



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

DEC 11 2012

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

Re: **Notice of Minor Title V Permit Modification**
District Facility # S-3088
Project # 1123996

Dear Mr. Rios:

Enclosed for you to review is an application for minor Title V permit modification for the facility identified above. TRC Operating Company is proposing a Title V minor permit modification to incorporate the recently issued Authorities to Construct S-3088-7-8, '-8-12, '-20-6, and '-24-4 into the Title V operating permit. The project adds a Specific Limiting Condition (SLC) for SO_x to be shared between steam generators S-3088-7, '-20, and '-24. Additionally, S-3088-24 is designated as an additional combustion device for vapors from Thermally Enhanced Oil Recovery operation S-3088-8.

Enclosed is the engineering evaluation with the following attachments: proposed modified Title V permit, recently issued Authorities to Construct S-3088-7-8, '-8-12, '-20-6, and '-24-4, application, and previous Title V permit. Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
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34946 Flyover Court
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San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

DEC 11 2012

Charles Comfort
TRC Operating Company
PO Box 227
Taft, CA 93268

**Re: Notice of Minor Title V Permit Modification
District Facility # S-3088
Project # 1123996**

Dear Mr. Comfort:

Enclosed is the District's analysis of your application for minor Title V permit modification for the facility identified above. You proposed a Title V minor permit modification to incorporate recently issued Authorities to Construct S-3088-7-8, '-8-12, '-20-6, and '-24-4 into the Title V operating permit. The project adds a Specific Limiting Condition (SLC) for SO_x to be shared between steam generators S-3088-7, '-20, and '-24. Additionally, S-3088-24 is designated as an additional combustion device for vapors from Thermally Enhanced Oil Recovery operation S-3088-8.

Enclosed is the engineering evaluation with the following attachments: proposed modified Title V permit, recently issued Authorities to Construct S-3088-7-8, '-8-12, '-20-6, and '-24-4, application, and previous Title V permit. This project will be subject to a 45-day EPA commenting period prior to the District taking final action.

Thank you for your cooperation in this matter. If you have any questions, please contact Mr. Leonard Scandura at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

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TITLE V APPLICATION REVIEW

Minor Modification
Project #: S-1123996

Engineer: Richard Edgehill
Date: December 11, 2012

Facility Number: S-3088
Facility Name: TRC Operating Company
Mailing Address: PO Box 227
Taft, CA 93268

Reviewed by AP SUPR
DEC 11 2012

Contact Name: Charles Comfort
Secretary/Treasurer

Phone: (661) 763-0081

Responsible Official: Charles Comfort
Title: Secretary/Treasurer

I. PROPOSAL

TRC Operating Company is proposing a minor modification to their Title V permit to incorporate Authorities to Construct (ATC) S-3088-7-8, '-8-12, '-20-6, and '-24-4 into their Title V operating permit.

The project adds a Specific Limiting Condition (SLC) for SO_x to be shared between '-7, '-20, and '-24. Additionally, steam generator S-3088-24 is designated as an additional combustion device for vapors from TEOR operation S-3088-8.

Please note that the ATCs were issued prior to the initial Title V permit and therefore do not include Federally Enforceable Conditions.

The purpose of this evaluation is to identify all applicable requirements, to determine if the facility will comply with the applicable requirements, and to provide the legal and factual basis for the proposed revisions.

II. FACILITY LOCATION

The subject steam generators S-3088-7, '-20, and '-24 and TEOR operation S-3088-8 are located within TRC's heavy oil western stationary source at SW Section 22, T32S, R23E. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

III. EQUIPMENT DESCRIPTION

S-3088-7-9: 62.5 MMBTU/HR NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME G-LE ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION (CYPRESS LEASE)

S-3088-8-13: THERMALLY ENHANCED OIL RECOVERY OPERATION WITH 150 STEAM ENHANCED CRUDE OIL PRODUCTION WELLS AND 665 SCFM AIR ASSIST STANDBY FLARE, WITH VAPOR PIPING FROM TANKS S-3088-9 THROUGH -16, -21 AND -22, GAS/LIQUID SEPARATORS, COMPRESSORS, HEAT EXCHANGERS, CONDENSATE PUMPS, FOUR SULFATREAT HP PACKED VESSELS, AND INCINERATION IN STEAM GENERATORS S-3088-7, '-20, OR '-24, OR STANDBY FLARE

S-3088-20-7: 62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE, ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION - CYPRESS LEASE

S-3088-24-5: 62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR (#92 DIS# 27572-80) WITH NORTH AMERICAN MAGNA FLAME GLE ULTRA LOW NOX BURNER

IV. SCOPE OF EPA AND PUBLIC REVIEW

This change to a Title V permit is considered to be a minor modification and, as such, requires no public review.

V. APPLICABLE REQUIREMENTS

District Rule 2520, Federally Mandated Operating Permits (Adopted June 21, 2001)

VI. DESCRIPTION OF PROPOSED MODIFICATIONS

Draft PTO S-3088-7-9

Draft PTO S-3088-7-9 includes identical or revised conditions on current Title V PTO S-3088-7-7 as indicated in the table below.

