



APR 13 2016

Michael Brandon
Westside Farm Management
P O Box 82034
Bakersfield, CA 93380

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-4800
Project Number: S-1151400

Dear Mr. Brandon:

Enclosed for your review and comment is the District's analysis of Westside Farm Management's application for an Authority to Construct for retrofitting engines with Altronic emission controls and increasing the annual operating hours limits for five engines, at the Northwest corner of Wildwood and Hanawalt Roads near Wasco.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. George Heinen of Permit Services at (559) 230-5811.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM:gh

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email

Sayed Sadredin
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Retrofit of Natural Gas Fired Agricultural IC Engines with the Interim Certified CIC Altronic Add-On Control System for District Rule 4702 Compliance

Facility Name: Westside Farm Management

Date: April 11, 2016

Mailing Address: PO Box 82034
Bakersfield, CA 93380

Engineer: G. Heinen

Lead Engineer: Joven Refuerzo

Contact Person: Michael Brandon

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E-Mail: bambamou812@gmail.com

Application #(s): S-4800-1-2, -2-2, -3-3, -4-2, and -5-2

Project #: S-1151400

Deemed Complete: 10/13/15

I. Proposal

The primary business of Westside Farm Management is agricultural crop production. Westside Farm Management has submitted an Authority to Construct (ATC) application for District Rule 4702 compliance. The proposed modifications are as follows:

- For S-4800-1-2: Increase the annual operating hours from 3,500 to 4,200 hours/year.
- For S-4800-2-2, -3-3, -4-2, and -5-2: Retrofit the existing engines with an interim-certification Altronic Inc. EPC-50 AFRC System and increase the annual operating hours from 3,500 to 4,200 hours/year.
- The proposed emissions control system will be a CIC Altronic System and consist of the following components:
 - Altronic Model EPC-50 air/fuel ratio controller,
 - EmeraChem EC-xxxx-xx-S-C 3-way catalyst system,
 - Zirconia exhaust gas oxygen sensor, and
 - Two Type K thermocouples.

See Appendix B for current permit requirements.

II. Applicable Rules

Rule 1070	Inspections (12/17/92)
Rule 2020	Exemptions (12/18/14)
Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 2530	Federally Enforceable Potential to Emit (12/18/08)
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 Internal Combustion Engines – Phase I (8/21/03)
Rule 4702 Internal Combustion Engines (11/14/13)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
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

This facility is located at the Northeast corner of Wildwood Road and Hanawalt Road in Wasco. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The primary function of this facility is agricultural growing of crops. Each stationary IC engine in this project powers an agricultural irrigation well pump or well booster pump.

No specific load information (e.g., water pressures, pump information, or engine loads) were available from the applicant; therefore, the load factor for the engines will be assumed to be 80%, pursuant to District policy FYI 275 *Use of Horsepower and Load Factor for IC Engines*.

V. Equipment Listing

Pre-Project Equipment Description:

- S-4800-1-1: 200 BHP CUMMINS MODEL G855 S/N 25229792 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH AN ALTRONIC EPC-110 AIR/FUEL RATIO CONTROL SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #1)
- S-4800-2-1: 200 BHP CUMMINS MODEL G855 S/N 25229793 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A CERTIFIED LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #2)
- S-4800-3-2: 250 BHP CUMMINS MODEL GTA12 S/N 25228178 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH LAMBDA 3-WAY CATALYST; POWERING AN AGRICULTURAL PUMP (WELL #2)
- S-4800-4-1: 304 BHP CUMMINS MODEL GTA 855B S/N 11840780 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #3)

S-4800-5-1: 304 BHP CUMMINS MODEL GTA 855B S/N 11840775 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #4)

Proposed Modification:

S-4800-1-2: MODIFICATION OF 200 BHP CUMMINS MODEL G855 S/N 25229792 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH AN ALTRONIC EPC-110 AIR/FUEL RATIO CONTROL SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #1): INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

S-4800-2-2: MODIFICATION OF 200 BHP CUMMINS MODEL G855 S/N 25229793 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A CERTIFIED LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #2): REPLACE LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

S-4800-3-3: MODIFICATION OF 250 BHP CUMMINS MODEL GTA12 S/N 25228178 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH LAMBDA 3-WAY CATALYST; POWERING AN AGRICULTURAL PUMP (WELL #2): REPLACE LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

S-4800-4-2: MODIFICATION OF 304 BHP CUMMINS MODEL GTA 855B S/N 11840780 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #3): REPLACE LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

S-4800-5-2: MODIFICATION OF 304 BHP CUMMINS MODEL GTA 855B S/N 11840775 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #4): REPLACE LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

Post Project Equipment Description:

S-4800-1-2: 200 BHP CUMMINS MODEL G855 S/N 25229792 RICH-BURN NATURAL GAS-FIRED IC ENGINE WITH AN ALTRONIC INC. EPC-110 AFRC SYSTEM POWERING AN AGRICULTURAL PUMP (BOOSTER #1)

S-4800-2-2: 200 BHP CUMMINS MODEL G855 S/N 25229793 RICH-BURN NATURAL GAS-FIRED IC ENGINE WITH AN INTERIM CERTIFIED CIC ALTRONIC INC. EPC-50 AFRC SYSTEM POWERING AN AGRICULTURAL PUMP (BOOSTER #2)

S-4800-3-3: 250 BHP CUMMINS MODEL GTA12 S/N 25228178 RICH-BURN NATURAL GAS-FIRED IC ENGINE WITH AN INTERIM CERTIFIED CIC ALTRONIC INC. EPC-50 AFRC SYSTEM POWERING AN AGRICULTURAL PUMP (WELL #2)

S-4800-4-2: 304 BHP CUMMINS MODEL GTA 855B S/N 11840780 RICH-BURN NATURAL GAS-FIRED IC ENGINE WITH AN INTERIM CERTIFIED CIC ALTRONIC INC. EPC-50 AFRC SYSTEM POWERING AN AGRICULTURAL PUMP (WELL #3)

S-4800-5-2: 304 BHP CUMMINS MODEL GTA 855B RICH-BURN NATURAL GAS-FIRED IC ENGINE WITH AN INTERIM CERTIFIED CIC ALTRONIC INC. EPC-50 AFRC SYSTEM POWERING AN AGRICULTURAL PUMP (WELL #4)

VI. Emission Control Technology Evaluation

All five criteria pollutants (NO_x , SO_x , PM_{10} , CO, and VOC) are emitted from natural gas-fired internal combustion engines. Various control technologies will be applied, as discussed below:

The four retrofitted engines will be equipped with interim certified CIC Altronic Inc. EPC-50 AFRC System for compliance with District Rule 4702 emission limits. The remaining engine has a similar, uncertified control system. These systems consist of the following main components:

- 3-Way Catalyst (Non-Selective Catalytic Reduction)
- Air/Fuel Ratio Controller

Non-Selective Catalytic Reduction (NSCR) 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 air/fuel 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

EPA F-factor (adjusted to 60°F):	8,578 dscf/MMBtu (40 CFR 60 App. B)
Heating value:	1,000 Btu/scf (District Policy APR 1720)
NG sulfur content:	2.85 lb/MMscf (District Policy APR 1720)
BHP to Btu/hr conversion:	2,542.5 Btu/hp-hr
Thermal efficiency of engine:	commonly $\approx 30\%$
Ag engine load factor:	80% (FYI 275; applies to Annual PE only)
Daily operating schedule:	24 hours/day (current PTOs)
Pre-project Annual Limits:	3,500 hours/year (current PTO's)
Post-project Annual Limits:	4,200 hours/year (applicant proposed to allow for highest hours with 2,000 ppmv CO.)

B. Emission Factors

Pre-Project Emission Factors (EF1)

The current permits include the pre-project emission factors shown in the following table:

Emission Factors (EF1)		
Pollutant	g/bhp-hr	Source
NO _x	2.102	Lambda Certification (80% reduction)
SO _x	0.011	Mass Balance Below*
PM ₁₀	0.075	Current PTOs
CO	14.3	Current PTO - S-4800-1-1
	17	Current PTOs - S-4800-2-1, 3-2, 4-1 and 5-1
VOC	0.11	Current PTO - S-4800-1-1
	1.2	Current PTOs -S-4800-2-1, 3-2, 4-1 and 5-1

$$* \frac{0.00285 \text{ lb}}{\text{MMBtu}} \times \frac{2542.5 \text{ Btu}}{\text{hp-hr}_{\text{in}}} \times \frac{1 \text{ hp}_{\text{in}}}{0.30 \text{ hp}_{\text{out}}} \times \frac{453.6 \text{ g}}{1 \text{ lb}} = 0.011 \text{ g-SOx/hp-hr}$$

Post Project Emission Factors (EF2)

The Altronic Inc. EPC-50 AFRC emissions control system has received interim certification to meet the following Rule 4702 emissions limits for natural gas-fired rich burn IC engines located at agricultural operations:

- NO_x: 90 ppmvd @ 15% O₂
- CO: 2,000 ppmvd @ 15% O₂*
- VOC : 250 ppmvd @ 15% O₂

*Normal District policy is to avoid an inflated Daily Emission Limit for CO and use an emission factor of 1,000 ppmvd @ 15% O₂ (equivalent to 8.49 g-CO/bhp-hr). The consultant, Michael Brandon, requested a limit of 2,000 ppmvd, which is the Altronic certified level. The consultant said the higher EF is more accurate estimate of the engine's potential emissions while still allowing a margin of compliance. He requested the annual hours be adjusted to allow the highest annual operating hours without exceeding federal operating permit requirements.

Emission Factors (EF2)		
Pollutant	g/bhp-hr	Source
NO _x *	1.3	NO _x BACT
SO _x	0.011	Mass Balance (shown above)
PM ₁₀	0.075	Current PTOs
CO	14.3	Current PTO - S-4800-1-1
	17	Applicant - S-4800-2-1, 3-2, 4-1 and 5-1
VOC*	0.11	Current PTO - S-4800-1-2
	0.21	VOC BACT - S-4800-2-2, 3-3, 4-2 and 5-2

* Using the originally proposed Altronic Interim Certification value of 1.2 g-VOC/bhp-hr triggers BACT for NO_x and VOC for each engine, due to the increased annual hours proposed. BACT was determined to be 90 ppmvd NO_x @ 15% O₂ (equivalent to 1.3 g-NO_x/bhp-hr) 50 ppmvd VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). The applicant agreed to revising the application to reflect this lower limit, the BACT EFs will be used for post-project emission calculations.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Daily and annual pre-project emissions (PE1) are calculated as shown in Appendix D and are summarized in the following tables:

Pre-Project Emissions (lb/day)					
Permit	NO _x	SO _x	PM ₁₀	CO	VOC
S-4800-1-1	22.2	0.1	0.8	151.3	1.2
S-4800-2-1	22.2	0.1	0.8	179.9	12.7
S-4800-3-2	27.8	0.1	1.0	224.9	15.9
S-4800-4-1	33.8	0.2	1.2	273.4	19.3
S-4800-5-1	33.8	0.2	1.2	273.4	19.3
Totals	139.8	0.7	5.0	1,102.9	68.4

Pre-Project Emissions (lb/year)					
Permit	NO _x	SO _x	PM ₁₀	CO	VOC
S-4800-1-1	3,244	17	116	22,068	170
S-4800-2-1	3,244	17	116	26,235	1,852
S-4800-3-2	3,823	20	136	30,919	2,183
S-4800-4-1	4,649	24	166	37,598	2,654
S-4800-5-1	4,649	24	166	37,598	2,654
Totals	19,609	102	700	154,418	9,513

2. Post Project Potential to Emit (PE2)

Daily and annual post-project emissions (PE2) are calculated as shown in Appendix D and are summarized in the following tables:

Post-Project Emissions (lb/day)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-2	13.8	0.1	0.8	151.3	1.2
S-4800-2-2	13.8	0.1	0.8	179.9	2.2
S-4800-3-3	17.2	0.1	1.0	224.9	2.8
S-4800-4-2	20.9	0.2	1.2	273.4	3.4
S-4800-5-2	20.9	0.2	1.2	273.4	3.4
Totals	86.6	0.7	5.0	1,102.9	13.0

Post-Project Emissions (lb/year)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-2	1,926	16	139	26,481	204
S-4800-2-2	1,926	16	139	31,481	389
S-4800-3-3	2,407	20	174	39,352	486
S-4800-4-2	2,927	25	211	47,852	591
S-4800-5-2	2,927	25	211	47,852	591
Totals	12,113	102	874	193,018	2,261

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. For this facility, the SSPE1 equals the PE1 calculated above.

SSPE1 (lb/year)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-1	3,244	17	116	22,068	170
S-4800-2-1	3,244	17	116	26,235	1,852
S-4800-3-2	3,823	20	136	30,919	2,183
S-4800-4-1	4,649	24	166	37,598	2,654
S-4800-5-1	4,649	24	166	37,598	2,654
SSPE1	19,609	102	700	154,418	9,513

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. For this facility, the SSPE2 equals the PE2 calculated above.

SSPE2 (lb/year)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-2	1,926	16	139	26,481	204
S-4800-2-2	1,926	16	139	31,481	389
S-4800-3-3	2,407	20	174	39,352	486
S-4800-4-2	2,927	25	211	47,852	591
S-4800-5-2	2,927	25	211	47,852	591
SSPE2	12,113	102	874	193,018	2,261

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
SSPE1	19,609	102	700	700	154,418	9,513
SSPE2	12,113	102	874	874	193,018	2,261
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM_{2.5} assumed to be equal to PM₁₀

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source 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)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	9.8	4.8	0.1	77	0.4	0.4
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

As shown above, the facility is not an existing PSD major source for any pollutant.

