



NOV 10 2016

Rick Gorzman
Cornerstone Dairy
8769 Avenue 128
Tipton, CA 93272

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-7033
Project Number: S-1162832

Dear Mr. Gorzman:

Enclosed for your review and comment is the District's analysis of Cornerstone Dairy's application for an Authority to Construct for an 896 horsepower Tier 2 certified diesel engine to provide emergency power in the event of an electrical outage, at 8769 Avenue 128 Tipton.

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. Robert Gilles of Permit Services at (559) 230-5804.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:RPG

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email
cc: Blythe Romo, Innovative Ag Services (w/ enclosure) via email

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

Facility Name: Cornerstone Dairy
 Mailing Address: 8769 Avenue 128
 Tipton, CA 93272

Date: October 21, 2016
 Engineer: Robert Gilles
 Lead Engineer: Joven Refuerzo

Contact Person: Blythe Romo, Innovative Ag Services
 Telephone: (559) 587-2800
 E-Mail: BRomo@innovativeag.net
 Application #: S-7033-10-0
 Project #: S-1162832
 Deemed Complete: August 30, 2016

I. Proposal

Cornerstone Dairy has requested an Authority to Construct (ATC) permit for the installation of a new 896 bhp MTU Tier 2 certified diesel-fired emergency standby IC engine powering an electrical generator as a replacement for permit unit S-7033-6. A summary of the proposed replacement is provided in the following table:

Summary of the Proposed Replacement				
Existing Unit		Replacement Unit		Power Rating Increase
Permit #	Power Rating	Permit #	Power Rating	
PTO S-7033-6-0	300 bhp	ATC S-7033-10-0	896 bhp	299% > 10%

As shown in the table above, the proposed replacement results in a design capacity increase of 299%, which is greater than the maximum 10% increase allowed for a Replacement Emissions Unit. Therefore, the proposed replacement cannot be a Replacement Emissions Unit per section 3.35 of Rule 2201.

Since permit unit '-6 will be replaced as a result of this project, the following condition will be included on ATC '-10-0:

- Within 90 days of startup of the equipment authorized by this Authority to Construct, Permit to Operate S-7033-6-0 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]

The draft ATC is included in Appendix A.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/18/16)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4701	Internal Combustion Engines – Phase I (8/21/03)
Rule 4702	Internal Combustion Engines (11/14/13)
Rule 4801	Sulfur Compounds (12/17/92)
California Health and Safety Code (CH&SC)	41700: Health Risk Assessment
California Health and Safety Code (CH&SC)	42301.6: School Notice
Public Resources Code (PRC)	21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14	15000-15387: CEQA Guidelines
California Code of Regulations, Title 17	93115: Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

III. Project Location

The facility is located at 8769 Avenue 128 in Tipton, CA. 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 (CH&SC) Section 42301.6 is not applicable to this project.

IV. Process Description

The proposed new emergency engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

Existing Engine PTO Description:

S-7033-6-0: 300 BHP CUMMINS MODEL 350WW SN 11427161 DIESEL-FIRED EMERGENCY IC ENGINE POWERING AN ELECTRICAL GENERATOR

Replacement Engine ATC Description:

S-7033-10-0: 896 BHP (INTERMITTENT) MTU MODEL 12V1600G80S, SN 16701002083, TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (REPLACES PERMIT UNIT S-7033-6)

Replacement Engine PTO Description:

S-7033-10-0: 896 BHP (INTERMITTENT) MTU MODEL 12V1600G80S, SN 16701002083, TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

VI. Emission Control Technology Evaluation

The applicant has proposed to install a Tier 2 certified compression ignition IC engine that is fired on very low-sulfur diesel fuel.

The proposed engine meets the latest Tier Certification requirements, as discussed in Appendix C; therefore, the engine meets the latest California Air Resources Board (CARB)/ U.S. Environmental Protection Agency (EPA) emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see Appendix E for a copy of the CARB Executive Order for the proposed IC engine).

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.

VII. General Calculations

A. Assumptions

- PM_{2.5} emissions are conservatively assumed to be equal to PM₁₀ emissions
- The engine has certified NO_x + VOC emissions of 4.62 g/bhp-hr. It will be assumed the NO_x + VOC emission factor is split 95% NO_x and 5% VOC (per the Carl Moyer program)
- 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)

B. Emission Factors

The emission factors in the following table are from the CARB Executive Order (E.O. U-R-052-0011) for this engine. See Appendix E for the CARB E.O.

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NOx	4.39	CARB E.O. U-R-052-0011
SOx	0.0051	Mass Balance Equation Below
PM ₁₀	0.14	CARB E.O. U-R-052-0011
CO	0.89	CARB E.O. U-R-052-0011
VOC	0.23	CARB E.O. U-R-052-0011

Mass Balance Equation for SOx

$$0.0015\% S \times \frac{7.1 \text{ lb - fuel}}{\text{gal - fuel}} \times \frac{2 \text{ lb - SO}_2}{\text{lb - S}} \times \frac{\text{gal - fuel}}{137,000 \text{ Btu}} \times \frac{\text{hp - input}}{0.35 \text{ hp - output}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp - hr}} \times \frac{453.6 \text{ g}}{\text{lb}}$$

$$= 0.0051 \frac{\text{g - SO}_x}{\text{bhp - hr}}$$

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post-Project Potential to Emit (PE2)

The daily and annual PE are calculated in the tables below. The following is a sample formula for calculating PE.

$$\text{PE} = \text{Power Rating, bhp} \times \text{EF, g/bhp-hr} \times \text{Operation, hr/day or hr/year} \div 453.6 \text{ g/lb}$$

Daily Post-Project Potential to Emit					
Pollutant	Emission Factor (g/bhp-hr)	Power Rating (bhp)	Operation Limit (hr/day)	Conversion (g/lb)	PE2 (lb/day)
NOx	4.39	896	24	453.6	208.1
SOx	0.0051				0.2
PM ₁₀	0.14				6.6
CO	0.89				42.2
VOC	0.23				10.9

Annual Post-Project Potential to Emit					
Pollutant	Emission Factor (g/bhp-hr)	Power Rating (bhp)	Operation Limit (hr/yr)	Conversion (g/lb)	PE2 (lb/yr)
NOx	4.39	896	100	453.6	867
SOx	0.0051				1
PM ₁₀	0.14				28
CO	0.89				176
VOC	0.23				45

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.

The SSPE1 is calculated in the following table using annual PE values for the dairy operations (calculations shown in Appendix F) and annual PE values for permit unit '6 (calculations shown in Appendix G).

SSPE1 (lb/year)					
Permit Unit	NOx	SOx	PM ₁₀	CO	VOC
Dairy Operations: S-7033-1-2, '2-3, '3-2, '4-3, and '5-1	0	0	69,825	0	288,187
Existing Emergency IC Engine: S-7033-6-0	661	0	31	201	75
SSPE1	661	0	69,856	201	288,262

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.

