

**ENGINEERING EVALUATION REPORT**  
**QUALITY INVESTMENT PROPERTIES SANTA CLARA, LLC**  
**PLANT #19010**  
**APPLICATION #31472**

**BACKGROUND**

Quality Investment Properties Santa Clara LLC (Applicant) currently operates at 2807 Mission College Blvd in Santa Clara, California. Currently, the Applicant is applying for minor modifications of three (3) existing emergency backup power generators. These minor modifications include:

1. The addition of abatement devices to each engine.
2. An increase in the permitted hours of maintenance and testing for each engine from 5 hrs/year to 50 hrs/year.

These minor modifications require Authorities to Construct and Permits to Operate per BAAQMD Regulation 2-1-301 and Regulation 2-1-302, respectively. The sources covered by this application for Authorities to Construct/Permits to Operate are identified as follows:

**S-2: Stationary Emergency Diesel Engine-Generator Set**  
**Make: Cummins; Model: KTA50-G3, Model Year: 1998**  
**1850 BHp. 6.3 MMBtu/Hr**

**Abated by:**

**A-5: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**

**A-6: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**

**S-3: Stationary Emergency Diesel Engine-Generator Set**  
**Make: Cummins; Model: KTA50-G3, Model Year: 2000**  
**1850 BHp. 6.3 MMBtu/Hr**

**Abated by:**

**A-7: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**

**A-8: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**

**S-4: Stationary Emergency Diesel Engine-Generator Set**  
**Make: Cummins; Model: KTA50-G3, Model Year: 1998**  
**1850 BHp. 6.3 MMBtu/Hr**

**Abated by:**

**A-18: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**

**A-19: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**

The sources are located within 1,000 feet of a K-12 school (Mission Early College High School), and therefore this application is subject to the school public notice requirements of BAAQMD Regulation 2-1-412.

**EMISSIONS SUMMARY**

Criteria pollutant emissions from the diesel engines that are the subject of this application are outlined below.

**Annual Emissions:**

Basis

- 50 hours/year/engine operation for non-emergency, reliability-related activities
- Maximum power 1850 bhp output rating for full-load, standby operation per engine
- Engine displacement/Engine 50.3 Liters ÷ 16 cylinders = 3.14 liters/cylinder
- Rated 1800 RPM, constant speed
- With the abatement packages, the engines will meet the EPA Tier 4 standards.

**Table 1A. Emission Factor Assumptions**

| Pollutant        | Emission Factor Unabated <sup>1</sup> (g/bhp-hr) | Abatement Device Efficiency <sup>2</sup> (DRE %) | Abated Emission Factor <sup>5</sup> (g/bhp-hr) |
|------------------|--|--|--|
| NO <sub>x</sub>  | 5.40   | 91%  | 0.5  |
| CO               | 1.00   | 0%   | 1.00   |
| POC              | 0.30   | 53%  | 0.14   |
| PM <sub>10</sub> | 0.20   | 85%  | 0.03   |
| SO <sub>2</sub>  | 0.000055   | 0%   | 0.000055                                       |

*References:*

1. Unabated factors are CARB certified (refer to A/N 17659).
2. PM abatement efficiency per CARB Executive Order DE-14-005-07 dated May 25, 2021. (<https://ww3.arb.ca.gov/diesel/verdev/vt/stationary.htm>). NO<sub>x</sub> and POC abatement efficiencies are back-calculated to meet the applicable BACT limits of 0.5 g/bhp-hr and 0.14 g/bhp-hr, respectively, because BACT is triggered for these pollutants, and applying a DRE is necessary to satisfy BACT. A permit limit will be imposed for complying with these limits.
3. Abated emission factor = Unabated emission factor \* (1 – Abatement Device Efficiency %)

**Table 1B. Calculated Annual Emissions**

| Per Engine       |   |   |          |          |   |      |     |   |    | Total  |           |   |         |       |   |       |     |   |   |         |   |         |         |       |     |
|------------------|---|---|----------|----------|---|------|-----|---|----|--------|-----------|---|---------|-------|---|-------|-----|---|---|---------|---|---------|---------|-------|-----|
| NO <sub>x</sub>  | = | ( | 0.50     | g/hp-hr) | ( | 1850 | hp) | ( | 50 | hr/yr) | (lb/454g) | = | 101.872 | lb/yr | = | 0.051 | TPY | * | 3 | engines | = | 305.616 | lb/year | 0.153 | TPY |
| CO               | = | ( | 1.00     | g/hp-hr) | ( | 1850 | hp) | ( | 50 | hr/yr) | (lb/454g) | = | 203.744 | lb/yr | = | 0.102 | TPY | * | 3 | engines | = | 611.232 | lb/year | 0.306 | TPY |
| POC              | = | ( | 0.14     | g/hp-hr) | ( | 1850 | hp) | ( | 50 | hr/yr) | (lb/454g) | = | 28.524  | lb/yr | = | 0.014 | TPY | * | 3 | engines | = | 85.572  | lb/year | 0.042 | TPY |
| PM <sub>10</sub> | = | ( | 0.03     | g/hp-hr) | ( | 1850 | hp) | ( | 50 | hr/yr) | (lb/454g) | = | 6.112   | lb/yr | = | 0.003 | TPY | * | 3 | engines | = | 18.336  | lb/year | 0.009 | TPY |
| SO <sub>2</sub>  | = | ( | 0.000055 | g/hp-hr) | ( | 1850 | hp) | ( | 50 | hr/yr) | (lb/454g) | = | 0.011   | lb/yr | = | 0.000 | TPY | * | 3 | engines | = | 0.033   | lb/year | 0.000 | TPY |

