



DEC 23 2010

Ed Anker
Shady Acres Dairy #2
P O Box 153
Helm, CA 93627

**Re: Notice of Preliminary Decision - Authority to Construct
Project Number: C-1103183**

Dear Mr. Anker:

Enclosed for your review and comment is the District's analysis of Shady Acres Dairy #2's application for Authority to Construct permits for one 1,250 horsepower diesel-fired emergency standby engine powering an electrical generator and one 500 gallon aboveground gasoline storage tank, at 15391 W. Elkhorn Ave in Helm.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jonah Aiyabei of Permit Services at (559) 230-5910.

Sincerely,

David Warner
Director of Permit Services

DW:jka

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
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DEC 23 2010

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

**Re: Notice of Preliminary Decision - Authority to Construct
Project Number: C-1103183**

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of Shady Acres Dairy #2's application for Authority to Construct permits for one 1,250 horsepower diesel-fired emergency standby engine powering an electrical generator and one 500 gallon aboveground gasoline storage tank, at 15391 W. Elkhorn Ave in Helm.

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

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Fresno Bee
Fresno Bee

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct permits to Shady Acres Dairy #2 for one 1,250 horsepower diesel-fired emergency standby engine powering an electrical generator and one 500 gallon aboveground gasoline storage tank, at 15391 W. Elkhorn Ave in Helm.

The analysis of the regulatory basis for this proposed action, Project #C-1103183, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

San Joaquin Valley Air Pollution Control District Authority to Construct Application Review Diesel-Fired Emergency Standby IC Engine and Gasoline Storage Tank

Facility Name: Shady Acres Dairy #2
Mailing Address: P O Box 153
Helm, CA 93627
Contact Person: Ed Anker
Telephone: 559-805-0868
Application #: C-6651-7-0
Project #: C-1103183
Complete: December 7, 2010

Date: December 13, 2010
Engineer: Jonah Aiyabei
Lead Engineer: Martin Keast

I. Proposal

Shady Acres Dairy #2 has requested Authority to Construct (ATC) permits for one 1,250 horsepower diesel-fired IC engine powering an electrical generator and one 500 gallon aboveground gasoline storage tank. The engine was installed in 2004 and the gasoline tank was installed in 2006. Both emission units were installed when the facility was already subject to District permit requirements, and should therefore not have been installed prior to the issuance of ATC permits. The facility received Notices of Violation from the District for installing the equipment without ATC permits. In order to bring the units into compliance, the facility is required to obtain ATC permits and comply with all the requirements that would have been applicable at the time of installation for each emission unit.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (12/18/08)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
CH&SC 41700 Health Risk Assessment
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4621 Gasoline Transfer into Stationary Storage Containers, Delivery Vessels,
and Bulk Plants (12/20/07)
Rule 4622 Transfer of Gasoline into Vehicle Fuel Tanks (12/20/07)

Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (1/18/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary
Compression-Ignition (CI) Engines
California Environmental Quality Act (CEQA)
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:
CEQA Guidelines

III. Project Location

The equipment is located at 15391 W. Elkhorn Avenue in Helm. The District has verified that 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 emergency standby engine powers an electrical generator to provide backup power for the facility's milk barn. Other than emergency standby operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

Gasoline is delivered to the storage tank via a delivery vessel. Gasoline is then dispensed from the storage tank into equipment fuel tanks during refueling.

V. Equipment Listing

- C-6651-7-0:** 1,250 BHP CATERPILLAR MODEL 3412 (S/N: BLG00319) DIESEL-FIRED TIER 1 CERTIFIED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR.
- C-6651-8-0:** AGRICULTURAL GASOLINE DISPENSING OPERATION WITH ONE 500 GALLON ABOVEGROUND STORAGE TANK SERVED BY TWO-POINT PHASE I VAPOR RECOVERY SYSTEM (G-70-102-A); AND 1 FUELING POINT WITH 1 PHASE II EXEMPT GASOLINE DISPENSING NOZZLE; USED PRIMARILY FOR FUELING IMPLEMENTS OF HUSBANDRY.

VI. Emission Control Technology Evaluation

The applicant has proposed to install a Tier 1 certified diesel-fired IC engine that is fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

The proposed engine met the tier certification requirements that were in effect at the time of installation; therefore, the engine meets the ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix C for a copy of the emissions data sheet and/or the ARB/EPA executive order).

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO_x emissions by over 99% from standard diesel fuel.

The gasoline storage tank is equipped with a two-point phase I vapor recovery system for the control of emissions during tank filling operations. The Phase I vapor recovery system is designed to reduce VOC emissions by at least 95% during tank filling. Emissions from fuel dispensing are uncontrolled but not expected to be significant since dispensing throughput is very low.

VII. General Calculations

A. Assumptions

Engine:

- Emergency operating schedule: 24 hours/day
- Non-emergency operating schedule: 100 hours/year
- Density of diesel fuel: 7.1 lb/gal
- EPA F-factor (adjusted to 60 °F): 9,051 dscf/MMBtu
- Fuel heating value: 137,000 Btu/gal
- BHP to Btu/hr conversion: 2,542.5 Btu/bhp-hr
- Thermal efficiency of engine: commonly ≈ 35%
- PM₁₀ fraction of diesel exhaust: 0.96 (CARB, 1988)

Gasoline Storage Tank:

- VOC is the only pollutant emitted from this operation.
- This facility may operate 24 hours per day, 365 days per year.
- The maximum daily gasoline throughput for tank filling is 500 gallons (total capacity of the tank.)
- The maximum daily gasoline throughput for fuel dispensing is 226 gallons.

B. Emission Factors

Engine:

Engine Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	5.75	ARB/EPA Certification
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.14	ARB/EPA Certification
CO	0.97	ARB/EPA Certification
VOC	0.07	ARB/EPA Certification

$$\frac{0.000015 \text{ lb} - S}{\text{lb} - \text{fuel}} \times \frac{7.1 \text{ lb} - \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} - SO_2}{1 \text{ lb} - S} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp} - \text{hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} - SO_x}{\text{bhp} - \text{hr}}$$

Gasoline Storage Tank:

These emission factors were obtained from Appendix A - Emission Factors For Gasoline Stations published by CAPCOA Air Toxic "Hot Spots" Program in the Gasoline Service Station Industrywide Risk Assessment Guidelines dated December 1997. The emission factors are summarized in the following table:

Gasoline Storage Tank Emission Factors	
Emission Factor (lb VOC/1,000-gal)	Emission Source
0.42	Tank filling loss (95%)
0.053	Breathing loss (A/G tank)
8.4	Vehicle fueling loss (Uncontrolled)
0.42	Spillage
9.293	Total VOC Losses

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since these emission units are being permitted as new, PE1 = 0 in all cases.

