[37] For the same reasons, this modification is neither exempt from BACT. *See* Rule 2201, section 4.2.3 (requiring same conditions for BACT exemption).

3663-1, for the 1977 "incineration of coker exhaust in CO boiler." Ex. JJ. Because the District may not approve the use of offsets for NOx and VOC emissions until the 1-hour ozone plan is approved by EPA, the Air District may not issue the Authority to Construct in reliance on these offsets.

Air District Rule 2201 § 4.13.1 requires that "Major Source shutdowns or permanent curtailments in production or operating hours of a Major Source may not be used as offsets for emissions from . . . a Federal Major Modification . . . unless the ERC, or the emissions from which the ERC are derived, has been included in an EPA-approved attainment plan."

The San Joaquin Valley air basin is currently designated as in extreme nonattainment with the 1-hour standard for ozone, for which NOx and VOC emissions are precursors. The District does not yet have an approved attainment plan for the 1-hour ozone standard. Thus, the Air District may not use these banked emission reduction credits to offset the NOx and VOC emissions of this project.

B. Emission Reduction Credit Certificates S-3458-3 and S-3663-1 Are Invalid

ERC S-3458-3, for CO reduction, and S-3663-1, for VOC reduction, state that they were issued for "incineration of coker exhaust in CO boiler." Ex. JJ. The authority to construct for the CO boiler was issued on January 12, 1976, and operations began in May of 1977.[38] Because these reductions occurred prior to August 7, 1977, the credit given for these reductions is invalid, and may not be used here to offset project emissions. *See* 40 C.F.R. § 51.165(a)(2)(ii)(C)(1)(ii) ("in no event may credit be given for shutdowns that occurred before August 7, 1977.").

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) submitted comments on the proposed emission reduction credits, explaining the many reasons why the credits are invalid.[39] Both EPA and CARB pointed out that credits were invalid because the application for banking credit was submitted beyond the required time limits; a completed application was not submitted until October 1985, almost ten years after the reduction occurred. EPA also explained that

> The reductions from the installation of the CO boiler are quite old. The burden is on the District to verify in its analysis that these reductions have not been assumed elsewhere (in the emissions inventory, the latest [air quality management plan], the attainment demonstration) and therefore are indeed surplus. In all likelihood, these reductions are not surplus since they occurred so long ago and

[38] *See* Letter, Raymond E. Menebroker, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987) (Exhibit LL).

[39] *See* Letter, Raymond E. Menebroker, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987) (Exhibit LL); Letter, David Howecamp, EPA, to Leon Hebertson, KCAPCD, (July 17, 1987) (Exhibit MM).

> probably are already reflected in the District's records and plans. The District must verify that these reductions are not credited elsewhere.

Ex. LL. The District did not provide EPA with verification that these reductions were not credited elsewhere. EPA further explained that:

> The reductions occurred prior to August 7, 1977 and are therefore too old to be granted credit. EPA has previously advised the District that banking credit may not be awarded for any reductions which occurred prior to the Clean Air Act Amendments of August 7, 1977. . . EPA will not recognize these reductions as valid offsets for any source wishing to purchase these ERCs for offsetting purpose.

Ibid. EPA warned that "any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action." *Ibid.*

Because ERCs S-3458-3 and S-3663-1 are invalid and "subject to federal enforcement action" if used, the Air District may not employ them here to offset the project's CO and VOC emissions.

C. Emission Reduction Credit Certificate S-3462-4 Is Invalid

ERC S-3462-4, for PM10 reductions from the March 1992 shutdown of the tailgas incinerator, does not represent the bankable emission reduction from this shutdown, and is therefore invalid.

In the application review for ERC S-3462-4, the Air District explained that the emission reductions eligible for an emission reduction credit certificate include the baseline emissions of the tailgas incinerator reduced by a 10% deposit into the "Community Bank". *See* Application review at 5 ("10% of AER shall be deposited to the Community Bank; remaining AER qualifies for the ERC Certificate.") (Exhibit NN). With this reduction, the Air District stated that the Bankable Emission Reductions, available for an ERC Certificate, were:

Quarter 1 Jan-Mar	Quarter 2 Apr-Jun	Quarter 3 Jul-Sep	Quarter 4 Oct-Dec.
1,425.41 lbs	1,689.42 lbs	1611.54 lbs	1,776.42 lbs

Id. at 6. However, the Emission Reduction Certificate issued did not take the 10% reduction into account, and erroneously issued credits as:

Quarter 1 Jan-Mar	Quarter 2 Apr-Jun	Quarter 3 Jul-Sep	Quarter 4 Oct-Dec.
1,584 lbs	1,877 lbs	1,791 lbs	1,974 lbs

See Ex. JJ, ERC S-3462-4. Because this Certificate fails to comply with Air District Rule 2201 § 4.12.1 and 2301 § 4.2.2, it is invalid and may not be used to offset the project's PM10 emissions.

D. Emission Reduction Credit Certificate S-4334-2 and S-3465-5 Are Invalid

ERCs S-4334-2 and S-3465 state that they were issued for the "shutdown of catalytic cracker, fluid coker, & CO boiler." Ex. JJ. Because these certificates were originally applied for in 1987, more than 90 days after the 1983 shutdown occurred, the application was not timely filed and the certificates are invalid. *See* Letter from Leon Hebertson to L.E. Perrier (Aug. 27, 1987) (Exhibit OO).

The Air District acknowledged as much. In a letter on August 27, 1987 to Texaco Refining (the predecessor to the Alon Bakersfield Refinery), the Air District denied Texaco's original emission reduction credit application as untimely, explaining that:

> On July 31, 1987 we received your applications for Emission Reduction Credit Banking Certificates resulting from the November, 1985 [sic] shutdown of the Tosco T.C.C. Unit, Fluid Coker, and CO Boiler. Review of these applications reveals that this request is not timely. Rule 210.3, section C.4.(b) requires applications for banking of emissions reductions to be submitted within 90 days after such reduction occurs. Because your proposal does not comply with this requirement, your applications for Emission Reduction Credits Banking Certificates must be denied within 30 days.

Ex. OO. After Texaco objected to the Air District's denial, the Air District reversed course and granted the requested emission reduction credits on April 14, 1988. In explaining the change, the Air District capitulated to Texaco's erroneous interpretation that because Texaco had maintained its operating permit, it had not actually "shutdown," even though the equipment had last been operated in 1983. Application Review for Application #s 2007130/101, '130/201, '130/401, '130/501, and '130/601 (Jan. 14 1988) (Exhibit PP) at 2. This interpretation, however, conflicts with Rule 2301 § 3.14, which defines "shutdown" for the purposes of awarding emission reduction credits as "either the *earlier* of the permanent cessation of emissions from an emitting unit or the surrender of that unit's operating permit." (emphasis added).

The Air District had it right the first time: the application was untimely because it was received more than 90 days after the shutdown occurred. ERC certificates S-4334-2 and S-3465 are therefore invalid and may not be used to offset this project's NOx and SOx emissions.

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For the foregoing reasons, we respectfully request the Air District to revise the BACT and emissions offsets analysis for the proposed Authority to Construct and to require the proper pollution controls and emissions offsets, in compliance with Rule 2201.

Sincerely,

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BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the matter of:

Alon USA – Bakersfield Refinery Crude Oil Flexibility Project
Project # S-1134224 & S-1134223
Proposed Authority to Construct / Certificate of Conformity

Issued by the San Joaquin Valley Air Pollution Control District

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PETITION TO OBJECT TO ISSUANCE OF AUTHORITY TO CONSTRUCT / CERTIFICATE OF CONFORMITY FOR THE ALON BAKERSFIELD CRUDE OIL FLEXIBLITY PROJECT

Pursuant to section 505 of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), 40 C.F.R. §§ 70.7 and 70.8(d), and San Joaquin Valley Air Pollution Control District ("Air District") Rule 2201, Association of Irritated Residents, Center for Biological Diversity, and the Sierra Club hereby petition the Administrator of the U.S. Environmental Protection Agency ("Administrator" or EPA) to object to the San Joaquin Valley Air Pollution Control District's proposed issuance of an Authority to Construct / Certificate of Conformity (the "Permit") for the Alon USA – Bakersfield Refinery Crude Oil Flexibility Project, Facility # S-33 & S-3303, Project # S-1134224 & S-1134223.

The Administrator must object to the Permit because it (1) fails to consider and apply Best Available Control Technology; (2) fails to properly calculate the emissions increase that must be offset because it relies on an improper emissions baseline; (3) severely underestimates the Project's emissions of volatile organic compounds by relying on flawed assumptions about the crude oils that will be stored and processed at the Refinery; (4) improperly exempts from emissions offset requirements existing heaters that will be retrofitted; and (5) relies on invalid emissions reduction credits for all other emissions increases.

INTRODUCTION

The Alon Bakersfield Crude Oil Flexibility Project (the "Project") entails a five-fold increase in the Alon Bakersfield Refinery's ("Refinery") capacity to import crude oil from 40 tank cars per day to 208 tank cars per day, or up to 63.1 million barrels of crude per year (over 173,000 barrels per day). As a result of this Project, millions of barrels of volatile Bakken crude oils will be hauled through California's most sensitive areas and treacherous passages, ultimately ending up in our most pollution-burdened communities for intensive refining. This influx of cheap, mid-continent crudes, including Bakken crude from North Dakota and Canadian tar sands, will allow the shuttered Refinery to reopen and run at full capacity, processing 70,000

barrels of crude oil per day. Restarting the Refinery—which has been mostly idle since 2008—will significantly increase harmful air pollution that will only exacerbate the poor air quality and respiratory illnesses that plague San Joaquin Valley communities already unfairly burdened with industrial pollution. Further, the massive ramp-up in crude imports will significantly increase greenhouse gas emissions and the risk of catastrophic accidents and oil spills along the rail transport route.

Unfortunately, the Air District's preliminary decision on the Authority to Construct does not meet New Source Review requirements under District Rule 2201. It fails to consider and apply Best Available Control Technology ("BACT") to the Project's new emissions units or those units undergoing major modifications, including new and modified floating roof tanks, new boilers, and new pumps and compressors. These units are expected to emit significant levels of oxides of nitrogen ("NOx") and volatile organic compounds ("VOC"), which result in the formation of ozone, for which the Valley is already in "extreme" nonattainment. Given existing unhealthy air quality that already exacts an enormous toll on Valley residents in the form of chronic respiratory illnesses, emergency room visits, premature death, missed school days, medical bills, lost wages, and reduced worker productivity, the application of BACT to these new and modified units is imperative.

The emissions offsets analysis for the proposed Authority to Construct is also improper. The analysis fails to properly calculate the emissions increase that must be offset because it erroneously relies on a 2008 baseline that does not represent normal non-operational conditions at the Refinery. In addition, it severely underestimates the Project's VOC emissions by relying on flawed assumptions about the crude oils that will be stored and processed at the Refinery. The analysis also improperly exempts from emissions offset requirements existing heaters that will be retrofitted and relies on invalid emissions reduction credits ("ERCs") for all other emissions increases. The failure to properly offset the Project's emissions increases will only result in further deterioration of the Valley's air and put attainment of air quality standards further out of reach.

PETITIONERS

Petitioner Association of Irritated Residents ("AIR") is a California non-profit corporation based in Kern County. AIR formed in 2001 to advocate for clean air and environmental justice in San Joaquin Valley communities. AIR has several dozen members who reside in Kern, Tulare, Kings, Fresno, and Stanislaus Counties. AIR members through themselves, their families, and friends, have direct experience with the many health impacts that arise from the type of pollution emissions associated with this Project.

Petitioner Center for Biological Diversity (the "Center") is a non-profit corporation with offices in San Francisco, Los Angeles, and elsewhere throughout California and the United States. The Center is actively involved in environmental protection issues throughout California and North America and has over 50,000 members, including many throughout California and in Kern County. The Center's mission includes protecting and restoring habitat and populations of imperiled species, reducing greenhouse gas pollution to preserve a safe climate, and protecting air quality, water quality, and public health. The Center's members and staff include individuals

who regularly use and intend to continue to use the areas in Kern County and elsewhere affected by the Project's refinery operations and rail transportation activities, including members who are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the Project.

Sierra Club is a national nonprofit organization of approximately 600,000 members. Sierra Club is dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and encouraging humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. Sierra Club's particular interest in this case and the issues which the case concerns stem from Sierra Club's interests in reducing reliance on fossil fuels and protecting the health of vulnerable communities. Sierra Club has approximately 600 members in Kern County and many more along the crude-by-rail transport route for this Project. These members live, work, and recreate in counties that are affected by the proposed crude-by-rail and Refinery operations.

PROCEDURAL BACKGROUND

On October 25, 2013, Alon USA Energy Inc. ("Alon") applied to the Air District for an Authority to Construct permit and Certificate of Conformity to modify its Bakersfield refinery and expand the refinery's crude rail terminal. The Air District published notice of its preliminary decision on the project on October 14, 2014, triggering a 30-day comment period on the preliminary decision. Public comments were due on November 19, 2014. *See* Authority to Construct Application Review, PDF 1 (Exhibit 1). The Air District e-mailed the preliminary decision to EPA on October 14, 2014, triggering a 45-day review period by EPA, ending on November 28, 2014. *See* Authority to Construct Application Review, PDF 1 (Exhibit 1). EPA did not object to the issuance of the Permit or otherwise submit comments.

