JUL 02 2015

Seferina Hawkins
Grimmius Cattle Co
5715 Kansas Avenue
Hanford, CA 93230

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: C-5719
Project Number: C-1151371

Dear Ms. Hawkins:

Enclosed for your review and comment is the District’s analysis of Grimmius Cattle Co’s application for an Authority to Construct for the installation of 317 bhp and 917 bhp diesel-fired emergency standby internal combustion (IC) engines powering electrical generators, at 5715 Kansas Ave in Hanford, CA.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Ms. Gurpreet Brar of Permit Services at (559) 230-5926.

Sincerely,

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1980 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

Printed on recycled paper.
I. Proposal

Grimmius Cattle Co is proposing to install a 317 bhp (intermittent) and a 917 bhp (intermittent) diesel-fired emergency standby internal combustion (IC) engines powering electrical generators. The proposed 917 bhp diesel-fired engine will replace an existing 200 bhp emergency standby internal combustion (IC) engine under permit unit C-5719-3; therefore, the following condition will be placed on ATC C-5719-12-0 to ensure compliance with this requirement:

- Upon startup of the equipment authorized by this Authority to Construct, Permit to Operate C-5719-3-0 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410 Prevention of Significant Deterioration (6/16/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 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 Stationary Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702 Stationary 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
III. Project Location

The equipment is located at 5715 Kansas Ave in Hanford, 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 engines powers electrical generators which are used for the growing of crops and/or animals. Other than emergency standby operation, the engines may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

C-5719-11-0: 317 BHP (INTERMITTENT) VOLVO MODEL TAD753GE SERIAL NO. 5311626338 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

C-5719-12-0: 917 BHP (INTERMITTENT) VOLVO MODEL TWD1643GE SERIAL NO. D16082399C3A 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 and Tier 3 certified diesel-fired IC engines that are fired on very low-sulfur diesel fuel.

The proposed engines meet the latest Tier Certification requirements; therefore, the engines 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 and/or the ARB/EPA executive order).

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO\textsubscript{x} emissions by over 99% from standard diesel fuel.
VII. General Calculations

A. Assumptions

Emergency operating schedule: 24 hours/day
Non-emergency operating schedule: 100 hours/year
Density of diesel fuel: 7.1 lb/gal
EPA F-factor (adjusted to 60 °F): 9,051 dscf/MMBtu
Fuel heating value: 137,000 Btu/gal
BHP to Btu/hr conversion: 2,542.5 Btu/bhp-hr
Thermal efficiency of engine: commonly ≈ 35%
PM\text{10} fraction of diesel exhaust: 0.96 (CARB, 1988)

The engines have certified NO\textsubscript{x} + VOC emissions. It will be assumed the NO\textsubscript{x} + VOC emission factor is split 95% NO\textsubscript{x} and 5% VOC (per the Carl Moyer program).

B. Emission Factors

C-5719-11-0:

<table>
<thead>
<tr>
<th>Diesel-fired IC Engine Emission Factors</th>
<th>g/hp•hr</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>2.85</td>
<td>EPA Certification</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.0051</td>
<td>Mass Balance Equation Below*</td>
</tr>
<tr>
<td>PM\text{10}</td>
<td>0.15</td>
<td>EPA Certification</td>
</tr>
<tr>
<td>CO</td>
<td>2.60</td>
<td>EPA Certification</td>
</tr>
<tr>
<td>VOC</td>
<td>0.24</td>
<td>EPA Certification</td>
</tr>
</tbody>
</table>

\[
\frac{0.000015 \text{ lb} \cdot \text{S}}{\text{ lb} \cdot \text{fuel}} \times \frac{7.1 \text{ lb} \cdot \text{fuel}}{1 \text{ gal}} \times \frac{2 \text{ lb} \cdot \text{SO}_2}{1 \text{ lb} \cdot \text{S}} \times \frac{1 \text{ gal}}{1 \text{ hp input}} \times \frac{2,542.5 \text{ Btu}}{0.35 \text{ hp out}} \times \frac{453.6 \text{ g}}{\text{ lb}} = 0.0051 \frac{\text{ g} \cdot \text{SO}_x}{\text{ hp} \cdot \text{hr}}
\]

C-5719-12-0:

<table>
<thead>
<tr>
<th>Diesel-fired IC Engine Emission Factors</th>
<th>g/hp•hr</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO\textsubscript{x}</td>
<td>4.56</td>
<td>EPA Certification</td>
</tr>
<tr>
<td>SO\textsubscript{x}</td>
<td>0.0051</td>
<td>Mass Balance Equation Below*</td>
</tr>
<tr>
<td>PM\text{10}</td>
<td>0.15</td>
<td>EPA Certification</td>
</tr>
<tr>
<td>CO</td>
<td>2.60</td>
<td>EPA Certification</td>
</tr>
<tr>
<td>VOC</td>
<td>0.24</td>
<td>EPA Certification</td>
</tr>
</tbody>
</table>

\[
\frac{0.000015 \text{ lb} \cdot \text{S}}{\text{ lb} \cdot \text{fuel}} \times \frac{7.1 \text{ lb} \cdot \text{fuel}}{1 \text{ gal}} \times \frac{2 \text{ lb} \cdot \text{SO}_2}{1 \text{ lb} \cdot \text{S}} \times \frac{1 \text{ gal}}{1 \text{ hp input}} \times \frac{2,542.5 \text{ Btu}}{0.35 \text{ hp out}} \times \frac{453.6 \text{ g}}{\text{ lb}} = 0.0051 \frac{\text{ g} \cdot \text{SO}_x}{\text{ hp} \cdot \text{hr}}
\]
C. Calculations

