



December 17, 2020

Mike Kalmink
Double J Dairy
6656 Ave. 328
Tulare CA 93291

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-5836
Project Number: S-1202480

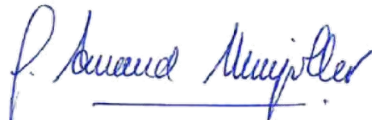
Dear Mr. Kalmink:

Enclosed for your review and comment is the District's analysis of Double J Dairy's application for an Authority to Construct for the installation of a 1,112 horsepower Tier 2 certified diesel engine to provide emergency power in the event of an electrical outage, at 6656 Ave. 328 in Tulare CA.

The notice of preliminary decision for this project has been posted on the District's website (www.valleyair.org). 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. William Jones of Permit Services at (661) 392-5610.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM:wej

Enclosures

cc: Courtney Graham, CARB (w/ enclosure) via email

Samir Sheikh
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District

Authority to Construct

Application Review

Diesel-Fired Emergency Standby IC Engine

Facility Name:	DOUBLE "J" DAIRY	Date:	11/18/20
Mailing Address:	6656 Ave 328, Tulare CA 93291	Engineer:	William Jones
Contact Person:	Mike Kalmink	Lead Engineer:	Rich Karrs
Telephone:	559-587-2800	<i>RWK</i>	12/03/20
E-mail:			
Application #:	S-5836-8-0		
Project #:	S-1202480		
Deemed Complete:	9/3/20		

I. Proposal

DOUBLE "J" DAIRY (DD) is proposing to install a 1,112 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engine powering an electrical generator.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410 Prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (8/15/19)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4701 Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702 Internal Combustion Engines (11/14/13)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The equipment will be located at 6656 Ave. 328 in Tulare, 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 42301.6 is not applicable to this project.

IV. Process Description

The emergency standby engine powers an electrical generator. Other than emergency standby operation, the engine may be operated up to 50 hours per year for maintenance and testing purposes.

V. Equipment Listing

S-5836-8-0: 1112 BHP CAT MODEL C18ATAAC 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 diesel-fired IC engine that is fired on very low-sulfur diesel fuel.

The proposed engine meets the latest Tier Certification requirements for emergency standby engines; therefore, the engine meets the latest ARB/EPA emissions standards for diesel particulate matter, hydrocarbons, nitrogen oxides, and carbon monoxide (see **Appendix C** for a copy of the emissions data sheet.

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

VII. General Calculations

A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	50 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%
PM ₁₀ fraction of diesel exhaust:	0.96 (CARB, 1988)

Conversion factor: 1.34 bhp/kw

B. Emission Factors

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	3.77	Engine Manufacturer
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.05	ARB/EPA Certification
CO	0.60	ARB/EPA Certification
VOC	0.08	Engine Manufacturer

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

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post-Project Potential to Emit (PE2)

The daily and annual PE2 are calculated as follows:

$$\text{Daily PE2 (lb-pollutant/day)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/day)} / 453.6 \text{ g/lb}$$

$$\text{Annual PE2 (lb-pollutant/yr)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/yr)} / 453.6 \text{ g/lb}$$

Post Project Emissions (PE2)						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Annual Hours of Operation (hrs/year)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	3.77	1112	24	50	221.8	462
SO _x	0.0051	1112	24	50	0.3	1
PM ₁₀	0.05	1112	24	50	2.9	6
CO	0.60	1112	24	50	35.3	74
VOC	0.08	1112	24	50	4.7	10

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 (ATCs) or Permits to Operate (PTOs) at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) 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.

SSPE1 is summarized in the following table.

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)							
	NO _x	SO _x	PM ₁₀	CO	VOC	NH ₃	H ₂ S
S-5836-1-4	0	0	0	0	2,856	977	0
S-5836-2-3	0	0	41,114	0	92,512	182,882	0
S-5836-3-5	0	0	0	0	13,576	42,388	1,025
S-5836-4-3	0	0	0	0	4,393	24,523	0
S-5836-5-2	0	0	0	0	172,261	0	0
S-5836-6-0	1,825	1	129	393	148	0	0
SSPE1	1,825	1	41,243	393	285,746	250,770	1,025

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

Pursuant to District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the PE from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

For this project the change in emissions for the facility is due to the installation of the new emergency standby IC engine. Thus:

Pre-Project Stationary Source Potential to Emit [SSPE2] (lb/year)							
	NO _x	SO _x	PM ₁₀	CO	VOC	NH ₃	H ₂ S
S-5836-1-4	0	0	0	0	2,856	977	0
S-5836-2-3	0	0	41,114	0	92,512	182,882	0
S-5836-3-5	0	0	0	0	13,576	42,388	1,025
S-5836-4-3	0	0	0	0	4,393	24,523	0
S-5836-5-2	0	0	0	0	172,261	0	0
S-5836-6-0	1,825	1	129	393	148	0	0
S-5836-8-0	924	1	12	147	20	0	0
SSPE1	2,749	2	41,255	540	285,766	250,770	1,025

5. Major Source Determination

Rule 2201 Major Source Determination:

Agricultural operations do not belong to any of the source categories specified in 40 CFR 51.165. Since this facility is an agricultural operation, fugitive emissions shall not be included in determining whether it is a major stationary source.

40 CFR 71.2 defines fugitive emissions as "those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening." In 2005, the California Air Pollution Control Officers Association (CAPCOA) issued guidance for estimating VOC emissions from dairy farms. This guidance determined that VOC emissions from the milking centers, cow housing areas, corrals, common manure storage areas, and land application of manure are considered fugitive since they are not physically contained and could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening. The guidance also determined that VOC emissions from liquid manure lagoons and storage ponds are not considered fugitive because emission collection technologies for liquid manure systems exist. The District has researched this issue and concurs with the CAPCOA determinations, as discussed in more detail below:

Milking Parlor

The mechanical ventilation system could arguably be utilized to capture emissions from the milking parlor. In order achieve and maintain the negative pressure required for this purpose, the adjoining holding area would also need to be completely enclosed. However, enclosing the holding area is not practical due to the continuous movement of cows in and out of the barn throughout the day. In addition, the capital outlay required to enclose this large area would be prohibitive. The District therefore determines that emissions from the milking parlor cannot reasonably be captured, and are to be considered fugitive.