This petition is timely because it is filed within sixty days of the expiration of EPA's 45-day review period, as required by section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2) and Air District Rule 2201 § 5.9.1.7. The Administrator must grant or deny this petition within sixty days after it is filed. *See id.* In compliance with section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), and Air District Rule 2201 §5.9.1.7, this petition is based on objections that were raised during the public comment period. Petitioners' comment letter is attached as Exhibit 2.

GROUNDS FOR OBJECTIONS

Petitioners request that the Administrator object to the Permit because it does not comply with 40 C.F.R. Part 70 and Air District Rule 2201. In particular, it (1) fails to consider and apply BACT to the Project's new emissions units or those units undergoing major modifications, including new and modified floating roof tanks, new boilers, and new pumps and compressors; (2) fails to properly calculate the emissions increase that must be offset because it erroneously relies on a 2008 baseline that does not represent normal non-operational conditions at the Refinery; (3) severely underestimates the Project's VOC emissions, by relying on flawed assumptions about the crude oils that will be stored and processed at the Refinery; (4) improperly

exempts from emissions offset requirements existing heaters that will be retrofitted; and (5) relies on invalid emissions reduction credits for all other emissions increases.

I. The Authority to Construct Fails to Apply BACT.

The proposed Permit fails to apply BACT to new floating roof tanks, boilers, and compressors and pumps, despite the District's determination that BACT is triggered for each of these units. BACT is "the most stringent emission limitation or control technique of the following": "[a]chieved in practice for such category and class of source;" "[c]ontained in any State Implementation Plan approved by the Environmental Protection Agency for such category and class of source"; "[c]ontained in an applicable federal New Source Performance Standard"; or "[a]ny other emission limitation or control technique, including process and equipment changes of basic or control equipment, found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source." Rule 2201 § 3.10. Generally, BACT is required for new or modified emissions units that result in emissions exceeding certain thresholds. *See generally* Rule 2201 § 4.0. Because the Permit fails to apply BACT, the Administrator must object to the Permit.

A. Stricter Volatile Organic Compound Control Systems and Geodesic Domes Must Be Applied to the Floating Roof Tanks.

The Authority to Construct does not apply BACT on floating roof tanks that store volatile substances, such as Bakken crude. The new tanks' VOC emissions will be subject to "95% control of VOC emissions, through use of primary metal shoe seal with secondary wiper, or equivalent." Authority to Construct Application Review, Crude Oil Flexibility Project ("Application Review"), PDF 38 (Exhibit 1). The Bay Area Air Quality Management District ("BAAQMD"), however, has determined that a "[v]apor recovery system w/ an overall system efficiency > ***98%***" is "technologically feasible" and "cost effective."[1] (emphasis added).

The Authority to Construct also fails to require geodesic domes to reduce VOC emissions from floating roof tanks. These domes on floating roof tanks are feasible, satisfy best available control technology, and are widely used. The BAAQMD BACT Guidelines specify that "a dome is required for tanks that meet all of the following: 1) capacity greater than or equal to 19,815 gallons [approximately 629 barrels] 2) located at a facility with greater than 20 tpy VOC emissions since the year 2000 and 3) storing a material with a vapor pressure equal to or greater than 3 psia (except for crude oil tanks that are permitted to contain more than 97% by volume crude oil)." Ex. A. The 250,000-barrel external floating roof tanks are 397 times the volume of the BAAQMD threshold and will certainly exceed a vapor pressure of 3psia when storing light crude oils, such as Bakken, Eagle Ford, and Permian Basin crude oils.

[1] The BAAQMD BACT Guidelines are available at http://hank.baaqmd.gov/pmt/bactworkbook/. Relevant portions are attached as Exhibit A.

Over 10,000 aluminum domes have been installed on petrochemical storage tanks in the United States.[2] For example, at the ExxonMobil Torrance Refinery, the refinery

> completed the process of covering all floating roof tanks with geodesic domes to reduce volatile organic compound (VOCs) emissions from facility storage tanks in 2008. By installing domes on our storage tanks, we've reduced our VOC emissions from these tanks by 80 percent. These domes, installed on tanks that are used to store gasoline and other similar petroleum-derived materials, help reduce VOC emissions by blocking much of the wind that constantly flows across the tank roofs, thus decreasing evaporation from these tanks.[3]

A similar project to increase crude storage capacity, recently proposed at the Phillips 66 Los Angeles Carson Refinery, required external floating roof tanks with geodesic domes to store crude oil with an RVP of 11.[4] The Negative Declaration for this project assumed these tanks would store crude oil with a TVP <11 psi.[5] The RVP would be even higher. The ConocoPhillips Wilmington Refinery added a geodesic dome to an existing oil storage tank to satisfy BACT.[6] Similarly, Chevron proposed[7] to use domes on several existing tanks to mitigate VOC emission increases at its Richmond Refinery.[8] The U.S. Department of Justice CITGO Consent Decree

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[2] M. Doxey and M. Trinidad, Aluminum Geodesic Dome Roof for Both New and Tank Retrofit Projects, Materials Forum, v. 30, 2006, available at: http://www.materialsaustralia.com.au/lib/pdf/Mats.%20Forum%20page%20164_169.pdf (Exhibit B).

[3] Torrance Refinery: An Overview of our Environmental and Social Programs, 2010, available at: http://www.exxonmobil.com/NA-English/Files/About_Where_Ref_TorranceReport.pdf (Exhibit C).

[4] See, e.g., Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project, September 6, 2013, Table 1-1, Draft Negative Declaration, available at http://www.aqmd.gov/docs/default-source/ceqa/documents/permit-projects/2014/draftnd-p66storage.pdf (Exhibit D).

[5] *Ibid.*

[6] SCAQMD Letter to G. Rios, December 4, 2009, available at: http://yosemite.epa.gov/r9/air/epss.nsf/e0c49a10c792e06f8825657e007654a3/e97e6a905737c9bd882576cd0064b56a/$FILE/ATTTOA6X.pdf/ID%20800363%20ConocoPhillips%20Wilmington%20-%20EPA%20Cover%20Letter%20%20-AN%20501727%20501735%20457557.pdf (Exhibit E).

[7] City of Richmond, Chevron Refinery Modernization Project, Environmental Impact Report, Volume 1: Draft EIR, March 2014 (Chevron DEIR), available at: http://chevronmodernization.com/project-documents/.

[8] Chevron DEIR, Chapter 4.3, available at: http://chevronmodernization.com/wp-content/uploads/2014/03/4.3_Air-Quality.pdf (Exhibit F).

required a geodesic dome on a gasoline storage tank at the Lamont, Texas refinery.[9] Further, numerous vendors have provided geodesic domes for refinery tanks.[10]

These numerous applications of geodesic domes to control VOC emissions from refinery storage tanks satisfy the "achieved in practice" test for BACT. Thus, geodesic domes must be required to satisfy BACT for the new and modified storage tanks under SJVAPCD Rule 2201.

Finally, because VOC emissions have been severely underestimated, *see* section III below, the potential amount of emissions to be reduced by the above VOC-controls is much greater than what the District's initial emissions estimates might indicate, and must be included when determining BACT. Because the Permit fails to comply with BACT requirements for the storage tanks, the Administrator must object to the Permit.

B. The BACT Analysis for the New Boilers Is Incomplete.

The BACT analysis for the three new boilers is flawed, failing to demonstrate that NOx, carbon monoxide ("CO"), and hydrogen sulfide emissions will be reduced to the extent feasible.

1. *NOx Selective Catalytic Reduction*

With respect to the boilers' NOx emissions, the District's Application Review concludes that 6 ppmv at 3% O2 using low-NOx burners is BACT. The top-down BACT analysis, however, rules out the application of selective catalytic reduction ("SCR") (which would achieve 5 ppmv NOx at 3% O2), because the cost of reducing emissions using this technology does not meet the District's cost-effectiveness threshold of $24,500 per ton. Application Review, PDF 478-79. The District's calculations show that the cost-effectiveness is only $58,198 per ton. *Ibid.* These calculations, however, do not explain or justify the underlying assumptions, precluding a meaningful assessment of the cost-effectiveness analysis. For example, the calculations state that an equipment life of 10 years is assumed. But in Alon's original application and BACT analysis for the project, Alon assumed a 20-year equipment life. *See* Ex. J. Indeed, the "capital recovery factor"$(i[1+i]^n/[1+i]^n-1)$ used in Alon's analysis is much lower (0.0944) than the one used by the District (0.1627). EPA's Air Pollution Control Cost Manual also provides an example calculation of SCR cost-effectiveness using a 20-year equipment life and 7% interest rate,

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[9] CITGO Petroleum Corp. Clean Air Act Settlement, available at: http://www2.epa.gov/enforcement/citgo-petroleum-corporation-clean-air-act-settlement (Exhibit G).

[10] See, e.g., Aluminum Geodesic Dome, available at: http://tankaluminumcover.com/Aluminum-Geodesic-Dome; Larco Storage Tank Equipments, available at: http://www.larco.fr/aluminum_domes.html; Vacono Dome, available at: http://www.easyfairs.com/uploads/tx_ef/VACONODOME_2014.pdf; Peksay Ltd., available at: http://www.peksay.info/oil_terminals/geodesic_domes.htm; United Industries Group, Inc., available at: http://www.thomasnet.com/productsearch/item/10039789-13068-1008-1008/united-industries-group-inc/geodesic-aluminum-dome-roofs/ (Exhibit H).

resulting in a cost recovery factor of 0.0944.[11] Using this lower capital recovery factor in the District's calculations results in a much more cost-effective emissions reduction of $33,757.44 per ton. However, as explained further below, the 7% interest rate is outdated and a 20-year lifetime is not realistic.

In a March 2014 presentation by the South Coast Air Quality Management District ("SCAQMD") concerning the cost-effectiveness of SCR for refineries, the SCAQMD's analysis (using the same levelized cash flow method used by the District) assumed a 4% interest rate and 25-year life of the equipment.[12] These assumptions are more realistic than Alon's or the District's. Alon's financial reports indicate that it is capable of securing capital at an interest rate lower than 4%.[13] And as explained by refinery expert Dr. Phyllis Fox in comments on a cost-effectiveness analysis of SCR in a similar context, "[f]or these types of analyses, the Office of Management and Budget ("OMB") directs that a real interest rate be used [i.e., adjusted to remove the effects of inflation and to reflect the real costs of funds to the borrower]. When the [EPA] Cost Control Manual was developed, the real interest rate was 7%. However, the latest real interest rate for cost-effectiveness analyses published by OMB is 1.9% for a 30-year period."[14] Thus, even a 4% interest rate is highly conservative.

With respect to the equipment lifetime, ample evidence indicates that SCR typically has a lifetime of 30 years or more. A study of the economic risks from SCR operation at the Detroit Edison Monroe power plant, for example, used 30 years as the anticipated lifetime.[15] Further, in

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[11] EPA Pollution Control Cost Manual, Sixth Edition (January 2002), available at http://www.epa.gov/ttncatc1/dir1/c_allchs.pdf (Exhibit K).

[12] *See* NOx RECLAIM Working Group Meeting, March 18, 2014, p. 13, available at http://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/regxx/reclaimwgm031814.pdf?sfvrsn=2 (Exhibit L).

[13] *See* Alon U.S.A. Energy, Inc., Form 10-K for Fiscal Year 2013, March 2014, PDF 79, 92 available at http://www.sec.gov/Archives/edgar/data/1325955/000132595514000013/alj-20131231x10k.htm (Exhibit M); Alon U.S.A. Energy, Inc., Form 10-Q, 9/30/2014, available at http://quote.morningstar.com/stock-filing/Quarterly-Report/2014/9/30/t.aspx?t=XNYS:ALJ&ft=10-Q&d=acdd8e2f9a21686b6e4d53b46613845b, p. 10 (noting interest rate swap agreements resulting in average fixed interest rate of 0.25% in 2014; 0.60% in 2015; 1.47% in 2016; 2.35% in 2017; 3.09% in 2018 and 3.28% thereafter); *id.*, p. 16 (noting recent loan agreement at annual rate of LIBOR plus 3.75% margin) (Exhibit N [PDF 18, 30]).

[14] Fox, Phyllis, Report on Hydrogen Cyanide Emissions From Fluid Catalytic Cracking Units (October 28, 2014), pp. 23-24 (Exhibit O), citing OMB Circular No. A-94, Appendix C, Revised February 7, 2014, available at: http://www.whitehouse.gov/sites/default/files/omb/memoranda/2014/m-14-05.pdf (Exhibit P). Dr. Fox's resume is attached as Exhibit Q.

[15] S.D. Unwin and others, Selective Catalytic Reduction (SCR) System Design and Operations: Quantitative Risk Analysis of Options, Presented at CCPS 17th Annual International Conference: Risk, Reliability, and Security, p. 3, available at: http://www.unwin-co.com/files%5CSCR-Risk-Paper,CCPS-RRS2002.pdf (Exhibit R).