**Maximum Daily Emissions:**

Daily emissions are calculated to establish whether a source triggers the requirement for Best Available Control Technology (BACT) (10 lb/highest day total source emissions for any BACT pollutant). A full 24-hour day is assumed since no daily limits are imposed on

intermittent and unexpected operations. The table below shows the calculated maximum daily emissions for each new source proposed in this application.

**Table 1C. Calculated Daily Emissions**

| Per Engine       |     |          |          |                                     | Total  |        |   |             |         |        |
|------------------|-----|----------|----------|-------------------------------------|--------|--------|---|-------------|---------|--------|
| NO <sub>x</sub>  | = ( | 0.50     | g/hp-hr) | ( 1850 hp) ( 24 hr/day) (lb/454g) = | 48.899 | lb/day | * | 3 engines = | 146.697 | lb/day |
| CO               | = ( | 1.00     | g/hp-hr) | ( 1850 hp) ( 24 hr/day) (lb/454g) = | 97.797 | lb/day | * | 3 engines = | 293.391 | lb/day |
| POC              | = ( | 0.14     | g/hp-hr) | ( 1850 hp) ( 24 hr/day) (lb/454g) = | 13.692 | lb/day | * | 3 engines = | 41.076  | lb/day |
| PM <sub>10</sub> | = ( | 0.03     | g/hp-hr) | ( 1850 hp) ( 24 hr/day) (lb/454g) = | 2.934  | lb/day | * | 3 engines = | 8.802   | lb/day |
| SO <sub>2</sub>  | = ( | 0.000055 | g/hp-hr) | ( 1850 hp) ( 24 hr/day) (lb/454g) = | 0.005  | lb/day | * | 3 engines = | 0.015   | lb/day |

**PLANT CUMULATIVE INCREASE**

Cumulative Increase is defined as the sum of all emissions increases authorized by authorities to construct and permits to operate issued to a facility since the applicable cumulative increase baseline date, which is April 5, 1991, for POC, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and CO, and August 31, 2016, for PM<sub>2.5</sub>. Prior to the proposed modifications, S-2 through S-4 were loss of exemption (LOE) engines. Therefore, S-2 through S-4 are not included in the cumulative increase subtotal for existing sources. The cumulative increase for the facility is summarized in the table below.

**Table 2. Calculated Plant Cumulative Increase (tons/year)**

| Pollutant         | EXISTING   |             |           |             | PROPOSED     |          | TOTAL        |
|-------------------|------------|-------------|-----------|-------------|--------------|----------|--------------|
|                   | A/N 17659  | A/N 22810   | A/N 30654 |             | A/N 31472    | Subtotal |              |
|                   | S-5 to S-8 | S-9 to S-11 | S-15      | S-16 & S-17 | S-2 to S-4   |          |              |
| NO <sub>x</sub>   | 0.124      | 1.854       | 0.375     | 1.020       | <b>3.373</b> | 0.153    | <b>3.526</b> |
| CO                | 0.144      | 0.252       | 0.052     | 0.216       | <b>0.664</b> | 0.306    | <b>0.970</b> |
| POC               | 0.064      | 0.096       | 0.007     | 0.044       | <b>0.211</b> | 0.042    | <b>0.253</b> |
| PM <sub>10</sub>  | 0.000      | 0.009       | 0.001     | 0.005       | <b>0.015</b> | 0.009    | <b>0.024</b> |
| PM <sub>2.5</sub> | 0.000      | 0.000       | 0.001     | 0.005       | <b>0.006</b> | 0.009    | <b>0.015</b> |
| SO <sub>2</sub>   | 0.000      | 0.000       | 0.003     | 0.007       | <b>0.010</b> | 0.000    | <b>0.010</b> |

**STATEMENT OF COMPLIANCE**

**Regulation 2 - Permits, Rule 1 – General Requirements**

***CEQA (Section 2-1-311)***

The project is ministerial under the BAAQMD’s CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors as specified in the BAAQMD Engineering Division Permit Handbook Chapter 2.3.1 (Stationary Diesel Engines) and therefore is not discretionary as defined by CEQA.