Condition # Comparison

Draft PTO S-3088-7-9	Current PTO S-3088-7-7	Comments
1	1	
2		nuisance
3	2	
4	3	
5	4	Draft PTO requires 14 ppmv NOx to qualify as clean emissions unit
6	5	Draft PTO SLC condition
7	6	Rule 4320 particulate matter/sulfur requirements
8-16	7-14,23	Source test conditions
17-20	15-18	Alternate monitoring conditions
21-24	19-21	SOx monitoring and recordkeeping conditions, draft PTO addresses SLC with revised test methods
25	22	General recordkeeping
26-28	24,25	Recordkeeping and Rule 4320 emissions fee unit conditions

Draft PTO S-3088-8-11

Draft PTO S-3088-8-11 includes identical or revised conditions on current Title V PTO S-3088-7-7 as indicated in the table below.

Condition # Comparison

Draft PTO S-3088-8-13	Current PTO S-3088-8-11	Comments
1		nuisance
2	1	
3	2	
4	3	
5	4	Combustion devices include '-24 on draft PTO
6-24	5-23	

Draft PTO S-3088-20-7

Draft PTO S-3088-20-7 includes identical or revised conditions on current Title V PTO S-3088-20-5 as indicated in the table below.

Condition # Comparison

Draft PTO S-3088-20-7	Current PTO S-3088-20-5	Comments
1	1	
2		nuisance
3	2	
4	3	
5,6	5	Draft PTO SLC condition
7	7	Draft PTO requires 14 ppmv NOx to qualify as clean emissions unit
8-12	8-12	
13-20	13-19,22	Source testing conditions
21-24	4,6, 20	SOx monitoring and recordkeeping conditions, draft PTO addresses SLC with revised test methods
25	21	General recordkeeping
26-28	23, 24	Rule 4320 emissions fee unit conditions

Condition # Comparison

Draft PTO S-3088-20-7	Current PTO S-3088-24-3	Comments
1	1	
2		nuisance
3	2	
4	3	
5,6	5	Draft PTO SLC condition
7	7	Draft PTO requires 14 ppmv NOx to qualify as clean emissions unit
8-12	8-12	
13-20	13-19,22	Source testing conditions
21-24	4,6, 20	SOx monitoring and recordkeeping conditions, draft PTO addresses SLC with revised test methods
25	21	General recordkeeping
26-28	23, 24	Rule 4320 emissions fee unit conditions

Condition # Comparison

Draft PTO S-3088-24-5	Current PTO S-3088-24-3	Comments
1	1	
2		nuisance
3	2	
4	3	
5,6	5	Draft PTO SLC condition
7-10	4,6-8	Draft PTO requires 14 ppmv NOx to qualify as clean emissions unit
11,12	9,10	
13-21	11-19	Source testing conditions
22-25	21-24	
26-29	20,25	SOx monitoring and recordkeeping conditions, draft PTO addresses SLC with revised test methods
30	26	General recordkeeping
31-33	27,28	Rule 4320 emissions fee unit conditions

VII. COMPLIANCE

In accordance with Rule 2520, 3.20, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include;
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including:

1. A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
2. The source's suggested draft permit; and
3. Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used.

VIII. ATTACHMENTS

- A. Proposed Modified Title V Operating Permit
- B. Authority to Construct
- C. Application
- D. Previous Title V Operating Permit

Attachment A

Proposed Modified Title V Operating Permit

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3088-7-9

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME G-LE ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION (CYPRESS LEASE)

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Emissions rates from the unit shall not exceed any of the following limits: 14 ppmv NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, 0.037 lb-PM10/MMBtu, 104 ppmv CO @ 3% O2 or 0.0757 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
6. Combined SOx emissions from steam generators S-3088-7, '-20, and '-24 shall not exceed 328.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
8. 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 and 4306] Federally Enforceable Through Title V Permit
9. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
10. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
11. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

12. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
13. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
14. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
16. 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
17. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
21. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H₂S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081, 2201, and 4320] Federally Enforceable Through Title V Permit
22. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081, 2201, and 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.

23. The following calculation shall be used to show compliance with the SOx daily emissions limit: $\text{lb SOx emitted/day} = (\text{volume of gas incinerated per day, in scf}) \times (\text{ppm H}_2\text{S prior to incineration}) \times 0.00000017$. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Records of weekly and quarterly test results for sulfur content, amounts of natural gas and waste gas combusted (in scf), higher heating values of natural gas and waste gas, and calculations to verify compliance with the sulfur SLC limit shared by units '-7, '-20, and '-24 shall be retained on-site for a period of at least five years and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4320] Federally Enforceable Through Title V Permit
25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306] Federally Enforceable Through Title V Permit
26. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
27. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit
28. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320] Federally Enforceable Through Title V Permit

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

DRAFT

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3088-8-13

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

THERMALLY ENHANCED OIL RECOVERY OPERATION WITH 150 STEAM ENHANCED CRUDE OIL PRODUCTION WELLS AND 665 SCFM AIR ASSIST STANDBY FLARE, WITH VAPOR PIPING FROM TANKS S-3088-9 THROUGH -16, -21 AND -22, GAS/LIQUID SEPARATORS, COMPRESSORS, HEAT EXCHANGERS, CONDENSATE PUMPS, FOUR SULFATREAT HP PACKED VESSELS, AND INCINERATION IN STEAM GENERATORS S-3088-7, -20, OR -24, OR STANDBY FLARE

