



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



## HEALTHY AIR LIVING™

MAY 09 2014

Ken Sun  
Prologis Logistic Services  
17284 N. Commerce Way  
Tracy, CA 95377

**Re: Notice of Preliminary Decision - Authority to Construct**  
**Facility Number: N-8881**  
**Project Number: N-1141526**

Dear Mr. Sun:

Enclosed for your review and comment is the District's analysis of Prologis Logistics' application for an Authority to Construct for a 904 bhp Tier 2 certified diesel fired IC engine that will power an emergency generator, at 1555 N. Chrisman Road in Tracy, 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 Mr. Mark Schonhoff of Permit Services at (209) 557- 6448.

Sincerely,

Arnaud Marjollet  
Director of Permit Services

AM:mjs

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

**Seyed Sadredin**

Executive Director/Air Pollution Control Officer

**Northern Region**

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# Authority to Construct Application Review

Facility Name: Prologis Logistics  
Mailing Address: 17284 N. Commerce Way  
Tracy, CA 95377

Date: May 8, 2014

Contact Person: Ken Sun (Facility Contact)  
Telephone: (510) 661-4027

Contact Person: Aaron Kiefer (Authorized Agent)  
Telephone: (925) 460-3232

Engineer: Mark Schonhoff  
Application #: N-8881-5-0  
Project #: N-1141526  
Deemed Complete:

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## I. Proposal

Prologis is proposing to install a 904 bhp Tier 2 certified diesel fired standby internal combustion (IC) engines that will power an electrical generator.

## II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)  
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 (8/18/11)  
Rule 4801 Sulfur Compounds (12/17/92)  
CH&SC 41700 Health Risk Assessment  
CH&SC 42301.6 School Notice  
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines  
California Environmental Quality Act (CEQA)  
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)  
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:  
CEQA Guidelines

### **III. Project Location**

1555 N. Chrisman Road  
Tracy, CA

The equipment will not be located within 1,000 feet of a K-12 school.

### **IV. Process Description**

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

### **V. Equipment Listing**

#### **N-8881-5-0:**

904 BHP VOLVO MODEL TWD1643GE TIER 2 CERTIFIED DIESEL-FIRED  
EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

### **VI. Emission Control Technology Evaluation**

The applicant has proposed to install a Tier 2 certified diesel-fired IC engine that will be fired on very low-sulfur diesel fuel (0.0015% by weight sulfur maximum).

#### **NO<sub>x</sub>, CO, VOC and PM<sub>10</sub>:**

The proposed engine do not meet the latest published Tier Certification requirements; However, compliance with both BACT and CARB's stationary ATCM requirements will be met as described below (see Appendix D for copies of the emissions data sheets and/or the ARB/EPA executive orders).

Although Tier 4i requirements for these categories of engines went into effect in 2011, CARB regulations and District policy allows for the availability of Tier 4i units to be accounted for. CARB's Stationary ATCM exemption §93115.3(u) says, "If the Executive Officer or District finds, based on verifiable information from the engine manufacturer, distributor, or dealer, that current model year engines meeting the current emission standards are not available or not available in sufficient numbers or in a sufficient range of makes, models, and horsepower ratings, then the Executive Officer or the District may allow the sale, purchase, or installation of a new stock engine meeting the emission standards from the previous model year to meet the new stationary diesel-fueled engine emission standards pursuant to title 13 of the California Code of Regulations or 40 CFR part 89." The District has thoroughly investigated, with each of the common manufacturers', the availability of Tier 4i units in this size range, and has found them to be currently unavailable. Since Tier 4i units are not available, as described above, the installation of a 904 bhp Tier 2 unit is acceptable, as these standards are prior published Tier in this engine's size range.

## SO<sub>x</sub>:

The use of very low-sulfur diesel fuel (0.0015% by weight sulfur maximum) reduces SO<sub>x</sub> emissions by over 99% from standard diesel fuel.