6. Baseline Emissions (BE)

The BE calculation (in lb/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.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore BE=PE1.

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

BE (lb/year)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-1	3,244	17	116	22,068	170
S-4800-2-1	3,244	17	116	26,235	1,852
S-4800-3-2	3,823	20	136	30,919	2,183
S-4800-4-1	4,649	24	166	37,598	2,654
S-4800-5-1	4,649	24	166	37,598	2,654
Totals	19,609	102	700	154,418	9,513

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 not a major source for any of the pollutants addressed in 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.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

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

As shown in the table below, the project potential to emit, by itself, will not exceed any PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units	6.1	1.1	0.1	97	0.3	0.3
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 1070 Inspections

This rule applies to any source operation, which emits or may emit air contaminants.

This rule allows the District to perform inspections for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations. The rule also allows the District to require record keeping, to make

inspections and to conduct tests of air pollution sources. Therefore, the following conditions will be included on the permit.

- {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
- {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]

Rule 2020 Exemptions

This rule specifies emissions units that are not required to obtain an Authority to Construct (ATC) or Permit to Operate (PTO). This rule is applicable to any source that emits or may emit air contaminants.

Per Section 6.20, no permit is required for agricultural sources at a stationary source that, in aggregate, produce actual emissions less than one-half of the major source thresholds. For the purposes of determining permitting applicability, fugitive emissions, except fugitive dust emissions, are included in determining aggregate emissions. As shown below, facility emissions exceed $\frac{1}{2}$ the major source threshold for NO_x and CO; therefore, this facility is not exempt from permitting requirements.

Post-Project Emissions (lb/year)					
Permit	NO _x	SO _x	PM ₁₀	CO	VOC
S-4800-1-2	1,926	16	139	26,481	204
S-4800-2-2	1,926	16	139	31,481	389
S-4800-3-3	2,407	20	174	39,352	486
S-4800-4-2	2,927	25	211	47,852	591
S-4800-5-2	2,927	25	211	47,852	591
SSPE2	12,113	102	874	193,018	2,261
$\frac{1}{2}$ Major Source Threshold	10,000	70,000	70,000	100,000	10,000
Major Source Threshold	20,000	140,000	140,000	200,000	20,000

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. If the engine retrofits were performed solely to comply with Rule 4702 requirements, the project may be exempt from BACT. Because the applicant has also requested an increase in the annual operating hours of each engine, that exemption is not applicable. 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 discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT is not triggered this purposes.

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 for this purpose.

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

The AIPE for the five engines involved in this project was calculated in Appendix E. As demonstrated in that section, the AIPE for NO_x, VOC, and CO are greater than 2.0 lb/day. However, BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above. Therefore, BACT is triggered for NO_x and VOC only since the PE is greater than 2 lb/day.

Using the originally proposed Altronic Interim Certification value of 1.2 g-VOC/bhp-hr, triggers BACT for VOC for these engines. The BACT Determination in Appendix F found BACT to be 50 ppmvd VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). The applicant agreed to revising the application to reflect these lower limits, the BACT EFs will be used for post-project emission calculations.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO_x emissions. Therefore BACT is not triggered for any pollutant for this purpose.

2. BACT Guideline

Draft BACT Guideline, applies to the AO Stationary Spark-Ignited IC Engines serving Irrigation Pumps (See Appendix F).

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 F), BACT has been satisfied with the following:

NO_x: 90 ppmvd NO_x @ 15% O₂ (equivalent to 1.3 g/bhp-hr)
VOC: 50 ppmvd VOC @ 15% O₂ (equivalent to 0.21 g/bhp-hr)

B. Offsets

1. Offset Applicability

Pursuant to Section 4.6.9 of this rule, offsets are not required for agricultural sources as long as the facility is not a major source for any criteria pollutant for which the offset exemption is sought. This facility is not a major source for any criteria pollutant; therefore, this facility is not subject to the offset requirements of this rule for this project and no further discussion is required.

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.
- e. Any project which results in a Title V significant permit modification

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 does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not 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. There are no new emissions units associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

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	19,609	12,113	20,000 lb/year	No
SO _x	102	102	54,750 lb/year	No
PM ₁₀	700	874	29,200 lb/year	No
CO	154,418	193,018	200,000 lb/year	No
VOC	9,513	2,261	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	12,113	19,609	-7,496	20,000 lb/year	No
SO _x	102	102	0	20,000 lb/year	No
PM ₁₀	874	700	174	20,000 lb/year	No
CO	193,018	154,418	38,600	20,000 lb/year	Yes
VOC	2,261	9,513	-7,252	20,000 lb/year	No

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

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for CO SSIPE emissions in excess of 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 IC engines, DELs are stated in the form of emission factors (g/hp-hr or lb/MMBtu), the maximum engine horsepower rating, and the maximum operational time of 24 hours per day.

- {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]
- {4872} NO_x emissions from this IC engine shall not exceed 90 ppmvd-NO_x @ 15% O₂ (equivalent to 1.3 g-NO_x/bhp-hr). [District Rules 2201 and 4702]
- PM₁₀ emissions from this IC engine shall not exceed 0.075 g-PM₁₀/bhp-hr. [District Rule 2201]
- Operation of the engine shall not exceed 4,200 hours per calendar year. [District Rules 2201]

For S-4800-1-2:

- Emissions from this IC engine shall not exceed any of the following limits: 1,685 ppmvd-CO @ 15% O₂ (equivalent to 14.3 g-CO/bhp-hr) or 23 ppmvd VOC @ 15% O₂ (equivalent to 0.11 g-VOC/hp-hr). [District Rules 2201 and 4702]

For S-4800-2-2, 3-3, 4-2 and 5-2:

- Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd-CO @ 15% O₂ (equivalent to 17 g-CO/bhp-hr) or 50 ppmvd-VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). [District Rules 2201 and 4702]

E. Compliance Assurance

1. Source Testing

No source testing is required to demonstrate compliance with Rule 2201. The permittee will be required to comply with the source testing requirements of Rule 4702 as applicable for each engine in this project, see the Rule 4702 discussion below.

2. Monitoring

There will be no Rule 2201 monitoring requirements since this will be satisfied via District Rule 4702, see the Rule 4702 discussion below.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. For additional recordkeeping requirements, see the Rule 4702 discussion below.

The permittee will be required to record the number of hours the engines are operated on a yearly basis. This requirement will be added to a condition which includes Rule 4702 recordkeeping requirements that will be discussed later. The following conditions will be included on the permits.

- {modified 4894} The operator shall maintain engine operating log records of: 1) the monthly engine hour meter reading; 2) the date and the engine hour meter reading at each oxygen sensor change, and thermocouples change; 3) the monthly pre- and post-catalyst exhaust temperatures monitoring data including the initial temperature differential and any subsequently determined temperature differentials; 4) the date and engine hour meter reading of each catalyst module inspection, washing, and replacement; and 5) fuel purchase records. [District Rules 2201 and 4702]
- {modified 3795} All records shall be maintained and retained for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII. C. 9, above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 2530 Federally Enforceable Potential to Emit

The purpose of this rule is to restrict the emissions of a stationary source so that the source may elect to be exempt from the requirements of Rule 2520. The facility has not elected to limit their emissions; therefore, the requirements of this rule are not applicable.

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.

The requirements of 40 CFR Part 60, Subpart JJJJ (Standards of Performance for Stationary Spark Ignited Internal Combustion Engines) covers stationary engines at agricultural and non-agricultural facilities.

The District has not been delegated the authority to implement NSPS regulations for Area Source requirements for non-Major Sources; therefore, no requirements shall be included on the permit(s).

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.

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 at agricultural and non-agricultural facilities.

The District has not been delegated the authority to implement NESHAP regulations for Area Source requirements for non-Major Sources; therefore, no requirements shall be included on the permits.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

Therefore, the following condition will be placed on the ATCs.

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in anyone hour which is dark or darker than Ringelmann 1 or equivalent to 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Therefore, the following condition will be placed on the ATCs.

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

RMR Summary			
Categories	NG ICE (Unit 1-2, 2-2, 3-3, 4-2, 5-2)	Project Totals	Facility Totals
Prioritization Score	0.70	0.70	0.70
Acute Hazard Index	N/A ¹	N/A ¹	N/A ¹
Chronic Hazard Index	N/A ¹	N/A ¹	N/A ¹
Maximum Individual Cancer Risk	N/A ¹	N/A ¹	N/A ¹
T-BACT Required?	No		
Special Permit Requirements?	Yes		

¹Acute and Chronic Hazard Index and Maximum Individual Cancer Risk were not calculated since the total facility prioritization score was less than 1.0.

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 1-2, 2-2, 3-3, 4-2, 5-2

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.
2. This engine shall be operated only for 4,200 hours/year.

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.

$$0.075 \frac{g}{hp \cdot hr} \times \frac{1 hp \cdot hr}{2,542.5 Btu} \times \frac{10^6 Btu}{8,578 dscf} \times \frac{0.30 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.016 \frac{grain}{dscf}$$

Since no unit will have a discharge greater than 0.1 grain/dscf, compliance with this rule is expected.

The following condition will be listed on the ATCs to ensure compliance:

- {14} Particulate matter emissions shall not exceed 0.1 grain/dscf in concentration.
[District Rule 4201]

Rule 4701 Stationary Internal Combustion Engines – Phase 1

Pursuant to Section 2.0, this rule applies to any internal combustion engine with a rated horsepower (hp) greater than 50 hp; therefore, the IC engines located at this facility are subject to this rule. However, Section 4.1 of the rule specifically exempts IC engines in agricultural operations used for the growing of crops or raising of fowl or animals. Since the engines are used for the growing of crops or raising of fowl or animals, they are exempt from the requirements of this rule. Therefore, the following condition will be listed on the ATCs to ensure compliance.

- {4877} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution.
[District Rules 4701 and 4702]

Rule 4702 – Internal Combustion Engines – Phase 2

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

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

Section 5.2.3 requires the owner of a spark-ignited internal combustion engine shall not operate it in such a manner that results in emissions exceeding the limits in Table 1 below for the appropriate engine type according to the compliance schedules listed in Section 7.0 or according to the compliance dates specified in Table 1 below. A spark-ignited engine shall comply with the applicable emission limits pursuant to Section 5.1 or Section 8.0.

Table 1 Emission Limits/Standards for a Spark-Ignited Internal Combustion Engine and Emission Limits/Standards and Compliance Schedule for a Spark-Ignited Engine Used Exclusively in Agricultural Operations (corrected to 15% oxygen on a dry basis)

District Rule 4702 Emission Limits			
Engine Type	NO _x	CO	VOC
3. Rich-Burn Engine Used Exclusively in Agricultural Operations			
a. Comply by 1/1/2009, or if owner has an agreement to electrify, comply by 1/1/2010	90 ppmv or 80% reduction	2000 ppmv	250 ppmv

The applicant is not proposing any changes to the control equipment on permit S-4800-1-1 so those permit conditions will be carried over to ATC S-4800-1-2 to ensure continued compliance with Rule 4702.

The facility has proposed to equip four of their existing natural gas engines in this project with interim certified Altronic Inc. EPC-50 AFRC emission control systems that meets the applicable NO_x, CO and VOC limits for rich-burn engines used in exclusively agricultural operations. To ensure compliance with Section 5.1 of District Rule 4702, the following conditions will be placed on permits S-4800-2-2, 3-3, 4-2 and 5-2:

- The Altronic Inc. EPC-50 AFRC System shall consist of an Altronic EPC50 air/fuel ratio controller, an EmeraChem EC- 1200-04-S-CS three-way catalyst system, two Type K thermocouples, and Zirconia exhaust gas oxygen sensor (the "xxxx-xx" will be replaced by the specific identifier of the catalyst required for the specific engine). [District Rule 4702]
- {4879} The Altronic Inc. EPC-50 AFRC System shall be installed, maintained and operated according to the component manufacturer's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
- {4880} A person performing installation of or maintenance specific to the Altronic Inc. EPC-50 AFRC System shall be a certified employee of Coastal Ignition & Controls or Water Associates, or work under the direct and personal supervision of an individual physically present at the work site who is certified. [District Rule 4702]
- {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
- {4893} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer, Coastal Ignition & Controls (CIC), or Water Associates. [District Rule 4702]
- {4037} During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control

system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]

