



SEP 08 2011

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

**Re: Proposed Authority to Construct / Certificate of Conformity (Minor Mod)
District Facility # S-1737
Project # S-1111515**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for Vintage Production California, LLC, located within the Light Oil Central Stationary Source within Kern County, which has been issued a Title V permit. Vintage Production California, LLC is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. Vintage has proposed to install a new gas-fired IC engine.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authority to Construct # S-1737-179-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

Enclosures
cc: Kris Rickards, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
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SEP 08 2011

Joey Barulich
Vintage Production California, LLC
9600 Ming Ave., Ste 300
Bakersfield, CA 93311

**Re: Proposed Authority to Construct / Certificate of Conformity (Minor Mod)
District Facility # S-1737
Project # S-1111515**

Dear Mr. Barulich:

Enclosed for your review is the District's analysis of your application for Authority to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Vintage has proposed to install a new gas-fired IC engine.

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

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
New Gas-Fired IC Engine Powering a Waste Water Pump

Facility Name:	Vintage Production California, LLC	Date:	August 24, 2011
Mailing Address:	9600 Ming Ave., Ste 300 Bakersfield, CA 93311	Engineer:	Kris Rickards
Contact Person:	Joey Barulich	Lead Engineer:	Rich Karrs Doug McCormick (Insight Consultant)
Telephone:	661-869-8075		661-282-2200
Fax:	661-869-8170		
E-Mail:	Joey_barulich@oxy.com		<u>dwmccorm@insenv.com</u>
Application #(s):	S-1737-179-0		
Project #:	S-1111515		
Deemed Complete:	June 9, 2011		

I. Proposal

Vintage Production California, LLC (hereafter referred to as VPC) operates light crude oil production operations within their Light Oil Central Stationary Source in Kern County (S-1737). VPC anticipates an increase in drilling activities and associated increase in waste water disposal as a result.

VPC has proposed the installation of a transportable 180 Bhp gas fired (natural gas, field gas, and/or LPG) IC engine powering a positive displacement pump. The engine is expected to run full time (8,760 hours/year) at multiple unspecified locations within VPC's Light Oil Central Stationary Source.

VPC has also proposed to surrender a permit for a storage tank (S-1737-119) to "net" emissions from the new engine.

VPC received their Title V Permit on September 23, 1999. This modification can be classified as a Title V minor modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day Environmental Protection Agency (EPA) comment period will be satisfied prior to the issuance of the Authority to Construct. VPC must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4701	Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702	Stationary Internal Combustion Engines – Phase 2 (1/18/07)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
40 CFR Part 89	- Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
Title 13 CCR 2423	- Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment
Title 17 CCR 93115	- Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
Public Resources Code 21000-21177	: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387	: CEQA Guidelines

III. Project Location

The proposed engine will be operated at various unspecified locations within VPC's Light Oil Central Stationary Source. The equipment will be prohibited from operating within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Produced fluids from drilling operations and/or nearby producing wells are routed to storage tanks for initial separation of oil and water. Dehydrated crude oil is stored in shipping tanks. Produced water is reinjected into the production formation to maintain pressure within the system.

V. Equipment Listing

~~S-1737-119-4: 42,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK (TEJON)~~

S-1737-179-0: 180 BHP WAUKESHA NATURAL GAS/FIELD GAS/LPG-FIRED TRANSPORTABLE RICH-BURN IC ENGINE WITH NSCR POWERING A WATER PUMP - VARIOUS UNSPECIFIED LOCATIONS WITHIN THE LIGHT OIL CENTRAL STATIONARY SOURCE (S-1737)

VI. Emission Control Technology Evaluation

The proposed IC engine is equipped with Non-Selective Catalytic Reduction (NSCR) that decreases NO_x, CO, and VOC emissions by using a catalyst to promote the chemical reduction of NO_x into N₂ and O₂, and the chemical oxidation of VOC and CO into H₂O and CO₂.

The PCV system reduces crankcase VOC and PM₁₀ emissions by at least 90% over an uncontrolled crankcase vent.

The fuel/air ratio controller, (oxygen controller) is used in conjunction with the NSCR to maintain the amount of oxygen in the exhaust stream to optimize catalyst function.

VII. General Calculations

A. Assumptions

- Operating Schedule 8,760 hrs/yr (per applicant)
- Gas heating value is 1,000 Btu/scf (District Practice)
- EPA F-factor (adjusted to 60 °F) is 8,578 dscf/MMBtu (40 CFR 60 Appendix B)
- Operating Schedule is 25 hrs/day, 8,760 hrs/yr
- BHP to Btu/hr conversion is 2,542.5 Btu/bhp-hr
- Thermal efficiency of an engine is commonly ≈ 35%
- 23 lbs-CO₂e = 1 lb-CH₄ (California Climate Change Action Registry (CCAR), Version 3.1, January, 2009 (Appendix C, Tables C.7 and C.8) and APR 2015)

B. Emission Factors

S-1737-119 is a crude oil tank currently operating with a PV vent. Emissions were calculated using the District spreadsheet *Tanks Emissions - Fixed Roof Crude Oil Less than 26 API*. The summary of these calculations is located in Appendix B.

The proposed engine is equipped with a catalyst that, based on source tests for similarly sized and similarly equipped gas fired IC engines within VPC's S-1738 stationary source, will achieve emissions concentrations for NO_x, CO, and VOC shown in the table below.

C-2249-40 Emission Factors			
Pollutant	Emission Factor	Emission Factor (g/bhp-hr)*	Source
NO _x	5 ppm	0.061 [†]	Proposed
SO _x	0.35 lb/1,000 gallons of LPG	0.012	CARB Emissions Inventory Database
PM ₁₀	5 lb/1,000 gallons of LPG	0.175	CARB Emissions Inventory Database
CO	100 ppm	0.739 [†]	Proposed
VOC	25 ppm	0.106 [†]	Proposed

