San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

DEC 2 3 2013

Mr. Joey Barulich
Vintage Production California, LLC
9600 Ming Avenue, Suite 300
Bakersfield, CA 93311

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-1738
Project # S-1134181

Dear Mr. Barulich:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project involves operating fifteen gas-fired IC engines powering crude oil well pumps at various unspecified locations within Vintage Production California's Light Oil Western Stationary Source within Kern County, California.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authorities 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

DW:KR/st

Enclosures

cc: Mike Tollstrup, CARB (w/enclosure) via email
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

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

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

New Transportable Gas-Fired IC Engines

Facility Name:	Vintage Production California, LLC	Date:	December 18, 2013
Mailing Address:	9600 Ming Avenue, Suite 300 Bakersfield, CA 93311	Engineer: Lead Engineer:	Kris Rickards Allan Phillips
Contact Person:	Joey Barulich		Doug McCormick (Consultant)
Telephone:	661-869-8075		661-282-2200
Fax:	661-869-8170		
E-Mail:	Joey_Barulich@oxy.com		dwmccorm@inseny.com
Application #(s):	S-1738-470-0 through '-484-0		
Project #:	S-1134181		
Deemed Complete:	October 28, 2013		

I. Proposal

Vintage Petroleum California, LLC (VPC) has requested Authorities to Construct (ATCs) for the operation of fifteen transportable 233 bhp natural gas fired IC engines powering crude oil well pumps. These engines will be equipped with non-selective catalytic converters and operated at various unspecified locations within VPCs Light Oil Western Stationary Source. Draft ATCs are included in Appendix A.

VPC received their Title V Permit on January 13, 2000. This modification can be classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. VPC must apply to administratively amend their Title V permit.

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 (8/18/11)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Title 17 CCR, Section 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 engines will be operated at various unspecified locations within VPC's Light Oil Western Stationary Source (LOWSS). The equipment will not be allowed to operate 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

The engines will be used to power crude oil well pumps at various locations in support of extensive new drilling in VPCs LOWSS.

V. Equipment Listing

All Units: 233 BHP WAUKESHA MODEL F-1905 (OR EQUIVALENT) PUC GAS/PRODUCED GAS/LPG FIRED IC ENGINE WITH CATALYTIC CONVERTER AND AIR FUEL RATIO CONTROLLER (OPERATED AT VARIOUS UNSPECIFIED LOCATIONS WITHIN STATIONARY SOURCE S-1738)

VI. Emission Control Technology Evaluation

The proposed IC engines are 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 N_2 and O_2, and the chemical oxidation of VOC and CO into H_2O and CO_2.

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 24 hrs/day, 8,760 hrs/yr (per applicant)
- Engines will be fired exclusively on PUC-regulated natural gas, sweetened produced gas, or low-sulfur LPG (per Applicant)
- PUC gas heating value is 1,000 Btu/scf (APR 1720)
- EPA F-factor (adjusted to 60 °F) is 8,578 dscf/MMBtu (40 CFR 60 Appendix B)
- Sulfur content of gas is based on a 0.54 lb-SO_X/day limit to avoid offsetting SO_X (APR 1130)
- Operating Schedule is 24 hrs/day, 8,760 hrs/yr
- BHP to Btu/hr conversion is 2,542.5 Btu/bhp-hr
- Thermal efficiency of engine is commonly ≈ 35%

B. Emission Factors

For the new IC engines, the emissions factors for NO_X, CO, and VOC are provided by the applicant and guaranteed by the engine manufacturer (see Appendix B).

VPC has requested that the fuel sulfur content be limited to a value that will result in each engine emitting less than 0.54 lb-SO_X/day, which rounds to zero for purposes of calculating offsets (APR 1130).

Limiting daily sulfur emissions to 0.54 lbs allows for the following grams of SO_X/bhp-hr:

$$\frac{0.54\ lb \cdot SO_X}{day}\left(\frac{453.6\ grams}{lb}\right)\frac{day}{24\ hours}\left(\frac{1}{233\ bhp}\right) = 0.0438\ \frac{g \cdot SO_X}{bhp \cdot hr}$$

Limiting sulfur emissions to 0.54 lbs allows for the following fuel sulfur limits for PUC-regulated gas, LPG, and produced gas fuel sulfur limits:

PUC-regulated Natural Gas (limited to 1.0 gr-S/100 dscf limit and 1,000 Btu/scf):

$$\frac{0.0438\ g \cdot SO_X}{bhp \cdot hr}\left(\frac{0.35\ bhp\ output}{1\ bhp\ input}\right)\frac{32\ lb \cdot S}{64\ lb \cdot SO_2}\left(\frac{15.43\ gr}{gram}\right)\frac{1\ Bhp\ input \cdot hr}{2{,}542.5\ Btu}\left(\frac{1{,}000\ Btu}{dscf}\right) = 4.65\ \frac{gr \cdot S}{100\ dscf}$$

Produced Gas (14 ppm and a net dry energy content of 1,121 Btu/scf, per the gas analysis in Appendix C):

$$\frac{0.0438\ g \cdot SO_X}{bhp \cdot hr}\left(\frac{0.35\ bhp\ output}{1\ bhp\ input}\right)\frac{32\ lb \cdot S}{64\ lb \cdot SO_2}\left(\frac{15.43\ gr}{gram}\right)\frac{1\ Bhp\ input \cdot hr}{2{,}542.5\ Btu}\left(\frac{1{,}121\ Btu}{dscf}\right) = 5.21\ \frac{gr \cdot S}{100\ dscf}$$

$$\frac{0.0521\ gr \cdot S}{scf}\left(\frac{lb}{7{,}000\ gr}\right)\frac{379.5\ scf}{lb \cdot mole}\left(\frac{lb \cdot mole\ H_2S}{34\ lb}\right) = 83\frac{\text{scf} \cdot H_2S}{10^6 scf}\ or\ 83\ ppm$$

LPG (0.53 gr-S/100 dscf per the gas analysis in Appendix C and assumed 2,520 Btu/scf,):

$$\frac{0.0438\ g \cdot SO_X}{bhp \cdot hr}\left(\frac{0.35\ bhp\ output}{1\ bhp\ input}\right)\frac{32\ lb \cdot S}{64\ lb \cdot SO_2}\left(\frac{15.43\ gr}{gram}\right)\frac{1\ Bhp\ input \cdot hr}{2{,}542.5\ Btu}\left(\frac{2{,}520\ Btu}{dscf}\right) = 11.72\ \frac{gr \cdot S}{100\ dscf}$$

VPC has provided fuel sulfur analyses that show worst case sulfur concentrations of 0.53 gr-S/100 dscf for LPG and 14 ppm for the produced gas. As demonstrated, limiting daily emissions to 0.54 lbs/day gives VPC a margin of compliance with the sulfur limits for all proposed fuels and does not trigger ERCs for this pollutant (per APR 1130).

The applicant has identified the PM_{10} source test included in project S-990589 that authorized the installation of several 4-stroke rich-burn Waukesha gas-fired engines rated at 162 bhp and equipped with catalytic converters. As these engines are identical in make and very similar in type (gas-fired, 4-stroke, and rich-burn), and equipped with similar emission controls, the PM_{10} emissions factor of 0.01 g/bhp-hr used to calculate emissions in project S-990589 will be used to calculate potential emissions for the proposed engines in this project.