- {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]
- {4881} The oxygen sensor shall be replaced every 2,000 hours of operation or when the EPC-50 controller indicates that an alarm code has been triggered for the sensor, whichever occurs earliest. Whenever the oxygen sensor is replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by equipment manufacturer. [District Rule 4702]
- {4882} The catalyst module housing and elements shall be visually inspected at least once every calendar quarter. The catalyst shall be washed at least once every 8,640 hours of operation and replaced at least every 25,920 hours of operation. [District Rule 4702]
- {4883} The thermocouples shall be replaced according to the manufacturer recommendations but at least every 36,000 hours of engine operation or every 48 calendar months, whichever comes first. Whenever the thermocouples are replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by Coastal Ignition & Controls. [District Rule 4702]
- {4884} The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at initial system calibration. Both temperatures shall be monitored at least once in each calendar month that the engine operates. If the temperature increase over the catalyst becomes less than 50% of the initially determined value, the Altronic Inc. EPC-50 AFRC System shall be calibrated or repaired, as necessary. [District Rule 4702]
- {4885} After the Altronic Inc. EPC-50 AFRC System is calibrated or repaired in response to a catalyst temperature drop, a District-approved portable analyzer shall be used to determine that the NOx and CO emissions and O2 levels are at or below permitted levels. The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at that time and the temperature increase over the catalyst shall be re-established. Monthly monitoring of the pre- and post-catalyst exhaust temperature shall resume as required in the previous condition, based on the new temperature increase value. [District Rule 4702]
- {4885} After the Altronic Inc. EPC-50 AFRC System is calibrated or repaired in response to a catalyst temperature drop, a District-approved portable analyzer shall be used to determine that the NOx and CO emissions and O2 levels are at or below permitted levels. The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at that time and the temperature increase over the catalyst shall be re-established. Monthly monitoring of the pre- and post-catalyst exhaust temperature shall resume as required in the previous condition, based on the new temperature increase value. [District Rule 4702]
- {4887} Until this system receives Final Certification from the District, the NOx, CO, and O2 monitoring provisions specified above condition shall be conducted at least once every 12 months. Monitoring conducted as part of routine maintenance and repair actions may be used satisfy this requirement, so long as no more than twelve months elapses between monitoring actions. Should the 12 month deadline fall during a period

of non-operation, the engine shall be monitoring within 30-calendar days of recommencing operations. [District Rule 4702]

- {3786} If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than eight (8) hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after eight (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]
- {4888} During the start-up inspection, the District shall be provided with written documentation that the emission control system is suitable for use on this engine and verify the engine's horsepower rating, exhaust flow rate, exhaust temperature, oil consumption, general mechanical condition and the available fuel supply pressure will satisfy the criteria for proper operation of the Altronic Inc. EPC-50 AFRC System, along with portable analyzer calibration records and results. [District Rule 4702]
- {4872} NO_x emissions from this IC engine shall not exceed 90 ppmvd-NO_x @ 15% O₂ (equivalent to 1.3 g-NO_x/bhp-hr). [District Rules 2201 and 4702]
- PM₁₀ emissions from this IC engine shall not exceed 0.075 g-PM₁₀/bhp-hr. [District Rules 2201 and 4702]
- Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O₂ (equivalent to 17 g-CO/bhp-hr) or 50 ppmvd-VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). [District Rules 2201 and 4702]
- The operator shall maintain engine operating log records of: 1) the monthly engine hour meter reading; 2) the date and the engine hour meter reading at each oxygen sensor change, and thermocouples change; 3) the monthly pre- and post-catalyst exhaust temperatures monitoring data including the initial temperature differential and any subsequently determined temperature differentials; 4) the date and engine hour meter reading of each catalyst module inspection, washing, and replacement; and 5) fuel purchase records. [District Rule 4702]
- 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]
- {4889} Should Final Certification of the Altronic Inc. EPC-50 AFRC System not be achieved by June 30th, 2018, this engine shall be considered to be uncertified under Rule 4702 and subject to initial and periodic source testing every 60 months, portable analyzer monitoring every 24 months, and a District-approved monthly Inspection & Monitoring plan. [District Rule 4702]
- {4890} The District may revise and/or add requirements in the future as necessary to ensure the Altronic Inc. EPC-50 AFRC System operates according to its Interim Certification requirements. [District Rule 4702]

Section 5.3 provides requirements for continuous emissions monitoring systems (CEMS). The engines in this project are not equipped with a CEMS; therefore, this section does not apply.

Sections 5.4 and 5.5 provide requirements for engines that use percent emission reduction to comply with the NO_x emission limits of Section 5.2. The engines in this project do not use percent emission reduction to comply with the emission limits of Section 5.2; therefore, these sections do not apply.

Section 5.6 provides requirements for operators that will pay an annual fee in lieu of complying with a NO_x emission limit. As previously discussed, the engines in this project will comply with the NO_x emission limit in Section 5.2.3 of this rule; therefore, the option to pay an annual fee is not applicable.

Section 5.7 provides sulfur oxide (SO_x) emission control requirements for non-AO spark-ignited engines and non-AO compression-ignited engines. The engines in this project are used exclusively in agricultural operations (AO); therefore, the SO_x emission control requirements of this section do not apply.

Section 5.8 provides monitoring requirements for non-AO spark-ignited engines and engines in an AECP (Section 8.0). The engines in this project are used exclusively in agricultural operations (AO) and are not in an Alternate Emissions Control Plan (AECP); therefore, the monitoring requirements of this section do not apply.

Section 5.9 states that the owner of an AO spark-ignited or compression-ignited engine subject to the requirements of Section 5.2 shall:

- Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.
- Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.
- Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Conditions that ensure compliance with the requirements of Section 5.9 were previously mentioned in Section 5.2.3. Therefore, compliance is expected and no further discussion is necessary.

Section 5.9.5 requires the owner of an agricultural spark-ignited engine that has been retrofitted with an exhaust control system that has not been certified in accordance with Section 9.0 to conduct periodic monitoring of the engine's NO_x emissions using a District-approved portable emissions analyzer.

- Use a portable NO_x analyzer to take NO_x emission readings at least once every 24 months that the engine is operated.
- All emission readings shall be taken with the engine operating either at conditions representative of normal operations or conditions specified in the Permit-to-Operate or Permit-Exempt Equipment Registration.

- The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO.
- All NOx emissions readings shall be reported to the APCO in a manner approved by the APCO.
- NOx emission readings taken pursuant to this section 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.

The applicant has proposed to install an interim certified control system. Conditions that ensure compliance with the requirements of Section 5.9.5 were previously mentioned in Section 5.2.3. Therefore, compliance is expected and no further discussion is necessary.

Section 6.1 requires that the owner of an engine subject to the requirements of this rule shall submit to the APCO an emission control plan of all actions to be taken to satisfy the emission requirements of Section 5.1 and the compliance schedules of Section 7.0.

Section 6.1.3 requires that the emission control plan shall identify the type of emission control device or technique to be applied to each engine and a construction/removal schedule, or shall provide support documentation sufficient to demonstrate that the engine is in compliance with the emission requirements of this rule.

The applicant has submitted all the required information for Section 6.1 and 6.1.3 in the application for the IC engines involved with this project.

Section 6.2 requires that the owner of an engine subject to the requirements of Section 5.2 shall maintain an engine operating log to demonstrate compliance with this rule. This information shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request. The engine-operating log shall include, on a monthly basis, the following information:

- Total hours of operation,
- Type of fuel used,
- Maintenance or modifications performed,
- Monitoring data,
- Compliance source test results, and
- Any other information necessary to demonstrate compliance with this rule.

Section 6.2.2 requires that the data collected pursuant to the requirements of Section 5.6 shall be maintained for at least five years, shall be readily available, and made available to the APCO upon request.

Conditions that ensure compliance with the requirements of Section 6.2 and 6.2.2 were previously mentioned in Section 5.2.3. Therefore, compliance is expected and no further discussion is necessary.

Section 6.3 provides source testing requirements for an owner of an engine subject to Section 5.2 or Section 8.0. Pursuant to section 6.3.1, the following engines shall comply with the requirements of Sections 6.3.2 through 6.3.4.

- 6.3.1.1 Engines that have been retrofitted with an exhaust control device, except those certified per Section 9.0;
- 6.3.1.2 Engines subject to Section 8.0;
- 6.3.1.3 An AO spark-ignited engine that is subject to the requirements of Section 8.0;
- 6.3.1.4 An AO spark-ignited engine that has been retrofitted with a catalytic emission control and is not subject to the requirements of Section 8.0.

The applicant has proposed to install interim certified exhaust control devices on each engine and will be required to perform a portable analyzer test upon startup of the engines; no source testing is required. Therefore, the requirements of Section 6.3 are not applicable.

Section 6.4 outlines the test procedures for determining compliance with the requirements of Section 5.2. The engine in this project is subject to the requirements of Section 5.2; however, the engines are not subject to source testing, as previously discussed, since the exhaust control system received interim certification. Therefore the requirements of this section are not applicable. Further, source tests of two of the engines indicated that the actual emissions are much lower than required that the BACT guidelines so additional testing are not required to demonstrate compliance.

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 Inspection and Monitoring (I&M) plan that specifies all actions to be taken to satisfy the following requirements and the requirements of Section 5.8. Pursuant to section 6.5.1, the following engines shall comply with the requirements of Sections 6.5.2 through 6.5.9.

- 6.5.1.1 Engines that have been retrofitted with an exhaust control device, except those certified per Section 9.0;
- 6.5.1.2 Engines subject to Section 8.0;
- 6.5.1.3 An AO spark-ignited engine that is subject to the requirements of Section 8.0;
- 6.5.1.4 An AO spark-ignited engine that has been retrofitted with a catalytic emission control and is not subject to the requirements of Section 8.0.

The applicant has proposed to install interim certified exhaust control devices which are not subject to Section 8.0. Therefore, the requirements of Section 6.5 are not applicable.

Section 7.3 outlines the compliance schedule for AO compression-ignited engines. The engines in this project are spark-ignited engines; therefore, the requirements of this section are not applicable.

Section 8.0 outlines the requirements for an Alternative Emission Control Plan (AECp). As previously discussed, the engines in this project are not subject to submitting an AECp; therefore, the requirements of this section are not applicable.

Rule 4801 Sulfur Compounds

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 (SO₂), on a dry basis averaged over 15 consecutive minutes.

$$\text{Volume SO}_2 = nRT/P$$

$$n = \text{moles SO}_2$$

$$T (\text{standard temperature}) = 60^\circ \text{F or } 520^\circ \text{R}$$

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

$$2.85 \quad \frac{\text{lb} \cdot \text{SO}_2}{\text{MMscf}_{\text{gas}}} \times \frac{1 \text{ scf}_{\text{gas}}}{1,000 \text{ Btu}} \times \frac{1 \text{ MMBtu}}{8,578 \text{ scf}_{\text{exhaust}}} \times \frac{1 \text{ lb} \cdot \text{mol}}{64 \text{ lb} \cdot \text{SO}_2} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ \text{R}} \times \frac{520^\circ \text{R}}{14.7 \text{ psi}} \times 1,000,000 \text{ ppm} = 1.97 \text{ ppmv}$$

Since 1.97 ppmv is $\leq$ 2000 ppmv, these engines are expected to comply with Rule 4801. The following condition will be included on the permit.

- {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]

California Health & Safety Code 42301.6 (School Notice)

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

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.

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the

District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue the ATCs S-4800-1-2, -2-2, -3-3, -4-2, and -5-2, 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
S-4800-1-2	3020-10-C	200 bhp IC engine	\$252
S-4800-2-2	3020-10-C	200 bhp IC engine	\$252
S-4800-3-3	3020-10-C	250 bhp IC engine	\$252
S-4800-4-2	3020-10-C	304 bhp IC engine	\$252
S-4800-5-2	3020-10-C	304 bhp IC engine	\$252

Appendices

- A: Draft ATCs
- B: Current PTOs
- C: Quarterly Net Emissions Change (QNES)
- D: Emission Calculations
- E: AIPE Calculations
- F: BACT Guideline and Analysis
- G: Health Risk Assessment Summary

APPENDIX A
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-4800-1-2

LEGAL OWNER OR OPERATOR: WESTSIDE FARM MANAGEMENT INC
MAILING ADDRESS: PO BOX 82034
BAKERSFIELD, CA 93380

LOCATION: WILDWOOD/HANAWALT NE CORNER
WASCO, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 200 BHP CUMMINS MODEL G855 S/N 25229792 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH AN ALTRONIC EPC-110 AIR/FUEL RATIO CONTROL SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #1): INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

CONDITIONS

1. {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {4877} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [District Rules 4701 and 4702]
7. Operation of the engine shall not exceed 4,200 hours per calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services

S-4800-1-2 Mar 3 2016 8:48AM - HEINENG : Joint Inspection NOT Required

8. {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]
9. {4872} NOx emissions from this IC engine shall not exceed 90 ppmvd-NOx @ 15% O2 (equivalent to 1.3 g-NOx/bhp-hr). [District Rules 2201 and 4702]
10. PM10 emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr. [District Rule 2201]
11. Emissions from this IC engine shall not exceed any of the following limits: 1,685 ppmvd CO @ 15% O2 (equivalent to 14.3 g-CO/bhp-hr) or 23 ppmvd VOC @ 15% O2 (equivalent to 0.11 g-VOC/hp-hr). [District Rules 2201 and 4702]
12. The Altronic EPC-110 control system shall be properly operated and maintained according to the manufacturer's recommendations, and shall be in place and operating at all times during engine operation. [District Rule 4702]
13. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
14. {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]
15. {4037} During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
16. {3855} The permittee shall monitor and record the stack concentration of NOx and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
17. If the NOx concentration corrected to 15% O2, as measured by the portable analyzer, exceeds the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
18. {4050} The owner/operator shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, and any other information necessary to demonstrate compliance. [District Rule 4702]
19. {4122} Source testing to measure NOx, CO, and VOC emissions shall be conducted at least once every 60 months. If fueled exclusively with PUC quality natural gas, the engine is not subject to the reoccurring source test requirements for VOC emissions. [District Rule 4702]
20. {3791} Emissions source testing shall be conducted with the engine operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. [District Rule 4702]
21. 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. Percent reduction of NOx emissions shall also be reported if complying with NOx emissions through percent reduction. [District Rule 4702]