2. Post-Project Potential to Emit (PE2)

Engine:

The Potential Emissions (PE) for the engine is calculated as follows:

Daily PE (lb/day) = Emission Factor (g/hp-hr) x horsepower rating (hp) x maximum daily operation (hr/day) / 453.6 grams per lb (g/lb)

Annual PE (lb/yr) = Emission Factor (g/hp-hr) x horsepower rating (hp) x maximum annual operation (hr/yr) / 453.6 grams per lb (g/lb)

The daily and annual PE values for the engine as summarized in the following table:

Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	5.75	1,250	24	100	380.3	1,585
SO _x	0.0051	1,250	24	100	0.3	1
PM ₁₀	0.14	1,250	24	100	9.3	39
CO	0.97	1,250	24	100	64.2	267
VOC	0.07	1,250	24	100	4.6	19

Gasoline Storage Tank:

The PE for the gasoline storage and dispensing operation is calculated as follows:

Daily VOC emissions:

Tank Filling (Phase I):

$$\begin{aligned}
 \text{VOC (lb/day)} &= \text{daily throughput (gal/day)/1,000} \times (\text{EF lb-VOC/1,000-gal}) \\
 &= (500 \text{ gal/day})/1,000 \times (0.42 \text{ lb-VOC/1,000-gal}) \\
 &= 0.2 \text{ lb-VOC/day}
 \end{aligned}$$

Breathing losses:

$$\begin{aligned}\text{VOC (lb/day)} &= \text{daily throughput (gal/day)/1,000} \times (\text{EF lb-VOC/1,000-gal}) \\ &= (226 \text{ gal/day})/1,000 \times (0.053 \text{ lb-VOC/1,000-gal.}) \\ &= 0.0 \text{ lb-VOC/day}\end{aligned}$$

Equipment refueling (Phase II):

$$\begin{aligned}\text{VOC (lb/day)} &= \text{daily throughput (gal/day)/1,000} \times (\text{EF lb-VOC/1,000-gal}) \\ &= (226 \text{ gal/day})/1,000 \times (8.4 \text{ lb-VOC/1,000-gal.}) \\ &= 1.9 \text{ lb-VOC/day}\end{aligned}$$

Spillage:

$$\begin{aligned}\text{VOC (lb/day)} &= \text{daily throughput (gal/day)/1,000} \times (\text{EF lb-VOC/1,000-gal}) \\ &= (226 \text{ gal/day})/1,000 \times (0.42 \text{ lb-VOC/1,000-gal.}) \\ &= 0.1 \text{ lb-VOC/day}\end{aligned}$$

Annual VOC emissions

Tank Filling (Phase I):

$$\begin{aligned}\text{Annual emissions (lb/yr)} &= \text{daily emissions (lb/day)} \times (365 \text{ days/yr}) \\ &= 0.2 \text{ lb/day} \times 365 \text{ days/yr} \\ &= 73 \text{ lb/yr}\end{aligned}$$

Breathing Losses:

$$\begin{aligned}\text{Annual emissions (lb/yr)} &= \text{daily emissions (lb/day)} \times (365 \text{ days/yr}) \\ &= 0.0 \text{ lb/day} \times 365 \text{ days/yr} \\ &= 0 \text{ lb/yr}\end{aligned}$$

Equipment refueling (Phase II):

$$\begin{aligned}\text{Annual emissions (lb/yr)} &= \text{daily emissions (lb/day)} \times (365 \text{ days/yr}) \\ &= 1.9 \text{ lb/day} \times 365 \text{ days/yr} \\ &= 694 \text{ lb/yr}\end{aligned}$$

Spillage:

$$\begin{aligned} \text{Annual emissions (lb/yr)} &= \text{daily emissions (lb/day)} \times (365 \text{ days/yr}) \\ &= 0.1 \text{ lb/day} \times 365 \text{ days/yr} \\ &= 37 \text{ lb/yr} \end{aligned}$$

$$\begin{aligned} \text{Total annual emissions} &= (\text{tank filling emissions}) + (\text{breathing losses}) + \\ &\quad (\text{equipment refueling emissions}) + \text{spillage} \\ &= 73 \text{ lb/yr} + 0 \text{ lb/yr} + 694 \text{ lb/yr} + 37 \text{ lb/yr} \\ &= 804 \text{ lb/yr} \end{aligned}$$

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

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

Since this facility does not have any banked ERCs, the SSPE1 is the sum of the PE1 values for the units with valid Authorities to Construct (ATC) or Permits to Operate (PTO), as summarized in the following table:

SSPE1						
Permit Unit	NOx (lb/yr)	SOX (lb/yr)	PM10 (lb/yr)	CO (lb/yr)	VOC (lb/yr)	Source Project
C-6651-1: Milking operation	0	0	0	0	2,137	C-1063801
C-6651-2: Cow Housing	0	0	34,602	0	50,078	C-1063801
C-6651-3: Liquid Manure	0	0	0	0	31,463	C-1063801
C-6651-4: Solid Manure	0	0	0	0	0	C-1063801
C-6651-5: 375 hp ICE	827	79	41	251	94	C-1063801
C-6651-6: Feed Storage	0	0	0	0	0	C-1063801
SSPE1:	827	79	34,643	251	83,772	

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the

Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. Since this facility does not have any banked ERCs, the SSPE2 is the sum of the PE2 values for the units with valid Authorities to Construct (ATC) or Permits to Operate (PTO), as summarized in the following table:

SSPE2					
Permit Unit	NOx (lb/yr)	SOX (lb/yr)	PM10 (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-6651-1: Milking operation	0	0	0	0	2,137
C-6651-2: Cow Housing	0	0	34,602	0	50,078
C-6651-3: Liquid Manure	0	0	0	0	31,463
C-6651-4: Solid Manure	0	0	0	0	0
C-6651-5: 375 hp ICE	827	79	41	251	94
C-6651-6: Feed Storage	0	0	0	0	0
C-6651-7: 1,250 hp ICE	1,585	1	39	267	19
C-6651-8: Gasoline Tank	0	0	0	0	804
SSPE2:	2,412	80	34,682	518	84,595

5. Major Source Determination

Pursuant to Section 3.24 of District Rule 2201, a Major Source is a stationary source with post project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.24.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site." This facility does not have ERCs which have been banked at the source; therefore, no adjustment to SSPE2 is necessary. The facility's PE is compared to the major source thresholds in the following table:

SSPE2					
Permit Unit	NOx (lb/yr)	SOX (lb/yr)	PM10 (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-6651-3: Liquid Manure	0	0	0	0	11,242 ¹
C-6651-5: 375 hp ICE	827	79	41	251	94
C-6651-7: 1,250 hp ICE	1,585	1	39	267	19

¹ For dairy operations, the only non-fugitive emissions that may be counted towards the major source determination are emissions from the lagoons. The non-fugitive lagoon emissions were calculated in project C-1063801.

