July 02, 2020

Mike Reid  
Fred Rau Dairy Inc  
PO BOX 430  
Caruthers, CA 93609

Re: Notice of Preliminary Decision - Authority to Construct  
Facility Number: C-5513  
Project Number: G-1201583

Dear Mr. Reid,

Enclosed for your review and comment is the District's analysis of Fred Rau Dairy Inc's application for an Authority to Construct for a 917 horsepower Tier 2 certified diesel engine to provide emergency power in the event of an electrical outage at 10255 Manning Ave, Fresno.

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. Errol Villegas of Permit Services at (559) 230-5900.

Sincerely,

[Signature]

Arnaud Marjollet  
Director of Permit Services

AM:cb  
Enclosures  
cc: Courtney Graham, CARB (w/ enclosure) via email
I. Proposal

Fred Rau Dairy Inc is proposing to install a 917 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 10255 Manning Ave in Fresno, 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 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

C-5513-39-0: 917 BHP (INTERMITTENT) VOLVO PENTA MODEL TWD1643GE 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 SOx emissions by over 99% from standard diesel fuel.

VII. General Calculations

A. Assumptions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency operating schedule:</td>
<td>24 hours/day</td>
</tr>
<tr>
<td>Non-emergency operating schedule:</td>
<td>100 hours/year</td>
</tr>
<tr>
<td>Density of diesel fuel:</td>
<td>7.1 lb/gal</td>
</tr>
<tr>
<td>EPA F-factor (adjusted to 60 °F):</td>
<td>9,051 dscf/MMBtu</td>
</tr>
<tr>
<td>Fuel heating value:</td>
<td>137,000 Btu/gal</td>
</tr>
<tr>
<td>BHP to Btu/hr conversion:</td>
<td>2,542.5 Btu/bhp-hr</td>
</tr>
<tr>
<td>Thermal efficiency of engine:</td>
<td>commonly ≈ 35%</td>
</tr>
<tr>
<td>PM$_{10}$ fraction of diesel exhaust:</td>
<td>0.96 (CARB, 1988)</td>
</tr>
<tr>
<td>Conversion factor:</td>
<td>1.34 bhp/kw, 453.6 g/lb, 15.43 grains/g</td>
</tr>
</tbody>
</table>
B. Emission Factors

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor (g/kW-hr)</th>
<th>Emission Factor (g/bhp-hr)</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>5.63</td>
<td>4.20</td>
<td>Engine Manufacturer</td>
</tr>
<tr>
<td>SOX</td>
<td>N/A</td>
<td>0.0051</td>
<td>Mass Balance Equation Below</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.076</td>
<td>0.057</td>
<td>Engine Manufacturer</td>
</tr>
<tr>
<td>CO</td>
<td>0.41</td>
<td>0.31</td>
<td>Engine Manufacturer</td>
</tr>
<tr>
<td>VOC</td>
<td>0.11</td>
<td>0.082</td>
<td>Engine Manufacturer</td>
</tr>
</tbody>
</table>

\[ \frac{0.000015 \text{ lb} - S}{\text{lb - fuel}} \times \frac{7.1 \text{ lb} - \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} - \text{SO}_x}{1 \text{ gal}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2.542.5 \text{ Btu}}{\text{bhp - hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} - \text{SO}_x}{\text{bhp - hr}} \]

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:

Daily PE2 (lb-pollutant/day) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/day) / 453.6 g/lb

Annual PE2 (lb-pollutant/yr) = EF (g-pollutant/bhp-hr) x rating (bhp) x operation (hr/yr) / 453.6 g/lb

