

13. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
14. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
15. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
16. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
17. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
20. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. The permittee shall record monthly fuel consumption. [District Rule 1070 and 40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
23. The permittee shall maintain annual records, in standard cubic feet, of the combined quantity of natural gas burned in the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

24. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-7365-21-4

EXPIRATION DATE: 09/30/2017

EQUIPMENT DESCRIPTION:

75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #2) .

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr [District Rules 4201 and 4301]
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The exhaust stack of this boiler shall have the following parameters: stack height from ground level - 50 feet; stack diameter - 32 inches; and gas exit flowrate - 13,000 cfm. [District Rule 4102]
4. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
5. Emissions shall not exceed any of the following limits: 7 ppmvd NO_x @ 3% O₂ or 0.008 lb-NO_x/MMBtu; 50 ppmvd CO @ 3% O₂ or 0.037 lb-CO/MMBtu; 0.0013 lb-VOC/MMBtu (equivalent to 3 ppmvd VOC @ 3% O₂); 0.0076 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
6. The combined maximum amount of fuel burned by the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22 shall not exceed 1,392.84 MMscf/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
8. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
9. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
11. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
12. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
14. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
15. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
16. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
17. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
20. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. The permittee shall record monthly fuel consumption. [District Rule 1070 and 40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
23. The permittee shall maintain annual records, in standard cubic feet, of the combined quantity of natural gas burned in the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

24. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-7365-22-4

EXPIRATION DATE: 09/30/2017

EQUIPMENT DESCRIPTION:

75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #3)

PERMIT UNIT REQUIREMENTS

1. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
2. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
3. The exhaust stack of this boiler shall have the following parameters: stack height from ground level - 50 feet; stack diameter - 32 inches; and gas exit flowrate - 13,000 cfm. [District Rule 4102]
4. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
5. Emissions shall not exceed any of the following limits: 7 ppmvd NO_x @ 3% O₂ or 0.008 lb-NO_x/MMBtu; 50 ppmvd CO @ 3% O₂ or 0.037 lb-CO/MMBtu; 0.0013 lb-VOC/MMBtu (equivalent to 3 ppmvd VOC @ 3% O₂); 0.0076 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
6. The combined maximum amount of fuel burned by the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22 shall not exceed 1,392.84 MMscf/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
8. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
9. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
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PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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13. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
14. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
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17. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
20. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
21. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. The permittee shall record monthly fuel consumption. [District Rule 1070 and 40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
23. The permittee shall maintain annual records, in standard cubic feet, of the combined quantity of natural gas burned in the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

24. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

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

Appendix II
BACT Guidelines 4.12.1 and 4.12.2

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 4.12.1*

Last Update: 11/26/2006

Chemical Plants - Valves & Connectors

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21 and Maintenance Program pursuant to District Rule 4455		

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

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

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 4.12.2*

Last Update: 11/27/2006

Chemical Plants Pump and Compressor Seals

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a reading of methane in excess of 500 ppmv above background when measure per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455		

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

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

Appendix III
New BACT Determination for Permit Units N-7365-35 and '-36

Proposed Pages for the BACT Clearinghouse

**San Joaquin Valley
Unified Air Pollution Control District
Best Available Control Technology (BACT) Guideline 1.9.x**

Emission unit: Power Oxidizer – VOC Incineration and Power Generation Industry Type: Ethanol Production from Corn Fermentation

Equipment Rating: < or = 35 MMBtu/hr

Last Update: April 26, 2016

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
NOx	9 ppmvd @ 15% O2 (equivalent to 0.0332 lb/MMBtu or 0.5 lb/MW-hr)	0.8 ppmvd @ 15% O2 (equivalent to 0.0062 lb/MMBtu or 0.1 lb/MW-hr)	
VOC	0.0064 lb/MMBtu	0.0055 lb/MMBtu	

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

***This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)**

BACT CLEARINGHOUSE

--Submission Form--

Category

Source Category	Power Oxidizer – VOC Incineration and Power Generation
SIC Code	2869 View SIC Code List
NAICS Code	325193 View NAICS Code List

Emission Unit Information

Manufacturer	Ener-Core
Type	Power Oxidizer
Model	Power Oxidizer 2 MW (KG2-3GEF/PO) Powerstation
Equipment Description	Cogeneration system consisting of a 25 MMBtu/hr Ener-Core model ECT-DR-S-NB1-21-KG2 power oxidizer, a Dresser-Rand model KG2-3G/EF/GO turbine and electric generator system, and a Superior Boiler heat recovery steam generator
Capacity/Dimensions	2 MW
Fuel Type	N/A
Multiple Fuel Types	Natural gas and waste gas
Operating Schedule	24 hrs/day, 7 days/week, 8,760 hours/year
Function of Equipment	Control VOCs from the ethanol production operation, generate electricity to be used onsite and generate steam to be used onsite.

Facility/District Information

Facility Name	Pacific Ethanol Stockton, LLC
Facility County	San Joaquin
Facility Zip Code	95206
District Contact	Arnaud Marjollet, San Joaquin Valley Air Pollution District
District Contact Phone	(559) 230-5900
District Contact E-mail	Arnaud.marjollet@valleyair.org

Project/Permit Information

Application or Permit Number	N-7365-35-0 and '-36-0
New Construction/Modification	New
ATC Date (mm-dd-yyyy)	Example: 03-29-2001
PTO Date (mm-dd-yyyy)	
Startup Date (mm-dd-yyyy)	
Technology Status	

Source Test Available

BACT Information

Pollutant Limit(s) and Control Method(s) – Please include proper units

NOx	<p>Limit: 0.8 (equivalent Units: ppmvd @ 15% O2 Averaging Time: 3 hours to 0.0062 lb/MMBtu or 0.1 lb/MW-hr)</p> <p>Control Method Type: Pressure vessel combustion chamber results in low oxidation temperature to reduce thermal NOx</p> <p>Control Method Description: same</p>
CO	<p>Limit: N/A Units: Averaging Time:</p> <p>Control Method Type: BACT not triggered</p> <p>Control Method Description:</p>
VOC	<p>Limit: 0.0055 Units: lb/MMBtu Averaging Time: 3 hours</p> <p>Control Method Type: PUC-quality natural gas as supplemental fuel</p> <p>Control Method Description: same</p>
PM	<p>Limit: Units: Averaging Time:</p> <p>Control Method Type: BACT not triggered</p> <p>Control Method Description:</p>
PM 2.5	<p>Limit: Units: Averaging Time:</p> <p>Control Method Type: BACT not triggered</p> <p>Control Method Description:</p>
PM 10	<p>Limit: Units: Averaging Time:</p> <p>Control Method Type: BACT not triggered</p> <p>Control Method Description:</p>
SOx	<p>Limit: Units: Averaging Time:</p> <p>Control Method Type: BACT Not Triggered</p> <p>Control Method Description:</p>
Pb	<p>Limit: Units: Averaging Time:</p> <p>Control Method Type:</p> <p>Control Method Description:</p>
Other	<p>Limit: Units: Averaging Time:</p> <p>Control Method Type:</p> <p>Control Method Description:</p>

BACT ANALYSIS

Facility Name: Pacific Ethanol Stockton, LLC
Mailing Address: 3028 Navy Drive
Stockton, CA 95206
Contact Person: Michael Kandris
Telephone: (916) 403-2124
Application #: N-7365-35-0 and '-36-0
Project #: N-1153189

Date: April 26, 2016

I. PROPOSAL:

Pacific Ethanol Stockton, LLC is proposing to install two identical power oxidizers, each driving a turbine powering an electric generator and a heat recovery steam generator (HRSG). The ethanol production process remains unchanged; however, the waste gas stream from ethanol production processes will be routed to the one or both of the proposed power oxidizers under normal operation. The existing regenerative thermal oxidizer (RTO) that is currently used to incinerate the waste gas will be used as a backup to the proposed power oxidizer systems.

II. PROJECT LOCATION

The proposed project will be located at 3028 Navy Drive in Stockton, CA.

III. EQUIPMENT LISTING

- N-7365-35-0: COGENERATION SYSTEM #1 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2 POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR
- N-7365-36-0: COGENERATION SYSTEM #2 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2 POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR

IV. PROCESS DESCRIPTION:

Each cogeneration system will use a power oxidizer (the emissions unit) to combust a mixture of compressed waste gas, air and natural gas fuel. The combusted gases will drive the turbine blades to rotate its shaft which is connected to a compressor and an electric generator. After driving the turbine, these gases will be routed to an unfired heat recovery steam generator (HRSG) to recover thermal energy to produce steam, which will be used in the production processes at the ethanol plant.

Ultra low levels of NO_x and CO are simultaneously able to be achieved by maintaining the inlet temperature above the autoignition temperature (such that no separate source of ignition is required) and the premixed air/fuel ratio below the flameout temperature (preventing premature ignition). This operating theory allows the combustion temperatures to be low to prevent thermal NO_x from forming while maintaining complete combustion to reduce CO emissions. While a flame will not propagate through the mixture, the mixture will oxidize fully to CO₂ and H₂O as long as there is sufficient residence time. The power oxidizer that is used in this system provides a longer residence time than typical combustion systems. Although longer residence times can increase thermal NO_x, it is offset by the exponential reduction in thermal NO_x from lower combustion temperatures.⁷

V. EMISSION CONTROL TECHNOLOGY EVALUATION:

A. BACT Applicability:

District Rule 2201 Section 4.1 states that BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following:

- a) Any new emissions unit with a potential to emit exceeding two pounds per day;
- b) The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day, and/or
- c) Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day.
- d) When a Major Modification is triggered for a modification project at a facility that is a Major Source.

Section 4.2 states that BACT is not triggered for CO emissions if the facility's post project Stationary Source Potential to Emit (SSPE2) is less than 200,000 lb of CO per year.

For the new units, the PE2 is greater than 2.0 lb/day for NO_x and VOC. Thus, the units trigger BACT for NO_x and VOC emissions.

B. BACT Policy:

Per District Policy APR 1305, Section IX, "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 for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis".

The District's BACT Clearinghouse was surveyed to determine if an existing BACT guideline was applicable for this class and category of operation. No BACT guidelines were found that cover power oxidizers. Therefore, pursuant to the District's BACT policy, a Top-Down BACT analysis will be performed for inclusion of a new determination in the District's BACT Clearinghouse.

⁷ This information was obtained from: Armstrong, Jeffrey, Douglas Hamrin, and Steven Lampe. "Application of Thermal Oxidation to a Recuperated Gas Turbine: The Path to ppb NO_x Emissions." *Proceedings of ASME Turbo Expo 2013: Turbine Technical Conference and Exposition* June 3-7, 2013

The Environmental Protection Agency (EPA), California Air Resources Board (CARB), San Diego County Air Pollution Control District (SDCAPCD), South Coast Air Quality Management District (SCAQMD), Bay Area Air Quality Management District (BAAQMD) and the San Joaquin Valley Air Pollution Control District (SJVAPCD) BACT clearinghouses were reviewed to determine potential control technologies for this class and category of operation, but no BACT guidelines for power oxidizers were found.

The SJVAPCD permit database was also searched for possible facilities within this class and category of operation. No facilities were found with active permits to operate (PTO's) that operate power oxidizers not used solely for vapor control.

Ener-Core, the manufacturer of the proposed equipment, has three installations of similar equipment. Two installations are pilot installations and one operates at a landfill in Holland and all the three installations are for equipment significantly smaller in scale (250 kW, as oppose the proposed system 2 MW each); therefore, these installations will not be analyzed further.

In November 2001, the California Air Resources Board (CARB) published "Guidance for Permitting of Electrical Generation Technologies". The purpose of the guidance document was to provide guidance to assist the California Air Districts in making permitting decisions for electrical generation technologies. As shown in the table below, this guidance document contains several suggested BACT emission levels for stationary gas turbines.