SSPE2					
Permit Unit	NOx (lb/yr)	SOX (lb/yr)	PM10 (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-6651-8: Gasoline Tank	0	0	0	0	804
SSPE	2,412	80	80	518	12,159
Major Source Thresholds	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As shown in the table above, the facility is not a major source.

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

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

7. Major Modification

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.*"

As discussed in Section VII.C.5 previously, the facility is not a Major Source for any criteria pollutant; therefore, the project does not constitute a Major Modification.

8. Federal Major Modification

As shown in the previous section, this project does not constitute a Major Modification. Therefore, in accordance with District Rule 2201, Section 3.17, this project does not constitute a Federal Major Modification and no further discussion is required.

9. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

As discussed in Section I, both the engine and the gasoline storage tank are being permitted as emission units. Additionally, as determined in Section VII.C.7, this project does not result in a Major Modification. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions are compared to the BACT threshold levels in the following tables:

Engine:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	380.3	> 2.0	n/a	Yes
SO _x	0.3	> 2.0	n/a	No
PM ₁₀	9.3	> 2.0	n/a	Yes
CO	64.2	> 2.0 and SSPE2 ≥ 200,000 lb/yr	518	No
VOC	4.6	> 2.0	n/a	Yes

As shown in the preceding table, BACT will be triggered for NO_x, PM₁₀, and VOC emissions from the engine.

Gasoline Storage Tank:

Phase I: Tank Filling:

Pre-control VOC emissions from tank filling operations exceed 2 lb/day; hence BACT is triggered for Phase I.

Phase II: Fuel Dispensing:

Pre-control emissions from equipment refueling operations are less than 2 lb/day; hence BACT is not triggered for Phase II.

2. BACT Guidelines

Engine:

BACT Guideline 3.1.3 (2004 version), which appears in Appendix B of this report, covers diesel-fired emergency IC engines ≥ 400 hp.

Gasoline Storage Tank:

The applicant is proposing to install an ARB certified Phase I vapor recovery system, which meets BACT for this type of operation (Appendix B).

3. Top Down BACT Analysis

Per District Policy APR 1305, Section IX, "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 for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

Engine:

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix B of this report, BACT is satisfied with:

- NO_x: Certified emissions of 6.9 g/hp-hr or less
- VOC: Positive Crankcase Ventilation
- PM₁₀: Emission rate of 0.4 g/hp-hr or less

The following condition(s) will be listed on the ATC to ensure compliance with the NO_x, VOC and PM₁₀ BACT emissions limit(s):

- Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
- {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201] N
- Emissions from this IC engine shall not exceed any of the following limits: 5.75 g-NO_x/bhp-hr, 0.97 g-CO/bhp-hr, or 0.07 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

Gasoline Storage Tank:

The applicant is proposing to install an ARB certified Phase I vapor recovery system, which meets BACT for this type of operation (see Appendix B).

B. Offsets

Pursuant to Section 4.6.9 of District Rule 2201, agricultural sources, to the extent provided by California Health and Safety Code, section 42301.18(c) are exempt from offsets as long as nothing in this Health and Safety Code section circumvents the requirements of Section 42301.16(a). Therefore, offsets are not required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. Any new Major Source, which is a new facility that is also a Major Source

As shown in Section VII.C.6, this facility is not a new Major Source.

- b. Major Modifications

As shown in Section VII.C.7, this project is not a Major Modification.

- c. Any new emissions unit with a Potential to Emit greater than 100 lb/day for any one pollutant

As calculated in Section VII.C.2, daily emissions for NO_x are greater than 100 lb/day.

- d. Any project which results in the offset thresholds being surpassed

As shown in Section VII.C.4, an offset threshold will not be surpassed.

- e. Any project with an Stationary Source project Increase in Potential (SSIPE) Emissions greater than 20,000 lb/year for any pollutant.

For this project, the proposed engine and gasoline storage tank are the only emissions sources that will generate an increase in Potential to Emit. Since the PE values of the proposed units are well below 20,000 lb/year for all pollutants (See Section VII.C.2), the SSIPE for this project will be below the public notice threshold.

2. Public Notice Action

As demonstrated above, this project will require public noticing. 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(s) for this equipment.

D. Daily Emissions Limits

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

Engine:

- Emissions from this IC engine shall not exceed any of the following limits: 5.75 g-NO_x/bhp-hr, 0.97 g-CO/bhp-hr, or 0.07 g-VOC/bhp-hr. [District Rule 2201]
- Emissions from this IC engine shall not exceed 0.14 g-PM₁₀/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102]
- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801]

Gasoline Storage Tank:

For the refueling operation the DEL is established by the maximum tank capacity, the emission factor as shown in Section VII.B of this document, and the following fuel dispensing throughput limit:

- The fuel dispensing throughput shall not exceed 226 gallons per day. [District Rule 2201] N.

E. Compliance Assurance

1. Source Testing

Engine:

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with Rule 2201.

Gasoline Storage Tank:

Source testing is required by District Rule 4621, Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants, this gasoline dispensing operation is subject to the source testing requirements of this rule. Source testing requirements, in accordance with this rule, will be discussed in Section VIII of this evaluation.

2. Monitoring

Engine:

No monitoring is required to demonstrate compliance with Rule 2201.

Gasoline Storage Tank:

Monitoring is required by District Rule 4621, Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants, this gasoline dispensing operation is subject to the monitoring requirements of this rule. Monitoring requirements, in accordance with this rule, will be discussed in Section VIII of this evaluation.

3. Recordkeeping

Engine:

Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

Gasoline Storage Tank:

Recordkeeping is required by District Rule 4621, Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants, this gasoline dispensing operation is subject to the recordkeeping requirements of this rule. Recordkeeping requirements, in accordance with this rule, will be discussed in Section VIII of this evaluation.

4. Reporting

No reporting is required to ensure compliance with Rule 2201 for either of the emission units in this project.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14.1 of this rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis.

As shown by the AAQA summary sheet in Appendix D, the proposed equipment will not cause or make worse a violation of an air quality standard for NO_x, CO, PM₁₀, or SO_x.