EPA's response to comments on the approval of a final rule determining that SCR was the "best available retrofit technology" and "most cost-effective" technology for the San Juan Generating Station, a coal-fired power plant in New Mexico, EPA justified a 30-year lifetime of the SCR assumed in its cost-effective analysis:

> The lifetime of an SCR, which is a metal frame packed with catalyst modules, is equal to the lifetime of the boiler, which might easily be over 60 years. *The lifetime of a retrofit SCR is generally set equal to the remaining useful life of the facility.* The record is silent on the remaining useful life of the [San Jaun Generating Station] units. Further, USGS studies of the coal reserves upon which the [San Juan Generating Station] relies indicate that the local coal supply is adequate to support a remaining useful life of 30 years. Many utilities routinely specify 30+ year lifetimes in requests for proposal and to evaluate proposals. In fact, an analysis prepared by [Black & Veatch] for another facility assumed a 40 year SCR lifetime. And finally, Sargent & Lundy assumed a design life of 30 years for the nearby Navajo Generating Station which burns a similar coal. We conclude there is nothing in the record to support a 20 year lifetime for the SCR and believe a 30 year lifetime is justified.[16]

Here, the expected life of the project is 30 years.[17] It is therefore reasonable to assume that the remaining useful life of the facility and of the SCR equipment is at least 30 years.[18]

Using the more realistic assumptions of a 30-year equipment life and a 1.9% real interest rate results in a capital recovery ratio of 0.044 and a cost-effectiveness of $15,748.11 per ton, which meets the District's cost-effectiveness threshold. Even the more conservative assumptions of a 4% interest rate and 25-year lifetime results in a capital recovery ratio of 0.064 and a cost-effectiveness of $22,890.68 per ton, which also meets the District's cost-effectiveness threshold. In light of the above evidence showing that the District improperly calculated the cost-effectiveness of SCR, the Administrator must object to the Permit.

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[16] "Approval and Promulgation of Implementation Plans; New Mexico; Federal Implementation Plan for Interstate Transport of Pollution Affecting Visibility and Best Available Retrofit Technology Determination; Final Rule," 76 Fed. Reg. 52388, 52402 (Aug. 22, 2011), available at http://www.gpo.gov/fdsys/pkg/FR-2011-08-22/pdf/2011-20682.pdf (Exhibit S).

[17] Kern County Draft Environmental Impact Report, Alon Bakersfield Refinery Crude Flexibility Project ("DEIR") (May 2014), pp. 4.5-14, 4.5-15, 4.6-59, available at http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_DEIR_Vol1.pdf (Exhibit T).

[18] *See also* Ex. O, pp. 22-23 (Fox report noting SCR is typically designed for a lifetime of 30 years and citing papers indicating SCRs that have been operational since as early as 1986); Selective Catalytic Reduction of NOx From Fluid Catalytic Cracking Case Study: BP Whiting Refinery (April 2002), available at http://www.cormetech.com/brochures/env-03-128%20-%20kunz%200%20Whiting%20Refinery%20FCC.pdf (Exhibit KK [PDF 6, 15, 19]) (indicating SCRs operational since as early as 1986).

2. *Low Temperature Oxidation*

Low temperature oxidation ("LTO") has achieved emissions controls comparable to that of SCR, but the District's analysis did not consider this technology in its BACT analysis. For example, a 16.4-MMBtu/hr Cleaver Brooks CB700 fire-tube boiler was permitted in February 1992 at 40 ppm NOx at 3% O_2. The boiler was subsequently equipped with LTO in October 1996 as a demonstration project. "The LTO system utilizes ozone to oxidize and control various pollutants, including NOx. The LTO system process includes (1) the recovery of waste heat from the flue gas, (2) the oxidation of NOx and CO, (3) the absorption of higher nitrogen and sulfur oxides formed in a scrubber solution, and (4) removal of ozone slip."[19]

Source tests demonstrated that LTO achieved a NOx limit of 5 ppm at 3% O_2.[20] The SCAQMD's Mobile Source Test Vehicle (MSTV 1) was used to collect and continuously analyze flue gases at the exhaust stack of the LTO system. NOx and CO concentrations were recorded every minute. The analysis of these data shows that NOx concentrations were consistently below 5 ppmvd at 3% O_2,[21] which corresponds to 0.0061 lb/MMBtu.[22] The Administrator must object to the Permit because the District's BACT analysis does not take into account the availability of LTO.

3. *CO*

With respect to CO emissions from boilers, Appendix D of the Air District's Authority to Construct Application Review contains no top-down BACT analysis showing how the District concluded that an emissions limit of 50 ppmv CO at 3% O2 is BACT. Application Review PDF 38 (Exhibit 1); *see* Appendix D to Application Review, PDF 477-81.

In addition, lower emission rates are technologically feasible. Oxidation catalysts are used on many combustion sources outside of the refining industry.[23] These catalysts can remove over 90% of the CO and VOCs and represent the top technology for CO and VOC control for

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[19] South Coast Air Quality Management District, LAER/BACT Determination for Application No. 343185, available at http://www.aqmd.gov/docs/default-source/bact/laer-bact-determinations/other-technologies/laer-bact-determination-259724.pdf?sfvrsn=2 (Exhibit U).

[20] *See* Best Available Control Technology Determination Data Submitted to the California Air Pollution Control Officers Association BACT Clearinghouse, available at http://www.arb.ca.gov/bact/bact1to3.htm (Alta Dena Dairy) (Exhibit V [PDF 23]).

[21] Ex. U.

[22] NOx emission rate (lb/MMBtu) = [[NOx concentration in exhaust gas (ppmvd) × 10E-6 × NOx molecular weight (lb/lb mole) x F factor in dscf/MMBtu]/[specific molar volume of exhaust gas at standard reference temperature (scf/lb mole)]] × [oxygen correction] = [[5 × 10E-6 × 46.01 x 8710] / 385.3][(20.9% / (20.9% - 3%)] = 0.0061 lb/MMBtu.

[23] BASF, Oxidation Catalysts for Power Generation, available at http://www.catalysts.basf.com/p02/USWeb-Internet/catalysts/en/content/microsites/catalysts/prods-inds/stationary-emissions/catco-pow-gen (Exhibit I).

refinery heaters and boilers. Assuming uncontrolled CO limits of 10 ppm for large heaters and 50 ppm for small heaters, BACT for CO should be no more than 1 ppmvd (15-minute average) for the large heaters and 5 ppmvd (3-hour average) for the small heaters. Because the Air District has not properly shown the CO limits for the boilers is BACT, the Administrator must object to the Permit.

4. Hydrogen Sulfide

Regarding the boilers' sulfur emissions, the District fails to impose any limits on hydrogen sulfide when such controls are feasible. The District's Application Review states that "[n]atural gas with a fuel sulfur content no greater than 5 grains total sulfur/100 scf" constitutes BACT, but makes no mention of a hydrogen sulfide limit. While Alon will meet the total sulfur requirement by firing the new boilers "on PUC regulated natural gas as supplied to them by the utility company," and such gas is limited to a hydrogen-sulfide content of 0.25 grain per 100 standard cubic feet,[24] or 80 ppmv hydrogen sulfide,[25] a lower limit is feasible. The BAAQMD BACT Guidelines have determined that "Natural Gas or Treated Refinery Gas Fuel w/ <.50 ppmv Hydrogen Sulfide" is "cost effective" and "technologically feasible." Ex. A. The Administrator must object to the Permit for failure to impose feasible hydrogen sulfide limits.

C. Stricter Fugitive Emissions Standards for Pumps and Compressors Are Feasible.

For fugitive emissions from pumps and compressors, the District's BACT analysis concludes that a "[l]eak defined as a reading of methane in excess of 500 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455" constitutes BACT. However, this standard does not specify how those emissions will be controlled to ensure leaks do not exceed this limit, and more stringent standards are feasible. Under the BAAQMD BACT Guidelines, a limit of "100 ppm expressed as methane measured using EPA Reference Method" is technologically feasible and cost effective for both compressors and pumps. Ex. A. The Administrator must object to the Permit for failure to impose feasible limits on fugitive emissions from pumps and compressors.

II. The Air District's Calculation of Baseline Emissions Violates District Rule 2201 and Does Not Represent Normal Source Operation.

The Air District has chosen the calendar year 2008 as the baseline year for purposes of calculating the project's "increases in stationary source emissions" for emissions offset purposes. *See* Application Review, Appendix F, PDF 491 (Exhibit 1) ("Baseline period taken to be calendar year 2008, in accordance with Rule 2201 § 3.9, as described in the ATC application.").

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[24] *See* General Order 58-A titled "Standards For Gas Service In The State of California," title 7(a), (b), available at: http://docs.cpuc.ca.gov/PUBLISHED/GENERAL_ORDER/54827.PDF (Exhibit W).

[25] *See* Santa Barbara County Air Pollution Control District, Frequently Asked Questions, available at: http://www.ourair.org/eng/tech/frequently-asked-questions/ (noting PUC's hydrogen sulfide limit for natural gas is equivalent to 80 ppmv hydrogen sulfide) (Exhibit X).

Because this baseline violates District Rule 2201 and does not represent normal source operation, the Administrator must object to the Permit.

In order to determine the refinery's baseline air emissions under the Air District's New and Modified Stationary Source Review Rule, Rule 2201, the Air District had two options applicable here.[26] It could choose either:

> 3.9.1 the two consecutive years of operation immediately prior to the submission date of the Complete Application; or
> 3.9.2 at least two consecutive years within the five years immediately prior to the submission date of the Complete Application if determined by the APCO as more representative of normal source operation. . . .

The Authority to Construct application was submitted on October 25, 2013. Thus, under Rule 2201, the Air District could have chosen as the baseline years either (1) October 25, 2011-October 25, 2013; or (2) any two or more consecutive years between October 25, 2008 and October 25, 2013 if the Air District determined these years were more representative or normal source operation. Instead of complying with Rule 2201, however, the Air District erroneously chose the period from January 1, 2008 to December 31, 2008—outside of the timeframe allowed by the rule and shorter than the required period of two consecutive years.

Because no crude refining operations have occurred since December 2008, the Authority to Construct should have reflected a baseline of zero emissions (years 2009-2010) as the most "representative of normal source operation." Conditions at the Refinery have changed dramatically since 2008. Although the plant was designed to refine crude oil, it went into bankruptcy on December 21, 2008 and stopped processing crude and other feedstock; it was still non-operational when purchased by Alon USA in 2010.[27] Following the change in ownership, the plant was refashioned to convert intermediate vacuum gas oil into finished products, rather than process crude oil.[28]

The Refinery only began operating again in this limited capacity in June 2011, after two-and-half years of being shut down.[29] No crude refining operations were resumed.[30] In 2012, gas oil processing operations were "intermittent," only occurring "from June to early November." DEIR, p. 3-19. The average throughput in 2011 and 2012 was only 10,915 and 4,751 bpd, or

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[26] The other two options under Rule 2201 for calculating the baseline emissions don't apply ("3.9.3 a shorter period of at least one year if the emissions unit has not been in operation for two years and this represents the full operational history of the emissions unit, including any replacement units; or 3.9.4 zero years if an emissions unit has been in operation for less than one year (only for use when calculating AER)."). The emissions units evaluated were either in place for more than one year or newly proposed.

[27] *See* Alon USA, Annual Report (Form 10-K) (March 14, 2013), PDF 47 (Exhibit Y).

[28] *See* Alon USA, Quarterly Report (Form 10-Q) (Aug. 8, 2011), PDF 35 (Exhibit Z).

[29] *See* Alon USA, Quarterly Report (Form 10-Q) (May 9, 2012), PDF 33 (Exhibit AA).

[30] *Ibid.*; DEIR, p. 3-19.

15.5% and 6.8% of the Refinery's daily capacity of 70,000 bpd. *Ibid.* Operations were suspended entirely in December 2012.[31] Based on this record, 2008 calendar year operating conditions do not represent the current conditions at the Refinery, and the years the refinery was completely shut down are "more representative of normal source operation." Rule 2201 § 3.9.2.

The Air District has repeatedly recognized that the operation of the refinery more than six years ago is not a representative baseline. On October 14, 2013, the Air District submitted comments on the Notice of Preparation on the DEIR, criticizing Kern County's use of a 2007 baseline as "reflect[ing] the environmental setting in effect 6-7 years ago, which appears to be remote from the conditions in effect at the time the environmental analysis commenced." Ex. CC. Similarly, in response to Alon's request to use years 2007 and 2008 for the purposes of Rule 3170, Chay Thao of the Air District explained in a July 7, 2014 email that:

> [I]n the past, operation of the refinery by the previous owner (Big West) was considerably different than operations under Alon USA. In 2007, the facility was owned by Big West and was processing heavy crude oil to produce gasoline and diesel. Operations were then suspended in 2008 after Big West's bankruptcy. Alon USA purchased the facility in 2010 and then applied for Authority to Construct (ATC) permits to modify the facility to process gas oil, instead of heavy crude oil. This application included modifications to the catalytic reformer #1, amine/fuel gas unit, hydrocracker, depentanizer, and unloading rack to accommodate processing of shipped in gas oil. Piping modifications and installation of two additional loading bays to the unloading rack were also authorized. Alon then commenced operation in 2011 to process gas oil. Since then the facility has only operated intermittently.
>
> Based on these changes, year 2007 and 2008 are not representative of normal source operation and therefore cannot be used for the Baseline Period[.]