Summary of BACT for the Control of Emissions from Stationary Gas Turbines		
Equipment Category	NOx (lb/MW-hr)	VOC (lb/MW-hr)
<3 MW	0.5 (9 ppmvd @ 15% O ₂)	0.1 (5 ppmvd @ 15% O ₂)
3-12 MW		
Combined Cycle	0.12	0.04
Simple Cycle	0.25	0.04
>12 - <50 MW		
Combined Cycle	0.1	0.03
Simple Cycle	0.2	0.03
Waste Gas Fired	1.25	-

While there is no category for power oxidizers, the proposed power oxidizers are expected to be at least as clean as a simple cycle turbine. Since each power oxidizer and power generation equipment has a maximum power output that is less than 3 MW, the following BACT guidance will be applied.

Summary of BACT for the Control of Emissions from Stationary Gas Turbines		
Equipment Category	NOx	VOC
< 3 MW	0.5 lb/MW-hr (9 ppmvd at 15% O ₂ or 0.0332 lb/MMBtu as converted in the attached calculator)	5 ppmvd at 15% O ₂ (0.0064 lb/MMBtu as converted in the attached calculator)

C. Top-Down BACT Analysis for NOx Emissions from the Power Oxidizer

Step 1: Identify All Possible Control Technologies

Option 1: 0.5 lb/MW-hr (equivalent to 9 ppmvd at 15% O₂ or 0.0332 lb/MMBtu) – Achieved in Practice⁸

This option is based on the CARB guidance document which suggests a NOx emissions limit of 0.5 lb/MW-hr for gas turbine electrical generation plants rated less than 3 MW. The CARB guidance also lists feasible emission factors for turbines rated larger than 3 MW, however, this system is only capable of achieving 2 MW power output.

Option 2: 0.1 lb/MW-hr (equivalent to 0.8 ppmvd at 15% O₂ or 0.0062 lb/MMBtu) – Technologically Feasible

This option is based on testing performed on similar units smaller in size and proposed by the applicant/manufacturer. No permitted unit has demonstrated compliance with this limit; therefore, this option is considered as technologically feasible at this time.

Alternate Basic Equipment:

A gas turbine may alternatively be used to generate electricity; however, pursuant to the CARB guidance document for gas turbines, gas turbines with rated outputs less than 3 MW can achieve NOx emissions of 0.5 lb/MW-hr. Since the power oxidizer is expected to achieve a lower emissions rate of 0.1 lb/MW-hr, a gas turbine will not be listed as Alternative Basic Equipment.

Step 2: Eliminate Technologically Infeasible Options

There are no technologically infeasible control options.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. 0.8 ppmvd @ 15% O₂ (equivalent to 0.0062 lb/MMBtu/0.1 lb/MW-hr) – Technologically Feasible
2. 9 ppmvd @ 15% O₂ (equivalent to 0.0332 lb/MMBtu/0.5 lb/MW-hr) 0.5 lb/MW-hr – Achieved in Practice

Step 4: Cost Effectiveness Analysis

Since the applicant is proposing to achieve the most stringent control listed above, that is, 0.8 ppmvd @ 15% O₂, equivalent to 0.0062 lb/MMBtu/0.1 lb/MW-hr cost effectiveness analysis is not required.

⁸ Although a power oxidizer has not demonstrated to be able to achieve this limit, it is expected that any similar power generating equipment be able to achieve, at a minimum, this limit established in the ARB Guidance for Permitting Electrical Generation Technology.

Step 5: Select BACT

The applicant has proposed to achieve 0.8 ppmvd @ 15% O₂, equivalent to 0.0062 lb/MMBtu/0.1 lb/MW-hr, which is the most stringent technologically feasible emission standard for the proposed unit. Therefore, BACT requirements are satisfied.

D. Top-Down BACT Analysis for VOC Emissions from the Power Oxidizer

Step 1: Identify All Possible Control Technologies

Option 1: 5.0 ppmvd @ 15% O₂ (0.0064 lb/MMBtu, see attached conversion calculation)
– Achieved in Practice⁹

This option is based on the CARB guidance document for gas turbine electrical generation plants rated less than 3 MW.

Option 2: 0.0055 lb/MMBtu – Technologically Feasible

VOC emissions are the result of incomplete combustion of fuel. This option is proposed by the applicant as incomplete combustion in the power oxidizer is expected to be less than 0.0055 lb/MMBtu.

Alternate Basic Equipment:

A gas turbine may alternatively be used to generate power; however, the VOC emissions from the power oxidizer are expected to be less than or equal to the emissions from a gas turbine. Therefore, a gas turbine will not be listed as Alternative Basic Equipment in this guideline.

Step 2: Eliminate Technologically Infeasible Options

There are no technologically infeasible control options.

Step 3: Rank Remaining Control Technologies by Control Effectiveness

1. 0.0055 lb/MMBtu – Technologically Feasible
2. 0.0064 lb/MMBtu – Achieved in Practice

Step 4: Cost Effectiveness Analysis

Since the applicant is proposing the most stringent control listed above, that is, 0.0055 lb/MMBtu, no cost effectiveness analysis is required.

Step 5: Select BACT

The applicant has proposed to achieve 0.0055 lb/MMBtu. Therefore, BACT requirements are satisfied.

⁹ Although a power oxidizer has not demonstrated to be able to achieve this limit, it is expected that any similar power generating equipment be able to achieve, at a minimum, this limit established in the ARB Guidance for Permitting Electrical Generation Technology.

ppm=>btu

	SELECTION #
COAL (ANTHRACITE)	0
COAL (BITUMINOUS)	1
COAL (LIGNITE)	2
OIL (CRUDE, RESIDUAL, OR DISTILLATE)	3
GAS (NATURAL)	4
GAS (PROPANE)	5
GAS (BUTANE)	6
WOOD	7
WOOD BARK	8
MUNICIPAL SOLID WASTE	9

STANDARD O2 CORRECTION FOR EXTERNAL COMBUSTION IS 3%	
Type of fuel (use table above)	4 GAS
O2 correction (i.e., 3%)	15 %
Enter concentrations	
NOx	9 ppmv
CO	0 ppmv
VOC (as methane)	5 ppmv

CALCULATED EQUIVALENT LB/MMBTU VALUES	
NOx	0.0332 LB/MMBTU
CO	0.0000 LB/MMBTU
VOC (as methane)	0.0064 LB/MMBTU

pV = R*T	
pressure (p)	1 atm
universal gas constant (R*)	0.7302 atm-scf/lbmole-oR
temperature (oF)	60 oF
calculated	
molar specific volume (V)	379.5 scf/lbmole
Molecular weights	
NOx	46 lb/lb-mole
CO	28 lb/lb-mole
VOC (as methane)	16 lb/lb-mole

F FACTORS FROM EPA METHOD 19		
COAL (ANTHRACITE)	10100 DSCF/MMBTU	COAL
COAL (BITUMINOUS)	9780 DSCF/MMBTU	COAL
COAL (LIGNITE)	9860 DSCF/MMBTU	COAL
OIL (CRUDE, RESIDUAL, OR DISTILLATE)	9190 DSCF/MMBTU	OIL
GAS (NATURAL)	8710 DSCF/MMBTU	GAS
GAS (PROPANE)	8710 DSCF/MMBTU	GAS
GAS (BUTANE)	8710 DSCF/MMBTU	GAS
WOOD	9240 DSCF/MMBTU	WOOD
WOOD BARK	9600 DSCF/MMBTU	WOOD BARK
MUNICIPAL SOLID WASTE	9570 DSCF/MMBTU	SOLID WASTE
F FACTOR USED IN CALCULATIONS	8710 DSCF/MMBTU	GAS

Appendix IV
Statewide Compliance Statement

December 17, 2015

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

Subject: Compliance Statement for Pacific Ethanol Stockton, LLC (N-7365)

Dear Mr. Peirce:

In accordance with Rule 2201, Section 4.15, "Additional Requirements for New Major Sources and Federal Major Modifications," Pacific Ethanol Stockton, LLC is pleased to provide this compliance statement regarding its proposed installation of two co-generation systems, each consisting of a power oxidizer, a compressor-turbine-generator system and a heat recovery steam generator, Project N-1153189.

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

Facility #1: Pacific Ethanol Stockton, LLC, 3028 Navy Drive, Stockton, CA 95206

Facility #2: Pacific Ethanol Madera, LLC, 31470 Avenue 12, Madera, CA 93638

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

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

Sincerely,



Mike Kandris,

Chief Operating Officer
Pacific Ethanol Stockton,
LLC

Appendix V
Compliance Certification



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



TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE AMENDMENT
 MINOR PERMIT MODIFICATION

COMPANY NAME: <u>Pacific Ethanol Stockton LLC</u>	FACILITY ID <u>N-7365</u>
1. Type of Organization: <input type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input checked="" type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: <u>Pacific Ethanol Stockton LLC</u>	
3. Agent to the Owner: <u>Mike Kandris</u>	

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

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

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

Mike Kandris

12/17/15

Signature of Responsible Official

Date

Mike Kandris

Name of Responsible Official (please print)

Chief Operating Officer

Title of Responsible Official (please print)

Appendix VI
HRA and AAQA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Jesse Garcia – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: January 14, 2016
 Facility Name: Pacific Ethanol Stockton, LLC
 Location: 3028 Navy Drive, Stockton
 Application #(s): N-7365-4-7 to 11-9, 20-5 to 22-5, 35-0, 36-0
 Project #: N-1153189

A. RMR SUMMARY

RMR Summary			
Categories	Cogeneration Systems (Units 35-0 & 36-0)	Project Totals	Facility Totals
Prioritization Score	0.05	0.05	>1.0
Acute Hazard Index	0.00	0.00	0.00
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk	4.68E-10	4.68E-10	1.20E-07
T-BACT Required?	No		
Special Permit Conditions?	Yes		

Proposed Permit Conditions

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

Units 35-0 & 36-0

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

B. RMR REPORT

I. Project Description

Technical Services received a request on January 4, 2016, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for a gradual oxidizer project.

For Units 4-7 to 11-9 and 20-5 to 22-5, the modifications proposed do not result in an increase in emissions. Therefore, no AAQA or RMR analysis was required or performed for these units. Modeling for the AAQA and RMR was only performed for Units 35-0 and 36-0 (the two new cogeneration systems).

II. Analysis

Toxic emissions for the project were calculated using Ventura County Air Pollution Control District emission factors for Natural Gas external combustion and San Diego County Air Pollution Control District emission factors for Digester Gas external combustion. The emissions were then input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines. The cumulative facilitywide prioritization scores totaled to greater than 1.0 (see RMR Summary Table). Therefore, a refined Health Risk Assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2009-2013 from Stockton to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Units 35-0 & 36-0			
Source Type	Point	Location Type	Urban
Stack Height (m)	10.97	Closest Receptor (m)	372
Stack Diameter (m)	0.91	Type of Receptor	Business
Stack Exit Velocity (m/s)	17.97	Natural Gas Usage Rates (MMscf for each unit)	0.0248 hr 155.17 yr
Stack Exit Temp. (°K)	469	Waste Gas Usage Rates (MMscf for each unit)	0.00025 hr 1.56 yr

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀; as well as a RMR. For each unit, the emission rates used for criteria pollutant modeling were 0.791 lb/hr CO, 0.217 lb/hr NO_x, 0.056 lb/hr SO_x, and 0.154 lb/hr PM₁₀.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Cogeneration Systems	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²
PM _{2.5}	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010, using the District's approved procedures.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusions

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

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

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

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

Attachments

RMR Request Form
Project Emails
Emissions Speciation Worksheets
Prioritization
AAQA Results
Facility Summary

Appendix VII
Draft Authority to Construct Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-4-7

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 18,500 GALLON SLURRY TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-5, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-5, '-6, '-7, '-8, '-9, '-10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-4-5 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District 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-7365-4-7 Apr 26 2016 @ 5:59PM -- GARCIAJ - Joint Inspection NOT Required

6. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. All vapors from the slurry tank shall be vented through the vent gas scrubber and then through the RTO or power oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The overall control efficiency for the vent gas scrubber vented to the RTO and the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total combined controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO and from the slurry tank served by the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total combined controlled emissions rate from the vent gas scrubber vented to the RTO and from the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total combined controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NO_x/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any one rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NO_x/year, 4,654 lb-SO_x/year, 4,899 lb-PM₁₀/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The VOC content of the vapor in the slurry tank and slurry mix tank shall not exceed 10% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Operator shall conduct initial sampling from the slurry mix tank to qualify for exemption from fugitive component counts for components handling fluids with less than 10% VOC by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
18. VOC content of vapor shall be determined by ASTM D1945, ASTM D1946, EPA Method 18 referenced as methane, or equivalent test method with prior District approval. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

20. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
21. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
22. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
23. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})] / [\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]\} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
29. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
30. During source testing, permittee shall maintain record of ethanol production rate measured in gal-ethanol/hour. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
31. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
32. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
33. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
34. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
35. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

36. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
37. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
38. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
39. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit
40. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
41. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
42. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
43. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
44. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
45. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
46. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-5-6

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF 29,653 GALLON YEAST TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-6, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-6, '-7, '-8, '-9, '-10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-5-5 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District 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 Marjolle, Director of Permit Services
N-7365-5-6 Apr 26 2016 6:59PM -- GARCIAJ Joint Inspection NOT Required

6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
7. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All vapors from the slurry tank shall be vented through the vent gas scrubber and then through the RTO or power oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The overall control efficiency for the vent gas scrubber vented to the RTO and the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total combined controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO and from the slurry tank served by the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total combined controlled emissions rate from the vent gas scrubber vented to the RTO and from the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total combined controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NOx/year, 4,654 lb-SOx/year, 4,899 lb-PM10/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Fugitive VOC emissions from equipment leaks associated with this tank shall not exceed 0.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
21. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
22. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
23. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})] / [\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]\} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
29. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
30. During source testing, permittee shall maintain records of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
31. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
32. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
33. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
34. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
35. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

36. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
37. The RTO shall be operated at a temperature of no less than 1,400 °F. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
38. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
39. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit
40. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
41. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 °F limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
42. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
43. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
44. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
45. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
46. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit
47. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit
48. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
49. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
50. All records shall be retained on site for a minimum of five years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
51. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

52. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-6-5

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 177,748 GALLON LIQUEFACTION TANK SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-9, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-7, '-8, '-9, '-10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-6-4 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District 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 Marjolle, Director of Permit Services

N-7365-6-5 Apr 26 2016 6:59PM - GARCIAJ Joint Inspection NOT Required

6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
7. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All vapors from the liquefaction tank shall be vented through the vent gas scrubber and then through the RTO and power oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The overall control efficiency for the vent gas scrubber vented to the RTO and the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total combined controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO and from the slurry tank served by the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total combined controlled emissions rate from the vent gas scrubber vented to the RTO and from the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total combined controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NOx/year, 4,654 lb-SOx/year, 4,899 lb-PM10/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Fugitive VOC emissions from equipment leaks associated with the liquefaction tank shall not exceed 0.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
21. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
22. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
23. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})] / [\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]\} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
29. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
30. During source testing, permittee shall maintain records of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
31. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
32. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
33. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
34. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
35. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

36. The permittee shall maintain daily records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
37. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
38. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
39. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit
40. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7 [40 CFR Part 64] Federally Enforceable Through Title V Permit
41. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
42. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
43. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
44. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
45. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
46. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit
47. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit
48. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
49. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
50. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
51. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

52. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-7-6

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF FERMENTATION PROCESS CONSISTING OF FOUR 705,000 GALLON FIXED ROOF PROCESS TANKS, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-8) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-8). THE EXHAUST FROM THE PROCESS TANKS IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11); ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-7-5 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [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-7365-7-6 Apr 26 2016 6:59PM -- GARCIAJ Joint Inspection NOT Required

5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
7. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All vapors from the fermentation tank shall be vented through the CO2 scrubber and then through the RTO and power oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The overall control efficiency for the CO2 scrubber vented to the RTO and CO2 scrubber vented power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total combined controlled VOC emissions rate from each fermentation tank served by the CO2 scrubber vented to the RTO and from each fermentation tank served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total combined controlled VOC emissions rate from the entire fermentation process served by the CO2 scrubber vented to the RTO and from the entire fermentation process served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb-VOC/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total combined controlled VOC emissions rate from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the RTO and from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NOx/year, 4,654 lb-SOx/year, 4,899 lb-PM10/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
17. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Fugitive VOC emissions from equipment leaks associated with the fermentation process shall not exceed 3.8 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. VOC content in the fluid handled through the chiller system (shared with permit N-7365-8) shall be less than or equal to 10% by weight. Compliance with this condition shall be verified by sampling fluid from chilled water tank, as well as, the sump of the CO2 scrubber within 60 days of startup under this permit and whenever required by the District, ARB, or EPA. [District Rules 2201 and 4455 and 40 CFR 60.480a (d)(5)] Federally Enforceable Through Title V Permit
21. The owner or operator shall keep records of the following items for VOC content testing: a.) the date, b.) vessel or location from where fluid is sampled, c.) name of the person taking and analyzing samples and company affiliation, d.) VOC content (% by wt.) in the sample, and e.) report of the test results. [District Rules 2201 and 4455, 40 CFR 60.486a (i)(3)] Federally Enforceable Through Title V Permit
22. The permittee shall include in the Operator Management Plan all components exclusively handling liquid streams with VOC content less than 10% by weight. [District Rule 4455] Federally Enforceable Through Title V Permit
23. The results of any laboratory testing or other pertinent information to demonstrate compliance with the exemption criteria for components exclusively handling liquid streams with VOC content less than 10% by weight shall be submitted with the Operator Management Plan. [District Rule 4455] Federally Enforceable Through Title V Permit
24. VOC content shall be determined using South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids, or EPA Method 8260B, or other alternative test methods approved by the District prior to their use. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit
25. Tanks shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit
26. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
27. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
28. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
29. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\frac{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})]}{[\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]}$ x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

34. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
35. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
36. During source testing, permittee shall maintain records of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
37. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
38. The CO2 scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
39. The water flow rate through the CO2 scrubber shall not be less than 33 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
40. The permittee shall monitor and record the water flow rate through the CO2 scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
41. If the water flow rate through the CO2 scrubber is less than 33 gal/minute, the permittee shall correct the water flow rate to exceed 33 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the CO2 scrubber continues to be less than 33 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
42. The permittee shall maintain daily records of (1) the date of water flow rate measurements, (2) the water flow rate through the CO2 scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 33 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
43. The RTO shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
44. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
45. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit
46. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
47. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
48. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
49. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

50. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
51. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
52. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit
53. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit
54. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
55. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
56. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
57. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
58. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-8-7

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 928,526 GALLON FIXED ROOF BEERWELL PROCESS TANK, A CHILLER SYSTEM (SHARED WITH PERMIT N-7365-7) CONSISTING OF AN AIR COOLED ROTARY LIQUID CHILLER, AN ENCLOSED CHILLED WATER HOLDING TANK, CHILLED WATER INJECTORS, AND A KOCH GLICH CO2 WET SCRUBBER (SHARED WITH PERMIT N-7365-7). THE EXHAUST FROM THE PROCESS TANK IS VENTED THROUGH THE CHILLED WATER INJECTORS BEFORE ITS RELEASE INTO THE CO2 SCRUBBER WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-8, '-9, -10 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-8-6 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [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 Marjolle, Director of Permit Services
N-7365-8-7 Apr 26 2016 7:00PM -- GARCIAJ Joint Inspection NOT Required

5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
7. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All vapors from the beerwell process tank shall be vented through the CO2 scrubber and then through the RTO or power oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The overall control efficiency for the CO2 scrubber vented to the RTO and the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total combined controlled VOC emissions rate from the beerwell process tank served by the CO2 scrubber vented to the RTO and from the beerwell process tank served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total combined controlled VOC emissions rate from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the RTO and from the fermentation process and beerwell process tank all served by the CO2 scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.05365 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOx/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NOx/year, 4,654 lb-SOx/year, 4,899 lb-PM10/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Fugitive VOC emissions from equipment leaks associated with the beerwell process tank shall not exceed 0.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. VOC content in the fluid handled through the chiller system (shared with permit N-7365-7) shall be less than or equal to 10% by weight. Compliance with this condition shall be verified by sampling fluid from chilled water tank, as well as, the sump of the CO2 scrubber within 60 days of startup under this permit and whenever required by the District, ARB, or EPA. [District Rules 2201 and 4455 and 40 CFR 60.480a (d)(5)] Federally Enforceable Through Title V Permit
20. The owner or operator shall keep records of the following items for VOC content testing: a.) the date, b.) vessel or location from where fluid is sampled, c.) name of the person taking and analyzing samples and company affiliation, d.) VOC content (% by wt.) in the sample, and e.) report of the test results. [District Rules 2201 and 4455, 40 CFR 60.486a (i)(3)] Federally Enforceable Through Title V Permit
21. The permittee shall include in the Operator Management Plan all components exclusively handling liquid streams with VOC content less than 10% by weight. [District Rule 4455] Federally Enforceable Through Title V Permit
22. The results of any laboratory testing or other pertinent information to demonstrate compliance with the exemption criteria for components exclusively handling liquid streams with VOC content less than 10% by weight shall be submitted with the Operator Management Plan. [District Rule 4455] Federally Enforceable Through Title V Permit
23. VOC content shall be determined using South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids, or EPA Method 8260B, or other alternative test methods approved by the District prior to their use. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit
24. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit
25. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
26. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
27. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
28. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 months from the date of the proposed source test. Source testing shall be conducted within 60 days of this exceedance. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit
30. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO2 scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\frac{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})]}{[\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

33. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
34. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
35. During source testing, permittee shall maintain records of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
36. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
37. The CO₂ scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
38. The water flow rate through the CO₂ scrubber shall not be less than 33 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
39. The permittee shall monitor and record the water flow rate through the CO₂ scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
40. If the water flow rate through the CO₂ scrubber is less than 33 gal/minute, the permittee shall correct the water flow rate to exceed 33 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the CO₂ scrubber continues to be less than 33 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
41. The permittee shall maintain daily records of (1) the date of water flow rate measurements, (2) the water flow rate through the CO₂ scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 33 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
42. The RTO shall be operated at a temperature of no less than 1,400 °F. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
43. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
44. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit
45. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
46. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 °F limit. [District Rule 2201 and 40 CFR Part 64]
47. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
48. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit

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49. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
50. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
51. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit
52. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit
53. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
54. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
55. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
56. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
57. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-9-4

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF DISTILLATION PROCESS CONSISTING OF ONE DE-GAS VESSEL, ONE BEER STRIPPER, ONE SIDE STRIPPER, ONE RECTIFIER, TWO MOLECULAR SIEVES AND ONE 200 PROOF ETHANOL CONDENSER, ALL SERVED BY KOCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-10 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-10 AND '-11); ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-9-3 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [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

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5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. All vapors from the distillation process shall be vented through the vent gas scrubber and then through the RTO or power oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The overall control efficiency for the vent gas scrubber vented to the RTO and the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Total combined controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO and from the slurry tank served by the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total combined controlled emissions rate from the vent gas scrubber vented to the RTO and from the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total combined controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NOX/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM10/MMBtu; or 0.00285 lb-SOX/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NOx/year, 4,654 lb-SOx/year, 4,899 lb-PM10/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Fugitive VOC emissions from equipment leaks associated with the distillation process shall not exceed 3.9 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
19. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit

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20. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})] / [\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]\} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
26. During source testing, permittee shall maintain records of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
27. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
28. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
29. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
30. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
31. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
32. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64]
33. The RTO shall be operated at a temperature of no less than 1,400 °F. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
34. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
35. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

36. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
37. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
38. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
39. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
40. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
41. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
42. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit
43. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit
44. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
45. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
46. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
47. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
48. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-10-5

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF ONE 190,400 GALLON PROCESS CONDENSATE TANK, COLLECTING WATER FROM THE CO2 AND VENT GAS SCRUBBERS, SERVED BY A KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-11) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-11): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-10-4 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [District Rule 2201] Federally Enforceable Through Title V Permit
4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-11-9, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District 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 Marjolle, Director of Permit Services
N-7365-10-5 Apr 26 2016 7:00PM -- GARCIAJ Joint Inspection NOT Required