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor (g/bhp-hr)</th>
<th>Rating (bhp)</th>
<th>Daily Hours of Operation (hrs/day)</th>
<th>Annual Hours of Operation (hrs/year)</th>
<th>Daily PE2 (lb/day)</th>
<th>Annual PE2 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>4.20</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>203.8</td>
<td>849</td>
</tr>
<tr>
<td>SOX</td>
<td>0.0051</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>0.2</td>
<td>1</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.057</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>2.8</td>
<td>12</td>
</tr>
<tr>
<td>CO</td>
<td>0.31</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>15.0</td>
<td>63</td>
</tr>
<tr>
<td>VOC</td>
<td>0.082</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>4.0</td>
<td>17</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>SSPE1 (lb/year)(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_X)</td>
</tr>
<tr>
<td>C-5513-1-4</td>
</tr>
<tr>
<td>C-5513-2-4</td>
</tr>
<tr>
<td>C-5513-3-4</td>
</tr>
<tr>
<td>C-5513-4-2</td>
</tr>
<tr>
<td>C-5513-32-0</td>
</tr>
<tr>
<td>C-5513-33-0</td>
</tr>
<tr>
<td>C-5513-36-1</td>
</tr>
<tr>
<td><strong>SSPE1</strong></td>
</tr>
</tbody>
</table>

\(^1\) Emissions values were taken from project C-1182868.

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:

<table>
<thead>
<tr>
<th></th>
<th>SSPE2 (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit Unit</td>
<td>NOx</td>
</tr>
<tr>
<td>SSPE1</td>
<td>842</td>
</tr>
<tr>
<td>C-5513-39-0</td>
<td>849</td>
</tr>
<tr>
<td>SSPE2</td>
<td>1,691</td>
</tr>
</tbody>
</table>

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

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 storage ponds have already been determined to be non-fugitive. The facility’s non-fugitive stationary source potential emissions are summarized in the following tables:

<table>
<thead>
<tr>
<th>Category</th>
<th>NOₓ</th>
<th>SOₓ</th>
<th>PM₁₀</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-5513-3-4 – Lagoons only</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5,916</td>
</tr>
<tr>
<td>C-5513-32-0 – Engine</td>
<td>379</td>
<td>0</td>
<td>18</td>
<td>115</td>
<td>43</td>
</tr>
<tr>
<td>C-5513-33-0 – Engine</td>
<td>463</td>
<td>0</td>
<td>22</td>
<td>141</td>
<td>53</td>
</tr>
<tr>
<td><strong>Non-Fugitive SSPE1</strong></td>
<td>842</td>
<td>0</td>
<td>40</td>
<td>256</td>
<td>6,012</td>
</tr>
</tbody>
</table>

¹ Emissions values were taken from project C-1182868.
The Rule 2201 major source determination is summarized in the following table:

<table>
<thead>
<tr>
<th>Category</th>
<th>NOx</th>
<th>SOx</th>
<th>PM_{10}</th>
<th>PM_{2.5}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-5513-3-4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5,916</td>
<td></td>
</tr>
<tr>
<td>C-5513-32-0</td>
<td>379</td>
<td>0</td>
<td>18</td>
<td>115</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>C-5513-33-0</td>
<td>463</td>
<td>0</td>
<td>22</td>
<td>141</td>
<td>53</td>
<td></td>
</tr>
<tr>
<td>C-5513-39-0</td>
<td>849</td>
<td>1</td>
<td>12</td>
<td>63</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Non-Fugitive SSPE2</td>
<td>1,691</td>
<td>1</td>
<td>52</td>
<td>319</td>
<td>6,029</td>
<td></td>
</tr>
</tbody>
</table>

1 Emissions values were taken from project C-1182868.

As shown 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:**

In determining if a stationary source is a PSD major source, the following sources of emissions shall not be included:

- Emissions from non-road engines (i.e. engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the source categories specified in 40 CFR 52.21(b)(1)(iii)

Agricultural operations do not belong to any of the source categories specified in specified in 40 CFR 52.21(b)(1)(i). Since this facility is an agricultural operation, fugitive emissions shall not be included in determining whether it is a PSD major source; and the PSD major source threshold is 250 tons/yr (tpy) for any regulated NSR pollutant.
The non-fugitive stationary source emissions from the preceding section have been converted into tons.\(^1\) The PSD major source determination is summarized in the following table:

<table>
<thead>
<tr>
<th>PSD Major Source Determination (tpy)</th>
<th>NO(_x)</th>
<th>SO(_x)</th>
<th>PM(_{10})</th>
<th>PM(_{2.5})</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated facility PE before project increase</td>
<td>0.4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
<td>3.0</td>
</tr>
<tr>
<td>PSD major source threshold</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>PSD major source?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

As shown above, 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.

\(^1\) \((\text{lb/yr}) / (2,000 \text{ lb/ton}) = \text{tons/yr (tpy)}\).
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

The project potential to emit, by itself, will not exceed any PSD major source thresholds. Therefore, Rule 2410 is not applicable, and no further discussion is required.

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

This rule allows the District to perform inspections for the purpose of obtaining information necessary to determine whether air pollution sources are in compliance with applicable rules and regulations. The rule also allows the District to require record keeping, to make inspections, and to conduct tests of air pollution sources. Therefore, the following conditions will be listed on each ATC 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 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

a. Any new emissions unit with a potential to emit exceeding two pounds per day,

b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,

c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or

d. Any new or modified emissions unit in a stationary source project, which results in 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.

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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions for the new unit (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{X}</td>
<td>203.8</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>SO\textsubscript{X}</td>
<td>0.2</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>2.8</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>CO</td>
<td>15.0</td>
<td>&gt; 2.0 and SSPE\textsubscript{2} \geq 200,000 lb/yr</td>
<td>319</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>4.0</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
</tbody>
</table>

As shown above, BACT will be triggered for NO\textsubscript{X}, PM\textsubscript{10}, and VOC emissions from the engine for this project.

\textsuperscript{2} Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE\textsubscript{2} of less than 200,000 pounds per year of CO.
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\textsubscript{X}: Latest Available Tier Certification level for applicable horsepower
- PM\textsubscript{10}: 0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent.
- VOC: Latest Available Tier Certification level for applicable horsepower

The facility has proposed to install a 917 bhp Tier 2 certified IC engine (with a PM\textsubscript{10} emissions rate of 0.057 g/bhp-hr). Therefore, BACT is satisfied for NO\textsubscript{X}, PM\textsubscript{10}, and VOC.

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.

<table>
<thead>
<tr>
<th>Offset Determination (lb/year)</th>
<th>NO\textsubscript{X}</th>
<th>SO\textsubscript{X}</th>
<th>PM\textsubscript{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE2</td>
<td>1,691</td>
<td>1</td>
<td>20,916</td>
<td>319</td>
<td>77,530</td>
</tr>
<tr>
<td>Offset Thresholds</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offsets Triggered?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
2. Quantity of Offsets Required

As shown in the table above, offsets are triggered for VOC emissions since the VOC SSPE2 exceeds the offset trigger threshold; however, as previously discussed, 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\textsubscript{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.

<table>
<thead>
<tr>
<th>Offset Thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pollutant</strong></td>
</tr>
<tr>
<td>NO\textsubscript{X}</td>
</tr>
<tr>
<td>SO\textsubscript{X}</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
</tr>
<tr>
<td>CO</td>
</tr>
<tr>
<td>VOC</td>
</tr>
</tbody>
</table>
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 discussed above, public noticing is required for this project for NOx emissions in excess of 100 lb/day. 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: 4.20 g-NOx/bhp-hr, 0.31 g-CO/bhp-hr, or 0.082 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} Emissions from this IC engine shall not exceed 0.057 g-PM\textsubscript{10}/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\textsubscript{X}, CO, and SO\textsubscript{X}. As shown by the AAQA summary sheet, the proposed equipment will not cause a violation of an air quality standard for NO\textsubscript{X}, CO, or SO\textsubscript{X}.