See Ex. DD. As the Air District has repeatedly recognized, 2008 is an inappropriate year for baseline calculations as it does not represent normal operations. The Authority to Construct should have reflected that the refinery ceased operating during the baseline period, and the Administrator must object to the Permit for failure to include a proper baseline, resulting in an underestimate of the Project's required emissions offsets.

III. The Assumptions Regarding the Project's Crude Slate Are Flawed.

The Application Review lists various assumptions used in its calculations of the Project's emissions, but these assumptions are not consistent with the Project's objective to import and

[31] Ex. Y, PDF 103; Alon USA, Form 10-Q (May 5, 2014), PDF 11 (noting Alon's California refineries did not process "crude" in 2013 and first quarter of 2014) (Exhibit BB).

process "cost-advantaged" light Bakken crude oil.[32] The Administrator must object to the Permit on the basis that it does not reflect the importation, storage, and processing of the anticipated crude oil processed by the Project.

The Application Review states that the "[c]rude oil density" of crude that will be unloaded with the new railcar unloading rack is "0.915 g/mL (per Applicant)," but this figure does not represent the worst case in terms of VOC emissions. Application Review at 19; *see also id.* ("All liquids transferred will be conservatively assumed to be light crude oil...."). [33] This crude oil density is within the range of heavy crude oil, not light crude oil, which will most likely be unloaded and processed at the Refinery. According to the Transportation Safety Board of Canada's study of crude oil samples taken from the oil train that derailed in Lac-Mégantic, Quebec, Bakken crude can have a density as low as .8165 g/mL.[34] The National Energy Board of Canada defines light crude oil as having a density equal to, or less than, 875.7 kg/m^3 (or .8757 g/mL) while heavy crude oil is defined as having a density greater than this threshold.[35]

In addition, while the Application Review notes that the Reid Vapor Pressure of the crude oil that will be stored in floating roof tanks is assumed to be 9 psia, this figure is not representative of the vapor pressure of Bakken crude oils, which is more volatile than other light crudes, as explained in the attached report by Dr. Phyllis Fox commenting on the final EIR for the Project. *See* Ex. GG at pp. 4-10 and accompanying references to the comment letter. As Dr. Fox explains, Bakken crude oils typically have a higher Reid vapor pressure than other light crude oils, including a Reid Vapor Pressure of up to 15.5 psia, which results in significantly higher emissions of VOCs and toxic air contaminants ("TAC"). The District's emissions analysis should have therefore reflected the higher vapor pressure and VOC and TAC emissions of Bakken crude oil. Moreover, tank inspection and monitoring requirements are too weak to ensure that fugitive emissions from the tanks are adequately controlled. District Rule 4623 § 6.1 only provides for tank inspections "on an annual basis" by the District. There are no other monitoring measures to ensure that the Project's tanks do not exceed the Reid Vapor Pressure assumed in the Air District's analysis and that fugitive emissions will not exceed the limits set forth in the

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[32] Kern County Final EIR for the Alon Bakersfield Refinery Crude Flexibility Project, vol. 3, Attachment F, PDF 553, available at http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_FEIR_Ch7_RTC.pdf (Exhibit EE) ("The Bakken Region will be the most likely source for crude to be transported to the proposed crude oil rail terminal to be located at the Bakersfield Refinery."); see also id., Attachment E, PDF 489, 528 (discussing Refinery's shift to lighter Bakken crudes); *id.* PDF 519-20 (noting Bakken crude's lower cost making it more attractive to process).

[33] The Application Review fails to note the temperature at which this density occurs. Since density is a function of temperature, it is unclear as to what type of crude oil is actually assumed in the District's analysis.

[34] Transportation Safety Board of Canada, TSB Laboratory Report LP148/2013, section 2.4, available at http://www.tsb.gc.ca/eng/enquetes-investigations/rail/2013/R13D0054/lab/20140306/LP1482013.asp (Exhibit FF).

[35] *See id.*, section 3.2.5 & notes 42-43 therein.

Authority to Construct. Because the Air District used faulty emissions assumptions that lead to an underestimate of the Project's required offsets, the Administrator must object to the Permit.

IV. The Retrofit of Existing Heaters Are Not Exempt from Emissions Offsets.

The Application Review notes that because three existing heaters are being retrofitted solely to comply with District rules, the heaters are exempt from emissions offset requirements. However, all of the conditions for this exemption are not met in this case. *See* Section 4.6.8 ("For existing facilities, the installation or modification of an emission control technique performed solely for the purpose of compliance with the requirements of District, State or Federal air pollution control laws, regulations, or orders, as approved by the APCO, shall be exempt from offset requirements for all air pollutants provided all of the following conditions are met...") This includes condition 4.6.8.1, which requires that "[t]here shall be no increase in the physical or operational design of the *existing facility*, except for those changes to the design needed for the installation or modification of the emission control technique itself." (emphasis added). Here, the existing facility will undergo significant changes in its physical and operational design, including an increase in the Refinery's capacity to unload crude at the rail terminal and an increase in its capacity to refine both heavier and lighter crudes.

These changes will result in increased emissions from the existing heaters that are being retrofitted, which must be offset. According to Alon, at least two of these heaters have been dormant for some time, and under the project, they will be reactivated. *See* Ex. HH (Kern County Environmental Impact Report Appendices noting post-project emissions of 19.44, 9.72, and 22.69 tons per year of CO from existing heaters compared to 0 tons per year under 2007 baseline conditions, and of 3.83, 2.40, and 4.47 tons per year of NOx compared to 0.30 tons per year under baseline conditions)[36]; Ex. II at 19 (Project Application noting heaters 21-H21 and 27-H2 were dormant during baseline period).[37] Because these heaters lack emissions offsets, the Administrator must object to the Permit.

V. All of the Emission Reduction Credits Proposed Are Invalid.

The Air District has proposed to use emission reduction credit (ERC) certificate numbers S-4334-2, S-3465-5, S-3462-4, S-3458-3, and S-3663-1. Application Review at 46. These emission reductions credits come from three separate shutdowns or curtailments at the facility, all of which occurred decades ago: (1) the 1977 incineration of coker exhaust in the CO boiler—almost four decades ago (ERC S-3458-3, and S-3663-1); (2) the 1983 shutdown of the catalytic cracker, fluid coker, and CO boiler—more than three decades ago (ERC S-4334-2 & S-3465-5); and (3) the shutdown of the tailgas incinerator in 1992—more than two decades ago (ERC S-3462-4). *See* Ex. JJ.

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[36] *See* DEIR volume 2, Appendix B, available at http://www.co.kern.ca.us/planning/pdfs/eirs/alon_flexibility_project/Alon_DEIR_Vol2%20Cultural%20Redactions.pdf (Exhibit HH).

[37] For the same reasons, this modification is neither exempt from BACT. *See* Rule 2201 § 4.2.3 (requiring same conditions for BACT exemption).

Under District Rule 2201 and 2301, emission reductions used as ERCs must be "real, enforceable, quantifiable, surplus, and permanent." Rule 2201 § 3.2.1; Rule 2301 § 4.1. Given the many changes that have occurred at the refinery since 1977, including the recent shutdown and previous reconfigurations of the refinery, these decades-old reductions are no longer "real" and will not actually offset the refinery's significant projected air emissions. The notion that these shutdown units could still be operational today and "offset" the existing refinery's emissions, after the many reconfigurations and shutdowns that the refinery has undergone, is purely fictional.

Moreover, as explained below, all of the ERC credits are either invalid or may not be employed here. Because the Permit does not include valid ERC credits, the Administrator must object to the Permit.

A. The Air District May Not Employ Banked Offsets for NOx and VOC Emissions.

The Air District proposes to offset the project's NOx and VOC emissions with ERC S-4334-2, for the 1983 "shutdown of catalytic cracker, fluid coker, & CO boiler," and with ERC S-3663-1, for the 1977 "incineration of coker exhaust in CO boiler." Ex. JJ. Because the District may not approve the use of offsets for NOx and VOC emissions until the 1-hour ozone plan is approved by EPA, the Administrator must object to the issuance of the Permit in reliance on these offsets.

Air District Rule 2201 § 4.13.1 requires that "Major Source shutdowns or permanent curtailments in production or operating hours of a Major Source may not be used as offsets for emissions from . . . a Federal Major Modification . . . unless the ERC, or the emissions from which the ERC are derived, has been included in an EPA-approved attainment plan."

The San Joaquin Valley air basin is currently designated as in extreme nonattainment with the 1-hour standard for ozone, for which NOx and VOC emissions are precursors. The District does not yet have an approved attainment plan for the 1-hour ozone standard. Thus, the Air District may not use these banked emission reduction credits to offset the NOx and VOC emissions of this Project.

B. Emission Reduction Credit Certificates S-3458-3 and S-3663-1 Are Invalid.

ERC S-3458-3, for CO reduction, and S-3663-1, for VOC reduction, state that they were issued for "incineration of coker exhaust in CO boiler." Ex. JJ. The authority to construct for the CO boiler was issued on January 12, 1976, and operations began in May of 1977.[38] Because these reductions occurred prior to August 7, 1977, the credit given for these reductions is invalid, and may not be used here to offset project emissions. *See* 40 C.F.R. § 51.165(a)(2)(ii)(C)(1)(ii) ("in no event may credit be given for shutdowns that occurred before August 7, 1977.").

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[38] *See* Letter, Raymond E. Menebroker, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987) (Exhibit LL).

Both EPA and the California Air Resources Board (CARB) submitted comments on the proposed emission reduction credits, explaining the many reasons why the credits are invalid.[39] Both EPA and CARB pointed out that credits were invalid because the application for banking credit was submitted beyond the required time limits; a completed application was not submitted until October 1985, almost ten years after the reduction occurred. EPA also explained:

> The reductions from the installation of the CO boiler are quite old. The burden is on the District to verify in its analysis that these reductions have not been assumed elsewhere (in the emissions inventory, the latest [air quality management plan], the attainment demonstration) and therefore are indeed surplus. In all likelihood, these reductions are not surplus since they occurred so long ago and probably are already reflected in the District's records and plans. The District must verify that these reductions are not credited elsewhere.

Ex. LL. The District did not provide EPA with verification that these reductions were not credited elsewhere. EPA further explained:

> The reductions occurred prior to August 7, 1977 and are therefore too old to be granted credit. EPA has previously advised the District that banking credit may not be awarded for any reductions which occurred prior to the Clean Air Act Amendments of August 7, 1977. . . EPA will not recognize these reductions as valid offsets for any source wishing to purchase these ERCs for offsetting purpose.

Ibid. EPA warned that "any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action." *Ibid.*

Because ERCs S-3458-3 and S-3663-1 are invalid and "subject to federal enforcement action" if used, the Administrator must object to the Permit.

C. Emission Reduction Credit Certificate S-3462-4 Is Invalid.

ERC S-3462-4, for PM10 reductions from the March 1992 shutdown of the tailgas incinerator, does not represent the bankable emission reduction from this shutdown, and is therefore invalid.

In the application review for ERC S-3462-4, the Air District explained that the emission reductions eligible for an emission reduction credit certificate include the baseline emissions of the tailgas incinerator reduced by a 10% deposit into the "Community Bank". *See* Application review at 5 ("10% of AER shall be deposited to the Community Bank; remaining AER qualifies for the ERC Certificate.") (Exhibit NN). With this reduction, the Air District stated that the Bankable Emission Reductions, available for an ERC Certificate, were:

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[39] *See* Letter, Raymond E. Menebroker, CARB, to Citron Toy, Kern County Air Pollution Control District (July 17, 1987) (Exhibit LL); Letter, David Howecamp, EPA, to Leon Hebertson, KCAPCD, (July 17, 1987) (Exhibit MM).

Quarter 1 Jan-Mar	Quarter 2 Apr-Jun	Quarter 3 Jul-Sep	Quarter 4 Oct-Dec.
1,425.41 lbs	1,689.42 lbs	1611.54 lbs	1,776.42 lbs

Id. at 6. However, the Emission Reduction Certificate issued did not take the 10% reduction into account, and erroneously issued credits as:

Quarter 1 Jan-Mar	Quarter 2 Apr-Jun	Quarter 3 Jul-Sep	Quarter 4 Oct-Dec.
1,584 lbs	1,877 lbs	1,791 lbs	1,974 lbs

See Ex. JJ, ERC S-3462-4. Because this Certificate fails to comply with Air District Rule 2201 § 4.12.1 and 2301 § 4.2.2, it is invalid and the Administrator must object to the Permit.

D. Emission Reduction Credit Certificate S-4334-2 and S-3465-5 Are Invalid.

ERCs S-4334-2 and S-3465 state that they were issued for the "shutdown of catalytic cracker, fluid coker, & CO boiler." Ex. JJ. Because these certificates were originally applied for in 1987, more than 90 days after the 1983 shutdown occurred, the application was not timely filed and the certificates are invalid. *See* Letter from Leon Hebertson to L.E. Perrier (Aug. 27, 1987) (Exhibit OO).