Emission Factors			
Pollutant	Emission Factor	Emission Factor (g/bhp-hr)*	Source
NO_X	5 ppm††	0.061	Manufacturer Data
SO_X	--	0.0438	Equation Below**
PM_{10}	--	0.01	Source Test (S-990589)
CO	50 ppm††	0.369	Manufacturer Data
VOC	25 ppm††	0.106	Manufacturer Data

*g/bhp-hr equivalent of ppm values are calculated as follows:

$$\frac{5\ parts \cdot NO_x}{10^6\ parts}\left(\frac{8{,}578\ dscf}{MMBtu}\right)\frac{46\ lb}{lb \cdot mol}\left(\frac{20.9}{20.9-15}\right)\frac{1\ lb \cdot mol}{379.5\ dscf}\left(\frac{MMBtu}{393.24\ bhp \cdot hr}\right)\frac{453.59\ g}{lb}\left(\frac{1}{0.35}\right) = 0.061\left(\frac{g \cdot NO_x}{hp \cdot hr}\right)$$

$$\frac{50\ parts \cdot CO}{10^6\ parts}\left(\frac{8{,}578\ dscf}{MMBtu}\right)\frac{28\ lb}{lb \cdot mol}\left(\frac{20.9}{20.9-15}\right)\frac{1\ lb \cdot mol}{379.5\ dscf}\left(\frac{MMBtu}{393.24\ bhp \cdot hr}\right)\frac{453.59\ g}{lb}\left(\frac{1}{0.35}\right) = 0.369\left(\frac{g \cdot CO}{hp \cdot hr}\right)$$

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

$$**\frac{0.54\ lb \cdot SO_x}{day}\left(\frac{453.6\ grams}{lb}\right)\frac{day}{24\ hours}\left(\frac{1}{233\ bhp}\right) = 0.0438\ \frac{g \cdot SO_x}{bhp \cdot hr}$$

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since these are new emissions units, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

The potential to emit for each engine (as they are all identical) is calculated as follows, and summarized in the table below:

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	233	24	453.6	0.8
SO_X	0.0438	233	24	453.6	0.5
PM_{10}	0.01	233	24	453.6	0.1
CO	0.369	233	24	453.6	4.5
VOC	0.106	233	24	453.6	1.3

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	233	8,760	453.6	274
SO_X	0.0438	233	8,760	453.6	197
PM_{10}	0.01	233	8,760	453.6	45
CO	0.369	233	8,760	453.6	1,660
VOC	0.106	233	8,760	453.6	477

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

Pursuant to District Rule 2201, the 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 (AER) that have occurred at the source, and which have not been used on-site.

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE1 calculations are not necessary.

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Since facility emissions are already above the Offset and Major Source Thresholds for all pollutants, SSPE2 calculations are not necessary.

6. Major Source Determination

Rule 2201 Major Source Determination:

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

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified In 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

VPC stipulates that they are an existing major source for PSD for at least one pollutant; therefore, the facility Is an existing major source for PSD.

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 District Rule 2201, BE = PE1 for:

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

otherwise,

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

Since these are new emissions units, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

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

Since this facility is a major source for all pollutants, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO_x	4,110	50,000	No
SO_x	NA*	80,000	No
PM_{10}	NA*	30,000	No
VOC	7,155	50,000	No

*Any emissions increases of 0.54 lb/day for a single pollutant calculated on an emissions unit by emissions unit basis rounds to zero for NSR purposes (APR 1130).

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

8. Federal Major Modification

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

Step 1

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

The project's combined total emission increases were calculated previously and compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO_x*	4,110	0	Yes
VOC*	7,155	0	Yes
PM_{10}	0***	30,000	No
$PM_{2.5}$	0** & ***	20,000	No
SO_x	0***	80,000	No

*If there are any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.
**According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 µm in diameter.
***Any emissions increases of 0.54 lb/day for a single pollutant calculated on an emissions unit by emissions unit basis rounds to zero for NSR purposes (APR 1130).

Since there is an increase in NO_x and VOC emissions, this project constitutes a Federal Major Modification, and no further analysis is required.

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

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO_2 (as a primary pollutant)
- SO_2 (as a primary pollutant)
- CO
- PM
- PM_{10}
- Greenhouse gases (GHG): CO_2, N_2O, CH_4, HFCs, PFCs, and SF_6

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase Determination

a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total potential to emit from all new and modified units is below this threshold, no futher analysis will be needed.

CO_2e emissions are calculated using the ARB GHG emission factor for combustion of natural gas, 116.67 lb-CO_2e/MMBtu, as follows:

$$15\ engines\left(\frac{233\ bhp\ out}{engine}\right)\frac{1\ bhp\ in}{0.35\ bhp\ out}\left(\frac{8{,}760\ hrs}{year}\right)\frac{MMBtu}{393.24\ bhp\cdot hr}\left(\frac{116.67\ lb\cdot CO_2e}{MMBtu}\right)$$
$$= 25{,}952{,}832\frac{lb\cdot CO_2e}{year} = 12{,}976\ \frac{tons\cdot CO_2e}{year}$$

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO_2	SO_2	CO	PM	PM_{10}	CO_2e
Total PE from New and Modified Units	2	1	12	<1*	<1	12,976
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

*According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

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

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. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install new gas-fired IC engines with a PE greater than 2 lb/day for CO. BACT is triggered for CO since the PE is greater than 2 lbs/day the SSPE2 for CO is greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 above.

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

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

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

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

d. SB 288/Federal Major Modification

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

2. BACT Guideline

BACT Guideline 3.3.12, applies to the fossil fuel-fired IC engines greater than 50 horsepower (See **Appendix D**).

3. Top-Down BACT Analysis

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see **Appendix E**), BACT has been satisfied with the following:

NO_X: 5 ppm @ 15% O_2
CO: 50 ppm @ 15% O_2
VOC: 25 ppm @ 15% O_2

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	>20,000	>54,750	>29,200	>200,000	>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	Yes	Yes	Yes	Yes	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for all pollutants. Therefore offset calculations will be required for this project.

The quantity of offsets in pounds per year is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

The emission units in this project are all new; therefore BE = 0 for all pollutants. Also, there are no increases in cargo carrier emissions; therefore offsets required can be determined as follows:

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

Offsets for <u>each engine</u> (disregarding the DOR for now) are determined as follows:

	Total Annual PE2 [lbs per year]				
	NO_X	SO_X	PM_{10}	CO	VOC
Each Engine	274	197	45	1,660	477

	Baseline Emissions (BE) [lbs per year]				
	NO_X	SO_X	PM_{10}	CO	VOC
Each Engine	0	0	0	0	0

	Offset Requirements (PE2 - BE)				
Permit No.	NO_X	SO_X	PM_{10}	CO	VOC
Each Engine [lb/year]	274	197	45	0*	477
Each Engine [lb/qtr]	69	0**	0**	0*	119

*Section 4.6.1 of Rule 2201 states that emissions offsets are not required for increases in carbon monoxide in attainment areas provided the applicant demonstrates to the satisfaction of the APCO that the Ambient Air Quality Standards are not violated in the areas to be affected, such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of Ambient Air Quality Standards. The District performed an Ambient Air Quality Analysis (discussed later) and determined that this project will not result in or contribute to a violation of an Ambient Air Quality Standard for CO (see Appendix F). Therefore, CO offsets are not required for this project.
**Emissions increases amounting to 0.54 lbs/day or less round to zero for emission offset purposes (APR 1130)

The project is a Federal Major Modification for NO_X and VOC; therefore, the correct offset ratio for NO_X and VOC is 1.5:1. Assuming this offset ration for NO_X and VOC, the following emission reduction credits need to be withdrawn for each engine:

NO_X Offsets Required = 274 lb/year x 1.5
= 411 lb/year = 103 lb/quarter for each engine
= 1,545 lb/quarter for the project

VOC Offsets Required = 477 lb/year x 1.5
= 715.5 lb/year = 179 lb/quarter for each engine
= 2,685 lb/quarter for the project

VPC has stated they plan to use the following ERC certificates with available quarterly credits as follows:

NO_X:

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #N-1148-2	63,927	60,771	63,015	64,150
Generated at:	Facility N-1662			
DOR	1.5 (Federal Major Modification)			
With the following reservations:				
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
S-1134319	542	542	542	542
S-1134513	219	219	219	227

Offsets Reserved in PAS (at a 1.5:1 offset ratio):

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #N-1148-2	1,545	1,545	1,545	1,545

This application requires 1,545 lb-NO_X/qtr. As seen above, VPC has sufficient NO_X credits to fully offset the quarterly NO_X emissions increases associated with this project.

VOC:

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #N-1139-1	2,427	2,427	2,427	2,427
Generated at:	Facility N-285			
DOR	1.5 (Federal Major Modification)			
No prior reservations				

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #N-1140-1	1,500	1,500	1,500	1,500
Generated at:	Facility N-285			
DOR	1.5 (Federal Major Modification)			
With the following reservations:				
	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
S-1134319	194	194	194	194

Offsets Reserved in PAS (at a 1.5:1 offset ratio):

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
ERC #N-1139-1	1,379	1,379	1,379	1,379
ERC #N-1140-1	1,306	1,306	1,306	1,306
Total:	**2,685**	**2,685**	**2,685**	**2,685**

This application requires 2,685 lb-VOC/qtr. As seen above, VPC has sufficient VOC credits to fully offset the quarterly VOC emissions increases associated with this project.