PERMIT UNIT REQUIREMENTS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. VOC content of the vapor control system gas shall not exceed 10% by weight as determined in accordance with the latest revision of ASTM Methods D1945 for gases and South Coast AQMD Method 304-91 or the latest revision of ASTM Method E-168, E-169 or E-260 for liquids. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
3. Thermally enhanced oil recovery operation shall include no more than 150 cyclically steam enhanced wells. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Liquid from separators, heat exchangers, condensate collection vessels, compressor knockouts, and flare shall be piped only in closed piping to tanks with vapor control. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Vapor control system gas shall be incinerated in steam generator S-3088-7, S-3088-20, S-3088-24 or standby John Zink model STF-LH-336-6/15 air assisted flare when steam generators are not operational. Flare shall be equipped with automatic re-ignition system. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Flare shall operate smokelessly (i.e. visible emissions shall be less than 1/4 Ringelmann). [District Rule 4101] Federally Enforceable Through Title V Permit
7. No more than 0.958 MM scf/day of TEOR and/or TVR gas shall be incinerated in standby flare. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Standby flare emissions shall not exceed any of the following limits: NOx: 0.068 lb/MMBtu, PM10: 0.008 lb/MMBtu, CO: 0.370 lb/MMBtu or VOC: 0.063 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
9. SOx emissions from flare shall not exceed 207.6 lb/day based on mass balance calculation with H2S content and daily volume of the TEOR and/or TVR gas combusted. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When the standby flare is being used, daily records shall be maintained of scrubbed vapor control system gas volume flow rate and sulfur content. [District Rule 2201] Federally Enforceable Through Title V Permit
11. The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401] Federally Enforceable Through Title V Permit
12. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] 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. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, component identification, record keeping, and notification requirements of Rule 4401 for all steam enhanced crude oil production wells at this facility except for those wells and components specifically exempted in Section 4.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
14. The inspection and re-inspection requirements set forth in Sections 5.8.1 through 5.8.5 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of 10% by weight or less [District Rule 4401] Federally Enforceable Through Title V Permit
15. The operator shall be in violation of Rule 4401 if any District inspection, or any operator inspection that is required by this rule, demonstrates that one or more of the leak standard conditions set forth in section 5.6.2 exists. [District Rule 4401, 5.6.1] Federally Enforceable Through Title V Permit
16. Operator shall conduct quarterly sampling of vapor recovery system gas. If vapor recovery system gas is shown to be less than 10% VOC by weight for 8 consecutive quarterly sampling, sampling shall only be required annually. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The sulfur content of the scrubbed vapor control system gas shall be tested at least monthly. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The sulfur content of the vapor control system gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
19. The flare flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
20. The flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit
21. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311] Federally Enforceable Through Title V Permit
22. Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit
23. Permittee shall maintain a record of all vapor control system gas sample analysis conducted for VOC and sulfur content, the volume flow rate to the flare, and a current listing of the steam enhanced wells with casing vents connected to the well vent collection and control system. [District Rule 2201] Federally Enforceable Through Title V Permit
24. All records shall be maintained for a period of at least five years and made available for District inspection upon request. [District Rule 1070]

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

DRAFT

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3088-20-7

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE, ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION - CYPRESS LEASE

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Combined SOx emissions from steam generators S-3088-7, '-20, and '-24 shall not exceed 328.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
7. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, 0.0076 lb-PM10/MMBtu, 47.5 ppmvd CO @ 3% O2 or 0.035 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
8. The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
9. If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

10. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
11. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
12. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
15. 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
16. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
17. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
20. 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
21. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H₂S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081, 2201, and 4320] Federally Enforceable Through Title V Permit

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PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

22. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081, 2201, and 4320] Federally Enforceable Through Title V Permit
23. The following calculation shall be used to show compliance with the SO_x daily emissions limit: $\text{lb SO}_x \text{ emitted/day} = (\text{volume of gas incinerated per day, in scf}) \times (\text{ppm H}_2\text{S prior to incineration}) \times 0.00000017$. [District Rule 2201] Federally Enforceable Through Title V Permit
24. Records of weekly and quarterly test results for sulfur content, daily amounts of natural gas and waste gas combusted (in scf), higher heating values of natural gas and waste gas, and calculations to verify compliance with the sulfur SLC limit shared by units '-7, '-20, and '-24 shall be retained on-site for a period of at least five years and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4320] Federally Enforceable Through Title V Permit
25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306] Federally Enforceable Through Title V Permit
26. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
27. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit
28. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320] Federally Enforceable Through Title V Permit

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

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San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3088-24-5

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR (#92 DIS# 27572-80) WITH NORTH AMERICAN MAGNA FLAME GLE ULTRA LOW NOX BURNER

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
5. Combined SOx emissions from steam generators S-3088-7, '-20, and '-24 shall not exceed 328.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
7. Emission rates from the unit shall not exceed any of the following limits: 0.058 lb-PM10/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Except during startup and shutdown, emission rates from the unit shall not exceed any of the following limits: 14 ppmv NOx @ 3% O2. or 47 ppmv CO @ 3% O2. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
9. Emission rates during startup and shutdown shall not exceed: NO2 - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4301 and 4405] Federally Enforceable Through Title V Permit
10. Emission rates shall not exceed any of the following: NOx (as NO2): 54.0 lb/day or 9855 lb/year, CO: 52.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
12. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305 and 4306] 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. Source testing to measure natural gas-combustion NO_x and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
15. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
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. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
18. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
19. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
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 and 4306] Federally Enforceable Through Title V Permit
21. 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
22. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
23. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
24. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

25. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306] Federally Enforceable Through Title V Permit
26. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H₂S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081, 2201, and 4320] Federally Enforceable Through Title V Permit
27. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081, 2201, and 4320] Federally Enforceable Through Title V Permit
28. The following calculation shall be used to show compliance with the SO_x daily emissions limit: $\text{lb SO}_x \text{ emitted/day} = (\text{volume of gas incinerated per day, in scf}) \times (\text{ppm H}_2\text{S prior to incineration}) \times 0.00000017$. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Records of weekly and quarterly test results for sulfur content, daily amounts of natural gas and waste gas combusted (in scf), higher heating values of natural gas and waste gas, and calculations to verify compliance with the sulfur SLC limit shared by units '-7, '-20, and '-24 shall be retained on-site for a period of at least five years and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4320] Federally Enforceable Through Title V Permit
30. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306] Federally Enforceable Through Title V Permit
31. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
32. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320] Federally Enforceable Through Title V Permit
33. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320] Federally Enforceable Through Title V Permit

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

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Attachment B
Authority to Construct

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3088-7-8

ISSUANCE DATE: 09/20/2012

LEGAL OWNER OR OPERATOR: TRC CYPRESS GROUP LLC

MAILING ADDRESS: P O BOX 227
TAFT, CA 93268

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: SW22 TOWNSHIP: 32S RANGE: 23E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 62.5 MMBTU/HR NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME G-LE ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION (CYPRESS LEASE): CREATE SOX SLC WITH PERMIT UNITS '-7, '-20, AND '-24

CONDITIONS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. Emissions rates from the unit shall not exceed any of the following limits: 14 ppmv NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, 0.037 lb-PM10/MMBtu, 104 ppmv CO @ 3% O2 or 0.0757 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]
6. Combined SOx emissions from steam generators S-3088-7, '-20, and '-24 shall not exceed 328.5 lb/day. [District Rule 2201]
7. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-3088-7-8 : Dec 6 2012 1:44PM -- EDGEHILR : Joint Inspection NOT Required

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

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 and 4306]
9. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306]
10. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306]
11. 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]
12. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306]
13. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306]
14. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306]
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 and 4306]
16. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
17. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306]
18. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306]
19. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306]
20. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306]

CONDITIONS CONTINUE ON NEXT PAGE

21. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H₂S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081, 2201, and 4320]
22. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081, 2201, and 4320]
23. The following calculation shall be used to show compliance with the SO_x daily emissions limit: lb SO_x emitted/day = (volume of gas incinerated per day, in scf) x (ppm H₂S prior to incineration) x 0.00000017. [District Rule 2201]
24. Records of weekly and quarterly test results for sulfur content, amounts of natural gas and waste gas combusted (in scf), higher heating values of natural gas and waste gas, and calculations to verify compliance with the sulfur SLC limit shared by units '-7, '-20, and '-24 shall be retained on-site for a period of at least five years and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4320]
25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]
26. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in Rule 4320. [District Rule 4320]
27. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320]
28. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320]

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3088-8-12

ISSUANCE DATE: 09/20/2012

LEGAL OWNER OR OPERATOR: TRC CYPRESS GROUP LLC

MAILING ADDRESS: P O BOX 227
TAFT, CA 93268

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: SW22 TOWNSHIP: 32S RANGE: 23E

EQUIPMENT DESCRIPTION:

MODIFICATION OF THERMALLY ENHANCED OIL RECOVERY OPERATION WITH 150 STEAM ENHANCED CRUDE OIL PRODUCTION WELLS AND 665 SCFM AIR ASSIST STANDBY FLARE, WITH VAPOR PIPING FROM TANKS S-3088-9 THROUGH -16, -21 AND -22, GAS/LIQUID SEPARATORS, COMPRESSORS, HEAT EXCHANGERS, CONDENSATE PUMPS, FOUR SULFATREAT HP PACKED VESSELS, AND INCINERATION IN STEAM GENERATORS S-3088-7 OR -20, OR STANDBY FLARE: ADD STEAM GENERATOR 3088-24 AS AN ALLOWED INCINERATION DEVICE

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. VOC content of the vapor control system gas shall not exceed 10% by weight as determined in accordance with the latest revision of ASTM Methods D1945 for gases and South Coast AQMD Method 304-91 or the latest revision of ASTM Method E-168, E-169 or E-260 for liquids. [District Rules 2201 and 4401]
3. Thermally enhanced oil recovery operation shall include no more than 150 cyclically steam enhanced wells. [District Rule 2201]
4. Liquid from separators, heat exchangers, condensate collection vessels, compressor knockouts, and flare shall be piped only in closed piping to tanks with vapor control. [District Rule 2201]
5. Vapor control system gas shall be incinerated in steam generator S-3088-7, S-3088-20, S-3088-24 or standby John Zink model STF-LH-336-6/15 air assisted flare when steam generators are not operational. Flare shall be equipped with automatic re-ignition system. [District Rule 2201]
6. Flare shall operate smokelessly (i.e. visible emissions shall be less than 1/4 Ringelmann). [District Rule 4101]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-3088-8-12 : Dec 6 2012 1:44PM - EDGEHILR : Joint Inspection NOT Required