***Public Notice, Schools (Section 2-1-412)***

A new or modified source located within 1,000 feet of the outer boundary of a K-12 school site which results in the increase in emissions of a toxic air contaminant in Table 2-5-1 of

*Regulation 2, Rule 5 New Source Review of Toxic Air Contaminants shall prepare and distribute a public notice in accordance with subsections 412.1 and 412.2 of Regulation 2, Rule 1 General Requirements.*

> This application proposes modified sources of TACs, and it is located within 1,000 feet of the outer boundary of the nearest K-12 school (with more than 12 children enrolled). Therefore, public notification pursuant to Reg. 2-1-412 is triggered. Mission Early College High School is an active, K-12 school located within 1,000 feet of the proposed source with more than 12 students enrolled. There are no other schools within a ¼-mi. radius of the proposed project. The school public notice will therefore be distributed to the parents and guardians of the students at the following schools as well as to addresses located within 1,000 feet of the facility:

Mission Early College High, 3000 Mission College Blvd, Santa Clara 95054

**Regulation 2 - Permits, Rule 2 – New Source Review**

In accordance with District Policy<sup>1</sup>, the standard potential to emit for emergency engines is based on 150 hr/yr operation (50 hr/yr non-emergency plus 100 hr/yr emergency purposes).

The assumption of 100 hours per year of emergency operation is used to determine the applicability of certain District permitting regulations, such as New Source Review and Title V Major Facility Review. The District Policy is not used to determine the quantity of emission offsets required for a project that triggers New Source Review or for PSD. It is also not applicable for purposes of the Toxics New Source Review requirements of District Reg. 2-5 (per Regulation 2-5-111).

Therefore, the potential to emit for the emergency engines in this application is based on 150 hr/yr/engine operation (50 hr/yr non-emergency plus 100 hr/yr emergency purposes).

Prior to the proposed modifications, S-2 through S-4 were loss of exemption (LOE) engines and not subject to Regulation 2, Rule 2. Therefore, S-2 through S-4 are not included in the facility-wide potential to emit existing sources subtotals.

The table below shows the calculated facility-wide potential to emit based on District Policy. The appendix to this application shows the back-up calculation for current PTE.

**Table 3. Facility-Wide Potential to Emit  
(Per BAAQMD Policy: Calculating PTE for Emergency Backup Power Generators)**

| Pollutant        | Existing<br>S-5 to S-17 | Proposed |       |       | New Total |
|------------------|-------------------------|----------|-------|-------|-----------|
|                  |                         | S-2      | S-3   | S-4   |           |
| NOx              | 13.532                  | 0.153    | 0.153 | 0.153 | 13.990    |
| CO               | 1.998                   | 0.306    | 0.306 | 0.306 | 2.915     |
| POC              | 0.641                   | 0.043    | 0.043 | 0.043 | 0.769     |
| PM <sub>10</sub> | 0.057                   | 0.009    | 0.009 | 0.009 | 0.085     |

<sup>1</sup> BAAQMD Policy: Calculating Potential to Emit for Emergency Backup Power Generators. Approval date June 3, 2019. (Referred to as “District Policy” in this engineering evaluation).

|                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|
| SO <sub>2</sub> | 0.039 | 0.000 | 0.000 | 0.000 | 0.039 |
|-----------------|-------|-------|-------|-------|-------|

**Best Available Control Technology Requirement (Section 2-2-301)**

Any new or modified source is required to use Best Available Control Technology (BACT) to control emissions of any BAAQMD BACT pollutants [precursor organic compounds (POC), non-precursor organic compounds (NPOC), oxides of nitrogen (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), PM<sub>10</sub>, PM<sub>2.5</sub>, and/or carbon monoxide (CO)] that have the potential to emit 10 or more pounds each on any day.

> Based on the emission calculations presented in Table 1C, BACT is triggered for NO<sub>x</sub>, CO, and POC since the maximum daily emissions for the modified sources are each greater than 10 lb/day.

BACT for NO<sub>x</sub>, CO, and POC for the sources are derived from the CARB ATCM Standards and set forth in the *BAAQMD BACT/TBACT Workbook for IC Engine-Compression Ignition: Stationary Emergency, non-Agricultural, non-direct drive fire pump (Class: ≥ 1000 BHP Output), Document # 96.1.5 Revision 0, Dated 12/22/2020*. The more restrictive BACT 1 standard is not applicable to the engines because it will be limited to operation as emergency standby engine. The BACT 2 emission limits for NO<sub>x</sub>, CO, and POC are shown in the table below, and typical technology specified for BACT 2 is any engine certified or verified to achieve the applicable standard.

> According to the emission data for S-2 through S-4, the sources' emission rates are below the applicable BACT 2 emission limits.

**Table 4. BACT 2 Analysis Summary**

| <b>BACT Pollutant Triggered</b> | <b>BACT 2 Limit &gt; 1000 HP (g/bhp-hr)</b> | <b>Emission Rate per Engine (g/bhp-hr)</b> |
|---------------------------------|---|--|
| NO <sub>x</sub>                 | 0.5   | 0.5  |
| CO                              | 2.6   | 1.0  |
| POC                             | 0.14  | 0.14                                       |

**Offset Requirements, POC and NO<sub>x</sub> (Section 2-2-302)**

This section establishes emission offset requirements for POC and NO<sub>x</sub> at facilities that will have the potential to emit more than 10 tons per year of POC or NO<sub>x</sub>. If the facility will have the potential to emit more than 10 tons per year but less than 35 tons per year of NO<sub>x</sub> or POC after the new or modified source is constructed, offsets must be provided at a 1:1 ratio for any un-offset cumulative increase in emissions at the facility. These offsets shall be provided by the District's Small Facility Banking Account (SFBA) unless the applicant owns offsets.