## VII. General Calculations

### A. Assumptions

Emergency operating schedule:	24 hours/day
Non-emergency operating schedule:	50 hours/year
Density of diesel fuel:	7.1 lb/gal
EPA F-factor (adjusted to 60 °F):	9,051 dscf/MMBtu
Fuel heating value:	137,000 Btu/gal
BHP to Btu/hr conversion:	2,542.5 Btu/bhp-hr
Thermal efficiency of engine:	commonly ≈ 35%
PM <sub>10</sub> fraction of diesel exhaust:	0.96 (CARB, 1988)

### B. Emission Factors

#### N-8881-5-0:

EF <sub>NO<sub>x</sub></sub> :	3.83 g/bhp-hr (engine data sheet)
EF <sub>CO</sub> :	0.542 g/bhp-hr (engine data sheet)
EF <sub>VOC</sub> :	0.048 g/bhp-hr (engine data sheet)
EF <sub>PM10</sub> :	0.036 g/bhp-hr (engine data sheet)
EF <sub>SO<sub>x</sub></sub> =	0.005 g/bhp-hr – see below

Sulfur Content of Diesel:	15 ppmw
Density of Diesel:	7.1 lb/gal
Fuel Use:	42.7 gal/hr
Engine Rating:	904 bhp

$$EF_{SO_x} = [(15 \text{ lb S}/10^6 \text{ lb fuel})(7.1 \text{ lb fuel/gal})(42.7 \text{ gal/hr})(2 \text{ lb SO}_2/\text{lb S}) \times (453.6 \text{ g/lb})] / (904 \text{ bhp}) = 0.005 \text{ g/bhp-hr}$$

### C. Potential to Emit (PE)

#### 1. Potential to Emit

##### Premodification:

The equipment is new, therefore, the premodification potential to emit (PE) is zero.

##### Postmodification:

$$PE_{NOx} = (3.83 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 183.2 \text{ lb/day}$$

$$PE_{NOx} = (3.83 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 382 \text{ lb/yr}$$

$$PE_{CO} = (0.542 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 25.9 \text{ lb/day}$$

$$PE_{CO} = (0.542 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 54 \text{ lb/yr}$$

$$PE_{VOC} = (0.048 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 2.3 \text{ lb/day}$$

$$PE_{VOC} = (0.048 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 5 \text{ lb/yr}$$

$$PE_{SOx} = (0.005 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 0.2 \text{ lb/day}$$

$$PE_{SOx} = (0.005 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 0 \text{ lb/yr}$$

*The annual SOx emissions were calculated to be 0.49 lb/yr and were rounded to zero per District Policy APR-1105.*

$$PE_{PM10} = (0.036 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(24 \text{ hr/day}) = 1.7 \text{ lb/day}$$

$$PE_{PM10} = (0.036 \text{ g/bhp-hr})(904 \text{ bhp})(\text{lb}/453.6 \text{ g})(50 \text{ hr/yr}) = 4 \text{ lb/yr}$$

### D. Increase in Permitted Emissions (IPE)

#### 1. Quarterly IPE

The emission profile for this ATC will include the following:

	NOx (lb)	SOx (lb)	PM10 (lb)	CO (lb)	VOC (lb)
Annual PE	382	0	4	54	5
Daily PE	183.2	0.2	1.7	25.9	2.3
Δ PE (Qtr 1)	95	0	1	13	1
Δ PE (Qtr 2)	95	0	1	13	1
Δ PE (Qtr 3)	96	0	1	14	1
Δ PE (Qtr 4)	96	0	1	14	2

#### 2. Adjusted Increase in Permitted Emissions (AIPE)

AIPE is used to determine whether or not Best Available Control Technology (BACT) is required for modified units. The unit currently under consideration is new, therefore AIPE calculations are not necessary.

## E. Facility Emissions

### 1. Pre Project Stationary Source Potential to Emit (SSPE1)

The following SSPE1 values are from the Application Review document for project N-1140353.