1. Pre-Project Potential to Emit (PE1)
   Since these are new emissions units, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)
   The daily and annual PE2 are calculated as follows:
   
   Daily PE2 (lb-pollutant/day) = \( \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/day)} / 453.6 \text{ g/lb} \)
   
   Annual PE2 (lb-pollutant/yr) = \( \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/yr)} / 453.6 \text{ g/lb} \)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions Factor (g/bhp-hr)</th>
<th>Rating (bhp)</th>
<th>Daily Hours of Operation (hrs/day)</th>
<th>Annual Hours of Operation (hrs/yr)</th>
<th>Daily PE2 (lb/day)</th>
<th>Annual PE2 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>2.85</td>
<td>317</td>
<td>24</td>
<td>100</td>
<td>47.8</td>
<td>199</td>
</tr>
<tr>
<td>SOX</td>
<td>0.0051</td>
<td>317</td>
<td>24</td>
<td>100</td>
<td>0.1</td>
<td>0</td>
</tr>
<tr>
<td>PM10</td>
<td>0.15</td>
<td>317</td>
<td>24</td>
<td>100</td>
<td>2.5</td>
<td>10</td>
</tr>
<tr>
<td>CO</td>
<td>2.60</td>
<td>317</td>
<td>24</td>
<td>100</td>
<td>43.6</td>
<td>182</td>
</tr>
<tr>
<td>VOC</td>
<td>0.15</td>
<td>317</td>
<td>24</td>
<td>100</td>
<td>2.5</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emissions Factor (g/bhp-hr)</th>
<th>Rating (bhp)</th>
<th>Daily Hours of Operation (hrs/day)</th>
<th>Annual Hours of Operation (hrs/yr)</th>
<th>Daily PE2 (lb/day)</th>
<th>Annual PE2 (lb/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOX</td>
<td>4.56</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>221.2</td>
<td>922</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>PM10</td>
<td>0.15</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>7.3</td>
<td>30</td>
</tr>
<tr>
<td>CO</td>
<td>2.60</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>126.1</td>
<td>526</td>
</tr>
<tr>
<td>VOC</td>
<td>0.24</td>
<td>917</td>
<td>24</td>
<td>100</td>
<td>11.6</td>
<td>49</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 (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

The SSPE1 is given in the following table and is taken from project #C-1123323.

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-5719-1-4 Calf Housing</td>
<td>0</td>
<td>0</td>
<td>112,789</td>
<td>0</td>
<td>53,513</td>
</tr>
<tr>
<td>C-5719-2-4 Solid Manure</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,634</td>
</tr>
<tr>
<td>C-5719-3-0 IC Engine</td>
<td>441</td>
<td>0*</td>
<td>22</td>
<td>134</td>
<td>50</td>
</tr>
<tr>
<td>C-5719-6-2 Gas Tank</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>698</td>
</tr>
<tr>
<td>C-5719-7-3 Feed</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>55,058</td>
</tr>
<tr>
<td>C-5719-8-2 Liquid Manure</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>14,819</td>
</tr>
<tr>
<td>C-5719-9-0 IC Engine</td>
<td>5,015</td>
<td>6</td>
<td>222</td>
<td>933</td>
<td>233</td>
</tr>
<tr>
<td>C-5719-10-0 IC Engine</td>
<td>10,827</td>
<td>14</td>
<td>278</td>
<td>1,943</td>
<td>555</td>
</tr>
</tbody>
</table>

SSPE1 Total: 16,283 20 113,311 3,010 127,560

*SOx emissions for '3-0 was based on the use of very low-sulfur diesel fuel (0.0015% by weight)

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE1</td>
<td>16,283</td>
<td>20</td>
<td>113,311</td>
<td>3,010</td>
<td>127,560</td>
</tr>
<tr>
<td>C-5719-3-0</td>
<td>-441</td>
<td>0</td>
<td>-22</td>
<td>-134</td>
<td>-50</td>
</tr>
<tr>
<td>C-5719-11-0</td>
<td>199</td>
<td>0</td>
<td>10</td>
<td>182</td>
<td>10</td>
</tr>
<tr>
<td>C-5719-12-0</td>
<td>922</td>
<td>1</td>
<td>30</td>
<td>526</td>
<td>49</td>
</tr>
</tbody>
</table>

SSPE2 Total: 16,963 21 113,329 3,584 127,569

Offset Threshold: 20,000 54,750 29,200 200,000 20,000

Offset Threshold Surpassed? No No No No No
5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Since agricultural operations do not fall under any of the specific source categories specified in 40 CFR 51.165, fugitive emissions are not counted when determining if an agricultural operation is a major source.

Since emissions at this facility are not actually collected, a determination of whether emissions could be reasonably collected must be made by the permitting authority. The California Air Pollution Control Association (CAPCOA) prepared guidance in 2005 for estimating potential to emit of Volatile Organic Compounds from dairy farms. The guidance states that “VOC emissions from the milking centers, cow housing areas, corrals, common manure storage areas, and land application of manure are not physically contained and could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening. No collection technologies currently exist for VOC emissions from these emissions units. Therefore, the VOC emissions from these sources are considered fugitive.” The guidance also concludes that, because VOC collection technologies do exist for liquid waste systems at dairies, “... the VOC emissions from waste lagoons and storage ponds are considered non-fugitive.”

The District has researched this issue and concurs with the CAPCOA assessment. All fugitive emissions are excluded from the Major Source determination.