Cow Housing

Although there are smaller dairy farms that have enclosed housing barns, such barns are usually not fully enclosed and do not include any systems for the collection of emissions. In addition, the airflow requirements for dairy cows are extremely high, primarily for herd health reasons. Airflow requirements are expected to be even higher in places such as the San Joaquin Valley, where daytime temperatures can exceed 110 degrees for prolonged periods during the summer months. Given the high air flow rates that will be involved, collection and control of the exhaust from housing barns is not only impractical but also cost prohibitive. The District therefore determines that emissions from housing barns cannot reasonably be captured, and are to be considered fugitive.

Manure Storage Areas

Solid manure is typically stored in the housing areas, as mounds or piles in individual corrals or pens. Some manure may also be stored in piles outside the housing areas while awaiting land application, shipment offsite, or other uses. Thus, manure storage areas are widely distributed over the dairy site, making it impractical to capture emissions from any significant proportion of the solid manure. The District therefore determines that emissions from manure storage areas cannot reasonably be captured, and are to be considered fugitive.

Land Application

Since manure has to be applied over large expanses of cropland (hundreds or even thousands of acres), there is no practical method that can be used to capture the associated emissions. The District therefore determines that emissions from land application of manure cannot reasonably be captured, and are to be considered fugitive.

Feed Handling and Storage

Silage and total mixed rations (TMR) are the primary sources of emissions from feed storage and handling. Silage is stored in several tarped/covered piles and/or plastic bags. One end/face of the pile/bag that is actively being used to prepare feed rations must remain open to allow extraction of the silage. A front-end loader is used to extract silage from the open face of the pile throughout the day as the feed rations for the various groups or categories of cows are prepared. A significant proportion of silage pile emissions are associated with this open face, which is exposed to the atmosphere and frequently disturbed during silage extraction. Due to the need to access the pile's open face throughout the day, it is not practical to enclose it or equip it with any kind of device or system that could be used to capture of emissions.

TMR is prepared by mixing silage with various additives such as seeds, grains, and molasses. Because the quality of silage degrades fairly rapidly upon exposure to air, TMR is prepared only when needed and promptly distributed to the feed lanes for consumption. Most of the TMR emissions are thus emitted from the feed lanes, which are located inside the housing barns, where the TMR will remain exposed to the air for at least several hours as the cows feed. As previously discussed, collection and control of emissions from housing barns is not only impractical but also cost prohibitive.

The District therefore determines that emissions from feed handling and storage cannot reasonably be captured, and are to be considered fugitive.

As previously stated, emissions from liquid manure lagoons and IC engines have already been determined to be non-fugitive. The facility's non-fugitive stationary source potential emissions are summarized in the following tables (see Appendix F for non-fugitive totals):

Non-Fugitive SSPE1 (lb/year)						
Category	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
S-5836-3-4 - Lagoons	0	0	0	0	0	6,501
S-5836-6-0 - Engine	1,825	1	129	129	393	148
Non-Fugitive SSPE1	1,825	1	129	129	393	6,649

Non-Fugitive SSPE2 (lb/year)						
Category	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
S-5070-3-5 - Lagoons	0	0	0	0	0	6,501
S-5070-6-0 - Engine	1,825	1	129	129	393	148
S-5070-8-0 - Engine	924	1	12	12	147	20
Non-Fugitive SSPE2	2,749	2	141	141	540	6,669

The Rule 2201 major source determination is summarized in the following table:

Rule 2201 Major Source Determination (lb/year)						
	NO_x	SO_x	PM₁₀	PM_{2.5}	CO	VOC
SSPE1	1,825	1	129	129	393	6,649
SSPE2	2,749	1	141	141	540	6,669
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

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

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility is not an existing Major Source for PSD for at least one pollutant. Therefore the facility is not an existing Major Source for PSD.

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 of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

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

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification.

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 pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	0.5	0	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis 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 **Appendix E**.

VIII. Compliance

Rule 1070 Inspections

- This rule allows the District to perform inspections for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations. The rule also allows the District to require record keeping, to make inspections and to conduct tests of air pollution sources. The following conditions will be listed on the ATC as a mechanism to ensure compliance:
- {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted, or where records must be kept under condition of the permit. [District Rule 1070]
- {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit. [District Rule 1070]

Rule 2010 Permits Required

The provisions of this rule apply to any person who plans to or does operate, construct, alter, or replace any source operation, which may emit air contaminants or may reduce the emission of air contaminants.

Pursuant to Section 4.0, a written permit shall be obtained from the APCO. No Permit to Operate shall be granted either by the APCO or the Hearing Board for any source operation described in Section 3.0 constructed or installed without authorization as required by Section 3.0 until the information required is presented to the APCO and such source operation is altered, if necessary, and made to conform to the standards set forth in Rule 2070 (Standards for Granting Applications) and elsewhere in these rules and regulations.

The facility has obtained all required Air District permits and complies with the requirements of this rule.

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following¹:

- 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 SB288 Major Modification or a Federal Major Modification, as defined by the rule.

As discussed in Section I, the facility is proposing to install a new emergency standby IC engine. Additionally, as determined in Sections VII.C.7 and VII.C.8, this project does not result in an SB288 Major Modification or a Federal Major Modification, respectively. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

¹ Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

The daily emissions from the new engine are compared to the BACT threshold levels in the following table:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for the new unit (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	221.8	> 2.0	n/a	Yes
SO _x	0.3	> 2.0	n/a	No
PM ₁₀	2.9	> 2.0	n/a	Yes
CO	35.3	> 2.0 and SSPE2 ≥ 200,000 lb/yr	540	No
VOC	4.7	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO_x, PM₁₀, and VOC emissions from the engine for this project.