SSPE1 (lb/yr)					
Permit #	NOx	CO	VOC	SOx	PM10
N-8881-1-0	1,034	116	109	1	34
N-8881-2-0	120	28	3	0	4
N-8881-3-0	548	187	25	1	16
N-8881-4-0	138	32	5	0	4
ERC	0	0	0	0	0
Total	1,840	363	142	2	58

### 2. Post Project Stationary Source Potential to Emit (SSPE2)

SSPE2 (lb/yr)					
Permit #	NOx	CO	VOC	SOx	PM10
N-8881-1-0	1,034	116	109	1	34
N-8881-2-0	120	28	3	0	4
N-8881-3-0	548	187	25	1	16
N-8881-4-0	138	32	5	0	4
N-8881-5-0	382	54	5	0	4
ERC	0	0	0	0	0
Total	2,222	417	147	2	62

### 3. Stationary Source Increase in Permitted Emissions (SSIPE)

$$\text{SSIPE} = \text{SSPE2} - \text{SSPE1}$$

The SSPE1 and SSPE2 balances are from sections VII.E.1 and VII.E.2 of this document.

	SSPE2 (lb/yr)	SSPE1 (lb/yr)	SSIPE (lb/yr)
NOx	2,222	1,840	382
CO	417	363	54
VOC	147	142	5
SOx	2	2	0
PM10	62	58	4



#### 4. Baseline Emissions

The equipment is new, therefore, the Baseline Emissions are zero for each pollutant.

#### F. Major Source Determination

##### Rule 2201 Major Source Determination:

The Major Source thresholds, the facility potentials to emit and whether or not the facility is a Major Source are presented on the following table. The Major Source thresholds are from Section 3.23.1. Since no emission reduction credits have been generated at this facility, the post-modification potential to emit is equivalent to the SSPE2.

Pollutant	Threshold (lb/yr)	Facility PE (lb/yr)	Major Source
NOx	20,000	2,222	No
CO	200,000	417	No
VOC	20,000	147	No
SOx	140,000	2	No
PM10	140,000	62	No

##### Rule 2410 Major Source Determination:

The equipment currently under consideration is not a source category listed in 40 CFR Part 52.21(b)(1)(i), therefore, the applicable thresholds are those shown on the table below. The table below shows the PSD major source thresholds, the current potentials to emit and whether or not the facility is currently a PSD major source.

Pollutant	Threshold (tons/yr)	Current Facility PE (tons/yr)	Currently a PSD Major Source
NOx	250	0.92	No
CO	250	0.18	No
VOC	250	0.071	No
SOx	250	0.001	No
PM	250	0.029	No
PM10	250	0.029	No
CO <sub>2e</sub>	100,000	45.4	No

EF<sub>GHG</sub>: 0.000187 metric tons/bhp-hr (CARB greenhouse gas emission factor)

The facility includes the following fuel burning equipment that will contribute to the GHG emission total:

N-8881-1: 2,346 bhp diesel fired IC engine limited to 50 hr/yr of operation  
N-1881-2: 385 bhp diesel fired IC engine limited to 50 hr/yr of operation  
N-1881-3: 1,194 bhp diesel fired IC engine limited to 50 hr/yr of operation

N-1881-4: 240 bhp diesel fired IC engine limited to 100 hr/yr of operation

Total Rating = (2,346 bhp + 385 bhp + 1,194 bhp)(50 hr/yr)  
+ (240 bhp)(100 hr/yr) = 220,250 bhp-hr/yr

PE<sub>GHG</sub> = (0.000187 MT/bhp-hr)(220,250 bhp-hr/yr)(2,205 lb/MT)  
x (ton/2000 lb) = 45.4 tons/yr

## G. Major Modification Determination

### SB-288 Major Modification:

The purpose of SB-288 Major Modification calculations is to determine the following:

If Best Available Control Technology (BACT) is triggered for a new or modified emission unit that results in a Major Modification (District Rule 2201, §4.1.3); and

If a public notification is triggered (District Rule 2201, §5.4.1).