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CONDITIONS CONTINUE ON NEXT PAGE

22. {3793} The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702]
23. The source test protocol shall describe which critical parameters will be measured and how the appropriate range for these parameters shall be established. The range for these parameters shall be incorporated into the I&M plan. [District Rule 4702]
24. {4127} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]
25. {4130} All 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]
26. {3788} The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
27. {3212} The permittee shall update the I&M plan for this engine prior to any planned change in operation. The permittee must notify the District no later than seven days after changing the I&M plan and must submit an updated I&M plan to the APCO for approval no later than 14 days after the change. The date and time of the change to the I&M plan shall be recorded in the engine's operating log. For modifications, the revised I&M plan shall be submitted to and approved by the APCO prior to issuance of the Permit to Operate. The permittee may request a change to the I&M plan at any time. [District Rule 4702]
28. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-4800-2-2

LEGAL OWNER OR OPERATOR: WESTSIDE FARM MANAGEMENT INC
MAILING ADDRESS: PO BOX 82034
BAKERSFIELD, CA 93380

LOCATION: WILDWOOD/HANAWALT NE CORNER
WASCO, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 200 BHP CUMMINS MODEL G855 S/N 25229793 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A CERTIFIED LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #2); REPLACE LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

CONDITIONS

1. {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {4877} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [District Rules 4701 and 4702]
7. Operation of the engine shall not exceed 4,200 hours per calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
S-4800-2-2 Mar 3 2016 8:48AM - HEINENG : Joint Inspection NOT Required

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

8. {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]
9. The Altronic Inc. EPC-50 AFRC System shall consist of an Altronic EPC50 air/fuel ratio controller, an EmeraChem EC-1200-04-S-CS three-way catalyst system, two Type K thermocouples, and Zirconia exhaust gas oxygen sensor. [District Rule 4702]
10. {4879} The Altronic Inc. EPC-50 AFRC System shall be installed, maintained and operated according to the component manufacturer's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
11. {4880} A person performing installation of or maintenance specific to the Altronic Inc. EPC-50 AFRC System shall be a certified employee of Coastal Ignition & Controls or Water Associates, or work under the direct and personal supervision of an individual physically present at the work site who is certified. [District Rule 4702]
12. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
13. {4893} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer, Coastal Ignition & Controls (CIC), or Water Associates. [District Rule 4702]
14. {4037} During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
15. {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]
16. {4881} The oxygen sensor shall be replaced every 2,000 hours of operation or when the EPC-50 controller indicates that an alarm code has been triggered for the sensor, whichever occurs earliest. Whenever the oxygen sensor is replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by equipment manufacturer. [District Rule 4702]
17. {4882} The catalyst module housing and elements shall be visually inspected at least once every calendar quarter. The catalyst shall be washed at least once every 8,640 hours of operation and replaced at least every 25,920 hours of operation. [District Rule 4702]
18. {4883} The thermocouples shall be replaced according to the manufacturer recommendations but at least every 36,000 hours of engine operation or every 48 calendar months, whichever comes first. Whenever the thermocouples are replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by Coastal Ignition & Controls. [District Rule 4702]
19. {4884} The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at initial system calibration. Both temperatures shall be monitored at least once in each calendar month that the engine operates. If the temperature increase over the catalyst becomes less than 50% of the initially determined value, the Altronic Inc. EPC-50 AFRC System shall be calibrated or repaired, as necessary. [District Rule 4702]
20. {4885} After the Altronic Inc. EPC-50 AFRC System is calibrated or repaired in response to a catalyst temperature drop, a District-approved portable analyzer shall be used to determine that the NOx and CO emissions and O2 levels are at or below permitted levels. The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at that time and the temperature increase over the catalyst shall be re-established. Monthly monitoring of the pre- and post-catalyst exhaust temperature shall resume as required in the previous condition, based on the new temperature increase value. [District Rule 4702]

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CONDITIONS CONTINUE ON NEXT PAGE

21. {4886} Within 30 days after installation of the Altronic Inc. EPC-50 AFRC System, a District-approved portable analyzer shall be used to determine NOx and CO emissions, and O2 levels. All emission readings shall be taken with the unit operating at conditions representative of normal operations. The analyzer shall be calibrated, maintained, 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]
22. {4887} Until this system receives Final Certification from the District, the NOx, CO, and O2 monitoring provisions specified above condition shall be conducted at least once every 12 months. Monitoring conducted as part of routine maintenance and repair actions may be used satisfy this requirement, so long as no more than twelve months elapses between monitoring actions. Should the 12 month deadline fall during a period of non-operation, the engine shall be monitoring within 30-calendar days of recommencing operations. [District Rule 4702]
23. {3786} If either the NOx or CO concentrations corrected to 15% O2, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than eight (8) hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after eight (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]
24. {4888} During the start-up inspection, the District shall be provided with written documentation that the emission control system is suitable for use on this engine and verify the engine's horsepower rating, exhaust flow rate, exhaust temperature, oil consumption, general mechanical condition and the available fuel supply pressure will satisfy the criteria for proper operation of the Altronic Inc. EPC-50 AFRC System, along with portable analyzer calibration records and results. [District Rule 4702]
25. {4872} NOx emissions from this IC engine shall not exceed 90 ppmvd-NOx @ 15% O2 (equivalent to 1.3 g-NOx/bhp-hr). [District Rules 2201 and 4702]
26. PM10 emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr. [District Rule 2201]
27. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O2 (equivalent to 17 g-CO/bhp-hr) or 50 ppmvd-VOC @ 15% O2 (equivalent to 0.21 g-VOC/bhp-hr). [District Rules 2201 and 4702]
28. The operator shall maintain engine operating log records of: 1) the monthly engine hour meter reading; 2) the date and the engine hour meter reading at each oxygen sensor change, and thermocouples change; 3) the monthly pre- and post-catalyst exhaust temperatures monitoring data including the initial temperature differential and any subsequently determined temperature differentials; 4) the date and engine hour meter reading of each catalyst module inspection, washing, and replacement; and 5) fuel purchase records. [District Rules 2201 and 4702]
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702]
30. Should Final Certification of the Altronic Inc. EPC-50 AFRC System not be achieved by June 30th, 2018, this engine shall be considered to be uncertified under Rule 4702 and subject to initial and periodic source testing every 60 months, portable analyzer monitoring every 24 months, and a District-approved monthly Inspection & Monitoring plan. [District Rule 4702]
31. {4890} The District may revise and/or add requirements in the future as necessary to ensure the Altronic Inc. EPC-50 AFRC System operates according to its Interim Certification requirements. [District Rule 4702]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-4800-3-3

LEGAL OWNER OR OPERATOR: WESTSIDE FARM MANAGEMENT INC
MAILING ADDRESS: PO BOX 82034
BAKERSFIELD, CA 93380

LOCATION: WILDWOOD/HANAWALT NE CORNER
WASCO, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 250 BHP CUMMINS MODEL GTA12 S/N 25228178 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH LAMBDA 3-WAY CATALYST; POWERING AN AGRICULTURAL PUMP (WELL #2): REPLACE LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

CONDITIONS

1. {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {4877} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [District Rules 4701 and 4702]
7. Operation of the engine shall not exceed 4,200 hours per calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
S-4800-3-3 Mar 3 2016 8:49AM - HEINENG : Joint Inspection NOT Required

8. {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]
9. The Altronic Inc. EPC-50 AFRC System shall consist of an Altronic EPC50 air/fuel ratio controller, an EmeraChem EC-1200-04-S-CS three-way catalyst system, two Type K thermocouples, and Zirconia exhaust gas oxygen sensor. [District Rule 4702]
10. {4879} The Altronic Inc. EPC-50 AFRC System shall be installed, maintained and operated according to the component manufacturer's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
11. {4880} A person performing installation of or maintenance specific to the Altronic Inc. EPC-50 AFRC System shall be a certified employee of Coastal Ignition & Controls or Water Associates, or work under the direct and personal supervision of an individual physically present at the work site who is certified. [District Rule 4702]
12. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
13. {4893} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer, Coastal Ignition & Controls (CIC), or Water Associates. [District Rule 4702]
14. {4037} During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
15. {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]
16. {4881} The oxygen sensor shall be replaced every 2,000 hours of operation or when the EPC-50 controller indicates that an alarm code has been triggered for the sensor, whichever occurs earliest. Whenever the oxygen sensor is replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by equipment manufacturer. [District Rule 4702]
17. {4882} The catalyst module housing and elements shall be visually inspected at least once every calendar quarter. The catalyst shall be washed at least once every 8,640 hours of operation and replaced at least every 25,920 hours of operation. [District Rule 4702]
18. {4883} The thermocouples shall be replaced according to the manufacturer recommendations but at least every 36,000 hours of engine operation or every 48 calendar months, whichever comes first. Whenever the thermocouples are replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by Coastal Ignition & Controls. [District Rule 4702]
19. {4884} The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at initial system calibration. Both temperatures shall be monitored at least once in each calendar month that the engine operates. If the temperature increase over the catalyst becomes less than 50% of the initially determined value, the Altronic Inc. EPC-50 AFRC System shall be calibrated or repaired, as necessary. [District Rule 4702]
20. {4885} After the Altronic Inc. EPC-50 AFRC System is calibrated or repaired in response to a catalyst temperature drop, a District-approved portable analyzer shall be used to determine that the NOx and CO emissions and O2 levels are at or below permitted levels. The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at that time and the temperature increase over the catalyst shall be re-established. Monthly monitoring of the pre- and post-catalyst exhaust temperature shall resume as required in the previous condition, based on the new temperature increase value. [District Rule 4702]

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CONDITIONS CONTINUE ON NEXT PAGE

21. {4886} Within 30 days after installation of the Altronic Inc. EPC-50 AFRC System, a District-approved portable analyzer shall be used to determine NO_x and CO emissions, and O₂ levels. All emission readings shall be taken with the unit operating at conditions representative of normal operations. The analyzer shall be calibrated, maintained, 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]
22. {4887} Until this system receives Final Certification from the District, the NO_x, CO, and O₂ monitoring provisions specified above condition shall be conducted at least once every 12 months. Monitoring conducted as part of routine maintenance and repair actions may be used satisfy this requirement, so long as no more than twelve months elapses between monitoring actions. Should the 12 month deadline fall during a period of non-operation, the engine shall be monitoring within 30-calendar days of recommencing operations. [District Rule 4702]
23. {3786} If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than eight (8) hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after eight (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]
24. {4888} During the start-up inspection, the District shall be provided with written documentation that the emission control system is suitable for use on this engine and verify the engine's horsepower rating, exhaust flow rate, exhaust temperature, oil consumption, general mechanical condition and the available fuel supply pressure will satisfy the criteria for proper operation of the Altronic Inc. EPC-50 AFRC System, along with portable analyzer calibration records and results. [District Rule 4702]
25. {4872} NO_x emissions from this IC engine shall not exceed 90 ppmvd-NO_x @ 15% O₂ (equivalent to 1.3 g-NO_x/bhp-hr). [District Rules 2201 and 4702]
26. PM₁₀ emissions from this IC engine shall not exceed 0.075 g-PM₁₀/bhp-hr. [District Rule 2201]
27. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O₂ (equivalent to 17 g-CO/bhp-hr) or 50 ppmvd-VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). [District Rules 2201 and 4702]
28. The operator shall maintain engine operating log records of: 1) the monthly engine hour meter reading; 2) the date and the engine hour meter reading at each oxygen sensor change, and thermocouples change; 3) the monthly pre- and post-catalyst exhaust temperatures monitoring data including the initial temperature differential and any subsequently determined temperature differentials; 4) the date and engine hour meter reading of each catalyst module inspection, washing, and replacement; and 5) fuel purchase records. [District Rules 2201 and 4702]
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702]
30. Should Final Certification of the Altronic Inc. EPC-50 AFRC System not be achieved by June 30th, 2018, this engine shall be considered to be uncertified under Rule 4702 and subject to initial and periodic source testing every 60 months, portable analyzer monitoring every 24 months, and a District-approved monthly Inspection & Monitoring plan. [District Rule 4702]
31. {4890} The District may revise and/or add requirements in the future as necessary to ensure the Altronic Inc. EPC-50 AFRC System operates according to its Interim Certification requirements. [District Rule 4702]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-4800-4-2

LEGAL OWNER OR OPERATOR: WESTSIDE FARM MANAGEMENT INC
MAILING ADDRESS: PO BOX 82034
BAKERSFIELD, CA 93380

LOCATION: WILDWOOD/HANAWALT NE CORNER
WASCO, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 304 BHP CUMMINS MODEL GTA 855B S/N 11840780 NATURAL GAS-FIRED IC ENGINE
EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #3): REPLACE
LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

CONDITIONS

1. {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {4877} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [District Rules 4701 and 4702]
7. Operation of the engine shall not exceed 4,200 hours per calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