2. BACT Guideline

BACT Guideline 3.1.1, which appears in Appendix B of this report, covers diesel-fired emergency IC engines.

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, which appears in Appendix B of this report, BACT is satisfied with:

NO_x: Latest Available Tier Certification level for applicable horsepower
VOC: Latest Available Tier Certification level for applicable horsepower
PM₁₀: 0.15 g/bhp-hr

The facility has proposed to install a 1,112 bhp Tier 2 certified IC engine (with a PM₁₀ emissions rate of 0.05 g/bhp-hr), and using very low sulfur diesel fuel. Therefore, BACT is satisfied for NO_x, VOC, and PM₁₀.

B. Offsets

1. Offset Applicability

Pursuant to Section 4.6.2 of this rule, offsets are not required for emergency IC engines. The engine in this project is an emergency IC engine; therefore, this exemption is applicable to this project.

However, even when there is an applicable exemption, the SSPE2 values are compared to the offset threshold to determine if offsets are triggered. In its PAS database, the District keeps track of facilities where offsets are triggered but an exemption applies. The SSPE2 values are compared to the offset trigger thresholds in the following table:

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	2,749	2	141	540	6,669
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets Triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As shown in the table above, no offset thresholds are exceeded with this project. Further, as previously stated, the offset exemption from Section 4.6.2 of District Rule 2201 is applicable to this project; therefore, offset calculations are not necessary and offsets are not required.

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, SB288 Major Modifications, and Federal Major Modifications

As shown in Sections VII.C.5, VII.C.7, and VII.C.8, this facility is not a new Major Source, not an SB 288 Major Modification, and not a Federal Major Modification, respectively.

b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant

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

c. Any project which results in the offset thresholds being surpassed

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	1,825	2,749	20,000 lb/year	No
SO _x	1	2	54,750 lb/year	No
PM ₁₀	129	141	29,200 lb/year	No
CO	393	540	200,000 lb/year	No
VOC	6,649	6,669	20,000 lb/year	No

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

d. Any project with a Stationary Source Project Increase in Permitted Emissions (SSIPE) greater than 20,000 lb/year for any pollutant

For this project, the proposed engine is the only emissions unit that will generate an increase in Potential to Emit. Since the proposed engine emissions are well below 20,000 lb/year for all pollutants (See Section VII.C.2), the SSIPE for this project will be below the public notice threshold.

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

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

2. Public Notice Action

As demonstrated above, this project will require public noticing. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be electronically published on the District's website prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (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. Therefore, the following conditions will be listed on the ATC as a mechanism to ensure compliance:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 3.77 g-NOx/bhp-hr, 0.60 g-CO/bhp-hr, or 0.08 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- {4772} Emissions from this IC engine shall not exceed 0.05 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]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with District Rule 2201.

3. Recordkeeping

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

4. Reporting

No reporting is required to ensure compliance with District Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

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

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

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

Rule 2410 Prevention of Significant Deterioration

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

Rule 2520 Federally Mandated Operating Permits

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

Rule 4001 New Source Performance Standards (NSPS)

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

The District has not been delegated the authority to implement Subpart IIII requirements for non-Major Sources; therefore, no requirements shall be included on the permit.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

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

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

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 listed on the ATC as a mechanism to ensure compliance:

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

Rule 4102 Nuisance

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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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.

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
8-0	NA ¹	NA ²	0.00	2.72E-07	No	Yes
Project Totals	NA ¹	NA ²	0.00	2.72E-07		
Facility Totals	>1	0.06	0.02	1.42E-06		

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.

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for

triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

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

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

Unit # 8-0

1. The PM₁₀ emissions rate shall not exceed 0.05 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.

Rule 4201 Particulate Matter Concentration

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

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

The new engine has a PM₁₀ emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC as a mechanism to ensure 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 (NO_x), 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.

The proposed engine is also subject to District Rule 4702, Internal Combustion Engines. Since emissions limits of District Rule 4702 and all other requirements are equivalent or more stringent than District Rule 4701 requirements for emergency engines, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

Rule 4702 Internal Combustion Engines

Emergency standby engines are subject to District Rule 4702 requirements. Emergency standby engines are defined in Section 3.0 of District Rule 4702 as follows:

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

Emergency standby engines cannot be used to reduce the demand for electrical power when normal electrical power line service has not failed, or to produce power for the electrical distribution system, or in conjunction with a voluntary utility demand reduction program or interruptible power contract. The following conditions will be included on the permit:

- {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]
- {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]

The 100 hour requirement is less stringent than the Air Toxic Control Measure operating limitations for emergency standby engines. Therefore, compliance with the applicable Air Toxic Control Measure requirements ensures compliance with the 100 hour requirement.

Operation of emergency standby engines are limited to 100 hours or less per calendar year for non-emergency purposes. The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits this engine's maintenance and testing to 50 hours/year; therefore, compliance is expected. The following conditions will be included on the permit:

- {4920} 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 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]

The following exemption in Section 4.2 of District Rule 4702 applies to emergency standby engines:

4.2 Except for the requirements of Section 5.9 and Section 6.2.3, the requirements of this rule shall not apply to:

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

Pursuant to the exemption in Section 4.2, the following requirements of Section 5.9 are applicable to emergency standby engines

Section 5.9 requires the owner to:

5.9.2 Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.3 Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

5.9.4 Install and operate a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO and is allowed by Permit-to-Operate or Permit-Exempt Equipment Registration condition. The owner of the engine

shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {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]

Monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier. The following condition will be included on the permit:

- {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]

Install and operate a nonresettable elapsed time meter. In lieu of installing 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 Permit-to-Operate condition. The operator shall properly maintain and operate the nonresettable elapsed time meter or alternative device in accordance with the manufacturer's instructions. The following condition will be included on the permit:

- {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 Rule 4702 and 17 CCR 93115]

The exemption in Rule 4702 Section 4.2 for emergency standby engines requires the engines to comply with Section 6.2.3, shown below.