†Converting concentrations:

$$\frac{5 \text{ parts} \cdot \text{NO}_x \left(\frac{8,578 \text{ dscf}}{\text{MMBtu}} \right) \frac{46 \text{ lb}}{\text{lb} \cdot \text{mol}} \left(\frac{20.9}{20.9-15} \right) \frac{1 \text{ lb} \cdot \text{mol}}{379.5 \text{ dscf}} \left(\frac{453.59 \text{ g}}{\text{lb}} \right) \frac{\text{MMBtu}}{393.24 \text{ bhp} \cdot \text{hr}} \left(\frac{1 \text{ bhp} \cdot \text{hr input}}{0.35 \text{ bhp out}} \right)}{10^6 \text{ parts}} = 0.061 \frac{\text{g} \cdot \text{NO}_x}{\text{bhp} \cdot \text{hr}}$$

$$\frac{100 \text{ parts} \cdot \text{CO} \left(\frac{8,578 \text{ dscf}}{\text{MMBtu}} \right) \frac{28 \text{ lb}}{\text{lb} \cdot \text{mol}} \left(\frac{20.9}{20.9-15} \right) \frac{1 \text{ lb} \cdot \text{mol}}{379.5 \text{ dscf}} \left(\frac{453.59 \text{ g}}{\text{lb}} \right) \frac{\text{MMBtu}}{393.24 \text{ bhp} \cdot \text{hr}} \left(\frac{1 \text{ bhp} \cdot \text{hr input}}{0.35 \text{ bhp out}} \right)}{10^6 \text{ parts}} = 0.739 \frac{\text{g} \cdot \text{CO}}{\text{bhp} \cdot \text{hr}}$$

$$\frac{25 \text{ parts} \cdot \text{VOC} \left(\frac{8,578 \text{ dscf}}{\text{MMBtu}} \right) \frac{16 \text{ lb}}{\text{lb} \cdot \text{mol}} \left(\frac{20.9}{20.9-15} \right) \frac{1 \text{ lb} \cdot \text{mol}}{379.5 \text{ dscf}} \left(\frac{453.59 \text{ g}}{\text{lb}} \right) \frac{\text{MMBtu}}{393.24 \text{ bhp} \cdot \text{hr}} \left(\frac{1 \text{ bhp} \cdot \text{hr input}}{0.35 \text{ bhp out}} \right)}{10^6 \text{ parts}} = 0.106 \frac{\text{g} \cdot \text{VOC}}{\text{bhp} \cdot \text{hr}}$$

C. Calculations

1. Pre-Project Potential to Emit (PE1)

S-1737-119:

The potential to emit for the tank is calculated using the District spreadsheet: *Tanks Emissions - Fixed Roof Crude Oil Less than 26 API* (see Appendix B). A summary of the tank emissions is shown in the following table:

Pre-Project Potential to Emit (PE1)		
Permit Unit	Daily Emissions (lb-VOC/day)	Annual Emissions (lb-VOC/year)
S-1737-119	2.7	998

S-1737-179:

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

2. Post Project Potential to Emit (PE2)

S-1737-119:

The unit will be cancelled as a result of this project. Therefore, all emissions will be equal to zero.

S-1737-179:

Emissions given in g/hp-hr are calculated using the following tables:

Daily Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE2 Total (lb/day)
NO _x	0.061	180	24	453.6	0.6
SO _x	0.012	180	24	453.6	0.1
PM ₁₀	0.175	180	24	453.6	1.7
CO	0.739	180	24	453.6	7.0
VOC	0.106	180	24	453.6	1.0

Annual Post Project Emissions					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hrs/yr)	Conversion (g/lb)	PE2 Total (lb/yr)
NO _x	0.061	180	8,760	453.6	212
SO _x	0.012	180	8,760	453.6	42
PM ₁₀	0.175	180	8,760	453.6	608
CO	0.739	180	8,760	453.6	2569
VOC	0.106	180	8,760	453.6	368

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

The table below summarizes the SSPE1 tabulation in Appendix C:

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Pre-Project SSPE (SSPE1)	69,858	3,665	12,950	161,538	58,079

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since

September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

The table below summarizes the SSPE2 tabulation in Appendix C:

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
Post Project SSPE (SSPE2)	70,070	3,707	13,558	164,107	57,519

5. Major Source Determination

Pursuant to Section 3.23 of District Rule 2201, a Major Source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.23.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site."

Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Pre-Project SSPE (SSPE1)	69,858	3,665	12,950	161,538	58,079
Post Project SSPE (SSPE2)	70,070	3,707	13,558	164,107	57,519
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	No	No	No	Yes

As seen in the table above, the facility is an existing Major Source for NO_x and VOC and will remain a Major Source for NO_x and VOC.

6. Baseline Emissions (BE)

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

Pursuant to Section 3.7 of District Rule 2201, BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22 of District Rule 2201.

Since unit S-1737-179 is a new emissions unit, BE = PE1 = 0 for all pollutants.

As shown in Section VII.C.5 above, the facility is not a Major Source for SO_x, PM₁₀, and CO. Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1) for these pollutants.

a. BE NO_x

This facility is a major source of NO_x.

The tank listed on permit S-1737-119 has no potential to emit NO_x emissions.

b. BE VOC

This facility is a major source of VOC.

The tank listed on permit S-1737-119 is equipped with a PV vent that meets the requirements for achieved-in-practice BACT (guideline 7.3.1, see Appendix D). Pursuant to Rule 2201, Section 3.12, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application. Therefore, Baseline Emissions (BE) of VOC are equal to the Pre-Project Potential to Emit (PE1) for this unit.

The following table summarizes baseline emissions for these units:

Baseline Emissions [BE] (lb/year)					
	NO_x	SO_x	PM₁₀	CO	VOC
S-1737-119	0	0	0	0	928
S-1737-179	0	0	0	0	0

7. SB 288 Major Modification

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

Non-road engines shall not be considered in determining whether a project is an SB 288 Major Modification. The Federal CAA reserves the regulation of non-road engines to Title II (National Emission Standards) of the CAA.

Therefore this project is not an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Non-road engines shall not be considered in determining whether a project is a Federal Major Modification. The Federal CAA reserves the regulation of non-road engines to Title II (National Emission Standards) of the CAA.

9. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

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

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

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

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install a new gas-fired IC engine with a PE greater than 2 lb/day for CO; however BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 of this document.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does not constitute a SB 288 and/or Federal Major Modification; therefore BACT is not triggered.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO_x	SO_x	PM₁₀	CO	VOC
Post Project SSPE (SSPE2)	70,070	3,707	13,558	164,107	57,519
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	No	No	No	Yes

2. Quantity of Offsets Required

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

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

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

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

Also, there are no increases in cargo carrier emissions; therefore required offsets can be determined as follows:

Permit No.	Total Annual PE2 [lbs per year]				
	NO _x	SO _x	PM ₁₀	CO	VOC
S-1737-119	0	0	0	0	0
S-1737-179	212	42	608	2,569	368
Total:	212	42	608	2569	368

Permit No.	Baseline Emissions (BE) [lbs per year]				
	NO _x	SO _x	PM ₁₀	CO	VOC
S-1737-119	0	0	0	0	928
S-1737-179	0	0	0	0	0
Total:	0	2	34	59	928

Permit No.	Offset Requirements Σ(PE2 - BE)				
	NO _x	SO _x	PM ₁₀	CO	VOC
S-1737-179 [lb/year]	212	0*	0*	0*	0
S-1737-179 [lb/qtr]	53	0	0	0	0

*Facility is not above the offset threshold for SO_x, PM₁₀, and CO; therefore, offsets will not be required for these pollutants.

$$\text{Offsets Required (lb/year)} = (\text{PE2} - \text{BE}) \times \text{DOR}$$

The applicant has stated that the facility plans to use ERC certificate S-3038-2 to offset the increases in NO_x emissions associated with this project. This certificate was generated by VPC's gasoline dispensing operation (S-1731) at the NE/4 of Section 18, T28S, R20E. This operation is greater than 15 miles from the Central Stationary Source boundary (Interstate 5) where the new IC engine will operate within; therefore, the DOR will be equal to 1.5 and quarterly NO_x credits required are calculated as:

$$\text{Offsets Required} = 53 \times 1.5 = 80 \text{ lb-NO}_x/\text{qtr}$$

Certificate S-3038-2 has available quarterly NO_x credits as follows:

	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
ERC #S-3038-2	417	345	508	572

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

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_x emission reduction credits for the following quantity of emissions: 1st quarter - 80 lb, 2nd quarter - 80 lb, 3rd quarter - 80 lb, and fourth quarter - 80 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- {GC# 1983} ERC Certificate Number S-3038-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

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

a. New Major Source

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

b. SB 288/Federal Major Modification

As demonstrated in VII.C.7, this project does not constitute a SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

c. PE > 100 lb/day

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

d. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	69,858	70,070	20,000 lb/year	No
SO _x	3,665	3,707	54,750 lb/year	No
PM ₁₀	12,950	13,558	29,200 lb/year	No
CO	161,538	164,107	200,000 lb/year	No
VOC	58,079	57,519	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

e. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. $SSIPE = SSPE2 - SSPE1$. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	70,070	69,858	212	20,000 lb/year	No
SO _x	3,707	3,665	42	20,000 lb/year	No
PM ₁₀	13,558	12,950	608	20,000 lb/year	No
CO	164,107	161,538	2,569	20,000 lb/year	No
VOC	57,519	58,079	-560	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

- This IC engine shall be equipped with non-selective catalytic reduction and shall be fired exclusively on natural gas, field gas, LPG, or any combination thereof. [District Rules 2201 and 4801]
- This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
- Emissions from this IC engine shall not exceed any of the following limits: 5 ppmv-NO_x @ 15% O₂, 0.012 g-SO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 100 ppmv-CO @ 15% O₂, or 25 ppmv-VOC @ 15% O₂. [District Rules 2201 and 4702]
- Sulfur content of the natural gas/field gas burned shall not exceed 1.0 grain/100 scf. [District Rules 2201 and 4801]

E. Compliance Assurance

1. Source Testing

Source testing is not required to demonstrate compliance with Rule 2201; however, source testing will be required pursuant to Rule 4702. Source testing requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

2. Monitoring

The applicant proposed to utilize pre-approve alternate monitoring plan "A" (Periodic Monitoring NO_x, CO, and O₂ Emissions Concentrations) to meet the requirements of District Rule 4702. Monitoring requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

- Permittee shall measure the sulfur content of the natural gas/field gas annually or upon any change in the source of the gas. The results of testing shall be submitted to the District upon request. [District Rules 1081, 7.2 and 2201]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201.

- Permittee shall measure the sulfur content of the natural gas/field gas annually or upon any change in the source of the gas. The results of testing shall be submitted to the District upon request. [District Rules 1081, 7.2 and 2201]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit pursuant to Section 3.20 of this rule. As discussed previously in the proposal section, the facility has applied for a Certificate of Conformity (COC). Therefore, the following conditions will be listed on the ATC:

- {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]
- {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

In addition, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60.

No subparts of 40 CFR Part 60 apply to reciprocating natural gas-fired IC engines.

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

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to crude oil storage.

40 CFR 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (RICE)

The requirements of 40 CFR Part 63, Subpart ZZZZ (*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*) covers stationary engines greater than 500 bhp located at Major HAP sources. Since the proposed engine is less than 500 bhp, this NESHAPs subpart does not apply.

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

The IC engine is fired solely on gaseous fuel, thus visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. The following condition will appear on the ATC:

- 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]

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-1737-179-0	0.8 per million	No

Discussion of T-BACT

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

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

The following conditions will be listed on the permit to ensure compliance with this rule:

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
- The unit shall not be located within 500 feet of any business or residence. [District Rule 2201]

Rule 4201 Particulate Matter Concentration

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

Emissions from the IC engine are the result of burning gaseous fuel only. Particulate emissions greater than 0.1 gr/dscf are not expected. The following condition will ensure compliance:

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

Rule 4301 Fuel Burning Equipment

The purpose of this rule is to limit the emission of air contaminants from fuel burning equipment. Fuel burning equipment is defined in the rule as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer."

The purpose of the IC engine is not to produce heat or power by indirect heat transfer; therefore, Rule 4301 does not apply to this engine.

Rule 4701 Internal Combustion Engines – Phase 1

Pursuant to Section 7.6.3.3.2 of Rule 4702, engines that are subject to Section 5.1 (Requirements) of Rule 4702, are no longer subject to Rule 4701.

Since this engine is subject to the requirements of Section 5.1 of Rule 4702, Rule 4701 is not applicable to these engines.

Rule 4702 Internal Combustion Engines – Phase 2

The purpose of this rule is to limit the emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines.

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower.

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

The following conditions will be listed on the permit to ensure compliance with this rule:

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
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Rule 4201 Particulate Matter Concentration

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

Emissions from the IC engine are the result of burning gaseous fuel only. Particulate emissions greater than 0.1 gr/dscf are not expected. The following condition will ensure compliance:

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

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The purpose of the IC engine is not to produce heat or power by indirect heat transfer; therefore, Rule 4301 does not apply to this engine.

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This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower.