The SSPE2 is calculated in the following table using annual PE values for the dairy operations (calculations shown in Appendix F) and annual PE values for ATC '10-0 (calculations shown in Section VII.C.2 above).

SSPE2 (lb/year)					
Permit Unit	NOx	SOx	PM ₁₀	CO	VOC
Dairy Operations: S-7033-1-2, '2-3, '3-2, '4-3, and '5-1	0	0	69,825	0	288,187
Replacement Emergency IC Engine: S-7033-10-0	867	1	28	176	45
SSPE2	867	1	69,853	176	288,232

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 threshold values below. 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); or
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

The major source determination in the following table uses annual PE values for the dairy operations from Appendix G and annual PE values for ATC '10-0 calculated in Section VII.C.2 above. Note that PM_{2.5} emissions are assumed to be equal to PM₁₀ emissions for the purpose of the major source determination.

Rule 2201 Major Source Determination (lb/year)						
	NOx	SOx	PM ₁₀	PM _{2.5}	CO	VOC
Dairy Operations: S-7033-1-2, '2-3, '3-2, '4-3, and '5-1	0	0	0	0	0	7,278
Emergency IC Engine: S-7033-10-0	867	1	28	28	176	45
SSPE	867	1	28	28	176	7,323
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Rule 2410 Major Source Determination:

Since the SSPE is not above the PSD major source threshold (either 100 tons/year or 250 tons/year depending on facility type) for any pollutant, the facility cannot be a Major Source for PSD for any one pollutant. Therefore, no calculations are required for determining if the facility is a PSD 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 District Rule 2201.

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

7. SB 288 Major Modification

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

Since this facility is not a major source for any pollutant 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 pollutant addressed in this project, this project does not constitute a Federal Major Modification.

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

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The project potential to emit, by itself, will not exceed any PSD Major Source threshold; therefore, Rule 2410 is not applicable and no further discussion is required.

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 Attachment I.

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions:

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a new diesel-fired IC engine with a PE greater than 2 lb/day for NO_x, PM₁₀, CO, and VOC. BACT is triggered for NO_x, PM₁₀, and VOC for new units with PE > 2 lb/day purposes. Per section 4.2.1 of the Rule, BACT is not required for CO emissions from new or modified Stationary Sources with a SSPE2 of less than 200,000 lb/year. Since the CO SSPE2 is less than 200,000 lb/year, as demonstrated in section VII.C.5 above, BACT is not triggered for CO for this purpose.

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

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

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 or Federal Major Modification; therefore, BACT is not triggered for these purposes.

2. BACT Guideline

BACT Guideline 3.1.1, *Emergency Diesel IC Engine*, applies to the diesel-fired emergency IC engine in this project and is included in Appendix C.

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."

Pursuant to the attached top-down BACT Analysis in Appendix C, BACT is satisfied with the following:

- NOx: Latest EPA Tier Certification level for applicable horsepower range
- PM₁₀: 0.15 g/bhp-hr
- VOC: Latest EPA Tier Certification level for applicable horsepower range

The certification requirements for diesel emergency IC engines are summarized in the following table. See Appendix C for additional information about applicable Tier certification requirements.

Certification Requirements for Diesel Emergency IC Engines	
Power Range	Certification Requirement
$50 \leq \text{bhp} < 75$	Tier 4i
$75 \leq \text{bhp} < 750$	Tier 3
$\geq 750 \text{ bhp}$	Tier 2

The applicant has proposed the use of a diesel emergency IC engine that meets the required certification requirement as discussed in the attached top-down BACT analysis in Appendix C. The following conditions will be included on the ATC as a mechanism to enforce compliance.

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 4.39 g-NOx/bhp-hr, 0.89 g-CO/bhp-hr, or 0.23 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {4772} 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]

B. Offsets

1. Offset Applicability

Pursuant to Rule 2201, section 4.62, offsets are not required for emergency IC engines. The engine in this project is an emergency IC engine; therefore, this exemption is applicable.

However, for the purpose of tracking in the District's PAS database, the following table compares the SSPE2 values to the offset thresholds to determine if offsets are triggered but an exemption applies.

Offset Determination (lb/year)					
	NOx	SOx	PM ₁₀	CO	VOC
SSPE2	867	1	69,853	176	288,232
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	Yes	No	Yes

2. Quantity of Offsets Required

As shown in the table above, offsets are triggered for PM₁₀ and VOC emissions since the PM₁₀ and VOC SSPE2 values exceed the offset trigger thresholds. However, as previously discussed, the offset exemption from section 4.6.2 of District Rule 2201 is applicable to this project; therefore, offsets are not required and offset calculations are not necessary.

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;
- d. Any project with an SSPE of greater than 20,000 lb/year for any pollutant; and/or
- 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 this purpose.

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 is not required for this project for these purposes.

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, trigger public noticing requirements. The following table compares the daily PE for each pollutant with the public notice threshold.

PE > 100 lb/day Public Notice Threshold			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NOx	208.1	100 lb/day	Yes
SOx	0.2	100 lb/day	No
PM ₁₀	6.6	100 lb/day	No
CO	42.2	100 lb/day	No
VOC	10.9	100 lb/day	No

As shown in the table above, the PE is greater than 100 lb/day for NOx; therefore, public noticing is required for this project for this purpose.

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NOx	661	867	20,000 lb/year	No
SOx	0	1	54,750 lb/year	No
PM ₁₀	69,856	69,853	29,200 lb/year	No
CO	201	176	200,000 lb/year	No
VOC	288,262	288,232	20,000 lb/year	No

As detailed above, no offset threshold was surpassed as a result of this project; therefore, public noticing is not required for this project for this purpose.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the Public Notice threshold 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?
NOx	867	661	206	20,000 lb/year	No
SOx	1	0	1	20,000 lb/year	No
PM ₁₀	69,853	69,856	0*	20,000 lb/year	No
CO	176	201	0*	20,000 lb/year	No
VOC	288,232	288,262	0*	20,000 lb/year	No

*Note, per District practice, a negative SSIPE value is set to zero pounds per year

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

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change cannot be a Title V Significant Permit Modification; therefore, public noticing is not required for this project for this purpose.

