

Facility Name: Greystar
Equipment Type: 34H – Emergency Diesel Engine
Application #: APCD2024-APP-008141
ID#: APCD2023-SITE-04310
Equipment/Facility Address: 110 Beech St,
San Diego, CA 92101
Facility Contact: Musashi Liu,
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Permit Engineer:

X Hawzhin Muhamed

Hawzhin Muhamed
Jr. Air Pollution Control Engineer
Signed by: Muhamed, Hawzhin S

4/18/2024

Senior Engineer Signature:

X Nicholas Horres

Nicholas Horres
Senior Engineer
Signed by: NHorres

1.0 Background

1.1 Type of Application: New installation of 1412 bhp emergency diesel engine/generator.

1.2 Permit History: This application is to replace the initial application APCD2023-APP-007783. The applicant requested to substitute the engine manufacturer make Mitsubishi which was submitted in the initial application with a Perkins engine due to long delivery time of the Mitsubishi engine. Application APCD2023-APP-007783 will be canceled.

1.3 Facility Description: This site is currently a parking lot with a plan to construct a new building. This facility has another application with SDAPCD at another site – No other applications are open at this site.

1.4 Other Background Info: There are no open hearing board actions, permit denials, legal settlements, NOV, or nuisance complaints. This is not a Title V facility.

2.0 Process Description

2.1 Equipment Description.

Emergency Diesel Engine Generator:

Make: Perkins,

Model: 5008C-E30TAG5

S/N: TBD,

Maximum Horsepower Rating: 1412 bhp,

Model Year 2023

EPA Certification: Tier 3,

Engine Family PCPXL45.8NZS.

Driving a 1000-kW emergency electrical generator.

12-inch diameter Vertical exhaust with flapper valve, 10 feet above ground.

Testing and maintenance limits: 19.5 hours/day, and 32 hours/year.

2.2 Process Description.

This is a diesel-powered generator to be used in situations of emergency and for limited operations for maintenance and testing purposes.

2.3 Emissions Controls.

This is a Tier 2 certified diesel engine. It is not equipped with any aftermarket controls.

2.4 Attachments.

Generator specification sheet

3.0 Emissions

3.1 Emissions estimate summary. Estimated emissions from the process are shown below.

Table 1: Estimated PTE for criteria pollutants

Compound	Emission Factor	Hourly Emissions	Daily Emissions	Annual Emissions	
	g/bhp-hr	lbs/hr	lbs/day	tons/year	lbs/yr
NO _x	4.11	12.80	249.51	0.20	409.45
CO	0.97	3.02	58.87	0.05	96.60
NMHC	0.22	0.67	13.13	0.0108	21.55
PM	0.06	0.19	3.62	0.003	5.945
SO _x	NA	0.01500	0.29241	0.00024	0.47985

3.2 Estimated Emissions Assumptions.

- Manufacturer-provided emissions were EPA certified emission factors.
- Table 1 evaluates the emission unit at 19.5 hours per day and a total of 32 hours per year, assuming full load operation.
- 15 ppmw sulfur fuel
- Standard toxics emission factors for diesel engines (see method E10).
- Other standard assumptions as stated in calculation sheets.
- Expected actual emissions same as PTE

3.3 Emissions Calculations.

Calculations were performed using the attached spreadsheets using standard calculation methods.

3.4 Attachments.

Emission Calculations.

4.0 Applicable Rules

4.1 District Prohibitory Rules

Emergency diesel engines at non-major sources are subject to the following District prohibitory rules: 50, 51, 53, 62 and 69.4.1. The proposed engine is expected to comply with all applicable requirements as shown in the table on the following page with standard permit conditions for this equipment type.

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Table 2: Prohibitory Rule Discussion

Applicable Section	Requirement	Engine Complies?	Explanation	Condition
Rule 50	Visible Emissions not to exceed 20% opacity or Ringelmann 1 for more than 3 minutes in a 60 minute period	Yes	Compliance with this requirement is achieved through the use of an EPA certified engine, and permit conditions will specify this requirement.	C28413
Rule 51	Cannot cause or contribute to a public nuisance	Yes	Due to the intermittent operation of an emergency engine that meets all emission requirements, it is anticipated that this will not cause a public nuisance. Permit conditions will prohibit this engine from causing a public nuisance.	C28414
Rule 53	Emissions of sulfur compounds calculated as SO ₂ on a dry basis shall not exceed 0.05 % by volume on a dry basis.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
Rule 62	Sulfur content of liquid fuel shall not exceed 0.5 % sulfur by weight.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
Rule 69.4.1				
69.4.1(d)(1)(ii)(E)	Emission standards for NO _x and CO emissions. For a new or replacement certified diesel engine, NO _x emissions shall not exceed: 3.5 g/bhp-hr if 50 ≤ bhp < 100; 3.0 g/bhp-hr if 100 ≤ bhp < 175; 3.0 g/bhp-hr if 175 ≤ bhp < 750; 4.8 g/bhp-hr if bhp ≥ 750. For a new or replacement certified diesel engine, CO emissions shall not exceed: 3.7 g/bhp-hr if	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) ensures that NO _x emissions comply with this requirement	NA