Rule 2520 Federally Mandated Operating Permits

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

Rule 4001 New Source Performance Standards (NSPS)

40 CFR 60 Subpart III – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Pursuant to 40 CFR 60.4200(a), the provisions of this subpart are applicable to stationary compression ignition engines that commenced construction after July 11, 2005 and were manufactured after April 1, 2006; or engines that were modified or reconstructed after July 11, 2005.

The proposed engine was manufactured in 2001 and installed in 2004, and is therefore not subject to the requirements of this subpart.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

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

Pursuant to 40 CFR 63.6590(b)(3), an existing stationary engine located at an area source of HAP does not have to meet the requirements of this subpart. Further, 40 CFR 63.6590(a)(1)(iii) defines an existing engine as one that was constructed or reconstructed before June 12, 2006.

Since the proposed engine was installed in 2004, it is a existing unit and is therefore not subject to the requirements of this subpart.

Rule 4101 Visible Emissions

Engine:

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 listed on the ATC to ensure compliance:

- {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]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations; provided the equipment is well maintained. Therefore, the following condition will be listed on the ATCs for both permit units to ensure compliance:

- {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)

Engine:

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) 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. Therefore, a risk

management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

RMR Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
C-6651-7-0	N/A	N/A	0.06 in a million	No

The following conditions will be listed on the ATC to ensure compliance with the RMR:

- {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]
- Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102]

Gasoline Storage Tank:

Motor vehicle refueling facilities equipped with vapor recovery systems satisfy the District's BACT requirement for air toxic control, and the District has determined the health risk impact from such sources is insignificant. Therefore, a health risk assessment will not be required. Compliance with this rule is expected.

Rule 4201 Particulate Matter Concentration

Engine:

Rule 4201 limits particulate matter emissions from any single source operation to 0.1 g/dscf, which, as calculated below, is equivalent to a PM₁₀ emission factor of 0.4 g-PM₁₀/bhp-hr.

$$0.1 \frac{\text{grain-PM}}{\text{dscf}} \times \frac{\text{g}}{15.43 \text{ grain}} \times \frac{1 \text{ Btu}_{in}}{0.35 \text{ Btu}_{out}} \times \frac{9,051 \text{ dscf}}{10^6 \text{ Btu}} \times \frac{2,542.5 \text{ Btu}}{1 \text{ bhp-hr}} \times \frac{0.96 \text{ g-PM}_{10}}{1 \text{ g-PM}} = 0.4 \frac{\text{g-PM}_{10}}{\text{bhp-hr}}$$

The proposed engine has a PM₁₀ emission factor less than 0.14 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC:

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

Rule 4621 Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants

This rule applies to stationary gasoline storage containers with a capacity greater than 250 gallons, stationary gasoline storage containers with a capacity greater than 250 gallons and less than 19,800 gallons located at bulk plants, and gasoline delivery vessels.

The rule exempts the transfer of gasoline into any stationary storage container with a capacity of 550 gallons or less used primarily for the fueling of implements of husbandry, if such container is equipped with a permanent submerged fill pipe, from the requirements of sections 5.2.1 and 5.2.2.

Section 5.1 states "loading equipment and vapor collection equipment shall be installed, maintained, and operated such that it is leak-free, with no excess organic liquid drainage at disconnect."

The following conditions will be placed on the permit to ensure compliance:

- {modified 3911} The fuel loading equipment and vapor collection equipment shall be installed, maintained and operated such that it is leak-free, with no excess organic liquid drainage at disconnect. [District Rule 4621]
- {3912} A leak is defined as the dripping of VOC-containing liquid at a rate of more than three (3) drops per minute, or the detection of any gaseous or vapor emissions with a concentration or total organic compound greater than 10,000 ppmv, as methane, above background when measured in accordance with EPA Test Method 21. [District Rule 4621]

In addition, ARB has the additional certification requirements, including applicable rules and regulations of the Division of Measurement Standards, the Department of Food and Agriculture, the Office of the State Fire Marshal, the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health, the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board that have been made conditions of the certification.

Therefore, the following permit condition will be placed on the ATC to ensure compliance with this requirement:

- {3976} The Phase I vapor recovery system shall be installed and maintained in accordance with the manufacturer specifications and the ARB Executive Order specified in this permit, including applicable rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board that have been made conditions of the certification. [District Rule 4621]

Section 5.4.1 states "all aboveground storage containers shall be constructed and maintained in a leak-free condition." Therefore, the following permit condition will be placed on the ATC to ensure compliance with this requirement:

- {3980} The storage container shall be installed, maintained, and operated such that it is leak-free. [District Rule 4621]

Section 5.4.5 states "operators of an aboveground storage container not located at a bulk plant shall conduct and pass the performance test specified in Sections 6.4.9 to determine compliance at least once every 36 months, (no more than 30 days before or after the required performance test date) unless otherwise required under ARB Executive Order." Therefore, the following permit condition will be placed on the ATC to ensure compliance with this requirement:

- {3927} The permittee shall conduct all periodic vapor recovery system performance tests specified in this permit, no more than 30 days before or after the required compliance testing date, unless otherwise required under the applicable ARB Executive Order. [District Rule 4621]
- {4020} The permittee shall perform and pass a Static Leak Test for Aboveground Tanks using ARB TP-201.3B or TP-206.3 within 60 days after initial start-up and at least once every 36 months thereafter. [District Rule 4621]

Section 5.5 states "All Phase I vapor recovery systems shall be inspected according to the frequency specified in Table 1. The person conducting the inspections shall, at a minimum, verify that the fill caps and vapor caps are not missing, damaged, or loose, that the fill cap gasket and vapor cap gaskets are not missing or damaged, that the fill adapter and vapor adapter are securely attached to the risers, that, where applicable, the spring-loaded submerged fill tube seals properly against the coaxial tubing, and the dry break (poppet-valve) is not missing or damaged and that the submerged fill tube is not missing or damaged." Therefore, the following permit conditions will be placed on the ATC to ensure compliance with these requirements:

- {3924} Periodic maintenance inspections of the Phase I vapor recovery system shall include, at a minimum, verification that 1) the fill caps and vapor caps are not missing, damaged, or loose; 2) the fill cap gasket and vapor cap gaskets are not missing or damaged; 3) the fill adapter and vapor adapter are securely attached to the risers; 4) where applicable, the spring-loaded submerged fill tube seals properly against the coaxial tubing; 5) the dry break (poppet-valve) is not missing or damaged; and 6) the submerged fill tube is not missing or damaged. [District Rule 4621]
- {3922} The permittee shall conduct periodic maintenance inspections based on the greatest monthly throughput of gasoline dispensed by the facility in the previous year as follows: A) less than 2,500 gallons - one day per month; B) 2,500 to less than 25,000 gallons - one day per week; or C) 25,000 gallons or greater - five days

per week. All inspections shall be documented within the O & M Manual. [District Rule 4621]