6.2.3 An owner claiming an exemption under Section 4.2 or Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and provided to the APCO upon request. The records shall include, but are not limited to, 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.*

Records of the total hours of operation, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and other support documentation must be maintained. All records shall be retained for a period of at least five years, shall be readily available, and be made available to the APCO upon request. The following conditions will be included on the permit:

- {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
- {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
- {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

Rule 4801 Sulfur Compounds

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

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

n = moles SO₂

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

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

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

Since 1.0 ppmv is $\leq$ 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition will be listed on the ATC as a mechanism to ensure 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]

California Health & Safety Code 42301.6 (School Notice)

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

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

The following requirements apply to new engines (those installed after 1/1/05):

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, is included on the permit. • {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]
The engine(s) must meet the emission standards in Table 1 of the ATCM for the specific power rating and model year of the proposed engine.	The applicant has proposed the use of an engine that is certified to the latest EPA Tier Certification standards for the applicable horsepower range, guaranteeing compliance with the emission standards of the ATCM. Additionally, the proposed diesel PM emissions rate is less than or equal to 0.15 g/bhp-hr.
The engine may not be operated more than 50 hours per year for maintenance and testing purposes unless the PM emissions are $\leq$ 0.01 g/bhp-hr, then the engine is allowed 100 hours per year. Emissions from this engine are certified at 0.05 g/bhp-	The following conditions will be included on the permit: • {4772} Emissions from this IC engine shall not exceed 0.05 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

hr, therefore the engine is allowed 50 hours.	{4920} 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 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM	The District has verified that this engine is not located within 500' of a school.
A non-resettable hour meter with a minimum display capability of 9,999 hours shall be installed upon engine installation, or by no later than January 1, 2005, on all engines subject to all or part of the requirements of sections 93115.6, 93115.7, or 93115.8(a) 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 permit: {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 Rule 4702 and 17 CCR 93115]
An owner or operator shall maintain monthly records of the following: emergency use hours of operation; maintenance and testing hours of operation; hours of operation for emission testing; initial start-up testing hours; hours of operation for all other uses; and the type of fuel used. All records shall be retained for a minimum of 36 months.	The following condition will be included on the permit: {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]

California Environmental Quality Act (CEQA)

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

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

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project qualifies for ministerial approval under the District's Guideline for Expedited Application Review (GEAR). Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

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 is 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

Pending a successful NSR public noticing period, issue Authority to Construct S-5836-8-0 subject to the permit conditions on the attached draft ATC in Appendix A.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
S-5836-8-0	3020-10-F	1,112 bhp IC engine	\$900

Appendixes

- A. Draft ATC
- B. BACT Guideline and BACT Analysis
- C. Emissions Data Sheet and/or ARB/EPA Certification
- D. RMR and AAQA
- E. QNEC Calculations

Appendix A

Draft ATC

*San Joaquin Valley
Air Pollution Control District*

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-5836-8-0

LEGAL OWNER OR OPERATOR: DOUBLE "J" DAIRY
MAILING ADDRESS: 6656 AVENUE 328
VISALIA, CA 93291

LOCATION: 6656 AVENUE 328
VISALIA, CA 93291

EQUIPMENT DESCRIPTION:

1,112 BHP CATERPILLAR MODEL C18ATAAC TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC
ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
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. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {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]
5. {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 Rule 4702 and 17 CCR 93115]
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. Emissions from this IC engine shall not exceed any of the following limits: 3.77 g-NOx/bhp-hr, 0.60 g-CO/bhp-hr, or 0.08 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.05 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, 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.

Samir Sheikh, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services

S-5836-8-0 : Nov 19 2020 9:17AM - JONESW : Joint Inspection NOT Required

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

9. {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]
10. {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]
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. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702 and 17 CCR 93115]
13. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 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 50 hours per calendar year. [District Rules 2201, 4102, and 4702, and 17 CCR 93115]
15. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]
16. {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

DRAFT

Appendix B

BACT Guideline and BACT Analysis

San Joaquin Valley Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.1
Last Update: 6/13/2019
Emergency Diesel IC Engine

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

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.

Top Down BACT Analysis for the Emergency IC Engine

This application was deemed complete on 9/3/20. Therefore, BACT Guideline 3.1.1 (June 13, 2019) was in effect at the time the project was deemed complete and will be used for this emergency diesel IC engine. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. BACT Analysis for NO_x, 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 steps were taken:

- Conduct a survey of all the emergency IC engines permitted in the District to determine the latest EPA Tier certification level that has been permitted for the proposed engine size
- Conduct a survey of the major IC engine manufacturers/genset vendors to determine the latest EPA Tier certification level that is readily available for the proposed engine size and use
- Review Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines to determine the latest Tier certification level required in California for the proposed engine size

Survey of Permitted Units:

The proposed emergency IC engine is rated at 1,112 bhp. Based on the latest survey of all permitted emergency IC engines powering electrical generators in the horsepower range applicable to the proposed unit, the District found that a Tier 2 certification level is the highest certification level that has been permitted for an IC engine of the size associated with the proposed project.

Survey of IC Engine Manufacturers/Genset Vendors:

Based on the latest survey of the major IC engine/genset manufacturers and vendors (Cummins, Caterpillar, Kohler, MQ Power, etc.) to determine the availability of Tier 4F certified units in the size range associated with the proposed project that are suitable for stationary emergency standby applications, the District concluded that no Tier 4F certified unit is suitable and available for stationary emergency standby use in the size range appropriate for the proposed project.