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	50≤bhp<100; 3.7 g/bhp-hr if 100≤bhp<175; 2.6 g/bhp-hr if 175≤bhp<750; 2.6 g/bhp-hr if bhp≥750.			
69.4.1(d)(2)	Engines operated on diesel fuel shall use only California Diesel Fuel.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
69.4.1(e)(3)	All engines must be equipped with a non-resettable totalizing fuel or hour meter which shall be replaced in accordance with subsection (g)(7) of this rule.	Yes	Permit conditions will require installation of a non-resettable hour meter and specify the requirements for replacement.	C28419
69.4.1(f)(2)	The owner or operator must conduct specific maintenance on the engine and control equipment, including oil change/analysis, and checking hoses and belts. Maintenance is required according to engine/control equipment manufacturer's instructions or other written procedure, at least once each calendar year.	Yes	Annual maintenance of engine according to written procedure will be required by permit conditions.	C43433
69.4.1(g)(1)	Specifies engine information that must be maintained on-site.	Yes	Manufacturer and model number, brake horsepower rating, combustion method and fuel type are contained in the permit application. Documentation of CARB diesel fuel certification and manual of recommended maintenance will be specified in permit conditions.	C45251
69.4.1(g)(2)	Requires keeping an operating log containing dates and times and purpose of each period of engine operation, cumulative operation of engine for each calendar year and maintenance records including	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C45252

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	dates maintenance is performed. Engines within 500 feet of schools must record the time of day when the engine is operated for testing and maintenance. Specific records for internal, external, and partial external power outages is required.			
69.4.1(g)(6)	Requires records of the dates and times when fuel is being combusted and cumulative operating time if claiming a commissioning exemption.	NA	The applicant has not claimed a commissioning period is needed.	NA
69.4.1(g)(7)	Requires notification to APCD within 10 calendar days of replacing an hour meter.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C28419
69.4.1(g)(9)	Requires specified records to be maintained on-site for at least three years and made available to the District upon request.	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432
69.4.1(i)(1)	Requires periodic source testing to confirm compliance with applicable emission standards.	NA	This subsection does not apply to certified emergency engines.	NA

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4.2 New Source Review (NSR) Rule 20.1-20.4

This application is subject to District NSR rules. This site is considered a non-major stationary source, for each pollutant, as shown in the following table, and is therefore subject to District Rule 20.2. Calculation of emissions and determination of applicable requirements is performed in accordance with District Rule(s) 20.1 through 20.3.

Table 3: Classification of Major/PSD Source and Modification New Source Review (NSR) Requirements

	NOx	VOC	PM-10	PM-2.5	SOx	CO	Lead
<i>Major Source Threshold (ton/year)</i>	50	50	100	100	100	100	100
Major Source? (yes/no)	No	No	No	No	No	No	No
<i>Major Modification Threshold (ton/year)</i>	25	25	15	10	40	100	0.6
Major Modification at a Major Source?	No	No	No	No	No	No	No
Contemporaneous Calculations Performed?	No	No	No	No	No	No	No
Federal Major Stationary Source Threshold (ton/year) (Severe non-attainment status)	25	25	100	100	100	100	100
Federal Major Stationary Source?	No	No	No	No	No	No	No
<i>Federal Major Modification Threshold (ton/year)</i> (Severe non-attainment status)	25	25	15	10	40	100	0.6
Federal Major Modification?	No	No	No	No	No	No	No
Contemporaneous Net Calculations Performed	No	No	No	No	No	No	No
<i>PSD Threshold (ton/year)</i>	250	250	250	--	250	250	--
<i>PSD Modification Threshold (ton/year)</i>	40	40	15	--	40	100	0.6
PSD New or Modification?	No	No	No	No	No		No

District Rule 20.2 contains requirements for Best Available Control Technology (BACT), Air Quality Impact Assessment (AQIA), Prevention of Significant Deterioration (PSD) and public notification. No requirements of this rule apply as shown in the table on the following page.

Table4: New Source Review Discussion				
Rule/Requirement	Requirement	Applicability	Discussion	Condition
Applicability	Rule 20.2 applies to non-major sources	Yes	This is not a major source, so Rule 20.2 applies.	NA
Type of application	New	NA	NA	NA
Exemptions	No exemptions apply to this equipment	NA	NA	NA
20.2(d)(1) – BACT				
BACT - NOx	Installation of BACT is required if emissions of NOx exceed 10 lbs/day	Triggered, see discussion below	A BACT review is triggered for NOx. A Tier 2 engine is accepted as BACT as described below.	NA
BACT - VOC	Installation of BACT is required if emissions of VOC exceed 10 lbs/day	Triggered, see discussion below	A BACT review is triggered for VOC. A Tier 2 engine is accepted as BACT as described below.	NA
BACT - PM-10	Installation of BACT is required if emissions of PM-10 exceed 10 lbs/day	Not Triggered, no permit limit	The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
BACT - SOx	Installation of BACT is required if emissions of SOx exceed 10 lbs/day	Not Triggered, no permit limit	The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
20.2(d)(2) – AQIA				
AQIA - NOx	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr of NOx calculated as NO2	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed the daily, so AQIA is not required.	NA
AQIA - PM-10	Required for project emission increases in excess of 100 lbs/day or 15 ton/yr of PM-10	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
AQIA - SOx	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed any of these	NA

