



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

APR - 5 2012

Tommy Coffey Jr.
Plains LPG Services, L.P.
19430 Beech Avenue
Shafter, CA 93263

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1114454

Dear Mr. Coffey Jr.:

Enclosed for your review and comment is the District's analysis of Plains LPG Services, L.P.'s application for Emission Reduction Credits (ERCs) resulting from the shutdown and removal of fin fan coolers and heat exchangers from the gas production equipment, at 19430 Beach Avenue in Shafter, CA. The quantity of ERCs proposed for banking is 2,332 lb-VOC/yr.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Dan Klevann of Permit Services at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

DW: DK/cm

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
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061
www.valleyair.org

Southern Region

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



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

APR - 5 2012

Mike Tollstrup, Chief
Project Assessment Branch
Stationary Source Division
California Air Resources Board
PO Box 2815
Sacramento, CA 95812-2815

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1114454

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Plains LPG Services, L.P.'s application for Emission Reduction Credits (ERCs) resulting from the shutdown and removal of fin fan coolers and heat exchangers from the gas production equipment, at 19430 Beach Avenue in Shafter, CA. The quantity of ERCs proposed for banking is 2,332 lb-VOC/yr.

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San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

APR - 5 2012

Gerardo C. Rios (AIR 3)
Chief, Permits Office
Air Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Notice of Preliminary Decision - Emission Reduction Credits
Project Number: S-1114454

Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of Plains LPG Services, L.P.'s application for Emission Reduction Credits (ERCs) resulting from the shutdown and removal of fin fan coolers and heat exchangers from the gas production equipment, at 19430 Beach Avenue in Shafter, CA. The quantity of ERCs proposed for banking is 2,332 lb-VOC/yr.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Dan Klevann of Permit Services at (661) 392-5500.

Sincerely,

David Warner
Director of Permit Services

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**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
EMISSION REDUCTION CREDITS**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Emission Reduction Credits to Plains LPG Services, L.P. for the shutdown and removal of fin fan coolers and heat exchangers from the gas production equipment, at 19430 Beach Avenue in Shafter, CA. The quantity of ERCs proposed for banking is 2,332 lb-VOC/yr.

The analysis of the regulatory basis for this proposed action, Project #S-1114454, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

EMISSION REDUCTION CREDIT BANKING APPLICATION REVIEW

Facility Name: Plains LPG Services, L.P.
Mailing Address: 19430 Beech Avenue
 Shafter, CA 93263

Contact Name: Tommy Coffey Jr.
Telephone: (661) 589-5377

Facility: S-71
Permit Numbers: S-71-4-13, S-71-14-10, S-71-15-8

ERC Certificate Numbers: S-3793-1
Project Number: S-1114454

Date Received: November 7, 2011
Date Complete: February 8, 2012

Engineer: Dan Klevann
Date: March 15, 2012

Lead Engineer: Rich Karrs, Supervising AQE

*Leonard Anderson 3/29/12
FSD manager*

I. SUMMARY:

Plains LPG Services, L.P. (Plains) is a natural gas production facility that has retrofitted some of their heat exchangers and also removed old heat exchangers and fin fan coolers. The VOC emissions are all assessed as fugitive components. The gas production operations still have fugitive emissions and as such are still permitted as S-71-4-13, S-71-14-10, and S-71-15-8. Following the removal of the fin fan coolers and the heat exchangers, on June 24, 2011, Plains submitted an application to bank the emission reduction credits (ERCs) for the decreased emissions. A copy of the Authorities to Construct which allowed the removal of the fin fan coolers and the heat exchangers are included in Attachment A of this report. The ATC's were implemented and converted to permits. The following emission reductions have been found to qualify for banking:

ERC #		ERC (b)			
		Q1	Q2	Q3	Q4
S-3793-1	VOC	583	583	583	583

II. APPLICABLE RULES:

- Rule 2201 New and Modified Stationary Source Review Rule (April 21, 2011)
- Rule 2301 Emission Reduction Credit Banking (January 19, 2012)
- Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants (April 20, 2005)

III. PROJECT LOCATION:

SW Section 35, Township 28S, Range 25E
19430 Beech Avenue
Shafter, CA 93263

IV. METHOD OF GENERATING EMISSION REDUCTIONS:

The emission reductions are being generated by shutdown and removal of fin fan coolers and heat exchangers from the gas production equipment. The applicant removed the equipment from service on June 24, 2011.

Equipment Removed:

PTO	Equipment
S-71-4-13	MODIFICATION OF BUTAMER-BUTANE ISOMERIZATION UNIT INCLUDING TWO BUTANE FEED DRYERS V-102A/B, HYDROGEN MAKE-UP DRYER V-106, TWO REGENERANT DRYERS V-107A/B, ONE 80 MMBTU/HR GAS-FIRED PROCESS OIL HEATER H-201 WITH SIX MODEL CUBR-10W LOW-NOX BURNERS AND FUEL PIPING SHARED WITH PERMIT #S-71-1: REMOVE DEISOBUTANIZER OVERHEAD CONDENSER E-203 (FIN-FAN COOLER), REMOVE TRIM COOLER 210 (HEAT EXCHANGER), INSTALL DEISOBUTANIZER OVERHEAD CONDENSER E-221 (HEAT EXCHANGER)