The proposed location is in a non-attainment area for the state’s PM\textsubscript{10} as well as federal and state PM\textsubscript{2.5} thresholds. As shown by the AAQA summary sheet, the proposed equipment will not cause a violation of an air quality standard for PM\textsubscript{10} or PM\textsubscript{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 III - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

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

Rule 4002 National Emission Standards for Hazardous Air Pollutants


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)

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.

### RMR Summary

<table>
<thead>
<tr>
<th>Categories</th>
<th>Emergency IC Engine (Unit -39-0)</th>
<th>Project Totals</th>
<th>Facility Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritization Score</td>
<td>23.10</td>
<td>23.10</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>NA¹</td>
<td>NA¹</td>
<td>0.21</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>0.00</td>
<td>0.00</td>
<td>0.08</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>2.06E-06</td>
<td>2.06E-06</td>
<td>8.73E-06</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Acute Hazard Index was not calculated for Unit 39 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 required for this project because the HRA indicates that the risk is above the District’s thresholds for triggering T-BACT requirements.

For this project, T-BACT is triggered for PM\(_{10}\). T-BACT is satisfied with BACT (see Appendix B), which is:

PM\(_{10}\): 0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent.

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 one 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:

- {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]

- {4772} Emissions from this IC engine shall not exceed 0.057 g-PM\textsubscript{10}/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

- {4775} 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 and 4702]

**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 PM\textsubscript{10} emission factor of 0.4 g-PM\textsubscript{10}/bhp-hr.

\[
0.1 \frac{\text{grain} - \text{PM}_{dscf}}{15.43 \text{grain}} \times \frac{1 \text{Btu}_{in}}{0.35 \text{Btu}_{out}} \times \frac{9.051 \text{dscf}}{10^6 \text{Btu}} \times \frac{2.5425 \text{Btu}}{1 \text{bhp} - \text{hr}} \times \frac{0.96 \text{g} - \text{PM}_{10}}{1 \text{g} - \text{PM}} = 0.4 \frac{\text{g} - \text{PM}_{10}}{\text{bhp} - \text{hr}}
\]

The new engine has a PM\textsubscript{10} 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\textsubscript{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.

Section 4.1 of the rule specifically exempts IC engines in agricultural operations used for the growing of crops or raising of fowl or animals. Since the engine(s) are used for the growing of crops or raising of fowl or animals, they are exempt from the requirements of this rule. Therefore, the following condition will be listed on the ATC(s) to ensure compliance.
• {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

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, 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]

• {4775} 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 and 4702]
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:
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:

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 (such as SO\(_2\)) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

\[
\text{Volume SO}_2 = \frac{n \times R \times T}{P} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot {^\circ}\text{R}}
\]

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

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):

<table>
<thead>
<tr>
<th>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</th>
<th>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>The requirements in Sections 93115.6, 93115.7, and 93115.10(a) do not apply to new stationary diesel-fueled CI engines used in agricultural operations.</td>
<td>The following condition will be added to the permit:</td>
</tr>
<tr>
<td>Emergency engine(s) must be fired on CARB diesel fuel or an approved alternative diesel fuel.</td>
<td>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.</td>
</tr>
<tr>
<td>The engine(s) must meet the requirements of Table 6 of the ATCM, which requires the Off-road engine certification standard for the specific power rating of the proposed engine on the date of acquisition (purchase date) or permit application submittal to the District, whichever is earliest.</td>
<td>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.</td>
</tr>
</tbody>
</table>
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 93115.8(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]

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**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.

To ensure that issuance of this permit does not conflict with any conditions imposed by any local agency permit process, the following permit condition will be listed on the ATC(s):

• {3658} 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].