> The facility has the potential to emit 13.990 tons per year of NO<sub>x</sub> based on District Policy (Table 3). However, the District Policy is not used to determine the amount of emissions offsets required for a project that triggers New Source Review. The *actual* project emissions of NO<sub>x</sub> based on permitted, non-emergency operation are 3.526 tons per year (Table 2). As this is below 10 tons per year, offsets are not triggered.

**Offset Requirement, PM<sub>2.5</sub>, PM<sub>10</sub> and Sulfur Dioxide (2-2-303)**

This section establishes emission offset requirements for PM<sub>2.5</sub>, PM<sub>10</sub> and Sulfur Dioxide from new or modified sources located at facility with the potential to emit 100 tons per year of PM<sub>2.5</sub>, PM<sub>10</sub> or Sulfur Dioxide.

> Since the potential to emit PM<sub>2.5</sub>, PM<sub>10</sub> or Sulfur Dioxide at the facility where these engines operate are each below 100 tons per year, the application is not subject to the offset requirements of *Regulation 2-2-303*.

***Prevention of Significant Deterioration (PSD) (2-2-304 through 307)***

These sections establish standards for PSD BACT requirements, PSD source impact analysis requirements, and PSD additional impacts analysis requirements.

> This facility will not emit 100 tons or more per year of any PSD pollutant and, therefore, is not a major PSD facility and is not subject to any of the PSD requirements in Regulations 2-2-304 through 2-2-307 per Regulation 2-2-224.

***NAAQS Protection Requirement (2-2-308)***

Per Regulation 2-2-308, if a project will result in a significant net increase in emissions of CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, or lead, the applicant must demonstrate that the emissions will not cause or contribute to any exceedance of the National Ambient Air Quality Standards for these pollutants.

> This project will not involve any significant net emissions increases, as defined in Regulation 2-2-227.2.

***Publication of Notice and Opportunity for Public Comment (2-2-404)***

If an application involves a major facility, a PSD project, or an increase in CO, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, VOC, or lead in an amount that is significant as defined in Regulation 2-2-227.2, the BAAQMD must prepare and distribute a public notice and provide an opportunity for public comment in accordance with Regulation 2-2-404 (Publication of Notice and Opportunity for Public Comment).

> This application does not involve a major facility or PSD project, and it will not increase emissions above any of the significance levels defined in Regulation 2-2-227.2.

**Regulation 2- Permits, Rule 5 New Source Review of Toxic Air Contaminants**

This rule requires that any new or modified source of toxic air contaminant (TAC) emissions subject to Authority to Construct or Permit to Operate requirements shall be evaluated for potential public exposure and health risk and meet the applicable standards and administrative requirements, as specified in Sections 300 and 400, respectively.

> The proposed engines will emit diesel exhaust particulate matter, which is a TAC under BAAQMD Regulations. BAAQMD Regulation 2, Rule 5 specifies that diesel exhaust particulate matter will be used as a surrogate for all TAC emissions from diesel-fueled compression-ignition internal combustion engines, as this is the principal driver of the health risk associated with this type of equipment. The calculated emissions increase of diesel exhaust particulate matter associated with the project is summarized in the table below. The project includes one related NSR application for new or modified sources permitted within the previous three-year period (per BAAQMD Reg 2-5-216).

**Table 5A. Project diesel exhaust particulate matter emissions**

| Source                       | PM Emission Factor, Abated (g/bhp-hr) | Horsepower | Annual Usage (hours/year) | Diesel PM Emissions (lb/year) |
|------------------------------|---------------------------------------|------------|---------------------------|-------------------------------|
| S-2 (A/N 31472)              | 0.03                                  | 1850       | 50                        | 6.11                          |
| S-2 (A/N 31472)              | 0.03                                  | 1850       | 50                        | 6.11                          |
| S-2 (A/N 31472)              | 0.03                                  | 1850       | 50                        | 6.11                          |
| S-15 (A/N 30654)             | 0.01                                  | 1821       | 50                        | 2.01                          |
| S-16 (A/N 30654)             | 0.02                                  | 2206       | 50                        | 4.86                          |
| S-17 (A/N 30654)             | 0.02                                  | 2206       | 50                        | 4.86                          |
| <b>Total</b>                 |                                       |            |                           | <b>30.06</b>                  |
| <i>HRA Trigger (Chronic)</i> |                                       |            |                           | <i>0.26</i>                   |

Regulation 2-5-402 requires a Health Risk Assessment (HRA) if TAC emissions exceed the screening thresholds set forth in Table 2-5-1 in Regulation 2, Rule 5. For this project, only the emissions of diesel particulate matter exceed the Table 2-5-1 screening threshold for chronic risk.