2. Public Notice Action

As demonstrated above, noticing requirements are triggered for this project. Therefore, public notice documents will be submitted to CARB and a public notification will be published in a local newspaper of general circulation prior to the issuance of the ATC for the proposed 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 this emergency IC engine, the DELs are stated in the form of emission factors, the maximum engine horsepower rating, and the maximum operational time of 24 hours per day. The following conditions will be included on the ATC as a mechanism to enforce compliance:

Proposed Rule 2201 (DEL) Conditions:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 4.39 g-NOx/bhp-hr, 0.89 g-CO/bhp-hr, or 0.23 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} 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]
- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
- {modified 3810} 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 Rules 2201, 4102, and 4702, and 17 CCR 93115]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

The owner/operator will be required to monitor the number of hours the engine operates for emergency and nonemergency purposes. The following condition will be included on the ATC as a mechanism to enforce compliance.

- {modified 4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification, and daily emission limit requirements of Rule 2201. The following conditions will be included on the ATC as a mechanism to enforce compliance.

- {modified 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 Rules 2201 and 4702, and 17 CCR 93115]

- {modified 3475} All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702, and 17 CCR 93115]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. Pursuant to Rule 2201, an AAQA shall only be conducted for a new or modified source that is subject to the public notification requirements of the rule. As previously discussed in Section VIII.C, this project requires that public notice requirements be satisfied before issuance of the ATC permit. Therefore, an AAQA is required for this project.

The District's Technical Services Division conducted the required analysis for this project. The following is a summary of the of the AAQA which is in Appendix D.

The proposed location is in an attainment area for PM₁₀, SO_x, and CO and the proposed equipment will not cause a violation of an air quality standard for PM₁₀, SO_x, or CO.

The proposed location is in a non-attainment area for NO_x and PM_{2.5} and the proposed equipment will not cause a violation of an air quality standard for NO_x and PM_{2.5}.

Therefore, the requirements for an AAQA are satisfied for this project.

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 a 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 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.

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

The requirements of 40 CFR Part 60, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* are applicable to stationary engines at agricultural and non-agricultural facilities. The District has not been delegated the authority to implement this NSPS regulation for non-Major Sources; therefore, compliance with the provisions of Subpart IIII will not be demonstrated for the engine in this project.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63.

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

The requirements of 40 CFR Part 63, Subpart ZZZZ – *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* are applicable to stationary engines at agricultural and non-agricultural facilities. The District has not been delegated the authority to implement Area Source requirements from NESHAP regulations for non-Major Sources; therefore, compliance with the provisions of Subpart ZZZZ will not be demonstrated for the engine in this project.

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 included on the ATC as a mechanism to enforce 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 this operation provided the equipment is well maintained. Therefore, the following condition will be included on the ATC as a mechanism to enforce 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)

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 D), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-7033-10-0	0.0745 per million	No

Discussion of T-BACT

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

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices or a cancer risk greater than the District's significance levels (i.e., greater than 1 for acute and chronic indices and greater than 20 in a million for cancer risk). As outlined by the HRA Summary in Appendix D of this document, the emissions increases for this project were determined to be less than significant.

The following conditions will be included on the ATC as a mechanism to enforce compliance:

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]
- {4772} 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]

- {modified 3810} 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 Rules 2201, 4102, and 4702, and 17 CCR 93115]

Rule 4201 Particulate Matter Concentration

The purpose of this rule is to protect the ambient air quality by establishing a particulate matter emission standard. This rule shall apply to any source operation which emits or may emit dust, fumes, or total suspended particulate matter. Section 3 of the rule requires that a person shall not release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions.

The following calculation determines the maximum PM emission rate that would be allowed without exceeding the 0.1 grain per dry standard cubic foot standard. The PM emission factor for the proposed engine is then compared to the maximum allowable emission rate.

Note that as previously mentioned, the PM₁₀ fraction of PM is assumed to be 96% for diesel engine exhaust.

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

The PM₁₀ emission factor for the proposed new engine is less than 0.4 g/bhp-hr; therefore, compliance with this rule is expected. The following condition will be included on the ATC as a mechanism to enforce compliance:

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

Rule 4701 Internal Combustion Engines – Phase 1

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine rated greater than 50 bhp that requires a PTO.

Section 4 – Exemptions

Pursuant to section 4.1, the provisions of this rule do not apply to engines in agricultural operations in growing of crops or raising of fowl or animals. Since the proposed engine is to support the dairy operation, this exemption is applicable to the engine in this project and the provisions of this rule are not applicable. The following condition will be included on the ATC as a mechanism to enforce compliance.

- {modified 4002} 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 and 17 CCR 93115]

Rule 4702 Internal Combustion Engines

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur oxides (SOx) from internal combustion engines. Except as provided in Section 4.0, this rule applies to any internal combustion engine rated at 25 brake horsepower or greater.

Section 4 – Exemptions

Section 4.2 provides an exemption from the requirements of the rule, except for the requirements of sections 5.9 and 6.2.3 for the following:

- 4.2 An emergency standby engine or a low-use engine, provided that the engine is operated with an operating nonresettable time meter.
 - 4.2.1 In lieu of operating a nonresettable elapsed time meter, the operator may use an alternative device, method, or technique, in determining operating time, provided that the alternative is approved by the APCO and EPA and is allowed by the Permit-to-Operate or Permit-Exempt Equipment Registration. The operator must demonstrate that the alternative device, method, or technique is equivalent to using a nonresettable elapsed time meter.
 - 4.2.2 The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions.

The proposed engine meets the requirements of the section 4.2 exemption. Therefore, only the requirements of sections 5.9 and 6.2.3 of the rule are applicable to the engine in this project. The following conditions will be included on the ATC as a mechanism to enforce compliance.

- {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 and 17 CCR 93115]
- {modified 4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]
- {modified 3810} 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 Rules 2201, 4102, and 4702, and 17 CCR 93115]

Section 5.9 – Monitoring Requirements

Section 5.9.1 requires the operator of any of the following engines to comply with the requirements of section 5.9.2 through section 5.9.5:

- 5.9.1.1 An AO spark-ignited engine subject to the requirements of section 5.2;
- 5.9.1.2 A compression-ignited engine subject to the requirements of section 5.2; or
- 5.9.1.3 An engine subject to section 4.2.

As previously discussed, the engine in this project is subject to the section 4.2 exemption; therefore, the engine is subject to the requirements of section 5.9.2 through section 5.9.5.

Section 5.9.2 requires the operator of the engine to properly operate and maintain the engine as recommended by the engine manufacturer.

Section 5.9.3 requires the operator of the engine to monitor the engine as recommended by the engine manufacturer or emission control system supplier.

Section 5.9.4 requires the operator of the engine to install and operate a nonresettable elapsed time meter and to properly install and operate the nonresettable elapsed time meter in accordance with the manufacturer's instructions.

The following conditions will be included on the ATC as a mechanism to enforce compliance with the requirements of section 5.9.2 through section 5.9.4.

- {4261} 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] N
- {modified 4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]

Section 5.9.5 outlines requirements for the operator of an AO spark-ignited engine that has been retro-fitted with a NOx exhaust control system. The engine in this project is not a spark-ignited engine; therefore, the engine in this project is not subject to the requirements of section 5.9.5.