S-4800-4-2 : Mar 3 2016 8:48AM - HEINENG : Joint Inspection NOT Required

8. {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]
9. The Altronic Inc. EPC-50 AFRC System shall consist of an Altronic EPC50 air/fuel ratio controller, an EmeraChem EC-1450-06-S-CS three-way catalyst system, two Type K thermocouples, and Zirconia exhaust gas oxygen sensor. [District Rule 4702]
10. {4879} The Altronic Inc. EPC-50 AFRC System shall be installed, maintained and operated according to the component manufacturer's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
11. {4880} A person performing installation of or maintenance specific to the Altronic Inc. EPC-50 AFRC System shall be a certified employee of Coastal Ignition & Controls or Water Associates, or work under the direct and personal supervision of an individual physically present at the work site who is certified. [District Rule 4702]
12. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
13. {4893} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer, Coastal Ignition & Controls (CIC), or Water Associates. [District Rule 4702]
14. {4037} During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
15. {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]
16. {4881} The oxygen sensor shall be replaced every 2,000 hours of operation or when the EPC-50 controller indicates that an alarm code has been triggered for the sensor, whichever occurs earliest. Whenever the oxygen sensor is replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by equipment manufacturer. [District Rule 4702]
17. {4882} The catalyst module housing and elements shall be visually inspected at least once every calendar quarter. The catalyst shall be washed at least once every 8,640 hours of operation and replaced at least every 25,920 hours of operation. [District Rule 4702]
18. {4883} The thermocouples shall be replaced according to the manufacturer recommendations but at least every 36,000 hours of engine operation or every 48 calendar months, whichever comes first. Whenever the thermocouples are replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by Coastal Ignition & Controls. [District Rule 4702]
19. {4884} The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at initial system calibration. Both temperatures shall be monitored at least once in each calendar month that the engine operates. If the temperature increase over the catalyst becomes less than 50% of the initially determined value, the Altronic Inc. EPC-50 AFRC System shall be calibrated or repaired, as necessary. [District Rule 4702]
20. {4885} After the Altronic Inc. EPC-50 AFRC System is calibrated or repaired in response to a catalyst temperature drop, a District-approved portable analyzer shall be used to determine that the NOx and CO emissions and O2 levels are at or below permitted levels. The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at that time and the temperature increase over the catalyst shall be re-established. Monthly monitoring of the pre- and post-catalyst exhaust temperature shall resume as required in the previous condition, based on the new temperature increase value. [District Rule 4702]

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CONDITIONS CONTINUE ON NEXT PAGE

21. {4886} Within 30 days after installation of the Altronic Inc. EPC-50 AFRC System, a District-approved portable analyzer shall be used to determine NO_x and CO emissions, and O₂ levels. All emission readings shall be taken with the unit operating at conditions representative of normal operations. The analyzer shall be calibrated, maintained, 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]
22. {4887} Until this system receives Final Certification from the District, the NO_x, CO, and O₂ monitoring provisions specified above condition shall be conducted at least once every 12 months. Monitoring conducted as part of routine maintenance and repair actions may be used satisfy this requirement, so long as no more than twelve months elapses between monitoring actions. Should the 12 month deadline fall during a period of non-operation, the engine shall be monitoring within 30-calendar days of recommencing operations. [District Rule 4702]
23. {3786} If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than eight (8) hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after eight (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]
24. {4888} During the start-up inspection, the District shall be provided with written documentation that the emission control system is suitable for use on this engine and verify the engine's horsepower rating, exhaust flow rate, exhaust temperature, oil consumption, general mechanical condition and the available fuel supply pressure will satisfy the criteria for proper operation of the Altronic Inc. EPC-50 AFRC System, along with portable analyzer calibration records and results. [District Rule 4702]
25. {4872} NO_x emissions from this IC engine shall not exceed 90 ppmvd-NO_x @ 15% O₂ (equivalent to 1.3 g-NO_x/bhp-hr). [District Rules 2201 and 4702]
26. PM₁₀ emissions from this IC engine shall not exceed 0.075 g-PM₁₀/bhp-hr. [District Rule 2201]
27. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O₂ (equivalent to 17 g-CO/bhp-hr) or 50 ppmvd-VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). [District Rules 2201 and 4702]
28. The operator shall maintain engine operating log records of: 1) the monthly engine hour meter reading; 2) the date and the engine hour meter reading at each oxygen sensor change, and thermocouples change; 3) the monthly pre- and post-catalyst exhaust temperatures monitoring data including the initial temperature differential and any subsequently determined temperature differentials; 4) the date and engine hour meter reading of each catalyst module inspection, washing, and replacement; and 5) fuel purchase records. [District Rules 2201 and 4702]
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702]
30. Should Final Certification of the Altronic Inc. EPC-50 AFRC System not be achieved by June 30th, 2018, this engine shall be considered to be uncertified under Rule 4702 and subject to initial and periodic source testing every 60 months, portable analyzer monitoring every 24 months, and a District-approved monthly Inspection & Monitoring plan. [District Rule 4702]
31. {4890} The District may revise and/or add requirements in the future as necessary to ensure the Altronic Inc. EPC-50 AFRC System operates according to its Interim Certification requirements. [District Rule 4702]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-4800-5-2

LEGAL OWNER OR OPERATOR: WESTSIDE FARM MANAGEMENT INC
MAILING ADDRESS: PO BOX 82034
BAKERSFIELD, CA 93380

LOCATION: WILDWOOD/HANAWALT NE CORNER
WASCO, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 304 BHP CUMMINS MODEL GTA 855B S/N 11840775 NATURAL GAS-FIRED IC ENGINE
EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #4); REPLACE
LAMBDA SYSTEM WITH ALTRONIC SYSTEM AND INCREASE ANNUAL HOURS LIMIT TO 4,200 HR/YR

CONDITIONS

1. {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {4877} This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [District Rules 4701 and 4702]
7. Operation of the engine shall not exceed 4,200 hours per calendar year. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
S-4800-5-2 Mar 3 2016 8:49AM - HEINENG Joint Inspection NOT Required

8. {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]
9. The Altronic Inc. EPC-50 AFRC System shall consist of an Altronic EPC50 air/fuel ratio controller, an EmeraChem EC-1450-06-S-CS three-way catalyst system, two Type K thermocouples, and Zirconia exhaust gas oxygen sensor. [District Rule 4702]
10. {4879} The Altronic Inc. EPC-50 AFRC System shall be installed, maintained and operated according to the component manufacturer's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
11. {4880} A person performing installation of or maintenance specific to the Altronic Inc. EPC-50 AFRC System shall be a certified employee of Coastal Ignition & Controls or Water Associates, or work under the direct and personal supervision of an individual physically present at the work site who is certified. [District Rule 4702]
12. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
13. {4893} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer, Coastal Ignition & Controls (CIC), or Water Associates. [District Rule 4702]
14. {4037} During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
15. {4863} This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 4702 and 4801]
16. {4881} The oxygen sensor shall be replaced every 2,000 hours of operation or when the EPC-50 controller indicates that an alarm code has been triggered for the sensor, whichever occurs earliest. Whenever the oxygen sensor is replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by equipment manufacturer. [District Rule 4702]
17. {4882} The catalyst module housing and elements shall be visually inspected at least once every calendar quarter. The catalyst shall be washed at least once every 8,640 hours of operation and replaced at least every 25,920 hours of operation. [District Rule 4702]
18. {4883} The thermocouples shall be replaced according to the manufacturer recommendations but at least every 36,000 hours of engine operation or every 48 calendar months, whichever comes first. Whenever the thermocouples are replaced, the Altronic Inc. EPC-50 AFRC System shall be calibrated, prior to resuming normal engine operation, according to the procedures outlined by Coastal Ignition & Controls. [District Rule 4702]
19. {4884} The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at initial system calibration. Both temperatures shall be monitored at least once in each calendar month that the engine operates. If the temperature increase over the catalyst becomes less than 50% of the initially determined value, the Altronic Inc. EPC-50 AFRC System shall be calibrated or repaired, as necessary. [District Rule 4702]
20. {4885} After the Altronic Inc. EPC-50 AFRC System is calibrated or repaired in response to a catalyst temperature drop, a District-approved portable analyzer shall be used to determine that the NOx and CO emissions and O2 levels are at or below permitted levels. The pre- and post-catalyst exhaust temperatures shall be monitored and the temperature increase over the catalyst shall be recorded at that time and the temperature increase over the catalyst shall be re-established. Monthly monitoring of the pre- and post-catalyst exhaust temperature shall resume as required in the previous condition, based on the new temperature increase value. [District Rule 4702]

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CONDITIONS CONTINUE ON NEXT PAGE

21. {4886} Within 30 days after installation of the Altronic Inc. EPC-50 AFRC System, a District-approved portable analyzer shall be used to determine NO_x and CO emissions, and O₂ levels. All emission readings shall be taken with the unit operating at conditions representative of normal operations. The analyzer shall be calibrated, maintained, 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]
22. {4887} Until this system receives Final Certification from the District, the NO_x, CO, and O₂ monitoring provisions specified above condition shall be conducted at least once every 12 months. Monitoring conducted as part of routine maintenance and repair actions may be used satisfy this requirement, so long as no more than twelve months elapses between monitoring actions. Should the 12 month deadline fall during a period of non-operation, the engine shall be monitoring within 30-calendar days of recommencing operations. [District Rule 4702]
23. {3786} If either the NO_x or CO concentrations corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than eight (8) hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after eight (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]
24. {4888} During the start-up inspection, the District shall be provided with written documentation that the emission control system is suitable for use on this engine and verify the engine's horsepower rating, exhaust flow rate, exhaust temperature, oil consumption, general mechanical condition and the available fuel supply pressure will satisfy the criteria for proper operation of the Altronic Inc. EPC-50 AFRC System, along with portable analyzer calibration records and results. [District Rule 4702]
25. {4872} NO_x emissions from this IC engine shall not exceed 90 ppmvd-NO_x @ 15% O₂ (equivalent to 1.3 g-NO_x/bhp-hr). [District Rules 2201 and 4702]
26. PM₁₀ emissions from this IC engine shall not exceed 0.075 g-PM₁₀/bhp-hr. [District Rule 2201]
27. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O₂ (equivalent to 17 g-CO/bhp-hr) or 50 ppmvd-VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). [District Rules 2201 and 4702]
28. The operator shall maintain engine operating log records of: 1) the monthly engine hour meter reading; 2) the date and the engine hour meter reading at each oxygen sensor change, and thermocouples change; 3) the monthly pre- and post-catalyst exhaust temperatures monitoring data including the initial temperature differential and any subsequently determined temperature differentials; 4) the date and engine hour meter reading of each catalyst module inspection, washing, and replacement; and 5) fuel purchase records. [District Rules 2201 and 4702]
29. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702]
30. Should Final Certification of the Altronic Inc. EPC-50 AFRC System not be achieved by June 30th, 2018, this engine shall be considered to be uncertified under Rule 4702 and subject to initial and periodic source testing every 60 months, portable analyzer monitoring every 24 months, and a District-approved monthly Inspection & Monitoring plan. [District Rule 4702]
31. {4890} The District may revise and/or add requirements in the future as necessary to ensure the Altronic Inc. EPC-50 AFRC System operates according to its Interim Certification requirements. [District Rule 4702]

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APPENDIX B
Current PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-4800-1-1

EXPIRATION DATE: 12/31/2019

EQUIPMENT DESCRIPTION:

200 BHP CUMMINS MODEL G855 S/N 25229792 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH AN ALTRONIC EPC-110 AIR/FUEL RATIO CONTROL SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #1)

PERMIT UNIT REQUIREMENTS

1. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. This IC engine shall only be used for the growing of crops or raising of fowl or animals. [District Rule 4701]
7. Operation of this engine shall not exceed 3,500 hours per year. [District Rule 2201]
8. This IC engine shall be fired on Public Utility Commission (PUC) regulated natural gas only. [District Rules 2201 and 4801]
9. NOx emissions from this IC engine shall either be reduced by 80% or shall not exceed 90 ppmvd NOx @ 15% O2 (equivalent to 1.3 g-NOx/hp-hr). [District Rule 4702]
10. PM10 emissions from this IC engine shall not exceed 0.075 g-PM10/hp-hr. [District Rule 2201]
11. Emissions from this IC engine shall not exceed any of the following limits: 1685 ppmvd CO @ 15% O2 (equivalent to 14.3 g-CO/hp-hr) or 23 ppmvd VOC @ 15% O2 (equivalent to 0.11 g-VOC/hp-hr). [District Rule 4702]
12. If the 80% NOx emission reduction is used to comply with District Rule 4702, the exhaust system shall be equipped with adequate sampling ports located both upstream and downstream of the catalyst module. Each sampling port shall be located at least 1/2 duct diameter upstream and at least 2 duct diameters downstream of any bend, diameter change or stack obstruction. [District Rule 4702]
13. The Altronic EPC-110 control system shall be properly operated and maintained according to the manufacturer's recommendations, and shall be in place and operating at all times during engine operation. [District Rule 4702]
14. The engine shall be equipped with an operational nonresettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
15. During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

16. The permittee shall monitor and record the stack concentration of NO_x and O₂ at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last month. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
17. If the NO_x concentration corrected to 15% O₂, as measured by the portable analyzer, exceeds the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
18. The owner/operator shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, and any other information necessary to demonstrate compliance. [District Rule 4702]
19. Source testing to measure NO_x, CO, and VOC emissions shall be conducted at least once every 60 months. If fueled exclusively with PUC quality natural gas, the engine is not subject to the reoccurring source test requirements for VOC emissions. [District Rule 4702]
20. 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]
21. For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit, the test cannot be used to demonstrate compliance with an applicable limit. VOC emissions shall be reported as methane. VOC, NO_x, and CO concentrations shall be reported in ppmv, corrected to 15% oxygen. Percent reduction of NO_x emissions shall also be reported if complying with NO_x emissions through percent reduction. [District Rule 4702]
22. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, CO (ppmv) - EPA Method 10 or ARB Method 100, stack gas oxygen - EPA Method 3 or 3A or ARB Method 100, and VOC (ppmv) - EPA Method 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702]
23. The source test protocol shall describe which critical parameters will be measured and how the appropriate range for these parameters shall be established. The range for these parameters shall be incorporated into the I&M plan. [District Rule 4702]
24. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier as specified on the Inspection and Monitoring (I&M) plan submitted to the District. [District Rule 4702]
25. All 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]
26. The permittee shall maintain records of: (1) the date and time of NO_x, CO, and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