Proposed Rule 2201 (offset) Conditions:

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO_X emission reduction credits for the following quantity of emissions: 1st quarter – 103 lb, 2nd quarter - 103 lb, 3rd quarter - 103 lb, and fourth quarter - 103 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]

- ERC Certificate Number N-1148-2 (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]

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter – 179 lb, 2nd quarter - 179 lb, 3rd quarter - 179 lb, and fourth quarter - 179 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]

- ERC Certificate Numbers N-1139-1 and N-1140-1 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:
a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

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

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

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

b. PE > 100 lb/day

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

c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	>20,000	>20,000	20,000 lb/year	No
SO_X	>54,750	>54,750	54,750 lb/year	No
PM_{10}	>29,200	>29,200	29,200 lb/year	No
CO	>200,000	>200,000	200,000 lb/year	No
VOC	>20,000	>20,000	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)*	SSPE1 (lb/year)*	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_x	-	-	4,110	20,000 lb/year	No
SO_x	-	-	2,955	20,000 lb/year	No
PM_{10}	-	-	675	20,000 lb/year	No
CO	-	-	24,900	20,000 lb/year	Yes
VOC	-	-	7,155	20,000 lb/year	No

*The SSIPE is solely equal to the increase in emissions from the proposed engines; therefore SSPE1 and 2 calculations are not necessary.

As demonstrated above, the SSIPE for CO was greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

2. Public Notice Action

As discussed above, public noticing is required for this project for it being a Federal Major Modification and the SSIPE for CO greater than 20,000 lb/year. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

For these IC engines, the DELs are stated in the form of emission factors (g/hp-hr or ppmv), fuel sulfur limits of the fuels (listed as both a fuel sulfur content limit and an emissions limit since the fuel source heating value of produced gas and LPG will vary), and the maximum engine horsepower rating:

- Emissions rates shall not exceed any of the following: PM10: 0.01 g/bhp-hr; NOx (as NO2): 5 ppmvd @15% O2; VOC (as CH4): 25 ppmvd @15% O2; CO: 50 ppmvd @15% O2; or SOx (as SO2): 0.0438 g/bhp-hr. Emission limits are on a 15 minute average. [District Rules 2201, 4701, and 4702]
- Sulfur content of fuel shall not exceed any of the following limits: produced natural gas: 5.2 grains/100 dscf and LPG: 5.4 grains/100 dscf. [District Rules 2201, 4702, and 4801]

E. Compliance Assurance

1. Source Testing

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

Source testing is not required to demonstrate compliance with Rule 2201; however, source testing may be required pursuant to Rule 4702. Any 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 O_2 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.

- If the engine is not fired exclusively on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested annually and whenever a change in the fuel source is made. [District Rules 2201 and 4702]

3. Recordkeeping

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

As required by District Rule 4702, *Stationary Internal Combustion Engines - Phase 2*, these IC engines are subject to recordkeeping requirements. Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to **Appendix F** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_X, CO, and SO_X. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_X, CO, or SO_X.

The proposed location is in a non-attainment area for the state's PM_{10} as well as federal and state $PM_{2.5}$ thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM_{10} and $PM_{2.5}$.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source and this project does constitute a Title I modification, therefore this requirement is applicable. VPC's compliance certification is included in Appendix G.

H. Alternate Siting Analysis

The proposed engines will be used at various locations at existing facilities throughout VPC's Light Oil Western Stationary Source.

Since the project will provide mechanical power to be used at each location where power is needed, these sites will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permits

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

Minor permit modifications are not Title I modifications as defined in District Rule 2520 or modifications as defined in Section 111 or 112 of the Federal Clean Air Act. The proposed engines in this project will result in a Federal Major Modification for NO_X and VOC. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

Rule 4001 New Source Performance Standards (NSPS)

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

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 engines are less than 500 bhp, this NESHAPs subpart does not apply.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). As the IC engines are fired solely on gaseous fuel, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, based on past inspections of the facility continued compliance is expected.

Rule 4102 Nuisance

Rule 4102 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 F**), the total facility prioritization score including this project was greater than one. Therefore, an HRA 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
Each Engine	0.095 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 F of this report, the emissions increases for this project was determined to be less than significant.

- 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]
- The exhaust stack height shall be at least 12 feet. [District Rule 4102]
- Two of the 15 engines (S-1738-470 through '-484) shall always operate at least 500 feet away from any receptor and the remaining 13 engines shall always operate at least 1,500 feet away from any receptor. [District Rule 4102]

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.

$$0.01 \quad \frac{g}{hp \cdot hr} \times \frac{1\,hp \cdot hr}{2{,}542.5\,Btu} \times \frac{10^6\,Btu}{9{,}051\,dscf} \times \frac{0.35\,Btu_{en}}{1\,Btu_{in}} \times \frac{15.43\,grain}{g} = \quad 0.002 \quad \frac{grain}{dscf}$$

Since 0.002 grain/dscf is less than 0.1 grain/dscf, compliance with this rule is expected.

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 engines are not to produce heat or power by indirect heat transfer; therefore, Rule 4301 does not apply to this equipment.

Rule 4701 Stationary 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 these engines are subject to the requirements of Section 5.1 of Rule 4702, Rule 4701 is not applicable to these engines.

Rule 4702 Stationary Internal Combustion Engines – Phase 2

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur oxides (SOx) from internal combustion engines. This rule applies to any internal combustion engine rated at 25 brake horsepower or greater.

Section 5.2.2 requires that on and after the compliance schedule specified in Section 7.5, the operator of a spark-ignited engine > 50 bhp that is used in non-agricultural operations shall comply with all the applicable requirements of the rule and one of the following, on an engine-by-engine basis:

5.2.2.1 On and after the compliance schedule specified in Section 7.5, the operator of a spark-ignited engine that is used exclusively in non-AO shall comply with Sections 5.2.2.1.1 through 5.2.2.1.3 on an engine-by-engine basis:

5.2.2.1.1 NOx, CO, and VOC emission limits pursuant to Table 2;
5.2.2.1.2 SOx control requirements of Section 5.7, pursuant to the deadlines specified in Section 7.5; and
5.2.2.1.3 Monitoring requirements of Section 5.10, pursuant to the deadlines specified in Section 7.5.

Rule 4702 Emission Limits (Table 2)

Engine Type	NO_x Emission Limit (ppmv @ 15% O_2, dry)	CO Emission Limit (ppmv @ 15% O_2, dry)	VOC Emission Limit (ppmv @ 15% O_2, dry)
1. d. Rich Burn, not listed above.	11 ppmv	2,000 ppmv	250 ppmv

The engines in this project will satisfy the NOx, CO, and VOC emission limits specified in Table 2.. The SOx control requirements of Section 5.7 will be satisfied by firing the engine either on PUC-quality natural gas or limiting the fuel sulfur content to 5 gr-S/100 scf (or a maximum of 5.4 gr-S/100 scf, rounding to 5 gr-S/100 scf), and compliance with the monitoring requirement of Section 5.10 will be satisfied as explained later in that section's discussion.

The following condition will be included on the ATC to ensure compliance with the emission limits of this rule:

- Emissions rates shall not exceed any of the following: PM10: 0.01 g/bhp-hr; NOx (as NO2): 5 ppmvd @15% O2; VOC (as CH4): 25 ppmvd @15% O2; CO: 50 ppmvd @15% O2; or SOx (as SO2): 0.0438 g/bhp-hr. Emission limits are on a 15 minute average. [District Rules 2201, 4701, and 4702]

Section 5.3 requires that all continuous emission monitoring systems (CEMS) emissions measurements shall be averaged over a period of 15 consecutive minutes. Any 15-consecutive-minute block average CEMS measurement exceeding the applicable emission limits of this rule shall constitute a violation of this rule. The IC engine involved with this project does not have a CEMS installed; therefore this section of the Rule is not applicable.

Section 5.7 requires that on and after the compliance schedule specified in Section 7.5, operators of non-AO spark-ignited engines and non-AO compression-ignited engines shall comply with one of the following requirements:

5.7.1 Operate the engine exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases; or
5.7.2 Limit gaseous fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or
5.7.3 Use California Reformulated Gasoline for gasoline-fired spark-ignited engines; or
5.7.4 Use California Reformulated Diesel for compression-ignited engines; or
5.7.5 Operate the engine on liquid fuel that contains no more than 15 ppm sulfur, as determined by the test method specified in Section 6.4.6; or
5.7.6 Install and properly operate an emission control system that reduces SO2 emissions by at least 95% by weight as determined by the test method specified in Section 6.4.6.