	of SOx calculated as SO2		levels, so no AQIA is required.	
AQIA - CO	Required for project emission increases in excess of 100 lbs/hr, 550 lbs/day or 1000 ton/yr of CO	Not Triggered	The increase in emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
20.2(d)(3) - PSD	Applicable to source that may have a significant impact on a class I area	NA	This is not a PSD source and emissions are not expected to impact a class I area	NA
20.2(d)(4) - Public Notice	Requires 30 day public notice if an AQIA was required or if increase in VOC emissions from the project exceed 250 lbs/day or 40 ton/year	NA	AQIA was not required and VOC emission increase from this project does not exceed these levels.	NA

20.2(d)(1) – BACT

The post-project NOx PTE is 249.51 lbs/day and VOC PTE 13.13 lbs/day based on 19.5 hours of non-emergency operation, which is greater than the 10 lbs/day threshold for BACT. Alternatives that were considered include natural gas and propane engines, Tier 4F engines including SCR and DPF. Gas-fueled engines are not feasible as backup power for operations that must occur if natural gas lines are damaged in the event of an emergency like an earthquake. An engine of this size would also likely require SCR for NOx emissions control, methods which are not cost effective as described below. The cost-effectiveness evaluation did not take into account the likely short periods of operation of this engine for maintenance. In many maintenance situations, the engine is operated at low loads and for approximately 30 minutes, some of which the SCR catalyst has not reached appropriate temperature for effectively controlling emissions.

NOx Analysis:

A tier 4 engine is the lowest emitting BACT option. Cost-effectiveness has previously been evaluated under applications APCD2021-APP-006831, and APCD2021-APP-006981, comparing incremental costs of a tier 2 vs. 4 engine, the results of which are summarized below. Note that this analysis is conservative and does not take into account the likely short periods of operation of this engine for maintenance as noted above which would lower the level of emission reductions achieved.

Project	Engine Size (bhp)	Capital Cost Tier 2	Capital Cost Tier 4	Annual Cost Tier 2	Annual Cost Tier 4	Annual Incremental Cost	Annual Emission Reduction (lb/yr)	Cost Effectiveness
6831	2346	\$329,050	\$603,826	\$127,026	\$200,228	\$73,202	1,112	\$65.82
6981	2937	\$810,000	\$1,200,000	\$131,824	\$195,294	\$63,471	1,322	\$48.03

This analysis shows that a Tier 4F engine, the lowest-emitting category of diesel engines, is not cost-effective. The analysis is based on the assumption that the engine allowed to run up to 50 hours per year for maintenance and testing, the maximum NOx emissions were calculated using the emission standards for a tier 2 and tier 4 engine. Capital costs were provided by the permit applicants which were annualized and added to expected maintenance and operating costs to determine an overall annual cost. While the previous analysis was conducted for larger engines, it is still representative for this application too because the equipment is very similar aside from engine size, and NOx emissions and costs are expected to scale roughly linearly with engine size. Additionally, the cost for an add-on SCR to a tier 2 engine is expected to have a similar cost to the incremental cost of a tier 4 engine, so this analysis also demonstrates that use of an SCR would not be cost effective, in addition to being technologically infeasible because it would not function during most periods of testing and maintenance.

A tier 2 certified engine is the next lowest emitting option and therefore satisfies BACT requirements for NOx.

VOC Analysis:

The installation of an add-on DOC to control the VOC emissions is also not expected to be cost-effective. The installation of an add-on DOC is only a fraction of the cost of a tier 4 final engine, conservatively estimated to only cost 10% of the difference in total annual cost described in the NOx BACT analysis. The average annual incremental cost, also accounting for the 50% reduction in engine size compared to the example is \$3174 (This is the assumed total annual cost to install an add-on DOC). The installation of an add-on DOC is assumed to reduce VOC emissions by 50%. Current post-project VOC PTE is 21.35 lbs/year for this engine under APCD2023-APP-007783, and the overall VOC emission reduction would be 10.68 lb/year. The cost effectiveness is \$297.15 per pound of VOC reduced, exceeding the \$6.60/lb threshold.

The next lowest emitting option is a Tier 2 certified engine which is therefore considered BACT as there is no cost-effective, feasible alternative.

20.2(d)(2) – AQIA

No AQIA limits were triggered by this engine, therefore no AQIA is required for this project.

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4.3 Toxic New Source Review – Rule 1200

District Rule 1200 applies to any application that is part of a project which results in an emission increase of toxic air contaminants. The rule limits the increase in acute and chronic health hazard index (HHI) to no more than one from the project and limits the increase in cancer risk from the project to no more than one in one million if the engine is not equipped with Toxics BACT (T-BACT) or no more than ten in one million if the project meets T-BACT requirements. The following table contains an in-depth review of Rule 1200 requirements. If a refined HRA was required, the HRA report is attached.