6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
7. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All vapors from the process condensate tank shall be vented through the vent gas scrubber and then through the RTO or oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The overall control efficiency for the vent gas scrubber vented to the RTO and the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total combined controlled VOC emissions rate from the slurry tank served by the vent gas scrubber vented to the RTO and from the slurry tank served by the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total combined controlled emissions rate from the vent gas scrubber vented to the RTO and from the vent gas scrubber vented to the power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total combined controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NO_x/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NO_x/year, 4,654 lb-SO_x/year, 4,899 lb-PM₁₀/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Fugitive VOC emissions from equipment leaks associated with this process condensate tank shall not exceed 0.2 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. Tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in leak-free condition. Collected vapors shall be directed to approved control devices having a destruction efficiency of at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623] Federally Enforceable Through Title V Permit
21. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
22. Except as otherwise provided in this permit, all piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit
23. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})] / [\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]\} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
29. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
30. During source testing, permittee shall maintain records of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
31. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
32. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
33. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
34. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

35. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
36. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64]
37. The RTO shall be operated at a temperature of no less than 1,400 °F. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
38. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
39. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit
40. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
41. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 °F limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
42. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
43. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
44. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
45. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455, 5.1.4] Federally Enforceable Through Title V Permit
46. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit
47. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit
48. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
49. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

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50. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
51. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
52. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-11-9

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF WET CAKE PROCESS CONSISTING OF ONE 194,400 GALLON WHOLE STILLAGE TANK, ONE CENTRIFUGE SYSTEM WITH FIVE CENTRIFUGES, ONE 127,000 GALLON THIN STILLAGE TANK, THREE EVAPORATORS, ONE 129,600 GALLON SYRUP TANK, CORN OIL EXTRACTION SYSTEM CONSISTING OF ONE 36,000 GALLON HEAT SOAK TANK, THREE CENTRIFUGES, ONE 800 GALLON BUFFER TANK, ONE 1,285 GALLON FINAL PRODUCT TANK, TWO 10,500 GALLON CORN OIL LOADOUT STORAGE TANKS ALL SERVED BY AN KOTCH GLICH VENT GAS SCRUBBER (SCRUBBER SHARED WITH PERMITS N-7365-4, '-5, '-6, '-9 AND '-10) WHICH IS VENTED TO A 2.4 MMBTU/HR A.H. LUNDBERG ASSOCIATES, INC. REGENERATIVE THERMAL OXIDIZER WITH A MAXON MODEL KINEDIZER LE LOW NOX BURNER (RTO SHARED WITH PERMITS N-7365-4, '-5, '-6, '-7, '-8, '-9 AND '-10) AND A TRUCK LOADOUT SYSTEM: ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36 AND ALLOW AN OPTION TO DISCHARGE THE EXHAUST FROM THE VENT GAS SCRUBBER TO THE POWER OXIDIZERS OF THE COGENERATION SYSTEMS UNDER PERMITS N-7365-35 AND '-36

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. Authority to Construct (ATC) N-7365-11-7 shall be implemented concurrently, or prior to the modification and startup of the equipment authorized by this ATC. [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 Marjolle, Director of Permit Services
N-7365-11-9 Apr 28 2016 7:00PM - GARCIAJ Joint Inspection NOT Required

4. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-20-5, '-21-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Wet cake conveyors between each tank or each emissions unit at the wet cake process unit shall be fully enclosed. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The maximum amount of ethanol produced at this facility shall not exceed either of the following limits: 360,000 gallon/day or 70,000,000 gallon/year. [District Rule 2201] Federally Enforceable Through Title V Permit
8. All vapors from the wet cake process shall be vented through the vent gas scrubber and then through the RTO or power oxidizer(s) listed on permits N-7365-35 and '-36. [District Rule 2201] Federally Enforceable Through Title V Permit
9. The RTO shall only be fired on PUC-regulated natural gas. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The overall control efficiency for the vent gas scrubber vented to the RTO and power oxidizer(s) listed on permits N-7365-35 and '-36 shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Total controlled VOC emissions rate from the wet cake process served by the vent gas scrubber vented to the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total controlled VOC emissions rate from the slurry tank, yeast tank, liquefaction tank, distillation process, process condensate tank and wet cake process all served by the vent gas scrubber vented to the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 shall not exceed 0.00995 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total controlled VOC emissions rate from the exhaust of the RTO and power oxidizer(s) listed on permits N-7265-35 and '-36 while serving the slurry tank, yeast tank, liquefaction tank, fermentation process, beerwell process tank, distillation process, process condensate tank and wet cake process shall not exceed 0.0636 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Emissions rates from the combustion of natural gas in the RTO burner shall not exceed any of the following limits: 0.05 lb-NO_x/MMBtu; 0.084 lb-CO/MMBtu; 0.0055 lb-VOC/MMBtu; 0.0076 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
15. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NO_x/year, 4,654 lb-SO_x/year, 4,899 lb-PM₁₀/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Loading losses from the distiller's syrup loadout operation shall not exceed 0.526 lb-VOC/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Loading losses from the distiller's corn oil loadout operation shall not exceed 0.000175 lb-VOC/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The maximum throughput of distiller's syrup loaded shall not exceed any of the following: 67,371 gallons per day or 24,590,415 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. The maximum throughput of corn oil loaded shall not exceed any of the following: 26,000 gallons per day or 5,000,000 gallons per year. [District Rule 2201]
21. Fugitive VOC emissions from equipment leaks associated with the wet cake process shall not exceed 2.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Fugitive VOC emissions from equipment leaks associated with the corn oil operation shall not exceed 0.03 lb/day. [District Rule 2201]
23. Fugitive VOC emissions from equipment leaks associated with the distiller's syrup operation shall not exceed 2.9 lb/day. [District Rule 2201]
24. Fugitive VOC emissions shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-1, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Average Emission Factors. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Fugitive VOC emissions from equipment leaks associated with the corn oil operation shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-9, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Leak Rate/Screening Value Correlations Emission Factors. [District Rule 2201]
26. Fugitive VOC emissions from equipment leaks associated with the distiller's syrup operation shall be calculated using the EPA "1995 Protocol for equipment Leak Emissions Estimates" (EPA-453/R-95-017), Table 2-9, Synthetic Organic Chemical Manufacturing Industry (SOCMI) Leak Rate/Screening Value Correlations Emission Factors. [District Rule 2201]
27. The permittee shall maintain daily and annual records, in gallons, of the quantity of distiller's syrup and corn oil loaded at this facility. [District Rule 2201]
28. The permittee shall maintain daily and annual records, in gallons, of the quantity of ethanol produced at this facility. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
29. Permittee shall maintain accurate component count and shall update such records when new components are approved and installed. [District Rule 2201]
30. Source testing requirements as stated in this permit for the RTO shall only be required when operation of the RTO exceeds 100 hours of operation during the previous 12 month period. Source testing shall be conducted within 60 days of exceedance of the 100 hour limit. [District Rule 2201] Federally Enforceable Through Title V Permit
31. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to the RTO and the vent gas scrubber vented to the RTO shall be conducted at least once every twelve (12) months with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
32. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the RTO shall be conducted at least once every twelve (12) months, with equipment in operational condition. [District Rule 2201] Federally Enforceable Through Title V Permit
33. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 and the vent gas scrubber vented to each power oxidizer listed under permits N-7365-35 and '-36 shall all be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
34. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - (\text{RTO Outlet and power oxidizer outlet})] / [\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]\} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

36. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
37. During source testing, permittee shall maintain records of ethanol produced, in gal-ethanol/hour. [District Rule 2201] Federally Enforceable Through Title V Permit
38. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
39. The vent gas scrubber shall be equipped with a water flow meter, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
40. The water flow rate through the vent gas scrubber shall not be less than 25 gal/minute. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
41. The permittee shall monitor and record the water flow rate through the vent gas scrubber at least once every day. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
42. If the water flow rate through the vent gas scrubber is less than 25 gal/minute, the permittee shall correct the water flow rate to exceed 25 gal/minute, as soon as possible, but no longer than 1 hour of operation after detection. If the water flow rate through the vent gas scrubber continues to be less than 25 gal/minute after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
43. The permittee shall maintain records of (1) the date of water flow rate measurements, (2) the water flow rate through the vent gas scrubber at the time of measure, and (3) a description of any corrective action taken to maintain the water flow rate above the 25 gal/minute limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
44. The RTO shall be operated at a temperature of no less than 1,400 °F. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
45. The RTO shall be equipped with a continuous temperature monitoring and recording device, in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
46. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [District Rule and 40 CFR Part 64] Federally Enforceable Through Title V Permit
47. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
48. The permittee shall maintain daily records of (1) the date of RTO temperature measurements, (2) the temperature of the RTO at the time of measure, and (3) a description of any corrective action taken to maintain the temperature above the 1,400 °F limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
49. Valves, threaded connections, and flanges shall not leak VOCs in excess of 100 ppmv above background when measured in accordance with EPA Method 21, provided the total number of leaking tagged components of any component type does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit
50. Pressure relief valves (PRVs) shall not leak VOC's in excess of 100 ppmv above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed 0.5 percent of the total number of components of that type inspected. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit
51. Process drains shall not leak VOC's in excess of 100 ppmv above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed 0.5 percent of the total number of components inspected. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

52. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 500 ppmv above background when measured in accordance with EPA Method 21. [District Rules 2201 and 4455] Federally Enforceable Through Title V Permit
53. This operation shall comply with the requirements of District Rule 4455, Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants, as specified on facility wide permit N-7365-0. [District Rule 4455] Federally Enforceable Through Title V Permit
54. This operation shall comply with the requirements of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, as specified on facility wide permit N-7365-0. [40 CFR 60.480 and 60.481] Federally Enforceable Through Title V Permit
55. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
56. Monthly hours of operation of the RTO shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
57. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
58. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
59. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-20-5

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF 75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #1); ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36

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. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-21-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The exhaust stack of this boiler shall have the following parameters: stack height from ground level - 50 feet; stack diameter - 32 inches; and gas exit flowrate - 13,000 cfm. [District Rule 4102]

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 Marjolle, Director of Permit Services

N-7365-20-5 Apr 26 2016 7:00PM -- GARCIA/J Joint Inspection NOT Required

7. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. Emissions shall not exceed any of the following limits: 7 ppmvd NO_x @ 3% O₂ or 0.008 lb-NO_x/MMBtu; 50 ppmvd CO @ 3% O₂ or 0.037 lb-CO/MMBtu; 0.0013 lb-VOC/MMBtu (equivalent to 3 ppmvd VOC @ 3% O₂); 0.003 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
9. The combined maximum amount of fuel burned by the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22 shall not exceed 1,392.84 MMscf/year. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NO_x/year, 4,654 lb-SO_x/year, 4,899 lb-PM₁₀/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
11. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
13. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
14. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
15. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
16. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
17. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
18. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
27. The permittee shall record monthly fuel consumption. [District Rule 1070 and 40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
28. The permittee shall maintain annual records, in standard cubic feet, of the combined quantity of natural gas burned in the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
29. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
30. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-7365-21-5

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF 75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #2): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36

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. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-22-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The exhaust stack of this boiler shall have the following parameters: stack height from ground level - 50 feet; stack diameter - 32 inches; and gas exit flowrate - 13,000 cfm. [District Rule 4102]

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-7365-21-5 Apr 28 2016 7:00PM -- GARCIAJ : Joint Inspection NOT Required

7. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. Emissions shall not exceed any of the following limits: 7 ppmvd NOx @ 3% O2 or 0.008 lb-NOx/MMBtu; 50 ppmvd CO @ 3% O2 or 0.037 lb-CO/MMBtu; 0.0013 lb-VOC/MMBtu (equivalent to 3 ppmvd VOC @ 3% O2); 0.003 lb-PM10/MMBtu; or 0.00285 lb-SOx/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
9. The combined maximum amount of fuel burned by the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22 shall not exceed 1,392.84 MMscf/year. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any one rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NOx/year, 4,654 lb-SOx/year, 4,899 lb-PM10/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
11. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{rolling 12 month heat input from boilers} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
13. Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
14. NOx emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
15. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
16. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
17. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
18. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
27. The permittee shall record monthly fuel consumption. [District Rule 1070 and 40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
28. The permittee shall maintain annual records, in standard cubic feet, of the combined quantity of natural gas burned in the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
29. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
30. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-22-5