The facility has previously elected to comply with Section 5.7.2 (and since PUC gas has a sulfur content less than 5 gr-S/100 scf, compliance with this section includes combusting PUC gas) by firing the engines on either PUC-quality natural gas or gas with a sulfur content less than 5.4 gr-S/100 scf; therefore, the following conditions will be listed on the ATCs to ensure continued compliance:

- Emissions rates shall not exceed any of the following: PM10: 0.01 g/bhp-hr; NOx (as NO2): 5 ppmvd @15% O2; VOC (as CH4): 25 ppmvd @15% O2; CO: 50 ppmvd @15% O2; or SOx (as SO2): 0.0438 g/bhp-hr. Emission limits are on a 15 minute average. [District Rules 2201, 4701, and 4702]

- If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2201]

- If the engine is not fired exclusively on PUC-regulated natural gas, then the sulfur content of the gas being fired in the IC engine shall be determined using ASTM method D1072, D3031, D4084 or D3246. [District Rule 2201]

- If the engine is not fired exclusively on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested annually and whenever a change in the fuel source is made. [District Rules 2201 and 4702]

Section 5.8 lists monitoring requirements for non-AO spark-ignited engines and is currently applicable to the engine involved with this project. Section 5.8 requires that the owner of an engine subject to the requirements of Section 5.2 must comply with the requirements specified in Sections 5.8.1 through 5.8.11. Since the engine is not greater than 1,000 bhp, Section 5.8.1 does not apply; however, Section 5.8.2 applies to engines not subject to 5.8.1. Section 5.8.2 requires the operator to monitor operational characteristics recommended by the engine manufacturer or emission control system supplier, and approved by the APCO.

The applicant has chosen to meet this section of the Rule by proposing a pre-approved alternate emissions monitoring plan that specifies that the permittee perform periodic NO_x, CO, and O_2 emissions concentrations as specified in District Policy SSP-1810. Therefore, the following conditions will be listed on the proposed ATCs:

- The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, and O2 at least once every calendar quarter using a portable emission monitor that meets District specifications. 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 1 day 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 4701 and 4702]

- If the NOx and/or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the permitted 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 4701 and 4702]

- The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx 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 4701 and 4702]

Section 5.8.6 requires the operator to install and operate a nonresettable elapsed time meter or other APCO approved alternative for each engine. The following condition will be listed on proposed ATCs:

- This engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

Section 5.8.7 requires that for each engine, the permittee implement the Inspection and Monitoring (I&M) plan, if any, submitted to and approved by the APCO pursuant to Section 6.5. The pre-approved alternate emissions monitoring procedure proposed in Section 5.8.1 above will satisfy the requirements of Section 5.8.7. Therefore, compliance with Section 5.8.7 is expected.

- 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 5.8.8 requires the operator to collect data through the I&M plan in a form approved by the APCO. By following the pre-approved alternate emissions monitoring procedure proposed

in Section 5.8.1 above, the applicant will be collecting data in a form approved by the APCO. Therefore, compliance with Section 5.8.8 is expected.

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

Section 5.8.9 requires that each engine, use a portable NO_x analyzer to take NO_x emission readings to verify compliance with the emission requirements of Section 5.2 or Section 8.0 during each calendar quarter in which a source test is not performed. Compliance with this requirement is expected with the following condition:

- The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, and O2 at least once every calendar quarter using a portable emission monitor that meets District specifications. 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 1 day 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 5.9 of the rule presents the alternative monitoring requirements for various engines not subject to the normal monitoring requirements of Section 5.8. These engines are required to monitor emissions under Section 5.8, so Section 5.9 does not apply.

Section 5.10 requires that on and after the compliance schedule specified in Section 7.5, an operator of a non-AO engine shall comply with the following requirements:

5.10.1 An operator of an engine complying with Sections 5.7.2 or 5.7.5 shall perform an annual sulfur fuel analysis in accordance with the test methods in Section 6.4. The operator shall keep the records of the fuel analysis and shall provide it to the District upon request,

5.10.2 An operator of an engine complying with Section 5.7.6 by installing and operating a control device with at least 95% by weight SOx reduction efficiency shall submit for approval by the APCO the proposed the key system operating parameters and frequency of the monitoring and recording not later than July 1, 2013, and

5.10.3 An operator of an engine complying with Section 5.7.6 shall perform an annual source test unless a more frequent sampling and reporting period is included in the Permit-to-Operate. Source tests shall be performed in accordance with the test methods in Section 6.4.

As previously mentioned under Section 5.7 above, the facility has elected to comply with Section 5.7.2 by firing the engines on gaseous fuel with a sulfur content limited to 5 gr-S/100 scf; therefore, the following condition will be listed on the permits to ensure compliance with this section:

- If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2201]

- If the engine is not fired exclusively on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested annually and whenever a change in the fuel source is made. [District Rules 2201 and 4702]

Section 6.1 requires that the operator 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 5.2 and the compliance schedules of Section 7.0.

As discussed above, the engines already complies with the emission requirements of Section 5.2. Therefore, an emission control plan for these engines is not required.

Section 6.2.1 requires that the operator of an engine subject to the requirements of Section 5.2 of this rule to 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.

Therefore, the following condition will be included on the ATCs to ensure continued compliance:

- Permittee shall maintain an engine operating log, on a monthly basis, which includes the following information; total hours of operation, type and quantity of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with Rule 4702. [District Rule 4702]

Section 6.2.2 requires that the data collected pursuant to the requirements of Section 5.8 and Section 5.9 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 included on both ATCs to ensure continued 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 Rule 4702]

Section 6.3.2 requires that the operator of an engine subject to the requirements of Section 5.2, which engine equipped with an exhaust control device, to demonstrate compliance with the applicable emission limits during the initial start-up and at least once every 24 months thereafter.

Section 6.3.3 requires that the test must be conducted with the unit operating at normal operating conditions and using three 30-consecutive minute test runs. In addition, VOC shall be reported as methane, VOC, NOx, and CO concentrations shall be reported in ppmv, corrected to 15 percent oxygen.

Section 6.3.5 specifies that engine that is limited by PTO condition to be fueled exclusively with PUC-quality natural gas shall not be subject to reoccurring source test requirements of Section 6.3.2 for VOC emissions. The following conditions will be included on the ATC to ensure continued compliance:

- Source testing to measure NOx, CO, and VOC emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 4701 and 4702]
- Source testing to measure natural gas-combustion NOx, CO, and VOC emissions from this unit shall be measured not less than once every 24 months. [District Rules 4701 and 4702]
- 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]
- 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, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 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 6.3.6 lists requirements for representative testing of similar engines (same stationary source, manufacturer, model number, maintenance requirements). The following conditions will ensure compliance with this section:

- Compliance with NOx, CO, and VOC emission limits may be demonstrated by submission of annual source test results from one or more representative IC engines as approved by the APCO. [District Rules 4701 and 4702]
- For representative testing, an engine operating log shall be maintained for each engine in the group. The log shall include, on a monthly basis, the total hours of operation, and maintenance or modifications performed. [District Rules 4701 and 4702]
- Should any representative engines exceed the required emission limits, each engine in the group shall demonstrate compliance by emissions testing. Failure to complete emissions testing within 90 days of the failed test shall result in the untested engines being considered in violation of this rule. [District Rules 4701 and 4702]

Section 6.4 requires that compliance with the requirements of Section 5.2 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.

Therefore, the following condition will be included on the ATC to ensure continued compliance:

- {3210} The following test methods shall be used: NOx (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 25 or EPA Method 18 referenced as methane. [District Rules 1081, 4701, and 4702]

Section 6.5 requires that the owner of an engine subject to the emission limits in Section 5.2 or the requirements of Section 8.0, shall submit to the APCO for approval, an I&M plan that specifies all actions to be taken to satisfy the following requirements and the requirements of Section 5.8. The actions to be identified in the I&M plan shall include, but are not limited to, the following:

Section 6.5.2 specifies procedures requiring the owner or operator to establish ranges for control equipment parameters, engine operating parameters, and engine exhaust oxygen concentrations that source testing has shown result in pollutant concentrations within the rule limits.