The BAAQMD therefore undertook a refined HRA<sup>2</sup> to evaluate the potential chronic carcinogenic and non-carcinogenic health risks from diesel PM emissions from this project. The HRA evaluated risks to workers and to residents in the vicinity of the project.

The Health Risk Assessment evaluated chronic health risks from each individual diesel engine. The evaluation assumed that the engines would operate up to the maximum 50 hours per year allowed for testing and maintenance purposes. Emissions from emergency operations were not included because they are exempt from Regulation 2, Rule 5 under Section 2-5-111.

For the project, the HRA analysis estimated the health risk resulting from TAC emissions from the non-emergency operation of the standby emergency diesel generator engines listed in Table 5A at this facility. Results from the HRA indicate that the maximum project cancer risk is **3.7 in a million**, the maximum project chronic hazard index is **0.0011**, the maximum source cancer risk is **0.88 in a million**, and the maximum source chronic hazard index is **0.00033**. In accordance with the District's Regulation 2-5-301, these sources do not require TBACT because each estimated source cancer risk and hazard indices is less than 1.0 in a million and 0.20, respectively. Since the estimated project cancer risk does not exceed 10 in a million and project hazard indices do not exceed 1.0, this project complies with the District's Regulation 2-5-302 project risk requirements.

Compliance with Regulation 2-5 is therefore satisfied.

### **Regulation 2- Permits, Rule 6 Major Facility Review**

*Regulation 2 Rule 6* implements the operating permit requirements of Title V of the federal Clean Air Act as amended in 1990. The rule applies to major facilities, Phase II acid rain facilities, subject solid waste incinerator facilities and any facility in a source category

<sup>2</sup> This project does not qualify for the HRA Streamlining Policy because the facility is a Data Center. Therefore, a refined HRA was required.

designated by the Administrator of the EPA in a rulemaking as requiring a Title V permit. The rule also provides a means by which facilities can avoid the Title V or other requirements by limiting their potential to emit. A major facility is defined in Section 2-6-212 as one that has the potential to emit 100 tons per year of any regulation air pollutant as defined in Section 2-6-222, or that has the potential to emit 10 tons per year of a single hazardous air pollutant or 25 tons per year or more of a combination of hazardous air pollutants.

> The project's potential to emit criteria pollutants was calculated in accordance with District Policy and presented previously in Table 3; all emissions are below 100 tons per year per pollutant threshold for a major facility.

In addition, the potential to emit toxics was calculated in accordance with Regulation 2 Rule 5 and presented previously in Tables 5A to 5D; emissions are well below 10 tons per year single HAP threshold for a major facility.

The facility is not a Phase II Acid Rain Facility (2-6-217) or a subject solid waste incinerator facility (Section 2-6-229), or a facility defined in a source category defined by EPA requiring a Title V permit. Therefore, Title V requirements, as implemented by Regulation 2, Rule 6) are not triggered.

#### **Regulation 6 - Particulate Matter, Rule 1 - General Requirements**

##### ***Ringelmann No. 1 Limitation (6-1-301)***

Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

> Since the engines are equipped with DPF abatement and are expected to emit low amount of PM<sub>10</sub>, they are expected to comply with *Regulation 6-1-301* pending a regular inspection.

##### ***Opacity Limitation (6-1-302)***

Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour an emission equal to or greater than 20% opacity as perceived by an opacity-sensing device, where such device is required by BAAQMD regulations.

> Since the engines are equipped with DPF abatement and are expected to emit low amounts of PM<sub>10</sub>, they are expected to comply with *Regulation 6-1-302* pending a regular inspection.

##### ***Visible Particles (Section 6-1-305)***

A person shall not emit particles which are large enough to be visible as individual particles at the emission point or of such size and nature as to be visible individually as incandescent particles.

> Since the engines are equipped with DPF abatement and are expected to emit low amounts of PM<sub>10</sub>, they are not expected to produce visible emissions or fallout in violation of this regulation and will be assumed to comply with *Regulation 6-1-305* pending a regular inspection.

***Particulate Weight Limitation (Section 6-1-310)***

A person shall not emit from any source particulate matter in excess of 0.15 grains/dscf of exhaust gas volume.

> The PM emission rate from each engine is 0.03 grams/bhp-hr, which results in an outlet grain loading of about 0.004 grains/dscf based on the engine set's specifications (1850 bhp, 9100 acfm exhaust flow, & 887° F emissions stack temperature). The PM emission rate for the project is much less than the 0.15 grains/dscf limit and complies with *Regulation 6-1-310.1*. Note that the TSP concentration limits set forth in Regulation 6-1-301.2 do not apply because the PTE for PM per source is below the 1000 kg per year applicability threshold.

**Regulation 9 – Inorganic Gaseous Pollutants, Rule 1 Sulfur Dioxide**

The proposed engine is subject to the following sections of Regulation 9, Rule 1 and will comply with all sections by burning Ultra Low Sulfur Diesel with a sulfur content of 15 ppm, which results in less than 1 ppmv of SO<sub>2</sub> in the exhaust gas.