SSPE calculations excluding fugitive emissions from this facility are taken from project #C-1123323.
Rule 2201 Major Source Determination (lb/year)

<table>
<thead>
<tr>
<th></th>
<th>NOx</th>
<th>SOx</th>
<th>PM10</th>
<th>PM2.5</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE1</td>
<td>16,283</td>
<td>20</td>
<td>522</td>
<td>522</td>
<td>3,010</td>
<td>9,947</td>
</tr>
<tr>
<td>SSPE2</td>
<td>16,963</td>
<td>21</td>
<td>540</td>
<td>540</td>
<td>3,584</td>
<td>9,956</td>
</tr>
<tr>
<td>Major Source Threshold</td>
<td>20,000</td>
<td>140,000</td>
<td>140,000</td>
<td>200,000</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Major Source?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: PM2.5 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 these are new emissions units, BE = PE1 = 0 for all criteria 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. Additionally, since the facility is not a major source for PM$_{10}$ (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

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 AIPExceeding 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.

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

As discussed in Section I, 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 each of the new engine is compared to the BACT threshold levels in the following tables:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions (lb/day)</th>
<th>BACT Threshold (lb/day)</th>
<th>SSPE2 (lb/yr)</th>
<th>BACT Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>47.8</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>SOx</td>
<td>0.1</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>2.5</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>CO</td>
<td>43.6</td>
<td>&gt; 2.0 and SSPE2 ≥ 200,000 lb/yr</td>
<td>3,584</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>2.5</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### New Emissions Unit BACT Applicability C-5719-12-0

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Daily Emissions (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>221.2</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>7.3</td>
<td>&gt; 2.0</td>
<td>n/a</td>
<td>Yes</td>
</tr>
<tr>
<td>CO</td>
<td>126.1</td>
<td>&gt; 2.0 and SSPE2 (\geq 200,000) lb/yr</td>
<td>3,584</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>11.6</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 engines 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\textsubscript{x}: Latest Available Tier Certification level for applicable horsepower*
- VOC: Latest Available Tier Certification level for applicable horsepower*
- PM\textsubscript{10}: 0.15 g/bhp-hr

*Note: The certification requirements for emergency engines are as follows: 50 \(\leq\) bhp \(< 75\) – Tier 4I; 75 \(\leq\) bhp \(< 750\) – Tier 3; \(\geq 750\) bhp – Tier 2.

### B. Offsets

Since emergency IC engines are exempt from the offset requirements of Rule 2201, per Section 4.6.2, offsets are not required for this engine, and no offset calculations are 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} and CO are greater than 100 lb/day from permit unit C-5719-12-0.

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

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

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 engines are the only emissions sources 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. **Title V Significant Modification**

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

2. Public Notice Action

As demonstrated above, this project will require public noticing. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATCs 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 ATCs to ensure compliance:

C-5719-11-0:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 2.85 g-NOx/bhp-hr, 2.60 g-CO/bhp-hr, or 0.15 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} Emissions from this IC engine shall not exceed 0.15 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]

C-5719-12-0:

- {4771} Emissions from this IC engine shall not exceed any of the following limits: 4.56 g-NOx/bhp-hr, 2.60 g-CO/bhp-hr, or 0.24 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

- {4772} Emissions from this IC engine shall not exceed 0.15 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 Rule 2201.
2. Monitoring

No monitoring is required to demonstrate compliance with 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 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 PM$_{10}$ 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 PM$_{10}$ and PM$_{2.5}$.

Rule 2410 Prevention of Significant Deterioration

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 ATCs to ensure compliance:

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

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, the following condition will be listed on the ATCs 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 (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite. Therefore, a risk management review (RMR) was performed for this project. The RMR results are summarized in the following table, and can be seen in detail in Appendix D.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Acute Hazard Index</th>
<th>Chronic Hazard Index</th>
<th>Cancer Risk</th>
<th>T-BACT Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-5719-11-0</td>
<td>N/A</td>
<td>N/A</td>
<td>0.0245 in a million</td>
<td>No</td>
</tr>
<tr>
<td>C-5719-12-0</td>
<td>N/A</td>
<td>N/A</td>
<td>0.036 in a million</td>
<td>No</td>
</tr>
</tbody>
</table>

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

- {4772} Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

- {4777} 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\(_{10}\) emission factor of 0.4 g-PM\(_{10}\)/bhp-hr.

\[
0.1 \frac{\text{grain}}{\text{dscf}} \times \frac{\text{g}}{15.43 \text{grain}} \times \frac{1 \text{Btu}_{in}}{0.35 \text{Btu}_{out}} \times \frac{9.05 \text{dscf}}{10^6 \text{Btu}} \times \frac{2,542.5 \text{Btu}}{1 \text{bhp-hr}} \times \frac{0.96 \text{g} - \text{PM}_{10}}{1 \text{g} - \text{PM}_{10}} = 0.4 \frac{\text{g} - \text{PM}_{10}}{\text{bhp-hr}}
\]

The new engine has a PM\(_{10}\) emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATC:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
Rule 4701 Internal Combustion Engines - Phase 1

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

Section 4.1 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

The following summarizes District Rule 4702 requirements for emergency standby IC engines:

1. Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes. The following condition will be included on the ATCs:

- [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]

2. 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]

3. 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]

4. 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 shall be used:

- 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]

5. 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:

- 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]

- 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]

6. 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:

\[
\text{Volume SO}_2 = \left( n \times R \times T \right) / P
\]

\( n = \text{moles SO}_2 \)