S-71-14-10	<p>MODIFICATION OF BUTAMER-BUTANE ISOMERIZATION UNIT #2 WITH 105 MMBTU/HR GAS-FIRED HOT OIL HEATER H-202 EQUIPPED WITH CALLIDUS MODEL CUBR-12W LOW-NOX BURNERS AND INTERNAL FGR, WITH NITROGEN PURGE SYSTEM SERVING COMPRESSOR SEALS AND COMPRESSOR CRANKCASES:REMOVE DEISOBUTANIZER OVERHEAD CONDENSER E-216 (FIN-FAN COOLER), REMOVE TRIM COOLER 218 (HEAT EXCHANGER), INSTALL DEISOBUTANIZER OVERHEAD CONDENSER E-222 (HEAT EXCHANGER)</p>
S-71-15-8	<p>MODIFICATION OF SAFECAT FEEDSTOCK TREATMENT UNIT WITH 23 MMBTU/HR GAS-FIRED HEATER H-401 EQUIPPED WITH CALLIDUS MODEL CUBR-8P LOW-NOX BURNERS AND INTERNAL FGR:REVISE FUGITIVE EMISSIONS DEL SHARED WITH S-71-14</p>

V. CALCULATIONS:

A. Assumptions and Emission Factors

The actual emissions will be calculated for each of the calendar quarters in the baseline period. The Historical Actual Emissions (HAE) will be calculated using California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (CAPCOA screening values) fugitive emission component counts and actual component leak data.

The applicant provided component counts for each permit unit. They also provided the leaking components in the 2 years prior to the permitting changes.

The components were checked for leaks with a portable monitor every quarter. The components that were leaking were fixed the same day the leak was detected. The actual ppm value of all the leaking components was less than the 10,000 ppmv value that was used in assessing emissions for potential to emit purposes. Therefore there are no leaking components (greater than 10,000 ppmv) for banking purposes.

Rule 2201 section 3.22 specifies the Historical Actual Emissions must be discounted for any emission reduction which is:

1. Required or encumbered by any laws, rules, regulations, agreement, orders, or permits

2. Attributed for a control measure noticed for workshop, or proposed or contained in a State Implementation plan
3. Proposed in the District's adopted air quality plan for attaining the reductions required by the California Clean Air Act.

Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants required the facility to keep track of the fugitive components and test them every quarter. Leaking components were fixed within the timeframe allowed by the rule. There are no other control measures noticed for workshop or included in the air quality attainment plan that apply to these components.

B. Baseline Period Determination

Per the following sections of Rule 2201, baseline period is defined as:

- 3.9.1 two consecutive years of operation immediately prior to submission of the complete application; or
- 3.9.2 another time period of at least two consecutive years within the five years immediately prior to submission of the complete application as determined by the APCO as more representative of normal operation;

The equipment was removed on June 24, 2011. The baseline period will be the two years immediately prior to the reduction. Plains supplied fugitive component counts and the leak records for the 2 years prior to the implementation of the ATC's. For the components, there was terminal downtime from June, when the components were removed from service, until November when Plains submitted the application. Therefore the baseline period will be from July 2009 through June 2011.

C. Historical Actual Emissions (HAE)

HAE was calculated using the component counts and leaking components data provided by the applicant and the emission factors from California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c. Actual calculation spreadsheets are shown in the Appendix C. A sample calculation is shown below.

VOC

HAE = Component Count x VOC screening value emission factor

HAE = 742 Valves x 1.852E-03 lb/day/source = 1.38 lb VOC/ day

VOC Historical Actual Emission (HAE)				
Permit	1 st Qtr. HAE (lb/qtr)	2 nd Qtr. HAE (lb/qtr)	3 rd Qtr. HAE (lb/qtr)	4 th Qtr. HAE (lb/qtr)
S-71-4	712	712	712	712
S-71-14, '-15	830	830	830	830
Total	1,542	1,542	1,542	1,542

D. Actual Emissions Reductions (AER)

Actual Emissions Reductions are calculated as follows:

$$AER = HAE - PE2$$

Where:

HAE = Historic Actual Emissions

PE2 = Post-project Potential to Emit

The fugitive components from the permitted equipment were removed therefore, PE2 is equal to the remaining components as shown in appendix C

VOC Post-Project potential to emit (PE2)				
Permit	1 st Qtr. AER (lb/qtr)	2 nd Qtr. AER (lb/qtr)	3 rd Qtr. AER (lb/qtr)	4 th Qtr. AER (lb/qtr)
S-71-4	438	438	438	438
S-71-14, '-15	456	456	456	456
Total	894	894	894	894

Actual Emission Reductions (AER)				
Pollutant	1 st Qtr. AER (lb/qtr)	2 nd Qtr. AER (lb/qtr)	3 rd Qtr. AER (lb/qtr)	4 th Qtr. AER (lb/qtr)
VOC	648	648	648	648

E. Air Quality Improvement Deduction (AQID)

Actual Emission Reductions must be discounted by 10% for Air Quality Improvement.

Sample calculation:

$$\begin{aligned}
 \text{Q1 VOC lb} &= \text{AER} \times (0.1) \\
 &= (648 \text{ lb}) \times (0.1) \\
 &= 64.8 \text{ lb} \\
 &= 65 \text{ lb}
 \end{aligned}$$

Air Quality Improvement Deduction (AQID)				
Pollutant	1 st Qtr. AQID (lb/qtr)	2 nd Qtr. AQID (lb/qtr)	3 rd Qtr. AQID (lb/qtr)	4 th Qtr. AQID (lb/qtr)
VOC	65	65	65	65

F. Increases in Permitted Emissions

The fugitive components have been removed and the Permit to Operate modified to reflect the removal from the permit. No emission increases are being authorized at this or any other location. Therefore, the Increase in Permitted Emissions for this application is zero.