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 C-5513-39-0 subject to the permit conditions on the attached draft ATC in Appendix A.
X. Billing Information

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>Fee Schedule</th>
<th>Fee Description</th>
<th>Fee Amount</th>
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</thead>
<tbody>
<tr>
<td>C-5513-39-0</td>
<td>3020-10-E</td>
<td>917 bhp IC engine</td>
<td>$723</td>
</tr>
</tbody>
</table>

Appendixes

A. Draft ATC
B. BACT Guideline and BACT Analysis
C. Emissions Data Sheet
D. Technical Services Memo and AAQA
E. QNEC Calculations
Appendix A
Draft ATC
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-5513-39-0 ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: FRED RAU DAIRY INC
MAILING ADDRESS: PO BOX 430
                  CARUTHERS, CA 93609

LOCATION: 10255 MANNING AVE
           FRESNO, CA 93706

EQUIPMENT DESCRIPTION:
917 BHP (INTERMITTENT) VOLVO PENTA MODEL TWD1643GE TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY
STANBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. {3215} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the
District to enter the permittee's premises where a permitted source is located or emissions related activity is conducted,
or where records must be kept under condition of the permit. [District Rule 1070]

2. {3216} Upon presentation of appropriate credentials, a permittee shall allow an authorized representative of the
District to have access to and copy, at reasonable times, any records that must be kept under the conditions of the
permit. [District Rule 1070]

3. {3658} 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. {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 Rules 4701 and 4702, and 17 CCR 93115]

5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

6. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three
minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

CONDITIONS CONTINUE ON NEXT PAGE

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

Samir Sheikh, Executive Director / APCO

Arnaud Marjollet, Director of Permit Services
C-5513-39-F- Jan 26 2021 7:34AM - BRHREC / Joint Inspection NOT Required
Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061
7. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

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. {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]

10. {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]

11. Emissions from this IC engine shall not exceed any of the following limits: 4.20 g-NOx/bhp-hr, 0.31 g-CO/bhp-hr, or 0.082 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

12. Emissions from this IC engine shall not exceed 0.057 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

13. {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]

14. {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]

15. {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]

16. {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]

17. {4775} 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 and 4702]

18. {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]

19. {4263} The permittee shall maintain monthly records of the type of fuel purchased. [District Rule 4702 and 17 CCR 93115]

20. {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]
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

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or in the SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>0.15 g/bhp-hr or the Latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent. (ATCM)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOx</td>
<td>Very low sulfur diesel fuel (15 ppmw sulfur or less)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>Latest EPA Tier Certification level for applicable horsepower range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 May 4, 2020. 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 diesel-fired emergency IC engine. In accordance with the District BACT policy, information from that guideline will be utilized without further analysis.

1. BACT Analysis for NO\textsubscript{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 917 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 one Tier 4F and numerous Tier 2 certified engines had been permitted.

   Survey of IC Engine Manufacturers/Genset Vendors:
   Per the District’s request, the applicant’s supplier checked with multiple 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. The supplier learned either no Tier 4F engines were available in generator configurations or the time required to receive a generator with a Tier 4F engine was six months or greater. The applicant’s dairy farm business is at risk to severe financial losses if power is lost at the dairy, and the owner cannot wait the additional six months for Tier 4F generator availability.
Stationary ATCM:
The CARB Stationary Air Toxic Control Measure (ATCM) for stationary emergency standby diesel-fired IC engines requires new nonroad compression-ignition engines to meet emission standards as listed in Table 1 as well as the emission standards specified in Table 1 of 40 CFR, PART 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Subpart IIII requires generator sets manufactured in 2015 or later and between 750 bhp and 1200 bhp to be certified to Tier 4F certification levels. However, ATCM exemption (u) allows engines to be certified at the next lower level provided the District finds the current certification level is not readily available. In this instance, the next lower certification is Tier 2 as Tier 3 certification is only for engines between 50 bhp and 750 bhp.