Table 5a: Rule 1200 Applicable Requirements and Discussion

Question	Answer	Discussion
Does the application result in an increase in toxic emissions?	Yes	The application does result in an increase in toxic emissions of specific trace heavy metals and organics (as shown in emission calculations section). See HRA for detail.
Do any special exemptions apply to this equipment?	No	No exemptions apply to this equipment
Are there any other applications that are part of the project?	No	NA
What type of HRA was used?	Refined	HRA performed by the District’s Toxics Group
Is the Project Equipped with T-BACT?	No	The engine is not equipped with a DPF which is typically considered T-BACT for the equipment type
Cancer Risk increase (per one million)	<1	Meets standard of one when limited to 10 hrs. /yr.
Chronic HHI	<1	Meets standard of one.
Acute HHI	<1	Meets standard of one.
Passes Rule 1200?	Yes	Maintenance and testing (non-emergency operation) must be limited by permit conditions to 32 hours per calendar year.

A refined health risk assessment was performed for the proposed engine which evaluated the estimated risk level at the point of maximum impact. The estimated residential risk does not exceed the worker risk. Therefore, only worker risk is evaluated in Table 5a.

Based on this analysis, the proposed engine complies with all applicable requirements of District Rule 1200.

4.4 AB3205

Requirements in the California Health and Safety Code in sections 42301.6 through 42301.9 (a.k.a. "AB3205 requirements") specify that prior to issuing an authority to construct for sources located within 1000 feet of a K-12 school, a 30-day public notification process must be conducted.

This project is located within 1000 feet of three schools (King-Chavez Community High School, City Tree Christian School and Washington Elementary School), so public notice is required for this section. A copy of the public notice is attached to the file and when the notice is issued, this evaluation and relevant attachments will be made available on the District's website for review. If any comments are received, they will be reviewed, considered and responded to prior to taking action on the permit including revising any requirements as necessary in response to comments received.

4.5 State and Federal Regulations.

This engine is subject to both the State Air Toxic Control Measure for Stationary Engines (Stationary ATCM) and federal EPA issued National Emission Standards for Hazardous Air Pollutants (NESHAPs) and New Source Performance Standards (NSPS).

Applicable requirements of the Stationary ATCM include purchasing an engine certified to EPA standards and meeting specified emission standards of the rule, installing an hour meter, conducting maintenance according to a written plan, restrictions on operating the engine for purposes other than emergency use and limited (50 hours/year) use for maintenance and testing, and maintaining records to substantiate compliance with these requirements. This engine is expected to comply with all these requirements as described in the detailed analysis shown in the table following the discussion of NESHAP/NSPS requirements.

The NESHAP (subpart ZZZZ) requires that all new emergency engines comply with the rule by complying with the NSPS (subpart IIII). Applicable requirements of the NSPS include purchasing a certified engine, operating it as directed by the manufacturer, and maintaining records to substantiate compliance. These requirements closely mirror the ATCM requirements, except that the NSPS is somewhat less stringent in regards to allowable PM emission rate and contains some allowance for other types of operation not allowed by the ATCM. This means the more stringent ATCM requirements apply. A detailed analysis of NESHAP and NSPS requirements is shown in the following table.

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Table 6a: State and Federal Requirement Discussion – Stationary ATCM				
Applicable Section	Requirement	Engine Complies/Expected to Comply?	Explanation	Condition
Stationary ATCM				
93115.3	There are no exemptions that apply to this engine	NA	This engine is not one of the engines exempted from any applicable requirements	NA
93115.4	Definitions. Permit conditions ensure that the engine only operates in a manner allowed for engines designated as "Emergency Standby"	Yes	Permit conditions require that the engine operate only as an emergency engine	C40239
93115.5	Requires the use of CARB diesel as fuel.	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412
93115.6(a)(1)	Prohibits non-emergency operation of an emergency engine between 7:30 AM and 3:30 PM during school days if within 500 feet of school and during all school sponsored activities if located on school grounds	Yes	Permit conditions specify this requirement.	C28415
93115.6(a)(2)	Allows for engine to be started 30 minutes prior to rotating outage	Yes	Permit conditions specify this requirement.	C28560
93115.6(a)(3)(A)(1)(b)	Requires that all engines used for emergency purposes be certified to at least tier 3 standards (tier 2 for engines with a rated power in excess of 750 bhp) and have	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) with PM emission below this level satisfies this requirement	NA

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	Diesel PM emissions less than 0.15 g/bhp-hr			
93115.6(a)(3)(A)(1)(c)	Restricts maintenance and testing operation to no more than 50 hours per calendar year	NA	Permit conditions specify this requirement.	C28643
93115.6(c)	Does not allow emergency standby engines to operate as part of "demand response programs" unless additional requirements are met	Yes	Permit conditions specify this requirement.	C40907
93115.10(a)-(b)	Requires that specified information is submitted to the District as part of application package	Yes	The submitted application contained all of the required contact/location information, engine data, and emission information	NA
93115.10(d)	Requires installation of a non-resettable hour meter and for engines with DPFs, a backpressure monitor that alerts the operator when the backpressure limit of the engine is approached	Yes	Permit conditions require the installation and use of a non-resettable hour meter.	C28419
93115.10(f)	Specifies that the owner or operator must keep records and prepare a monthly summary of hours of operation and purpose (emergency, maintenance and testing, emission testing, start-up testing, other, demand response) of each period of operation	Yes	Permit conditions require that these records be kept and the summary updated monthly	C45252
93115.10(f)	Requires records of CARB diesel fuel certification	Yes	Permit conditions require that documentation of the CARB diesel certification for all fuel used be maintained	C43434