27. 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]
28. 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]

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-4800-2-1

EXPIRATION DATE: 12/31/2019

EQUIPMENT DESCRIPTION:

200 BHP CUMMINS MODEL G855 S/N 25229793 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A CERTIFIED LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (BOOSTER #2)

PERMIT UNIT REQUIREMENTS

1. The District may revise and/or add requirements in the future as necessary to ensure the Lambda Management System operates according to its conditional certification requirements. [District Rule 4702]
2. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
3. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
7. This IC engine shall only be used for the growing of crops or raising of fowl or animals. [District Rule 4701]
8. Operation of this engine shall not exceed 3,500 hours per year. [District Rule 2201]
9. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 2201 and 4702]
10. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer. [District Rule 4702]
11. During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
12. This IC engine shall be fired exclusively on Public Utility Commission (PUC) regulated natural gas. [District Rules 2201, 4702, and 4801]
13. NOx emissions from this IC engine shall be reduced by 80% or not exceed 90 ppmvd-NOx @ 15% O2 (equivalent to 1.3 g-NOx/bhp-hr). [District Rules 2201 and 4702]
14. PM10 emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr. [District Rule 2201]
15. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O2 (equivalent to 17.0 g-CO/bhp-hr) or 250 ppmvd-VOC @ 15% O2 (equivalent to 1.2 g-VOC/bhp-hr). [District Rules 2201 and 4702]

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

16. The add-on emission control system (hereinafter referred to as the "Lambda Management System") shall consist of a Johnson-Matthey Model CXX8-4 3-way catalyst module, a Gas Systems Model LMS-MF-2D1 air/fuel ratio controller ("Lambda Management Controller"), and a Bosch Model LSU 4.2 oxygen sensor. [District Rule 4702]
17. The Lambda Management System shall be installed, maintained and operated according to Lambda's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
18. The oxygen sensor shall be replaced at least once every 2,000 hours of operation. Whenever the oxygen sensor is replaced, the new oxygen sensor shall be calibrated according to the procedures outlined by Lambda prior to engine operation. [District Rule 4702]
19. The catalyst module shall be washed according to manufacturer recommendations or replaced as necessary at least once every 8,000 hours of operation. [District Rule 4702]
20. The operator shall perform monthly inspections of the Lambda Management System. The monthly inspection shall ensure the system is operating correctly, i.e. the wiring, installation, and indicator lights are all visibly compliant per Lambda's recommendation. The operator shall monitor the lambda management controller and record any adjustments necessary to return the system to the optimum lambda setting (green light) at least once every month. Monitoring shall be performed with the engine operating at conditions representative of normal source operations. Monitoring shall not be required if the engine is not in operation during any one calendar month, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within a week of restarting the engine unless monitoring has been performed within the last calendar month. Records shall be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
21. If the lambda setting is either fuel lean (yellow light) or fuel rich (red light), the operator shall adjust the lambda management controller as necessary to return the system to the optimum lambda setting (green light) as soon as possible, but no longer than eight hours after detection. If the lambda setting cannot be returned to the optimum lambda setting within eight hours after detection, the operator shall notify the District and shut the engine down within the following hour, and shall not operate the engine until after making all necessary repairs to return the system to green light status. [District Rule 4702]
22. The operator shall maintain records of: 1.) The date and time of the lambda management controller monitoring, the lambda setting (e.g. green, yellow, or red light), and a description of any adjustments made to return the system to the optimum lambda setting (green light); 2.) The date and engine hour meter reading at each oxygen sensor change and a description of the oxygen sensor calibration procedures used; and 3.) The date and engine hour meter reading of each catalyst module washing or replacement. [District Rule 4702]
23. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ (pre- and post-catalyst, if using percent reduction to demonstrate NO_x compliance) at least once every 60 months using a portable emissions monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last 60 months. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
24. When using exhaust concentration to demonstrate compliance, if the NO_x or CO concentration corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]

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

25. When using percent reduction to demonstrate compliance, if the percent reduction (using NO_x concentrations, as measured by the portable analyzer, corrected to 15% O₂) is less than 80%, 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 demonstrate percent reduction less than 80% after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
26. If compliance is based on the percent reduction allowance, then the exhaust system shall be equipped with adequate sampling ports located both upstream and downstream of the catalyst module. Each sampling port shall be located at least 1/2 duct diameter upstream and at least 2 duct diameters downstream of any bend, diameter change or stack obstruction. [District Rule 4702]
27. All 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]
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
29. The owner/operator shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, and any other information necessary to demonstrate compliance. [District Rule 4702]
30. The permittee shall record the total time the engine operates, in hours per calendar year. [District Rule 2201]
31. 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]

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-4800-3-2

EXPIRATION DATE: 12/31/2019

EQUIPMENT DESCRIPTION:

250 BHP CUMMINS MODEL GTA12 S/N 25228178 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH LAMBDA 3-WAY CATALYST; POWERING AN AGRICULTURAL PUMP (WELL #2)

PERMIT UNIT REQUIREMENTS

1. The District may revise and/or add requirements in the future as necessary to ensure the Lambda Management System operates according to its conditional certification requirements. [District Rule 4702]
2. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
3. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
7. This IC engine shall only be used for the growing of crops or raising of fowl or animals. [District Rule 4701]
8. Operation of this engine shall not exceed 3,300 hours per year. [District Rule 2201]
9. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 2201 and 4702]
10. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer. [District Rule 4702]
11. During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
12. This IC engine shall be fired exclusively on Public Utility Commission (PUC) regulated natural gas. [District Rules 2201, 4702, and 4801]
13. NOx emissions from this IC engine shall be reduced by 80% or not exceed 90 ppmvd-NOx @ 15% O2 (equivalent to 1.3 g-NOx/bhp-hr). [District Rules 2201 and 4702]
14. PM10 emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr. [District Rule 2201]
15. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O2 (equivalent to 17.0 g-CO/bhp-hr) or 250 ppmvd-VOC @ 15% O2 (equivalent to 1.2 g-VOC/bhp-hr). [District Rules 2201 and 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

16. The add-on emission control system (hereinafter referred to as the "Lambda Management System") shall consist of a Johnson-Matthey Model CXX8-4 3-way catalyst module, a Gas Systems Model LMS-MF-2D1 air/fuel ratio controller ("Lambda Management Controller"), and a Bosch Model LSU 4.2 oxygen sensor. [District Rule 4702]
17. The Lambda Management System shall be installed, maintained and operated according to Lambda's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
18. The oxygen sensor shall be replaced at least once every 2,000 hours of operation. Whenever the oxygen sensor is replaced, the new oxygen sensor shall be calibrated according to the procedures outlined by Lambda prior to engine operation. [District Rule 4702]
19. The catalyst module shall be washed according to manufacturer recommendations or replaced as necessary at least once every 8,000 hours of operation. [District Rule 4702]
20. The operator shall perform monthly inspections of the Lambda Management System. The monthly inspection shall ensure the system is operating correctly, i.e. the wiring, installation, and indicator lights are all visibly compliant per Lambda's recommendation. The operator shall monitor the lambda management controller and record any adjustments necessary to return the system to the optimum lambda setting (green light) at least once every month. Monitoring shall be performed with the engine operating at conditions representative of normal source operations. Monitoring shall not be required if the engine is not in operation during any one calendar month, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within a week of restarting the engine unless monitoring has been performed within the last calendar month. Records shall be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
21. If the lambda setting is either fuel lean (yellow light) or fuel rich (red light), the operator shall adjust the lambda management controller as necessary to return the system to the optimum lambda setting (green light) as soon as possible, but no longer than eight hours after detection. If the lambda setting cannot be returned to the optimum lambda setting within eight hours after detection, the operator shall notify the District and shut the engine down within the following hour, and shall not operate the engine until after making all necessary repairs to return the system to green light status. [District Rule 4702]
22. The operator shall maintain records of: 1.) The date and time of the lambda management controller monitoring, the lambda setting (e.g. green, yellow, or red light), and a description of any adjustments made to return the system to the optimum lambda setting (green light); 2.) The date and engine hour meter reading at each oxygen sensor change and a description of the oxygen sensor calibration procedures used; and 3.) The date and engine hour meter reading of each catalyst module washing or replacement. [District Rule 4702]
23. The permittee shall monitor and record the stack concentration of NO_x, CO, and O₂ (pre- and post-catalyst, if using percent reduction to demonstrate NO_x compliance) at least once every 60 months using a portable emissions monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last 60 months. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
24. When using exhaust concentration to demonstrate compliance, if the NO_x or CO concentration corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]

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

25. When using percent reduction to demonstrate compliance, if the percent reduction (using NO_x concentrations, as measured by the portable analyzer, corrected to 15% O₂) is less than 80%, 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 demonstrate percent reduction less than 80% after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
26. If compliance is based on the percent reduction allowance, then the exhaust system shall be equipped with adequate sampling ports located both upstream and downstream of the catalyst module. Each sampling port shall be located at least 1/2 duct diameter upstream and at least 2 duct diameters downstream of any bend, diameter change or stack obstruction. [District Rule 4702]
27. All 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]
28. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
29. The owner/operator shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, and any other information necessary to demonstrate compliance. [District Rule 4702]
30. The permittee shall record the total time the engine operates, in hours per calendar year. [District Rule 2201]
31. 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]

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-4800-4-1

EXPIRATION DATE: 12/31/2019

EQUIPMENT DESCRIPTION:

304 BHP CUMMINS MODEL GTA 855B S/N 11840780 NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #3)

PERMIT UNIT REQUIREMENTS

1. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. This IC engine shall only be used for the growing of crops or raising of fowl or animals. [District Rule 4701]
7. Operation of this engine shall not exceed 3,300 hours per year. [District Rule 2201]
8. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 2201 and 4702]
9. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer. [District Rule 4702]
10. During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
11. This IC engine shall be fired exclusively on Public Utility Commission (PUC) regulated natural gas. [District Rules 2201, 4702, and 4801]
12. NOx emissions from this IC engine shall be reduced by 80% or not exceed 90 ppmvd-NOx @ 15% O2 (equivalent to 1.3 g-NOx/bhp-hr). [District Rules 2201 and 4702]
13. PM10 emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr. [District Rule 2201]
14. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O2 (equivalent to 17.0 g-CO/bhp-hr) or 250 ppmvd-VOC @ 15% O2 (equivalent to 1.2 g-VOC/bhp-hr). [District Rules 2201 and 4702]
15. The add-on emission control system (hereinafter referred to as the "Lambda Management System") shall consist of a Johnson-Matthey Model CXX8-4 3-way catalyst module, a Gas Systems Model LMS-MF-2D1 air/fuel ratio controller ("Lambda Management Controller"), and a Bosch Model LSU 4.2 oxygen sensor. [District Rule 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

16. The Lambda Management System shall be installed, maintained and operated according to Lambda's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
17. The oxygen sensor shall be replaced at least once every 2,000 hours of operation. Whenever the oxygen sensor is replaced, the new oxygen sensor shall be calibrated according to the procedures outlined by Lambda prior to engine operation. [District Rule 4702]
18. The catalyst module shall be washed according to manufacturer recommendations or replaced as necessary at least once every 8,000 hours of operation. [District Rule 4702]
19. The operator shall perform monthly inspections of the Lambda Management System. The monthly inspection shall ensure the system is operating correctly, i.e. the wiring, installation, and indicator lights are all visibly compliant per Lambda's recommendation. The operator shall monitor the lambda management controller and record any adjustments necessary to return the system to the optimum lambda setting (green light) at least once every month. Monitoring shall be performed with the engine operating at conditions representative of normal source operations. Monitoring shall not be required if the engine is not in operation during any one calendar month, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within a week of restarting the engine unless monitoring has been performed within the last calendar month. Records shall be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
20. If the lambda setting is either fuel lean (yellow light) or fuel rich (red light), the operator shall adjust the lambda management controller as necessary to return the system to the optimum lambda setting (green light) as soon as possible, but no longer than eight hours after detection. If the lambda setting cannot be returned to the optimum lambda setting within eight hours after detection, the operator shall notify the District and shut the engine down within the following hour, and shall not operate the engine until after making all necessary repairs to return the system to green light status. [District Rule 4702]
21. The operator shall maintain records of: 1.) The date and time of the lambda management controller monitoring, the lambda setting (e.g. green, yellow, or red light), and a description of any adjustments made to return the system to the optimum lambda setting (green light); 2.) The date and engine hour meter reading at each oxygen sensor change and a description of the oxygen sensor calibration procedures used; and 3.) The date and engine hour meter reading of each catalyst module washing or replacement. [District Rule 4702]
22. Source testing to measure NOx and CO emissions shall be conducted at least once every 60 months. [District Rule 4702]
23. 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]
24. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
25. 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]
26. 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]
27. 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 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702]