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

MODIFICATION OF 75.6 MMBTU/HR SUPERIOR BOILER WORKS NATURAL GAS-FIRED BOILER WITH A JOHN ZINK MODEL RMBU 32-G-2500 ULTRA LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM (BOILER #3): ESTABLISH A SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS FROM UNITS N-7365-4 THROUGH '-11, '-20, '-21, '-22, '-35, '-36

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. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-35-0 and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grain/dscf at operating conditions, nor 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr [District Rules 4201 and 4301] Federally Enforceable Through Title V Permit
5. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The exhaust stack of this boiler shall have the following parameters: stack height from ground level - 50 feet; stack diameter - 32 inches; and gas exit flowrate - 13,000 cfm. [District Rule 4102]

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-7365-22-5 Apr 26 2016 7:00PM - GARCIAJ : Joint Inspection NOT Required

7. The unit shall only be fired on PUC-quality natural gas. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. Emissions shall not exceed any of the following limits: 7 ppmvd NO_x @ 3% O₂ or 0.008 lb-NO_x/MMBtu; 50 ppmvd CO @ 3% O₂ or 0.037 lb-CO/MMBtu; 0.0013 lb-VOC/MMBtu (equivalent to 3 ppmvd VOC @ 3% O₂); 0.003 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
9. The combined maximum amount of fuel burned by the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22 shall not exceed 1,392.84 MMscf/year. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any one 12 month period, shall not exceed any of the following limits: 12,194 lb-NO_x/year, 4,654 lb-SO_x/year, 4,899 lb-PM₁₀/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
11. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{combined rolling 12 month heat input from boilers (MMBtu)} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production (1,000 gal)} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
13. Source testing to measure NO_x and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
14. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
15. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
16. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
17. Fuel sulfur content shall be determined using EPA Method 11 or Method 15. [District Rule 4320] Federally Enforceable Through Title V Permit
18. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
19. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
20. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit

21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
24. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
25. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306, and 4320] Federally Enforceable Through Title V Permit
26. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
27. The permittee shall record monthly fuel consumption. [District Rule 1070 and 40 CFR 60.48c(g)(2)] Federally Enforceable Through Title V Permit
28. The permittee shall maintain annual records, in standard cubic feet, of the combined quantity of natural gas burned in the boilers operating under permits N-7365-20, N-7365-21 and N-7365-22. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
29. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201]
30. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320 and 40 CFR 60.48c(i)] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-35-0

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:

COGENERATION SYSTEM #1 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2 POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR

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. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5, and '-36-0. [District Rule 2201] Federally Enforceable Through Title V Permit
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction [District Rule 4102]
6. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District 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 Marjolle, Director of Permit Services
N-7365-35-0 : Apr 27 2018 2:56PM -- GARCIAJ : Joint Inspection NOT Required

7. The unit shall only be fired on PUC-regulated natural gas or a mixture of PUC-regulated natural gas and waste gas from the ethanol production operations listed under permits N-7365-4, through '-11. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The maximum heat input, including startup, shall be limited to 620 MMBtu/day and 219,020 MMBtu/year (equivalent to 0.62 MMscf/day and 219.02 MMscf/year of natural gas). [District Rule 2201] Federally Enforceable Through Title V Permit
9. The overall control efficiency for the scrubbers listed under permits N-7365-4, through '-11 vented to the power oxidizer shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
11. Emissions rates from combustion in the power oxidizer shall not exceed any of the following limits: 0.0062 lb-NO_x/MMBtu (0.8 ppmv @ 15% O₂); 0.0226 lb-CO/MMBtu (4.8 ppmv @ 15% O₂); 0.003 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emission rate from the combustion of natural gas in the power oxidizer shall not exceed 0.0055 lb-VOC/MMBtu (4.3 ppmv @ 15% O₂). [District Rule 2201] Federally Enforceable Through Title V Permit
13. VOC emissions from ethanol production, the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 and the power oxidizers listed under permit N-7365-35 and -36 shall not exceed 0.0653 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any one rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NO_x/year, 4,654 lb-SO_x/year, 4,899 lb-PM₁₀/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: PE = rolling 12 month heat input from boilers x 0.0013 lb/MMBtu (or emission factor established by most recent source test) + rolling 12 month ethanol production x 0.0653 lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to the power oxidizer and the vent gas scrubber vented to the power oxidizer shall be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the power oxidizer shall be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\frac{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - \text{Power Oxidizer Outlet}]}{[\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]}$ x 100%. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Source testing to measure NO_x and CO emissions from this unit shall be conducted within 90 days of initial start-up and at least once every twelve (12) months thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

21. Source testing for NO_x emissions shall be conducted using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
22. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100 [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
23. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. During source testing, permittee shall maintain record of ethanol production rate measured in gal-ethanol/hour. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
28. The power oxidizer shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
29. The power oxidizer shall be equipped with a continuous temperature monitoring and recording device, and shall be in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
30. The owner or operator shall maintain an operating log that includes, on a daily basis, total heat input (in either MMBtu or MMscf), date of power oxidizer temperature measurements, temperature at the time of measure and a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
31. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit
32. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
33. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201] Federally Enforceable Through Title V Permit
34. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
35. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
36. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-7365-36-0

LEGAL OWNER OR OPERATOR: PACIFIC ETHANOL STOCKTON LLC
MAILING ADDRESS: 400 CAPITOL MALL, STE 2060
SACRAMENTO, CA 95814

LOCATION: 3028 NAVY DRIVE
STOCKTON, CA 95206

EQUIPMENT DESCRIPTION:
COGENERATION SYSTEM #2 CONSISTING OF A 25 MMBTU/HR ENER-CORE MODEL ECT-DR-S-NB1-21-KG2
POWER OXIDIZER DRIVING A DRESSER-RAND MODEL KG2-3G/EF/GO TURBINE AND ELECTRIC GENERATOR
SYSTEM, AND A SUPERIOR BOILER HEAT RECOVERY STEAM GENERATOR

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. This Authority to Construct (ATC) shall be implemented concurrently with ATCs N-7365-4-7, '-5-6, '-6-5, '-7-6, '-8-7, '-9-4, '-10-5, '-11-9, '-20-5, '-21-5, '-22-5 and '-35-0. [District Rule 2201] Federally Enforceable Through Title V Permit
4. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction [District Rule 4102]
6. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

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Arnaud Marjolle, Director of Permit Services
N-7365-36-0 Apr 27 2016 2:56PM - GARCIAJ | Joint Inspection NOT Required

7. The unit shall only be fired on PUC-regulated natural gas or a mixture of PUC-regulated natural gas and waste gas from the ethanol production operations listed under permits N-7365-4, through '-11. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The maximum heat input, including startup, shall be limited to 620 MMBtu/day and 219,020 MMBtu/year (equivalent to 0.62 MMscf/day and 219.02 MMscf/year of natural gas). [District Rule 2201] Federally Enforceable Through Title V Permit
9. The overall control efficiency for the scrubbers listed under permits N-7365-4, through '-11 vented to the power oxidizer shall be a minimum of 99.5% for VOC emissions. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
11. Emissions rates from combustion in the power oxidizer shall not exceed any of the following limits: 0.0062 lb-NO_x/MMBtu (0.8 ppmv @ 15% O₂); 0.0226 lb-CO/MMBtu (4.8 ppmv @ 15% O₂); 0.003 lb-PM₁₀/MMBtu; or 0.00285 lb-SO_x/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emission rate from the combustion of natural gas in the power oxidizer shall not exceed 0.0055 lb-VOC/MMBtu (4.3 ppmv @ 15% O₂). [District Rule 2201] Federally Enforceable Through Title V Permit
13. VOC emissions from ethanol production, the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 and the power oxidizers listed under permit N-7365-35 and -36 shall not exceed 0.0653 lb/1,000 gal-ethanol produced at the facility. [District Rule 2201] Federally Enforceable Through Title V Permit
14. The combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36, during any one rolling 12 month period, shall not exceed any of the following limits: 12,194 lb-NO_x/year, 4,654 lb-SO_x/year, 4,899 lb-PM₁₀/year, 53,301 lb-CO/year, and 6,379 lb-VOC/year (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Compliance with the combined 12 month rolling average limit for VOC emissions from the boilers listed under permits N-7365-20, '-21 and '-22, the power oxidizers listed under permits N-7365-35 and '-36, from ethanol production and the RTO listed under permits N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10 and '-11 shall be determined with the following equation and updated monthly: $PE = \text{rolling 12 month heat input from boilers} \times 0.0013 \text{ lb/MMBtu (or emission factor established by most recent source test)} + \text{rolling 12 month ethanol production} \times 0.0653 \text{ lb/1,000 gal-ethanol produced at the facility (or the lb/1,000 gal-ethanol produced emission factor established at most recent source test)}$. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Source testing to demonstrate compliance with the 99.5% overall control efficiency of the CO₂ scrubber vented to the power oxidizer and the vent gas scrubber vented to the power oxidizer shall be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Source testing to demonstrate compliance with the overall VOC emissions rate from the exhaust of the power oxidizer shall be conducted within 90 days after initial start-up and at least once every twelve (12) months thereafter, with conditions representative of normal operation. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Compliance with the 99.5% overall VOC control efficiency shall be determined as follows: Overall VOC Control Efficiency (%) = $\{[(\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}) - \text{Power Oxidizer Outlet}] / [\text{CO}_2 \text{ Scrubber Inlet} + \text{Vent Gas Scrubber Inlet}]\} \times 100\%$. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Source testing to measure NO_x and CO emissions from this unit shall be conducted within 90 days of initial start-up and at least once every twelve (12) months thereafter. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Source testing for VOC emissions shall be conducted using EPA Method 18, 25 or 25A. Source testing shall also be conducted in accordance with EPA's Midwest Scaling Protocol for the Measurement of "VOC Mass Emissions" at Ethanol Production Facilities and/or any other testing methodology that has been previously approved by the District, CARB, and EPA. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

21. Source testing for NOx emissions shall be conducted using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
22. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100 [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
23. Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 1080 and 2201] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. During source testing, permittee shall maintain record of ethanol production rate measured in gal-ethanol/hour. [District Rules 1081 and 2201] Federally Enforceable Through Title V Permit
26. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
27. Sampling facilities for source testing shall be provided in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081] Federally Enforceable Through Title V Permit
28. The power oxidizer shall be operated at a temperature of no less than 1,400 øF. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
29. The power oxidizer shall be equipped with a continuous temperature monitoring and recording device, and shall be in operation at all times. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
30. The owner or operator shall maintain an operating log that includes, on a daily basis, total heat input (in either MMBtu or MMscf), date of power oxidizer temperature measurements, temperature at the time of measure and a description of any corrective action taken to maintain the temperature above the 1,400 øF limit. [District Rule 2201 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
31. Upon detecting any excursion from the acceptable temperature readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable. [40 CFR Part 64] Federally Enforceable Through Title V Permit
32. The permittee shall comply with the compliance assurance monitoring and maintenance requirements of 40 CFR Part 64.7. [40 CFR Part 64] Federally Enforceable Through Title V Permit
33. Records of the combined annual emissions from units N-7365-4, '-5, '-6, '-7, '-8, '-9, '-10, '-11, '-20, '-21, '-22, '-35 and '-36 (excluding VOCs from fugitive emissions and from the distiller's corn and syrup loadout operations) shall be maintained and updated monthly. [District Rule 2201] Federally Enforceable Through Title V Permit
34. All records shall be retained on site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 1070 and 40 CFR Part 64] Federally Enforceable Through Title V Permit
35. If the District or EPA determine that a Quality Improvement Plan is required under 40 CFR Part 64.7(d)(2), the permittee shall develop and implement the Quality Improvement Plan in accordance with 40 CFR Part 64.8. [40 CFR Part 64] Federally Enforceable Through Title V Permit
36. The permittee shall comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9. [40 CFR Part 64] Federally Enforceable Through Title V Permit

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Appendix VIII
Correspondences

Jag Kahlon

From: Patrick McKenzie <pmckenzie@pacificethanol.com>
Sent: Monday, November 23, 2015 3:42 PM
To: Nick Peirce; Jag Kahlon
Cc: Mike Kandris; Jeffrey Hahn; Joe Teubner; Frank Cunnane
Subject: Pacific Ethanol Stockton N-7365 Information/clarification request response
Attachments: 11 03 2015 Pacific Ethanol Stockton N-7365 Response Rev 23.pdf; 11 03 2015 Pacific Ethanol Stockton N-7365 Response nov 23.docx

Good afternoon Nick and Jag,
Please find the two attachments regarding the Pacific Ethanol Stockton ATC request. These attachments have the same content but are provided in the two formats for your convenience. We are hoping these are sufficient to deem our application complete and look forward to any feedback.