***Limitations on Ground Level Concentrations (Section 9-1-301)***

Sulfur Dioxide emissions shall not result in ground level concentrations in excess of 0.5 ppm continuously for 3 consecutive minutes or 0.25 ppm averaged over 60 consecutive minutes or 0.05 ppm averaged over 24 hours.

***General Emission Limitation (Section 9-1-302)***

A gas stream containing Sulfur Dioxide shall not contain sulfur dioxide in excess of 300 ppm (dry).

***Fuel Burning (Liquid and Solid Fuels) (Section 9-1-304)***

The sulfur content of liquid fuel burned shall not exceed 0.5% by weight.

**Regulation 9 – Inorganic Gaseous Pollutants, Rule 8 NO<sub>x</sub> and CO from Stationary Internal Combustion Engines**

***Exemptions (Section 9-8-110)***

Section 110.5 exempts emergency standby engines from the requirements of Sections 9-8-301 through 305, 501 and 503.

***Emergency Standby Engines, Hours of Operation (Section 9-8-330)***

The engine is subject to the requirements of *Regulation 9-8-330* which limits reliability related operation of the engines to 50 hours per year per engine.

> Permit Conditions for S-2 through 4 will include an operating limit that complies with this standard.

***Monitoring and Records (Section 9-8-500)***

The engine is subject to the reporting requirements of Sections 502 and 530.

> Permit Conditions for S-2 through 4 will include reporting requirements that meet this standard.

**Regulation 10 – Standards of Performance for New Stationary Sources**

***New Source Performance Standards (NSPS)***

Any new or modified source is required to comply with *Regulation 10, Standard of Performance for New Stationary Sources* – which is Title 40, Part 60 of the Code of Federal Regulation incorporated by reference. According to §60.4200(a)(3), the

provisions of 40 CFR Part 60 Subpart III *Standards of Performance for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE)* are applicable to owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

§60.4205 specifies the emission standards that must be met by owners/operators of stationary CI ICE emergency engines. Per §60.4205(f), Owners and operators of any modified or reconstructed emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in paragraphs (a) through (e) of §60.4205. Per §60.4205(a), owners and operators of pre-2007 model year emergency stationary CI ICEs with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to 40 CFR Part 60 Subpart III.

>As shown below, engines S-2 through 4 satisfy the emission standards contained in 40 CFR Part 60 Subpart III Table 1 for engines rated over 560 kW for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder.

**Table 6. Engine Emission Rates vs. 40 CFR Part 60 Subpart III Emission Standards**

| <b>Pollutant</b> | <b>40 CFR 60 Subpart III Table 1 Emission Standard (g/HP-hr)</b> | <b>Emission Rate S-2 through 4 (g/HP-hr), Abated</b> |
|------------------|--|--|
| HC               | 1.0  | 0.14   |
| NO <sub>x</sub>  | 6.9  | 0.5  |
| CO               | 8.5  | 1.00   |
| PM               | 0.40   | 0.03   |

§60.4206 requires that the owner/operator of a stationary CI ICE meet the applicable emission standards specified in §60.4205 over the entire life of the engine.

> The owner/operator is expected to comply with this requirement.

§60.4207 specifies fuel requirements that must be met for owners/operators of a stationary CI ICE engine subject to Subpart III. Effective October 1, 2010, engines with a displacement less than 30 L/cylinder that use diesel fuel must the requirements of 40 CFR 80.510(b) for nonroad diesel fuel. 40 CFR 80.510(b) specifies standards of 15 ppm maximum sulfur content for nonroad diesel fuel and a cetane index of 40 or aromatic content of 35%.

> The owner/operator is expected to comply with this requirement because CARB allows only ultra-low sulfur diesel to be used for stationary engines in California.

§60.4209 specifies the monitoring requirements for owner/operators of stationary CI ICEs: emergency engines not meeting emission standards must be equipped with a non-

resettable hour meter prior to startup, and DPFs (if equipped) must be installed with a backpressure monitor that notifies the owner/operator when high backpressure limit is approached. In addition, monitoring requirements of §60.4211 must be met (see next subsection, below).

> Sources S-2 through 4 meet the standards applicable to emergency engines and are equipped with a non-resettable hour meter (even though they are not specifically required to do so per this section). Also, the engines' DPFs will be installed with backpressure monitors. Standard permit conditions will be imposed to ensure compliance with these requirements.