The engine in this project is a spark-ignited full time engine of greater than 50 hp, and is subject to the requirements of Section 5.

Table 1: Rule 4702 Emission Limits			
Engine Type	NO_x Emission Limit (ppmv @ 15% O₂, dry)	CO Emission Limit (ppmv @ 15% O₂, dry)	VOC Emission Limit (ppmv @ 15% O₂, dry)
1. a. Rich Burn, Waste Gas Fueled	50 or 90% reduction	2,000	250
1. b. Rich Burn, Cyclic Loaded, Field Gas Fueled	50	2,000	250
1. c. Rich Burn, All Other Engine	25 or 96% reduction	2,000	250
2. a. Lean Burn 2-Stroke, Gaseous Fueled, < 100 hp	75 or 85% reduction	2,000	750
2. b. Lean Burn, All Other Engines	65 or 90% reduction	2,000	750

Table 1 Section 1.c requires that engines meet the following emissions limits: 25 ppmv NO_x @ 15% O₂, 2,000 ppmv CO @ 15% O₂ and 250 ppmv VOC @ 15% O₂. The applicant has proposed 5 ppmv-NO_x @ 15% O₂, 100 ppmv-CO @ 15% O₂ and 25 ppmv-VOC @ 15% O₂. Since these figures are lower than the Rule limits, compliance with Section 5.1 is expected. The Daily Emission Limits listed in Section 2201 above will ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 5 ppmv-NO_x @ 15% O₂, 0.012 g-SO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 100 ppmv-CO @ 15% O₂, or 25 ppmv-VOC @ 15% O₂. [District Rules 2201 and 4702]

Section 5.6 requires the following: For each engine with a rated brake horsepower of 1,000 hp or greater and which is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition to operate more than 2,000 hours per calendar year, or with an external emission control device, either install, operate, and maintain continuous monitoring equipment for NO_x, CO, and oxygen, as identified in Rule 1080 (Stack Monitoring), or install, operate, and maintain APCO-approved alternate monitoring consisting of one or more of the following:

- Periodic NO_x and CO emission concentrations,
- Engine exhaust oxygen concentration,
- Air-to-fuel ratio,
- Flow rate of reducing agents added to engine exhaust,
- Catalyst inlet and exhaust temperature,
- Catalyst inlet and exhaust oxygen concentration,
- Other operational characteristics.

This engine is rated at less than 1,000 horsepower; however, it is equipped with an external control device (NSCR). Therefore the engine will be required to install and maintain CEMS or install, operate and maintain APCO-approved alternate monitoring.

The applicant has proposed pre-approved alternate monitoring scheme A, *Periodic Monitoring of NO_x, CO and O₂ Concentrations*. Pursuant to District Policy SSP 1810 *Emissions Monitoring for Rules 4701 and 4702*.

The following conditions will be listed on the ATC to ensure compliance.

- The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every calendar quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. [In-stack O₂ monitors may be allowed if approved by the APCO.] Monitoring shall be performed not less than once every month for 12 months if 2 consecutive deviations are observed during quarterly monitoring. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last quarter if on a quarterly monitoring schedule. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
- {3786} If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, 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 the performing the notification and testing required by this condition. [District Rule 4702]
- {3787} 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 Rule 4702]
- 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 15% 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 Rule 4702]

Section 5.6.6 requires that each engine shall have a non-resettable operating time meter. The applicant has proposed to install non-resettable elapsed operating meters, and the following condition will be listed on the engine permits to ensure compliance.

- {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

Section 5.6.7 requires that the operator use a portable NO_x analyzer to take NO_x emissions readings to verify compliance with the emission requirements of Section 5.1 during each calendar quarter in which a source test is not performed and the engine is operated. All emission readings shall be taken with the engine 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.

Therefore, in addition to the alternate monitoring conditions listed above, the following condition will be listed on the engine permit to ensure compliance.

- {3202} This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]

Section 5.6.8 requires that for each engine, the operator collect data through the I&M plan in a form approved by the APCO. The following condition will be listed on the engine permit to ensure compliance.

- The operator shall collect data through the I&M plan in a form approved by the APCO. [District Rule 4702]

Section 5.6.9 requires that for any engine subject to the rule, use a portable NO_x analyzer to take NO_x emission readings to verify compliance with the emission requirements of Section 5.1 or Section 8.0 during each calendar quarter in which a source test is not performed. The following condition, previously discussed in the alternate monitoring section, will be listed on the engine permit to ensure compliance.

- The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every calendar quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications. [In-stack O₂ monitors may be allowed if approved by the APCO.] Monitoring shall be performed not less than once every month for 12 months if 2 consecutive deviations are observed during quarterly monitoring. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last quarter if on a quarterly monitoring schedule. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]

Section 6.1 requires that the owner of an engine to submit to the APCO an emission control plan of all actions to be taken to satisfy the emission requirements of Section 5.1 and the compliance schedules of Section 7.0. The engines are expected to be in full compliance with Rule 4702.

Section 6.2 requires that the owner of an engine subject to the requirements of this rule shall maintain an engine operating log to demonstrate compliance with this rule. This information shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request.

The engine operating log shall include, on a monthly basis, the following information:

- Total hours of operation,
- Type and quantity (cubic feet of gas or gallons of liquid) of fuel used,
- Maintenance or modifications performed,
- Monitoring data,
- Compliance source test results, and
- Any other information necessary to demonstrate compliance with this rule.

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

- {3797} The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702]

Section 6.2.2 requires that the data collected pursuant to the requirements of Section 5.6 shall be maintained for at least five years, shall be readily available, and made available to the APCO upon request. Therefore, the following condition will be listed on the engine permit to ensure compliance.

- 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 2201, and 4702]

Section 6.3 requires the owner of an engine subject to the requirements of Sections 5.1 to conduct emissions source testing with the engine operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate. For emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15 percent oxygen. For engines that comply with a percent reduction limit in Table 1, the percent reduction of NO_x emissions shall also be reported.

The following conditions will be listed on the engine permit to ensure compliance.

