

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT SERVICES DIVISION

APPLICATION PROCESSING AND CALCULATIONS

Pages 6	Page 1
Appl No. 15872	Date 5/2/2007
Processed By E.Y. Chan	Checked By

DRAFT

**Verizon Wireless (Fremont High School); Plant #18351
1279 Sunnyvale Saratoga Rd, Sunnyvale 94087**

BACKGROUND

Verizon Wireless (Fremont High School) is applying to install a new diesel standby generator:

S-1 Emergency Diesel Generator, John Deere 5030HF270, 93 bhp

EMISSIONS SUMMARY

Basis: ISO 8178-D2 emission factors for this engine.
Engine Family: 6JDXL03.0064
Engine Model Number: 5030HF270
Standby Power Rating: 96 BHP

Operate: \leq 50 hours year non-emergency use

Maximum Fuel Usage: 5.2 gallons/hour

	g/bhp-hr	Control efficiency	lb/hr	lb/yr	tpy
POC	0.34	0%	0.070	3.49	0.002
NOx	4.92	0%	1.009	50.44	0.025
CO	1.00	0%	0.205	10.25	0.005
PM	0.090	0%	0.018	0.92	0.000

SO₂: (0.05% S) (1/100%) (260 gal/yr) (7.2 lb/gal) (64 SO₂/32 S) = 1.87 lb/yr = 0.001 tpy

PLANT CUMULATIVE INCREASE

Pollutant	tons/year		
	current	application increase	New Total
PM-10	0.000	0.000	0.000
POC	0.000	0.002	0.002
Nitrogen Oxides	0.000	0.025	0.025
Sulfur Dioxide	0.000	0.001	0.001
Carbon Monoxide	0.000	0.005	0.005

TOXIC RISK SCREENING ANALYSIS

A Toxic Risk Screen was performed in accordance with the District's Toxic Risk Screen Policy since the PM10 emissions from diesel exhaust particulate matter exceeded the 0.64 lb/year trigger level found in Regulation 2, Rule 5, Table 2-5-1. Per the enclosed 4/5/07 Interoffice Memorandum, at 50 hours per year

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT SERVICES DIVISION

APPLICATION PROCESSING AND CALCULATIONS

Pages 6	Page 2
Appl No. 15872	Date 5/2/2007
Processed By E.Y. Chan	Checked By

of non-emergency use, this proposed project passed the Risk Screening Analysis at 0.2 in a million cancer risk for residents and workers. The risk to students is deemed negligible because statewide regulation prohibits operation of this engine between the hours of 7:30am and 3:30 pm. The source meets the District's TBACT requirement for PM10 of 0.15 g/bhp-hr with a CARB certification for this engine series at 0.09 g/bhp-hr.

BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

BACT is triggered for any single pollutant that exceeds 10 pounds per highest day per Regulation 2-2-301. For this proposed project, BACT is triggered for NOx since the highest day emissions are 24.2 pounds (1.009 lb/hr x 24 hr). As shown in the table below, the S-1 Standby Diesel Engine meets the BACT2 limit for NOx for diesel engines greater than 175 hp (Reference: BACT/TBACT Handbook, IC Engine-Compression Ignition, Document #96.1.2). BACT1 for an emergency standby diesel engine is impractical and not cost effective for short hours of operation.

	CARB Certified g/bhp-hr	BACT g/bhp-hr
POC	0.34	1.5
NOx	4.92	6.9
CO	1.0	2.75
PM	0.09	0.15

CARB Stationary Diesel Engine ATCM

The State Office of Administrative Law approved the Airborne Toxic Control Measure (ATCM) on November 8, 2004. State law requires the local Air Districts to implement and enforce the requirements of the ATCM. Effective January 1, 2005, there is a prohibition on the operation of new diesel emergency standby engines greater than 50 bhp unless the following operating requirements and emission standards are met:

**“Stationary Diesel Engine ATCM”
section 93115, title 17, CA Code of
Regulations.**

Diesel PM – General Requirements

1. Meet 0.15 g/bhp-hr PM standard
2. Operate 50 hours per year, or less, for maintenance and testing (except emergency use and emissions testing)

HC,NOx, NMHC+NOx, CO

1. Meet standards for off-road engines of the same model year and horsepower rating As specified in the OFF-Road Compression Ignition Engine Standards; Or if no standards have been established
2. Meet the Tier1 standards in Title 13, CCR, Section 2423 for off-road engines of the same horsepower rating, irrespective of the new engine's model year

This emergency standby diesel engine (S-1) complies with the above ATCM requirements. The diesel engine will operate for no more than 50 hours per year for maintenance and reliability testing. This 96 hp

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT SERVICES DIVISION

APPLICATION PROCESSING AND CALCULATIONS

Pages 6	Page 3
Appl No. 15872	Date 5/2/2007
Processed By E.Y. Chan	Checked By

engine is subject to the EPA Tier 2 requirements for HC, NOx, NMHC+NOx and CO. As shown in the table below, the engine meets these requirements.