Summary:
The proposed emergency IC engine is rated at 917 bhp. The District has permitted one emergency diesel-fired IC engine rated greater than 750 bhp with a Tier 4F certification level. The District does not believe this constitutes “achieved in practice.” The engine manufacturers and genset vendors contacted stated a Tier 4F generator was neither offered nor readily available. Moreover, the ATCM does not require a tier certification level higher than Tier 2 for engines greater than 750 bhp when a Tier 4F certified engine is not readily available.

Based on the above analysis, the District finds that a Tier 4F emergency IC engine/generator with a rating of approximately 917 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 NOx 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.
2. **BACT and T-BACT Analysis for PM$_{10}$ 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$_x$ and VOC 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 0.057 g/bhp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/bhp-hr for all new emergency standby diesel IC engines.

   Therefore, the proposed PM/PM$_{10}$ emission factor of 0.057 g/bhp-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 and T-BACT for PM$_{10}$ is emissions of 0.15 g/bhp-hr or less. The applicant is proposing an engine that meets this requirement. Therefore, BACT will be satisfied.
Appendix C
Emissions Data Sheet
EXHAUST EMISSION DECLARATION

The emission data in this declaration are measured according to the test procedures specified below and on one member engine of the engine type. Emission data may vary among production engines.

TECHNICAL SPECIFICATION

<table>
<thead>
<tr>
<th>Engine type:</th>
<th>TWD1643GE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specification:</td>
<td>860523</td>
</tr>
<tr>
<td>Module No:</td>
<td>138052022</td>
</tr>
<tr>
<td>Rated crankshaft power *):</td>
<td>674 kW</td>
</tr>
<tr>
<td>Rated speed:</td>
<td>1800 rpm</td>
</tr>
<tr>
<td>*) Stand-by power without fan acc. to ISO 3046.</td>
<td></td>
</tr>
</tbody>
</table>

TEST INFORMATION

<table>
<thead>
<tr>
<th>Test conditions</th>
<th>40 CFR part 89</th>
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</thead>
<tbody>
<tr>
<td>Test identification</td>
<td>29003822</td>
</tr>
<tr>
<td>Test date</td>
<td>December 4, 2006</td>
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<tr>
<td>Test cycle</td>
<td>5-mode US constant speed test cycle</td>
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EXHAUST EMISSIONS (weighted cycle)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CO (g/kWh)</td>
<td>0.41</td>
</tr>
<tr>
<td>HC (g/kWh)</td>
<td>0.11</td>
</tr>
<tr>
<td>NOx (g/kWh)</td>
<td>5.63</td>
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<tr>
<td>PM (g/kWh)</td>
<td>0.076</td>
</tr>
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</table>

EXHAUST EMISSIONS (per cycle mode)

<table>
<thead>
<tr>
<th>Mode</th>
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<th>2</th>
<th>3</th>
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<tr>
<td>Power (kW)</td>
<td>668</td>
<td>503</td>
<td>335</td>
<td>167</td>
<td>67</td>
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<tr>
<td>NOx (g/h)</td>
<td>3427</td>
<td>2716</td>
<td>1892</td>
<td>1009</td>
<td>629</td>
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<tr>
<td>HC (g/h)</td>
<td>43</td>
<td>36</td>
<td>32</td>
<td>31</td>
<td>44</td>
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<tr>
<td>CO (g/h)</td>
<td>486</td>
<td>179</td>
<td>68</td>
<td>83</td>
<td>155</td>
</tr>
<tr>
<td>PM (g/h)</td>
<td>33</td>
<td>20</td>
<td>16</td>
<td>32</td>
<td>133</td>
</tr>
<tr>
<td>CO₂ (kg/h)</td>
<td>441</td>
<td>324</td>
<td>219</td>
<td>120</td>
<td>64</td>
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<tr>
<td>NOx (ppm)</td>
<td>629</td>
<td>599</td>
<td>540</td>
<td>441</td>
<td>386</td>
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<tr>
<td>HC (ppm)</td>
<td>23</td>
<td>23</td>
<td>26</td>
<td>40</td>
<td>81</td>
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<tr>
<td>CO (ppm)</td>
<td>138</td>
<td>61</td>
<td>30</td>
<td>56</td>
<td>147</td>
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<tr>
<td>CO₂ (%)</td>
<td>7.85</td>
<td>6.93</td>
<td>6.06</td>
<td>5.1</td>
<td>3.8</td>
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<tr>
<td>O₂ (%)</td>
<td>10</td>
<td>11.23</td>
<td>12.45</td>
<td>13.75</td>
<td>15.55</td>
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</tbody>
</table>