93115.10(f)	States that records must be kept on-site for at least 24 months and off-site for an additional 12 months (total 36 months)	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432
93115.13(a)	Allows the use of certification data or other emission test data to demonstrate compliance with emission limits	Yes	The manufacturer's engine rating specific emission data was used to determine compliance and for emission calculations	NA
93115.13(f)	For engines equipped with DPFs, allows the use of an engine certified to a PM-10 emission level of no more than 0.15 g/bhp-hr and a verified DPF in lieu of source testing (or other alternative means as listed)	NA	Engine is not equipped with a DPF.	NA

Table 6a: State and Federal Requirement Discussion

Applicable Section	Requirement	Engine Complies/Expected to Comply?	Explanation	Condition
NESHAP ZZZZ				
40 CFR 63.6590(b)-(c)	Requires that new emergency engines comply with the NESHAP by complying with the applicable NSPS	Yes	See NSPS section below.	NA
NSPS IIII				
40 CFR 60.4205	Requires that engines meet emission limits equivalent to tier 3 levels (tier 2 for engines 750 bhp or higher)	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp) satisfies this requirement	NA
40 CFR 60.4207	Sets maximum fuel sulfur limits for fuel equivalent to CARB diesel requirements	Yes	Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.	C28412

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40 CFR 60.4209	Requires installation of a non-resettable hour meter	Yes	Permit conditions require the installation and use of a non-resettable hour meter.	C28419
40 CFR 60.4211(a)	Requires that the engine be operated according to manufacturer's emission related instructions and that no changes are made to emission related settings unless allowed by manufacturer	Yes	Permit conditions specify this requirement.	C43433
40 CFR 60.4211(c)	Requires that the engine be certified under EPA regulations	Yes	Use of an EPA certified tier 3 engine (tier 2 for engines with a rated power in excess of 750 bhp)	NA
40 CFR 60.4211(e)	Restricts operation of emergency engines for non-emergency purposes	Yes	Compliance ensured by permit conditions for ATCM limiting operation for maintenance and testing to no more than 50 hours per calendar year and restricting non-emergency operation for only those uses allowed by the permit (maintenance and testing). ATCM requirements more stringent than NSPS.	C40239, C40907, C28643
40 CFR 60.4214(b)	Requires records of operation to show that engine is operated as an emergency engine	Yes	Compliance is expected and specified in permit conditions.	C45252
40 CFR 60.4214(c)	For engines with DPFs, requires records of corrective actions taken when the high backpressure limit is approached	NA	Engine is not equipped with a DPF.	NA
40 CFR 60.7(f)	Requires that all records be maintained for at least 2 years	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C43432

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4.6 Title V.

This is not a Title V facility therefore this requirement does not apply.

5.0 Recommendations

This equipment is expected to comply with all rules and regulations, and therefore it is recommended, this equipment is expected to comply with all rules and regulations, and therefore it is recommended, pending completion of the AB3205 noticing and comment process, that an authority to construct be issued with the following conditions.

6.0 Recommended Conditions

Standard BEC APCD2022-CON-001943 with a 19.5 hour/day and a 32 hour/year for non-emergency/maintenance and testing use.

Rule 1200 Health Risk Assessment

Facility Name: Greystar
Facility ID: APCD2023-SITE-04310
Application: APCD2024-APP-008141
Project Engineer: Hawzhin Muhamed
Modeler: Bill Reeve
Toxics Risk Analyst: Maria Galvez
Date Submitted to Toxics: 03/13/2024
Date Completed by Toxics: 04/04/2024
HRA Tools Used: Lakes-AERMOD (Version 23132)/HARP (v22118)

The following estimated risks are valid only for the input data provided by the Project Engineer.

Estimated residential risk does not exceed the worker risk. Therefore, only worker risk is presented in the following results.

Estimated Risk Levels:

Maximum Individual Cancer Risk (Worker)	= 1.55 in one million
Chronic Noncancer Health Hazard Index (Worker)	= 1.19E-03
8-Hour Noncancer Health Hazard Index (Worker)	= No Health Data
Acute Health Hazard Index (*PMI)	= 0.124

*Point of Maximum Impact

The proposed application is for a stationary diesel emergency engine. The ARB Air Toxics Control Measure (ATCM) limits non-emergency operations to 50 hours per year.

The estimated cancer risk for the application exceeds Rule 1200 limits of 1 in one million (not equipped with T-BACT) at 50 hours, therefore the project is within Rule 1200 thresholds contingent on Routine Maintenance and Testing limited to 32 hours per year.

Input Data Provided by Project Engineer:

Type of Source: Emergency Diesel IC Engine

Controls Description: None.