As shown in section VII.F of this document, the facility is not a Major Source for any pollutant. Therefore, the proposed project cannot trigger an SB-288 Major Modification.

### Federal Major Modification:

As shown in section VII.F of this document, the facility is not a Major Source for any pollutant. Therefore, the proposed project cannot trigger a Federal Major Modification.

## VIII. Compliance

### Rule 2201 New and Modified Stationary Source Review Rule

#### A. BACT

##### 1. BACT Applicability

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

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

\*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 two new emergency standby IC engines. Additionally, as shown in Section VII.G, this project does not result in an SB288 Major Modification or a Federal Major Modification. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions from the new engines are compared to the BACT threshold levels in the following tables:

New Emissions Unit BACT Applicability				
Pollutant	Daily Emissions for unit -1-0 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO <sub>x</sub>	183.2	> 2.0	n/a	Yes
CO	25.9	> 2.0 and SSPE2 ≥ 200,000 lb/yr	417	No
VOC	2.3	> 2.0	n/a	Yes
SO <sub>x</sub>	0.2	> 2.0	n/a	No
PM <sub>10</sub>	1.7	> 2.0	n/a	No

As shown above, BACT will be triggered for the NO<sub>x</sub> and VOC emissions from this engine.

## 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<sub>x</sub>: Latest EPA Tier Certification level for applicable horsepower range
- VOC: Latest EPA Tier Certification level for applicable horsepower range

## **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**

District Rule 2201 section 5.4 requires a public notification for the affected pollutants from the following types of projects:

- a. New Major Sources
- b. Major Modifications
- c. New emission units with a PE > 100 lb/day of any one pollutant (IPE Notifications)
- d. Modifications with SSPE1 below an offset threshold and SSPE 2 above an offset threshold on a pollutant by pollutant basis (Existing Facility Offset Threshold Exceedence Notification)
- e. New stationary sources with SSPE2 exceeding offset thresholds (New Facility Offset Threshold Exceedence Notification)
- f. Any permitting action with a SSIPE exceeding 20,000 lb/yr for any one pollutant. (SSIPE Notice)

#### **a. New Major Source Notice Determination:**

The facility is not new, therefore, a New Major Source Determination notice is not required.

#### **b. Major Modification Notice:**

As shown in section VII.G of this document, this permitting action is not a Major Modification. Therefore a Major Modification notice is not required.

#### **c. PE Notification:**

A notification is required for each new emission unit with the potential to emit more than 100 pounds per day of any one affected pollutant.

As shown in section VII.C.1 of this document, the PE of NO<sub>x</sub> from unit will exceed 100 pounds per day. Therefore, a notification is required.

**d. Existing Facility Offset Threshold Exceedence Notification**

The facility is new, therefore a public notification is not required.

**e. New Facility Offset Threshold Exceedence Notification**

The potential to emit of no pollutant will be in excess of an offset threshold, therefore, a public notification is not required.

**f. SSIPE Notification:**

A notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/yr of any affected pollutant. As shown in section VII.E.3 of this document, the SSIPE of each pollutant will be less than 20,000 pounds per year. An SSIPE notification is not required.

**2. Public Notice**

As shown above, a public notification is required because the project includes a new emission unit with the potential to emit of more than 100 lb/day of NOx.

**D. DAILY EMISSION LIMITS**

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.16 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the ATC to ensure compliance:

**N-8881-5-0:**

- Emissions from this IC engine shall not exceed any of the following limits: 3.83 g-NOx/bhp-hr, 0.542 g-CO/bhp-hr, or 0.048 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
- Emissions from this IC engine shall not exceed 0.036 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
- 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**

As they apply to the equipment currently under consideration, no District rule or policy requires monitoring.

### **3. Record Keeping**

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

### **4. Reporting**

As they apply to the equipment currently under consideration, no District rule or policy requires reporting.