Stationary ATCM:

Table 1 of the CARB Stationary Air Toxic Control Measure (ATCM) for stationary emergency standby diesel-fired IC engines requires a Tier 2 certification level for IC engines rated greater than 750 bhp. The ATCM does not require a Tier certification level higher than Tier 2 for engines rated greater than 750 bhp.

Summary:

The proposed emergency IC engine is rated at 1,112 bhp. The District has not permitted any emergency diesel-fired IC engines rated greater than 750 bhp with a tier certification level higher than Tier 2. Moreover, according to the engine manufacturers and genset vendors contacted, a Tier 2 certification level is the latest available for a 1,112 bhp emergency standby diesel-fired IC engine powering a generator.

Based on the above analysis, the District finds that a Tier 4F emergency IC engine/generator with a rating of approximately 1,112 bhp is not readily available.

Consequently, the District considers a Tier 2 certification level to be the latest available Tier certification level for the proposed engine size. Furthermore, a Tier 2 certification level satisfies the stationary ATCM requirement for emergency standby IC engines rated greater than 750 bhp.

b. Step 2 - Eliminate technologically infeasible options

The control option listed in Step 1 is not technologically infeasible.

c. Step 3 - Rank remaining options by control effectiveness

Ranking is not necessary since there is only one control option listed in Step 1.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for NO_x and VOC will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

3. 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 EPA 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 EPA Tier level to be considered.

Please note the proposed Tier 2 IC engine has a PM emission factor of 0.05 g/hp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/hp-hr for all new emergency standby diesel IC engines.

Therefore, the proposed PM/PM₁₀ emission factor of 0.05 g/hp-hr meets BACT requirements, and also satisfies the stationary ATCM requirement for new emergency standby diesel IC engines.

b. Step 2 - Eliminate technologically infeasible options

The control option listed in Step 1 is not technologically infeasible.

c. Step 3 - Rank remaining options by control effectiveness

No ranking needs to be done because there is only one control option listed in Step 1.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control option remaining under consideration. Therefore, a cost effectiveness analysis is not required.

e. Step 5 - Select BACT

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

Appendix C
Emissions Data Sheet and or ARB/EPA Certification



QUINN Power Systems

3500 Shepherd Street, City of Industry, California 90601
Post Office Box 227044, Los Angeles, California 90022-0744
(562) 463-6000

June 1, 2020

Subject: Caterpillar Power Systems BACT for a Stationary 750KW generator set

To whom it may Concern:

For stationary/emergency use, the BACT from Caterpillar for a 750KW gen set is Tier 2. This generator set utilizes a CAT, C18, tier 2 engine. Tier 4 is not an available option in this configuration.

Please let me know if you have any questions.

Danny Finnegan
Quinn Power Systems
Sales Manager- Retail Products
Ph: 559-203-0239
Office 559-891-5402
Fax: 559-891-6704
Email: daniel.finnegan@quinnpower.com
www.quinnpower.com



Cat® C18 DIESEL GENERATOR SETS



Standby & Prime: 60Hz



Image shown might not reflect actual configuration

Engine Model	Cat® C18 ATAAC™ In-line 6, 4-cycle diesel
Bore x Stroke	145mm x 183mm (5.7in x 7.2in)
Displacement	18.13 L (1106.3 in³)
Compression Ratio	14:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	Electronic Unit Injection
Governor	Electronic ADEM™ A4

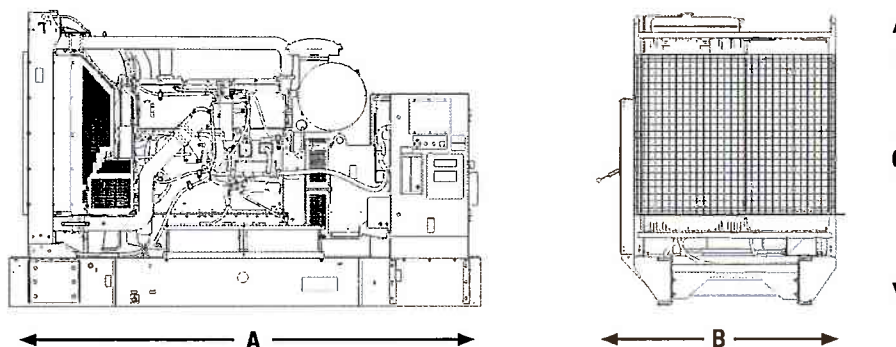
Model	Standby	Prime	Emission Strategy
C18	750 ekW, 938 kVA	680 ekW, 850 kVA	EPA TIER II

PACKAGE PERFORMANCE

Performance	Standby		Prime
Frequency	60 Hz		
Genset Power Rating	938 kVA		850 kVA
Genset power rating with fan @ 0.8 power factor	750 ekW		680 ekW
Emissions	EPA TIER II		
Performance Number	EM3842		EM3843
Fuel Consumption			
100% load with fan, L/hr (gal/hr)	205.5 (54.2)		188.5 (49.7)
75% load with fan, L/hr (gal/hr)	164.3 (43.4)		146.3 (38.6)
50% load with fan, L/hr (gal/hr)	108.9 (28.7)		100.3 (26.5)
25% load with fan, L/hr (gal/hr)	63.5 (16.7)		59.4 (15.6)
Cooling System¹			
Radiator air flow restriction (system), kPa (in. Water)	0.12 (0.48)		0.12 (0.48)
Radiator air flow, m³/min (cfm)	900 (31783)		900 (31783)
Engine coolant capacity, L (gal)	20.8 (5.5)		20.8 (5.5)
Radiator coolant capacity, L (gal)	77 (20.3)		77 (20.3)
Total coolant capacity, L (gal)	97.8 (25.8)		97.8 (25.8)
Inlet Air			
Combustion air inlet flow rate, m³/min (cfm)	67.3 (2376)		65.6 (2316)
Max. Allowable Combustion Air Inlet Temp, °C (°F)	49 (120)		49 (120)
Exhaust System			
Exhaust stack gas temperature, °C (°F)	452.9 (847.2)		432.9 (811.2)
Exhaust gas flow rate, m³/min (cfm)	170.7 (6028)		161 (5686)
Exhaust system backpressure (maximum allowable) kPa (in. water)	10.0 (40.0)		10.0 (40.0)
Heat Rejection			
Heat rejection to jacket water, kW (Btu/min)	225 (12795)		208 (11828)
Heat rejection to exhaust (total) kW (Btu/min)	714 (40604)		664 (37761)
Heat rejection to aftercooler, kW (Btu/min)	272 (15468)		253 (14387)
Heat rejection to atmosphere from engine, kW (Btu/min)	142 (8075)		123 (6995)