There are documents referenced in the attachments that are too large to attach. I have set up a drop.box location and you will receive invitations to download the associated files. Your firewalls may prevent this activity and I can hand deliver an electronic version if needed.

Looking forward to working with you on this and we appreciate the time you are spending with this project.

Best Regards
Pat



Pacific Ethanol, Inc.

Patrick (Pat) McKenzie
Director of Corporate Engineering

400 Capital Mall, Suite 2060
Sacramento, Ca, 95814
916.403.2744 office
209.487.2836 mobile
pmckenzie@pacificethanol.net
<http://www.pacificethanol.net/>

A. Cogeneration Systems:

1. Heat input rate, emission rate and monitoring

- o The power oxidizer will be fueled on natural gas fuel as well as process gas from ethanol production processes.

What would be the maximum heat input rate (MMBtu/hr) from the process gas?

The maximum heat input rate from the process gases (CO₂ and Vent Scrubbers) is ~1% of the Oxidizer's NG heat input, or 0.289 mmBtu/hr. The 0.289 mmBtu/hr heat input was derived by Dresser-Rand from the individual VOC compounds emitted from the scrubbers, in lb/hr, as input to the Oxidizer, and their individual heat contents.

What would be the maximum heat input rate (MMBtu/hr) from the natural gas?

The maximum heat input rate from NG to both Oxidizers is 50 mmBtu/hr.

What would be the maximum rated capacity (MMBtu/hr) of each power oxidizer?

25 mmBtu/hr

- Provide NOx, CO, VOC emissions from the fuel (i.e., natural gas and waste gas) combustion in terms of ppmvd @ 15% O₂ and lb/MMBtu, and provide the calculations showing conversion from ppmvd @ 15% O₂ to lb/MMBtu.

Please note the original ATC application had a unit mistake in attachment 3, sections 3, 4, and 5. The indicated value of 80,636 wet scfm has been corrected to 80,636 lb/hr. The following is a result of this correction:

Mol wt. g/mol	31.998	44	18.01	28.01	39.95			31.998	44	28.01	39.95	
	O ₂	CO ₂	H ₂ O	N ₂	Ar	mol wt		O ₂	CO ₂	N ₂	Ar	mol wt.
One Unit operation VOC - Section 4	6.02%	33.65%	6.96%	52.80%	0.56%	32.9988		6.47%	36.17%	56.76%	0.60%	34.1232
Two Unit operation VOC - Section 3	9.83%	18.11%	6.43%	64.90%	0.72%	30.7380		10.51%	19.36%	69.37%	0.77%	31.6195
No VOC - Section 5	13.53%	3.10%	5.91%	76.59%	0.87%	28.5581		14.38%	3.29%	81.40%	0.92%	29.2166

	Wet SCFM	Dry SCFM
One Unit operation VOC -Section 4	14,333.62	13,861.28
Two Unit operation VOC - Section 3	15,387.87	14,958.85
No VOC (NG only) - Section 5	16,562.42	16,189.16

This response considers Scenario 1: Both Power Oxidizers Operating and splitting the Gas Flow from the Vent and CO2 scrubbers:

Calculation Template:

$\text{NOx (ppmdv)} = (\text{NOx lb/hr}) (379.5\text{scf/lb-mole}) (\text{lb-mole}/46 \text{ lb NOx}) (10\text{E}6/\text{dscfm})(\text{hr}/60\text{min}) = \text{_____ ppm dv}$
@ ____% O2

$\text{NOx (lb/mmBtu)} = (\text{NOx lb/hr})(1/25 \text{ mmBtu/hr}) =$

$\text{NOx (ppmdv @ 15\% O2)} = \text{NOx (ppmdv @ ____\% O2)} (20.9 - 15)/20.9 - \text{____\% O2} =$

$\text{CO (ppmdv)} = \text{_____ @ ____\% O2}$ (same formula as NOx but with the MW of 28)

$\text{CO (ppmdv @ 15\% O2)} = \text{_____}$ (same formula as NOx %O2 correction)

$\text{CO (lb/mmBtu)} = \text{_____}$ (same formula as NOx lb/mmBtu)

$\text{VOC (ppmdv)} = \text{_____ @ ____\%O2}$ (same formula as NOx but with the MW of 26.4)

$\text{VOC (ppmdv @ 15\% O2)} = \text{_____}$ (same formula as NOx %O2 correction)

$\text{VOC (lb/mmBtu)} = \text{_____}$ (same formula as NOx lb/mmBtu)

Proposed NOx emissions typical operation – Scenario 1 below:

For NOx emissions of 0.31 lb/hr for both Oxidizers, use 0.155 lb/hr, 14,959 dscfm, 46 MW for NOx and 10.51% O2:

NOx ppmdv @ 15% O2 = 0.809 and NOx lb/mmBtu = 0.0062

Proposed CO emissions:

For CO emissions of 1.13 lb/hr for both Oxidizers, use 0.565 lb/hr, 14,959 dscfm, 28 MW for CO and 10.51% O2:

CO ppmdv @ 15% O2 = 4.845 and CO lb/mmBtu = 0.0226

Proposed VOC emissions:

For VOC emissions of 0.5539 lb/hr for both Oxidizers, use 0.27695 lb/hr, 14,959 dscfm, 26.4 MW for VOC and 10.51% O2:

VOC ppmdv @ 15% O2 = 2.519 and VOC lb/mmBtu = 0.01108

- Provide SOx and PM₁₀ emission factor in lb/MMBtu for each power oxidizer.

This response considers Scenario 1: Both Power Oxidizers Operating and splitting the Gas Flow from the Vent and CO2 scrubbers:

Using the PM 10 and SOx emission factors for the PES NG boilers and the RTO, and their 160 mmBtu/hr combined heat input rate, of 0.0076 lb/mmBtu for PM 10 and 0.00285 lb/mmBtu for SOx, the existing PES PTE is PM 10 = 1.22 lb/hr and SOx = 0.46 lb/hr.

With the Oxidizers, the NG boilers heat input will be 132 mmBtu/hr, or PM 10 = 1.00 lb/hr and SOx = 0.38 lb/hr. Therefore, with no net increase in PM 10 and SOx PTE, both Oxidizers would have PM 10 = 0.22 lb/hr and SOx = 0.08 lb/hr. The Oxidizers would emit PM 10 = 0.0044 lb/mmBtu and SOx = 0.0016 lb/mmBtu.

- o Provide a monitoring method (e.g., continuous emission monitoring system, portable analyzer systems, etc.) and its frequency that will be used to demonstrate on-going compliance with the proposed NOx and CO emissions.

Annual testing methods consistent with proposed test protocol will be applied. A test protocol is being developed for submittal to the District for review and comments prior to the ATC's approval, and will be formally submitted as required in the ATC and according to district rules.

Consistent with the monitoring for ongoing compliance with the PES RTO and NG boilers, an annual source test by a CARB certified independent tester will be performed on each Oxidizer's exhaust, while the NG boilers will continue on their three year source test cycle on each NG boiler. With such very low ppmv of NOx and CO in each Oxidizer's exhaust, using CEMS and CERMS under 40CFR60 Appendix B & F to monitor NOx and CO is not feasible.

2. Best Available Control Technology (BACT)

It is likely that each power oxidizer will trigger BACT for NOx, SOx, PM₁₀ and VOC emissions. The District does not have a BACT guideline to address the requirements for this unit, and have to create a new BACT guideline for this unit. Your vendor Ener-Core/Dresser-Rand has indicated a few installations for similar units at various locations.

- Please identify name of facility, location, unit's rated capacity (MMBtu/hr, MWe, steam production), fuel type (e.g., natural gas, landfill gas, propane, etc. or combination of any of these gases), presence of emissions control equipment (e.g., selective catalytic reduction system, oxidation catalyst, etc.), emission rates for various pollutants (NOx, SOx, PM₁₀ and VOC) and source testing results.

Facility Name	Location	Rated Capacity	Emissions Control Equipment	Emission Rates	Source Testing Results availability Note 5	Comments
Lamb Canyon Landfill	Beaumont, Ca	100 kW	None other than the Oxidizer itself	Refer to Source Test Reports	Yes See Note 2	See Note 1
1 st Division Landfill,	Fort Benning, Ga	250 kW	None other than the Oxidizer itself	Refer to Source Test Reports	YES See Note 3	See Note 1
ICEPAG	Portsmouth, NH	250 kW	None other than the Oxidizer itself	Refer to Source Test Reports	Yes See Note 4	
University of California, Irvine	Irvine, Ca	250 kW	None other than the Oxidizer itself	Refer to white-paper	Note 5	

Note 1: An overview and technical discussion, including a discussion of NOx BACT, is presented in the attached paper: "Application of Thermal Oxidization to a Recuperated Gas Turbine: The Path to PPB Nox Emissions" by Armstrong, Hamrin and Lampe of FlexEnergy at the ASME Turbo Expo, San Antonio, Texas June 3-7, 2013.

Note 2: FlexPowerStation Lamb Canyon Landfill Performance Testing by URS, August 24, 2010