TA-Luft

<table>
<thead>
<tr>
<th>Mode</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (kW)</td>
<td>616</td>
<td>462</td>
<td>308</td>
<td>154</td>
</tr>
<tr>
<td>NOx (O₂) (g/Nm³)</td>
<td>1.9</td>
<td>2.1</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>HC (O₂) (mg/Nm³)</td>
<td>20</td>
<td>23</td>
<td>31</td>
<td>51</td>
</tr>
<tr>
<td>CO (O₂) (mg/Nm³)</td>
<td>238</td>
<td>110</td>
<td>76</td>
<td>163</td>
</tr>
<tr>
<td>PM (O₂) (mg/Nm³)</td>
<td>27</td>
<td>17</td>
<td>13</td>
<td>26</td>
</tr>
</tbody>
</table>

* PM is calculated from multifilter measurements with AVL Smart Sampler.

Gothenburg 2011-05-24

Hanna Österlindh

AB Volvo Penta
47 436, Engine Emission Certification
Appendix D
Technical Services Memo and AAQA
1. Summary

1.1 RMR

<table>
<thead>
<tr>
<th>Units</th>
<th>Prioritization Score</th>
<th>Acute Hazard Index</th>
<th>Chronic Hazard Index</th>
<th>Maximum Individual Cancer Risk</th>
<th>T-BACT Required</th>
<th>Special Permit Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>-39-0</td>
<td>23.10</td>
<td>NA(^1)</td>
<td>0.00</td>
<td>2.06E-06</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Project Totals</td>
<td>23.10</td>
<td>NA(^1)</td>
<td>0.00</td>
<td>2.06E-06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility Totals</td>
<td>&gt;1</td>
<td>0.21</td>
<td>0.08</td>
<td>8.73E-06</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
1. Acute Hazard Index was not calculated for Unit 39 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.

1.2 AAQA

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Air Quality Standard (State/Federal)(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Hour</td>
</tr>
<tr>
<td>CO</td>
<td>NA(^2)</td>
</tr>
<tr>
<td>NO(_x)</td>
<td>NA(^2)</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>NA(^2)</td>
</tr>
</tbody>
</table>
| PM\(_{10}\) |          |          |          |          | Pass\(^4\)
| PM\(_{2.5}\) |          |          |          |          | Pass\(^5\)
| Ozone     | NA\(^2\) |          | NA\(^2\) |          |        |

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. The criteria pollutants are below EPA’s level of significance as found in 40 CFR Part 51.165 (b)(2) unless otherwise noted.
4. Modeled PM\(_{10}\) concentrations were below the District SIL for non-fugitive sources of 1 \(\mu g/m^3\) for the annual concentration.
5. Modeled PM\(_{2.5}\) concentrations were below the District SIL for non-fugitive sources of 0.2 \(\mu g/m^3\) for the annual concentration.
1.3 Proposed Permit Requirements

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

**Unit # -39-0**

1. The PM$_{10}$ emissions rate shall not exceed 0.057 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 50 hours per calendar year.

T-BACT is required for this unit because of emissions of Diesel Particulate Matter which is PM$_{10}$.