Worst-Case TAC Emissions Increase:

Toxic Air Contaminant	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
DIESEL PARTICULATE		9.28E+00
ACETALDEHYDE	5.55E-02	2.78E+00
ACROLEIN	2.40E-03	1.20E-01
ARSENIC COMPOUNDS	1.13E-04	5.67E-03
BENZENE	1.32E-02	6.60E-01
BUTADIENE, 1,3-	1.54E-02	7.69E-01
CADMIUM AND COMPOUNDS	1.06E-04	5.32E-03
CHLOROBENZENE	1.42E-05	7.09E-04
CHROMIUM (HEXAVALENT)	7.09E-06	3.55E-04
COPPER AND COMPOUNDS	2.91E-04	1.45E-02
ETHYL BENZENE	7.73E-04	3.86E-02
FORMALDEHYDE	1.22E-01	6.12E+00
HEXANE-N	1.91E-03	9.54E-02
HYDROCHLORIC ACID	1.32E-02	6.60E-01
LEAD & COMPOUNDS	5.88E-04	2.94E-02
MANGANESE AND COMPOUNDS	2.20E-04	1.10E-02
MERCURY AND COMPOUNDS	1.42E-04	7.09E-03
NAPHTHALENE	1.40E-03	6.98E-02
NICKEL AND NICKEL COMPOUNDS	2.77E-04	1.38E-02
POLYCYCLIC AROM. HC (PAH) [Treat as B(a)P for HRA]	2.57E-03	1.28E-01
PROPYLENE	3.31E-02	1.66E+00
SELENIUM AND COMPOUNDS	1.56E-04	7.80E-03
TOLUENE	7.47E-03	3.74E-01
XYLENES	3.01E-03	1.50E-01

Source: Acute TACs – Ventura County, 5/17/01.

Diesel particulate exhaust is a surrogate for all toxic air contaminant annual emissions from diesel-fueled engines when determining the potential cancer risk and noncancer chronic hazard index. Speciated toxic air contaminant hourly emissions are used when determining the potential noncancer acute hazard index.

Process Data:

Operation Parameter	Value
Diesel particulate emission factor (g/hp-hr)	0.06
Engine horsepower (bhp)	1412
Fuel Consumption (gal/hr)	70.9
Annual hours of operation	50

Release Parameters:

Exhaust Flow Rate, cfm:	7,097
Exhaust Temperature, °F:	937
Stack Height above ground, ft:	10.0
Stack Diameter, ft:	1.0

Discussion

The HRA was conducted in accordance with EPA and OEHHA guidance and District standard procedures. A point source was modeled with refined air dispersion modeling using EPA's AERMOD model, AERMET (Version 22112) processed Lindbergh 2019/2021 ustar adjusted updated meteorology data, AERMAP terrain processing, and rural dispersion coefficients. Building downwash effects were calculated using the EPA BPIP-Prime model. The receptor grid was sufficiently dense to identify maximum impacts.

An occupational Ground Level Concentration (GLC) adjustment factor was applied to calculate worker cancer risk assuming source emissions are released 8 hours per day and 5 days per week.

These risk results are based on the risk scenario calculations and health data at the time of the review and should not be scaled with revised emissions rates without consulting with the Toxics Section.

*HARP - HRACalc v22118 4/3/2024 5:38:59 PM - Cancer Risk - Input File: D:\8141_Greystar\8141_HARP\worker_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBRE\	CONC	RISK_SUM	INH_RISK	SCENARIO
1	Engine		9901	DieselExhP	0.00595	1.55E-06	1.55E-06	25YrCancerDerived_InhSoilDerm

*HARP - HRACalc v22118 4/3/2024 5:38:59 PM - Chronic Risk - Input File: D:\8141_Greystar\8141_HARP\worker_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBRE\	CONC	RESP	SCENARIO
1	Engine		9901	DieselExhP	0.00595	1.19E-03	NonCancerChronicDerived_InhSoilDerm

*HARP - HRACalc v22118 4/3/2024 5:38:59 PM - Acute Risk - Input File: D:\8141_Greystar\8141_HARP\worker_HRAInput.hra

INDEX	GRP1	GRP2	POLID	POLABBRE\	CONC	EYE	SCENARIO
1	Engine		9901	DieselExhP	0	0.00E+00	NonCancerAcute
2	Engine		75070	Acetaldehy	2.08	4.43E-03	NonCancerAcute
3	Engine		107028	Acrolein	0.0899	3.60E-02	NonCancerAcute
4	Engine		7440382	Arsenic	0.00424	0.00E+00	NonCancerAcute
5	Engine		71432	Benzene	0.494	0.00E+00	NonCancerAcute
6	Engine		106990	1,3-Butadie	0.576	0.00E+00	NonCancerAcute
7	Engine		7440439	Cadmium	0.00398	0.00E+00	NonCancerAcute
8	Engine		108907	Chlorobenz	0.000531	0.00E+00	NonCancerAcute
9	Engine		18540299	Cr(VI)	0.000265	0.00E+00	NonCancerAcute
10	Engine		7440508	Copper	0.0109	0.00E+00	NonCancerAcute
11	Engine		100414	Ethyl Benz	0.0289	0.00E+00	NonCancerAcute
12	Engine		50000	Formaldehy	4.58	8.33E-02	NonCancerAcute
13	Engine		110543	Hexane	0.0714	0.00E+00	NonCancerAcute
14	Engine		7647010	HCl	0.494	2.35E-04	NonCancerAcute
15	Engine		7439921	Lead	0.022	0.00E+00	NonCancerAcute
16	Engine		7439965	Manganese	0.00822	0.00E+00	NonCancerAcute
17	Engine		7439976	Mercury	0.00531	0.00E+00	NonCancerAcute
18	Engine		91203	Naphthaler	0.0523	0.00E+00	NonCancerAcute
19	Engine		7440020	Nickel	0.0103	0.00E+00	NonCancerAcute
20	Engine		1151	PAHs-w/o	0.096	0.00E+00	NonCancerAcute
21	Engine		115071	Propylene	1.24	0.00E+00	NonCancerAcute
22	Engine		7782492	Selenium	0.00584	0.00E+00	NonCancerAcute
23	Engine		108883	Toluene	0.28	5.60E-05	NonCancerAcute
24	Engine		7664417	NH3	0	0.00E+00	NonCancerAcute
25	Engine		1330207	Xylenes	0.112	5.09E-06	NonCancerAcute
						1.24E-01	