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

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

\[
\begin{align*}
0.000015 \frac{\text{lb}}{\text{gal}} \times \frac{7.1 \text{ lb}}{64 \text{ lb} - \text{SO}_2} \times \frac{1 \text{ MMBtu}}{1 \text{ gal}} \times \frac{1 \text{ gal}}{0.137 \text{ MMBtu}} \times \frac{1 \text{ lb} - \text{mol}}{64 \text{ lb} - \text{SO}_2} \times \frac{10.73 \text{ psi} - \text{ft}^3}{\text{lb} - \text{mol} - ^\circ \text{R}} \times \frac{520 ^\circ \text{R}}{14.7 \text{ psi}} \times 1,000,000 = 1.0 \text{ ppmv}
\end{align*}
\]

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

• {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><strong>Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators</strong></th>
<th><strong>Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements</strong></th>
</tr>
</thead>
</table>
| 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. | The following condition will be added to the ATCs:  
- 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] |
| 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, was included earlier in this evaluation. |
| The engine(s) must meet 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. | For emergency engines, the Off-road engine certification standards are identified in Table 1 of the ATCM. The applicant has proposed the use of an emergency engine that meets the Table 1 emission standards (Off-road engine certification standards) for the applicable horsepower range. |
| 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] |

1 Although Section 93115.8 of the ATCM states that new IC engines used in agricultural operations must meet the emissions limits in Table 6, the ATCM Staff Report clarifies that all new emergency standby IC engines must meet the emissions limits specified in Table 1 of the ATCM. This eliminates the requirement that new agricultural emergency standby IC engines would otherwise have to meet the after-treatment based Tier 4 standards specified in Table 6.
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.

Permit conditions enforcing these requirements were shown earlier in the evaluation.

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 ATCs:

- 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].
IX. Recommendation

Pending a successful NSR Public Noticing period, issue Authority to Construct C-5719-11-0 & -12-0 subject to the permit conditions on the attached draft Authority to Construct 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>
</tr>
</thead>
<tbody>
<tr>
<td>C-5719-11-0</td>
<td>3020-10-C</td>
<td>317 bhp IC engine</td>
<td>$240.00</td>
</tr>
<tr>
<td>C-5719-12-0</td>
<td>3020-10-E</td>
<td>917 bhp IC engine</td>
<td>$602.00</td>
</tr>
</tbody>
</table>

Appendixes

A. Draft ATCs
B. BACT Guideline and BACT Analysis
C. Engine Manufacturer Data
D. RMR Summary and AAQA
E. QNEC Calculations
Appendix A

Draft ATCs
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-5719-11-0

LEGAL OWNER OR OPERATOR: GRIMMIUS CATTLE CO
MAILING ADDRESS: 5715 KANSAS AVE
HANFORD, CA 93230

LOCATION: 5715 KANSAS AVE
HANFORD, CA 93230

EQUIPMENT DESCRIPTION:
317 BHP (INTERMITTENT) VOLVO MODEL TAD753GE SERIAL NO. 5311626338 TIER 3 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

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

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

3. This permit does not authorize the violation of any conditions established for this facility in the Conditional Use Permit (CUP), Special Use Permit (SUP), Site Approval, Site Plan Review (SPR), or other approval documents issued by a local, state, or federal agency. [Public Resources Code 21000-21177: California Environmental Quality Act]

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

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

6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

7. This IC engine shall only be used for the growing and harvesting of crops or the raising of fowl or animals for the primary purpose of making a profit, providing a livelihood, or conducting agricultural research or instruction by an educational institution. [District Rules 4701 and 4702, and 17 CCR 93115]

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

Seyed Sadredin, Executive Director & APCO

Arnaud Marjollet, Director of Permit Services
C-5719-11-0, Jun 25 2015 1:06PM - BRARO : Joint Inspeetor NOT Required
Central Regional Office • 1990 E. Gettysburg Ave. • Fresno, CA 93726 • (559) 230-5900 • Fax (559) 230-6061
8. {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]

9. {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]

10. Emissions from this IC engine shall not exceed any of the following limits: 2.85 g-NOx/bhp-hr, 2.60 g-CO/bhp-hr, or 0.15 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

11. Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102, and 17 CCR 93115]

12. {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]

13. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]

14. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]

15. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]

16. {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]

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

19. {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]
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-5719-12-0

LEGAL OWNER OR OPERATOR: GRIMMIUS CATTLE CO
MAILING ADDRESS: 5715 KANSAS AVE
                  HANFORD, CA 93230

LOCATION: 5715 KANSAS AVE
           HANFORD, CA 93230

EQUIPMENT DESCRIPTION: 917 BHP (INTERMITTENT) VOLVO MODEL TWD1643GE SERIAL NO. D16082399C3A TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

CONDITIONS

1. Upon startup of the equipment authorized by this Authority to Construct, Permit to Operate C-5719-3-0 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable. [District Rule 2201]

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

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

4. 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]

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

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

7. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services
8. {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]

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: 4.56 g-NOx/bhp-hr, 2.60 g-CO/bhp-hr, or 0.24 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]

12. Emissions from this IC engine shall not exceed 0.15 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]

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]

17. {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]

18. {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]

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: September 10, 2013
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>0.15 g/bhp-hr or the latest EPA Tier Certification level for applicable horsepower range, whichever is more stringent (ATCM)</td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>Very low sulfur diesel fuel (15 ppmw sulfur or less)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOX</td>
<td>Latest EPA Tier Certification level for applicable horsepower range*</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>

*Note: The certification requirements are as follows: for emergency engines 50 ≤ bhp < 75 - Tier 4 Interim; for emergency engines 75 ≤ bhp < 750 - Tier 3; for emergency engines ≥ 750 bhp - Tier 2.