## **F. Ambient Air Quality Analysis**

Section 4.14.1 of this rule requires that an ambient air quality analysis (AAQA) 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 Technical Services Division of the SJVAPCD conducted the required analysis.

As shown by the AAQA summary sheet in Appendix C, the proposed equipment will not cause or make worse a violation of an air quality standard for NO<sub>x</sub>, CO, PM<sub>10</sub>, PM<sub>2.5</sub> or SO<sub>x</sub>.

## **Rule 2410 Prevention of Significant Deterioration**

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>
- Greenhouse gases (GHG): CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, PFCs, and SF<sub>6</sub>

The first step of this PSD applicability evaluation consists of determining whether the facility is an existing PSD Major Source. This facility is not an existing PSD Major source (See Section VII.F of this document).

In the case of a facility that is NOT an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

**Potential to Emit for All Emission Units at the Facility vs PSD Major Source Thresholds:**

As a screening tool, the potential to emit from all new and modified units at the facility is compared to the PSD major source threshold and if the total potential to emit from all new and modified units at the facility is below this threshold, no further analysis will be needed.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	CO <sub>2e</sub>
Total PE from New and Modified Units	0.19	0.003	0	0.027	0.002	0.002	9.3
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	No	No	No	No	No	No	No

EF<sub>GHG</sub>: 0.000187 metric tons/bhp-hr (CARB greenhouse gas emission factor)  
 Rating: 904 bhp  
 Schedule: 50 hr/yr

$$PE_{GHG} = (0.000187 \text{ MT/bhp-hr})(904 \text{ bhp})(50 \text{ hr/yr})(2,205 \text{ lb/MT}) \times (\text{ton}/2000 \text{ lb}) = 9.3 \text{ tons/yr}$$

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD major source thresholds. Therefore, Rule 2410 is not applicable and 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 proposed engines are subject to the requirements of this subpart. The District has not yet obtained a delegation from EPA to enforce this subpart. Therefore, requirements of this subpart are not listed in the permit at this time.

**Rule 4002 National Emission Standards for Hazardous Air Pollutants**

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

The proposed engines are subject to the requirements of this subpart. The District has not yet obtained a delegation from EPA to enforce this subpart. Therefore, requirements of this subpart are not listed in the permit at this time.

**Rule 4101 Visible Emissions**

As long as the equipment is properly maintained and operated, the visible emissions are not expected to exceed 20% opacity for a period or periods aggregating more than 3 minutes in any one hour. Compliance with the provisions of this rule is expected.

**Rule 4102 Nuisance**

**A. California Health & Safety Code 41700 (Health Risk Analysis)**

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 C.

RMR Results				
Unit	Acute Hazard Index	Chronic Hazard Index	Cancer Risk	T-BACT Required?
N-8881-5-0	N/A	N/A	0.0186 in one million	No

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

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



- Emissions from this IC engine shall not exceed 0.036 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
- The engine shall be operated only for maintenance, testing and required regulatory purposes and during emergency situations. Operation of the engine for maintenance, testing and required regulatory purposes shall not exceed 50 hours per year. [District Rules 2201 and 4702 and 17 CCR 93115]

### 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<sub>10</sub> emission factor of 0.4 g-PM<sub>10</sub>/bhp-hr.

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

Each new engine has a PM<sub>10</sub> emission factor less than 0.4 g/bhp-hr. Therefore, compliance is expected and the following condition will be listed on the ATCs:

- {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.

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

## Rule 4702 Internal Combustion Engines

The following table demonstrates how the proposed engine(s) will comply with the requirements of District Rule 4702.