Section 6.2 – Recordkeeping

The provisions of sections 6.2.1 and 6.2.2 are not applicable to the engine in this project; therefore, the provision from these sections will not be discussed.

Section 6.2.3 requires an operator claiming an exemption under Section 4.2 or Section 4.3 to maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include the following:

- 6.2.3.1 Total hours of operation,
- 6.2.3.2 The type of fuel used,
- 6.2.3.3 The purpose for operating the engine,
- 6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and
- 6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.

Compliance with the recordkeeping requirements of this rule is expected. The following conditions will be included on the ATC as a mechanism to enforce compliance.

- {modified 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 Rules 2201 and 4702, and 17 CCR 93115]
- {modified 3475} All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702, and 17 CCR 93115]
- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

Compliance with the requirements of this rule for the proposed engine is expected. Conditions will be included on the ATC permit, as outlined above, as a mechanism to enforce compliance with all applicable requirements. No further discussion is required.

Rule 4801 Sulfur Compounds

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

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

Where;

n = moles SO₂

T = standard temperature: 60°F or 520°R

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

Volume SO₂ =

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

Volume SO₂ = 1.0 ppmv SO₂

Since 1.0 ppmv is ≤ 2,000 ppmv, this engine is expected to comply with Rule 4801. The following condition will be included on the ATC as a mechanism to enforce compliance:

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

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

The purpose of this Airborne Toxic Control Measure (ATCM) is to reduce diesel particulate matter (PM) and criteria pollutant emissions from stationary diesel-fueled compression ignition (CI) engines.

§93115.2 – Applicability

Per 93115.2(a), except as provided in section 93115.3, this ATCM applies to any person who either sells a stationary CI engine, offers a stationary CI engine for sale, leases a stationary CI engine, or purchases a stationary CI engine for use in California, unless such engine is:

- (1) a portable CI engine,
- (2) a CI engine used to provide motive power,
- (3) an auxiliary CI engine used on a marine vessel, or
- (4) an agricultural wind machine as defined in section 93115.4.

The requirements of this ATCM are applicable to the owner/operator of the engine in this project.

§93115.3 – Exemptions

Section 93115.3(a) provides that the in-use stationary diesel agricultural emission standards and other requirements of §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. The proposed engine is a new, not in-use IC engine; therefore, this exemption is not applicable to the engine in this project.

Section 93115.3(b) provides that the requirements specified in §93115.6, §93115.7, and §93115.10(a) do not apply to new or in-use stationary diesel-fueled CI engines used in agricultural operations. The proposed engine is a new stationary diesel-fueled CI engine used in an agricultural operation; therefore, the requirements of §93115.6, §93115.7, and §93115.10(a) do not apply to the engine in this project. The following condition will be included on the ATC as a mechanism to enforce compliance.

- {modified 4002} 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 and 17 CCR 93115]

There are no further exemptions that apply to a new emergency CI engine used in an agricultural operation.

§93115.5 – Fuel and Fuel Additive Requirements

Per §93115.5(a), a new stationary CI engine shall be fueled only with the following fuels:

- (1) CARB Diesel Fuel; or
- (2) an alternative diesel fuel that is:
 - (A) biodiesel;
 - (B) a biodiesel blend that does not meet the definition of CARB Diesel Fuel;
 - (C) a Fischer-Tropsch fuel; or
 - (D) an emulsion of water in diesel fuel; or
- (3) any alternative diesel fuel that is not identified in section 93115.5(a)(2) above and meets the requirements of the Verification Procedure; or
- (4) an alternative fuel; or
- (5) CARB Diesel Fuel used with fuel additives that meets the requirements of the Verification Procedure; or
- (6) any combination of 93115.5(a)(1) through (5) above.

The applicant has proposed the use of CARB-certified diesel fuel which meets the requirements of §93115.5(a)(1); therefore, compliance with this requirement is expected. The following condition will be included on the ATC as a mechanism to enforce compliance.

- {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]

§93115.8 – Emission Standards for Stationary Diesel-Fueled CI Engines (>50 bhp) Used in Agricultural Operations

§93115.8(a)(1) requires compliance with the emission performance standards in Table 6 for all new diesel-fueled engines with a power rating greater than 50 bhp used in agricultural operations. The applicable requirements from Table 6 are summarized in the following table:

Summary of the Emission Standards for New Stationary Diesel-Fueled CI Engines >50 bhp Used in Agricultural Operations		
Horsepower Range (bhp)	Diesel PM	Other Pollutants
	Diesel PM Standard (g/bhp-hr)	HC, NOx, NMHC+NOx, and CO Standards (g/bhp-hr)
Generator Set Engines Greater than 50	≤0.15 OR Off-Road CI Engine Certification Standards for an off-road engine of the same maximum rated power, whichever is more stringent	Off-Road CI Engine Certification Standard for an off-road engine of the model year and maximum rated power of the engine installed to meet the applicable PM standard

The certification requirements for diesel emergency IC engines are summarized in the following table. See Appendix C for additional information about applicable Tier certification requirements.

Certification Requirements for Diesel Emergency IC Engines	
Power Range	Certification Requirement
50 ≤ bhp < 75	Tier 4i
75 ≤ bhp < 750	Tier 3
≥ 750 bhp	Tier 2

The applicant has proposed the installation of a diesel emergency IC engine that meets the required certification requirement as discussed in the attached top-down BACT analysis in Appendix C. The following conditions will be included on the ATC as a mechanism to enforce compliance.

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 4.39 g-NOx/bhp-hr, 0.89 g-CO/bhp-hr, or 0.23 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {4772} 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]

§93115.10 – Recordkeeping, Reporting, and Monitoring Requirements

Section 93115.10(a) outlines information that must be submitted to the District by each owner or operator prior to the installation of any new stationary CI engine at a facility. As previously discussed, §93115.10(a) is not applicable to the proposed engine per §93115.3(b).

Section 93115.10(b) requires the owner or operator to submit to the District emissions data for the purposes of demonstrating compliance with the emission standards from §93115.6 and §93115.7. As previously discussed, §93115.6 and §93115.7 are not applicable to the proposed engine per §93115.3(b); therefore, §93115.10(b) is not applicable.

Section 93115.10(d)(1) requires that a non-resettable hour meter with a minimum display capability of 9,999 hours be installed upon engine installation unless the District determines on a case-by-case basis that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or

operator's compliance history. The following condition will be included on the ATC as a mechanism to enforce compliance:

- {modified 4749} This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]

Section 93115.10(d)(2) requires that all diesel particulate filters (DPFs) installed pursuant to the requirements of this ATCM must, upon engine installation, be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. Since the proposed engine is not equipped with a DPF, this section is not applicable.