The Air District acknowledged as much. In a letter on August 27, 1987 to Texaco Refining (the predecessor to the Alon Bakersfield Refinery), the Air District denied Texaco's original emission reduction credit application as untimely, explaining that:

> On July 31, 1987 we received your applications for Emission Reduction Credit Banking Certificates resulting from the November, 1985 [sic] shutdown of the Tosco T.C.C. Unit, Fluid Coker, and CO Boiler. Review of these applications reveals that this request is not timely. Rule 210.3 § C.4.(b) requires applications for banking of emissions reductions to be submitted within 90 days after such reduction occurs. Because your proposal does not comply with this requirement, your applications for Emission Reduction Credits Banking Certificates must be denied within 30 days.

Ex. OO. After Texaco objected to the Air District's denial, the Air District reversed course and granted the requested emission reduction credits on April 14, 1988. In explaining the change, the Air District capitulated to Texaco's erroneous interpretation that because Texaco had maintained its operating permit, it had not actually "shutdown," even though the equipment had last been operated in 1983. Application Review for Application #s 2007130/101, '130/201, '130/401, '130/501, and '130/601 (Jan. 14 1988) (Exhibit PP) at 2. This interpretation, however, conflicts with Rule 2301 § 3.14, which defines "shutdown" for the purposes of awarding emission reduction credits as "either the *earlier* of the permanent cessation of emissions from an emitting unit or the surrender of that unit's operating permit." (emphasis added).

The Air District had it right the first time: the application was untimely because it was received more than 90 days after the shutdown occurred. ERC certificates S-4334-2 and S-3465 are therefore invalid and may not be used to offset this project's NOx and SOx emissions. Because the Permit fails to include valid emission reduction credits, the Administrator must object to the Permit.

CONCLUSION

For the foregoing reasons, the proposed Permit does not comply with the Clean Air Act and applicable regulations, and the Administrator must object to the issuance of the Permit.

Dated: December 16, 2014

Respectfully Submitted,

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BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF ALON USA – BAKERSFIELD REFINERY KERN COUNTY, CALIFORNIA PROJECT NOS. S-1134224 & S-1134223 ISSUED BY THE SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT	PETITION NO. IX-2014-15 ORDER RESPONDING TO THE PETITIONERS' REQUEST FOR OBJECTION TO THE ISSUANCE OF A PERMIT

ORDER GRANTING IN PART A PETITION FOR OBJECTION TO PERMIT

I. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) received a petition dated December 16, 2014, (Petition) from the Association of Irritated Residents, Center for Biological Diversity, and the Sierra Club (Petitioners). The Petition requests that the EPA object to the proposed issuance of an Authority to Construct / Certificate of Conformity (Permit) issued by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or District[1]) to the Alon USA – Bakersfield Refinery (Alon or facility) in Bakersfield, Kern County, California.

This Order responds to Claim V of the Petition.[2] Based on a review of the Petition and other relevant materials, including the Permit, the permit record, and relevant statutory and regulatory authorities, and as explained further below, the EPA grants in part the Petition requesting that the EPA lodge an objection. Specifically, the EPA grants Claim V of the Petition.

II. STATUTORY AND REGULATORY FRAMEWORK

A. Title V Permits and Preconstruction Permits

Section 502(d)(l) of the Clean Air Act (CAA or Act), 42 U.S.C. § 766la(d)(1), requires each state to develop and submit to the EPA an operating permit program to meet the requirements of title V of the CAA and the EPA's implementing regulations at 40 C.F.R. part 70. The California Air Resources Board (CARB) submitted a title V program on behalf of SJVUAPCD governing the

[1] Prior to March 20, 1991, when SJVUAPCD began operation, the Kern County Air Pollution Control District was the permitting authority for the Alon facility. The term "District" used herein is intended to refer to the relevant permitting authority with jurisdiction over the facility at any given point in time.

[2] Pursuant to the terms of a settlement agreement, noticed on October 21, 2016 (81 FR 72804), this Order responds only to the claims made in Part V of the Petition. The Petitioners' additional claims will be addressed separately pursuant to the timeline specified in the settlement agreement.

issuance of operating permits in the District on July 3, and August 17, 1995. The EPA granted interim approval of SJVUAPCD's title V operating permit program in 1996 (61 FR 18083) and final approval in 2001 (66 FR 63503). SJVUAPCD's title V program is codified in SJVUAPCD Rule 2520 and portions of Rule 2201.

All major stationary sources of air pollution and certain other sources are required to apply for title V operating permits that include emission limitations and other conditions as necessary to assure compliance with applicable requirements of the CAA, including the requirements of the applicable state implementation plan (SIP). CAA §§ 502(a) and 504(a), 42 U.S.C. §§ 7661a(a) and 7661c(a). The title V operating permit program generally does not impose new substantive air quality control requirements, but does require permits to contain adequate monitoring, recordkeeping, reporting and other requirements to assure sources' compliance with applicable requirements. 57 Fed. Reg. 32250, 32251 (July 21, 1992). One purpose of the title V program is to "enable the source, States, the EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements." *Id.* Thus, the title V operating permit program is a vehicle for ensuring that air quality control requirements are appropriately applied to facility emission units and for assuring compliance with such requirements.

Applicable requirements for a new "major stationary source" or for a "major modification" to a major stationary source include the requirement that the source obtain a preconstruction permit that complies with applicable new source review (NSR) requirements. For major stationary sources, the NSR program is comprised of two core types of preconstruction permit programs. Part C of the CAA establishes the Prevention of Significant Deterioration (PSD) program, which applies to areas of the country that are designated as attainment or unclassifiable for the national ambient air quality standards (NAAQS). CAA §§ 160–169, 42 U.S.C. §§ 7470–7479. Part D of the Act establishes the nonattainment NSR (NNSR) program, which applies to areas that are designated as nonattainment with a NAAQS. CAA §§ 171–193, 42 U.S.C. §§ 7501–7515. The Alon facility is located in an area designated federally as nonattainment for ozone and particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$), and, as such, is subject to the NNSR program.

B. SJVUAPCD Title V and Preconstruction Permit Programs

SJVUAPCD issues preconstruction NNSR permits—termed Authorities to Construct, or ATCs—under SIP-approved SJVUAPCD Rule 2201. Applicable requirements from a preconstruction permit (such as an ATC) must be included in a source's title V operating permit.[3] According to SJVUAPCD's EPA-approved title V program rules, this can be accomplished in one of two ways, as described below. *See* SJVUAPCD Rule 2520 § 5.3.3. Depending on the procedures

[3] Under 40 C.F.R. § 70.1(b), "All sources subject to [the title V regulations] shall have a permit to operate that assures compliance by the source with all applicable requirements." "Applicable requirements" are defined in 40 C.F.R. § 70.2 to include: "(1) Any standard or other requirement provided for in the applicable implementation plan approved or promulgated by EPA through rulemaking under title I of the [Clean Air] Act that implements the relevant requirements of the Act, including any revisions to that plan promulgated in [40 C.F.R.] part 52; [and] (2) Any term or condition of any preconstruction permits issued pursuant to regulations approved or promulgated through rulemaking under title I, including parts C or D, of the Act."

used, proposed permits issued by SJVUAPCD could be subject to EPA review in two different circumstances.

First, the source's title V permit could be revised to include the ATC terms through significant or minor title V permit modification procedures. *See* SJVUAPCD Rule 2520 §§ 3.20, 3.29, 11.3, 11.4; *see also* 40 C.F.R. § 70.7(e). Title V permit modifications that incorporate the terms of ATC permits through significant or minor title V permit modification procedures would be subject to review according to the requirements of title V of the CAA and the EPA's implementing regulations. Under CAA § 505(a), 42 U.S.C. § 7661d(a), and the relevant implementing regulations found at 40 C.F.R. § 70.8(a), permitting authorities are required to submit each proposed title V operating permit to the EPA for review. Upon receipt of a proposed permit, the EPA has 45 days to object to final issuance of the proposed permit if the EPA determines that the proposed permit is not in compliance with applicable requirements of the Act. CAA § 505(b)(1), 42 U.S.C. § 7661d(b)(1); *see also* 40 C.F.R. § 70.8(c) (providing that the EPA will object if the EPA determines that a proposed permit is not in compliance with applicable requirements or requirements under 40 C.F.R. part 70). If the EPA does not object to a permit on its own initiative, CAA § 505(b)(2) and 40 C.F.R. § 70.8(d) provide that any person may petition the Administrator, within 60 days of the expiration of the EPA's 45-day review period, to object to the permit.[4] SJVUAPCD's EPA-approved title V regulations in Rule 2520 § 11.3 outline this process for initial title V permits, permit renewals, and significant permit modifications.

Alternatively, the ATC terms could be incorporated into the title V permit through administrative permit amendment procedures under certain circumstances. The EPA's regulations at 40 C.F.R. § 70.7(d)(1)(v) provide that requirements from preconstruction permits may be incorporated into a source's title V permit through administrative amendment procedures, provided that the permitting authority's EPA-approved preconstruction permit program "meets procedural requirements substantially equivalent to the requirements of" the EPA's title V regulations in 40 C.F.R. §§ 70.7 and 70.8 that would be applicable if the permit changes were subject to review as a title V permit modification. Under SJVUAPCD Rules 2201 and 2520, if an ATC is issued with a Certificate of Conformity (COC)—certifying that it was "issued in accordance with procedural requirements substantially equivalent to" those that would have been required under title V permit modification procedures—the ATC terms would be eligible to be incorporated into an existing title V permit as an administrative permit amendment. *See* SJVUAPCD Rule 2520 §§ 1.4, 3.2.6, 3.7; Rule 2201 § 6.0; *see also* 40 C.F.R. § 70.7(d)(1)(v). SJVUAPCD Rule 2201 §§ 5.9 and 6.0, which are also part of SJVUAPCD's EPA-approved title V program, detail the "enhanced" procedural requirements that must be followed to issue an ATC with a COC. Among others, these requirements include public notification, EPA 45-day review and objection procedures, and public petition procedures. *See* SJVUAPCD Rule 2201 § 5.9.1. Importantly, where an ATC permit is issued according to these "enhanced" procedural requirements in order

[4] SJVUAPCD Rule 2520 § 11.3.7 mirrors these provisions for the submittal of petitions to the EPA on title V permit actions.

to qualify for a COC, an opportunity for the public to petition the EPA exists on the ATC issued with a COC, under Rule 2201. *See* SJVUAPCD Rule 2201 § 5.9.1.7.[5]

C. Framework for EPA Review of Issues in the Petition

The Petition requests an EPA objection to the ATC permit issued with a COC. The Petition cites CAA § 505(b)(2) and 40 C.F.R. § 70.8(d) as well as SJVUAPCD Rule 2201 as the bases for its Petition. The framework for the EPA's evaluation of the issues raised in a petition on a proposed ATC issued with a COC according to SJVUAPCD Rule 2201 should be the same as the framework for the EPA's review of a proposed title V permit issued under SJVUAPCD Rule 2520 (under the authority of CAA § 505(b)(2) and 40 C.F.R. § 70.8(d)). The premise of the "enhanced administrative requirements" contained in SJVUAPCD Rule 2201 (and authorized by 40 C.F.R. § 70.7(d)(1)(v)) is to create a process that is "substantially equivalent to" the process delineated in 40 C.F.R. §§ 70.7 and 70.8. As this includes the opportunity to petition the EPA and for EPA objection (SJVUAPCD Rule 2201 § 5.9.1.7), the framework underlying the EPA's review of a SJVUAPCD Rule 2201 petition should be "substantially equivalent to" the standard of review contemplated by title V of the CAA and the EPA's implementing regulations. Moreover, SJVUAPCD Rule 2201 § 5.9.1.9.4 states that EPA objection "shall be limited to compliance with applicable requirements and the requirements of 40 CFR Part 70."[6] This language mirrors the objection criteria articulated in CAA § 505(b)(1) and (2) and 40 C.F.R. § 70.8(c). Thus, it is appropriate for the EPA to apply the traditional title V standards and framework based on CAA § 505(b)(2) (described in the following subsection) when reviewing the Petition under Rule 2201.

D. Review of Issues in a Petition Pursuant to 505(b)(2)

A petition to the EPA under CAA § 505(b)(2) shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting agency (unless the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period). CAA § 505(b)(2), 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d); *see also* SJVUAPCD Rule 2201 § 5.9.1.7. In response to such a petition, the Act requires the Administrator to issue an objection if a petitioner demonstrates that a permit is not in compliance with the requirements of the Act. CAA § 505(b)(2), 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(c)(l); *see also New York Public Interest Research Group, Inc. v. Whitman,* 321 F.3d 316,333 n.11 (2d Cir. 2003) *(NYPIRG)*. Under section 505(b)(2) of the Act, the burden is on the petitioner to make the required demonstration to the EPA. *MacClarence v. EPA,* 596 F.3d 1123, 1130–33 (9th Cir. 2010); *Sierra Club v. Johnson,* 541 F.3d 1257, 1266–1267 (11th Cir. 2008); *Citizens Against Ruining the Environment v. EPA,* 535 F.3d 670, 677–78 (7th Cir. 2008); *WildEarth Guardians v. EPA,* 728 F.3d 1075, 1081–82 (10th Cir. 2013); *Sierra Club v. EPA,* 557

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[5] As noted above, these rules are part of the District's EPA-approved title V program. *See* 66 FR 63503 (November 30, 2001); 66 FR 53151 (October 19, 2001) (proposing to approve portions of District Rule 2201 "that contain part 70 requirements allowing a source to obtain a modification under Rule 2201 that also satisfies part 70 requirements").