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.
BACT Guideline 3.1.1 (September 10, 2013) applies to emergency diesel IC engines. 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*

   *Note: for emergency engines $50 \leq bhp < 75$, Tier 4 Interim certification is the requirement; for emergency engines $75 \leq bhp < 750$, Tier 3 certification is the requirement; for emergency engines $\geq 750$ bhp, Tier 2 certification is the requirement.

   C-5719-11-0:

   The proposed engine is rated at 317 hp. Therefore, the applicable control technology option is EPA Tier 3 certification.

   C-5719-12-0:

   The proposed engine is rated at 917 hp. Therefore, the applicable control technology option is EPA Tier 2 certification.

   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 NO\textsubscript{x}, VOC, and CO will be the use of an EPA Tier 2 and Tier 3 certified engines. The applicant is proposing such units. Therefore, BACT will be satisfied.
2. **BACT Analysis for PM\textsubscript{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 and Tier 3.

   Please note Tier 2, 3, or 4i IC engines do not have a PM emission standard that is more stringent than 0.15 g/hp-hr. Additionally, the ATCM requires a PM emission standard of 0.15 g/hp-hr for all new emergency diesel IC engines.

   Therefore, a PM/PM\textsubscript{10} emission standard of 0.15 g/hp-hr is required as BACT.

   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 PM\textsubscript{10} is emissions of 0.15 g/hp-hr or less. The applicant is proposing an engines that meets this requirement. Therefore, BACT will be satisfied.
Appendix C

Emissions Data Sheet
Diesel Product Line

VD200-01

200 kWe / 180 kWe

Ratings

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Phase</th>
<th>PF</th>
<th>Hz</th>
<th>Generator Model</th>
<th>Connection</th>
<th>AMPS</th>
<th>Temp Rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>240V</td>
<td>1</td>
<td>1.0</td>
<td>60</td>
<td>432CSL6210</td>
<td>12 LEAD ZIG-ZAG</td>
<td>833</td>
<td>130°C / 27°C</td>
</tr>
<tr>
<td>208V</td>
<td>3</td>
<td>0.8</td>
<td>60</td>
<td>431CSL6206</td>
<td>12 LEAD WYE</td>
<td>695</td>
<td>130°C / 27°C</td>
</tr>
<tr>
<td>240V</td>
<td>3</td>
<td>0.8</td>
<td>60</td>
<td>431CSL6206</td>
<td>12 LEAD DELTA</td>
<td>602</td>
<td>130°C / 27°C</td>
</tr>
<tr>
<td>480V</td>
<td>3</td>
<td>0.8</td>
<td>60</td>
<td>431CSL6206</td>
<td>12 LEAD WYE</td>
<td>301</td>
<td>130°C / 27°C</td>
</tr>
<tr>
<td>600V</td>
<td>3</td>
<td>0.8</td>
<td>60</td>
<td>431PSL6243</td>
<td>4 LEAD WYE</td>
<td>241</td>
<td>130°C / 27°C</td>
</tr>
</tbody>
</table>

Prime [Only Available For Mobile Applications]

<table>
<thead>
<tr>
<th>Voltage</th>
<th>kWe</th>
<th>AMPS</th>
<th>Temp Rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>208V</td>
<td>180</td>
<td>750</td>
<td>105°C / 40°C</td>
</tr>
<tr>
<td>240V</td>
<td>180</td>
<td>625</td>
<td>105°C / 40°C</td>
</tr>
<tr>
<td>480V</td>
<td>135</td>
<td>542</td>
<td>105°C / 40°C</td>
</tr>
<tr>
<td>600V</td>
<td>180</td>
<td>271</td>
<td>105°C / 40°C</td>
</tr>
</tbody>
</table>

Standard Equipment

Engine
- Radiator Cooled Unit Mounted (55°C)
- Blower Fan & Fan Drive
- Starter & Alternator
- Oil Pump & Filter
- Oil Drain Extension w/Valve
- Governor - Electronic Isochronous
- 24V Battery System & Cables
- SAE Flywheel & Housing
- Air Cleaner (Dry Single Stage)
- Flexible Fuel Connectors
- EPA Certified - Tier 3

Generator
- Brushless Single Bearing
- Automatic Voltage Regulator
- ± 1.0% Voltage Regulation
- 4 Pole, Rotating Field
- 130°C Standby Temperature Rise
- 105°C Prime Temperature Rise
- 100% of Rated Load - One Step
- 5% Maximum Harmonic Content
- NEMA MG 1, IEEE and ANSI standards compliance for temperature rise

Additional
- Microprocessor Based Digital Control
- Base - Formed Steel
- Main Line Circuit Breaker Mounted & Wired
- Critical Grade Silencer Mounted
- Battery Charger 24V 5 Amp
- Jacket Water Heater -20°F 2000W 240V w/Isolation Valves
- Vibration Isolation Mounts
- Radiator Duct Flange (OPU Only)
- Single Source Supplier
- 2YR / 2000HR Standby Warranty
- 1YR / 1500HR Prime Warranty
- Standard Colors - White / Tan / Gray
### Application Data

#### Engine
- **Manufacturer:** Volvo
- **Model:** TAD753GE
- **Type:** 4-Cycle
- **Displacement - Cu. In. (lit):** 436 (7.15)
- **Bore - in. (cm) x Stroke - in. (cm):** 4.25(10.8) x 5.12 (13.0)
- **Compression Ratio:** 18.0:1
- **Rated RPM:** 1800
- **Max HP Stby (kWm):** 317 (231.7)