	CARB Certified g/bhp-hr	ATCM Tier 2 g/bhp-hr
HC+NOx	5.27	5.6
CO	1.0	3.7
PM	0.09	0.3

OFFSET ANALYSIS

Per Regulation 2-2-302 and 2-2-303, this facility does not trigger offsets because its facility wide NOx and POC emissions are each less than 10 tpy and its SO2 and PM10 emissions are each less than 100 tpy.

STATEMENT OF COMPLIANCE

S-1, diesel emergency generator, meets the Emergency Standby Engines provisions of Reg 9-8-330 and 9-8-530 (Inorganic Gaseous Pollutants: Nitrogen Oxides and Carbon Monoxide from Stationary Internal Combustion Engines). The engine will operate for less than 100 hours for maintenance and reliability testing as limited by Regulation 9-8-330. Condition #22850, Part 1, has been imposed to limit those non-emergency hours of engine operation to no more than 50 hours. Records of total hours of operation, emergency hours of operation and the nature of each emergency will be kept as required by Regulation 9-8-530 and enforced by Part 3 of Condition #22850.

Since the source is an emergency standby engine, S-1 is not subject to the requirements of Regulations 9-8-301, 9-8-302, and 9-8-502 per Regulation 9, Rule 8, Section 110.4.

9-8-110 Exemptions: The requirements of Sections 9-8-301, 302, and 502 shall not apply to the following:
110.4 Emergency standby engines.

The Owner/Operator should comply with Regulation 6, "Particulate Matter and Visible Emissions". Visible emissions should be less than Ringelmann 2 (Regulation 6-303).

The Owner/Operator should comply with Regulation 9, Rule 1, "Inorganic Gaseous Pollutants: Sulfur Dioxide for Limitations on Ground Level Concentration". Low sulfur diesel fuel (≤ 0.05 wt%) will be used to meet the sulfur limitation of 0.5 wt% in Regulation 9-1-304.

This project is considered to be ministerial under the District'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 emission factors and therefore is not discretionary as defined by CEQA (MOP Chapter 2.3).

This project is located at a school is within the 1000 feet public notice requirement limit of Reg-2-412. A public notice was prepared and sent on Date----. The public notices were sent to:

All addresses within 1000 mile of the diesel generator.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT SERVICES DIVISION

APPLICATION PROCESSING AND CALCULATIONS

Pages 6	Page 4
Appl No. 15872	Date 5/2/2007
Processed By E.Y. Chan	Checked By

Parents and guardians of students at Fremont High School at 1729 Sunnyvale Saratoga Rd, Sunnyvale, and at Community Day School at 589 West Fremont Ave, Sunnyvale.

Offsets, PSD, NSPS, and NESHAPS are not triggered or do not apply to this project.

CONDITIONS

COND# 22850 -----

1. Operating for reliability-related activities is limited to 50 hours per year per engine.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]

2. The owner or 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 hours while mitigating emergency conditions or while emission testing to show compliance with District, state or Federal emission limits is not limited.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(3) or (e)(2)(B)(3)]

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: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(G)(1)]

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

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT SERVICES DIVISION

APPLICATION PROCESSING AND CALCULATIONS

Pages 6	Page 5
Appl No. 15872	Date 5/2/2007
Processed By E.Y. Chan	Checked By

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: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(4)(I), (or Regulation 2-6-501)]

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 or 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, playground, athletic field, or other areas of school property but does not include unimproved school property.

[Basis: "Stationary Diesel Engine ATCM" section 93115, title 17, CA Code of Regulations, subsection (e)(2)(A)(1)] or (e)(2)(B)(2)]

RECOMMENDATION

Issue a conditional Authority to Construct for the following source:

S-1 Emergency Diesel Generator, John Deere 5030HF270, 93 bhp

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT SERVICES DIVISION

APPLICATION PROCESSING AND CALCULATIONS

Pages 6	Page 6
Appl No. 15872	Date 5/2/2007
Processed By E. Y. Chan	Checked By

By: _____
Eric Y. W. Chan
Air Quality Engineer II

5/2/07 _____
Date