Section 5.7.2 states “no person shall operate, or allow the operation of a delivery vessel unless valid State of California decals which attest to the vapor integrity of the container are displayed.” Therefore, the following permit condition will be placed on the ATC to ensure compliance with this requirement:

- {3915} No gasoline delivery vessel shall be operated or be allowed to operate unless valid State of California decals are displayed on the cargo container, which attest to the vapor integrity of the container. [District Rule 4621]

Section 6.1.4 states “all records required to demonstrate compliance with the requirements of this rule shall be retained on the premises for a minimum of five years and made available on site during normal business hours to the APCO, ARB, or EPA, and submitted to the APCO, ARB, or EPA upon request.” Therefore, the following permit conditions will be placed on the ATC to ensure compliance with these requirements:

- {4009} The permittee shall maintain monthly and annual gasoline throughput records. [District Rule 4621]
- {3973} All records required by this permit shall be retained on-site for a period of at least five years and shall be made available for made available for District inspection upon request. [District Rule 4621]

Section 6.2.3 states “Operators shall notify the District at least seven days prior to any performance testing.”

Section 6.2.4 states “Operators shall submit all performance test results to the District within 30 days of test completion.”

Therefore, the following permit condition will be placed on the ATC to ensure compliance with these requirements:

- {3968} The permittee shall notify the District at least 7 days prior to each performance test. The test results shall be submitted to the District no later than 30 days after the completion of each test. [District Rule 4621]

Section 6.3.1 states “on and after June 20, 2008, installation and maintenance contractors shall be certified by the ICC for Vapor Recovery System Installation and Repair (VI) and make available onsite proof of ICC certification for VI, and have and make available on site proof of any and all certifications required by the Executive Order and installation and operation manual in order to install or maintain specific systems, or work under the direct and personal supervision of an individual physically present at the work site who possesses and makes available onsite a current certificate

from the ICC, indicating he or she has passed the VI exam and all certifications required by the applicable Executive Order.

Section 6.3.2 states "All ICC certifications shall be renewed every 24 months by passing the appropriate exam specific to the certification being sought."

Section 6.3.3 states "Effective on and after March 21, 2008, Gasoline Dispensing Facility Testers wishing to conduct vapor recovery system testing and repair at facilities located within the District, shall be in full compliance with District Rule 1177 (Gasoline Dispensing Facility Tester Certification)."

Therefore, the following permit condition will be placed on the ATC to ensure compliance with these requirements:

- {4013} A person performing installation of, or maintenance on, a certified Phase I vapor recovery system shall be certified by the ICC for Vapor Recovery System Installation and Repair, or work under the direct and personal supervision of an individual physically present at the work site who is certified. The ICC certification shall be renewed every 24 months. [District Rule 4621]
- {4015} Proof of the ICC certification and all other certifications required by the Executive Order and installation and operation manual shall be made available onsite. [District Rule 4621]
- {4006} A person conducting testing of, or repairs to, a certified vapor recovery system shall be in compliance with District Rule 1177 (Gasoline Dispensing Facility Tester Certification). [District Rule 4621]

Rule 4622 Transfer of Gasoline into Vehicle Fuel Tanks

This rule applies to gasoline dispensing facilities that fuel motor vehicles. Pursuant to section 4.2, the requirements of this rule shall not apply to gasoline storage containers that are exempt pursuant to Section 4.0 of Rule 4621 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants).

Since the proposed equipment under section 4.0 of Rule 4621, the requirements of this rule are not applicable.

Rule 4701 Internal Combustion Engines – Phase 1

The provisions of this rule do not apply to engines used in agricultural operations, i.e. for the growing of crops or raising of fowl or animals.

The following standard condition from the District's for GEAR for diesel IC engines used in agricultural operations will be included on the permit:

- 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 Rule 4701]

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.

Pursuant to Section 4.2, except for the requirements of Sections 5.7 and 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following condition:

- 1) An emergency standby engine as defined in Section 3.0 of this rule, and provided that it is operated with a nonresettable elapsed operating time meter. In lieu of a nonresettable time meter, the owner of an emergency engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Section 3.15 defines an "Emergency-Standby Engine" as an internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes: (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work; (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes. An engine shall not be considered to be an emergency standby engine if it is used: (1) to reduce the demand for electrical power when normal electrical power line service has not failed; or (2) to produce power for the utility electrical distribution system; or (3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.

The emergency-standby IC engine will only have to meet the requirements of Sections 5.7 and 6.2.3 of this rule.

Section 5.7 requires that the owner of an emergency-standby engine to comply with the requirements specified in Section 5.7.2 through Section 5.7.5 below:

- 1) Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.
- 2) Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.
- 3) 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 Stationary 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.

Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {3405} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
- {3478} During periods of operation for maintenance, testing, and required regulatory purposes, 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]
- {3403} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93115]
- {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
- {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
- {3809} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702]

Section 6.2.3 requires that an owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and submitted to the APCO upon request and at the end of each calendar year in a manner and form approved by the APCO. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {3479} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
- {3475} 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 and 17 CCR 93115]

Rule 4801 Sulfur Compounds

Engine:

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

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

n = moles SO₂

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

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

$$\frac{0.000015 \text{ lb} - \text{S}}{\text{lb} - \text{fuel}} \times \frac{7.1 \text{ lb}}{\text{gal}} \times \frac{64 \text{ lb} - \text{SO}_2}{32 \text{ lb} - \text{S}} \times \frac{1 \text{ MMBtu}}{9,051 \text{ scf}} \times \frac{1 \text{ gal}}{0.137 \text{ MMBtu}} \times \frac{\text{lb} - \text{mol}}{64 \text{ lb} - \text{SO}_2} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} - \text{mol} \cdot \text{°R}} \times \frac{520 \text{ °R}}{14.7 \text{ psi}} \times 1,000,000 = 1.0 \text{ ppmv}$$

Since 1.0 ppmv is ≤ 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC to ensure compliance:

- Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801]

California Health & Safety Code 42301.6 (School Notice)

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

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

Pursuant to Section 93115.3(a), the in-use stationary diesel agricultural emission standard and other requirements of section 93115.8(b) do not apply to agricultural emergency standby generator set engines equipped with nonresettable hour meters with a minimum display capability of 9,999 hours, provided the owners or operators of such engines comply with the registration requirements of section 93115.8(c) and (d) and the applicable recordkeeping and reporting requirements of section 93115.10.