[6] Similarly, SJVUAPCD Rule 2201 § 5.9.1.7 indicates, "Petitions shall be based on the compliance of the permit provisions with applicable requirements."

F.3d 401, 406 (6th Cir. 2009) (discussing the burden of proof in title V petitions); *c.f. NYPIRG*, 321 F.3d at 333 n.11.

The petitioner's demonstration burden is a critical component of CAA § 505(b)(2). As courts have recognized, CAA § 505(b)(2) contains both a "discretionary component," to determine whether a petition demonstrates to the Administrator that a permit is not in compliance with the requirements of the Act, and a nondiscretionary duty to object where such a demonstration is made. *NYPIRG*, 321 F.3d at 333; *Sierra Club v. Johnson*, 541 F.3d at 1265–66 ("[I]t is undeniable [that CAA § 505(b)(2)] also contains a discretionary component: it requires the Administrator to make a judgment of whether a petition demonstrates a permit does not comply with clean air requirements."). Courts have also made clear that the Administrator is only obligated to grant a petition to object under CAA § 505(b)(2) if the Administrator determines that the petitioner has demonstrated that the permit is not in compliance with requirements of the Act. *See, e.g., Citizens Against Ruining the Environment*, 535 F.3d at 667 (stating that § 505(b)(2) "clearly obligates the Administrator to (1) determine whether the petition demonstrates noncompliance and (2) object *if* such a demonstration is made" (emphasis added)); *Sierra Club v. Johnson*, 541 F.3d at 1265 ("Congress's use of the word shall . . . plainly mandates an objection *whenever* a petitioner demonstrates noncompliance." (emphasis added)). When courts have reviewed the EPA's interpretation of the ambiguous term "demonstrates" and its determination as to whether the demonstration has been made, they have applied a deferential standard of review. *See, e.g., Sierra Club v. Johnson*, 541 F.3d at 1265–66; *Citizens Against Ruining the Environment*, 535 F.3d at 678; *MacClarence*, 596 F.3d at 1130–31. We discuss certain aspects of the petitioner's demonstration burden below; however, a fuller discussion can be found in *In the Matter of Consolidated Environmental Management, Inc. – Nucor Steel Louisiana*, Order on Petition Nos. VI-2011-06 and VI- 2012-07 at 4–7 (June 19, 2013) *(Nucor II Order)*.

The EPA has looked at a number of criteria in determining whether a petitioner has demonstrated noncompliance with the Act. *See generally Nucor II Order* at 7. For example, one such criterion is whether the petitioner has addressed the state or local permitting authority's decision and reasoning. The EPA expects the petitioner to address the permitting authority's final decision, and the permitting authority's final reasoning (including the response to comment (RTC) document), where these documents were available during the timeframe for filing the petition. *See MacClarence*, 596 F.3d at 1132–33; *see also, e.g., In the Matter of Noranda Alumina, LLC*, Order on Petition No. VI-2011-04 at 20–21 (December 14, 2012) (denying title V petition issue where petitioners did not respond to state's explanation in response to comments or explain why the state erred or the permit was deficient); *In the Matter of Kentucky Syngas, LLC*, Order on Petition No. IV-2010-9 at 41 (June 22, 2012) (denying title V petition issue where petitioners did not acknowledge or reply to state's RTC or provide a particularized rationale for why the state erred or the permit was deficient). Another factor the EPA has examined is whether a petitioner has provided the relevant analyses and citations to support its claims. If a petitioner does not, the EPA is left to work out the basis for petitioner's objection, contrary to Congress' express allocation of the burden of demonstration to the petitioner in CAA § 505(b)(2). *See MacClarence*, 596 F.3d at 1131 ("[T]he Administrator's requirement that [a title V petitioner] support his allegations with legal reasoning, evidence, and references is reasonable and persuasive."); *In the Matter of Murphy Oil USA, Inc.*, Order on Petition No. VI-2011-02 at 12 (September 21, 2011) (denying a title V petition claim where petitioners did not cite any specific

applicable requirement that lacked required monitoring). Relatedly, the EPA has pointed out in numerous orders that, in particular cases, general assertions or allegations did not meet the demonstration standard. *See, e.g., In the Matter of Luminant Generation Co. – Sandow 5 Generating Plant,* Order on Petition Number VI-20 11- 05 at 9 (January 15, 2013); *In the Matter of BP Exploration (Alaska) Inc., Gathering Center #1,* Order on Petition Number VII-2004-02 at 8 (April 20, 2007); *In the Matter of Chevron Products Co., Richmond, Calif. Facility,* Order on Petition No. IX-2004-10 at 12, 24 (March 15, 2005). Also, if a petitioner did not address a key element of a particular issue, the petition should be denied. *See, e.g., In the Matter of Public Service Company of Colorado, dba Xcel Energy, Pawnee Station,* Order on Petition Number: VIII-2010-XX at 7–10 (June 30, 2011); *In the Matter of Georgia Pacific Consumer Products LP Plant,* Order on Petition No. V-2011-1 at 6–7, 10–11, 13–14 (July 23, 2012).

The information that the EPA considers in making a determination whether to grant or deny a petition generally includes, but is not limited to, the administrative record for the proposed permit and the petition, including attachments to the petition. The administrative record for a particular proposed permit includes the draft and proposed permits; any permit applications that relate to the draft or proposed permits; the statement of basis for the draft and proposed permits; the permitting authority's written responses to comments, including responses to all significant comments raised during the public participation process on the draft permit; relevant supporting materials made available to the public according to 40 C.F.R. § 70.7(h)(2); and all other materials available to the permitting authority that are relevant to the permitting decision and that the permitting authority made available to the public according to § 70.7(h)(2). If a final permit and a statement of basis for the final permit are available during the agency's review of a petition on a proposed permit, those documents may also be considered as part of making a determination whether to grant or deny the petition.

If the EPA grants an objection in response to a title V petition, a permitting authority may address the EPA objection by, among other things, providing the EPA with a revised permit. *See, e.g.*, 40 C.F.R. § 70.7(g)(4). However, as explained in the *Nucor II Order*, a new proposed permit in response to an objection will not always need to include new permit terms and conditions. For example, when the EPA has issued an objection on the ground that the permit record does not adequately support the permitting decision, it may be acceptable for the permitting authority to respond only by providing additional rationale to support its permitting decision. *Id.* at 14 n.10. In any case, whether the permitting authority submits revised permit terms, a revised permit record, or other revisions to the permit, the permitting authority's response is generally treated as a new proposed permit for purposes of CAA § 505(b) and 40 C.F.R. §§ 70.8(c) and (d). *See Nucor II Order* at 14. Accordingly, the new proposed permit would be subject to the agency's opportunity to conduct a 45-day review per CAA § 505(b)(1) and 40 C.F.R. § 70.8(c), and an opportunity for a petition if the EPA does not object. The EPA has explained that treating a state's response to an EPA objection as triggering a new EPA review period and a new petition opportunity is consistent with the statutory and regulatory process for addressing objections by the EPA. *Id.* at 14–15. The EPA's view that the permitting authority's response to an EPA objection is generally treated as a new proposed permit does not alter the procedures for making the changes to the permit terms or conditions or permit record that are intended to resolve the EPA's objection, however. When the permitting authority modifies a permit in order to resolve an EPA objection, it must go through the appropriate

procedures for that modification. For example, when the permitting authority's response to an objection is a change to the permit terms or conditions or a revision to the permit record, the permitting authority should determine whether its response is a minor modification or a significant modification to the title V permit, as described in 40 CFR 70.7(e)(2) and (4) or the corresponding regulations in the permitting authority's EPA-approved title V program. If the permitting authority determines that the modification is a significant modification, then the permitting authority must provide for notice and opportunity for public comment for the significant modification consistent with 40 CFR 70.7(h) or the permitting authority's corresponding regulations. The same principles would apply to responses to EPA objections under SJVUAPCD Rule 2201.

It is also important to note that when a permitting authority responds to an EPA objection, it may choose to do so by modifying the permit or permit record with respect to the specific deficiencies that the EPA identified; permitting authorities need not re-propose the entire permit or address elements of the permit or permit record unrelated to the EPA's objection. As described in various title V petition orders, the scope of the EPA's review (and accordingly, the appropriate scope of a petition) on such a response would be limited to the specific permit terms or elements of the permit record modified in that permit action—for example, the specific elements revised by the permitting authority in response to the EPA's objection.[7] *See In The Matter of Hu Honua Bioenergy, LLC*, Order on Petition No. VI-2014-10, at 38–40 (September 14, 2016); *In the Matter of WPSC – Weston*, Order on Petition No. V-2006-4 at 5–6, 10 (December 19, 2007).

III. BACKGROUND

A. The Alon Facility

Alon USA owns a petroleum products refinery and gasoline terminal, located in Bakersfield, Kern County, California. Alon has proposed multiple modifications to its facility, including the addition of new equipment and the modification of several process and combustion units (termed the "Crude Flexibility Project"). These modifications will result in nitrogen oxide (NOx), carbon monoxide (CO), volatile organic compounds (VOC), PM_{10}, $PM_{2.5}$ and sulfur oxide (SOx) emissions from new or modified combustion units, as well as VOC emissions from tank, loading, and fugitive sources. Because the facility is located in a nonattainment area, Alon was required to obtain ATCs for the Crude Flexibility Project pursuant to SJVUAPCD's NNSR rules. The Crude Flexibility Project will exceed NNSR offset thresholds for NOx, SOx, CO, PM_{10} and VOC emissions, and, therefore, Alon was required to obtain offsets for the emissions associated with the Crude Flexibility Project.

B. Permitting History

On October 25, 2013, Alon submitted an application for multiple ATCs to authorize the proposed Crude Flexibility Project. Alon also applied for the ATCs to be processed with a COC,

[7] Of course, when a permitting authority chooses to revise permit terms or portions of the permit record not directly addressed by the EPA's objection, any of those revised terms would also be within the scope of the EPA's review and subsequent public petition opportunity.

as these modifications would have also necessitated a significant permit modification to Alon's title V permit. Accordingly, the ATCs were processed according to the enhanced administrative requirements of Rule 2201 § 5.9. SJVUAPCD published notice[8] of its preliminary decision and proposed ATCs and COC for the Crude Flexibility Project on October 14, 2014, triggering a public comment period that ended on November 19, 2014. SJVUAPCD also emailed the preliminary decision to the EPA on October 14, 2014, triggering the EPA's 45-day review period, which ended on November 27, 2014. The EPA did not object to the issuance of the Permit or otherwise submit comments. SJVUAPCD issued the final ATCs and COC on March 19, 2015. Accompanying the final ATCs were SJVUAPCD's RTC document.

C. Timeliness of Petition

If the EPA does not object to a proposed permit during its 45-day review period, any person may petition the Administrator within 60 days after the expiration of the 45-day review period to object. SJVUAPCD Rule 2201 § 5.9.1.7. The 60-day public petition period ran until January 26, 2015.[9] The Petition was dated December 16, 2014, and, therefore, the EPA finds that the Petitioners timely filed the Petition.

IV. EPA DETERMINATIONS ON CLAIMS RAISED BY THE PETITIONERS

Claim V: "All of the Emission Reduction Credits Proposed Are Invalid"

Petitioners' Claim: The Petitioners state that the District proposed to use emission reduction credit (ERC) certificate numbers S-4334-2, S-3465-5, S-3462-4, S-3458-3, and S-3663-1 to offset emissions associated with the proposed project. Petition at 13 (citing Application Review at 46). The Petitioners claim generally that all of these ERCs are invalid and conclude that the ERCs therefore may not be used as offsets and that the EPA must object to the Permit. *Id.* at 14–18. To support this claim, the Petitioners put forth a collection of specific arguments, each addressing some or all of the subject ERCs.

First, the Petitioners contend that the emission reductions associated with the ERCs submitted by Alon are not "real" because the reductions took place years ago. *Id.* at 15. The Petitioners claim that because many changes have occurred at the refinery since the reductions took place, the reductions are no longer real and will not offset the refinery's projected air emissions. *Id.*

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[8] As described above, SJVUAPCD rules provide for two distinct procedures to incorporate terms from a preconstruction permit into a title V permit. See SJVUAPCD Rule 2520 § 5.3.3. The EPA notes that although the ATC was issued according to the Rule 2201 § 5.9 enhanced administrative procedures, the public notice package also indicated that the "modification can be classified as a significant Title V modification pursuant to Rule 2520, and can be processed with a [COC]." Authority to Construct Application Review at 2 (October 14, 2014). The EPA understands this to mean that revising Alon's title V permit to incorporate the terms of the ATCs at issue *would have* required title V significant modification procedures, if these changes had been processed through Rule 2520 rather than Rule 2201. The EPA does not interpret the ATC issued with a COC to constitute an actual title V significant permit modification under Rule 2520 §§ 3.29 and 11.3. Rather, the Permit clearly explains that, by virtue of obtaining a COC with the ATC, the revision to Alon's title V permit may subsequently be conducted via administrative amendment procedures (not significant permit modification procedures).