#### Exhaust System
- **Gas Temp. (Stack): °F (°C):** 1,022 (550)
- **Gas Volume at Stack Temp: CFM (m³/min):** 1,508 (42.7)
- **Maximum Allowable Exhaust Restriction: in. H2O (kPa):** 27.7 (7.0)

#### Cooling System
- **Ambient Capacity of Radiator: °F (°C):** 131 (55.0)
- **Maximum Allowable Static Pressure on Rad. Exhaust: in. H2O (kPa):** 0.5 (0.12)
- **Water Pump Flow Rate: Gpm (l/min):** 78.0 (295)
- **Heat Rejection to Coolant: BTUM (kW):** 7,450 (131)
- **Heat Rejection to CAC: BTUM (kW):** 2,445 (43.0)
- **Heat Radiated to Ambient: BTUM (kW):** 2,419 (42.3)

#### Air Requirements
- **Aspirating: CFM (m³/min):** 530 (15.0)
- **Air Flow Required for Rad. Cooled Unit: CFM (m³/min):** 11,660 (330)
- **Air Flow Required for Heat Exchanger/Rem. Rad. CFM (m³/min):** Consult Factory For Remote Cooled Applications

#### Fuel Consumption
- **At 100% of Power Rating: gal/hr (lit/hr):** 14.9 (56.4)
- **At 75% of Power Rating: gal/hr (lit/hr):** 11.6 (44.0)
- **At 50% of Power Rating: gal/hr (lit/hr):** 8.29 (31.4)

#### Fluids Capacity
- **Total Oil System: gal (lit):** 8.9 (34.0)
- **Engine Jacket Water Capacity: gal (lit):** 2.64 (10.0)
- **System Coolant Capacity: gal (lit):** 8.98 (34.0)

---

**Deterioration Factors**
- Rated Power is available up to 13,123 ft (4000m) at ambient temperatures to 122°F (50°C) standby and prime.
- Consult factory for site conditions above these parameters.

**VD200-01**
# Diesel Product Line

**VD600-01**

**600 kWe / 550 kWe**

## Ratings

<table>
<thead>
<tr>
<th>Voltage</th>
<th>208V</th>
<th>240V</th>
<th>480V</th>
<th>600V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PF</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Hz</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Generator Model</td>
<td>573RSL4033</td>
<td>573RSL4033</td>
<td>572RSL4031</td>
<td>572RSS4272</td>
</tr>
<tr>
<td>Connection</td>
<td>12 LEAD WYE</td>
<td>12 LEAD DELTA</td>
<td>12 LEAD WYE</td>
<td>4 LEAD WYE</td>
</tr>
<tr>
<td><strong>Standby</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>kWe</td>
<td>600</td>
<td>600</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>AMPS</td>
<td>2084</td>
<td>1806</td>
<td>903</td>
<td>723</td>
</tr>
<tr>
<td>Temp Rise</td>
<td>130°C / 27°C</td>
<td>130°C / 27°C</td>
<td>130°C / 27°C</td>
<td>130°C / 27°C</td>
</tr>
<tr>
<td><strong>Prime</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>kWe</td>
<td>550</td>
<td>550</td>
<td>550</td>
<td>550</td>
</tr>
<tr>
<td>AMPS</td>
<td>1911</td>
<td>1656</td>
<td>828</td>
<td>662</td>
</tr>
<tr>
<td>Temp Rise</td>
<td>105°C / 40°C</td>
<td>105°C / 40°C</td>
<td>105°C / 40°C</td>
<td>105°C / 40°C</td>
</tr>
</tbody>
</table>

## Standard Equipment

**Engine**
- Radiator Cooled Unit Mounted (50°C)
- Blower Fan & Fan Drive
- Starter & Alternator
- Oil Pump & Filter
- Oil Drain Extension w/Valve
- Governor - Electronic Isochronous
- 24V Battery System & Cables
- SAE Flywheel Housing
- Air Cleaner (Dry Single Stage)
- Flexible Fuel Connectors
- EPA Certified - Tier 2

**Generator**
- Brushless Single Bearing
- Automatic Voltage Regulator
- ± .25% Voltage Regulation
- 4 Pole, Rotating Field
- 130°C Standby Temperature Rise
- 105°C Prime Temperature Rise
- 100% of Rated Load - One Step
- 5% Maximum Harmonic Content
- NEMA MG 1, IEEE and ANSI standards compliance for temperature rise

**Additional**
- Microprocessor Based Digital Control
- Base - Structural Steel
- Main Line Circuit Breaker Mounted & Wired
- Critical Grade Silencer Mounted
- Battery Charger 24V 5 Amp
- Jacket Water Heater -20°F 5000W 240V w/Isolation Valves
- Vibration Isolation Mounts (Pad Type)
- Radiator Duct Flange (OPU Only)
- Single Source Supplier
- 2YR / 2000HR Standby Warranty
- 1YR / 1500HR Prime Warranty
- Standard Colors - White / Tan / Gray
Diesel Product Line
600 kWe / 550 kWe

BLUE STAR
Power Systems Inc.