- {3790} Source testing to measure natural gas-combustion NO_x, CO, and VOC emissions from this unit shall be conducted within 60 days of startup and at least once every 24 months. [District Rule 4702]
- {3791} Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702]
- {3792} 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. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702]

Section 6.3.6 (representative source testing) requires that for spark-ignited engines, in lieu of compliance with the applicable requirements of Section 6.3.2, compliance with the applicable emission limits in Section 5.1 shall be demonstrated by submittal of annual emission test results, within 30 days of the test date, to the District, from a unit or units that represents a specified group of units, provided all of the following requirements are satisfied:

- 6.3.6.1** The units are located at the same stationary source;
- 6.3.6.2** The units were produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated capacity and operating specifications;
- 6.3.6.3** The units are operated and maintained in a similar manner; and
- 6.3.6.4** At least 20% of the total number of units are tested during each annual test cycle.
- 6.3.6.5** The District, based on documentation submitted by the stationary source:
 - 6.3.6.5.1** Determines that the margin of compliance for the identical units tested is significant and can be maintained on an on-going basis; or
 - 6.3.6.5.2** Determines based on a review of sufficient emissions data that, though the margin of compliance is not substantial, other factors allow for the determination that the variability of emissions for identical tested units is low enough for confidence that the untested unit will be in compliance. These factors may include, but are not limited to, the following:
 - 6.3.6.5.2.1** Historical records at the tested unit showing consistent invariant load;
 - 6.3.6.5.2.2** Fuel characteristics yielding low variability and therefore assurance that emissions will be constant and below allowable levels;
 - 6.3.6.5.2.3** Statistical analysis of a robust emissions data set demonstrate sufficiently low variability to convey assurance that the margin of compliance, though small, is reliable.
- 6.3.6.6** Should any of the representative units exceed the required emission limits, or if the District notifies the operator that the criteria in Sections 6.3.6.1 through 6.3.6.5 have not been fulfilled, each of the units in the group shall individually demonstrate compliance by emissions testing. Failure to complete emissions testing within 90 days of the failed test shall result in the untested units being in violation of this rule. After compliance with the requirements of Section 6.3.6.6 has been demonstrated, subsequent source testing shall be performed pursuant to Sections 6.3.2 or 6.3.6.

As there is only one engine at this site representative testing conditions are irrelevant.

Section 6.4 requires that compliance with the requirements of Section 5.0 shall be determined in accordance with the following test procedures or any other method approved by EPA and the APCO:

- Oxides of nitrogen - EPA Method 7E, or ARB Method 100.
- Carbon monoxide - EPA Method 10, or ARB Method 100.
- Stack gas oxygen - EPA Method 3 or 3A, or ARB Method 100.
- Volatile organic compounds - EPA Method 25A or 25B, or ARB Method 100.
- Operating horsepower determination - any method approved by EPA and the APCO.

The following conditions will be listed on the engine permit to ensure compliance.

- {3793} 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, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702]
- {109} 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]
- {110} The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Section 6.5 requires that the owner of an engine subject to the emission limits in Section 5.1 shall submit to the APCO for approval, an I&M plan that specifies all actions to be taken to satisfy the requirements of Section 5.6 and 6.5.

Therefore, the following conditions will be listed on the engine permit to ensure compliance.

- The owner/operator shall submit to the APCO for approval, and Inspection and Maintenance (I&M) plan that specifies all actions to be taken to satisfy all of the requirements of Rule 4702 Sections 5.6 and 6.5. [District Rule 4702]
- {3212} The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]

Section 7.6 requires that the owner of an engine subject to the requirements of this rule not operate the engine beyond the compliance dates outlined in the compliance schedule.

The engines are expected to be in full compliance with the rule.

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = (n \times R \times T) \div P$$

n = moles SO₂

T (standard temperature) = 60 °F or 520 °R

$$R \text{ (universal gas constant)} = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot \text{°R}}$$

$$0.35 \frac{lb-S}{1,000 gal} \times \frac{1 gal}{0.094 MMBtu} \times \frac{1 MMBtu}{8,578 scf} \times \frac{lb-mol}{64 lb-S} \times \frac{10.73 psi-ft^3}{lb-mol-^{\circ}R} \times \frac{520^{\circ}R}{14.7 psi} \times 1,000,000 = 2.57 \text{ ppmv}$$

Since 2.57 ppmv is \leq 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following conditions (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- Sulfur content of the natural gas/field gas burned shall not exceed 1.0 grain/100 scf. [District Rules 2201 and 4801]
- This IC engine shall be equipped with non-selective catalytic reduction and shall be fired exclusively on natural gas, field gas, LPG, or any combination thereof. [District Rules 2201 and 4801]

California Health & Safety Code 42301.6 (School Notice)

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

- The equipment shall not be located within 1,000 feet of any K-12 school. [CH&SC 42301.6]

40 CFR Part 89 - Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines

40 CFR 89 applies to nonroad engines.

Pursuant to Section 89.2, a nonroad engine is any internal combustion engine that is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicators of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

Pursuant to paragraph (2), an ICE is not a nonroad engine if the engine remains or will remain at a location for more than 12 consecutive months. While the word location is not defined in 40 CFR 89.2, District Rule 4702 defines location as any single site at a building, structure, facility, or installation.

The engine is intended for use throughout VPC's Light Oil Western Source as operations demand. Therefore, this engine is considered transportable, constituting a nonroad engine.

40 CFR 89, Subpart A Appendix A, which only applies to nonroad engines states:

"EPA believes that states are not precluded (*or prevented*) under section 209 from regulating the use and operation of non-road engines, such as regulations on hours of usage, daily mass emission limits, or sulfur limits on fuel; nor are permits regulating such operations precluded (*or prevented*), once the engine is no longer new. EPA believes that states are *precluded* from requiring retrofitting of used nonroad engines except that states are permitted to adopt and enforce any such retrofitting requirements identical to California requirements which have been authorized by EPA under section 209 of the Clean Air Act."

Accordingly, since this is a new nonroad engine, local authorities (The District) can only regulate the use and operation of it such as regulations on the hours of usage, daily mass emission limits, or sulfur limits on fuel. Local authorities cannot require retrofitting of used nonroad engines except those that are identical to California requirements that have been authorized by EPA, e.g. in the California Code of Regulations (CCR).

The engine proposed is equipped with NSCR and meets or exceeds emission requirements and all other requirements of the District. Since no further retrofitting has been required, this Part is satisfied, and compliance with 40 CFR 89 is expected.

Title 13 CCR 2423 - Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment

This Section is applicable to new heavy-duty compression-ignited engines produced on or after January 1, 1996 and all other new 2000 model year and later off-road compression-ignition engines, with certain non-relevant exceptions.

The engine involved with this project is fired on gaseous fuel and is not compression ignited. Therefore, this regulation is not applicable to this project.