District Rule 4702 Requirements Emergency Standby IC Engines	Proposed Method of Compliance with District Rule 4702 Requirements
Operation of emergency standby engines is limited to 100 hours or less per calendar year for non-emergency purposes, verified through the use of a non-resettable elapsed operating time meter.	The Air Toxic Control Measure for Stationary Compression Ignition Engines (Stationary ATCM) limits the engine maintenance and testing to 50 hours/year. Thus, compliance is expected.
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.	<p>The following conditions will be included on the permits:</p> <ul style="list-style-type: none"> <li>• {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]</li> <li>• {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]</li> </ul>
The owner/operator must operate and maintain the engine(s) and any installed control devices according to the manufacturers written instructions.	A permit condition enforcing this requirement was shown earlier in the evaluation.
The owner/operator must monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.	<p>The following condition will be included on the permits:</p> <ul style="list-style-type: none"> <li>• {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]</li> </ul>
Records of the total hours of operation of the emergency standby engine, type of fuel used, purpose for operating the engine, all hours of non-emergency and emergency operation, and support documentation must be maintained. All	<p>The following conditions will be included on the permit:</p> <ul style="list-style-type: none"> <li>• {3496} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of</li> </ul>

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.

hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 4701, 4702 and 17 CCR 93115]

- 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 Rules 4701, 4702 and 17 CCR 93115]

### Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO<sub>2</sub>) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

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

n = moles SO<sub>2</sub>

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

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

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

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

The following table demonstrates how the proposed engine(s) will comply with the requirements of Title 17 CCR Section 93115.

Title 17 CCR Section 93115 Requirements for New Emergency IC Engines Powering Electrical Generators	Proposed Method of Compliance with Title 17 CCR Section 93115 Requirements
Emergency engine(s) must be fired on CARB diesel fuel, or an approved alternative diesel fuel.	The applicant has proposed the use of CARB certified diesel fuel. The proposed permit condition, requiring the use of CARB certified diesel fuel, was included earlier in this evaluation.
<p>Section 96115.6(a) – Table 1 limits the emissions to the following:</p> <p>NMHC + NOx: 4.8 g/bhp-hr            CO: 2.6 g/bhp-hr            PM: 0.15 g/bhp-hr</p>	<p>As shown in section VII.B of this document. The emissions are expected to be:</p> <p>NMHC + NOx: 3.88 g/bhp-hr            CO: 0.542 g/bhp-hr            PM: 0.036 g/bhp-hr</p>
The engines may not be operated more than 50 hours per year for maintenance and testing purposes.	<p>The following condition will be included on the permits:</p> <ul style="list-style-type: none"> <li>This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rule 4702 and 17 CCR 93115]</li> </ul>
Engines, with a PM10 emissions rate greater than 0.01 g/bhp-hr and located at schools, may not be operated for maintenance and testing whenever there is a school sponsored activity on the grounds. Additionally, engines located within 500 feet of school grounds may not be operated for maintenance and testing between 7:30 AM and 3:30 PM	The District has verified that this engine is not located within 500' of a school.
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.

## California Health & Safety Code 42301.6 (School Notice)

The equipment will not be located within 1,000 feet of a K-12 school, therefore, a school notice is not required.

### IX. Recommendation

Issue an Authority-to-Construct permit with the conditions on the attached draft Authority to Construct permit.

### X. Billing Information

Permit #	Description	Fee Schedule
N-8881-5-0	904 bhp	3020-10-E

### Appendices

- Appendix A: Draft ATC
- Appendix B: BACT Guideline and BACT Analysis
- Appendix C: HRA and AAQA Summaries
- Appendix D: Emission Data Sheet

# **Appendix A**

## **Draft ATC**



San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: N-8881-5-0

LEGAL OWNER OR OPERATOR: PROLOGIS  
MAILING ADDRESS: 17284 W. COMMERCE WAY  
TRACY, CA 95377-8639

LOCATION: 1555 N CHRISMAN RD  
TRACY, CA

EQUIPMENT DESCRIPTION:  
904 BHP VOLVO MODEL TWD1643GE TIER 2 CERTIFIED DIESEL-FIRED EMERGENCY STANDBY IC ENGINE  
POWERING AN ELECTRICAL GENERATOR