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

28. The permittee shall monitor and record the stack concentration of NO_x, CO and O₂ (pre- and post-catalyst, if using percent reduction to demonstrate NO_x compliance) at least once every 3 months (in which a source test is not performed) using a portable emissions monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last 3 months. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
29. When using exhaust concentration to demonstrate compliance, if the NO_x or CO concentration corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
30. When using percent reduction to demonstrate compliance, if the percent reduction (using NO_x concentrations, as measured by the portable analyzer, corrected to 15% O₂) is less than 80%, 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 demonstrate percent reduction less than 80% after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
31. If compliance is based on the percent reduction allowance, then the exhaust system shall be equipped with adequate sampling ports located both upstream and downstream of the catalyst module. Each sampling port shall be located at least 1/2 duct diameter upstream and at least 2 duct diameters downstream of any bend, diameter change or stack obstruction. [District Rule 4702]
32. All 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]
33. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
34. The owner/operator shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, 3 month exhaust emissions monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 2201 and 4702]

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

35. 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]
36. The permittee shall record the total time the engine operates, in hours per calendar year. [District Rule 2201]
37. 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]

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San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-4800-5-1

EXPIRATION DATE: 12/31/2019

EQUIPMENT DESCRIPTION:

304 BHP CUMMINS MODEL GTA 855B S/N NATURAL GAS-FIRED IC ENGINE EQUIPPED WITH A LAMBDA MANAGEMENT SYSTEM; POWERING AN AGRICULTURAL PUMP (WELL #4)

PERMIT UNIT REQUIREMENTS

1. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
2. Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]
3. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
5. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. This IC engine shall only be used for the growing of crops or raising of fowl or animals. [District Rule 4701]
7. Operation of this engine shall not exceed 3,300 hours per year. [District Rule 2201]
8. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 2201 and 4702]
9. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer. [District Rule 4702]
10. During periods of operation, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
11. This IC engine shall be fired exclusively on Public Utility Commission (PUC) regulated natural gas. [District Rules 2201, 4702, and 4801]
12. NOx emissions from this IC engine shall be reduced by 80% or not exceed 90 ppmvd-NOx @ 15% O2 (equivalent to 1.3 g-NOx/bhp-hr). [District Rules 2201 and 4702]
13. PM10 emissions from this IC engine shall not exceed 0.075 g-PM10/bhp-hr. [District Rule 2201]
14. Emissions from this IC engine shall not exceed any of the following limits: 2,000 ppmvd CO @ 15% O2 (equivalent to 17.0 g-CO/bhp-hr) or 250 ppmvd-VOC @ 15% O2 (equivalent to 1.2 g-VOC/bhp-hr). [District Rules 2201 and 4702]
15. The add-on emission control system (hereinafter referred to as the "Lambda Management System") shall consist of a Johnson-Matthey Model CXX8-4 3-way catalyst module, a Gas Systems Model LMS-MF-2D1 air/fuel ratio controller ("Lambda Management Controller"), and a Bosch Model LSU 4.2 oxygen sensor. [District Rule 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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16. The Lambda Management System shall be installed, maintained and operated according to Lambda's recommendations and shall be in place and operating at all times during engine operation. [District Rule 4702]
17. The oxygen sensor shall be replaced at least once every 2,000 hours of operation. Whenever the oxygen sensor is replaced, the new oxygen sensor shall be calibrated according to the procedures outlined by Lambda prior to engine operation. [District Rule 4702]
18. The catalyst module shall be washed according to manufacturer recommendations or replaced as necessary at least once every 8,000 hours of operation. [District Rule 4702]
19. The operator shall perform monthly inspections of the Lambda Management System. The monthly inspection shall ensure the system is operating correctly, i.e. the wiring, installation, and indicator lights are all visibly compliant per Lambda's recommendation. The operator shall monitor the lambda management controller and record any adjustments necessary to return the system to the optimum lambda setting (green light) at least once every month. Monitoring shall be performed with the engine operating at conditions representative of normal source operations. Monitoring shall not be required if the engine is not in operation during any one calendar month, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within a week of restarting the engine unless monitoring has been performed within the last calendar month. Records shall be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
20. If the lambda setting is either fuel lean (yellow light) or fuel rich (red light), the operator shall adjust the lambda management controller as necessary to return the system to the optimum lambda setting (green light) as soon as possible, but no longer than eight hours after detection. If the lambda setting cannot be returned to the optimum lambda setting within eight hours after detection, the operator shall notify the District and shut the engine down within the following hour, and shall not operate the engine until after making all necessary repairs to return the system to green light status. [District Rule 4702]
21. The operator shall maintain records of: 1.) The date and time of the lambda management controller monitoring, the lambda setting (e.g. green, yellow, or red light), and a description of any adjustments made to return the system to the optimum lambda setting (green light); 2.) The date and engine hour meter reading at each oxygen sensor change and a description of the oxygen sensor calibration procedures used; and 3.) The date and engine hour meter reading of each catalyst module washing or replacement. [District Rule 4702]
22. Source testing to measure NOx and CO emissions shall be conducted at least once every 60 months. [District Rule 4702]
23. 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]
24. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]
25. 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]
26. 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]
27. 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 18, 25A or 25B, or ARB Method 100. [District Rules 1081 and 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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28. The permittee shall monitor and record the stack concentration of NO_x, CO and O₂ (pre- and post-catalyst, if using percent reduction to demonstrate NO_x compliance) at least once every 3 months (in which a source test is not performed) using a portable emissions monitor that meets District specifications. Monitoring shall not be required if the engine is not in operation, i.e. the engine need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the engine unless monitoring has been performed within the last 3 months. Records must be maintained of the dates of non-operation to validate extended monitoring frequencies. [District Rule 4702]
29. When using exhaust concentration to demonstrate compliance, if the NO_x or CO concentration corrected to 15% O₂, as measured by the portable analyzer, exceed the allowable emission concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 8 hours after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
30. When using percent reduction to demonstrate compliance, if the percent reduction (using NO_x concentrations, as measured by the portable analyzer, corrected to 15% O₂) is less than 80%, 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 demonstrate percent reduction less than 80% after 8 hours, the permittee shall notify the District within the following 1 hour, and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rule 4702]
31. If compliance is based on the percent reduction allowance, then the exhaust system shall be equipped with adequate sampling ports located both upstream and downstream of the catalyst module. Each sampling port shall be located at least 1/2 duct diameter upstream and at least 2 duct diameters downstream of any bend, diameter change or stack obstruction. [District Rule 4702]
32. All 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]
33. The permittee shall maintain records of: (1) the date and time of NO_x, CO and O₂ measurements, (2) the O₂ concentration in percent and the measured NO_x and CO concentrations corrected to 15% O₂, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rule 4702]
34. The owner/operator shall maintain an engine operating log to demonstrate compliance. The engine operating log shall include, on a monthly basis, the following information: total hours of operation, type of fuel used, maintenance or modifications performed, monitoring data, 3 month exhaust emissions monitoring data, compliance source test results, and any other information necessary to demonstrate compliance. [District Rules 2201 and 4702]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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35. 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]
36. The permittee shall record the total time the engine operates, in hours per calendar year. [District Rule 2201]
37. 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]

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

APPENDIX C
Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

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

$QNEC = PE2 - PE1$, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.

PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

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

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

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE1, quarterly PE2 and QNEC can be calculated with the results shown in the following tables:

Quarterly PE1 (lb/qtr)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-1	811	4	29	5,517	43
S-4800-2-1	811	4	29	6,559	463
S-4800-3-2	956	5	34	7,730	546
S-4800-4-1	1,162	6	42	9,400	664
S-4800-5-1	1,162	6	42	9,400	664

Quarterly PE2 (lb/qtr)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-2	482	4	35	6,620	51
S-4800-2-2	482	4	35	7,870	97
S-4800-3-3	602	5	44	9,838	122
S-4800-4-2	732	6	53	11,963	148
S-4800-5-2	732	6	53	11,963	148

QNEC (lb/qtr)					
Permit	NOx	SOx	PM10	CO	VOC
S-4800-1-2	-329	0	6	1,103	8
S-4800-2-2	-329	0	6	1,311	-366
S-4800-3-3	-354	0	10	2,108	-424
S-4800-4-2	-430	0	11	2,563	-516
S-4800-5-2	-430	0	11	2,563	-516

APPENDIX D
Emission Calculations

Pre-Project Stationary Source Potential to Emit Calculations for S-4800 Westside Farm Management

Emissions were calculated based on EE S-1095422 emission factors and hours/year.

		Permitted	EF from ATC EE					Annual Emissions				
Permit	HP	Hour/year	NOx	SOx	PM10	CO	VOC	NOx	SOx	PM10	CO	VOC
S-4800-1-1	200	3500	2.102	0.011	0.075	14.3	0.11	3,244	17	116	22,068	170
S-4800-2-1	200	3500	2.102	0.011	0.075	17	1.2	3,244	17	116	26,235	1,852
S-4800-3-2	250	3300	2.102	0.011	0.075	17	1.2	3,823	20	136	30,919	2,183
S-4800-4-1	304	3300	2.102	0.011	0.075	17	1.2	4,649	24	166	37,598	2,654
S-4800-5-1	304	3300	2.102	0.011	0.075	17	1.2	4,649	24	166	37,598	2,654
Annual Totals (lb/year)								19,609	102	700	154,418	9,513
Major Source Thresholds (lb/year)								20,000	140,000	140,000	200,000	20,000

		Permitted	EF from ATC EE					Daily Emissions				
Permit	HP	Hour/day	NOx	SOx	PM10	CO	VOC	NOx	SOx	PM10	CO	VOC
S-4800-1-1	200	24	2.102	0.011	0.075	14.3	0.11	22.2	0.1	0.8	151.3	1.2
S-4800-2-1	200	24	2.102	0.011	0.075	17	1.2	22.2	0.1	0.8	179.9	12.7
S-4800-3-2	250	24	2.102	0.011	0.075	17	1.2	27.8	0.1	1.0	224.9	15.9
S-4800-4-1	304	24	2.102	0.011	0.075	17	1.2	33.8	0.2	1.2	273.4	19.3
S-4800-5-1	304	24	2.102	0.011	0.075	17	1.2	33.8	0.2	1.2	273.4	19.3
Daily Totals (lb/day)								139.8	0.7	5.0	1,102.9	68.4

Post-Project Stationary Source Potential to Emit Calculations for S-4800 Westside Farm Management

Emissions were calculated based on Applicant Information (NOx) and EE S-1095422 emission factors.

		Permitted		EF from ATC EE					Annual Emissions				
Permit	HP	Hour/year	Load Factor	NOx	SOx	PM10	CO	VOC	NOx	SOx	PM10	CO	VOC
S-4800-1-2	200	6500	0.80	1.3	0.011	0.075	8.49	0.11	1,926	16	139	26,481	204
S-4800-2-2	200	6500	0.80	1.3	0.011	0.075	8.49	1.2	1,926	16	139	31,481	389
S-4800-3-3*	250	6500	0.80	1.3	0.011	0.075	8.49	1.2	2,407	20	174	39,352	486
S-4800-4-2*	304	6500	0.80	1.3	0.011	0.075	8.49	1.2	2,927	25	211	47,852	591
S-4800-5-2	304	6500	0.80	1.3	0.011	0.075	8.49	1.2	2,927	25	211	47,852	591
Annual Totals (lb/year)									12,113	102	874	193,018	2,261
Major Source Thresholds (lb/year)									20,000	140,000	140,000	200,000	20,000

		Permitted		EF from ATC EE					Daily Emissions				
Permit	HP	Hour/day	Load Factor	NOx	SOx	PM10	CO	VOC	NOx	SOx	PM10	CO	VOC
S-4800-1-2	200	24	1.00	2.102	0.011	0.075	8.49	0.11	13.8	0.1	0.8	151.3	1.2
S-4800-2-2	200	24	1.00	1.3	0.011	0.075	8.49	1.2	13.8	0.1	0.8	179.9	2.2
S-4800-3-3	250	24	1.00	1.3	0.011	0.075	8.49	1.2	17.2	0.1	1.0	224.9	2.8
S-4800-4-2	304	24	1.00	1.3	0.011	0.075	8.49	1.2	20.9	0.2	1.2	273.4	3.4
S-4800-5-2	304	24	1.00	1.3	0.011	0.075	8.49	1.2	20.9	0.2	1.2	273.4	3.4
Daily Totals (lb/day)									86.6	0.7	5.0	1,102.9	13.0

Post-Project Stationary Source Potential to Emit Calculations for S-4800 Westside Farm Management

REVISED TO REFLECT BACT NO_x AND VOC EF

Emissions were calculated based on Applicant Information (NO_x) and EE S-1095422 emission factors.