Emissions (Nominal) ²		Standby		Prime	
NOx, mg/Nm ³ (g/hp-hr)		See Emissions Pages			
CO, mg/Nm ³ (g/hp-hr)					
HC, mg/Nm ³ (g/hp-hr)					
PM, mg/Nm ³ (g/hp-hr)					
Alternator ³					
Voltages	208V	220V	240V	480V	600V
Motor starting capability @ 30% Voltage Dip	1917 skVA	2129 skVA	2501 skVA	2512 skVA	2512 skVA
Current	2602.2 amps	2460.3 amps	2512 amps	1127.6 amps	902.1 amps
Frame Size	LC7224N	LC7224L	LC7224L	LC7234L	LC7224L
Excitation	AREP	AREP	AREP	PMG	AREP
Temperature Rise	130 °C	130 °C	130 °C	105 °C	130 °C

WEIGHTS & DIMENSIONS



Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
3512 (138)	1746 (69)	2322 (92)	4863 (10721)

APPLICABLE CODES AND STANDARDS:

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

PRIME: Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year

RATINGS: Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

DEFINITIONS AND CONDITIONS

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

³ UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

LET'S DO THE WORK.™

**Caterpillar Emergency Engines
SCAQMD CEP List
February 5, 2020**

Model	Generator kW	HP	EPA Engine Certification (2020) (g/bhp-hr)						TMI Reference Data (g/bhp-hr)	SCAQMD BACT Guidelines (2016) (g/bhp-hr)				
			Family Name	HC	NOx	NMHC + NOx	CO	PM		HC	NOx	NMHC + NOx	CO	PM
C4.4 (4506)	40	96	LPKXL04.4NP1	0.18	3.10	3.28	1.04	0.13	P4506A			3.5	3.7	0.15
C4.4 (4506)	50	96	LPKXL04.4NP1	0.18	3.10	3.28	1.04	0.13	P4506A			3.5	3.7	0.15
C4.4 (4506)	60	96	LPKXL04.4NP1	0.18	3.10	3.28	1.04	0.13	P4506A			3.5	3.7	0.15
C4.4 (4510)	80	132	LPKXL04.4NR1	0.11	2.54	2.65	0.67	0.09	P4510A			3.0	3.7	0.15
C4.4 (4514)	100	161	LPKXL04.4NR1	0.11	2.54	2.65	0.67	0.09	P4514A			3.0	3.7	0.15
C7.1 (4392)	125	229	LPKXL07.0PW1	0.14	2.53	2.67	0.90	0.09	P4392A			3.0	2.6	0.15
C7.1 (4390)	150	247	LPKXL07.0PW1	0.14	2.53	2.67	0.90	0.09	P4390A			3.0	2.6	0.15
C7.1 (4378)	175	280	LPKXL07.0PW1	0.14	2.53	2.67	0.90	0.09	P4378A			3.0	2.6	0.15
C7.1 (4364)	200	315	LPKXL07.0PW1	0.14	2.53	2.67	0.90	0.09	P4364A-00			3.0	2.6	0.15
C9	250	398	LCPXL08.8NZS	0.18	2.55	2.76	0.97	0.10	DM8501-03			3.0	2.6	0.15
C9	300	480	LCPXL08.8NZS	0.18	2.55	2.76	0.97	0.10	DM8168-03			3.0	2.6	0.15
C13	350	539	LCPXL12.5NYS	0.14	2.65	2.76	2.01	0.12	EM1692			3.0	2.6	0.15
C13	400	609	LCPXL12.5NYS	0.14	2.65	2.76	2.01	0.12	EM1694			3.0	2.6	0.15
C15	400	619	LCPXL15.2NYS	0.16	2.60	2.76	2.16	0.07	DM8151-03			3.0	2.6	0.15
C15	450	689	LCPXL15.2NYS	0.16	2.60	2.76	2.16	0.07	DM8153-03			3.0	2.6	0.15
C15	500	762	LCPXL15.2NZS	0.07	4.01	4.10	1.19	0.07	DM8155-03			4.8	2.6	0.15
C15	550	839	LCPXL15.2NZS	0.07	4.01	4.10	1.19	0.07	DM8157-03			4.8	2.6	0.15
C18	550	839	LCPXL18.1NYS	0.08	3.77	3.85	0.60	0.05	DM8517-04			4.8	2.6	0.15
C18	600	900	LCPXL18.1NYS	0.08	3.77	3.85	0.60	0.05	DM8518-04			4.8	2.6	0.15
C18	750	1112	LCPXL18.1NYS	0.08	3.77	3.85	0.60	0.05	EM3842			4.8	2.6	0.15
C27	650	998	LCPXL27.0NZS	0.07	3.95	4.02	0.97	0.13	DM9079-01			4.8	2.6	0.15
C27	700	1069	LCPXL27.0NZS	0.07	3.95	4.02	0.97	0.13	DM9075-03			4.8	2.6	0.15
C27	750	1141	LCPXL27.0NZS	0.07	3.95	4.02	0.97	0.13	DM9071-02			4.8	2.6	0.15
C27	800	1214	LCPXL27.0NZS	0.07	3.95	4.02	0.97	0.13	DM7696-02			4.8	2.6	0.15
C32	900	1357	LCPXL32.0NZS	0.07	3.74	3.80	0.52	0.04	DM8140-02			4.8	2.6	0.15
C32	1000	1474	LCPXL32.0NZS	0.07	3.74	3.80	0.52	0.04	DM7714-02			4.8	2.6	0.15
C32	1250	1829	LCPXL32.0NZS	0.07	3.74	3.80	0.52	0.04	EM2324-09			4.8	2.6	0.15
3512C	1500	2206	LCPXL78.1NZS	0.18	4.20	4.38	0.90	0.11	DM8260-04			4.8	2.6	0.15
3512C	1750	2584	LCPXL78.1NZS	0.18	4.20	4.38	0.90	0.11	EM1787-02			4.8	2.6	0.15
3516C	2000	2937	LCPXL78.1NZS	0.19	3.78	3.97	0.67	0.09	DM8263-03			4.8	2.6	0.15
3516C	2500	3634	LCPXL78.1NZS	0.19	3.78	3.97	0.67	0.09	DM8266-04			4.8	2.6	0.15
3518E	2750	4043	LCPXL78.1NZS	0.13	3.98	4.11	1.12	0.10	EM1787-02			4.8	2.6	0.15
C175	3000	4423	LCPXL106.NZS	0.16	4.17	4.33	1.27	0.07	DM8448-07			4.8	2.6	0.15