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
4. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
5. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rules 4701 and 4702 and 17 CCR 93115]
6. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]
7. Emissions from this IC engine shall not exceed any of the following limits: 3.83 g-NOx/bhp-hr, 0.542 g-CO/bhp-hr, or 0.048 g-VOC/bhp-hr. [District Rule 2201 and 17 CCR 93115]
8. Emissions from this IC engine shall not exceed 0.036 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 17 CCR 93115]
9. 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]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DRAFT**

Arnaud Marjolle, Director of Permit Services  
N-8881-5-0, Apr 24 2014, 6:10PM, E:\CHON\IDM - User Inspection NOT Required

10. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
11. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
12. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rule 4702 and 17 CCR 93115]
13. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rules 4701, 4702 and 17 CCR 93115]
14. {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]
15. U.S. EPA administers the requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. The owner or operator shall comply with the emission and operating limitations, testing requirements, initial and continuous compliance requirements as specified in these subparts. The owner or operator shall submit all applicable notifications, reports, and records to the administrator by the required compliance dates. [District Rules 4001 and 4002]

DRAFT

## **Appendix B**

### **BACT Guideline and BACT Analysis**

# San Joaquin Valley Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 3.1.1**  
**Last Update: 7/10/2009**  
**Emergency Diesel IC Engine**

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

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

## **Top Down BACT Analysis for the Emergency IC Engine**

BACT Guideline 3.1.1 (July 10, 2009) 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<sub>x</sub> and VOC Emissions:**

#### **a. Step 1 - Identify all control technologies**

BACT Guideline 3.1.1 identifies only the following option:

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

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

- 40 CFR Part 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
- 40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression – Ignition Engines
- 40 CFR Part 1039 – Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines
- Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines

40 CFR Parts 89 and 1039, which apply only to nonroad engines, do not directly apply because the proposed emergency engine(s) do not meet the definition of a nonroad engine. Therefore, only Title 17 CCR, Section 93115 and 40 CFR Part 60 Subpart IIII apply directly to the proposed emergency engine(s).

Title 17 CCR, Section 93115.6(a)(3)(A) (CARB stationary diesel engine ATCM) applies to emergency standby diesel-fired engines and requires that such engines be certified to the emission levels in Table 1 (below). Please note that these levels are at least as stringent or more stringent than the emission levels in 40 CFR Subpart IIII.

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

Additionally, 40 CFR Subpart IIII establishes emission standards for emergency diesel IC engines. These emission standards are the same as those specified in the CARB ATCM, except for engines rated greater than or equal to 50 and less than 75 hp. For such IC engines, the CARB ATCM is more stringent.

Therefore, the most stringent applicable emission standards are those listed in the CARB ATCM (Table 1).

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

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

The proposed engine is rated at 904 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 NOx and VOC will be the use of an EPA Tier 2 certified engine. The applicant is proposing such a unit. Therefore, BACT will be satisfied.

## **Appendix C**

### **RMR and AAQA Summaries**

## San Joaquin Valley Air Pollution Control District Risk Management Review

To: Mark Schonhoff - Permit Services  
 From: Kyle Melching - Permit Services  
 Date: April 28, 2014  
 Facility Name: Prologis  
 Location: 1555 Chrisman Way, Tracy  
 Application #(s): N-8881-5-0  
 Project #: N-1141526

### A. RMR SUMMARY

RMR Summary			
Categories	Emergency Diesel ICE (Unit 5-0)	Project Totals	Facility Totals
Prioritization Score	N/A <sup>1</sup>	N/A <sup>1</sup>	>1
Acute Hazard Index	N/A <sup>2</sup>	N/A <sup>2</sup>	N/A
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk	1.86E-08	1.86E-08	7.54E-06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

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 Hazard Index was 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 5-0

1. The PM10 emissions rate shall not exceed **0.05 g/bhp-hr** based on US EPA certification using ISO 8178 test procedure. [District Rules 2201]
2. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
3. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 50 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

**B. RMR REPORT****I. Project Description**

Technical Services received a request on April 23, 2014, to perform an Ambient Air Quality Analysis (AAQA) and a Risk Management Review (RMR) for one 904 bhp emergency diesel IC engine powering an electrical generator.