Title 17 California Code of Regulations (CCR), Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

This regulation applies to any new or in-use stationary diesel-fueled compression ignition (CI) emergency standby engine. The engine involved with this project is fired on gaseous fuel and is not compression ignited. Therefore, this regulation is not applicable to this project.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The San Joaquin Valley Unified Air Pollution Control District (District) adopted its *Environmental Review Guidelines* (ERG) in 2001.

The basic purposes of CEQA are to:

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

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue Authority to Construct S-1737-179-0 subject to the permit conditions on the attached draft Authority to Construct in Appendix G.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1737-179-0	3020-10-B	180 bhp	\$117.00

Appendices

- A: Current PTOs
- B: Pre-Project Tank Emissions Tabulation
- C: SSPE Tabulation
- D: BACT Guideline
- E: HRA Summary
- F: Quarterly Net Emissions Change
- G: Draft ATC
- H: Emissions Profile

Appendix A

Current PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1737-119-4

EXPIRATION DATE: 02/28/2014

SECTION: 34 **TOWNSHIP:** 11N **RANGE:** 19W

EQUIPMENT DESCRIPTION:

42,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK (TEJON)

PERMIT UNIT REQUIREMENTS

1. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623] Federally Enforceable Through Title V Permit
2. Permittee shall conduct True Vapor Pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623, 6.2.2] Federally Enforceable Through Title V Permit
3. In lieu of testing each uncontrolled fixed roof tank, an operator may conduct a TVP testing of a representative tank provided the following requirements are met. The selection of representative, uncontrolled fixed roof tanks is submitted in writing to the APCO, and written approval is granted by the APCO prior to conducting the test. One uncontrolled fixed roof tank represents some or all of the tanks in a tank battery. For crude oil production facilities, the representative uncontrolled fixed roof tank shall be the first line tank (or tanks) in a tank battery that is first receiving the produced fluids (mixture of oil, water, and gases) from the crude oil production wells. The stored organic liquid in each of the represented tanks is the same and came from the same source. The TVP and storage temperature of the stored organic liquid of the representative tank to be tested are the same or higher than those of the tanks it is to represent. [District Rule 4623, 6.2.2] Federally Enforceable Through Title V Permit
4. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. If the tank stores crude oil or petroleum distillates, the operator shall also conduct an API gravity testing. [District Rule 4623, 6.2.1.2] Federally Enforceable Through Title V Permit
5. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623, 6.4.2] Federally Enforceable Through Title V Permit
6. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623, 6.4.4] Federally Enforceable Through Title V Permit
7. For other organic liquids, the true vapor pressure (TVP) shall be measured using Reid vapor pressure ASTM Method D323, and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance of the oil and gas section of "California Air Resources Boards (ARB) Technical Guidance Document to the Criteria and Guidelines Regulations for AB 2588", dated August 1989. As an alternative to using ASTM D 323, the TVP of crude oil with an API gravity range of greater than 26 degrees up to 30 degrees may be determined by using other equivalent test methods approved by APCO, ARB and EPA. [District Rule 4623, 6.4.3] 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.

8. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623] Federally Enforceable Through Title V Permit
9. This tank shall be subject to the requirements of Rule 4623 if the tank loses its exemption under section 4.0 on the date the exemption status is lost. [Rule 4623, 7.2] Federally Enforceable Through Title V Permit
10. As used in this permit, the term "source or type" shall mean liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
11. This unit has a storage capacity less than 420,000 gallons and is used for petroleum or condensate stored, processed and/or treated at a drilling and production facility prior to custody transfer. Therefore, the requirements of 40CFR 60 Subpart K, Ka and Kb do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
12. The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

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

Appendix B

Pre-Project Tank Emissions Tabulation

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1737-119-4
facility tank I.D.	
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, T _b (°F)	100
is this a constant-level tank? (yes, no)	no
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	21.5
capacity of tank (bbl)	1,000
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? (yes, no)	yes
For roof: color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	3
condition (1: Good, 2: Poor)	1
_____This row only used if shell is different color from roof_____	
_____This row only used if shell is different color from roof_____	

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		20
maximum annual fluid throughput (bbl)		7,300
_____This row only used if flashing losses occur in this tank_____		
_____This row only used if flashing losses occur in this tank_____		
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.0
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psi)	97.2	0.8800
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psi)	86.4	0.6303
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	91.8	0.7444
roof outage, H _{ro} (feet)		0.2240
vapor space volume, V _v (cubic feet)		2259.61
paint factor, alpha		0.54
vapor density, W _v (lb/cubic foot)		0.0084
daily vapor temperature range, delta T _v (degrees Rankine)		42.57
vapor space expansion factor, K _e		0.0910

Results	lb/year	lb/day
Standing Storage Loss	833	1.74
Working Loss	365	1.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	998	2.7

Summary Table	
Permit Number	S-1737-119-4
Facility Tank I.D.	
Tank capacity (bbl)	1,000
Tank diameter (ft)	21.5
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	20
Maximum Annual Fluid Throughput (bbl/year)	7,300
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	2.7
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	998