Section 6.5.3 specifies procedures for monthly inspections as approved by the APCO. The applicable control equipment parameters and engine operating parameters will be inspected and monitored monthly in conformance with a regular inspection schedule listed in the I&M plan. The applicant has previously proposed that the alternate monitoring program will ensure compliance with Sections 6.5.2 and 6.5.3 of the Rule. Therefore, the following conditions will ensure continued compliance with the I&M requirements of this rule:

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

- 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 no later than 14 days after the change for approval. 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 6.5.4 specifies procedures for the corrective actions on the noncompliant parameter(s) that the operator will take when an engine is found to be operating outside the acceptable range for control equipment parameters, engine operating parameters, and engine exhaust NOx, CO, VOC, or oxygen concentrations.

Section 6.5.5 specifies procedures for the operator to notify the APCO when an engine is found to be operating outside the acceptable range for control equipment parameters, engine operating parameters, and engine exhaust NOx, CO, VOC, or oxygen concentrations.

The applicant has proposed that the alternate monitoring program will ensure compliance with these two sections of the Rule.

The following condition will ensure continued compliance with these requirements:

- If the NOx and/or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the permitted 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]

Section 6.5.6 specifies procedures for preventive and corrective maintenance performed for the purpose of maintaining an engine in proper operating condition. The applicant has proposed that the engines will be operated and maintained per the manufacturer's specifications. Therefore, the following condition will be included on the ATC to ensure continued compliance:

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

Section 6.5.7 specifies procedures and a schedule for using a portable NO_x analyzer to take NO_x emission readings pursuant to Section 5.8.9. The applicant has proposed that the alternate monitoring program will ensure compliance with this Section of the Rule. The following condition will ensure continued compliance with this requirement:

- 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]

Section 6.5.8 specifies procedures for collecting and recording required data and other information in a form approved by the APCO including, but not limited to, data collected through the I&M plan and the monitoring systems described in Sections 5.8.1 and 5.8.2. Data collected through the I&M plan shall have retrieval capabilities as approved by the APCO. The applicant has proposed that the alternate monitoring program will ensure compliance with this Section of the Rule. The following condition will ensure continued compliance with this requirement:

- The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx 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 6.5.9 specifies procedures for revising the I&M plan. The I&M plan shall be updated to reflect any change in operation. The I&M plan shall be updated prior to any planned change in operation. An engine operator that changes significant I&M plan elements must notify the District no later than seven days after the change and must submit an updated I&M plan to the APCO no later than 14 days after the change for approval. The date and time of the change to the I&M plan shall be recorded in the engine operating log. For new engines and modifications to existing engines, the I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit-to-Operate or Permit-Exempt Equipment Registration. The operator of an engine may request a change to the I&M plan at any time. The applicant has proposed that they will modify their I&M plan per this section of the Rule. Therefore, the following condition will be included on the ATC to ensure continued compliance:

- 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 no later than 14 days after the change for approval. 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 7.1 requires that the owner of an engine which becomes subject to the emission limits of this rule through loss of exemption shall not operate the subject engine, except as required for obtaining a new or modified Permit-to-Operate for the engine, until the owner demonstrates full compliance with the requirements of this rule. The engine involved with project is already subject to this rule; therefore this section is not applicable.

Section 7.5.1 requires an operator with non-AO spark-ignited engines at a stationary source subject to Table 2 or Section 8.0 emission limits, SOx control requirements of Section 5.7, and the SOx monitoring requirements of Section 5.10 shall comply with the schedule specified in Table 5.

The engines involved with this project already meet all the requirements of Rule 4702 at the time of initial operation. Therefore, the engines are in compliance with this rule and no further discussion is required.

Section 8.0 lists the requirements for engines that could be part of an alternative emission control plan (AECP): Since all engines in this project will comply with the requirements of Section 5.2 upon installation, this section is irrelevant.

Therefore, compliance with the requirements of this Rule is expected.

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes.

This rule contains a limit on sulfur compounds. The limit at the point of discharge is 0.2 percent by volume, 2000 ppmv, calculated as sulfur dioxide (SO_2), on a dry basis averaged over 15 consecutive minutes.

From the permitted conditions, the maximum sulfur content of LPG combusted (fuel with greatest permitted sulfur content) shall not exceed 5.4 grain-S/100scf.

$$\frac{5.4\ gr \cdot S}{100\ scf}\left(\frac{lb}{7{,}000\ gr}\right)\frac{379.5\ scf}{lb \cdot mole}\left(\frac{lb \cdot mole}{34\ lb \cdot S}\right) = 8.61x10^{-5}\ or\ 86.1\ ppm\ as\ S$$

Since 86.1 ppmv is ≤ 2000 ppmv, this project is expected to comply with Rule 4801.

- Sulfur content of fuel shall not exceed any of the following limits: produced natural gas: 5.2 grains/100 dscf and LPG: 5.4 grains/100 dscf. [District Rules 2201, 4702, and 4801]

Title 17 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 engines involved with this project are fired on natural gas and are not compression ignited. Therefore, this regulation is not applicable to this project.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

District CEQA Findings

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity consists of issuing a permit for a piece of

transportable equipment to be used at various locations within the District. The District makes the following findings regarding this activity: 1) Issuance of the permit does not have a significant environmental impact. 2) Assessment of potential environmental effects resulting from the use of the transportable equipment on a development project is the responsibility of the Lead Agency approving the specific project, and will be determined on a project specific basis. The District has determined that no additional findings are required.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs S-1738-470-0 through '-484-0 subject to the permit conditions on the attached draft ATCs in **Appendix A.**

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
All Units	3020-10-C	233 bhp	$240.00

Appendices

A: Draft ATCs
B: Engine Manufacturer Details
C: Gas Analyses
D: BACT Guideline
E: BACT Analysis
F: HRA and AAQA Summary
G: Compliance Certifications

APPENDIX A

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1738-470-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: VINTAGE PRODUCTION CALIFORNIA LLC
MAILING ADDRESS: 9600 MING AVE, SUITE 300
BAKERSFIELD, CA 93311

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE
KERN COUNTY
CA

EQUIPMENT DESCRIPTION:
233 BHP WAUKESHA MODEL F-1905 (OR EQUIVALENT) PUC GAS/PRODUCED GAS/LPG FIRED IC ENGINE WITH CATALYTIC CONVERTER AND AIR FUEL RATIO CONTROLLER (OPERATED AT VARIOUS UNSPECIFIED LOCATIONS WITHIN STATIONARY SOURCE S-1738)

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender NOX emission reduction credits for the following quantity of emissions: 1st quarter - 103 lb, 2nd quarter - 103 lb, 3rd quarter - 103 lb, and fourth quarter - 103 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
4. ERC Certificate Number N-1148-2 (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

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

DRAFT

DAVID WARNER, Director of Permit Services
S-1738-470-0 : Dec 19 2013 3:38PM – RICKARDK : Joint Inspection NOT Required

5. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 179 lb, 2nd quarter - 179 lb, 3rd quarter - 179 lh, and fourth quarter - 179 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
6. ERC Certificate Numbers N-1139-1 and N-1140-1 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit
8. 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
9. 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
10. 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]
11. The exhaust stack height shall be at least 12 feet. [District Rule 4102]
12. Two of the 15 engines (S-1738-470 through '-484) shall always operale al least 500 feet away from any receptor and the remaining 13 engines shall always operate at least 1,500 feet away from any receptor. [District Rule 4102]
13. Unit shall not be operated within 1,000 feet of any K-12 school. [CH&SC 42301.6]
14. Emissions rates shall not exceed any of the following: PM10: 0.01 g/bhp-hr; NOx (as NO2): 5 ppmvd @15% O2; VOC (as CH4): 25 ppmvd @15% O2; CO: 50 ppmvd @15% O2; or SOx (as SO2): 0.0438 g/bhp-hr. Emission limits are on a 15 minute average. [District Rules 2201, 4701, and 4702] Federally Enforceable Through Title V Permit
15. Sulfur content of fuel shall not exceed any of the following limits: produced natural gas: 5.2 grains/100 dscf and LPG: 5.4 grains/100 dscf. [District Rules 2201, 4702, and 4801] Federally Enforceable Through Title V Permit
16. The permittee shall monitor and record the stack concentration of NOx (as NO2), CO, and O2 at least once every calendar quarter using a portable emission monitor that meets District specifications. 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 1 day 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 Rules 4701 and 4702] Federally Enforceahle Through Title V Permit
17. If the NOx and/or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the permitted emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after dctection. 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 Rules 4701 and 4702] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

18. 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

19. The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx 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 Rules 4701 and 4702] Federally Enforceable Through Title V Permit

20. 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

21. Source testing to measure NOx, CO, and VOC emissions from this unit shall be conducted within 60 days of initial start-up. [District Rules 4701 and 4702] Federally Enforceable Through Title V Permit