Section 93115.10(e) outlines reporting provisions for owners or operators of exempted agricultural emergency, prime, and nonagricultural engines subject to §93115.3(a), §93115.3(d), or §93115.3(j). The proposed engine is not subject to §93115.3(a), §93115.3(d), or §93115.3(j); therefore, this section is not applicable.

Section 93115.10(f) requires the owner or operator of an emergency standby engine to keep records and prepare a monthly summary that lists each of the following. Records shall be retained for a minimum of 36 months.

- (A) emergency use hours of operation;
- (B) maintenance and testing hours of operation;
- (C) hours of operation for emission testing to show compliance with sections 93115.6(a)(3) and 93115.6(b)(3);
- (D) initial start-up testing hours;
- (E) if applicable, hours of operation to comply with the requirements of NFPA 25;
- (F) hours of operation for all uses other than those specified in sections 93115.10(g)(1)(A) through (D) above; and
- (G) if applicable, DRP engine hours of operation, and
- (H) the fuel used.
 1. For engines operated exclusively on CARB Diesel Fuel, the owner or operator shall document the use of CARB Diesel Fuel through the retention of fuel purchase records indicating that the only fuel purchased for supply to an emergency standby engine was CARB Diesel Fuel; or
 2. For engines operated on any fuel other than CARB Diesel Fuel, fuel records demonstrating that the only fuel purchased and added to an emergency standby engine or engines, or to any fuel tank directly attached to an emergency standby engine or engines, meets the requirements of section 93115.5(b).

The following conditions will be included on the ATC as a mechanism to enforce compliance with the applicable recordkeeping requirements of §93115.10(f).

- {modified 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 Rules 2201 and 4702, and 17 CCR 93115]
- {modified 3475} All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 2201 and 4702, and 17 CCR 93115]

Compliance with the requirements of this ATCM for the proposed engine is expected. Conditions will be included on the ATC permit, as outlined above, as a mechanism to enforce compliance with all requirements. No further discussion is required.

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.

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, the issuance of such ATCs is a ministerial approval for the District and is not subject to CEQA provisions.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit are based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

As described above, the project requires only ministerial approval, and is exempt from the provisions of CEQA. As such, an Indemnification Agreement or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATC S-7033-10-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-7033-10-0	3020-10-E	896 bhp IC engine	\$659.00

Appendixes

- A: Draft ATC S-7033-10-0
- B: Current PTO S-7033-6-0
- C: BACT Guideline and Top-Down BACT Analysis
- D: HRA and AAQA Summary

- E: CARB Executive Order (E.O.)
- F: Annual PE Calculation for Dairy Operations
- G: Annual PE Calculation for S-7033-6-0

Attachments

- I: Quarterly Net Emissions Change (QNEC) Calculation

APPENDIX A
Draft ATC S-7033-10-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-7033-10-0

LEGAL OWNER OR OPERATOR: CORNERSTONE DAIRY
MAILING ADDRESS: 8769 AVENUE 128
TIPTON, CA 93272

LOCATION: 8769 AVENUE 128
TIPTON, CA 93272

EQUIPMENT DESCRIPTION:

896 BHP (INTERMITTENT) MTU MODEL 12V1600G80S, SN 16701002083, TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR (REPLACES PERMIT UNIT S-7033-6)

CONDITIONS

1. Within 90 days of startup of the equipment authorized by this Authority to Construct, Permit to Operate S-7033-6 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]
2. {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]
3. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. {4261} 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]
6. {4258} Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801, and 17 CCR 93115]
7. This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rules 2201 and 4702, and 17 CCR 93115]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

DRAFT

Arnaud Marjollet, Director of Permit Services

S-7033-10-0 - Oct 21 2016 4:47PM - GILLESPIE - 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. 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 and 17 CCR 93115]
10. 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 Rules 2201, 4102, and 4702, and 17 CCR 93115]
11. {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 and 17 CCR 93115]
12. Emissions from this IC engine shall not exceed any of the following limits: 4.39 g-NOx/bhp-hr, 0.89 g-CO/bhp-hr, or 0.23 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
13. Emissions from this IC engine shall not exceed 0.14 g-PM10/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]
14. 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]
15. 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 Rules 2201 and 4702, and 17 CCR 93115]
16. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
17. 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, and 17 CCR 93115]

DRAFT

APPENDIX B
Current PTO S-7033-6-0

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-7033-6-0

EXPIRATION DATE: 12/31/2017

EQUIPMENT DESCRIPTION:

300 BHP CUMMINS MODEL 350WW SN 11427161 DIESEL-FIRED EMERGENCY IC ENGINE POWERING AN ELECTRICAL GENERATOR

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. This permit does not authorize the violation of any conditions established for this facility in the Conditional Use Permit (CUP), Special Use Permit (SUP), Site Approval, Site Plan Review (SPR), or other approval documents issued by a local, state, or federal agency. [Public Resources Code 21000-21177: California Environmental Quality Act]
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 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, and 17 CCR 93115]
8. This engine shall be equipped with a non-resettable hour meter with a minimum display capability of 9,999 hours, unless the District determines that a non-resettable hour meter with a different minimum display capability is appropriate in consideration of the historical use of the engine and the owner or operator's compliance history. [District Rule 4702 and 17 CCR 93115]
9. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rule 4801 and 17 CCR 93115]
10. 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]
11. 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]
12. 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 and 17 CCR 93115]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. 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 and 17 CCR 93115]
14. 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]
15. 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]
16. The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
17. 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]

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

APPENDIX C

BACT Guideline and Top-Down Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.1*

Last Update: 9/10/2013

Emergency Diesel IC engine

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Latest EPA Tier Certification level for applicable horsepower range*		
SOX	Very low sulfur diesel fuel (15 ppmw sulfur or less)		
PM10	0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)		
NOX	Latest EPA Tier Certification level for applicable horsepower range*		
CO	Latest EPA Tier Certification level for applicable horsepower range*		

*Note: for emergency engines 50 <= bhp < 75, Tier 4 Interim certification is the requirement; for emergency engines 75 <= bhp < 750, Tier 3 certification is the requirement; for emergency engines >= 750 bhp, Tier 2 certification is the requirement.

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

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

Top Down BACT Analysis for the Emergency IC Engine

BACT Guideline 3.1.1 (September 10, 2013) applies to emergency diesel IC engines. In accordance with the District's BACT policy, APR 1305, information from the BACT guideline will be utilized without further analysis.