The proposed engine is an in-use engine because it was installed in 2004. The engine is equipped with an hour meter meeting the ATCM requirements and the registration requirements are superseded by permit requirements. The engine is therefore in compliance with the applicable sections of the ATCM.

California Environmental Quality Act (CEQA)

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

The basic purposes of CEQA are to:

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

Consistent with California Environmental Quality Act (CEQA) and CEQA Guidelines requirements, the San Joaquin Valley Air Pollution Control District (District) has adopted procedures and guidelines for implementing CEQA. The District's Environmental

Review Guidelines (ERG) establishes procedures for avoiding unnecessary delay during the District's permitting process while ensuring that significant environmental impacts are thoroughly and consistently addressed. The ERG includes policies and procedures to be followed when processing permits for projects that are exempt under CEQA.

The State Legislature granted a number of exemptions from CEQA, including projects that require only ministerial approval. Based upon analysis of its own laws and consideration of CEQA provisions, the District has identified a limited number of District permitting activities considered to be ministerial approvals. As set forth in §4.2.1 of the ERG, projects permitted consistent with the District's *Guidelines for Expedited Application Review* (GEAR) are standard application reviews in which little or no discretion is used in issuing Authority to Construct (ATC) documents.

For the proposed project, the District performed an Engineering Evaluation (this document) and determined that the project qualifies for processing under the procedures set forth in the District's Permit Services Procedures Manual in the Guidelines for Expedited Application Review (GEAR). Thus, as discussed above, this issuance of such ATC(s) is a ministerial approval for the District and is not subject to CEQA provisions.

On December 17, 2009, the District's Governing Board adopted the first comprehensive regional policy and guidance on addressing and mitigating GHG emission impacts caused by industrial, commercial, and residential development in the San Joaquin Valley. The adopted District policy – *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* applies to projects for which the District has discretionary approval authority over the project and serves as the lead agency for CEQA purposes. The policy relies on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. However, consistent with the District's objective to achieve the GHG emission reduction targets established pursuant to AB 32, BPS will be incorporated into the District's GEAR application review process. In the interim, projects meeting the existing GEAR requirements will continue to be processed as ministerial approvals.

IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authority to Construct C-6651-7-0 and 8-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix A.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
C-6651-7-0	3020-10-F	1,250 bhp IC engine	\$749.00
C-6651-8-0	3020-11-A	1 nozzle	\$34.00

XI. Appendices

- A. Draft ATCs
- B. BACT Guidelines and BACT Analysis
- C. Emissions Certification
- D. HRA Summary and AAQA
- E. QNEC Calculations

Appendix A

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: C-6651-7-0

LEGAL OWNER OR OPERATOR: SHADY ACRES DAIRY #2

MAILING ADDRESS: PO BOX 153
HELM, CA 93627

LOCATION: 15391 W ELKHORN AVE
HELM, CA 93687

EQUIPMENT DESCRIPTION:

1,250 BHP CATERPILLAR MODEL 3412 (S/N: BLG00319) DIESEL-FIRED TIER 1 CERTIFIED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR.

CONDITIONS

1. {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
2. {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]
3. Emissions from this engine shall not exceed 0.14 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102]
4. Emissions from this engine shall not exceed any of the following limits: 5.75 g-NOx/bhp-hr, 0.97 g-CO/bhp-hr, or 0.07 g-VOC/bhp-hr. [District Rule 2201]
5. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
6. {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]
7. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
8. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801]
9. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

C-6651-7-0 : Dec 20 2010 9:33AM - AIYABEUJ : Joint Inspection NOT Required

10. The engine shall be operated only for testing and maintenance, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201, 4102 and 4702]
11. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93115]
12. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
13. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, 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]
14. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
15. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
16. 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 Rule 4701]
17. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702]
18. {3475} 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 and 17 CCR 93115]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: C-6651-8-0

LEGAL OWNER OR OPERATOR: SHADY ACRES DAIRY #2

MAILING ADDRESS: PO BOX 153
HELM, CA 93627

LOCATION: 15391 W ELKHORN AVE
HELM, CA 93687

EQUIPMENT DESCRIPTION:

AGRICULTURAL GASOLINE DISPENSING OPERATION WITH ONE 500 GALLON ABOVEGROUND STORAGE TANK SERVED BY TWO-POINT PHASE I VAPOR RECOVERY SYSTEM (G-70-102-A); AND 1 FUELING POINT WITH 1 PHASE II EXEMPT GASOLINE DISPENSING NOZZLE; USED PRIMARILY FOR FUELING IMPLEMENTS OF HUSBANDRY.

CONDITIONS

1. The fuel dispensing throughput shall not exceed 226 gallons per day. [District Rule 2201]
2. The fuel loading equipment and vapor collection equipment shall be installed, maintained and operated such that it is leak-free, with no excess organic liquid drainage at disconnect. [District Rule 4621]
3. {3980} The storage container(s) shall be installed, maintained, and operated such that they are leak-free. [District Rule 4621]
4. {3912} A leak is defined as the dripping of VOC-containing liquid at a rate of more than three (3) drops per minute, or the detection of any gaseous or vapor emissions with a concentration of total organic compound greater than 10,000 ppmv, as methane, above background when measured in accordance with EPA Test Method 21. [District Rule 4621]
5. {3976} The Phase I vapor recovery system shall be installed and maintained in accordance with the manufacturer specifications and the ARB Executive Order specified in this permit, including applicable rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the Office of the State Fire Marshal of the Department of Forestry and Fire Protection, the Division of Occupational Safety and Health of the Department of Industrial Relations, and the Division of Water Quality of the State Water Resources Control Board that have been made conditions of the certification. [District Rule 4621]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