22. Source testing to measure natural gas-combustion NOx, CO, and VOC emissions from this unit shall be measured not less than once every 24 months. [District Rules 4701 and 4702] Federally Enforceable Through Title V Permit

23. Compliance with NOx, CO, and VOC emission limits may be demonstrated by submission of annual source test results from one or more representative IC engines as approved by the APCO. [District Rules 4701 and 4702] Federally Enforceable Through Title V Permit

24. For representative testing, an engine operating log shall be maintained for each engine in the group. The log shall include, on a monthly basis, the total hours of operation, and maintenance or modifications performed. [District Rules 4701 and 4702] Federally Enforceable Through Title V Permit

25. Should any representative engines exceed the required emission limits, each engine in the group shall demonstrate compliance by emissions testing. Failure to complete emissions testing within 90 days of the failed test shall result in the untested engines being considered in violation of this rule. [District Rules 4701 and 4702] Federally Enforceable Through Title V Permit

26. Compliance demonstration (source testing) shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit

27. 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

28. 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, NOx, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. [District Rule 4702] Federally Enforceable Through Title V Permit

29. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit

30. 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

31. The following test methods shall be used: NOx (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 25 or EPA Method 18 referenced as methane. [District Rules 1081, 4701, and 4702] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

32. Permittee shall maintain records of either operating hours per day, location (e.g. well number) at which IC engine is operated, source test results, monitoring data, and other information deemed necessary by the APCO to demonstrate compliance with Rules 4701 and 4702 for a period of five years and shall make such records readily available for District inspection upon request. [District Rules 4701 and 4702] Federally Enforceable Through Title V Permit

33. Portable analyzers will be maintained and calibrated according to the manufacturer's specifications in order to ensure they operate properly and their accuracy remains within specification. EPA protocol calibration gases will be utilized to ensure proper calibration. After a successful calibration, the accuracy of the analyzer may be verified by utilizing reference gases that most closely approximate the emission limit to be checked. Between calibrations, the analyzer shall be checked before each use with reference gases to ensure its sensor cells are operational and accurate. [District Rule 4702] Federally Enforceable Through Title V Permit

34. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081 (Amended December 16, 1993), of 3 thirty-minute test runs for NOx, and CO. [District Rule 1081, 4701, and 4702] Federally Enforceable Through Title V Permit

35. The following conditions must be met for representative units to be used to test for pollutant (NOx) emissions for a group of units: 1) all units are initially source tested and emissions from each unit in the group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in the group are similar in terms of rated brake horsepower, make and series, operational conditions, fuel used, and control method, 3) the group is owned by a single owner and located at a single stationary source, and 4) the selection of the representative units is approved by the District prior to testing. [District Rule 4702] Federally Enforceable Through Title V Permit

36. All units in a group for which representative units are annually source tested for NOx and CO emissions shall have received the same maintenance and tune-up procedures as the representative units. [District Rule 4702] Federally Enforceable Through Title V Permit

37. The number of representative units source tested for NOx and CO emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated; such that in 3 years, all units in the entire group will have been tested at least once. [District Rule 4702] Federally Enforceable Through Title V Permit

38. Particulate emissions shall not exceed at the point of discharge, 0.1 gr/dscf. [District Rule 4201] Federally Enforceable Through Title V Permit

39. If the IC engine is fired on PUC-regulated natural gas, then maintain on file copies of all natural gas bills. [District Rule 2201] Federally Enforceable Through Title V Permit

40. If the engine is not fired exclusively on PUC-regulated natural gas, then the sulfur content of the gas being fired in the IC engine shall be determined using ASTM method D1072, D3031, D4084 or D3246. [District Rule 2201] Federally Enforceable Through Title V Permit

41. If the engine is not fired exclusively on PUC-regulated natural gas, the sulfur content of each fuel source shall be tested annually and whenever a change in the fuel source is made. [District Rules 2201 and 4702] Federally Enforceable Through Title V Permit

42. Permittee shall monitor and record, on a monthly basis, the catalyst inlet and outlet temperatures. [District Rule 4702] Federally Enforceable Through Title V Permit

43. The acceptable catalyst temperature differential shall be established by source testing this unit or other representative units as approved by the District. The normal range/level shall be any temperature increase across the catalyst unless compliance with applicable NOx and CO emissions limits have been demonstrated through source testing at a similar temperature drop. [District Rule 4702] Federally Enforceable Through Title V Permit

44. Permittee shall maintain records of the date and time of temperature measurements and the measured temperatures. The records shall also include a description of any corrective action taken to maintain the temperature differential at the acceptable level. [District Rule 4702] Federally Enforceable Through Title V Permit

45. If the catalyst temperature differential is outside of the normal range/level, the permittee shall notify the District and take corrective action (i.e. temperature differential returned to normal range/level) with one (1) hour of detection. If the catalyst temperature differential rate is not immediately corrected, the permittee shall conduct a source test within 60 days, to demonstrate compliance with the applicable emissions limits at the new temperature differential. [District Rule 4702] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

46. 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

47. Permittee shall maintain an engine operating log, on a monthly basis, which includes the following information; total hours of operation, type and quantity of fuel used, maintenance or modifications performed, monitoring data, compliance source test results, and any other information necessary to demonstrate compliance with Rule 4702. [District Rule 4702] Federally Enforceable Through Title V Permit

48. 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 Rule 4702] Federally Enforceable Through Title V Permit

APPENDIX B

Engine Manufacturer Details

Application & Performance Warranty Data

Project Information

Site Location:	Bakersfield, CA
Project Name:	Plato Ranch
Application:	Gas Compression
Number of Engines:	1
Operating Hours per Year:	8700

Engine Specifications

Engine Manufacturer:	Waukesha
Model Number:	1905
Rated Speed:	1,000 RPM
Type of Fuel:	Natural Gas
Type of Lube Oil:	0.6 wt% sulfated ash or less
Lube Oil Consumption:	< 0.00027 gal/bhp-hr

Engine Cycle Data

Load	Speed	Power	Exhaust Flow	Exhaust Temp	Fuel Cons.	NO_x	CO	NMHC	NMNEHC	CH_2O	PM_{10}	O_2	H_2O
%		bhp	acfm (cfm)	F	BTU/bhp-hr	g/bhp-hr	g/bhp-hr	g/bhp-hr	g/bhp-hr	g/bhp-hr	g/bhp-hr	%	%
100	Rated	233	1080	1088	4500	14	17	0.5	0.25			0.5	18.5

Emission Data (100% Load)

Emission	Raw Engine Emissions						Target Outlet Emissions						Calculated
	g/bhp-hr	ppmvd @ 15% O2	ppmvd	lb/MW-hr	tons/yr	g/kW-hr	g/bhp-hr	ppmvd @ 15% O2	ppmvd	lb/MW-hr	tons/yr	g/kW-hr	Reduction
NOx*	14	967	3,343	41.39	31.28	18.774	0.07	5	17	0.21	0.16	0.097	99.5%
CO	17	1,926	6,667	50.26	37.99	22.797	0.44	50	173	1.3	0.99	0.591	97.4%
NMHC**	0.5	99	342	1.48	1.12	0.671							
NMNEHC**	0.25	50	171	0.74	0.56	0.335	0.13	25	86	0.37	0.28	0.169	50%

* MW referenced as NO_2 ** MW referenced as CH_4

System Specifications

NSCR System Specifications (IQ2-16-06-EC2)

Design Exhaust Flow Rate:	1,080 acfm (cfm)
Design Exhaust Temperature¹:	1,088°F
Housing Model Number:	IQ2-16-06-HSG
Element Model Number:	IQ-RE-16EC
Number of Catalyst Layers:	2
Number of Spare Catalyst Layers:	0
System Pressure Loss:	2.0 inches of WC (Fresh)
Exhaust Temperature Limits:	750 – 1250°F (catalyst inlet); 1350°F (catalyst outlet)

APPENDIX C

Gas Analyses

PGT
Pacific Gas Technology, Inc.