PROJECT TITLE:
APP008141
annual x/q

COMMENTS:



SOURCES:
1

RECEPTORS:
40433

OUTPUT TYPE:
Concentration

MAX:
63.3 ug/m³

COMPANY NAME:

MODELER:

DATE:
4/3/2024

SCALE: 1:777
 0 0.02 km

PROJECT NO.:

PROJECT TITLE:
APP008141
 hourly x/q

COMMENTS:



SOURCES:

1

RECEPTORS:

40433

OUTPUT TYPE:

Concentration

MAX:

297 ug/m³

COMPANY NAME:


MODELER:

DATE:

4/3/2024

SCALE:

1:777

0  0.02 km

PROJECT NO.:

FACILITY NAME: Greystar		RISK ANALYST ONLY	
Fuel Consumption (gal/hr):	70.90	DISPERSION MODELING DATA	
Diesel Particulate Emission Factor (g/hp-hr):	0.05968	Annual Receptor Type:	Worker
Brake Horsepower (hp):	1412	ANNUAL DISPERSION FACTOR (µg/m3)/(g/s):	44.6
Annual Hours of Operation (hrs):	50	Distance (m):	
FACILITY ID:	APCD2023-SITE-04310	Hourly Receptor Type:	PMI
APPLICATION NO.:	APCD2023-APP-008141	HOURLY DISPERSION FACTOR (µg/m3)/(g/s):	297.0
ENGINEER:	Hawzhin Muhamed	Distance (m):	

CHEMICAL NAME	Emission Factor lb/1000 gal	Acute Emission Rate lb/hr	Annual Emission Rate lb/yr	Acute Emissions Rate g/s	Annual Emission Rate g/s	Hourly GLC µg/m ³	Annual GLC µg/m ³
DIESEL PARTICULATE			9.28E+00		1.33E-04		5.95E-03
ACETALDEHYDE	7.83E-01	5.55E-02	2.78E+00	6.99E-03		2.08E+00	
ACROLEIN*	3.39E-02	2.40E-03	1.20E-01	3.03E-04		8.99E-02	
ARSENIC COMPOUNDS	1.60E-03	1.13E-04	5.67E-03	1.43E-05		4.24E-03	
BENZENE	1.86E-01	1.32E-02	6.60E-01	1.66E-03		4.94E-01	
BUTADIENE, 1,3-	2.17E-01	1.54E-02	7.69E-01	1.94E-03		0.575691	
CADMIUM AND COMPOUNDS	1.50E-03	1.06E-04	5.32E-03	1.34E-05		3.98E-03	
CHLOROBENZENE	2.00E-04	1.42E-05	7.09E-04	1.79E-06		5.31E-04	
CHROMIUM (HEXAVALENT)	1.00E-04	7.09E-06	3.55E-04	8.93E-07		2.65E-04	
COPPER AND COMPOUNDS	4.10E-03	2.91E-04	1.45E-02	3.66E-05		1.09E-02	
ETHYL BENZENE	1.09E-02	7.73E-04	3.86E-02	9.74E-05		2.89E-02	
FORMALDEHYDE	1.73E+00	1.22E-01	6.12E+00	1.54E-02		4.58E+00	
HEXANE-N	2.69E-02	1.91E-03	9.54E-02	2.40E-04		7.14E-02	
HYDROCHLORIC ACID	1.86E-01	1.32E-02	6.60E-01	1.66E-03		4.94E-01	
LEAD & COMPOUNDS	8.30E-03	5.88E-04	2.94E-02	7.41E-05		2.20E-02	
MANGANESE AND COMPOUNDS	3.10E-03	2.20E-04	1.10E-02	2.77E-05		8.22E-03	
MERCURY AND COMPOUNDS (INORGANIC)	2.00E-03	1.42E-04	7.09E-03	1.79E-05		5.31E-03	
NAPHTHALENE	1.97E-02	1.40E-03	6.98E-02	1.76E-04		5.23E-02	
NICKEL AND NICKEL COMPOUNDS	3.90E-03	2.77E-04	1.38E-02	3.48E-05		1.03E-02	
POLYCYCLIC AROM. HC (PAH) [Treat as B(a)P for	3.62E-02	2.57E-03	1.28E-01	3.23E-04		9.60E-02	
PROPYLENE	4.67E-01	3.31E-02	1.66E+00	4.17E-03		1.24E+00	
SELENIUM AND COMPOUNDS	2.20E-03	1.56E-04	7.80E-03	1.97E-05		5.84E-03	
TOLUENE	1.05E-01	7.47E-03	3.74E-01	9.42E-04		2.80E-01	
AMMONIA (only if SCR)	N/A						
XYLENES	4.24E-02	3.01E-03	1.50E-01	3.79E-04		1.12E-01	