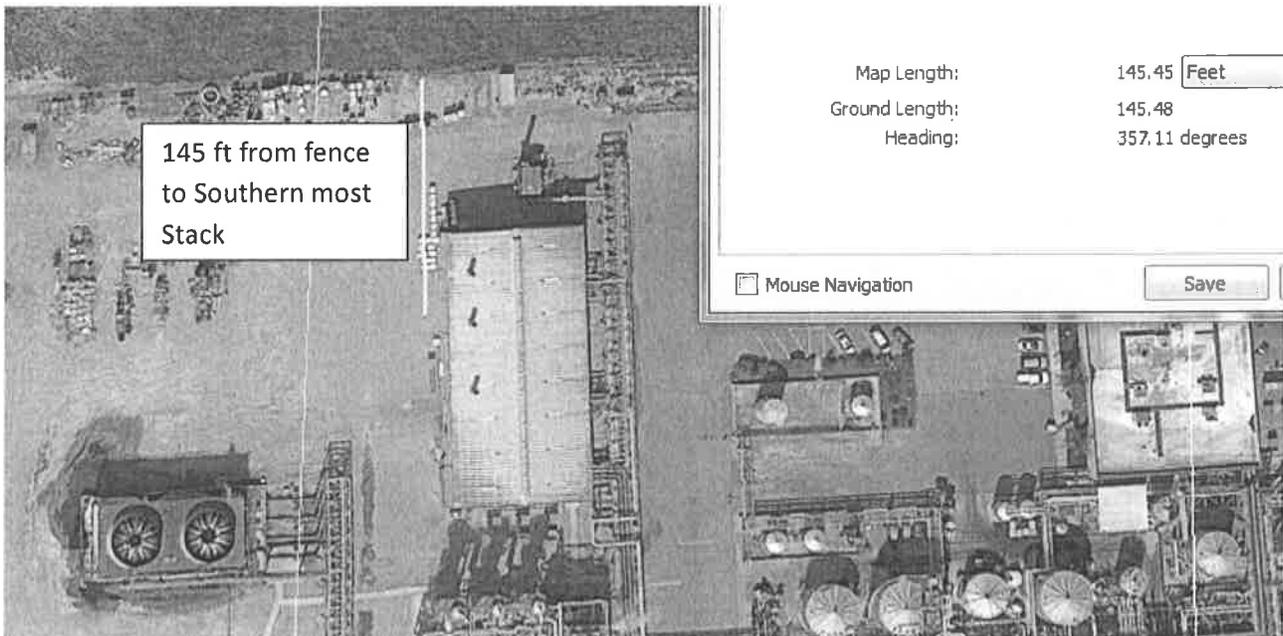
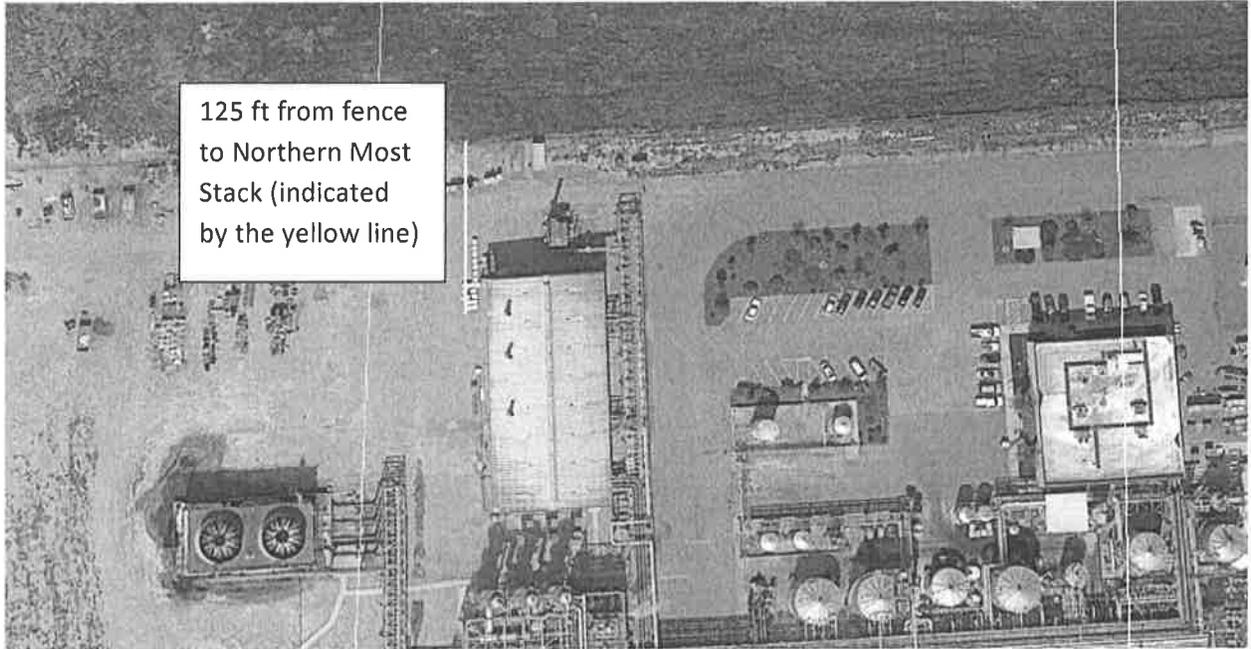
Note 3: Stationary Source Sampling Report for Southern Research Institute Fort Benning, Georgia by INTEGRITY Air Monitoring, November 2012.

Note 4: Refer to presentation: "Expanding the market opportunities for gas turbines by utilizing low btu fuels and other fuels", 2013 ICEPAG, Douglas Hamrin, FlexPower (now Ener-core), Slide 15.

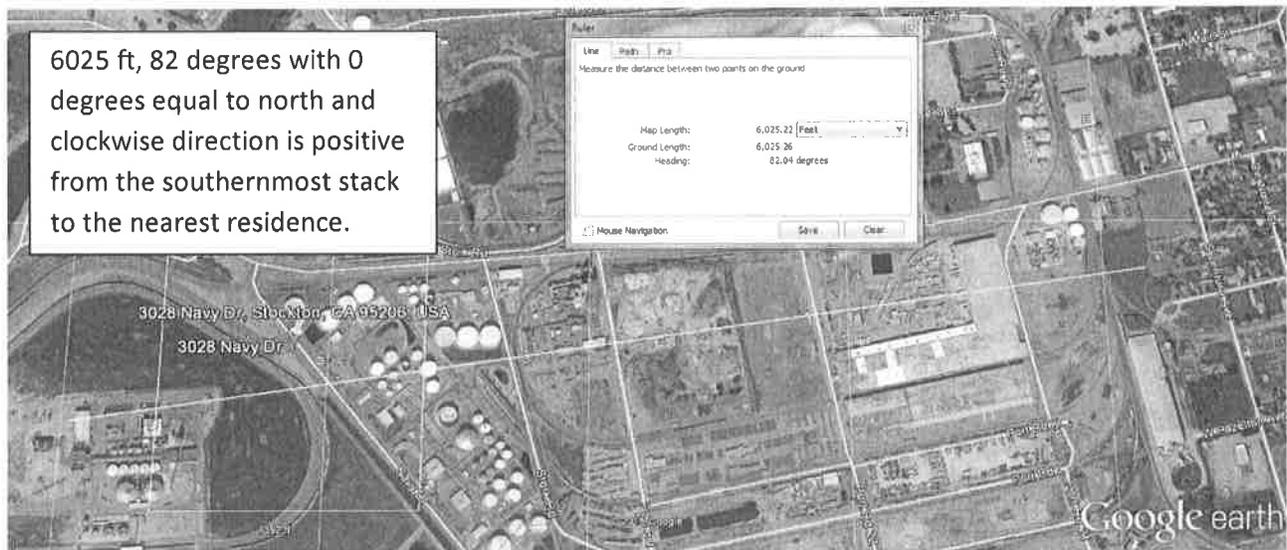
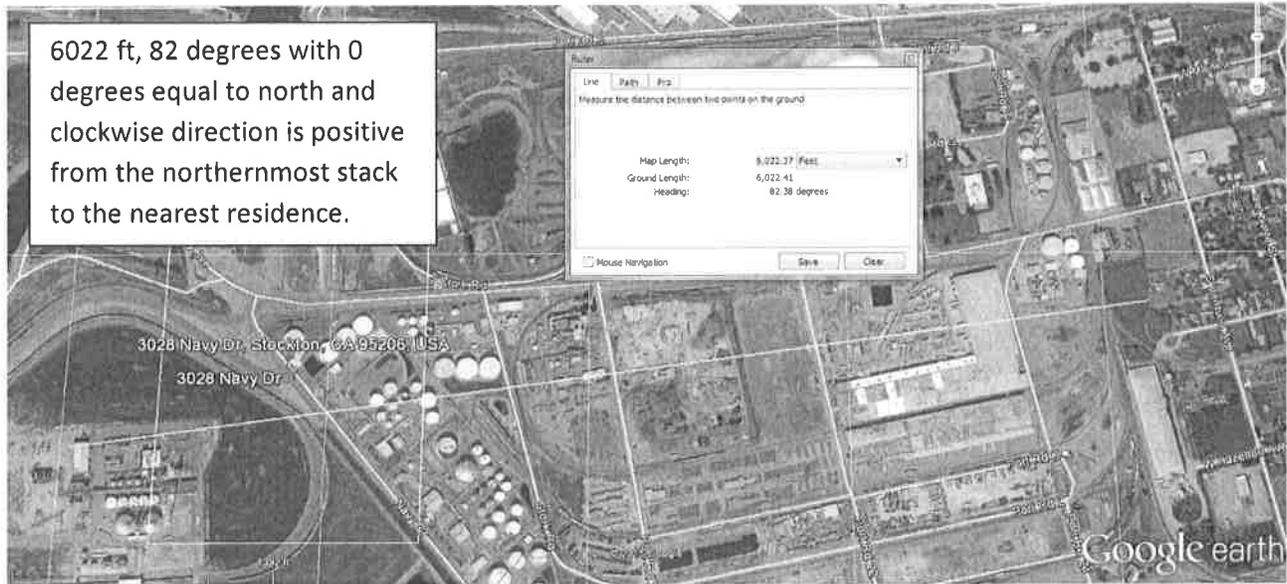
Note 5: Box.com: The source test reports and reference whitepapers are available for down load from Box.com. An invitation will be sent to you, allowing access.

3. Location and receptor information

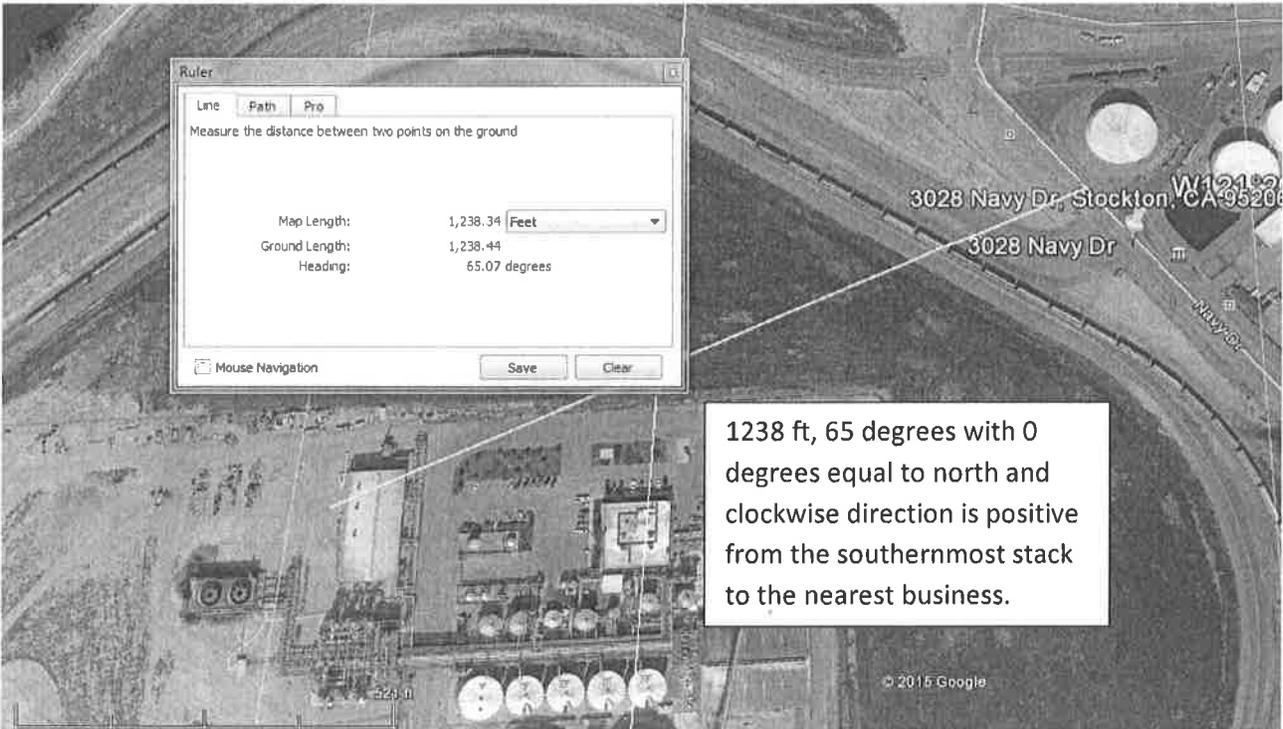
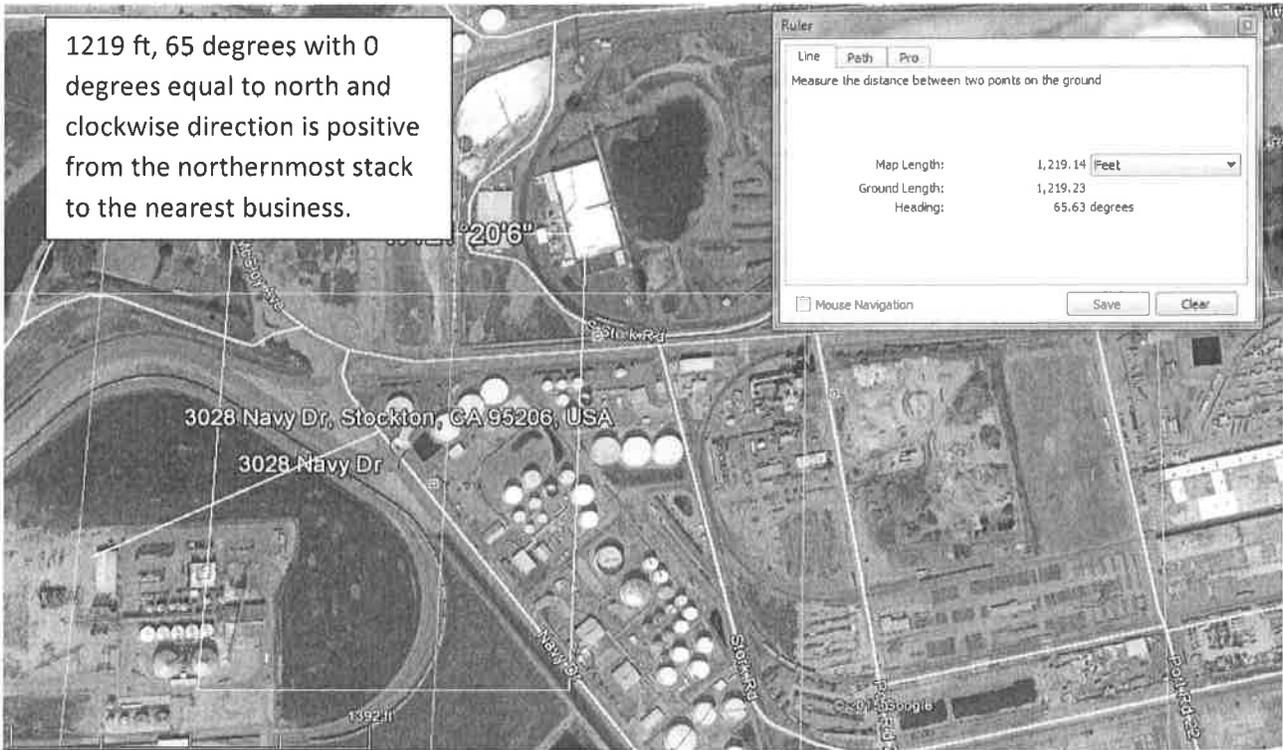
- Provide the aerial map showing the location of the new cogen systems and the distances from each stack to the outer boundary line of the facility;