7. No more than 0.958 MM scf/day of TEOR and/or TVR gas shall be incinerated in standby flare. [District Rule 2201]
8. Standby flare emissions shall not exceed any of the following limits: NO_x: 0.068 lb/MMBtu, PM₁₀: 0.008 lb/MMBtu, CO: 0.370 lb/MMBtu or VOC: 0.063 lb/MMBtu. [District Rule 2201]
9. SO_x emissions from flare shall not exceed 207.6 lb/day based on mass balance calculation with H₂S content and daily volume of the TEOR and/or TVR gas combusted. [District Rule 2201]
10. When the standby flare is being used, daily records shall be maintained of scrubbed vapor control system gas volume flow rate and sulfur content. [District Rule 2201]
11. The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401]
12. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401]
13. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, component identification, record keeping, and notification requirements of Rule 4401 for all steam enhanced crude oil production wells at this facility except for those wells and components specifically exempted in Section 4.0 of Rule 4401. [District Rule 4401]
14. The inspection and re-inspection requirements set forth in Sections 5.8.1 through 5.8.5 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of 10% by weight or less [District Rule 4401]
15. The operator shall be in violation of Rule 4401 if any District inspection, or any operator inspection that is required by this rule, demonstrates that one or more of the leak standard conditions set forth in section 5.6.2 exists. [District Rule 4401, 5.6.1]
16. Operator shall conduct quarterly sampling of vapor recovery system gas. If vapor recovery system gas is shown to be less than 10% VOC by weight for 8 consecutive quarterly sampling, sampling shall only be required annually. [District Rule 2201]
17. The sulfur content of the scrubbed vapor control system gas shall be tested at least monthly. [District Rule 1081]
18. The sulfur content of the vapor control system gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 1081]
19. The flare flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311]
20. The flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311]
21. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311]
22. Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. [District Rule 4311]
23. Permittee shall maintain a record of all vapor control system gas sample analysis conducted for VOC and sulfur content, the volume flow rate to the flare, and a current listing of the steam enhanced wells with casing vents connected to the well vent collection and control system. [District Rule 2201]
24. All records shall be maintained for a period of at least five years and made available for District inspection upon request. [District Rule 1070]

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3088-20-6

ISSUANCE DATE: 09/20/2012

LEGAL OWNER OR OPERATOR: TRC CYPRESS GROUP LLC

MAILING ADDRESS: P O BOX 227
TAFT, CA 93268

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: SW22 TOWNSHIP: 32S RANGE: 23E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE, ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION - CYPRESS LEASE: CREATE SOX SLC WITH PERMIT UNITS '-7, '-20, AND '-24

CONDITIONS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. Combined SOx emissions from steam generators S-3088-7, '-20, and '-24 shall not exceed 328.5 lb/day. [District Rule 2201]
6. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320]
7. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 14 ppmvd NOx @ 3% O2 or 0.017 lb-NOx/MMBtu, 0.0076 lb-PM10/MMBtu, 47.5 ppmvd CO @ 3% O2 or 0.035 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-3088-20-6 : Dec 6 2012 1:44PM -- EDGEHILR : Joint Inspection NOT Required

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8. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306]
9. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306]
10. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306]
11. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306]
12. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306]
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 and 4306]
14. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306]
15. 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]
16. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305 and 4306]
17. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306]
18. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306]
19. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305 and 4306]
20. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

CONDITIONS CONTINUE ON NEXT PAGE

21. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H₂S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081, 2201, and 4320]
22. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081, 2201, and 4320]
23. The following calculation shall be used to show compliance with the SO_x daily emissions limit: $\text{lb SO}_x \text{ emitted/day} = (\text{volume of gas incinerated per day, in scf}) \times (\text{ppm H}_2\text{S prior to incineration}) \times 0.00000017$. [District Rule 2201]
24. Records of weekly and quarterly test results for sulfur content, daily amounts of natural gas and waste gas combusted (in scf), higher heating values of natural gas and waste gas, and calculations to verify compliance with the sulfur SLC limit shared by units '-7, '-20, and '-24 shall be retained on-site for a period of at least five years and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4320]
25. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]
26. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in Rule 4320. [District Rule 4320]
27. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320]
28. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320]

AUTHORITY TO CONSTRUCT

PERMIT NO: S-3088-24-4

ISSUANCE DATE: 09/20/2012

LEGAL OWNER OR OPERATOR: TRC CYPRESS GROUP LLC

MAILING ADDRESS: P O BOX 227
TAFT, CA 93268

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: SW22 TOWNSHIP: 32S RANGE: 23E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR (#92 DIS# 27572-80) WITH NORTH AMERICAN MAGNA FLAME GLE ULTRA LOW NOX BURNER (CYPRESS LEASE): CREATE SOX SLC WITH PERMIT UNITS '-7, '-20, AND '-24 AND ACCEPT TEOR WASTE GAS FROM 3088-8 FOR INCINERATION

CONDITIONS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]
2. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. Combined SOx emissions from steam generators S-3088-7, '-20, and '-24 shall not exceed 328.5 lb/day. [District Rule 2201]
6. Fuel gas sulfur content shall not exceed 1 gr S/100 scf unless SOx is reduced by 95% or to 9 ppmv SOx @ 3% O2 in exhaust with scrubber. [District Rules 2201 and 4320]
7. Emission rates from the unit shall not exceed any of the following limits: 0.058 lb-PM10/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-3088-24-4 : Dec 6 2012 1:44PM -- EDGEHLR : Joint Inspection NOT Required

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8. Except during startup and shutdown, emission rates from the unit shall not exceed any of the following limits: 14 ppmv NOx @ 3% O₂. or 47 ppmv CO @ 3% O₂. [District Rules 2201, 4305, and 4306]
9. Emission rates during startup and shutdown shall not exceed: NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4301 and 4405]
10. Emission rates shall not exceed any of the following: NOx (as NO₂): 54.0 lb/day or 9855 lb/year, CO: 52.5 lb/day. [District Rule 2201]
11. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305 and 4306]
12. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305 and 4306]
13. Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305 and 4306]
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 and 4306]
15. The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306]
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]
17. 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 and 4306]
18. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. [District Rules 4305 and 4306]
19. Stack gas oxygen (O₂) shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306]
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 and 4306]
21. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
22. The permittee shall monitor and record the stack concentration of NOx, CO, and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305 and 4306]