1. BACT Analysis for NOx and VOC Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *Latest EPA Tier Certification level for applicable horsepower range*

To determine the latest applicable Tier level, the following EPA and state regulations were consulted:

- 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression – Ignition Engines
- 40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
- Title 13 CCR, Section 2423 – Exhaust Emission Standards and Test Procedures - Off-Road Compression-Ignition Engines
- Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

40 CFR Parts 89 and 1039, which apply only to nonroad engines, do not apply because the proposed emergency engine does not meet the definition of a nonroad engine. Likewise, 13 CCR section 2423, which only applies to offroad engines, does not apply because the proposed emergency engine does not meet the definition of an offroad engine. Therefore, only 17 CCR section 93115 (Stationary Diesel ATCM) emission levels are applicable to the proposed emergency engine.

Title 17 CCR section 93115.6(a)(3)(A) applies to emergency diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 of the Stationary Diesel ATCM. The Table 1 emission factors are provided below for reference.

17 CCR §93115 Table 1: Emission Standards for New Stationary Emergency Standby Diesel-Fueled CI Engines g/bhp-hr (g/kW-hr)					
Maximum Engine Power	Tier	Model Year(s)	PM	NMHC+NOx	CO
50 ≤ HP < 75 (37 ≤ kW < 56)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	4i	2008+			
75 ≤ HP < 100 (56 ≤ kW < 75)	2	2007	0.15 (0.20)	5.6 (7.5) 3.5 (4.7)	3.7 (5.0)
	3	2008+			
100 ≤ HP < 175 (75 ≤ kW < 130)	3	2007	0.15 (0.20)	3.0 (4.0)	3.7 (5.0)
		2008+			
175 ≤ HP < 300 (130 ≤ kW < 225)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
300 ≤ HP < 600 (225 ≤ kW < 450)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
600 ≤ HP < 750 (450 ≤ kW < 560)	3	2007	0.15 (0.20)	3.0 (4.0)	2.6 (3.5)
		2008+			
HP > 750 (kW > 560)	2	2007	0.15 (0.20)	4.8 (6.4)	2.6 (3.5)
		2008+			

Since the Title 17 CCR section 93115 ATCM contains the only applicable emission levels and Tier certifications, the most stringent applicable emission levels are those listed in the Stationary Diesel ATCM. A description of the engine power ranges and corresponding Tier certification is provided below.

For IC engines rated greater than or equal to 50 hp and less than 75 hp, the required certification is Interim Tier 4 (Tier 4i). For IC engines rated greater than or equal to 75 hp and less than 750 hp, the required certification is Tier 3. For engines rated equal to or greater than 750 hp, the required certification is Tier 2.

Also, please note that neither the Stationary Diesel ATCM nor the Code of Federal Regulations require the installation of IC engines meeting a higher Tier standard than those listed above for emergency applications due to concerns regarding the effectiveness of the exhaust emissions controls during periods of short-term operation (such as testing operational readiness of an emergency engine).

The proposed engine is rated at 896 bhp; therefore, the applicable control option is Tier 2 certification.

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from Step 1.

c. Step 3 - Rank remaining Tier options by control effectiveness

Per APR 1305, no ranking needs to be done because the applicant has proposed the Achieved-in-Practice control option.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control that has not been eliminated from consideration. Therefore, per the District's BACT policy, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for NOx and VOC is the use of a Tier 2 certified engine. The applicant is proposing an engine meeting this requirement. Therefore, BACT for NOx and VOC is satisfied.

2. BACT Analysis for PM₁₀ Emissions:

a. Step 1 - Identify all control technologies

BACT Guideline 3.1.1 identifies only the following option:

- *0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)*

The latest Tier Certification level for an engine of the proposed model year and horsepower rating is Tier 2. Refer to the top-down BACT analysis for NO_x for a discussion regarding the determination of the Tier Certification level to be considered.

Please note Tier 2 IC engines do not have a PM emission standard that is more stringent than 0.15 g/bhp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/bhp-hr for all new emergency diesel IC engines.

Therefore, a PM/PM₁₀ emission standard of 0.15 g/bhp-hr is required as BACT.

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from Step 1.

c. Step 3 - Rank remaining options by control effectiveness

Per APR 1305, no ranking needs to be done because the applicant has proposed the Achieved-in-Practice control option.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control that has not been eliminated from consideration. Therefore, per the District's BACT policy, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for PM₁₀ is emissions of 0.15 g/bhp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT for PM₁₀ is satisfied.

APPENDIX D
HRA and AAQA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Robert Gilles – Permit Services
 From: Cheryl Lawler – Technical Services
 Date: October 13, 2016
 Facility Name: Cornerstone Dairy
 Location: 8769 Avenue 128, Tipton
 Application #(s): S-7033-10-0
 Project #: S-1162832

A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Unit 10-0)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	>1.0
Acute Hazard Index	N/A ²	N/A ²	0.00
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk	7.45E-08	7.45E-08	7.45E-08
T-BACT Required?	No		
Special Permit Requirements?	Yes		

¹Prioritization 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.

²Acute Hazard Index was not calculated since there is no risk factor or the risk factor is so low that it has been determined to be insignificant for this type of unit.

Unit 10-0

1. The PM10 emissions rate shall not exceed 0.14 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.
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.
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.

B. RMR REPORT

I. Project Description

Technical Services received a request on September 27, 2016, to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the proposed installation of an 896 bhp diesel-fired emergency IC engine powering an electrical generator. The engine will replace PTO S-7033-6.

II. Analysis

Toxic emissions for this project were calculated using PM10 emission rates calculated and supplied by the processing engineer, and input as diesel exhaust emissions 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, May 28, 2015), a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2007-2011 from Tipton to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 10-0			
Source Type	Point	Location Type	Rural
Stack Height (m)	3.35	Closest Receptor (m)	274
Stack Diameter (m)	0.25	Type of Receptor	Resident
Stack Exit Velocity (m/s)	43.28	Max Hours per Year	100
Stack Exit Temp. (°K)	698	Diesel Exhaust Rate	28 lbs/yr

Technical Services performed modeling for criteria pollutants CO, NOx, SOx, and PM₁₀ with the emission rates below:

Unit #	NOx (Lbs.)		SOx (Lbs.)		CO (Lbs.)		PM₁₀ (Lbs.)	
	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.	Hr.	Yr.
10-0	0	867	0	1	0	176	0	28

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	NA ¹	X	NA ¹	X	X
NO _x	NA ¹	X	X	X	Pass
SO _x	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	X	X	X	NA ¹	Pass ²
PM _{2.5}	X	X	X	NA ¹	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour and 24-hour) standards is not required.

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

III. Conclusion

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

To ensure that human health risks will not exceed District allowable levels; the permit 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.

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

IV. Attachments

- A. RMR Request Form & Attachments
- B. Convert Calculations
- C. Facility Summary
- D. AAQA Summary

APPENDIX E
CARB Executive Order (E.O.)