G. Bankable Emissions Reductions Credits

The bankable emission reduction (ERC) is equal to the AER minus the AQID.

Sample calculation:

$$\begin{aligned}
 \text{Q1 VOC lb} &= \text{AER} - \text{AQID} \\
 &= 648 \text{ lb} - 65 \text{ lb} \\
 &= 583 \text{ lb}
 \end{aligned}$$

Bankable Emission Reductions Credit (ERC)				
Pollutant	1st Qtr. ERC (lb/qtr)	2nd Qtr. ERC (lb/qtr)	3rd Qtr. ERC (lb/qtr)	4th Qtr. ERC (lb/qtr)
VOC	583	583	583	583

VI. COMPLIANCE:

To be eligible for banking, emission reduction credits (ERC's) must be verified as being real, enforceable, quantifiable, permanent, and surplus pursuant to District Rules 2201 and 2301. In addition, the application must be submitted within the timeline specified in Rule 2301.

A. Real

The AER quantified above are based on actual, historical emissions and were calculated from actual component counts and leak data. The components have been removed from service and from the permit.

Therefore, the AER due to removing the components are real.

B. Enforceable

The components authorized by the permit have been removed from service and the Permit to Operate has been modified. Therefore, the quantified AER is enforceable.

C. Quantifiable

The actual emission reductions (AER) quantified above are based on actual, historical emissions calculated from component counts and emission factors. Therefore, the AER is quantifiable.

D. Permanent

The applicant has removed the components from service and modified the PTO to remove the components from the PTO. Therefore, the AER is permanent.

E. Surplus

The emission reductions are not mandated by any law, rule, regulation, agreement, or order of the District, State, or Federal Government. Rule 4455 applies to the components.

Inspection and maintenance of the components result in compliance with Rule 4455 requirements. The emissions reductions are surplus of Rule 4455. Therefore, the AER is surplus.

F. Timeliness

The ERC application was submitted on November 7, 2011. The components were removed on June 24, 2011. The PTO has been modified and implemented.

Because the ERC application was submitted within 180 days after the date that shutdown occurred, the application is timely.

VII. RECOMMENDATION:

After public notice, comments and review, issue ERCs to Plains in the amounts shown below:

ERC #		ERC (lb)			
		Q1	Q2	Q3	Q4
S-3793-1	VOC	583	583	583	583

Appendix A

S-71-4, S-71-14, S-71-15



AUTHORITY TO CONSTRUCT

PERMIT NO: S-71-4-13

ISSUANCE DATE: 12/23/2009

LEGAL OWNER OR OPERATOR: PLAINS LPG SERVICES, L.P.

MAILING ADDRESS: 19430 BEECH AVE
SHAFTER, CA 93263

LOCATION: 7TH STANDARD & BEECH
SHAFTER, CA 93263

SECTION: 35 **TOWNSHIP:** 28S **RANGE:** 25E

EQUIPMENT DESCRIPTION:

MODIFICATION OF BUTAMER-BUTANE ISOMERIZATION UNIT INCLUDING TWO BUTANE FEED DRYERS V-102A/B, HYDROGEN MAKE-UP DRYER V-106, TWO REGENERANT DRYERS V-107A/B, ONE 80 MMBTU/HR GAS-FIRED PROCESS OIL HEATER H-201 WITH SIX MODEL CUBR-10W LOW-NOX BURNERS AND FUEL PIPING SHARED WITH PERMIT #S-71-1: REMOVE DEISOBUTANIZER OVERHEAD CONDENSER E-203 (FIN-FAN COOLER), REMOVE TRIM COOLER 210 (HEAT EXCHANGER), INSTALL DEISOBUTANIZER OVERHEAD CONDENSER E-221 (HEAT EXCHANGER)

CONDITIONS

1. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
2. Operation shall include feed surge drum V-103, one product separator V-104, two reactors R-101A/B, stabilizer receiver V-109, and one perchloroethylene storage/injection vessel V-105. [District Rules 2201 & 4102]
3. Operation shall include one spent caustic de-gas drum V-112, one stabilizer column V-108, and one net gas scrubber V-110. [District Rule 2201]
4. Operation shall include one de-isobutanizer tower T-201, one de-isobutanizer overhead accumulator V-201, one 125 HP recycle gas compressor C-101, and one hydrogen make-up knock-out drum V-115. [District Rule 2201]
5. Operation shall include hot oil circulation piping, exchangers, and miscellaneous vessels. [District Rule 2201]
6. Hot oil drum shall be equipped with a pressure relief valve set at a minimum 100 psig and no greater than maximum pressure rating recommended by ASME or other recognized authority. [District Rule 2201]