Application Data

<table>
<thead>
<tr>
<th>Engine</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer:</td>
<td>Volvo</td>
<td>Displacement - Cu. In. (lt):</td>
<td>984 (16.12)</td>
<td></td>
</tr>
<tr>
<td>Model:</td>
<td>TWD1643GE</td>
<td>Bore - in. (cm) x Stroke - in. (cm):</td>
<td>5.7 (14.4) x 6.5 (16.5)</td>
<td></td>
</tr>
<tr>
<td>Type:</td>
<td>4-Cycle</td>
<td>Compression Ratio:</td>
<td>16.5:1</td>
<td></td>
</tr>
<tr>
<td>Aspiration:</td>
<td>Turbo Charged, H2O to Air CAC</td>
<td>Rated RPM:</td>
<td>1800</td>
<td></td>
</tr>
<tr>
<td>Cylinder Arrangement:</td>
<td>6 Cylinder Inline</td>
<td>Max HP Stby (kWm):</td>
<td>917 (674)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exhaust System</th>
<th>Standby</th>
<th>Prime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Temp. (Stack): °F (°C)</td>
<td>862 (461)</td>
<td>792 (422)</td>
</tr>
<tr>
<td>Gas Volume at Stack Temp: CFM (m³/min)</td>
<td>4,594 (130)</td>
<td>4,202 (119)</td>
</tr>
<tr>
<td>Maximum Allowable Exhaust Restriction: in. H2O (kPa)</td>
<td>40.2 (10.0)</td>
<td>40.2 (10.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cooling System</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Capacity of Radiator: °F (°C)</td>
<td>122 (50.0)</td>
<td>122 (50.0)</td>
<td></td>
</tr>
<tr>
<td>Maximum Allowable Static Pressure on Rad. Exhaust: in. H2O (kPa)</td>
<td>0.5 (0.12)</td>
<td>0.5 (0.12)</td>
<td></td>
</tr>
<tr>
<td>Water Pump Flow Rate: Gpm (lt/min)</td>
<td>95.4 (361)</td>
<td>95.4 (361)</td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to Coolant: BTUM (kw)</td>
<td>15,355 (270)</td>
<td>13,990 (246)</td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to CAC: BTUM (kw)</td>
<td>7,677 (135)</td>
<td>6,881 (121)</td>
<td></td>
</tr>
<tr>
<td>Heat Radiated to Ambient: BTUM (kw)</td>
<td>3,928 (68.7)</td>
<td>3,600 (63.0)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Requirements</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirating: CFM (m³/min)</td>
<td>1,937 (54.8)</td>
<td>1,874 (53.0)</td>
</tr>
<tr>
<td>Air Flow Required for Rad. Cooled Unit: CFM (m³/min)</td>
<td>31,802 (900)</td>
<td>31,802 (900)</td>
</tr>
<tr>
<td>Air Flow Required for Heat Exchanger/Rem. Rad. CFM (m³/min)</td>
<td>Consult Factory For Remote Cooled Applications</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuel Consumption</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>At 100% of Power Rating: gal/hr (lt/hr)</td>
<td>40.8 (154.4)</td>
<td>36.7 (138.9)</td>
</tr>
<tr>
<td>At 75% of Power Rating: gal/hr (lt/hr)</td>
<td>29.7 (112.4)</td>
<td>26.9 (101.8)</td>
</tr>
<tr>
<td>At 50% of Power Rating: gal/hr (lt/hr)</td>
<td>20.0 (75.7)</td>
<td>18.3 (69.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fluids Capacity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Oil System: gal (lt)</td>
<td>12.7 (48.0)</td>
<td>12.7 (48.0)</td>
</tr>
<tr>
<td>Engine Jacket Water Capacity: gal (lt)</td>
<td>8.7 (33.0)</td>
<td>8.7 (33.0)</td>
</tr>
<tr>
<td>System Coolant Capacity: gal (lt)</td>
<td>25.1 (95.0)</td>
<td>25.1 (95.0)</td>
</tr>
</tbody>
</table>

Deration Factors
Rated Power is available up to 4920 ft (1500 m) at ambient temperatures to 122°F (50°C).
Consult factory for site conditions above these parameters.

VD600-01
Appendix D

HRA Summary and AAQA
San Joaquin Valley Air Pollution Control District
Risk Management Review

To: Gurpreet Brar - Permit Services
From: Cheryl Lawler - Permit Services
Date: June 9, 2015
Facility Name: Grimmius Cattle Company
Location: 5715 Kansa Avenue, Hanford
Application #(s): C-5719-11-0 & 12-0
Project #: C-1151371

A. RMR SUMMARY

<table>
<thead>
<tr>
<th>Categories</th>
<th>Emergency Diesel ICE (Unit 11-0)</th>
<th>Emergency Diesel ICE (Unit 12-0)</th>
<th>Project Totals</th>
<th>Facility Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prioritization Score</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Acute Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.28</td>
</tr>
<tr>
<td>Chronic Hazard Index</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.07</td>
</tr>
<tr>
<td>Maximum Individual Cancer Risk</td>
<td>2.45E-08</td>
<td>3.60E-08</td>
<td>6.05E-08</td>
<td>7.71E-06</td>
</tr>
<tr>
<td>T-BACT Required?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Special Permit Conditions?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

1 Prioritization for this unit was not conducted since it has been determined that all diesel-fired IC engines will result in a prioritization score greater than 1.0.
2 Acute and Chronic Hazard Indices were not calculated since there is no risk factor, or the risk factor is so low that the risk has been determined to be insignificant for this type of unit.

Proposed Permit Conditions

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

Unit 11-0

1. The PM10 emissions rate shall not exceed 0.15 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]
Unit 12-0

1. The PM10 emissions rate shall not exceed 0.15 g/bhp-hr based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on May 28, 2015, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for two emergency diesel IC engines (317 bhp & 917 bhp).