Pursuant to the authority vested in the Air Resources 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-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2010	AMDDL21.0GWR	17.5, 21	Diesel	8,000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Electronic Control Module			Generator Set	

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kW-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kW-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
kW > 560	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	N/A	N/A	N/A
		CERT	--	--	6.2	1.2	0.19	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 22 day of October 2009.

Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

U-R-052-0011

10/20/09

ATTACHMENT

Engine Family	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
AMDDL21.0GWR	7185	12V G80S 3D	896 @ 1800	246	291.1	N/A	N/A	N/A	DFI ECM TC CAC
AMDDL21.0GWR	7186	12V G20S 3B	896 @ 1800	246	291.1	N/A	N/A	N/A	DFI ECM TC CAC
AMDDL21.0GWR	7187	12V B40S 3B	896 @ 1800	246	291.1	N/A	N/A	N/A	DFI ECM TC CAC
AMDDL21.0GWR	7188	12V G70S 3D	822 @ 1800	227	269.8	N/A	N/A	N/A	DFI ECM TC CAC
AMDDL21.0GWR	7189	12V G10S 3B	822 @ 1800	227	269.8	N/A	N/A	N/A	DFI ECM TC CAC
AMDDL21.0GWR	7190	10V G80S 3D	752 @ 1800	243	240.8	N/A	N/A	N/A	DFI ECM TC CAC
AMDDL21.0GWR	7191	10V G20S 3B	752 @ 1800	243	240.8	N/A	N/A	N/A	DFI ECM TC CAC

APPENDIX F
Annual PE Calculations for Dairy Operations

Pre-Project Facility Information

- Does this facility house Holstein or Jersey cows?
Most facilities house Holstein cows unless explicitly stated on the PTO or application.
- Does the facility have an anaerobic treatment lagoon?
- Does the facility land apply liquid manure?
Answering "yes" assumes worst case.
- Does the facility land apply solid manure?
Answering "yes" assumes worst case.
- Is any scraped manure sent to a lagoon?
Answering "yes" assumes worst case.

Pre-Project Herd Size							
Herd	Flushed Freestalls	Scraped Freestalls	Flushed Corrals	Scraped Corrals	Total # of Animals		
Milk Cows			4,125		4,125		
Dry Cows			660		660		
Support Stock (heifers, calves, and bulls)			4,142		4,142		
Large Heifers					0		
Medium Heifers					0		
Small Heifers					0		
Bulls					0		
Calf Hutches							
Calf	Calf Hutches				Calf Corrals		Total # of Calves
	Aboveground Flushed	Aboveground Scraped	On-Ground Flushed	On-Ground Scraped	Flushed	Scraped	
Calves							0

Total Herd Summary	
Total Milk Cows	4,125
Total Mature Cows	4,785
Support Stock (heifers, calves, and bulls)	4,142
Total Calves	0
Total Dairy Head	8,927

Pre-Project Silage Information			
Feed Type	Max # Open Piles	Max Height (ft)	Max Width (ft)
Corn	5	30	150
Alfalfa	4	30	150
Wheat	9	30	150

Post-Project Facility Information

- Does this facility house Holstein or Jersey cows?
Most facilities house Holstein cows unless explicitly stated on the PTO or application.
- Does the facility have an anaerobic treatment lagoon?
- Does the facility land apply liquid manure?
Answering "yes" assumes worst case.
- Does the facility land apply solid manure?
Answering "yes" assumes worst case.
- Is any scraped manure sent to a lagoon?
Answering "yes" assumes worst case.
- Does this project result in any new lagoon/storage pond(s) or an increase in surface area for any existing lagoon/storage pond(s)?

Post-Project Herd Size							
Herd	Flushed Freestalls	Scraped Freestalls	Flushed Corrals	Scraped Corrals	Total # of Animals		
Milk Cows			4,125		4,125		
Dry Cows			660		660		
Support Stock (heifers, calves, and bulls)			4,142		4,142		
Large Heifers					0		
Medium Heifers					0		
Small Heifers					0		
Bulls					0		
Calf Hutches							
Calf	Calf Hutches				Calf Corrals		Total # of Calves
	Aboveground Flushed	Aboveground Scraped	On-Ground Flushed	On-Ground Scraped	Flushed	Scraped	
Calves							0

Total Herd Summary	
Total Milk Cows	4,125
Total Mature Cows	4,785
Support Stock (heifers, calves, and bulls)	4,142
Total Calves	0
Total Dairy Head	8,927

Post-Project Silage Information			
Feed Type	Max # Open Piles	Max Height (ft)	Max Width (ft)
Corn	5	30	150
Alfalfa	4	30	150
Wheat	9	30	150

This spreadsheet serves only as a resource to calculate potential emissions from dairies, and may not reflect the final emissions used by the District due to parameters not addressed in this spreadsheet and/or omissions from the spreadsheet. Any other permissible equipment (e.g. IC engines, gasoline tanks, etc.) at a facility will need to be calculated separately. All final calculations used in permitting projects will be conducted by District staff.

Post-Project Potential to Emit (PE2)

Post-Project Herd Size							
Herd	Flushed Freestalls	Scraped Freestalls	Flushed Corrals	Scraped Corrals	Total # of Animals		
Milk Cows	0	0	4,125	0	4,125		
Dry Cows	0	0	660	0	660		
Support Stock (Heifers, Calves, and Bulls)	0	0	4,142	0	4,142		
Large Heifers	0	0	0	0	0		
Medium Heifers	0	0	0	0	0		
Small Heifers	0	0	0	0	0		
Bulls	0	0	0	0	0		
	Calf Hutches				Calf Corrals		Total # of Calves
	Aboveground Flushed	Aboveground Scraped	On-Ground Flushed	On-Ground Scraped	Flushed	Scraped	
Calves	0	0	0	0	0	0	0

Silage Information				
Feed Type	Maximum # Open Piles	Maximum Height (ft)	Maximum Width (ft)	Open Face Area (R ²)
Corn	5	30	150	17,036
Alfalfa	4	30	150	13,628
Wheat	9	30	150	30,664

Milking Parlor				
Cow	VOC		NH3	
	lb/day	lb/yr	lb/day	lb/yr
Milk Cows	4.5	1,650	1.5	564
Total	4.5	1,650	1.5	564

	Cow Housing					
	VOC		NH3		PM10	
	lb/day	lb/yr	lb/day	lb/yr	lb/day	lb/yr
Total	170.0	62,035	354.0	129,222	191.3	69,825

Cow	Liquid Manure Handling					
	VOC		NH3		H2S	
	lb/day	lb/yr	lb/day	lb/yr	lb/day	lb/yr
Milk Cows	27.5	10,024	85.8	31,309	1.3	487
Dry Cows	2.4	878	6.9	2,534	0.1	40
Support Stock (Heifers, Calves, and Bulls)	11.6	4,225	22.4	8,160	0.4	131
Large Heifers	0.0	0	0.0	0	0	0
Medium Heifers	0.0	0	0.0	0	0	0
Small Heifers	0.0	0	0.0	0	0	0
Calves	0.0	0	0.0	0	0	0
Bulls	0.0	0	0.0	0	0	0
Total	41.5	15,126	115.1	42,003	1.8	658