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

7. All VOC sampling connections, open-ended valves, and lines shall be equipped with two closed valves or be sealed with blind flanges, caps, or threaded plugs except during actual use. [District Rule 2201]
8. Perchloroethylene storage vessel shall be blanketed with inert gas. [District Rule 4102]
9. Perchloroethylene storage vessel shall be equipped with a pressure relief valve set at a minimum pressure of 50 psig. [District Rule 4102]
10. Hot oil drum shall be fuel gas blanketed with vent to fuel gas system. [District Rule 2201]
11. Fuel gas combusted in fired equipment may be comprised of process off-gas (including hydrogen), propane, butane, natural gas, or any combination thereof. [District Rule 2201]
12. The heating value of the fuel gas (Btu/scf @ hhv) combusted in fired equipment shall be determined by sample analysis at least annually. Results of sample analysis shall be retained on site and made available for District inspection upon request. [District Rule 2201]
13. Total heat input of fuel gas combusted in units S-71-4, '5, '14 and '15 shall not exceed 1,602,019 MM Btu/yr. [District Rule 2201]
14. Perchloroethylene receiving line shall be blown dry to storage vessel using an inert gas upon completion of transfer. [District Rule 4102]
15. Only heat transfer fluid manufactured and marketed for such use shall be used in a closed loop as heat transfer medium. [District Rule 2201]
16. All excess gas shall be incinerated in process heater firebox or existing boiler. [District Rule 2201]
17. Fugitive VOC emission rate shall not exceed 46.5 pounds per day. [District Rule 2201]
18. Permittee shall maintain permit accurate fugitive component counts and resulting emissions calculated using CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," February 1999, Table IV-2c: CAPCOA Oil and Gas Production Screening Value Range Emission Factors. [District Rule 2201]
19. Emission rates shall not exceed any of the following: PM10: 0.005 lb/MMBtu; NOx (as NO2): 25 ppmv @ 3% O2; VOC: 0.00275 lb/MMBtu; SOx (as SO2): 0.0005 lb/MMBtu; or CO: 50 ppmv @ 3% O2. [District Rule 2201]
20. Hot oil heater stack shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 2201]
21. The operator shall keep a copy of the APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB and US EPA upon request. 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 4455]
22. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, recordkeeping and notification requirements of Rule 4455 for all components containing or contacting VOC at the this gas liquids processing facility, except for those components specifically exempted in Sections 4.1 and 4.2. [District Rule 4455]
23. Except for those components specified in condition 24, a component shall be considered leaking if one of more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of the rule exist at the facility. [District Rule 4455, 5.1.4]
24. For valves and connectors, a leak shall be defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21. For pump and compressor seals, a leak shall be defined as a reading of methane in excess of 500 ppmv above background when measure per EPA Method 21. [District Rule 2201]
25. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 & 4306]
26. The duration of each startup and shutdown period for the 80 MMBtu/hr gas-fired process oil heater shall not exceed 5.5 hours and 2.0 hours respectively. Emission limits of Rules 4305 and 4306 are waived during periods of startup and shutdown. [District Rules 4305 & 4306]

CONDITIONS CONTINUE ON NEXT PAGE

27. The permittee shall maintain records of the duration of each startup period for the 80 MMBtu/hr gas-fired process oil heater. [District Rules 4305 & 4306]
28. The permittee shall monitor and record the stack concentration of NO_x (as NO₂), CO, and O₂ at least once every month using a portable emission monitor. 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]
29. If the NO_x and/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 Rule 4305 and 4306]
30. 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]
31. 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]
32. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
33. This unit shall be tested for compliance with the NO_x, CO, and SO_x emissions limits at least once every 12 months. After demonstrating compliance on two consecutive annual source tests, the unit shall be tested not less than once every thirty-six months. [District Rules 2201, 4305 and 4306]
34. 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. NO_x emissions during the source test shall be calculated as the arithmetic average of three 30-consecutive-minute test runs. [District Rules 4305 and 4306]
35. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. CO emissions during the source test shall be calculated as the arithmetic average of three 30-consecutive-minute test runs. [District Rules 4305 and 4306]
36. SO_x emissions for source test purposes shall be determined using EPA Method 19. [District Rule 1081]
37. Stack gas oxygen for source test purposes shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306]
38. If permittee fails any compliance demonstration for NO_x, CO, or SO_x emission limits when testing not less than once every 36 months, compliance with NO_x, CO, and SO_x emission limits shall be demonstrated not less than once every 12 months. [District Rules 2201, 4305 and 4306]
39. Permittee shall maintain accurate records of perchloroethylene usage, fuel gas heating value, and daily, monthly and annual records of fuel gas use. [District Rules 1070 and 2201]
40. Permittee shall maintain accurate monthly records of the combined heat input of the fuel gas combusted in units S-71-4, '5, '14 and '15. [Districts Rule 1070 and 2201]
41. When the LPG supply source for make up fuel to the fuel gas system changes, the stack concentrations of NO_x, CO, and O₂ shall be measured with a District approved portable analyzer to verify emissions compliance. This is to be done anytime that LPG is being vaporized to supply make up fuel to the fuel gas system. [District Rule 2201, 4301, 4305 and 4306]

CONDITIONS CONTINUE ON NEXT PAGE

42. All records required by this permit shall be retained for a period of at least 5 years and shall be made available to the District, ARB, and USEPA upon request. [District Rules 1070 and 4455]



AUTHORITY TO CONSTRUCT

PERMIT NO: S-71-14-10

ISSUANCE DATE: 12/23/2009

LEGAL OWNER OR OPERATOR: PLAINS LPG SERVICES, L.P.
MAILING ADDRESS: 19430 BEECH AVE
SHAFTER, CA 93263

LOCATION: 7TH STANDARD & BEECH
SHAFTER, CA 93263

SECTION: SW35 **TOWNSHIP:** 28S **RANGE:** 25E

EQUIPMENT DESCRIPTION:

MODIFICATION OF BUTAMER-BUTANE ISOMERIZATION UNIT #2 WITH 105 MMBTU/HR GAS-FIRED HOT OIL HEATER H-202 EQUIPPED WITH CALLIDUS MODEL CUBR-12W LOW-NOX BURNERS AND INTERNAL FGR, WITH NITROGEN PURGE SYSTEM SERVING COMPRESSOR SEALS AND COMPRESSOR CRANKCASES: REMOVE DEISOBUTANIZER OVERHEAD CONDENSER E-216 (FIN-FAN COOLER), REMOVE TRIM COOLER 218 (HEAT EXCHANGER), INSTALL DEISOBUTANIZER OVERHEAD CONDENSER E-222 (HEAT EXCHANGER)

CONDITIONS

1. Operation shall include deisobutanizer tower T-202, stabilizer tower V-503, caustic scrubber tower V-110A, two butamer reactor vessels V-501 A/B, stabilizer receiver vessel V-502, and deisobutanizer overhead accumulator vessel V-203. [District Rule 2201]
2. Operation shall include seventeen shell & tube heat exchangers, four air-cooled heat exchangers, 350 hp recycle gas compressor C-401, and 20 hp emergency vent drum vapor compressor C-501. [District Rule 2201]
3. Perchloroethylene shall be received, stored, and transferred using a pressurized and/or enclosed system shared with permit unit #S-71-4. [District Rule 2201]
4. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
5. Fuel gas combusted in fired equipment may be comprised of process off-gas (including hydrogen), propane, butane, natural gas, or any combination thereof. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-71-14-10 : Mar 20 2012 4:09PM - KLEVANNND : Joint Inspection NOT Required

6. The heating value of the fuel gas (Btu/scf @ the hhv) combusted in fired equipment shall be determined by sample analysis at least annually. Results of sample analysis shall be retained on site and made available for District inspection upon request. [District Rule 2201]
7. Total heat input of fuel gas combusted in units S-71-4, '5, '14 and '15 shall not exceed 1,602,019 MMBtu/yr. [District Rule 2201]
8. The nitrogen purge system serving the liquid lines shall be a closed loop system and shall not vent to the atmosphere during operation of the system. [District Rule 2201]
9. The nitrogen purge system serving the compressor seals and compressor crankcases shall vent through two activated charcoal canisters connected in series, except during scheduled maintenance or repair activities. During repair and maintenance (such as charcoal bed change out) VOC emissions shall be minimized to the fullest extent possible. [District Rule 2201]
10. The nitrogen purge system's used activated charcoal canisters shall be handled and disposed of in sealed containers, preventing VOC emissions to the fullest extent possible. [District Rule 2201]
11. The nitrogen purge system's activated charcoal canisters shall be replaced to maintain the VOC concentration from the canister vent less than 4,500 ppmv-VOC or periodically as recommended by the manufacturer, whichever occurs first. [District Rule 2201]
12. Maximum fugitive VOC emissions from permits #S-71-14 and '-15 shall not exceed 63.2 lb per day. [District Rule 2201]
13. Permittee shall maintain permit accurate fugitive component counts and resulting emissions calculated using CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," February 1999, Table IV-2c: CAPCOA Oil and Gas Production Screening Value Range Emission Factors. [District Rule 2201]
14. Emission rates shall not exceed any of the following: PM10: 0.0137 lb/MMBtu; NO_x (as NO₂): 25 ppmv @ 3% O₂; SO_x (as SO₂): 0.0006 lb MMBtu; VOC: 0.00141 lb/MMBtu; or CO: 50 ppmv @ 3% O₂. [District Rule 2201]
15. Process oil heater stack shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081]
16. The stack concentration of NO_x (as NO₂), CO, and O₂ shall be measured at least on a monthly basis using District approved portable analyzers. [District Rules 4305 and 4306]
17. The permittee shall maintain records of the date and time of NO_x, CO, and O₂ measurements, the measured NO₂ and CO concentrations corrected to 3% O₂, and the O₂ concentration. The records shall also include a description of any corrective action taken to maintain the emissions in the acceptable range. These records shall be retained at the facility for a period of no less than five years and shall be made readily available for District inspection upon request. [District Rules 1070, 4305 and 4306]
18. If the NO_x and/or CO concentrations, as measured by the portable analyzer, exceed the permitted emission limits, the permittee or third party shall notify the District and return the NO_x and CO concentrations to the permitted emission limits as soon as possible but no longer than one (1) hour after detection. If the portable analyzer readings continue to exceed the permitted emission limits after (1) hour, the permittee shall conduct a source test within 60 days, of the first exceedance to demonstrate compliance with the permitted emission limits. [District Rules 4305 and 4306]
19. District witnessed compliance source testing for NO_x, CO, and SO_x emission limits shall be conducted at least once every 12 months, except as provided below. [District Rules 2201, 4305 and 4306]
20. District witnessed source testing to demonstrate compliance with NO_x, CO, and SO_x emission limits shall be conducted not less than once every 36 months if compliance is demonstrated on two consecutive annual tests. [District Rules 2201, 4305 and 4306]
21. If permittee fails any compliance demonstration for NO_x, CO, or SO_x emission limits when testing not less than once every 36 months, compliance with NO_x, CO, and SO_x emission limits shall be demonstrated not less than once every 12 months. [District Rules 2201, 4305 and 4306]