II. Analysis

Technical Services performed a refined level health risk assessment using diesel exhaust emission rates based on annual hours of operation and the horsepower rating of each engine. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Hanford to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Carcinogenic Risks.

The following parameters were used for the RMR and AAQA:

<table>
<thead>
<tr>
<th>Analysis Parameters</th>
<th>Unit 11-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{10}$ g/bhp-hr</td>
<td>0.15</td>
</tr>
<tr>
<td>BHP</td>
<td>317</td>
</tr>
<tr>
<td>Closest Receptor (m)</td>
<td>1189</td>
</tr>
<tr>
<td>Max Hours per Year</td>
<td>100</td>
</tr>
<tr>
<td>Location Type</td>
<td>Rural</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source Type</th>
<th>Stack Diameter (m)</th>
<th>0.13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stack Height (m)</td>
<td>2.89</td>
<td></td>
</tr>
<tr>
<td>Stack Gas Temp. (K)</td>
<td>823</td>
<td></td>
</tr>
<tr>
<td>Stack Gas Velocity (m/s)</td>
<td>51.04</td>
<td></td>
</tr>
</tbody>
</table>

Per the supplemental application forms submitted, the exhaust stack has a fixed rain cap. Therefore, the source group was designated as such in AERMOD's Source Pathway Module during refined modeling for the project per District policy.

<table>
<thead>
<tr>
<th>Analysis Parameters</th>
<th>Unit 12-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM$_{10}$ g/bhp-hr</td>
<td>0.15</td>
</tr>
<tr>
<td>BHP</td>
<td>917</td>
</tr>
<tr>
<td>Closest Receptor (m)</td>
<td>1189</td>
</tr>
<tr>
<td>Max Hours per Year</td>
<td>100</td>
</tr>
<tr>
<td>Location Type</td>
<td>Rural</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source Type</th>
<th>Stack Diameter (m)</th>
<th>0.25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stack Height (m)</td>
<td>3.81</td>
<td></td>
</tr>
<tr>
<td>Stack Gas Temp. (K)</td>
<td>734</td>
<td></td>
</tr>
<tr>
<td>Stack Gas Velocity (m/s)</td>
<td>39.14</td>
<td></td>
</tr>
</tbody>
</table>

Per the supplemental application forms submitted, the exhaust stack has a fixed rain cap. Therefore, the source group was designated as such in AERMOD's Source Pathway Module during refined modeling for the project per District policy.
For each engine, Technical Services also performed modeling for criteria pollutants NOx, SOx, and PM\(_{10}\); as well as the RMR for the engine. For Unit 11-0, the emission rates used for criteria pollutant modeling were 199 lbs/yr NOx, 0 lb/yr SOx, and 10 lbs/yr PM\(_{10}\). For Unit 12-0, the emission rates used for criteria pollutant modeling were 922 lbs/yr NOx, 1 lb/yr SOx, and 30 lbs/yr PM\(_{10}\).

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

<table>
<thead>
<tr>
<th>Diesel ICES</th>
<th>CO</th>
<th>NOx</th>
<th>SOx</th>
<th>PM(_{10})</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NA</td>
<td>X</td>
<td>NA</td>
<td>X</td>
</tr>
<tr>
<td>1 Hour</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Pass</td>
</tr>
<tr>
<td>3 Hours</td>
<td>X</td>
<td>X</td>
<td>NA</td>
<td>Pass</td>
</tr>
<tr>
<td>8 Hours</td>
<td>X</td>
<td>NA</td>
<td>X</td>
<td>Pass</td>
</tr>
<tr>
<td>24 Hours</td>
<td>X</td>
<td>X</td>
<td>NA</td>
<td>Pass</td>
</tr>
<tr>
<td>Annual</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Results were taken from the attached PSD spreadsheet.

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.

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

III. Conclusions

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

The Cancer Risk associated with the operation of the proposed diesel IC engines is less than 1.0 in a million. In accordance with the District’s Risk Management Policy, the project is approved \textbf{without} Toxic Best Available Control Technology (T-BACT).

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

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

Attachments

RMR Request Form & Attachments
DICE Spreadsheets for Diesel Exhaust Calculations
Risk Results
AAQA Results
Facility Summary
AERMOD Non-Regulatory Option Checklist
Appendix E

QNEC Calculations
Quarterly Net Emissions Change (QNEC)

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

\[
\text{QNEC} = \text{PE2} - \text{PE1}, \text{ where:}
\]

\[
\begin{align*}
\text{QNEC} &= \text{Quarterly Net Emissions Change for each emissions unit, lb/qtr} \\
\text{PE2} &= \text{Post-Project Potential to Emit for each emissions unit, lb/qtr} \\
\text{PE1} &= \text{Pre-Project Potential to Emit for each emissions unit, lb/qtr}
\end{align*}
\]

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

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

\[
\text{PE2}_{\text{quarterly}} = \frac{\text{PE2 (lb/yr)}}{4 \text{ quarters/year}} = \text{QNEC}
\]

### C-5719-11-0:

<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>199</td>
<td>50</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>CO</td>
<td>182</td>
<td>46</td>
</tr>
<tr>
<td>VOC</td>
<td>10</td>
<td>3</td>
</tr>
</tbody>
</table>

### C-5719-12-0:

<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>922</td>
<td>231</td>
</tr>
<tr>
<td>SO(_x)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>PM(_{10})</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td>CO</td>
<td>526</td>
<td>132</td>
</tr>
<tr>
<td>VOC</td>
<td>49</td>
<td>12</td>
</tr>
</tbody>
</table>