C-6651-8-0 : Dec 22 2010 8:38AM - AIYABEUJ : Joint Inspection NOT Required

6. {3927} The permittee shall conduct all periodic vapor recovery system performance tests specified in this permit, no more than 30 days before or after the required compliance testing date, unless otherwise required under the applicable ARB Executive Order. [District Rule 4621]
7. {4020} The permittee shall perform and pass a Static Leak Test for Aboveground Tanks using ARB TP-201.3B or TP-206.3 within 60 days after initial start-up and at least once every 36 months thereafter. [District Rule 4621]
8. {3924} Periodic maintenance inspections of the Phase I vapor recovery system shall include, at a minimum, verification that 1) the fill caps and vapor caps are not missing, damaged, or loose; 2) the fill cap gasket and vapor cap gaskets are not missing or damaged; 3) the fill adapter and vapor adapter are securely attached to the risers; 4) where applicable, the spring-loaded submerged fill tube seals properly against the coaxial tubing; 5) the dry break (poppet-valve) is not missing or damaged; and 6) the submerged fill tube is not missing or damaged. [District Rule 4621]
9. {3922} The permittee shall conduct periodic maintenance inspections based on the greatest monthly throughput of gasoline dispensed by the facility in the previous year as follows: A) less than 2,500 gallons - one day per month; B) 2,500 to less than 25,000 gallons - one day per week; or C) 25,000 gallons or greater - five days per week. All inspections shall be documented within the O & M Manual. [District Rule 4621]
10. {3915} No gasoline delivery vessel shall be operated or be allowed to operate unless valid State of California decals are displayed on the cargo container, which attest to the vapor integrity of the container. [District Rule 4621]
11. {4009} The permittee shall maintain monthly and annual gasoline throughput records. [District Rule 4621]
12. {3973} All records required by this permit shall be retained on-site for a period of at least five years and shall be made available for District inspection upon request. [District Rule 4621]
13. {3968} The permittee shall notify the District at least 7 days prior to each performance test. The test results shall be submitted to the District no later than 30 days after the completion of each test. [District Rule 4621]
14. {4013} A person performing installation of, or maintenance on, a certified Phase I vapor recovery system shall be certified by the ICC for Vapor Recovery System Installation and Repair, or work under the direct and personal supervision of an individual physically present at the work site who is certified. The ICC certification shall be renewed every 24 months. [District Rule 4621]
15. {4015} Proof of the ICC certification and all other certifications required by the Executive Order and installation and operation manual shall be made available onsite. [District Rule 4621]
16. {4006} A person conducting testing of, or repairs to, a certified vapor recovery system shall be in compliance with District Rule 1177 (Gasoline Dispensing Facility Tester Certification). [District Rule 4621]

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Appendix B

BACT Guidelines and BACT Analyses

Best Available Control Technology (BACT) Guideline 3.1.3*

Last Update: June 30, 2001

Emission Unit: Emergency Diesel I.C. Engine \geq 400 hp

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Positive crankcase ventilation		
CO	2.0 grams/brake horsepower-hour	\leq 1.4 grams/bhp-hr	
SO _x	Low-sulfur diesel fuel (500 ppmw sulfur or less) or Very Low-sulfur diesel fuel (15 ppmw sulfur or less), where available.		
NO _x	Certified emissions of 6.9 g/bhp-hr or less		
PM ₁₀	0.1 grams/bhp-hr (if TBACT is triggered) 0.4 grams/bhp-hr (if TBACT is not triggered)		

1. Any engine model included in the ARB or EPA diesel engine certification lists and identified as having a PM10 emission rate of 0.149 grams/bhp-hr or less, based on ISO 8178 test procedure, shall be deemed to meet the 0.1 grams/bhp-hr requirement.
2. A site-specific Health Risk Analysis is used to determine if TBACT is triggered. (Clarification added 05/07/01)

BACT Analysis

BACT Analysis for NO_x Emissions:

Oxides of nitrogen (NO_x) are generated from the high temperature combustion of the diesel fuel. A majority of the NO_x emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NO_x emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

a. Step 1 - Identify All Possible NO_x Control Technologies

The SJVUAPCD BACT Clearinghouse identifies achieved-in-practice BACT for this engine as certified NO_x emissions of 6.9 g/hp-hr or less. No technologically feasible alternatives are listed.

b. Step 2 - Eliminate Technologically Infeasible Options

There are no technologically feasible options listed.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Certified NO_x emissions of 6.9 g/hp-hr or less.

d. Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

Therefore, BACT for NO_x emissions is certified NO_x emissions of less than 6.9 g/hp · hr.

BACT Analysis for PM₁₀ Emissions:

Particulate matter (PM₁₀) emissions occur from the reaction of various elements in the diesel fuel including fuel sulfur.

a. Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse identifies achieved-in-practice BACT for this engine as 0.1 grams/bhp-hr (if TBACT is triggered) and 0.4 grams/bhp-hr (if TBACT is not triggered). In this case, TBACT is not triggered.

b. Step 2 - Eliminate Technologically Infeasible Options

There are no technologically infeasible options.

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

PM₁₀ emission factor of less than or equal to 0.4 g/hp·hr.

d. Step 4 - Cost Effectiveness Analysis

The only control technology alternative in the ranking list from Step 3 has been achieved in practice. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM₁₀ emissions for this engine is PM₁₀ emissions of less than or equal to 0.4 g/hp·hr.

BACT Analysis for VOC Emissions:

a. Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse identifies achieved-in-practice BACT for this engine as positive crankcase ventilation (PCV).

b. Step 2 - Eliminate Technologically Infeasible Options

PCV is technologically feasible

c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

PCV

d. Step 4 - Cost Effectiveness Analysis

Since the PCV is achieved-in-practice BACT, a cost effectiveness analysis is not required.

e. Step 5 – Select BACT

BACT for VOC emissions for this engine is PCV.

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 4.6.1*

Last Update: October 1, 2002

Emissions Unit: Motor Vehicle Gasoline Storage and Dispensing Operation

Pollutant	Achieved in Practice or contained in SIP	Technologically Feasible	Alternate Basic Equipment
VOC	CARB certified Phase I and Phase II vapor recovery systems		

Determinations 4.6.1 and 4.6.2 were combined 10/01/02 since BACT requirements were identical for both classes of this source category.

BACT Analysis for VOC Emissions:

Step 1 - Identify All Possible Control Technologies

Emission control system consisting of ARB certified Phase I vapor recovery system.

Step 2 - Eliminate Technologically Infeasible Options

All control technologies listed in the clearinghouse are feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

ARB certified Phase I vapor recovery system.

Step 4 - Cost Effectiveness Analysis

A cost effectiveness analysis is not required when the applicant proposes the most effective control method identified as technologically feasible. A Phase I vapor recovery system is identified as technologically feasible and achieved in practice BACT. Therefore, further cost effectiveness analysis is not required.

Step 5 - Select BACT

The applicant's proposed use of Phase I vapor recovery for the control of VOC emissions satisfies District's BACT requirements.