CONDITIONS CONTINUE ON NEXT PAGE

22. Compliance demonstration (source testing) shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081]
23. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081]
24. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
25. For the purposes of source testing, the following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, SO_x (lb/MMBtu) - EPA Method 19, and stack gas oxygen - EPA Method 3 or 3A or ARB Method 100. [District Rules 1081, 4305 and 4306]
26. When the LPG supply source for make up fuel to the fuel gas system changes, the stack concentrations of NO_x, CO, and O₂ shall be measured with a District approved portable analyzer to verify emissions compliance. This is to be done anytime that LPG is being vaporized to supply make up fuel to the fuel gas system. [District Rule 2201, 4301, 4305 and 4306]
27. Permittee shall maintain accurate records of perchloroethylene usage, fuel gas heating value and daily, monthly and yearly records of fuel gas use. [District Rules 1070 and 2201]
28. Permittee shall maintain accurate monthly records of the combined fuel gas combusted in units S-71-4, '5, '14 and '15. [District Rules 1070 and 2201]
29. The operator shall keep a copy of the APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB and US EPA upon request. 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 4455]
30. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, recordkeeping and notification requirements of Rule 4455 for all components containing or contacting VOC at the this gas liquids processing facility, except for those components specifically exempted in Sections 4.1 and 4.2. [District Rule 4455]
31. Except for those components specified in condition 32, a component shall be considered leaking if one of more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of the rule exist at the facility. [District Rule 4455, 5.1.4]
32. For valves and connectors, a leak shall be defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21 and Maintenance Program pursuant to District Rule 4455. For pump and compressor seals, a leak shall be defined as a reading of methane in excess of 500 ppmv above background when measure per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455. [District Rule 2201]
33. All records required by this permit shall be retained for a period of at least 5 years and shall be made available to the District, ARB, and USEPA upon request. [District Rules 1070 and 4455]
34. ATC shall be implemented concurrently with ATC S-71-15-8. [District Rule 2201]



AUTHORITY TO CONSTRUCT

PERMIT NO: S-71-15-8

ISSUANCE DATE: 12/23/2009

LEGAL OWNER OR OPERATOR: PLAINS LPG SERVICES, L.P.

MAILING ADDRESS: 19430 BEECH AVE
SHAFTER, CA 93263

LOCATION: 7TH STANDARD & BEECH
SHAFTER, CA 93263

SECTION: SW35 **TOWNSHIP:** 28S **RANGE:** 25E

EQUIPMENT DESCRIPTION:

MODIFICATION OF SAFECAT FEEDSTOCK TREATMENT UNIT WITH 23 MMBTU/HR GAS-FIRED HEATER H-401 EQUIPPED WITH CALLIDUS MODEL CUBR-8P LOW-NOX BURNERS AND INTERNAL FGR:REVISE FUGITIVE EMISSIONS DEL SHARED WITH S-71-14

CONDITIONS

1. 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]
2. A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201]
3. Operation shall include SafeCat feed surge drum V-401, SafeCat reactor vessel V-402, SafeCat product separator vessel V-403, depropanizer receiver boot V-7, sulfur injection drum V-407, and three SafeCat adsorber vessels V-405 A/B/C. [District Rule 2201]
4. Operation shall include two SulfaTreat adsorber vessels V-102 A/B, SafeCat Feed prefilter vessel F-401, five shell & tube heat exchangers, and air-cooled heat exchanger. [District Rule 2201]
5. SafeCat feedstock treatment system gas shall be routed only to SafeCat feed stream or SulfaTreat sulfur removal equipment prior to introduction into facility fuel gas system. [District Rule 2201]
6. No on-site regeneration of SulfaTreat chemical is authorized. [District Rule 2201]
7. Gas combusted in fired equipment may be comprised of process off-gas (including hydrogen), propane, butane, natural gas, or any combination thereof. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-71-15-8: Mar 20 2012 4:00PM - KLEVANNND : Joint Inspection NOT Required

8. The heating value of the fuel gas (Btu/scf @ the h_hv) combusted in fired equipment shall be determined by sample analysis at least annually. Results of sample analysis shall be retained on site and made available for District inspection upon request. [District Rule 2201]
9. Total heat input of fuel gas combusted in units S-71-4, '5, '14 and '15 shall not exceed 1,602,019 MM Btu/yr. [District Rule 2201]
10. Leaks from valves, connectors, and other components (not including pump and compressor seals) subject to a BACT requirement and subject to the provisions of Rule 4455 shall be defined as a reading of methane on a portable hydrocarbon detection instrument in excess of 100 ppmv above background when measured as close as possible but not greater than one (1) cm from the potential source. [District Rule 2201]
11. Leaks from pump and compressor seals subject to a BACT requirement and subject to the provisions of Rule 4455 shall be defined as a reading of methane on a portable hydrocarbon detection instrument in excess of 500 ppmv above background when measured as close as possible but not greater than one (1) cm from potential source. [District Rule 2201]
12. Maximum fugitive VOC emissions from permits #S-71-14 and '-15 shall not exceed 63.2 lb per day. [District Rule 2201]
13. Permittee shall maintain permit accurate fugitive component counts and resulting emissions calculated using CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," February 1999, Table IV-2c: CAPCOA Oil and Gas Production Screening Value Range Emission Factors. [District Rule 2201]
14. Emission rates shall not exceed any of the following: PM₁₀: 0.0137 lb/MMBtu; NO_x (as NO₂): 25 ppmv @ 3% O₂; SO_x (as SO₂): 0.0006 lb/MMBtu; VOC: 0.00279 lb/MMBtu; or CO: 50 ppmv @ 3% O₂. [District Rule 2201]
15. SafeCat heater stack shall be equipped with sampling facilities for source testing in accordance with the provisions of Rule 1081 (Source Sampling). [District Rule 1081]
16. The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rules 4305 & 4306]
17. The duration of each startup and shutdown period for the 23 MMBtu/hr gas-fired heater shall not exceed 7.7 hours and 2.0 hours respectively. Emission limits of Rules 4305 and 4306 are waived during periods of startup and shutdown. [District Rules 4305 & 4306]
18. The permittee shall maintain records of the duration of each startup period for the 23 MMBtu/hr gas-fired heater. [District Rules 4305 & 4306]
19. The permittee shall monitor and record the stack concentration of NO_x (as NO₂), CO, and O₂ at least once every month using a portable emission monitor. 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]
20. If the NO_x and/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]
21. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 3% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305 and 4306]