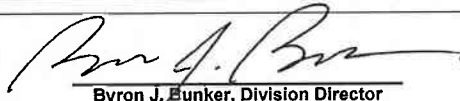


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2020 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: Caterpillar Inc.
(U.S. Manufacturer or Importer)
Certificate Number: LCPXL18.INYS-019

Effective Date:
07/25/2019
Expiration Date:
12/31/2020


Byron J. Bunker, Division Director
Compliance Division

Issue Date:
07/25/2019
Revision Date:
N/A

Model Year: 2020
Manufacturer Type: Original Engine Manufacturer
Engine Family: LCPXL18.INYS

Mobile/Stationary Indicator: Stationary
Emissions Power Category: 560<kW<=2237
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Electronic Control, Engine Design Modification

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.



South Coast Air Quality Management District

21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

December 6, 2019

Mr. Bob Shepherd
Caterpillar, Inc./Quinn Power Systems
PO Box 226789
Los Angeles, CA 90022-0489

Dear Mr. Shepherd:

The South Coast Air Quality Management District (South Coast AQMD) has extended Certified Equipment Permits (CEPs) to December 31, 2020 for the stationary emergency internal combustion (IC) engine models listed in the attached table. However, please be reminded that many of these certified diesel-fueled IC engines may not meet Rule 1470 requirements if installed at or near a sensitive receptor or near school grounds and, therefore, may require an aftertreatment system such as a diesel particulate filter in the exhaust stream.

Please note that the South Coast AQMD does not endorse or warrant any specific equipment or manufacturer. Modification of the equipment listed here will void this certification.

If you have additional questions or need further clarification on the CEP program, please feel free to contact CJ Chang at (909) 396-3293, cchang@aqmd.gov; or Susan Tsai at (909) 396-2529, stsai@aqmd.gov.

Sincerely,

David Ono
Senior Air Quality Engineering Manager
Engineering and Permitting

DO:GI:ST:CC



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
Certified ICE-Emergency Generators

CATERPILLAR, INC./QUINN POWER SYSTEMS

Engine Mfg.	Model	Engine Rating	Application No.
Caterpillar	C4.4 (60 KWe)	99.9 BHP	544534
Caterpillar	C4.4 (80/100 KWe)	156.8 BHP	482670
Caterpillar	C-6.6 (125/150/175	274 BHP	472638
Perkins	1106D-E66TAG4	274 BHP	457877
Caterpillar	C7.1 (125 KWe)	229 BHP	585257
Caterpillar	C7.1 (150 KWe)	247 BHP	585258
Caterpillar	C7.1 (175 KWe)	280 BHP	585259
Caterpillar	C7.1 (200 KWe)	315 BHP	567863
Caterpillar	C9 (200/230 KWe)	374 BHP	514974
Caterpillar	C-9 (250 KWe)	398 BHP	455162
Caterpillar	C-9 (300 KWe)	480 BHP	455163
Caterpillar	C15 (350 KWe)	546 BHP	554734
Caterpillar	C-15 (400 KWe)	619 BHP	452052
Caterpillar	C15 (450 KWe)	689 BHP	600362
Caterpillar	C15 (500 KWe)	762 BHP	554729
Caterpillar	C15 (550 KWe)	839 BHP	554730
Caterpillar	C-18 (550 KWe)	839 BHP	453934
Caterpillar	C-18 (600 KWe)	900 BHP	453933
Caterpillar	C-18 (750 KWe)	1112 BHP	611877

Appendix D
Technical Services Memo and AAQA

San Joaquin Valley Air Pollution Control District

Risk Management Review and Ambient Air Quality Analysis

To: William Jones – Permit Services
From: Adrian Ortiz – Technical Services
Date: September 18, 2020
Facility Name: DOUBLE “J” DAIRY
Location: 6656 AVENUE 328, VISALIA
Application #(s): S-5836-8-0
Project #: S-1202480

Summary

RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
8-0	NA ¹	NA ²	0.00	2.72E-07	No	Yes
Project Totals	NA ¹	NA ²	0.00	2.72E-07		
Facility Totals	>1	0.06	0.02	1.42E-06		

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.