[9] The EPA notes that the District issued its RTC after the end of the 60-day public petition period. Thus, the Petitioners did not have the opportunity to address the District's RTC in the Petition.

Next, with regard to ERC certificates S-4334-2 and S-3663-1, the Petitioners argue that the District may not approve the use of these ERCs as offsets for NOx and VOCs until a 1-hour ozone plan is approved by the EPA. *Id.* at 15. The Petitioners rely on SJVUAPCD Rule 2201 § 4.13.1, which provides that "Major Source shutdowns or permanent curtailments in production or operating hours of a Major Source may not be used as offsets for emissions from . . . a Federal Major Modification . . . unless the ERC, or the emissions from which the ERC are derived, has been included in an EPA-approved attainment plan." *Id.* (citing SJVUAPCD Rule 2201 § 4.13.1). The Petitioners argue that because the District did not yet have an approved attainment plan for the 1-hour ozone standard, the District may not use banked NOx and VOC emissions for this project. *Id.*

Finally, the Petitioners advance several arguments that specific ERCs are "invalid." With regard to ERC certificates S-3458-3 and S-3663-1, the Petitioners argue that the subject ERCs are invalid because they were issued for reductions that occurred prior to the August 7, 1977 deadline found in 40 C.F.R. § 51.165(a)(3)(ii)(C)(*1*)(*ii*).[10] Petition at 15. The Petitioners cite 40 C.F.R. § 51.165(a)(3)(ii)(C)(*1*)(*II*) for the proposition that "in no event may credit be given for shutdowns that occurred before August 7, 1977." Petition at 15. Citing correspondence between the CARB and the Kern County Air Pollution Control District, the Petitioners assert that the ATC for the CO boiler project associated with the emission reductions at issue in these ERCs was issued on January 12, 1976, and operations began in May of 1977. *Id.* Because these dates predate the August 7, 1977, deadline contained in § 51.165(a)(3)(ii)(C)(*1*)(*ii*), the Petitioners claim that the ERCs are invalid. *Id.*

The Petitioners also claim that ERCs S-3458-3 and S-3663-1 "were invalid because the application for banking credit was submitted beyond the required time limits; a completed application was not submitted until October 1985, almost ten years after the reduction occurred." *Id.* at 16. Furthermore, the Petitioners argue that the District failed to establish that the reductions associated with the subject ERCs were surplus and that they have not been credited elsewhere. *Id.*

With regard to ERC certificate S-3462-4, the Petitioners argue that the ERC is invalid because it does not represent the bankable emission reduction from the associated shutdown. *Id.* at 16–17. Specifically, the Petitioners claim that SJVUAPCD Rules 2201 § 4.12.1 and 2301 § 4.2.2 require the District to deposit 10 percent of the credits into a Community Bank, and decrease the emission reduction eligible for ERC issuance by this quantity. Citing to the application review[11] for the subject ERC, the Petitioners argue that even though the application review recognized this obligation and identified the 10 percent reduction, the District failed to make the necessary reduction when it actually issued the ERC certificate. Accordingly, the Petitioners argue that the ERC certificate is invalid.

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[10] The Petitioners incorrectly cite the subject regulation as 40 C.F.R. § 51.165(a)(2)(ii)(C)(1)(ii). Petition at 15. The correct citation for the provision is 40 C.F.R. § 51.165(a)(3)(ii)(C)(*1*)(*ii*).

[11] An "application review" in the context of a specific ERC refers to the documentation associated with the process of initially issuing an ERC certificate for an emission reduction, such that the ERC can be "banked" and potentially later used to satisfy NNSR offset requirements.

With regard to ERC certificates S-4334-2 and S-3465-5, the Petitioners claim that the ERCs are invalid because the application for these ERC certificates was not timely filed. *Id.* at 17–18. According to the Petitioners, Kern County Air Pollution Control District Rule 210.3 required applications for banking of emissions reductions to be submitted within 90 days after the reduction occurs. The Petitioners claim that the equipment at issue—a catalytic cracker, fluid coker, and CO boiler—ceased operation in 1983, and that an application was not received until 1987. Specifically, the Petitioners argue that the (Kern) District was incorrect in finding that the emission units had not actually "shutdown" in 1983 because Texaco had maintained its operating permit. Citing SJVUAPCD Rule 2301 § 3.14, the Petitioners claim that "shutdown" must be defined as the earlier of the permanent cessation of emissions from an emitting unit, or the surrender of that unit's operating permit. In light of this rule, the Petitioners claim that the unit was shutdown in 1983, rendering the 1987 applications late and the resulting ERCs invalid.

EPA's Response: For the reasons stated below, the EPA grants the Petitioners' request for an objection on this claim on the basis that the permit record is inadequate—specifically, that the District's response to significant comments was insufficient to explain affirmatively why the ERCs relied upon were valid for use as offsets.

The Petitioners request that the Administrator object to the Permit because it does not comply with, *inter alia*, SJVUAPCD Rule 2201. Petition at 3, 14–17. Rule 2201 contains substantive requirements associated with the construction of new or modified emission units—including the NNSR requirement to obtain offsets in § 4.5—as well as "Administrative Requirements" for all applications for new or modified emissions units. *See* SJVUAPCD Rule 2201 § 5.0. As discussed above, Rule 2201 also includes "Enhanced Administrative Requirements" for applications requesting a Certificate of Conformity with the procedural requirements of 40 CFR Part 70. *See* Rule 2201 § 5.9. Section 5.9.1.1 requires that the District must provide public notification and provide 30 days from the date of publication to submit written comments. Section 5.9.1.3 requires the District to provide a written response to persons or agencies that submit timely written comments. These requirements closely track the notice, comment, and response requirements for title V permits found in SJVUAPCD Rule 2520 § 11.3.1.1 and 11.3.1.3.

In its RTC, the District did not specifically acknowledge or address any of the individual alleged deficiencies raised in the public comments regarding the validity of the ERCs at issue in the Petition. Instead, the District's RTC generally states that ERCs are recognized as real mitigation for emissions increases when appropriate safeguards are employed. The response then outlines the criteria established in SJVUAPCD Rule 2301 that must be met for emission reductions to be eligible for credit as ERCs, and asserts that "[t]he ERCs proposed by Alon were demonstrated to meet these requirements when they were originally granted." RTC at 6. As such, SJVUAPCD concludes that "the proposed ERCs are valid for any use." *Id.* Additionally, the RTC notes that all ERCs are "incorporated into the District's growth factors as emissions in the air attainment plans and associated emissions inventories," and that the attainment plans "provide for real-time mitigation to ensure contemporaneous air quality benefit, regardless of the date the credits were banked." *Id.* The RTC also notes that annual accounting and reporting document and verify real-time benefits to air quality. Finally, the RTC states that since 2001, Rule 2201 § 7.0 has required that the District demonstrate on an annual basis that the offset requirements of Rule 2201 are

equivalent to the quantity of offsets that would be required by a federal-only NNSR program. The District asserts that it has demonstrated offset equivalency each year since that time.

As described above, the applicable rules require the District to provide a written response to timely written comments. SJVUAPCD Rule 2201 § 5.9.1.3. Well-established principles of administrative law provide that an inherent component of any meaningful notice and opportunity for comment is a response by the regulatory authority to significant comments. *See, e.g., In the Matter of U.S. Department of Energy – Hanford Operations,* Order on Petition Nos. X-2014-01 and X-2013-01, at 20-23 (May 29, 2015) (citing *Home Box Office v. FCC*, 567 F.2d 9, 35 (D.C. Cir. 1977) ("[T]he opportunity to comment is meaningless unless the agency responds to significant points raised by the public."). A significant comment in this context is one that concerns whether the permit includes terms and conditions addressing federal applicable requirements—for example, NNSR emission offset requirements. *See e.g., Hanford Order* at 21.

In light of the comments received and SJVUAPCD's response, the record is inadequate to determine whether Alon provided the offsets required by SJVUAPCD's NNSR program rules. Specifically, the record is inadequate because SJVUAPCD did not adequately respond to the specific comments challenging the validity of the ERCs used as offsets. The comments suggesting that the ERCs are not valid were significant comments, as they related directly to whether Alon had satisfied applicable NNSR emission offset requirements associated with the modifications authorized by the ATC. As such, these significant comments warranted an adequate response, as discussed further below. The District's general assertions—that the ERCs were determined to be valid when initially issued, that the ERCs are incorporated into the District's growth factors, and that Rule 2201 § 7.0 requires annual equivalency determinations—are conclusory and an inadequate response to the many specific comments raised by the Petitioners.

As an initial matter, the District did not directly address any of the specific comments regarding alleged deficiencies with individual ERCs. Moreover, the District provided no technical support for its assertion that the ERCs met applicable NNSR requirements pertaining to ERCs when they were originally granted.[12] The record is also lacking in key documentation and information relating to these claims. For example, SJVUAPCD did not provide as part of the record, or otherwise cite or describe, the application review documents associated with the initial issuance of the ERC certificates at issue here. Moreover, the District did not explain why, assuming the ERCs were valid when initially issued, they would necessarily remain valid and available for use as offsets at any later date.[13] Although the District referenced Rule 2201 § 7.0 in its RTC, the District does not explain whether and how the offset equivalency determination and pre-baseline ERC cap tracking system defined therein relates to any or all of the Petitioners' specific claims,

[12] As a factual matter, SJVUAPCD Rules 2201 and 2301 did not exist when many of the ERCs at issue were initially granted. For example, ERCs S-3458-3, S-3663-1, S-4334-2, and S-3465-5 appear to have been issued from 1986–89, pursuant to Kern County Rules that existed prior to the promulgation of SJVUAPCD's NNSR rules. The RTC does not address how the District's general reliance on the criteria in SJVUAPCD's NNSR Rules establish the validity of the ERCs for any later use could be impacted by the fact that these rules were not in place when the ERCs were originally granted, nor does the RTC describe any processes or procedures that would ensure the continuing validity of ERCs granted prior to the existence of SJVUAPCD's NNSR rules.

[13] The EPA notes that some requirements in SJVUAPCD's SIP-approved Rule 2201 appear to impose conditions that apply at the time ERCs are used as offsets, such as Rule 2201 § 4.13.1.

or how these systems ensure the continuing validity of ERCs. When the relevant facts go back many years, as they do in this case, it is even more important, both for transparency of the process and credibility of the program, for the permitting agency to respond specifically and in detail to specific comments and questions raised by commenters. Overall, therefore, the District's assertions about the validity of the ERCs and its general discussion of applicable regulations are not sufficient to establish a record adequate to support the use of these ERCs as offsets in light of the specific public comments received.

With regard to the District's record concerning the specific ERCs in the Petitioners' claims, the EPA observes that is unclear whether a 10 percent reduction, as required by SJVUAPCD Rule 2201 § 4.12.1, was taken from the credits issued for ERC certificate S-3462-4. *See* Petition at 16–17. Also, with respect to the Petitioners' claim that ERCs S-3458-3 and S-3663-1 are invalid based on the August 7, 1977, deadline contained in 40 C.F.R. § 51.165(a)(3)(ii)(C)(*1*)(*ii*), the EPA notes that this limitation applies only to shutdowns. Although the record as it stands appears to suggest that the subject ERCs are not associated with a shutdown, the record does not make this point clear and the District has not clarified this point in its RTC, such as by providing information from the application reviews associated with these ERC certificates.[14]

Accordingly, the EPA finds that the District did not provide sufficient responses to significant comments, and therefore the record is inadequate for the EPA to sufficiently evaluate the Petitioners' claim and determine whether Alon obtained the necessary offsets as required by SJVUAPCD's NNSR program rules. For the foregoing reasons, the EPA grants the Petitioners' request for an objection on this claim.

Direction to SJVUAPCD: In responding to this Order, SJVUAPCD must review its determination and the record with respect to the ERCs at issue in the Petition and provide a record to adequately support its determination. If the District concludes upon further review that its determination in the record with respect to some or all of the ERCs is not supportable, SJVUAPCD must make a new determination and ensure that any such new determination is adequately supported and explained in the permit record. If the District concludes upon further review that its determination in the record is supportable, SJVUAPCD must explain why this is this case.

Specifically, the District must directly respond to the allegations raised in the public comments concerning the validity of the five ERCs relied upon by Alon. Further, the District should explain why the specific emission reductions are eligible for credit as ERCs, consistent with Rule 2201, applicable attainment plans, and associated inventories. The District should also explain its interpretation of its emission offset tracking system and explain how this system addresses the claims raised by the Petitioners. If SJVUAPCD determines, upon additional review, that any of the ERCs are not valid (for example, that ERC certificate S-3462-4 does not reflect a 10 percent reduction), it must take action to address the deficiency.

[14] The EPA observes that the Kern County rules governing the timeliness of ERC application submittals are not requirements of SJVUACPD's EPA-approved SIP.

V. CONCLUSION

For the reasons set forth above, I hereby grant the Petition as to the claim described herein.