**II. Analysis**

For the diesel engine, Technical Services used diesel exhaust emissions calculated using the District Diesel Exhaust Risk Screening Spreadsheet. 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; therefore, a refined Health Risk Assessment was required and performed for the unit. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Tracy 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 Risk.

The following parameters were used for the review:

Analysis Parameters Unit 5-0			
Source Type	Point	Location Type	Urban
Stack Height (m)	37.5	Type of Closest Receptor	Business
Stack Diameter (m)	0.2	Closest Receptor (m)	107
Stack Temp (K)	734	BHP	904
Stack Velocity (m/s)	66.9	Max Hours per Year	50
		PM <sub>10</sub> g/hp-hr	0.036

Technical Services also performed modeling for criteria pollutants NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>; as well as the RMR. For Unit 3-0, the emission rates used for criteria pollutant modeling were 382 lb/yr NO<sub>x</sub>, 54 lb/yr CO, 0.5 lb/yr SO<sub>x</sub>, and 3.6 lb/yr PM<sub>10</sub>.

The results from the Criteria Pollutant Modeling are as follows:

**Criteria Pollutant Modeling Results\***

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA <sup>1</sup>	X	NA <sup>1</sup>	X	X
NO <sub>x</sub>	NA <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	NA <sup>1</sup>	NA <sup>1</sup>	X	NA <sup>1</sup>	Pass
PM <sub>10</sub>	X	X	X	NA <sup>1</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	NA <sup>1</sup>	Pass <sup>2</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>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.

<sup>2</sup>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 engine is  $1.86E-0$ , which is less than 1.0 in a million. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT) for PM10.

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 unit.

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

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Stack Parameter Worksheet
- D. DICE Screening Risk Tool
- E. HARP Risk Report
- F. Facility Summary
- G. AAQA Summary
- H. AAQA Parameter Summary

## **Appendix D Emission Data Sheet**



# KOHLER. Power Systems

## 600REOZVB

### 60 HZ. DIESEL INDUSTRIAL GENERATOR SET EMISSION DATA SHEET

ENGINE INFORMATION			
Model:	Volvo, TWD1643GE	Bore:	144mm (5.67 in.)
Nameplate BPH @ 1800 RPM:	904	Stroke:	165mm (6.50 in.)
Type:	4-Cycle, 6 Cylinder, Inline	Displacement:	16.12 L (984 cu. in.)
Aspiration:	Turbocharged, Charge Air-Cooled	EPA Family:	EVPXL16.1ACW
Compression Ratio	16.5:1	EPA Certificate:	EVPXL16.1ACW-002
Emission Control Device	EM, TC, CAC		

PERFORMANCE DATA:	1/4	1/2	3/4	Full
	Standby	Standby	Standby	Standby
Engine bkW @ Stated Load	167.00	335.00	503.00	674.00
Fuel Consumption (g/kWh)	220.00	200.00	188.00	204.00
Exhaust Gas Flow (m <sup>3</sup> /s)				2.17
Exhaust Temperature (°C)				481.00
<b>EXHAUST EMISSION DATA:</b>				
HC (Total Unburned Hydrocarbons)	0.185	0.095	0.071	0.084
NO <sub>x</sub> (Oxides of Nitrogen as NO <sub>2</sub> )	6.041	5.647	5.399	5.130
CO (Carbon Monoxide)	0.487	0.202	0.349	0.727
PM (Particular Matter)	0.191	0.047	0.039	0.048

*5/HP =*  
 0.048  
 3.83  
 0.542  
 0.034

Values are in g/kWh

TEST METHODS AND CONDITIONS
Test Conditions- 40 CFR part 89 - 5 Mode US constant speed test cycle

Data and specifications subject to change without notice  
 For further information, please contact Mark Annarumma @ 920-246-1968