2. Project Description

Technical Services received a revised request on June 9, 2020 to perform a Risk Management Review (RMR) and Ambient Air Quality Analysis (AAQA) for the following:

- Unit -39-0: 917 BHP TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

3. RMR Report

3.1 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 2013-2017 from Fresno (rural dispersion coefficient selected) to determine the dispersion factors (i.e., the predicted concentration or Χ 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:

<table>
<thead>
<tr>
<th>Source Process Rates</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Unit ID</td>
<td>Process ID</td>
<td>Process Material</td>
<td>Process Units</td>
<td>Hourly Process Rate</td>
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<tr>
<td>39</td>
<td>1</td>
<td>PM₁₀</td>
<td>LB</td>
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<table>
<thead>
<tr>
<th>Point Source Parameters</th>
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</thead>
<tbody>
<tr>
<td>Unit ID</td>
<td>Unit Description</td>
<td>Release Height (m)</td>
<td>Temp. (°K)</td>
<td>Exit Velocity (m/sec)</td>
<td>Stack Diameter (m)</td>
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<tr>
<td>39</td>
<td>917 BHP DICE</td>
<td>3.96</td>
<td>734</td>
<td>66.86</td>
<td>0.20</td>
</tr>
</tbody>
</table>

4. 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:
Technical Services performed modeling for directly emitted criteria pollutants with the emission rates below:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Station Name</th>
<th>County</th>
<th>City</th>
<th>Measurement Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>Fresno - Drummond</td>
<td>Fresno</td>
<td>Fresno</td>
<td>2016</td>
</tr>
<tr>
<td>PM\textsubscript{10}</td>
<td>Fresno - Drummond</td>
<td>Fresno</td>
<td>Fresno</td>
<td>2016</td>
</tr>
<tr>
<td>PM\textsubscript{2.5}</td>
<td>Fresno - Garland</td>
<td>Fresno</td>
<td>Fresno</td>
<td>2016</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>Fresno - Garland</td>
<td>Fresno</td>
<td>Fresno</td>
<td>2016</td>
</tr>
</tbody>
</table>

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 2013-2017 from Fresno (rural dispersion coefficient selected) were used for the analysis:

The following parameters were used for the review:

<table>
<thead>
<tr>
<th>Unit ID</th>
<th>Process</th>
<th>NO\textsubscript{x}</th>
<th>SO\textsubscript{x}</th>
<th>CO</th>
<th>PM\textsubscript{10}</th>
<th>PM\textsubscript{2.5}</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>1</td>
<td>849</td>
<td>1</td>
<td>63</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

5. Conclusion

5.1 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. However, the cancer risk for one or more units in this project is greater than 1.0 in a million. In accordance with the District’s Risk Management Policy, the project is approved with 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.

5.2 AAQA

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

\[
QNEC = PE_2 - PE_1, \text{ where:}
\]

\[
\begin{align*}
QNEC & = \text{Quarterly Net Emissions Change for each emissions unit, lb/qtr} \\
PE_2 & = \text{Post-Project Potential to Emit for each emissions unit, lb/qtr} \\
PE_1 & = \text{Pre-Project Potential to Emit for each emissions unit, lb/qtr}
\end{align*}
\]

Since this is a new unit, \(PE_1 = 0\) for all pollutants. Thus, \(QNEC = PE_2\) (lb/qtr).

Using the \(PE_2\) (lb/yr) values calculated in Section VII.C.2, Quarterly \(PE_2\) is calculated as follows:

\[
PE_{2\text{quarterly}} = \frac{PE_2\text{ (lb/yr)}}{4 \text{ quarters/year}} = QNEC
\]

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PE2 Total (lb/yr)</th>
<th>Quarterly PE2 (lb/qtr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO(_x)</td>
<td>849</td>
<td>212.3</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>PM(_{10})</td>
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<td>3.0</td>
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<tr>
<td>CO</td>
<td>63</td>
<td>15.8</td>
</tr>
<tr>
<td>VOC</td>
<td>17</td>
<td>4.3</td>
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