CONDITIONS CONTINUE ON NEXT PAGE

23. If either the NO_x or CO concentrations corrected to 3% O₂, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4305 and 4306]
24. All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305 and 4306]
25. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306]
26. Permittee shall determine sulfur content of combusted gas weekly for eight consecutive weeks. After demonstrating compliance for eight consecutive weeks testing may be conducted on a quarterly basis. Weekly sulfur testing shall resume if quarterly testing does not indicate compliance. Weekly gas analysis shall be performed using Draeger tubes and quarterly analysis using ASTM method D3246 or double GC for H₂S and mercaptans. First of the weekly gas analyses shall be done using laboratory analysis. [District Rules 1081, 2201, and 4320]
27. Compliance with fuel sulfur limit(s) can be demonstrated either by monitoring sulfur content at location(s) after all fuel sources are combined prior to incineration, or by monitoring the sulfur content and volume of each fuel source and performing mass balance calculations. Records of monitoring locations, detected sulfur concentrations, and mass balance calculations, if necessary, shall be maintained and kept onsite and made readily available for District inspection upon request. [District Rules 1081, 2201, and 4320]
28. The following calculation shall be used to show compliance with the SO_x daily emissions limit: $\text{lb SO}_x \text{ emitted/day} = (\text{volume of gas incinerated per day, in scf}) \times (\text{ppm H}_2\text{S prior to incineration}) \times 0.00000017$. [District Rule 2201]
29. Records of weekly and quarterly test results for sulfur content, daily amounts of natural gas and waste gas combusted (in scf), higher heating values of natural gas and waste gas, and calculations to verify compliance with the sulfur SLC limit shared by units '-7, '-20, and '-24 shall be retained on-site for a period of at least five years and made readily available for District inspection upon request. [District Rules 1070, 2201, and 4320]
30. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, and 4306]
31. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in Rule 4320. [District Rule 4320]
32. On and after July 1, 2010, the permittee shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contracts may be used to satisfy this requirement, provided they establish the fuel parameters mentioned above. [District Rule 4320]
33. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320]

Attachment C
Application

5-3088-7-9, 8-13, 2-7, 24-5

RECEIVED

San Joaquin Valley Air Pollution Control District

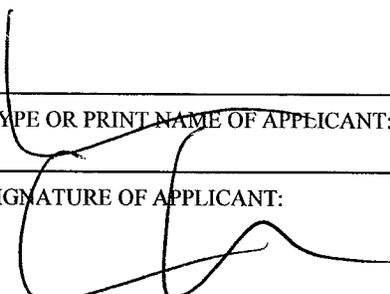
www.valleyair.org

OCT 24 2012

SJVAPCD Southern Region

Permit Application For:

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

1. PERMIT TO BE ISSUED TO: TRC Operating Company	
2. MAILING ADDRESS: STREET/P.O. BOX: P.O. Box 227 CITY: Taft STATE: CA 9-DIGIT ZIP CODE: 93268	
3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: STREET: _____ CITY: _____ ¼ SECTION 22 TOWNSHIP 32S RANGE 23E	INSTALLATION DATE: 9/20/2012
4. GENERAL NATURE OF BUSINESS: Crude Oil Production	
5. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE (include Permit #'s if known, and use additional sheets if necessary) S-3088-7-8: 62.5 MMBTU/HR STEAM GENERATOR S-3088-8-12: TEOR OPERATION S-3088-20-6: 62.5 MMBTU/HR STEAM GENERATOR S-3088-24-4: 62.5 MMBTU/HR STEAM GENERATOR	
6. TYPE OR PRINT NAME OF APPLICANT: Charlie Comfort	TITLE OF APPLICANT: Secretary/Treasurer
7. SIGNATURE OF APPLICANT: 	DATE: 10/23/12 PHONE: (661) 763-0081 FAX: (661) 763-5028 EMAIL: gary@trcopco.com

TRC Cypress

For APCD Use Only:

DATE STAMP	FILING FEE RECEIVED: \$ 76- CHECK#: 1718
	DATE PAID: PM 10/24/12
	PROJECT NO: S-1123796 FACILITY ID: S-3088

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Revised: January, 2009

TVFORM-008

Title V - Minor Mod

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Southern Region

San Joaquin Valley Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION
- MINOR PERMIT MODIFICATION
- ADMINISTRATIVE AMENDMENT

COMPANY NAME: <u>TRC OPERATING CO. INC.</u>	FACILITY ID: <u>S-3088</u>
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: <u>TRC OPERATING CO. INC.</u>	
3. Agent to the Owner: <u>CHARLES COMFORT</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:

[Signature]

10/25/12

Signature of Responsible Official

Date

Charles H. Comfort

Name of Responsible Official (please print)

Secretary/Treasurer

Title of Responsible Official (please print)

Attachment D
Previous Title V Operating Permit

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3088-7-7

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR WITH NORTH AMERICAN MAGNA-FLAME G-LE ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION (CYPRESS LEASE)

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Emissions rates from the unit shall not exceed any of the following limits: 15 ppmv NOx @ 3% O2 or 0.018 lb-NOx/MMBtu, 0.037 lb-PM10/MMBtu, 104 ppmv CO @ 3% O2 or 0.0757 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, and 4306] Federally Enforceable Through Title V Permit
5. SOx emissions from this steam generator shall not exceed 328.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. An ATC application to modify this permit to comply with section 5.4 of Rule 4320 shall be submitted by 4/30/2012. [District Rule 4320] Federally Enforceable Through Title V Permit
7. All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
8. 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
9. 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
10. 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
11. 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