Cow	Solid Manure Handling			
	VOC		NH3	
	lb/day	lb/yr	lb/day	lb/yr
Milk Cows	5.3	1,939	32.0	11,674
Dry Cows	0.5	172	2.6	944
Support Stock (Heifers, Calves, and Bulls)	2.3	828	8.5	3,107
Large Heifers	0.0	0	0.0	0
Medium Heifers	0.0	0	0.0	0
Small Heifers	0.0	0	0.0	0
Calves	0.0	0	0.0	0
Bulls	0.0	0	0.0	0
Total	8.1	2,939	43.1	15,724

Feed Handling and Storage		
	Daily PE (lb-VOC/day)	Annual PE (lb-VOC/yr)
Corn Emissions	106.1	38,714
Alfalfa Emissions	21.4	7,795
Wheat Emissions	241.4	88,097
TMR	196.8	71,830
Total	565.7	206,437

Permit	Total Daily Post-Project Potential to Emit (lb/day)						
	NOx	SOx	PM10	CO	VOC	NH3	H2S
Milking Parlor	0.0	0.0	0.0	0.0	4.5	1.5	0.0
Cow Housing	0.0	0.0	191.3	0.0	170.0	354.0	0.0
Liquid Manure	0.0	0.0	0.0	0.0	41.5	115.1	1.8
Solid Manure	0.0	0.0	0.0	0.0	8.1	43.1	0.0
Feed Handling	0.0	0.0	0.0	0.0	565.7	0.0	0.0
Total	0.0	0.0	191.3	0.0	789.8	513.7	1.8

Permit	Total Annual Post-Project Potential to Emit (lb/yr)						
	NOx	SOx	PM10	CO	VOC	NH3	H2S
Milking Parlor	0	0	0	0	1,650	564	0
Cow Housing	0	0	69,825	0	62,035	129,222	0
Liquid Manure	0	0	0	0	15,126	42,003	658
Solid Manure	0	0	0	0	2,939	15,724	0
Feed Handling	0	0	0	0	206,437	0	0
Total	0	0	69,825	0	288,187	187,513	658

Calculations for milking parlor:

Annual PE = (# milk cows) x (EF2 lb-pollutant/hd-yr)

Daily PE = (Annual PE lb/yr) ÷ (365 day/yr)

Calculations for cow housing:

See detailed calculations under Cow Housing Calculations worksheet.

Calculations for liquid manure and solid manure handling:

Annual PE = [(# milk cows) x (EF1 lb-pollutant/hd-yr)] + [(# dry cows) x (EF2 lb-pollutant/hd-yr)] + [(# large heifers) x (EF2 lb-pollutant/hd-yr)] + [(# medium heifers) x (EF2 lb-pollutant/hd-yr)] + [(# small heifers) x (EF2 lb-pollutant/hd-yr)] + [(# calves) x (EF2 lb-pollutant/hd-yr)] + [(# bulls) x (EF2 lb-pollutant/hd-yr)]

Daily PE = (Annual PE lb/yr) ÷ (365 day/yr)

The H2S emission factor is assumed to be 10% of the NH3 lagoon/storage pond(s) emission factor, for each respective herd size.

Calculations for silage emissions:

Annual PE = (EF2) x (area ft²) x (0.0929 m²/ft²) x (8,760 hr/yr) x (60 min/hr) x 2.20E-9 lb/μg

Daily PE = (Annual PE lb/yr) ÷ (365 day/yr)

Calculation for TMR emissions:

Annual PE = (# cows) x (EF2) x (0.658 m²) x (525,600 min/yr) x (2.20E-9 lb/μg)

Daily PE = (Annual PE lb/yr) ÷ (365 day/yr)

Calves are not included in TMR calculation.

Permit	Major Source Emissions (lb/yr)					
	NOx	SOx	PM10	CO	VOC	
Milk Parlor	0	0	0	0	0	0
Cow Housing	0	0	0	0	0	0
Liquid Manure	0	0	0	0	0	7,278
Solid Manure	0	0	0	0	0	0
Feed Handling	0	0	0	0	0	0
Total	0	0	0	0	0	7,278

APPENDIX G

Annual PE Calculation for S-7033-6-0

Potential to Emit Calculation for S-7033-6-0

I. Equipment Description

S-7033-6-0: 300 BHP CUMMINS MODEL 350WW SN 11427161 DIESEL-FIRED EMERGENCY IC ENGINE POWERING AN ELECTRICAL GENERATOR

II. Assumptions

- Non-emergency operating schedule: 100 hours/year (current PTO)
- 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 approx. 35%
- PM₁₀ fraction of diesel exhaust: 0.96 (CARB, 1988)

III. Emission Factors

Diesel-fired IC Engine Emission Factors			
Pollutant	EF lb/hp-hr	EF g/bhp-hr*	Source
NOx	0.02205	10.00	Carl Moyer Program
SOx	---	0.0051	Mass Balance Equation Below
PM ₁₀	0.0011	0.475	Carl Moyer Program
CO	0.0068	3.04	AP-42 (10/96) Table 3.3-1
VOC	0.0025	1.14	AP-42 (10/96) Table 3.3-1

*The g/bhp-hr value is calculated using the lb/bhp-hr value multiplied by 453.6 g/lb

Mass Balance Equation for SOx

$$0.0015\% S \times \frac{7.1 \text{ lb - fuel}}{\text{gal - fuel}} \times \frac{2 \text{ lb - SO}_2}{\text{lb - S}} \times \frac{\text{gal - fuel}}{137,000 \text{ Btu}} \times \frac{\text{hp - input}}{0.35 \text{ hp - output}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp - hr}} \times \frac{453.6 \text{ g}}{\text{lb}}$$

$$= 0.0051 \frac{\text{g - SO}_x}{\text{bhp - hr}}$$

IV. Potential to Emit

The annual PE is calculated in the tables below. The following is a sample formula for calculating PE for each pollutant.

$$\text{PE} = \text{Power Rating, bhp} \times \text{EF, g/bhp-hr} \times \text{Operation, hr/year} \div 453.6 \text{ g/lb}$$

Annual Potential to Emit – N-6536-6-0					
Pollutant	Emission Factor, g/bhp-hr	Power Rating, bhp	Operation, hr/day	Conversion, g/lb	Annual PE, lb/year
NOx	10.00	300	100	453.6	661
SOx	0.0051				0
PM ₁₀	0.475				31
CO	3.04				201
VOC	1.14				75