Appendix C

Emissions Certification

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-159

Relating to Certification of New Off-Road Compression-Ignition Equipment Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board (Board) by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and exhaust emission control system produced by the manufacturer are certified as described below for use in off-road equipment:

Model Year: 2001

Typical Equipment Usage: Generator

Fuel Type: Diesel

<u>Engine Family</u>	<u>Engine Displacement (liters)</u>	<u>Useful Life (hours)</u>	<u>Exhaust Emission Control Systems and Special Features</u>
1CPXL27.0MRS	27.0	8000	Direct Diesel Injection Turbocharger Charge Air Cooler Engine Control Module

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values for total hydrocarbons (THC), carbon monoxide (CO), oxides of nitrogen (NOx), and particulate matter (PM) (units are expressed in grams per kilowatt-hour (g/kw-hr)), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423(b)(1) and 2423(b)(3)(B), as amended by Board approval on January 28, 2000):

<u>Engine Power Rating (kw)</u>	<u>Emission Standard Category</u>		<u>Exhaust Emissions (g/kw-hr)</u>				<u>Smoke Opacity (%)</u>		
			<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
560<KW	Tier 1	Standard	1.3	11.4	9.2	0.54	N/A	N/A	N/A
		Certification	0.1	1.3	7.7	0.19	--	--	--

BE IT FURTHER RESOLVED: That, at the request of the manufacturer, the listed engine models are **conditionally certified** to, and shall be required to comply with, all amendments to Title 13, California Code of Regulations, Sections 2420 through 2427 adopted by the Board on January 28, 2000 at its hearing "TO CONSIDER AMENDMENTS TO OFF-ROAD COMPRESSION-IGNITION ENGINE REGULATIONS: 2000 AND LATER EMISSION STANDARDS, COMPLIANCE REQUIREMENTS AND TEST PROCEDURES." The listed engine models comply with all such amendments, including, but not limited to:

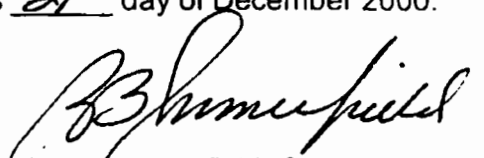
- the amended "Emission Control Labels—1996 and Later Off-Road Compression-Ignition Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year;
- the Board's amended emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 and 2426) for the listed engine models, as demonstrated by materials submitted by the manufacturer; and
- new California requirements for the Selective Enforcement Audit (SEA) for the listed engine models, as demonstrated by the manufacturer's submission of materials.

BE IT FURTHER RESOLVED: That the conditional certification described in the paragraph above is conditioned on the amendments being approved by the California Office of Administrative Law (OAL) pursuant to Government Code Section 11349.3, and where necessary, authorized by the Administrator of the U. S. Environmental Protection Agency (U.S. EPA) pursuant to Section 209(e)(2) of the Federal Clean Air Act. In the event that the OAL disapproves the amendments or the U.S. EPA decides not to authorize them, the ARB shall notify the manufacturer that the listed engine models must comply with the "California Exhaust Emission Standards and Test Procedures for 1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Sections 2420 through 2427) adopted on May 12, 1993, as applicable. Failure to demonstrate compliance within 45 days after notification by the Air Resources Board shall be cause for the Board to revoke the Executive Order and deem the listed engine models uncertified.

The conditional certification described herein is not conditioned on further U.S. EPA action on amendments determined by the Board to be within the scope of an existing U.S. EPA authorization.

Engines certified under this Executive Order must conform to the above requirements under Title 13, California Code of Regulations, Chapter 9, Article 4, and all other applicable California emission laws and regulations.

Executed at El Monte, California this 21st day of December 2000.


R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

ATTN: COMMENT

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **1CPXL27.0MRS**
 Mfr Family Name: **NA**
 Process Code: **New Submission**

U-R-1-159

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
Note: Peak Hp and Peak Torque fuel rates are nominal values. Due to production engine avgs. these fuel rates may change.								
1 - Cert Engine	3412	1210@1800	368	445.1	N/A	368	445.1	EM, DI, TC, ECM,
2	3412	1136@1800	338	409.4	N/A	338	409.4	EM, DI, TC , ECM,
3	3412	1250@2100	314	443.7	3321@1600	338	364.1	EM, DI, TC , ECM, CAC

PDI, TC, CAC, ECM

Appendix D

HRA Summary and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Jonah Aiyabei, AQE – Permit Services
 From: Jennifer Hart, AQS – Technical Services
 Date: December 6, 2010
 Facility Name: Shady Acres Dairy #2
 Location: 15391 W Elkhorn Ave, Helm
 Application #(s): C-6651-7-0
 Project #: C-1103183

A. RMR SUMMARY

RMR Summary			
Categories	Ag DICE (Unit 7-0)	Project Totals	Facility Totals
Prioritization Score	NA ¹	NA ¹	NA ¹
Acute Hazard Index	N/A ²	N/A ²	N/A ²
Chronic Hazard Index	N/A ²	N/A ²	N/A ²
Maximum Individual Cancer Risk (10⁻⁶)	0.06	0.06	0.06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

- 1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
- 2 Acute and Chronic Hazard Indices were not calculated since there is not risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Proposed Permit Conditions

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

Unit # 7-0

1. The PM10 emissions rate shall not exceed 0.14 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. 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]
3. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on December 1, 2010, to perform an Ambient Air Quality Analysis and a Risk Management Review for an ag 1,250 bhp diesel-fired emergency standby IC engine powering an electrical generator.

II. Analysis

Technical Services performed a screening level health risk assessment using the District developed DICE database.

The following parameters were used for the review:

Analysis Parameters Unit 7-0			
Source Type	Point	Location Type	Rural
BHP	1,250	PM ₁₀ g/hp-hr	0.14
Closest Receptor (m)	2,286	Quad	2
Max Hours per Year	100	Type of Receptor	Residential or Business

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀; as well as a RMR. The emission rates used for criteria pollutant modeling were 64.2 lb/day CO, 380.3 lb/day NO_x, 0.3 lb/day SO_x, and 9.3 lb/day PM₁₀. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

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

The cancer risk associated with the operation of the proposed diesel IC engine is less than 1 in a million. In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT) for PM10.

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

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

Attachments:

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Facility toxic emissions summary
- D. Diesel Internal Combustion Engine (DICE) prinout
- E. AAQA Results
- F. NO₂ NAAQS Report
- G. AERMOD Non-Regulatory Option Checklist

Appendix E
QNEC Calculations

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

Since the emission units in this project are being permitted as new units, PE1 = 0 for all pollutants. Thus, QNEC = PE2 (lb/qtr).

Using the PE2 (lb/yr) values calculated in Section VII.C.2, Quarterly PE2 is calculated as follows:

$$PE2_{\text{quarterly}} = PE2 \text{ (lb/yr)} \div 4 \text{ quarters/year} = \text{QNEC}$$

Engine:

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	1,585	396.25
SO _x	1	0.25
PM ₁₀	39	9.75
CO	267	66.75
VOC	19	4.75

Gasoline Storage Tank:

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	0	0
SO _x	0	0
PM ₁₀	0	0
CO	0	0
VOC	804	201