		Permitted		EF from ATC EE					Annual Emissions				
Permit	HP	Hour/year	Load Factor	NO _x	SO _x	PM10	CO	VOC	NO _x	SO _x	PM10	CO	VOC
S-4800-1-2	200	4,200	0.8	1.3	0.011	0.075	14.3	0.11	1,926	16	139	26,481	204
S-4800-2-2	200	4,200	0.8	1.3	0.011	0.075	8.49	0.21	1,926	16	139	31,481	389
S-4800-3-3	250	4,200	0.8	1.3	0.011	0.075	8.49	0.21	2,407	20	174	39,352	486
S-4800-4-2	304	4,200	0.8	1.3	0.011	0.075	8.49	0.21	2,927	25	211	47,852	591
S-4800-5-2	304	4,200	0.8	1.3	0.011	0.075	8.49	0.21	2,927	25	211	47,852	591
Annual Totals (lb/year)									12,113	102	874	193,018	2,261
Major Source Thresholds (lb/year)									20,000	140,000	140,000	200,000	20,000

		Permitted		EF from ATC EE					Daily Emissions				
Permit	HP	Hour/day	Load Factor	NO _x	SO _x	PM10	CO	VOC	NO _x	SO _x	PM10	CO	VOC
S-4800-1-2	200	24	1	1.3	0.011	0.075	14.3	0.11	13.8	0.1	0.8	151.3	1.2
S-4800-2-2	200	24	1	1.3	0.011	0.075	8.49	0.21	13.8	0.1	0.8	179.9	2.2
S-4800-3-3	250	24	1	1.3	0.011	0.075	8.49	0.21	17.2	0.1	1.0	224.9	2.8
S-4800-4-2	304	24	1	1.3	0.011	0.075	8.49	0.21	20.9	0.2	1.2	273.4	3.4
S-4800-5-2	304	24	1	1.3	0.011	0.075	8.49	0.21	20.9	0.2	1.2	273.4	3.4
Daily Totals (lb/day)									86.6	0.7	5.0	1,102.9	13.0

APPENDIX E

AIPE Calculations

Adjusted Increase in Permitted Emissions (AIPE) Calculations

Because the applicant has requested an increase in annual operating hours, the engines would be allowed to run on days when the current limit would prohibit them from operating. On those days, PE1 = 0 and PE2 is the daily PE2 calculated earlier in this evaluation. Using this practice, the AIPE was calculated as shown below.

The AIPE is calculated using the following equations:

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

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

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE2} - (\text{PE1} \times (\text{EF2} / \text{EF1}))$$

Using the originally proposed Altronic Interim Certification value of 1.2 g-VOC/bhp-hr, triggers BACT for VOC for the four retrofit engines. The BACT Determination in Appendix F found BACT to be 50 ppmvd VOC @ 15% O₂ (equivalent to 0.21 g-VOC/bhp-hr). The applicant agreed to revising the application to reflect this lower limit, the BACT EF will be used for post-project emission calculations. The original AIPE calculations for the five engines are shown in the following tables.

AIPE (S-4800-1)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	13.8	0	1.3	2.102	13.8	Yes
SOx	0.1	0	0.011	0.011	0.1	No
PM10	0.8	0	0.075	0.075	0.8	No
CO	151.3	0	14.3	14.3	151.3	No
VOC	1.2	0	0.11	0.11	1.2	No

AIPE (S-4800-2)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	13.8	0	1.3	2.102	13.8	Yes
SOx	0.1	0	0.011	0.011	0.1	No
PM10	0.8	0	0.075	0.075	0.8	No
CO	179.9	0	17	17	179.9	No
VOC	2.2	0	0.055	1.2	2.2	Yes

AIPE (S-4800-3)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	17.2	0	2.102	2.102	17.2	Yes
SOx	0.1	0	0.011	0.011	0.1	No
PM10	0.8	0	0.075	0.075	0.8	No
CO	89.8	0	17	17	89.8	No
VOC	15.9	0	0.055	0.055	15.9	Yes

AIPE (S-4800-4 and -5)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	20.9	0	2.102	2.102	20.9	Yes
SOx	0.2	0	0.011	0.011	0.2	No
PM10	1.2	0	0.075	0.075	1.2	No
CO	136.6	0	17	17	136.6	Yes
VOC	19.3	0	0.055	1.2	19.3	Yes

As shown in the preceding tables, the AIPE for NOx, VOC, and CO are greater than 2.0 lb/day. However, BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above. Therefore, BACT is triggered for NOx and VOC only since the PE is greater than 2 lb/day.

Recalculation of the AIPE using the BACT VOC limit is shown in the following tables:

Recalculated AIPE (S-4800-1)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	22.2	0	2.102	1.3	22.2	Yes
SOx	0.1	0	0.011	0.011	0.1	No
PM10	0.8	0	0.075	0.075	0.8	No
CO	151.3	0	17	8.49	151.3	Yes
VOC	1.2	0	0.11	0.11	1.2	No

Recalculated AIPE (S-4800-2)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	13.8	0	2.102	2.102	13.8	Yes
SOx	0.1	0	0.011	0.011	0.1	No
PM10	0.8	0	0.075	0.075	0.8	No
CO	89.8	0	17	3.4	89.8	Yes
VOC	2.2	0	0.055	0.055	12.7	Yes

Recalculated AIPE (S-4800-3)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	17.2	0	2.102	2.102	17.2	Yes
SOx	0.1	0	0.011	0.011	0.1	No
PM10	0.8	0	0.075	0.075	0.8	No
CO	89.8	0	17	3.4	89.8	Yes
VOC	2.8	0	0.055	0.055	15.9	Yes

Recalculated AIPE (S-4800-4 and -5)						
Pollutants	PE2 (lb/day)	PE1 (lb/day)	EF2	EF1	AIPE (lb/day)	BACT Triggered?
NOx	20.9	0	2.102	2.102	20.9	Yes
SOx	0.2	0	0.011	0.011	0.2	No
PM10	1.2	0	0.075	0.075	1.2	No
CO	136.6	0	17	17	136.6	Yes
VOC	3.4	0	0.055	1.2	19.3	Yes

As shown in the preceding tables, when using the BACT VOC limit, the recalculated AIPE for NOx, VOC, and CO are still greater than 2.0 lb/day. However, BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above. Therefore, BACT is triggered for NO_x and VOC only since the PE is greater than 2 lb/day.

APPENDIX F
BACT Guideline and Analysis

San Joaquin Valley Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline x.x.x

Emission Unit: AO Stationary Spark-Ignited IC Engines serving Irrigation Pumps Industry Type: Agriculture

Equipment Rating: ≤ 1,000 bhp

Last Update:

Pollutant	Achieved in Practice	Technologically Feasible	Alternate Basic Equipment
VOC	50 ppmvd @ 15% O ₂ *		Electrification
NO _x	90 ppmvd @ 15% O ₂ *	5 ppmvd @ 15% O ₂ (Lean Burn Engines only)	
CO	500 ppmvd @ 15% O ₂ *		
PM ₁₀	0.063 g/bhp-hr		
SO _x	0.0094 g/bhp-hr		

*Achievable via Rich-Burn Engine w/3-way catalyst or Lean Burn Engine.

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. A cost effectiveness analysis 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

1. Top-Down BACT Analysis for NO_x Emissions for Rich-Burn Natural Gas-Fired AO Stationary Spark-Ignited IC Engines serving Irrigation Pumps

Step 1 – Identify All Possible NO_x Control Technologies

The previously presented District BACT Guideline for AO Stationary Spark-Ignited IC Engines serving Irrigation Pumps, identifies BACT for NO_x emissions as the following:

Option 1: 90 ppmvd @ 15% O₂ – Achieved in Practice

Option 2: 5 ppmvd @ 15% O₂ (Lean Burn Engines only)

Option 3: Electrification – Alternate Basic Equipment

Step 2 – Eliminate Technologically Infeasible Options

Option 2, presented in Step 1 above, is feasible for lean-burn engines only. Since these are rich-burn engines, that option will be considered technologically infeasible and removed from consideration.

Step 3 – Rank Remaining NO_x Control Technologies by Control Effectiveness

The remaining feasible options are ranked according to their on-site emission factors.

Control Technology	Rank	Emissions	Technology Classification for BACT
Electrification	1	0	Alternate Basic Equipment (ABE)
90 ppmvd @ 15% O ₂	2	90 ppmvd @ 15% O ₂	Achieved-in-Practice (AIP)

Step 4 – Cost Effectiveness Analysis

Cost Effective Threshold:

The District's BACT Policy (APR 1305) establishes annual cost thresholds for imposed controls based upon the amount of pollutants abated by the controls. If the cost of control is at or below the threshold, the control is considered cost effective. If the cost exceeds the threshold, it is not cost effective and the control is not required. In May 2008 the District updated the BACT cost effective thresholds. The District's cost effective threshold for each pollutant from the May 2008 update is shown in the following table:

Cost Effective Thresholds, May 2008 Update	
Pollutant	Threshold (\$/ton)
NOx	24,500
CO	300
VOC	17,500
SOx	18,300
PM ₁₀	11,400

A. Electrification (Alternate Basic Equipment)

Pursuant to the District BACT Policy, Section E.2., alternate basic equipment shall not be required for modifications of existing equipment with valid District PTOs. Therefore, a cost analysis will not be performed for this option

B. 90 ppmvd @ 15% O₂ (Achieved-in-Practice)

Pursuant to APR 1305, Section D, item 3, a cost effectiveness analysis is not required for control alternatives which are deemed achieved-in-practice; therefore, a cost effectiveness analysis will not be performed for this option.

Step 5 – Select BACT

The remaining control not eliminated in Step 4 is the AIP BACT for this class and category of source. 90 ppmvd @ 15% O₂ (equivalent to 1.3 g/bhp-hr) is therefore considered BACT for NOx emissions.

Top-Down BACT Analysis for VOC Emissions for Rich-Burn Natural Gas-Fired AO Stationary Spark-Ignited IC Engines serving Irrigation Pumps

Step 1 – Identify All Possible VOC Control Technologies

The previously presented District BACT Guideline for AO Stationary Spark-Ignited IC Engines serving Irrigation Pumps, identifies BACT for VOC emissions as the following:

Option 1: 50 ppmvd @ 15% O₂ – Achieved in Practice

Option 2: Electrification – Alternate Basic Equipment

Step 2 – Eliminate Technologically Infeasible Options

Both options are considered to be technologically feasible.

Step 3 – Rank Remaining VOC Control Technologies by Control Effectiveness

Control Technology	Rank	Emissions	Technology Classification for BACT
Electrification	1	0	Alternate Basic Equipment (ABE)
50 ppmvd @ 15% O ₂	2	50 ppmvd @ 15% O ₂	Achieved-in-Practice (AIP)

Step 4 – Cost Effectiveness Analysis

A. Electrification (Alternate Basic Equipment)

Pursuant to the District BACT Policy, Section E.2., alternate basic equipment shall not be required for modifications of existing equipment with valid District PTOs. Therefore, a cost analysis will not be performed for this option

B. 50 ppmvd @ 15% O₂ (Achieved-in-Practice)

Pursuant to APR 1305, Section D, item 3, a cost effectiveness analysis is not required for control alternatives which are deemed achieved-in-practice; therefore, a cost effectiveness analysis will not be performed for this option.

Step 5 – Select BACT

The remaining control not eliminated in Step 4 is the AIP BACT for this class and category of source. 50 ppmvd @ 15% O₂ (equivalent to 0.21 g/bhp-hr) is therefore considered BACT for VOC emissions.

APPENDIX G
Health Risk Assessment Summary

REVISED
San Joaquin Valley Air Pollution Control District
Risk Management Review

To: G Heinen – Permit Services
From: Tadeh Issakhanian – Technical Services
Date: March 14, 2016
Facility Name: Westside Farm Mgmnt
Location: Wildwood Rd. & Hanawalt Rd.
Application #(s): S-4800-1-2, -2-2, -3-3, -4-2, -5-2
Project #: S-1151400

A. RMR SUMMARY

RMR Summary			
Categories	NG ICE (Unit 1-2, 2-2, 3-3, 4-2, 5-2)	Project Totals	Facility Totals
Prioritization Score	0.25	0.25	0.25
Acute Hazard Index	N/A ¹	N/A ¹	N/A ¹
Chronic Hazard Index	N/A ¹	N/A ¹	N/A ¹
Maximum Individual Cancer Risk	N/A ¹	N/A ¹	N/A ¹
T-BACT Required?	No		
Special Permit Requirements?	Yes		

¹Acute and Chronic Hazard Index and Maximum Individual Cancer Risk were not calculated since the total facility prioritization score was less than 1.0..

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 1-2, 2-2, 3-3, 4-2, 5-2

1. This engine's shall be operated only for 4,200 hours/year.

B. RMR REPORT

I. Project Description

Technical Services received a request on March 3, 2016, to revise a Risk Management Review for a proposed modification for S-4800-1-2 to increase the annual operating hours from 3,500 to 4,200 hours/year and S-4800-2-2, 3-3, 4-2, 5-2 retrofit the existing engines with an interim-certification Altronic Inc. EPC-50 AFRC System and increase the annual operating hours for units 2,3,4,5 from 3,500 to 4,200 hour/year.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2000 AP42 emission factors for Natural Gas Fired internal combustion 4 Stroke Rich Burn) Engine. The use of a catalyst reduces TACs by 76% (NESHAP), and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed unit was less than 1.0 (see RMR Summary Table). Therefore, no further analysis was necessary.

The following parameters were used for the review:

Analysis Parameters Unit 1-2, 2-2			
NG Fuel Usage Rate (MMscf/hr)	1.45E-03	NG Fuel Usage Rate (MMscf/yr)	1.02
Closest Receptor (m)	253		
Analysis Parameters Unit 3-3			
NG Fuel Usage Rate (MMscf/hr)	1.82E-03	NG Fuel Usage Rate (MMscf/yr)	1.27
Closest Receptor (m)	253		
Analysis Parameters Unit 4-2, 5-2			
NG Fuel Usage Rate (MMscf/hr)	2.21E-03	NG Fuel Usage Rate (MMscf/yr)	1.55
Closest Receptor (m)	253		

III. Conclusion

The prioritization score is less than 1.0. 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 requirements listed on page 1 of this report must be included for this proposed unit.

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

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Prioritization score w/ toxic emissions summary
- D. Facility Summary