Appendix C

SSPE Tabulation

SSPE1

	Facility	Permit #	Mod	NOx	SOx	PM10	CO	VOC
S	1737	40	4	0	0	0	0	22
S	1737	41	4	0	0	0	0	22
S	1737	42	3	0	0	0	0	22
S	1737	43	3	0	0	0	0	22
S	1737	82	4	0	0	0	0	1,278
S	1737	110	4	0	0	0	0	0
S	1737	111	4	0	0	0	0	0
S	1737	112	5	0	0	0	0	0
S	1737	113	5	0	0	0	0	0
S	1737	114	5	0	0	0	0	925
S	1737	115	5	0	0	0	0	0
S	1737	116	4	0	0	0	0	925
S	1737	117	4	0	0	0	0	925
S	1737	118	4	0	0	0	0	925
S	1737	119	4	0	0	0	0	928
S	1737	120	4	0	0	0	0	0
S	1737	121	4	0	0	0	0	0
S	1737	137	1	0	0	0	0	726
S	1737	138	1	0	0	0	0	730
S	1737	139	1	0	0	0	0	730
S	1737	140	1	0	0	0	0	730
S	1737	141	1	0	0	0	0	730
S	1737	142	1	0	0	0	0	726
S	1737	143	1	0	0	0	0	730
S	1737	144	1	0	0	0	0	730
S	1737	145	1	0	0	0	0	723
S	1737	146	1	1,241	0	365	6,752	1,606
S	1737	147	1	0	0	0	0	730
S	1737	148	1	0	0	0	0	730
S	1737	149	1	0	0	0	0	730
S	1737	150	1	280	2	34	59	16
S	1737	151	1	329	0	37	73	37
S	1737	152	1	329	0	37	73	37
S	1737	153	1	329	0	37	73	37
S	1737	154	1	0	0	0	0	0
S	1737	155	1	0	0	0	0	0
S	1737	156	1	0	0	0	0	0
S	1737	157	1	30,564	2,927	8,734	16,571	14,392
S	1737	158	1	0	0	0	0	402
S	1737	159	1	0	0	0	0	694
S	1737	160	1	1,460	0	0	1,241	0
S	1737	161	1	0	0	0	0	949
S	1737	162	1	0	0	0	0	949
S	1737	163	1	175	1	15	146	818
S	1737	167	1	11,580	260	920	10,300	660
S	1737	188	1	19,820	183	2,336	107,785	18,762
S	1737	169	1	0	0	0	0	37
S	1737	170	1	0	0	0	0	37
S	1737	171	1	0	0	0	0	37
S	1737	172	0	0	0	0	0	146
S	1737	173	0	0	0	0	0	73
S	1737	174	0	0	0	0	0	73
S	1737	175	0	0	0	0	0	73
S	1737	178	0	0	0	0	0	37
S	1737	177	0	429	0	33	361	0
S	1737	178	0	3,322	292	402	18,104	3,468
			Total:	69,858	3,665	12,950	161,538	58,079

SSPE2

	Facility	Permit #	Mod	NOx	SOx	PM10	CO	VOC
S	1737	40	4	0	0	0	0	22
S	1737	41	4	0	0	0	0	22
S	1737	42	3	0	0	0	0	22
S	1737	43	3	0	0	0	0	22
S	1737	82	4	0	0	0	0	1,278
S	1737	110	4	0	0	0	0	0
S	1737	111	4	0	0	0	0	0
S	1737	112	5	0	0	0	0	0
S	1737	113	5	0	0	0	0	0
S	1737	114	5	0	0	0	0	925
S	1737	115	5	0	0	0	0	0
S	1737	116	4	0	0	0	0	925
S	1737	117	4	0	0	0	0	925
S	1737	118	4	0	0	0	0	925
S	1737	120	4	0	0	0	0	0
S	1737	121	4	0	0	0	0	0
S	1737	137	1	0	0	0	0	726
S	1737	138	1	0	0	0	0	730
S	1737	139	1	0	0	0	0	730
S	1737	140	1	0	0	0	0	730
S	1737	141	1	0	0	0	0	730
S	1737	142	1	0	0	0	0	726
S	1737	143	1	0	0	0	0	730
S	1737	144	1	0	0	0	0	730
S	1737	145	1	0	0	0	0	723
S	1737	146	1	1,241	0	365	6,752	1,606
S	1737	147	1	0	0	0	0	730
S	1737	148	1	0	0	0	0	730
S	1737	149	1	0	0	0	0	730
S	1737	150	1	280	2	34	59	16
S	1737	151	1	329	0	37	73	37
S	1737	152	1	329	0	37	73	37
S	1737	153	1	329	0	37	73	37
S	1737	154	1	0	0	0	0	0
S	1737	155	1	0	0	0	0	0
S	1737	156	1	0	0	0	0	0
S	1737	157	1	30,564	2,927	8,734	16,571	14,392
S	1737	158	1	0	0	0	0	402
S	1737	159	1	0	0	0	0	694
S	1737	160	1	1,460	0	0	1,241	0
S	1737	161	1	0	0	0	0	949
S	1737	162	1	0	0	0	0	949
S	1737	163	1	175	1	15	146	818
S	1737	167	1	11,580	260	920	10,300	660
S	1737	168	1	19,820	183	2,336	107,785	18,762
S	1737	169	1	0	0	0	0	37
S	1737	170	1	0	0	0	0	37
S	1737	171	1	0	0	0	0	37
S	1737	172	0	0	0	0	0	146
S	1737	173	0	0	0	0	0	73
S	1737	174	0	0	0	0	0	73
S	1737	175	0	0	0	0	0	73
S	1737	176	0	0	0	0	0	37
S	1737	177	0	429	0	33	361	0
S	1737	178	0	3,322	292	402	18,104	3,468
S	1737	179	0	212	42	608	2,569	368
			Total:	70,070	3,707	13,558	164,107	57,519

Appendix D

BACT Guideline

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.3.1*

Last Update: 10/1/2002

**Petroleum and Petrochemical Production - Fixed Roof Organic
Liquid Storage or Processing Tank, < 5,000 bbl Tank capacity ****

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	PV-vent set to within 10% of maximum allowable pressure	99% control (Waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); or equal).	

** Converted from Determinations 7.1.11 (10/01/02).

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

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

Appendix E

HRA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Kris Rickards
 From: Matthew Cegielski-Technical Services
 Date: August 11, 2011
 Facility Name: Vintage Production
 Location: Various, Unspecified within Vintage's LOC Source
 Application #(s): S-1737-179-0
 Project #: S-1111515

A. RMR SUMMARY

RMR Summary			
Categories	Type of Unit (Unit 179-0)	Project Totals	Facility Totals
Prioritization Score	0.2	0.2	8.3
Acute Hazard Index	0.0	0.0	0.0
Chronic Hazard Index	0.0	0.0	0.0
Maximum Individual Cancer Risk (10⁻⁶)	0.8	0.8	1.7
T-BACT Required?	No		
Special Permit Conditions?	Yes		

*Facility totals taken from project S-1104605

Proposed Permit Conditions

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

Unit # 179-0

Standard conditions in the ATC

1. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102] N
2. The unit shall not be located within 500 feet of any business or residence. [District Rule 2201]

B. RMR REPORT

I. Project Description

Technical Services received a request on August 11, 2011 to perform a Risk Management Review for a proposed 180 Bhp Natural Gas or LPG-Fired fulltime IC engine.

II. Analysis

Toxic emissions for the IC engine assumed LPG combustion as a worst case scenario. Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District emission factors for Natural Gas Fired internal combustion 4 Stroke Rich Burn Engine and the Districts approved conversion factors from Natural Gas to LPG.

In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database.