§60.4211 requires (a) owners/operators operate and maintain the engine and control device according to manufacturer's emission-related written instructions, change only those emission-related settings that are permitting by the manufacturer, and meet the requirements of 40 CFR 89, 94, and/or 1068 if applicable. In addition, §60.4211(b) requires owners/operators of pre-2007 model year stationary CI internal combustion engines complying with §60.4205(a) to either (1) purchase an engine certified to emission standards for the same model year and maximum engine power as described in 40 CFR part 1039 and install and configure the engine according to manufacturer's specifications; (2) keep records of performance test results for each pollutant for a test conducted on a similar engine, where the tests must be conducted using the same methods specified in 40 CFR Part 60 Subpart III; (3) keep records of engine manufacturer data indicating compliance with the standards; (4) keep records of control device vendor data indicating compliance with the standards; or (5) conduct an initial performance test to demonstrate compliance with the emission standards according the requirements specified in § 60.4212. Also, §60.4211(e) requires owners/operators of modified or reconstructed stationary CI ICEs with a displacement of <30 liters per cylinder complying with §60.4205(f) to either (1) purchase, or otherwise own or operate, and engine certified to the emission standards in §60.4205(f) or (2) conduct a performance test within 60 days after the engine commences operation after the modification or reconstruction to demonstrate initial compliance with the emission standards according the requirements specified in §60.4212. Lastly, §60.4211(f) specifies emergency engine operation for non-emergency purposes are limited to 50 hours per year (up to 100 hours per year for certain situations) and emergency use is unlimited.

> The owner/operator is expected to comply with the compliance requirements outlined in §60.4211. Due to the CARB ATCM limiting non-emergency use to 50 hours per year, the 100 hours per year provision does not apply.

§60.4214 specifies notification, reporting and recordkeeping requirements for owners/operators of CI ICEs.

> The proposed engines S-2 through 4 are not subject to initial notification requirements of §60.4214(b) because they are emergency engines and meet the standards applicable to non-emergency engines in the applicable model year. Per §60.4214(b), the owner/operator will be required to keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine

is approached. The owner/operator will be expected to comply with the annual reporting requirements of §60.4214(d) if triggered.

§60.4218 specifies the general provisions in 40 CFR 60.1 to 60.19 applicable.

> The owner/operator is expected to comply with these provisions.

## **Regulation 11 – National Emission Standards for Hazardous Air Pollutants**

### ***National Emission Standards for Hazardous Air Pollutants (NESHAP)***

There are no subparts under 40 CFR Part 61 that apply to ICES. Therefore, this regulation does not apply to any of the proposed sources in this application.

*40 CFR Part 63 Subpart ZZZZ* establishes NESHAPs for Stationary Reciprocating Internal Combustion Engines (RICES). Both area and major sources of RICES are subject to Subpart ZZZZ. The facility constitutes an area source of HAPs because the potential to emit any single/combined HAP are below the 10/25 tons per year threshold for major sources. Sources S-2 through 4 are existing stationary RICE CI at an area source subject to (and compliant with) regulations under 40 CFR Part 60 Subpart IIII. Therefore, per 40 CFR 63.6590(c)(1), no further requirements apply for the proposed engine under Subpart ZZZZ.

## **Other Regulations**

The BAAQMD is charged with enforcing the requirements of California's Air Toxic Control Measure for Stationary Compression Ignition Engines *Title 17, California Code of Regulations, Section 93115* for the purpose of reducing diesel particulate matter (PM) and criteria pollutant emissions from stationary diesel-fueled compression ignition (CI) engines.

### ***Airborne Toxic Control Measure (ATCM) for Emergency Standby Diesel-Fueled CI Engines (>50 bhp)***

*Subsection 93115.6(b)(3)* sets forth Emission Standards for in-use stationary emergency standby diesel fueled compression ignition engines. Per Subsection 93115.6(b)(3)(A), the engines are subject to a 0.15 g/bhp-hr diesel PM emissions rate limit. Per Subsection 93115.6(b)(3)(B), the three engines must “meet the applicable HC, NO<sub>x</sub>, NMHC+NO<sub>x</sub>, and CO standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression Ignition Engine Standards (title 13, CCR, section 2423). If no standards have been established for an off-road engine of the same model year and maximum rated power as the in-use stationary emergency standby diesel-fueled CI engine, then the in-use stationary emergency standby diesel-fueled CI engine shall meet the Tier 1 standards in title 13, CCR, section 2423 for an off-road engine of the same maximum rated power, irrespective of the in-use stationary emergency standby diesel-fueled CI engine's model year”.

> Sources S-2 through 4 meet the 0.15 g/bhp-hr diesel PM emissions rate limit of this section of the ATCM. Sources S-2 through 4 are subject to and meet the Tier 1 standards

for off-road CI engines identified in title 13, CCR, section 2423. These requirements are summarized in Table 7.

**Table 7. Engine Emission Rates vs. ATCM Emission Standards**

| Pollutant       | ATCM Emission Standards (g/bhp-hr) | Manufacturer's Performance Data Sheet Emission Rate (g/bhp-hr), Abated |
|-----------------|------------------------------------|--|
| PM              | 0.15                               | 0.03   |
| Pollutant       | ATCM Emission Standards (g/kW-hr)  | Manufacturer's Performance Data Sheet Emission Rate (g/kW-hr), Abated  |
| NO <sub>x</sub> | 9.2                                | 0.7  |
| HC              | 1.3                                | 0.2  |
| CO              | 11.4                               | 1.3  |

*Subsection 93115.6(b)(3)(A)(2)(c)* limits the non-emergency operation of 50 hours/year for maintenance and testing.

> Permit Conditions for sources S-2 through 4 will limit non-emergency operation to 50 hours/year/engine and as such, will comply with this section of the ATCM.