E-mail pgtech@earthlink.net

4100 Burr Street
P.O. Box 80847
Bakersfield, CA 93380-0847
Telephone (661) 324-1317
Fax (661) 324-2746

Attention: Alex Herrera
Vintage Petroleum LLC
P.O. Box 82576
Bakersfield, CA 93380

Sampled: 8/29/2012
Submitted: 8/29/2012
Analyzed: 8/30/2012
Reported: 8/31/2012

Gas Analysis by Chromatography - ASTM D 3588-91

Description: 3-29
Meter
Facility: Pleito Ranch

Lab No: 120831-1
Pressure: 50 psi
Temperature: 85 deg F

Component	Mole %	Weight %	GPMCF
Oxygen	ND	0.00	
Nitrogen	0.85	1.08	
Carbon Dioxide	0.13	0.27	
Hydrogen	ND	0.00	
Carbon Monoxide	ND	0.00	
Methane	81.12	59.09	
Ethane	4.85	6.62	
Propane	5.43	10.88	1.500
Iso-Butane	1.62	4.27	0.531
n-Butane	3.27	8.63	1.033
iso-Pentane	1.40	4.59	0.513
n-Pentane	0.98	3.21	0.355
Hexanes Plus	0.35	1.37	0.144
Totals	100.00	100.00	4.075

Specific Volume, ft3/lb		17.22	Values Corrected		
Compressibility (Z) Factor		0.9960	for Compressibility	CHONS	Weight %
Specific Gravity, Calculated		0.7604	0.7632	Carbon	76.790
				Hydrogen	21.940
GROSS				Oxygen	0.195
BTU/ft3	Dry	1313.1	1318.4	Nitrogen	1.075
	Wet	1290.1	1295.3	Sulfur	0.000
BTU/lb	Dry	22610.7	22701.7		
BTU/lb	Wet	22215.0	22304.4	F FACTOR @	8696
NET				60 deg F, dscf/MBTU	
BTU/ft3	Dry	1192.5	1197.3		
	Wet	1171.6	1176.3	F FACTOR @	8565
BTU/lb	Dry	20533.9	20616.6	60 deg F, dscf/MBTU	
BTU/lb	Wet	20174.6	20255.8		

Hydrogen Sulfide, ppm	TR<1	Method	GC/FPD
Total Sulfur, ppm	Not Tested	Method	ASTM D3246
Hydrocarbon Dew Point, deg F	Not Tested	Method	Bureau of Mines
Moisture, lbs H2O/MMCF	Not Tested	Method	Bureau of Mines

ND: None Detected
TR: Trace

PGT
Pacific Gas Technology, Inc.

E-mail pgtech@earthlink.net

4100 Burr Street
P.O. Box 80847
Bakersfield, CA 93380-0847
Telephone (661) 324-1317
Fax (661) 324-2746

Attention: Steve Gluyas
Vintage Petroleum LLC
6851 McDivitt Dr. Ste. D
Bakersfield, CA 93313

Sampled: 9/7/2012
Submitted: 9/7/2012
Analyzed: 9/10/2012
Reported: 9/12/2012

Gas Analysis by Chromatography - ASTM D 3588-91

Description: Pleito Ranch
Meter: Sales Gas
Facility:

Lab No.: 120859-1
Pressure:
Temperature:

Component	Mole %	Weight %	GPM/CF
Oxygen	ND	0.00	
Nitrogen	0.69	0.93	
Carbon Dioxide	0.34	0.72	
Hydrogen	ND	0.00	
Carbon Monoxide	ND	0.00	
Methane	84.26	64.86	
Ethane	4.88	7.01	
Propane	3.77	7.98	1.041
Iso-Butane	1.15	3.21	0.377
n-Butane	2.86	7.98	0.904
Iso-Pentane	1.22	4.22	0.447
n-Pentane	0.61	2.11	0.221
Hexanes Plus	0.24	0.99	0.099
Totals	100.00	100.00	3.087

Specific Volume, ft3/lb		18.20	Values Corrected		
Compressibility (Z) Factor		0.9965	for Compressibility	CHONS	Weight %
Specific Gravity, Calculated		0.7196	0.7219	Carbon	76.218
				Hydrogen	22.332
GROSS				Oxygen	0.522
BTU/ft3	Dry	1247.3	1251.7	Nitrogen	0.927
	Wet	1225.4	1229.8	Sulfur	0.000
BTU/lb	Dry	22699.4	22779.9		
BTU/lb	Wet	22302.2	22381.3	F FACTOR @	8683
NET				60 deg F, dscf/MMBTU	
BTU/ft3	Dry	1131.1	1135.1		
	Wet	1111.3	1115.3	F FACTOR @	8553
BTU/lb	Dry	20585.3	20658.3	60 deg F, dscf/MMBTU	
BTU/lb	Wet	20225.1	20296.8		

	Total Sulfur, ppm	14	Method	ASTM D3246
	Dew Point, deg F	Not Tested	Method	Bureau of Mines
	Hydrocarbon Dew Point, deg F	Not Tested	Method	Bureau of Mines
	Moisture, lbs H2O/MMCF	Not Tested	Method	Bureau of Mines

ND : None Detected
tr : Trace

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Vintage Production California LLC - 2	Project: Master	Work Order No.: 1203321
9600 Ming Avenue Ste 300	Project #:	Reported: 03/22/2012
Bakersfield, CA 93311-1373	Attention: George Elledge	Received: 03/21/2012 09:45

Lab Sample ID: 1203321-02	Collected By: Armando Ruvio
Client Sample ID: Oxy Skid at Propane Truck Rack	Date Collected: 3/21/2012 8:51:00AM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Total Sulfur/Hydrogen Sulfide by ASTM D3246								
Hydrogen sulfide	6.7	1.0	ppm		ASTM D 3246/M	3/21/12	3/21/12	JAH
Sulfur	0.41	0.06	gr/100 scf		ASTM D3246	3/21/12	3/21/12	JAH

Quality Control data is available upon request.

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Vintage Production California LLC - 2	Project: Master	Work Order No.: 1203367
9600 Ming Avenue Ste 300	Project #:	Reported: 03/23/2012
Bakersfield, CA 93311-1373	Attention: George Elledge	Received: 03/23/2012 09:15

Lab Sample ID: 1203367-01	Collected By: Armando Rubio
Client Sample ID: Oxy Skid at Propane Truck Rack	Date Collected: 3/23/2012 8:30:00AM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
Total Sulfur/Hydrogen Sulfide by ASTM D3246								
Hydrogen sulfide	4.4	1.0	ppm		ASTM D 3246M	3/23/12	3/23/12	JAH
Sulfur	0.27	0.00	gr/100 scf		ASTM D3246	3/23/12	3/23/12	JAH

NSS: Not Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level *: See Case Narrative
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

APPENDIX D

BACT Guideline

Best Available Control Technology (BACT) Guideline 3.3.12*

Last Update 10/1/2002

Fossil Fuel** Fired IC Engine > 50 hp

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	56 ppmvd @ 15% O2, 0.6 g/bhp-hr, or 1.9 lb/MW-hr		
NOx	9 ppmvd @ 15% O2, 0.15 g/bhp-hr, or 0.5 lb/MW/hr	5 ppmv @ 15% O2 (Selective Catalytic Reduction, or equal)	2 ppmv natural gas fired turbine
PM10	0.02 g/bhp-hr, or 0.06 lb/MW-hr		
SOx	PUC quality natural gas, or equal.		
VOC	25 ppmvd @15% O2, 0.15 g/bhp-hr, or 0.5 lb/MW-hr		

** For the purposes of this determination, fossil fuels includes diesel, gasoline, natural gas, propane, kerosene, and similar hydrocarbon compounds derived from petroleum oil or natural gas. Fossil fuels also include similar synthetic fuels such as biodiesel and/or any fuel containing one or more fossil fuels.

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

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

APPENDIX E

BACT Analysis

BACT Analysis for NO_X

BACT Guideline 3.3.12 lists the controls that are considered potentially applicable to fossil fuel fired IC engines >50 hp.

Step 1 - Identify All Possible Control Technologies

9 ppmvd @ 15% O_2, 0.15 g/bhp-hr, or 0.5 lb/MW-hr (Achieved in Practice)

5 ppmvd @ 15% O_2 (Selective Catalytic Reduction, or Equal) (Technologically Feasible)

2 ppmv natural gas fired turbine (Alternate Basic Equipment)

Step 2 - Eliminate Technologically Infeasible Options

Due to the engines being fired on a mixture of produced gas and LPG, and the requirement that the engines remain very portable for exploration purposes, the turbines are not technologically feasible options.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The following options are ranked based on their emission factor:

5 ppmvd @ 15% O_2 (Selective Catalytic Reduction, or Equal) (Technologically Feasible)

9 ppmvd @ 15% O_2, 0.15 g/bhp-hr, or 0.5 lb/MW-hr (Achieved in Practice)

Step 4 - Cost Effective Analysis

A cost effective analysis must be performed for all control options in the list from step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

VPC has proposed the technologically feasible option; therefore, a cost effective analysis is not necessary.