CONDITIONS CONTINUE ON NEXT PAGE

22. 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]
23. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
24. This unit shall be tested for compliance with the NO_x, CO, and SO_x emissions limits at least once every 12 months. After demonstrating compliance on two consecutive annual source tests, the unit shall be tested not less than once every thirty-six months. [District Rules 2201, 4305 and 4306]
25. NO_x emissions for source test purposes shall be determined using EPA Method 7E or ARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. NO_x emissions during the source test shall be calculated as the arithmetic average of three 30-consecutive-minute test runs. [District Rules 4305 and 4306]
26. CO emissions for source test purposes shall be determined using EPA Method 10 or ARB Method 100. CO emissions during the source test shall be calculated as the arithmetic average of three 30-consecutive-minute test runs. [District Rules 4305 and 4306]
27. SO_x emissions for source test purposes shall be determined using EPA Method 19. [District Rule 1081]
28. Stack gas oxygen for source test purposes shall be determined using EPA Method 3 or 3A or ARB Method 100. [District Rules 4305 and 4306]
29. If permittee fails any compliance demonstration for NO_x, CO, or SO_x emission limits when testing not less than once every 36 months, compliance with NO_x, CO, and SO_x emission limits shall be demonstrated not less than once every 12 months. [District Rules 2201, 4305 and 4306]
30. When the LPG supply source for make up fuel to the fuel gas system changes, the stack concentrations of NO_x, CO, and O₂ shall be measured with a District approved portable analyzer to verify emissions compliance. This is to be done anytime that LPG is being vaporized to supply make up fuel to the fuel gas system. [District Rule 2201, 4301, 4305 and 4306]
31. Permittee shall maintain accurate records of perchloroethylene usage, fuel gas heat input, and daily, monthly and yearly records of fuel gas use. [District Rules 1070 and 2201]
32. Permittee shall maintain accurate monthly records of the combined heat input of the fuel gas combusted in units S-71-4, '5, '14 and '15. [District Rules 1070 and 2201]
33. The operator shall keep a copy of the APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB and US EPA upon request. 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 4455]
34. In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, recordkeeping and notification requirements of Rule 4455 for all components containing or contacting VOC at the this gas liquids processing facility, except for those components specifically exempted in Sections 4.1 and 4.2. [District Rule 4455]
35. Except for those components specified in condition 36, a component shall be considered leaking if one of more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of the rule exist at the facility . [District Rule 4455, 5.1.4]
36. For valves and connectors, a leak shall be defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21 and Maintenance Program pursuant to District Rule 4455. For pump and compressor seals, a leak shall be defined as a reading of methane in excess of 500 ppmv above background when measured per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455. [District Rule 2201]
37. All records required by this permit shall be retained for a period of at least 5 years and shall be made available to the District, ARB, and USEPA upon request. [District Rules 1070 and 4455]
38. ATC shall be implemented concurrently with ATC S-71-14-10. [District Rule 2201]

Appendix B

Leak Data

LeakID	LeakBit5	Tag	Rule	Facility	Area	Subarea	Component	Leak Path	Service	Leak Date	Leak Rate	Leak Time	Repair Time	Repair Date	Post Leak Rate	Repair Action
20987	FALSE	14-3214.00	4455L	Lone Star Frac	Heater Skid	E-216	Threaded Connection	Threaded Connection	LL	8/3/2010	1147 PPM	7	7	8/3/2010	5.68 PPM	Tightened
20984	FALSE	14-4167.00	4455L	Lone Star Frac	Heater Skid	E-216 A/B	Threaded Connection	Threaded Connection	G	8/3/2010	3408 PPM	7	7	8/3/2010	3.88 PPM	Tightened
17966	FALSE	14-7373.00	4455L	Lone Star Frac	Heater Skid	E-216 M/N	Threaded Connection	Threaded Connection	G	3/4/2010	5515 PPM	365	365	3/4/2010	0 PPM	Tightened
13859	FALSE	14-2941.00	4455L	Lone Star Frac	Heater Skid	E-218	Flange	Flanged Connection	LL	8/24/2009	3019 PPM	3	3	8/24/2009	1.67 PPM	Tightened
17065	FALSE	14-2941.00	4455L	Lone Star Frac	Heater Skid	E-218	Flange	Flanged Connection	LL	3/1/2010	2806 PPM	7	7	3/1/2010	105 PPM	Tightened
17066	FALSE	14-2943.00	4455L	Lone Star Frac	Heater Skid	E-218	Threaded Connection	Threaded Connection	LL	3/1/2010	1284 PPM	7	7	3/1/2010	6.48 PPM	Tightened