AAQA

Pollutant	Air Quality Standard (State/Federal)				
	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA		NA		
NO _x	NA				Pass
SO _x	NA	NA		NA	Pass
PM ₁₀				NA	Pass
PM _{2.5}				NA	Pass
Ozone	NA		NA		

Notes:

1. Results were taken from the attached AAQA Report.
2. The 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.
3. ²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted.
4. Modeled PM₁₀ concentrations were below the District SIL for non-fugitive sources of 1 µg/m³ for the annual concentration.
5. Modeled PM_{2.5} concentrations were below the District SIL for non-fugitive sources of 0.2 µg/m³ for the annual concentration.

Proposed Permit Requirements

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

Unit # 8-0

4. The PM₁₀ emissions rate shall not exceed 0.05 g/bhp-hr based on US EPA certification using ISO 8178 test procedure.
5. 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.
6. 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.

Project Description

Technical Services received a request on September 2, 2020 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -8-0: 1112 BHP CATERPILLAR MODEL C18ATAAC TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

RMR Report

Analysis

The District performed an analysis pursuant to the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015) to determine the possible cancer and non-cancer health impact to the nearest resident or worksite. This policy requires that an assessment be performed on a unit by unit basis, project basis, and on a facility-wide basis. If a preliminary prioritization analysis demonstrates that:

- A unit's prioritization score is less than the District's significance threshold and;
- The project's prioritization score is less than the District's significance threshold and;
- The facility's total prioritization score is less than the District's significance threshold

Then, generally no further analysis is required.

The District's significant prioritization score threshold is defined as being equal to or greater than 1.0. If a preliminary analysis demonstrates that either the unit(s) or the project's or the facility's total prioritization score is greater than the District threshold, a screening or a refined assessment is required

If a refined assessment is greater than one in a million but less than 20 in one million for carcinogenic impacts (Cancer Risk) and less than 1.0 for the Acute and Chronic hazard indices (Non-Carcinogenic) on a unit by unit basis, project basis and on a facility-wide basis the proposed application is considered less than significant. For unit's that exceed a cancer risk of 1 in one million, Toxic Best Available Control Technology (TBACT) must be implemented.

Toxic emissions for this project were calculated using the following methods:

- Toxic emissions for the proposed unit were calculated and provided by the processing engineer.

These emissions were input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy, risks from the proposed unit's toxic emissions were prioritized using the procedure in the 2016 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required.

The AERMOD model was used, with the parameters outlined below and meteorological data for 2007-2010 from Visalia (rural dispersion coefficient selected) 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:

Source Process Rates					
Unit ID	Process ID	Process Material	Process Units	Hourly Process Rate	Annual Process Rate
8	1	PM10	Lbs.	0.12	12

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/ Horizontal/ Capped
8	1112 Emergency DICE	3.05	507	1.59	0.25	Vertical

AAQA Report

The District modeled the impact of the proposed project on the National Ambient Air Quality Standard (NAAQS) and/or California Ambient Air Quality Standard (CAAQS) in accordance with District Policy APR-1925 (Policy for District Rule 2201 AAQA Modeling) and EPA's Guideline for Air Quality Modeling (Appendix W of 40 CFR Part 51). The District uses a progressive three level approach to perform AAQAs. The first level (Level 1) uses a very conservative approach. If this analysis indicates a likely exceedance of an AAQS or Significant Impact Level (SIL), the analysis proceeds to the second level (Level 2) which implements a more refined approach. For the 1-hour NO₂ standard, there is also a third level that can be implemented if the Level 2 analysis indicates a likely exceedance of an AAQS or SIL.

The modeling analyses predicts the maximum air quality impacts using the appropriate emissions for each standard's averaging period. Required model inputs for a refined AAQA include background ambient air quality data, land characteristics, meteorological inputs, a receptor grid, and source parameters including emissions. These inputs are described in the sections that follow.

Ambient air concentrations of criteria pollutants are recorded at monitoring stations throughout the San Joaquin Valley. Monitoring stations may not measure all necessary pollutants, so background data may need to be collected from multiple sources. The following stations were used for this evaluation:

Monitoring Stations				
Pollutant	Station Name	County	City	Measurement Year
NOx	Visalia - N. Church	Tulare	Visalia	2018
PM10	ASH MOUNTIAN, SEQUOIA NATIONAL PARK	Tulare	Sequoia National Park	2018
PM2.5	Visalia - N. Church	Tulare	Visalia	2018
SOx	Fresno - Garland	Fresno	Fresno	2018

Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

Emission Rates (lbs/hour)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
8	1	NA	NA	NA	NA	NA

1. The 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.

Emission Rates (lbs/year)						
Unit ID	Process	NOx	SOx	CO	PM10	PM2.5
8	1	924	1	147	12	12

The AERMOD model was used to determine if emissions from the project would cause or contribute to an exceedance of any state of federal air quality standard. The parameters outlined below and meteorological data for 2007-2010 from Visalia (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

Point Source Parameters						
Unit ID	Unit Description	Release Height (m)	Temp. (°K)	Exit Velocity (m/sec)	Stack Diameter (m)	Vertical/ Horizontal/ Capped
8		3.05	507	1.59	0.25	Vertical

Conclusion

RMR

The cumulative acute and chronic indices for this facility, including this project, are below 1.0; and the cumulative cancer risk for this facility, including this project, is less than 20 in a million. In addition, the cancer risk for each unit in this 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.

AAQA

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

Attachments

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

Appendix E

QNEC Calculations

Quarterly Net Emissions Change (QNEC)

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

$QNEC = PE2 - PE1$, where:

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

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

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

Since this is a new unit, $PE1 = 0$ for all pollutants. Thus, $QNEC = PE2$ (lb/qtr).

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

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

QNEC		
Pollutant	PE2 Total (lb/yr)	Quarterly PE2 (lb/qtr)
NO _x	462	115.5
SO _x	1	0.3
PM ₁₀	6	1.5
CO	74	18.5
VOC	10	2.5