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

12. 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
13. 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
14. 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
15. 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
16. 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
17. 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
18. 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
19. Permittee shall monitor H₂S content of the gas prior to incineration in this steam generator on a daily basis utilizing Draeger tubes calibrated for H₂S or other District-approved fuel sulfur detection method(s) or device(s). If compliance with fuel sulfur content limit(s) for the affected steam generators is demonstrated for 5 consecutive days, then the monitoring frequency shall be weekly. [District Rule 2201] Federally Enforceable Through Title V Permit
20. The following calculation shall be used to show compliance with the SO_x daily emissions limit: $\text{lb SO}_x \text{ emitted/day} = (\text{volume of gas incinerated per day, in scf}) \times (\text{ppm H}_2\text{S prior to incineration}) \times (0.32)$. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Records of daily and weekly Draeger tube results for sulfur content as required by this permit, and daily natural gas and waste gas consumption volume in scf shall be maintained, retained on-site for a period of at least five years and made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
22. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 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.

23. 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
24. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
25. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320] 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: S-3088-8-11

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

THERMALLY ENHANCED OIL RECOVERY OPERATION WITH 150 STEAM ENHANCED CRUDE OIL PRODUCTION WELLS AND 665 SCFM AIR ASSIST STANDBY FLARE, WITH VAPOR PIPING FROM TANKS S-3088-9 THROUGH -16, -21 AND -22, GAS/LIQUID SEPARATORS, COMPRESSORS, HEAT EXCHANGERS, CONDENSATE PUMPS, FOUR SULFATREAT HP PACKED VESSELS, AND INCINERATION IN STEAM GENERATORS S-3088-7 OR -20, OR STANDBY FLARE

PERMIT UNIT REQUIREMENTS

1. VOC content of the vapor control system gas shall not exceed 10% by weight as determined in accordance with the latest revision of ASTM Methods D1945 for gases and South Coast AQMD Method 304-91 or the latest revision of ASTM Method E-168, E-169 or E-260 for liquids. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
2. Thermally enhanced oil recovery operation shall include no more than 150 cyclically steam enhanced wells. [District Rule 2201] Federally Enforceable Through Title V Permit
3. Liquid from separators, heat exchangers, condensate collection vessels, compressor knockouts, and flare shall be piped only in closed piping to tanks with vapor control. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Vapor control system gas shall be incinerated in steam generator S-3088-7 and S-3088-20 or standby John Zink model STF-LH-336-6/15 air assisted flare when steam generators are not operational. Flare shall be equipped with automatic re-ignition system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Flare shall operate smokelessly (i.e. visible emissions shall be less than 1/4 Ringelmann). [District Rule 4101] Federally Enforceable Through Title V Permit
6. No more than 0.958 MM scf/day of TEOR and/or TVR gas shall be incinerated in standby flare. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Standby flare emissions shall not exceed any of the following limits: NOx: 0.068 lb/MMBtu, PM10: 0.008 lb/MMBtu, CO: 0.370 lb/MMBtu or VOC: 0.063 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
8. SOx emissions from flare shall not exceed 207.6 lb/day based on mass balance calculation with H2S content and daily volume of the TEOR and/or TVR gas combusted. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When the standby flare is being used, daily records shall be maintained of scrubbed vapor control system gas volume flow rate and sulfur content. [District Rule 2201] Federally Enforceable Through Title V Permit
10. The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401] Federally Enforceable Through Title V Permit
11. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved OMP. [District Rule 4401] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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12. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, component identification, record keeping, and notification requirements of Rule 4401 for all steam enhanced crude oil production wells at this facility except for those wells and components specifically exempted in Section 4.0 of Rule 4401. [District Rule 4401] Federally Enforceable Through Title V Permit
13. The inspection and re-inspection requirements set forth in Sections 5.8.1 through 5.8.5 of Rule 4401 shall not apply to components exclusively handling gas/vapor or liquid with a VOC content of 10% by weight or less [District Rule 4401] Federally Enforceable Through Title V Permit
14. The operator shall be in violation of Rule 4401 if any District inspection, or any operator inspection that is required by this rule, demonstrates that one or more of the leak standard conditions set forth in section 5.6.2 exists. [District Rule 4401] Federally Enforceable Through Title V Permit
15. Operator shall conduct quarterly sampling of vapor recovery system gas. If vapor recovery system gas is shown to be less than 10% VOC by weight for 8 consecutive quarterly sampling, sampling shall only be required annually. [District Rule 2201] Federally Enforceable Through Title V Permit
16. The sulfur content of the scrubbed vapor control system gas shall be tested at least monthly. [District Rule 1081] Federally Enforceable Through Title V Permit
17. The sulfur content of the vapor control system gas being combusted in the flare shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The flare flame shall be present at all times when combustible gases are vented through the flare. [District Rule 4311] Federally Enforceable Through Title V Permit
19. The flare outlet shall be equipped with an automatic ignition system, or, shall operate with a pilot flame present at all times when combustible gases are vented through the flare, except during purge periods for automatic-ignition equipped flares. [District Rule 4311] Federally Enforceable Through Title V Permit
20. Except for flares equipped with a flow-sensing ignition system, a heat sensing device such as a thermocouple, ultraviolet beam sensor, infrared sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311] Federally Enforceable Through Title V Permit
21. Flares that use flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. [District Rule 4311] Federally Enforceable Through Title V Permit
22. Permittee shall maintain a record of all vapor control system gas sample analysis conducted for VOC and sulfur content, the volume flow rate to the flare, and a current listing of the steam enhanced wells with casing vents connected to the well vent collection and control system. [District Rule 2201] Federally Enforceable Through Title V Permit
23. All records shall be maintained for a period of at least five years and made available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3088-20-5