Dated: DEC 2 1 2016

Gina McCarthy
Administrator

Appendix I

District Responses

District Responses to Comments

Public Comments on the Proposed Authority to Construct Permits for EJ Gallo Winery, District Facility ID No. N-3386, Project N. 1162270 (ATCs N-3386-512-0 through 521-0)

On February 23, 2017, the District received comments from the public on EJ Gallo Winery's project for the installation of 10 new wine storage tanks. The comments and the District's response to each comment are presented below.

Public Comment #1:

A. Emission Reduction Credit Certificate S-4727-1 is Invalid

ERC S-4727-1, for VOC reduction, states that it was issued for "[i]ncineration of the Fluid Coker exhaust in the CO boiler."[1] The authority to construct for the identified CO boiler was issued on January 12, 1976, and operation of the CO boiler began in May 1977.[2] However, under 40 C.F.R. § 51.165(a)(3)(ii)(C)(*1*)(*ii*), "in no event may credit be given for shutdowns that occurred before August 7, 1977." As the U.S. EPA explained in comments on the proposed banking credit application in 1987:

> The reductions occurred prior to August 7, 1977 and are therefore too old to be granted credit. EPA has previously advised the District that banking credit may not be awarded for any reductions which occurred prior to the Clean Air Act Amendments of August 7, 1977 . . . EPA will not recognize these reductions as valid offsets for any source wishing to purchase these ERCs for offsetting purpose.[3]

District Response to Public Comment #1:

It is worth noting, first, that this section of the CFR is implemented by the District's SIP-approved Rule 2201. If the commenter is objecting to the sufficiency of Rule 2201, the proper forum to do so is in a challenge to EPA's approval of Rule 2201, not in a project analyzed subsequent to EPA's approval of that rule into the SIP. However, the following is offered in an effort to be as fully responsive as possible:

40 CFR 51.165(a)(3)(ii)(C)(1) states:

> (C)(*1*) Emissions reductions achieved by shutting down an existing emission unit or curtailing production or operating hours may be generally credited for offsets if they meet the requirements in paragraphs (a)(3)(ii)(C)(*1*)(*i*) through (*ii*) of this section.
>
> (*i*) Such reductions are surplus, permanent, quantifiable, and federally enforceable.
> (*ii*) The shutdown or curtailment occurred after the last day of the base year for the SIP planning process. For purposes of this paragraph, a reviewing authority

> may choose to consider a prior shutdown or curtailment to have occurred after the last day of the base year if the projected emissions inventory used to develop the attainment demonstration explicitly includes the emissions from such previously shutdown or curtailed emission units. However, in no event may credit be given for shutdowns that occurred before August 7, 1977.

ERC S-4727-1 represents emission reductions that were generated from adding controls to an existing emission unit, i.e. incineration of coker exhaust in a CO boiler. The referenced CFR section only applies to units with emission reductions resulting from being shut down or curtailed. Therefore, the referenced CFR section would not apply, even if District permitting actions had to directly conform to it.

Public Comment #2:

Further, both the U.S. EPA and the California Air Resources Board ("CARB") pointed out in comments on the original application for banking credit that the credit was invalid because the application was submitted beyond the required time limits—a completed application for the banking credit was not submitted until October 1985, almost ten years after the reduction occurred.[4]

District Response to Public Comment #2:

According to August 7, 1987 correspondence between the Kern County Air Pollution Control District and both the California Air Resources Board and EPA's Air Management Division, the Kern County banking rule in effect at the time (Rule 210.3) allowed filing of applications for banking certificates for emission reductions occurring before the date of rule adoption (April 25, 1983) to be filed within one year of adoption. The original banking application was filed on April 24, 1984; thus, Kern County Air Pollution Control District considered the original banking application to have been filed in a timely manner.

Public Comment #3:

To this end, the proposed emissions credit comes from a shutdown or curtailment that occurred nearly four decades ago. Under District Rule 2201 and 2301, emission reductions used as ERCs must be "real, enforceable, quantifiable, surplus, and permanent." (Air District Rule 2201 § 3.2.1; Rule 2301 § 4.1.2.) Given the many changes that have occurred at the refinery since 1977, this decades-old reduction is no longer "real" and will not actually offset projected air emissions. As U.S. EPA noted even ten years after the event:

> the reductions from the installation of the CO boiler are quite old. The burden is on the District to verify in its analysis that these reductions have not been assumed elsewhere (in the emissions inventory, the latest [air quality management plan], the attainment demonstration) and therefore are indeed surplus. In all likelihood, these reductions are not surplus since they occurred so long ago and probably are already reflected in the District's records and plans. The District must verify that these reductions are not credited elsewhere.[5]

However, the Air District did not provide U.S. EPA with verification that these reductions had not been credited elsewhere. U.S. EPA previously warned that "any source which attempts to use these emission reductions as an offset may be subject to federal enforcement action."[6] Because ERC S-4727-1 is invalid and "subject to federal enforcement action" if used, the Air District may not employ it to offset the project's VOC emissions here.

District Response to Public Comment #3:

Prior of issuance of an Emission Reduction Credit (ERC) the District must determine if the emission reduction meets all of the criteria in Rule 2301, *Emission Reduction Credit Banking*, i.e. that the emission reductions be real, enforceable, quantifiable, surplus, and permanent. In addition, all originating ERC projects are subject to a 30-day EPA/CARB/Public comment period. Any and all comments must be addressed by the District prior to final issuance of an originating ERC certificate.

If an emission reduction does not meet these criteria, an ERC cannot be granted. Conversely, if an emission reduction meets the criteria in Rule 2301, the emission reduction qualifies for banking and an ERC is issued.

Once the ERC is issued, there is no requirement in Rule 2301 or Rule 2201, *New and Modified Stationary Source Review*, to re-evaluate the ERC when used to provide emission offsets required by an Authority to Construct (ATC).

This is critical to providing certainty for applicants, and for the District, that once an ERC has been issued it is valid as a means to provide emission offsets in Rule 2201. As such, it is not required that the District re-establish that ERCs are valid for use at the time that the ERCs are proposed to be used as offsets for an ATC.

Please note while Rule 2201 includes an explicit requirement that emission offsets be provided for every ATC that has an emission increase that exceeds the emission offset thresholds, Rule 2201 includes additional provisions to ensure that the District's offset

requirements as a whole are equivalent to the offset requirements prescribed by Federal regulations.

Rule 2201 section 7.0 Annual Offset Equivalency Demonstration and Pre-baseline ERC Cap Tracking System assesses the overall equivalency of Rule 2201 offset requirements with federal offset regulations on an annual basis. The details of this equivalency system have been included in Rule 2201 since December 19, 2002.

Each year an offset equivalency demonstration is performed by the District to show the District's offsetting requirements are as stringent, if not more stringent, than the Federal offsetting requirements. This demonstration examines NSR projects processed during the tracking year (August 20th of the previous year to August 19th of the current year). A successful demonstration allows the District to continue administering its offsetting program instead of directly implementing federal offsetting requirements. The District's annual offset equivalency demonstration is detailed in a report to EPA which includes a list of the Federal Major Modifications and new Major Source projects which would have required offsets under the federal offset program. Copies of these reports are located on the District's website, see http://www.valleyair.org/busind/pto/annual_offset_report/annual_offset_report.htm.

This offset equivalency demonstration ensures that the District's offset system provides an equivalent quantity of "federal offsets" for all new Major Source and Federal Major Modifications (as in the case with the subject ATCs issued to Gallo) in a given year as would be required under a "Federal only" offset requirement. A successful annual offset equivalency demonstration indicates and confirms that all permitting performed during the 12-month period of the report complies with federal offsetting requirements, including the need to supply surplus credits for major project emission increases. This demonstration is valid regardless of the specific ERCs that are used to provide offsets for specific new major source and Federal major modification projects.

Therefore, the following responses to the Climate Change Law Foundation's comments do not attempt to demonstrate that the ERCs proposed to be used for the Gallo project meet, on an individual ERC basis, federal offsetting requirements. Rather, they demonstrate the legality of the specific ERCs used to satisfy Rule 2201 requirements for the use of such ERCs, while the annual offset equivalency report demonstrates the District NSR rule's programmatic compliance with federal offsetting requirements.

Moreover, the District does not claim, nor does Rule 2201 require, that these ERCs are surplus "at the time of use". As explained above, the surplus nature of emission reductions used to offset increases in emissions from federal major projects is demonstrated on an annual basis through the District's EPA-approved Offset Equivalency Demonstration Report process. Any discussion of the surplus nature of individual credits used to satisfy the offsetting requirements of Rule 2201, the District's NSR rule, is not germane to the applicable regulations.

The Gallo ATCs result in a Federal Major modification for VOC emissions (but not for NOx, PM10, SOx, or CO emissions). As such, these emissions will be included in the 8/20/16 – 8/19/17 Offset Equivalency Report submitted to EPA in November 2017.

This report identifies each ATC project that constitutes a new Federal major source or a Federal major modification and the quantity of Federal offsets that would be required for that project under a Federal-only permitting program. The report requires two equivalency determinations – offset requirement equivalency and surplus at the time of use equivalency.

The offset requirement equivalency compares the offsets that would be required under a Federal NSR to the annual quantity of offsets required under Rule 2201 and includes any excess or shortfall from previous years. If there is an excess amount of emission reductions provided, the report demonstrates offset requirement equivalency.

The surplus at the time of use equivalency compares the offsets that would be required under a Federal NSR to the surplus value of creditable emission reductions used as offsets during the year and includes any excess or shortfall from previous years. If there is an excess amount of surplus emission reductions, the report demonstrates surplus at the time of use equivalency.

Lastly, the emission reductions represented by ERC S-4727-1 have not been "credited elsewhere". Under Rule 2201, *New and Modified Stationary Source Review*, the District is required to demonstrate mitigation of newly permitted major projects with federal surplus reductions on an annual basis, in our Annual Offset Equivalency Demonstration. The individual ERCs surrendered by an applicant to mitigate their project's emissions are not required by District regulations to satisfy federal offsetting requirements, and any statement by the commenter that they are required by law to be viewed in that context is purely fictional.

While the District does not stipulate that the ERCs being discussed are from the curtailment or shutdown of major sources, a full discussion and explanation of the District's position on this issue for each ERC is unnecessary, as, contrary to the commenter's position, the subject ERCs are "...included in an EPA-approved attainment plan." Each of these ERCs have been incorporated in the District's growth factors as being available to provide offsets for growth in emissions in attainment plans, including the EPA-approved 2007 8-hour ozone plan. Thus, these emissions are included in future year emissions calculations and modeling of future air quality. The attainment plans then provide for real-time mitigation to ensure contemporaneous air quality benefit, regardless of the date the credits were banked or used as offsets under the District's NSR rule. ERC S-4727-1 (listed as previously issued parent ERC S-2333-1) is included in the EPA approved 2007 ozone attainment plan (approved 3/1/2012, see 77 FR 12652) in Appendix D, see
http://www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm.

The inclusion of these ERCs in the 2007 ozone attainment plan verifies that this emission reduction is not being used as "credit elsewhere".
Therefore, ERC S-4727-1 is valid, and its use to mitigate the proposed VOC emissions increase from the Gallo ATCs complies with District Rule 2201.

Public Comment #4:

1. The U.S. EPA Has Previously Objected to Use of the Proposed ERC

AIR, the Center, and Sierra Club previously filed comments to the Air District,[7] and subsequently a petition to the U.S. EPA,[8] objecting to use of ERCs including S-3663-1 in a matter involving an ATC for Alon U.S.A. Energy Inc. to expand a crude rail terminal at the company's Bakersfield, CA refinery. ERC S-3663-1 was issued from the same source, "[i]ncineration of the Fluid Coker exhaust in the CO boiler," as was ERC S-4727-1. The Petition objected to use of ERC S-3663-1 on the same grounds as presented here for ERC S-4227-1—that no credit may be given for shutdowns that occured before August 7, 1977, that the application for banking credit was submitted beyond required time limits, and that the District had not verified the credits were "real" and had not been credited elsewhere.

On December 21, 2016, U.S. EPA granted the Petition in part, and objected to the Air District's use of multiple ERCs, including S-3663-1. U.S. EPA found "that the [Air] District did not provide sufficient responses to significant comments [by AIR, the Center, and Sierra Club], and therefore the record is inadequate for the EPA to . . . determine whether Alon obtained the necessary offsets as required. . . ."[9] U.S. EPA directed the Air District to "review its determination and the record with respect to the ERCs at issue in the Petition and provide a record to adequately support its determination" that the challenged credits are valid. Unless and until such time as the Air District provides a record to validate use of ERCs issuing from "[i]ncineration of the Fluid Coker exhaust in the CO boiler," it must consider use of any such ERC, including S-4227-1, to be invalid.

District Response to Public Comment #4:

EPA reviewed this project and provided no objections to the use of ERC certificate S-4727-1.

Furthermore, the issue of the date the emission reductions under ERC certificate S-4727-1 occurred has been addressed under the District Response to Comment #1 above. The issue of the timely submittal of the original ERC backing application upon which ERC certificate S-4727-1 was based has been addressed under the District Response to Comment #2 above. Finally, the question of the District's verification that the credits were "real" and had not been credited elsewhere has been addressed under the District Response to Comment #3 above.

Finally, as discussed above, ERC S-4727-1 is valid, and its use to mitigate the proposed VOC emissions increase from the Gallo ATCs complies with District Rule 2201.