The prioritization score for the facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined analysis was necessary. The AERMOD model was used, with the parameters outlined below and meteorological data for 2005 to 2009 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 179-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	2.44	Closest Receptor (m)	152
Stack Diameter. (m)	0.0889	Type of Receptor	Residence
Stack Exit Velocity (m/s)	83.6	Max Hours per Year	8760
Stack Exit Temp. (°K)	755	Fuel Type	LPG
		Bhp	180

III. Conclusion

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

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

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

Attachments:

- A. HARP Output
- B. AEMOD Output
- C. Toxic emissions summary, Prioritization score
- D. LPG Internal Combustion Emissions spreadsheet

Appendix F

Quarterly Net Emissions Change

Quarterly Net Emissions Change (QNEC)

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

$QNEC = PE2 - PE1$, where:

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

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

$$PE2_{quarterly} = PE2_{annual} \div 4 \text{ quarters/year}$$

$$PE1_{quarterly} = PE1_{annual} \div 4 \text{ quarters/year}$$

S-1737-179-0 Quarterly NEC [QNEC]			
	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO_x	53	0	53
SO_x	6	0	6
PM₁₀	55	0	55
CO	642	0	642
VOC	92	0	92

Appendix G

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1737-179-0

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC

MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93380-2576

LOCATION: LIGHT OIL CENTRAL
KERN COUNTY, CA

EQUIPMENT DESCRIPTION:

180 BHP WAUKESHA NATURAL GAS/FIELD GAS/LPG-FIRED TRANSPORTABLE RICH-BURN IC ENGINE WITH NSCR POWERING A WATER PUMP - VARIOUS UNSPECIFIED LOCATIONS WITHIN THE LIGHT OIL CENTRAL STATIONARY SOURCE (S-1737)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Upon implementation of this Authority to Construct, Permit to Operate S-1737-119 shall be cancelled. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 80 lb, 2nd quarter - 80 lb, 3rd quarter - 80 lb, and fourth quarter - 80 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit

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-1737-179-0 : Sep 8 2011 4:40PM - RICKARDK : Joint Inspection NOT Required

5. ERC Certificate Number S-3038-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The equipment shall not be located within 1,000 feet of any K-12 school. [CH&SC 42301.6]
7. The equipment shall not be located within 500 feet of any residence or business. [District Rule 4102]
8. The operator shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 1081] Federally Enforceable Through Title V Permit
9. This IC engine shall be equipped with non-selective catalytic reduction and shall be fired exclusively on natural gas, field gas, LPG, or any combination thereof. [District Rules 2201 and 4801] Federally Enforceable Through Title V Permit
10. This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201] Federally Enforceable Through Title V Permit
11. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit
12. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
13. This engine shall be operated and maintained in proper operating condition per the manufacturer's requirements as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702] Federally Enforceable Through Title V Permit
14. 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
15. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
16. Emissions from this IC engine shall not exceed any of the following limits: 5 ppmv-NO_x @ 15% O₂, 0.012 g-SO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 100 ppmv-CO @ 15% O₂, or 25 ppmv-VOC @ 15% O₂. [District Rules 2201 and 4702] Federally Enforceable Through Title V Permit
17. Sulfur content of the natural gas/field gas burned shall not exceed 1.0 grain/100 scf. [District Rules 2201 and 4801] Federally Enforceable Through Title V Permit
18. Permittee shall measure the sulfur content of the natural gas/field gas annually or upon any change in the source of the gas. The results of testing shall be submitted to the District upon request. [District Rules 1081, 7.2 and 2201] Federally Enforceable Through Title V Permit
19. The sulfur content of the combusted gas shall be determined using ASTM test methods D-1072, D-3246, D-6228, or double GC for H₂S and mercaptans, or by gas supplier test data consistent with the natural gas fuel sulfur content test method listed in this permit. [District Rule 1081] Federally Enforceable Through Title V Permit
20. Source testing to measure natural gas-combustion NO_x, CO, and VOC emissions from this unit shall be conducted within 60 days of startup and at least once every 24 months thereafter. [District Rule 4702] Federally Enforceable Through Title V Permit
21. Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702] Federally Enforceable Through Title V Permit

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22. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702] Federally Enforceable Through Title V Permit
23. 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, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702] Federally Enforceable Through Title V Permit
24. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
25. 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
26. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ at least once every calendar quarter (in which a source test is not performed) using a portable emission monitor that meets District specifications (In-stack O₂ monitors may be allowed if approved by the APCO). Monitoring shall be performed not less than once every month for 12 months if 2 consecutive deviations are observed during quarterly monitoring. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month if on a monthly monitoring schedule, or within the last quarter if on a quarterly monitoring schedule. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702] Federally Enforceable Through Title V Permit
27. 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 15% 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 Rule 4702] Federally Enforceable Through Title V Permit
28. If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, 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 4702] Federally Enforceable Through Title V Permit
29. 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 Rule 4702] Federally Enforceable Through Title V Permit
30. The owner/operator shall submit to the APCO for approval, an Inspection and Maintenance (I&M) plan that specifies all actions to be taken to satisfy all of the requirements of Rule 4702 Sections 5.6 and 6.5. [District Rule 4702] Federally Enforceable Through Title V Permit
31. The operator shall collect data through the I&M plan in a form approved by the APCO. [District Rule 4702] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

32. The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702] Federally Enforceable Through Title V Permit
33. The permittee shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rule 4702] Federally Enforceable Through Title V Permit
34. The permittee shall maintain records of each location at which the equipment was operated, the dates operated at each location, and the hours of operation at each location. [District Rule 2201] Federally Enforceable Through Title V Permit
35. 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. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rules 4701 and 4702] Federally Enforceable Through Title V Permit

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Appendix H

Emissions Profile

Permit #: S-1737-179-0	Last Updated
Facility: VINTAGE PRODUCTION CALIFORNIA	08/24/2011 RICKARDK

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	212.0	42.0	608.0	2569.0	368.0
Daily Emis. Limit (lb/Day)	0.6	0.1	1.7	7.0	1.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	53.0	10.0	152.0	642.0	92.0
Q2:	53.0	10.0	152.0	642.0	92.0
Q3:	53.0	10.0	152.0	642.0	92.0
Q4:	53.0	10.0	152.0	642.0	92.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio	1.5				
Quarterly Offset Amounts (lb/Qtr)					
Q1:	53.0				
Q2:	53.0				
Q3:	53.0				
Q4:	53.0				