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS-FIRED STEAM GENERATOR WITH A NORTH AMERICAN MODEL MAGNA-FLAME G-LE, ULTRA LOW NOX BURNER AND FLUE GAS RECIRCULATION - CYPRESS LEASE

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Testing for vapor recovery gas sulfur content shall be conducted no less than monthly. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Fuel gas sulfur content shall not exceed 5 gr S/100 scf. [District Rules 2201 and 4320] Federally Enforceable Through Title V Permit
6. Permittee shall determine sulfur content of combusted gas annually. [District Rules 1081 and 4320] Federally Enforceable Through Title V Permit
7. Emissions from the natural gas-fired unit shall not exceed any of the following limits: 15 ppmvd NO_x @ 3% O₂ or 0.018 lb-NO_x/MMBtu, 0.00285 lb-SO_x/MMBtu, 0.0076 lb-PM₁₀/MMBtu, 47.5 ppmvd CO @ 3% O₂ or 0.035 lb-CO/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
8. 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
9. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

10. 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
11. 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
12. 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
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. 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
15. 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
16. 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
17. 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
18. 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
19. 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
20. The permittee shall keep daily records of the amount of natural gas and waste gas combusted, the sulfur content and higher heating value of each fuel, and the resulting calculated emissions of SO_x (as SO₂)/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
21. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
22. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

23. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NOx emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NOx emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
24. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320] 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: S-3088-24-3

EXPIRATION DATE: 05/31/2017

SECTION: SW22 **TOWNSHIP:** 32S **RANGE:** 23E

EQUIPMENT DESCRIPTION:

62.5 MMBTU/HR C.E. NATCO NATURAL GAS/WASTE GAS FIRED STEAM GENERATOR (#92 DIS# 27572-80) WITH NORTH AMERICAN MAGNA FLAME GLE ULTRA LOW NOX BURNER

PERMIT UNIT REQUIREMENTS

1. All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201] Federally Enforceable Through Title V Permit
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
3. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
4. Emission rates from the unit shall not exceed any of the following limits: 0.028 lb-SO_x/MMBtu, 0.058 lb-PM₁₀/MMBtu, or 0.0055 lb-VOC/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
5. An ATC application to modify this permit to comply with section 5.4 of Rule 4320 shall be submitted by 4/30/2012. [District Rule 4320] Federally Enforceable Through Title V Permit
6. Except during startup and shutdown, emission rates from the unit shall not exceed any of the following limits: 15 ppmv NO_x @ 3% O₂. or 47 ppmv CO @ 3% O₂. [District Rules 2201, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
7. Emission rates during startup and shutdown shall not exceed: NO₂ - 140 pounds per hour or 0.14 pounds per MMBtu. [District Rules 4301 and 4405] Federally Enforceable Through Title V Permit
8. Emission rates shall not exceed any of the following: NO_x (as NO₂): 54.0 lb/day or 9855 lb/year, CO: 52.5 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status by allowing it to cool down from its operating temperature to ambient temperature as the fuel supply to the unit is completely turned off. [District Rules 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
10. Duration of start-up or shutdown shall not exceed two hours each per occurrence. During start-up or shutdown, the emissions control system shall be in operation, and emissions shall be minimized insofar as technologically possible. The operator shall maintain daily records of the duration of start-up and shutdown periods. [District Rules 4305, 4306 and 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.

11. 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
12. 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
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. 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
15. 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
16. 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
17. 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
18. 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
19. 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
20. Each fuel source shall be tested weekly for sulfur content and higher heating value using ASTM D 1072, D 4468, D 4084, D3246 or grab sample analysis by double GC for H₂S and mercaptans performed in the laboratory. If compliance with the sulfur emission limits has been demonstrated for 8 consecutive weeks, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. If the source of fuel is changed, weekly testing shall again be required as outlined in this permit condition. When source or type of fuel gas changes, sampling for sulfur content and heating value shall be conducted within one week. A change in fuel type is defined as changing between any of the following: crude oil, refined petroleum product, PUC-quality gas, unprocessed field gas or any field gas with any specific level of pretreatment. For certified fuel sources, permittee may use sulfur content analysis provided by the fuel supplier to meet testing requirements. [District Rule 2201] Federally Enforceable Through Title V Permit
21. 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

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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22. 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
23. 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
24. 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
25. The permittee shall keep daily records of the amount of natural gas and waste gas combusted, the sulfur content and higher heating value of each fuel, and the resulting calculated emissions of SO_x (as SO₂)/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
26. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] Federally Enforceable Through Title V Permit
27. Pursuant to Rule 4320, beginning in 2010 the operator shall pay an annual emission fee to the District for NO_x emissions from this unit for the previous calendar year. Payments are due by July 1 of each year. Payments shall continue annually until either the unit is permanently removed from service in the District or the operator demonstrates compliance with the applicable NO_x emission limit listed in Rule 4320. [District Rule 4320] Federally Enforceable Through Title V Permit
28. Permittee shall maintain records of annual heat input (MMBtu) for this unit on a calendar year basis. Such records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070 and Rule 4320] Federally Enforceable Through Title V Permit

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