**PUBLIC COMMENTS RECEIVED**

Standard BAAQMD permitting procedures stipulate that all complete applications undergo a 10-Day Public Participation Period (PPP). During this time, members of the public may submit comments on application materials. During the 10-day PPP for this application, no comments were received on the application materials.

**PERMIT CONDITIONS**

Sources S-2 through 4 will be subject to Permit Condition Numbers 27602 and 22850. All conditions are shown below.

*Condition No. 27602*

1. The owner/operator of S-2, S-3, and S-4 Emergency standby diesel engines shall abate each engine at all times of operation by a properly installed, maintained, and operated A-5, 6, 7, 8, 18, and 19 (Clean Emissions Products Inc. Model P/N FL-20-XASA-SCR Diesel Particulate Filters/SCR Catalysts).  
[Basis: Cumulative Increase, Title 17 CCR Section 93115.7(a)(3), 40 CFR 1039.101, BACT]
2. The owner/operator of S-2, S-3, and S-4 shall install a backpressure monitor for the diesel particulate filters (DPF) abating each engine and comply with the terms and conditions specified in the applicable CARB Executive Order, if any. The backpressure monitor shall be equipped with a warning light that indicates when

the backpressure is approaching the maximum allowable pressure as specified by the engine and/or DPF manufacturer.

[Basis: Title 17 CCR Section 93115, ATCM for Stationary CI Engines, BAAQMD Regulation 1-523]

3. The owner/operator shall conduct an initial District-approved source test on a minimum of one engine of the engine group comprised of S-2, S-3, and S-4 within 60 days of startup and once every three years thereafter at the maximum load expected during emergency operation utilizing District-approved source test methods to demonstrate compliance with the following emission limits:

NO<sub>x</sub>: 0.50 g/bhp-hour

POC: 0.14 g/bhp-hour

The owner/operator shall submit the results of the source test to the District within 60 days from the date of the source test. The owner/operator of S-2, S-3, and S-4 shall test a different engine of the engine group comprised of S-2, S-3, and S-4 during each subsequent triennial source test. After each engine has been tested, the next triennial test shall be performed on the first engine tested in the group.

[Basis: BACT]

4. The owner/operator shall comply with all applicable testing requirements as specified in Volume IV of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section, in writing, of the source test protocols and projected test dates required by Part 3 of this permit condition at least 14 days prior to testing. The following test methods will be utilized for each pollutant:

NO<sub>x</sub> EPA Method 7E or District-approved equivalent

POC EPA Method 25A and EPA Method 18 or District-approved equivalent

[Basis: Regulation 2-1-403]

6. To determine compliance with the above conditions, the owner/operator of S-2, S-3, and S-4 shall maintain the following records in a District-approved log and shall make these records available to District staff upon request. All records shall be retained for at least 36 months from the date of entry. These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable District or state regulations.
    - a. Source Test Notifications
    - b. All source test reports for S-2, S-3, and S-4
    - c. Engine serial number and source number for each source test
    - d. The owner/operator shall record any corrective actions taken in response to the exceedance of the manufacturer's specified backpressure limit.
    - e. Engine load percentage during emergency operation
- [Basis: Cumulative Increase]

Condition No. 22850

1. *The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.*

*[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]*

2. *The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.*

*[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]*

3. *The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.*

*[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]*

4. *Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.*

*a. Hours of operation for reliability-related*

- activities (maintenance and testing).*
  - b. Hours of operation for emission testing to show compliance with emission limits.*
  - c. Hours of operation (emergency).*
  - d. For each emergency, the nature of the emergency condition.*
  - e. Fuel usage for each engine(s).*
- [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]*

*5. At School and Near-School Operation:  
If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall apply:*

*The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:*

- a. Whenever there is a school sponsored activity (if the engine is located on school grounds)*
- b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.*

*"School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, athletic field, or other areas of school property but does not include unimproved school property.*

*[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]*

## **RECOMMENDATION**

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the modified sources are located within 1000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412.6. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following sources:

- S-2: Stationary Emergency Diesel Engine-Generator Set**  
**Make: Cummins; Model: KTA50-G3, Model Year: 1998**  
**1850 BHp. 6.3 MMBtu/Hr**
- Abated by:**
- A-5: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**
- A-6: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**
- S-3: Stationary Emergency Diesel Engine-Generator Set**  
**Make: Cummins; Model: KTA50-G3, Model Year: 2000**  
**1850 BHp. 6.3 MMBtu/Hr**
- Abated by:**
- A-7: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**
- A-8: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**
- S-4: Stationary Emergency Diesel Engine-Generator Set**  
**Make: Cummins; Model: KTA50-G3, Model Year: 1998**  
**1850 BHp. 6.3 MMBtu/Hr**
- Abated by:**
- A-18: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**
- A-19: Clean Emissions Products Inc. Catalyst Model No. P/N FL-20-XASA-SCR**

By: Daniel Oliver      Date: 03/02/2022  
Daniel Oliver  
Air Quality Engineer I