Step 5 - Select BACT

BACT for NO_X emissions from these fossil fuel fired IC engines >50 hp is a limit of 56 ppmvd @ 15% O_2. The applicant has proposed to operate these engines with a NO_X limit of 5 ppmvd @ 15% O_2; therefore BACT for NO_X emissions is satisfied.

BACT Analysis for CO Emissions

BACT Guideline 3.3.12 lists the controls that are considered potentially applicable to fossil fuel fired IC engines >50 hp.

Step 1 - Identify All Possible Control Technologies

56 ppmvd @ 15% O_2, 0.6 g/bhp-hr, or 1.9 lb/MW-hr (Achieved in Practice)

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options to eliminate.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The following options are ranked based on their emission factor:

56 ppmvd @ 15% O_2, 0.6 g/bhp-hr, or 1.9 lb/MW-hr (Achieved in Practice)

Step 4 - Cost Effective Analysis

A cost effective analysis must be performed for all control options in the list from step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

Only one control technology is identified. The applicant is proposing CO emissions of 50 ppmvd @ 15% O_2; therefore, a cost effective analysis is not necessary.

Step 5 - Select BACT

BACT for CO emissions from these fossil fuel fired IC engines >50 hp is a limit of 56 ppmvd @ 15% O_2. The applicant has proposed to operate these engines with a CO limit of 50 ppmvd @ 15% O_2; therefore BACT for CO emissions is satisfied.

BACT Analysis for VOC

BACT Guideline 3.3.12 lists the controls that are considered potentially applicable to fossil fuel fired IC engines >50 hp.

Step 1 - Identify All Possible Control Technologies

25 ppmvd @ 15% O_2, 0.15 g/bhp-hr, or 0.5 lb/MW-hr (Achieved in Practice)

Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options to eliminate.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The following options are ranked based on their emission factor:

25 ppmvd @ 15% O_2, 0.15 g/bhp-hr, or 0.5 lb/MW-hr (Achieved in Practice)

Step 4 - Cost Effective Analysis

A cost effective analysis must be performed for all control options in the list from step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

Only one control technology is identified. The applicant is proposing CO emissions of 25 ppmvd @ 15% O_2; therefore, a cost effective analysis is not necessary.

Step 5 - Select BACT

BACT for VOC emissions from these fossil fuel fired IC engines >50 hp is a limit of 25 ppmvd @ 15% O_2. The applicant has proposed to operate these engines with a VOC limit of 25 ppmvd @ 15% O_2; therefore BACT for VOC emissions is satisfied.

APPENDIX F

HRA and AAQA Summary

REVISED
San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Kris Rickards – Permit Services
From:	Ester Davila – Technical Services
Date:	December 11, 2013
Facility Name:	Vintage Production California, LLC
Location:	Various Unspecified Locations within LOW (S1738)
Application #(s):	S-1738-470-0 thru 484-0
Project #:	S-1134181

A. RMR SUMMARY

RMR Summary			
Categories	**15 NG, LPG, & Produced Gas ICEs (Units 470-0 thru 484-0)**	**Project Totals**	**Facility Totals**
Prioritization Score	0.095 (each)	>1	>1
Acute Hazard Index	0.00 (each)	0.03	0.48
Chronic Hazard Index	0.00 (each)	0.02	0.08
Maximum Individual Cancer Risk	**1.25E-08 (each)**	1.78E-07	9.04E-06[1]
T-BACT Required?	**No**		
Special Permit Conditions?	**Yes**		

[1]The facility has almost reached its maximum allowed Cancer Risk of 10 in a million. This score reflects remodeling of Project # S-1120872 with site specific location, changing the project cancer risk from 1.54E-6 to 4.97E-8. No further projects will be allowed without first re-examining all previous projects.

Proposed Permit Conditions

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

Units 470-0 thru 484-0:

1. {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] N
2. The exhaust stack height shall be at least 12 feet.
3. Two of the 15 engines shall always operate at least 500 feet away from any receptor and the remaining 13 engines shall always operated at least 1500 feet away from any receptor.

I. Project Description

Technical Services received a request on October 28, 2013, to perform a Risk Management Review for fifteen identical, 233 bhp, natural gas, propane gas, and produced gas-fired IC engines to be authorized to operate at various unspecified locations within facility S-1738 (LOW).

II. Analysis

Toxic emissions for the project were calculated using District approved emissions factors for field gas-fired internal combustion engines as worst-case scenario. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was greater than 1.0 (see RMR Summary Table).
A refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and the 5-year concatenated meteorological data from 2004 to 2008 for Fellows to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters (Units 470-0 to 484-0)			
Source Type	Point	**Closest Receptor (ft)**	500 (2 ICE) & 1500 (13 ICE)*
Stack Height (ft)	12*	**Type of Receptor**	Residence & Business
Stack Diameter (m)	0.254	**Location Type**	Rural
Stack Gas Temperature (K)	859.82	**Stack Gas Velocity (m/sec)**	10.06

*The stack height and receptor distance will be placed as conditions on all 15 units.

Technical Services also performed modeling for criteria pollutants CO, NOx, SOx, and PM_{10}; as well as the RMR. The emission rates used for criteria pollutant modeling were 0.19 lb/hr CO, 0.03 lb/hr NOx, 0.02 lb/hr SOx, and 0.01 lb/hr PM_{10}, per each engine.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*
Values are in $\mu g/m^3$

15 ICEs	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO_x	Pass[1]	X	X	X	Pass[1]
SO_x	Pass	Pass	X	Pass	Pass
PM_{10}	X	X	X	Pass[2]	Pass[2]
$PM_{2.5}$	X	X	X	Pass[2]	Pass[2]

*Results were taken from the attached PSD spreadsheet.
[1]The project was compared to the 1-hour NO2 National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.
[2]The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusions

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

The acute and chronic Indices are below 1.0; and the maximum individual cancer risk associated with each unit is below the 1 in a million threshold. 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 each 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

RMR Request Form & Attachments
Project Related Emails
Natural Gas ICE Speciation Worksheets
Prioritization
Risk Result Pages
Facility Summary

APPENDIX G

Compliance Certifications

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

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

COMPANY NAME: **Vintage Production California LLC**	FACILITY ID: - S – 1738
1. Type of Organization: [K]Corporation [ ]Sole Ownership [ ]Government [ ]Partnership [ ]Utility	
2. Owner's Name: **Vintage Production California LLC**	
3. Agent to the Owner: **Denny Brown**	

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

DB Based on information and belief formed after reasonable inquiry, the source identified in this application will continue to comply with the applicable federal requirement(s) which the source is in compliance.

DB Based on information and belief formed after reasonable inquiry, the source identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

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

DB Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

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

Denny Brown
Signature of Responsible Official

10-22-13
Date

Denny Brown
Name of Responsible Official (please print)

Operations Manager
Title of Responsible Official (please print)

CERTIFICATION

OXY USA Inc. hereby certifies as follows:

1. OXY USA Inc. owns or operates certain major stationary sources in the State of California. Such sources are comprised of a vast number of emission points. As used in this certification, the term "major stationary source" shall, with respect to OXY USA Inc. stationary sources in the SJVUAPCD, have the meaning ascribed thereto in SJVUAPCD Rule 2201, Section 3.23, and shall, with respect to all of OXY USA Inc.'s other stationary sources in the State of California, have the meaning ascribed thereto in section 302(J) of the Clean Air Act (42 U.S.C. Section 7602 (J)).

2. Subject to paragraphs 3 and 4 below, all major stationary sources owned or operated by OXY USA Inc. in the State of California are either in compliance, or on an approved schedule of compliance, with all applicable emission limitations and standards under the Clean Air Act and all of the State Implementation Plan approved by the Environmental Protection Agency.

3. This certification is made on information and belief and is based upon a review of OXY USA Inc.'s major stationary sources in the State of California by those employees of OXY USA Inc. who have operational responsibility for compliance. In conducting such reviews, OXY USA Inc. and its employees have acted in good faith and have exercised best efforts to identify any exceedance of the emission limitations and standards referred to in paragraph 2 thereof.

4. This certification shall speak as of the time and date of its execution.

CERTIFICATION

By: Danny Bw Date: 10-22-13

Title: Operations Lead Time: 11:30 AM