Appendix C
Fugitive emission Calculations

Plains LPG Services LP

Project # S-1114454 , Permit Unit # S-71-4 Pre-Project

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities

Table IV-2c. Oil and Gas Production
Screening Value Ranges Emission Factors

Percentage of components with $\geq 10,000$ ppmv leaks allowed? 0 %
 Weight percentage of VOC in the total organic compounds in gas (neglect non-organics)? 100 %
 Weight percentage of VOC in the total organic compounds in oil (neglect non-organics)? 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF TOC		VOC emissions (lb/day)
				< 10,000 ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	
Valves	Gas/Light Liquid	742	0	1.852E-03	7.333E+00	1.37
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	9	0	5.270E-02	4.709E+00	0.47
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	186	0	7.778E-03	7.281E+00	1.45
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	5,045	0	6.349E-04	1.370E+00	3.20
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	853	0	1.482E-03	3.228E+00	1.26
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

Total VOC Emissions = 7.8 lb/day

Plains LPG Services LP

Project # S-1114454 , Permit Unit # S-71-14 / '15 Pre-Project

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities

Table IV-2c. Oil and Gas Production
Screening Value Ranges Emission Factors

Percentage of components with $\geq 10,000$ ppmv leaks allowed? 0 %
 Weight percentage of VOC in the total organic compounds in gas (neglect non-organics)? 100 %
 Weight percentage of VOC in the total organic compounds in oil (neglect non-organics)? 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF: TOC		VOC emissions (lb/day)
				< 10,000 ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	
Valves	Gas/Light Liquid	888	0	1.852E-03	7.333E+00	1.64
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	15	0	5.270E-02	4.709E+00	0.79
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	120	0	7.778E-03	7.281E+00	0.93
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	6,763	0	6.349E-04	1.370E+00	4.29
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	1,004	0	1.482E-03	3.228E+00	1.49
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

Total VOC Emissions = 9.1 lb/day

Plains LPG Services LP

Project # S-1114454 , Permit Unit # S-71-4 Post-Project

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities

Table IV-2c. Oil and Gas Production
Screening Value Ranges Emission Factors

Percentage of components with $\geq 10,000$ ppmv leaks allowed? 0 %
 Weight percentage of VOC in the total organic compounds in gas (neglect non-organics)? 100 %
 Weight percentage of VOC in the total organic compounds in oil (neglect non-organics)? 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value		VOC emissions (lb/day)
				< 10,000 ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	
Valves	Gas/Light Liquid	743	0	1.852E-03	7.333E+00	1.38
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	9	0	5.270E-02	4.709E+00	0.47
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	186	0	7.778E-03	7.281E+00	1.45
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	401	0	6.349E-04	1.370E+00	0.25
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	857	0	1.482E-03	3.228E+00	1.27
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

Total VOC Emissions = 4.8 lb/day

Plains LPG Services LP

Project # S-1114454 , Permit Unit # S-71-14 / '15 Post-Project

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities

*Table IV-2c. Oil and Gas Production
Screening Value Ranges Emission Factors*

Percentage of components with $\geq 10,000$ ppmv leaks allowed? 0 %
 Weight percentage of VOC in the total organic compounds in gas (neglect non-organics)? 100 %
 Weight percentage of VOC in the total organic compounds in oil (neglect non-organics)? 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF - TOC		VOC emissions (lb/day)
				< 10,000 ppmv (lb/day/source)	> 10,000 ppmv (lb/day/source)	
Valves	Gas/Light Liquid	889	0	1.852E-03	7.333E+00	1.65
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	15	0	5.270E-02	4.709E+00	0.79
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	120	0	7.778E-03	7.281E+00	0.93
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	200	0	6.349E-04	1.370E+00	0.13
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	1,008	0	1.482E-03	3.228E+00	1.49
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

Total VOC Emissions = 5.0 lb/day

VOC Emissions

	Daily		AER	Yearly AER	AQID	Bankable credits	Quarterly Emissions
	Pre-Project	Post Project					
S-71-4	7.8	4.8	3	1095			
S-71-14/ '15	9.1	5	4.1	1497			
Total	16.9	9.8	7.1	2592	259	2332	583

Appendix D

Draft ERCs

San Joaquin Valley
Air Pollution Control District

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308

Emission Reduction Credit Certificate
S-3793-1

ISSUED TO: PLAINS LPG SERVICES, L.P.
ISSUED DATE: <DRAFT>
LOCATION OF REDUCTION: 7TH STANDARD & BEECH
SHAFTER, CA 93263
SECTION: SW 35 TOWNSHIP: 28S RANGE: 25E

For VOC Reduction In The Amount Of:

Quarter 1	Quarter 2	Quarter 3	Quarter 4
583 lbs	583 lbs	583 lbs	583 lbs

Conditions Attached

Method Of Reduction

- Shutdown of Entire Stationary Source
 Shutdown of Emissions Units
 Other

Removal of old heat exchangers and fin fan coolers

Use of these credits outside the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) is not allowed without express written authorization by the SJVUAPCD.

Seyed Sadredin, Executive Director / APCO

DRAFT

David Warner, Director of Permit Services