- o Distance from stack of each cogen to the nearest residence and its direction; and



- Distance from stack of each cogen to the nearest business and its direction.



4. Stack Parameters

- o Will there be any rain cap? If yes, is it flapper type or flapper type, or other (please explain)?

There will be no sort of rain cap or other.

- Provide the direction of exhaust flow (i.e., vertically upward, horizontal, or other)

Vertically Up

B. Boilers:

There are three natural gas-fired boilers. Each boiler is rated at 75.6 MMBtu/hr. These units can use up to 226.8 MMBtu/hr (3 x 75.6 MMBtu/hr). Further, the combined fuel use is limited to 1,392.84 MMscf/year (approx. 1,392,840 MMBtu/year using a heating Value of 1,000 Btu/set).

Clarification:

There are three natural gas-fired boilers. Each boiler is rated at 75.6 MMBtu/hr. The combined fuel use is limited to 1,392.84 MMscf/year (approx. 1,392,840 MMBtu/year using a heating value of 1,000 Btu/scf). The potential emissions in the application are estimated using a heat input rate of 132 MMBtu/hr. It is not clear if you're proposing to establish an hourly limit for all three boilers or it's a calculation to show no overall increase in potential emissions.

In the application package, the post-project potential emissions from the boilers are estimated using a combined heat input rate of 132 MMBtu/hr. However, it is unclear if Pacific Ethanol is proposing to establish an hourly limit for all three boilers.

- o Please clearly state the modifications to the boiler permits. For instance, establishing combined emission rates for boilers and cogen systems, or some operating scenarios, etc.

When both of the Oxidizers are operating, which will be the typical operating scenario, the three (3) NG boilers will be operating with a combined 132 mmBtu/hr heat rate input.

If one (1) NG boiler needs to be taken out of service, the remaining two (2) NG boilers will operate at a combined heat rate input of 132 mmBtu/hr. It is important to maintain each NG boiler's maximum heat rate input of 75.4 mmBtu/hr, but limit the combined NG boilers annual average heat rate input to 132 mmBtu/hr, when both Oxidizers are operating.

There are three (3) operating scenarios:

- 1) Two (2) Oxidizers at 25 mmBtu/hr heat rate input each and two (2) or three (3) NG boilers operating at a combined 132 mmBtu/hr heat rate input, with each Oxidizer handling half (1/2) of the process gas; the typical operating scenario.

- 2) One (1) Oxidizer at 25 mmBtu/hr heat rate input and three (3) NG boilers operating with the one Oxidizer handling all the process gas; this operating scenario is expected to occur for not more than seven (7) days per year for each Oxidizer, or for no more than 168 hours per year for each Oxidizer.

- 3) No Oxidizer operating and the RTO operating at 2 mmBtu/hr heat rate input and the three (3) NG boilers operating at 158 mmBtu/hr heat rate input; this operating scenario is the worst-case scenario where both Oxidizers were to fail operation and is considered by PES to be unlikely, or zero days per year. However, PES needs a back-up VOC control system, at least during the initial operation of the Oxidizers. A fundamental aspect and justification of this project is to provide Pacific Ethanol with advanced VOC control equipment to ensure this scenario does not present itself.

There is one startup Scenario:

This also addresses the comment for the ATC application comment, Attachment 3, Item 5.

After the initial startup of both Oxidizers, there will be a single start up per year for each oxidizer.

On startup, each Oxidizer will use more than 25 mmBtu/hr heat rate input, up to 35 mmBtu/hr heat rate input, to heat up the internals of the Oxidizers. After reaching their operating temperature, the NG heat rate input will drop to 25 mmBtu/hr for each Oxidizer.

C. Regenerative thermal oxidizer (RTO):

Pacific Ethanol has proposed to retain the existing RTO as a backup unit. The unit will be used in case both cogen systems are shut down for maintenance and or repair.

- o Please provide the maximum number of hours per year the RTO will be operated?

ZERO (0) hrs per yr

Please reference to operating scenario 3, in section B. Boilers.

D. Draft- Preliminary Report Calculations

Based on the information provided in the application package, the District quantified the potential emission changes at the plant due to the cogeneration project.

o Please review the attached document and provide your comments.

Corrections to Sections 3,4 and 5 of Attachment 3 to this ATC application, are as follows:

Mol wt. g/mol	31.998	44	18.01	28.01	39.95			31.998	44	28.01	39.95	
	O2	CO2	H2O	N2	Ar	mol wt		O2	CO2	N2	Ar	mol wt.
One Unit operation VOC - Section 4	6.02%	33.65%	6.96%	52.80%	0.56%	32.9988		6.47%	36.17%	56.76%	0.60%	34.1232
Two Unit operation VOC - Section 3	9.83%	18.11%	6.43%	64.90%	0.72%	30.7380		10.51%	19.36%	69.37%	0.77%	31.6195
No VOC - Section 5	13.53%	3.10%	5.91%	76.59%	0.87%	28.5581		14.38%	3.29%	81.40%	0.92%	29.2166

	Wet SCFM	Dry SCFM
One Unit operation VOC -Section 4	14,333.62	13,861.28
Two Unit operation VOC - Section 3	15,387.87	14,958.85
No VOC (NG only) - Section 5	16,562.42	16,189.16

Section D. Draft-Preliminary Report Calculations, the response is shown below:

PES and D-R have reviewed Section D of the Notice of Incomplete Applications and offer the following comments:

1. Section D's PE1's for NO_x, CO and VOC's are very close to PES's ATC application values.
2. PES's ATC application set EC = 0 for all emissions, including NO_x, CO, VOC, PM 10 and SO_x (details included in PES's response to Section A for PM 10 and SO_x setting EC = 0), Section D's EC values are negative for all emissions except VOC's, and the differences are explained below:
 - A. Section D's PE2's for NO_x, CO and VOC's for the NG boilers are lower than PES's ATC application values because the Section D used a NG annual average heat input of 109 mmBtu/hr where PES will need 132 mmBtu/hr for process steam production.
 - B. Except for VOC's, if Section D used the NG input of 132 mmBtu/hr, EC = 0
 - C. For VOC's, PES's ATC application set EC = 0, with the VOC emission rate for the Oxidizers at 0.5539 lb/hr and 4852 lb/yr (Section D uses 6862 lb/yr). PES continues to propose EC = 0 for VOC emissions, such that the NG boilers will emit 1503 lb/yr of VOC's and the Oxidizers will emit 4852 lb/yr for at total VOC emission of 6355 lb/yr. Section D uses 1241 lb/yr for the NG boilers and 6861 lb/yr for the Oxidizers, for a total of 8103 lb/yr.
3. As suggested in Section D, PES agrees to a PE2 for VOC's of 6380 lb/yr, which includes both Oxidizer's average hourly rate of 0.5539 lb/hr, an average lb/mmBtu rate for both Oxidizers of 0.01108 lb/mmBtu and an average production rate of 0.0683 lb VOC/1000 gallons Ethanol produced at 70,000,000 gallons of Ethanol produced per year

In addition, the District has determined that the application filing fee has not been fully paid. Payment of the attached invoice is required prior to further processing.

In response, please refer to the above project number, and send to the attention of Mr. Jag Kahlon.

Please submit the requested information within 30 days. The District will not be able to process your application until this information is received and the attached invoice is paid in full.

PES will/has submitted the additional ATC application fee in a separate action.

Jesse Garcia

From: Jeffrey Hahn <jeffreyhahn@gmail.com>
Sent: Tuesday, February 9, 2016 9:36 AM
To: Jesse Garcia; Patrick McKenzie; Michels, Kayn (FTC); Joe Teubner; Frank Cunnane; Jeffrey Hahn
Subject: Re: Pacific Ethanol Stockton - Gradual Oxidizer VOC limits (N-7365, 1153189)

Jesse:

After reviewing your email below, both PES and Dresser-Rand agree with your proposed permit conditions on VOC emissions from the Boilers, Oxidizers, RTO and Ethanol Production.

Thanks,

Jeff Hahn

On Mon, Feb 8, 2016 at 6:13 PM, Jesse Garcia <Jesse.Garcia@valleyair.org> wrote:

I found a couple typos. See below:

Jesse A. Garcia, P.E.

Air Quality Engineer

San Joaquin Valley APCD

From: Jesse Garcia
Sent: Monday, February 8, 2016 5:36 PM
To: jeffreyhahn@gmail.com
Subject: Pacific Ethanol Stockton - Gradual Oxidizer VOC limits (N-7365, 1153189)

Jeff,

We had talked about how to determine VOC emissions from the gradual oxidizer previously. I think if we write the permits to include the following conditions, it would satisfy the District's requirements/concerns and also Pacific Ethanol's:

1. Combined annual VOC emissions based on a 12 month rolling average from the Boilers, Oxidizers, RTO and Ethanol Production shall not exceed 6,387 lb-VOC/yr.

2. Compliance the combined 12 month rolling average limit for VOC emissions from the Boilers, Oxidizers, RTO and Ethanol Production shall be determined with the following equation and updated monthly: PE = rolling 12 month heat input from boilers x 0.0013 lb/MMBtu + rolling 12 month ethanol production x 0.0654 lb/1000 gal (or lb/1000 gallon emission factor established at last source test).

Where the above values were calculated as such:

Pre-Project:

VOC

Boilers:	1,811 lb/yr	= 1,392,840 MMBtu/yr x 0.0013 lb/MMBtu
RTO:	116 lb/yr	= 2.4 MMBtu/hr x 8,760 hrs/yr x 0.0055 lb/MMBtu
Ethanol Production:	4,460 lb/yr	= 70,000,000 gal/yr x 0.0636 lb/1000 gal
Total	6,387 lb-VOC/yr	

Post Project:

VOC

Boilers:	1,811 lb/yr	
RTO:	116 lb/yr	
Oxidizers:	2,410 lb /yr	= 1,205 lb /yr x 2 = 25 MMBtu/hr x 8,760 hrs/yr x 0.0055 lb/MMBtu
Ethanol Production:	4,460 lb/yr	= 70,000,000 gal/yr x 0.0636 lb/1000 gal
Total Combined limit	6,387 lb-VOC/yr	

Where 0.0654 lb/1000 gal = (6,387 – 1,811)/ 70,000,0000 gal

Let me know if you think this would work?

Thanks,

Jesse A. Garcia, P.E.

Air Quality Engineer

San Joaquin Valley APCD

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