**San Diego Air Pollution Control District
Supplemental Application Information
Rule 1200 Toxics Evaluation**

(ALL REQUESTED INFORMATION IS IMPORTANT - PLEASE FILL BLUE CELLS)

Facility Name:	Greystar			
Equipment Location:	110 Beech Street, San Diego, CA 92101			
Project Description:	Emergency Diesel Engine			
Control Equipment:	None			
Operating Schedule:	Hours per Day:	1	Weeks per Year:	50
	Days per Week:	1	Days per Year:	50

RELEASE POINT DATA

How are the emissions from this project released into the outdoor air? (Check all that apply)

Point Source	Non-Point Source		
<input checked="" type="checkbox"/> Exhaust Stack or Duct	<input type="checkbox"/> Passive Ventilation	<input type="checkbox"/> Released through windows and/or roll-up doors	<input type="checkbox"/> Fugitive Emissions

Point Source

Parameter	Point Source #1	Point Source #2	Point Source #3
Height of release above ground (ft)	10.0		
Stack Diameter (or length x width) (ft)	1.00		
Exhaust Gas Temperature (°F) ¹	937		
Exhaust Gas Flow (ACFM)	7097		
Direction of Flow ²	vertical		
Flow Obstruction ³	no		
Distance to Nearest Property Line (+/- 10ft)	90.00		

¹ Use "70 °F" or "Ambient" if unknown

² if "other" describe: _____

³ if "other" describe: _____

AERIAL MAP AND FACILITY PLOT PLAN must be attached and labeled with **Release Point(s) and Building(s)**
(includes facility and neighboring buildings within 5x the release height of a point source(s)).

Parameter	Building A	Building B	Building C
Point Source(s)			
Point Source Location			
Building Length (ft) (optional)			
Building Width (ft) (optional)			
Building Height above ground (ft)			

San Diego APCD Use Only

Additional Rule 1200 Submittal Information

Submittal Date:		Site ID:	APCD2023-SITE-04310
Project Engineer:	Hawzhin Muhamed	Appl. Number(s):	APCD2023-APP-008141
Fees Collected:		PTO No. (if existing):	

Facility Name: Greystar
 Application Number: APCD2023-APP-008141
 Site ID Number: APCD2023-SITE-04310
 Equipment Address: 110 Beech Street,
 San Diego, CA 92101
 Contact Name: Jeremy Roos
 Contact Title: Project Executive
 Contact Affiliation: Greystar
 Contact Number: (619) 791-5500
 Contact E-Mail: jroos@helixelectric.com
 Project Engineer: Hawzhin Muhamed

Make: Perkins
 Model: 5008C-E30TAG5
 S/N:
 Fuel Type: diesel
 BHP Rating: 1412
 Model Year: 2023
 Tier Level: 2
 Engine Family Number: PCPXL45.8NZS
 Device Driven: 1000 kW

NOx, g/BHP-hr:	4.11	5.51	g/kW-hr	NOx, g/BHP-hr: + NMHC, g/BHP-hr:	5.8
CO, g/BHP-hr:	0.97	1.30	g/kW-hr		
NMHC, g/BHP-hr:	0.22	0.29	g/kW-hr		
PM10, g/BHP-hr:	0.06	0.08	g/kW-hr		
NH3 Slip from SCR (yes/no)	no	0	ppm (default 10 ppm if applicable)		

Fuel Usage, gal/hr: 70.9
 Operating Schedule, hrs/day: 19.5
 Operating Schedule, hrs/yr: 50

Exhaust Flow Rate, cfm: 7097
 Exhaust Temperature, °F: 937
 Stack Height above ground, ft: 10
 Stack Diameter, ft: 1

Nearest School, ft: 880
 Residential Receptor, m: 50.29 165 ft
 Occupational Receptor, m: 27.43 90 ft
 Acute Receptor, m: 27.43 90 ft

AB3205? AB3205 is Required

Consult Toxics? Receptor Distances are more than 25 meters.

Vertical Exhaust? (yes/no): Yes
 Flapper Valve? (flapper/raincap): Flapper
 Plot Plan? (yes/no): yes
 Flow Obstructions: no

HARP2 - HRACalc (dated 22118) 4/3/2024 5:38:59 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully

RISK SCENARIO SETTINGS

Receptor Type: Worker
Scenario: All
Calculation Method: Derived

EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: 16
Total Exposure Duration: 25

Exposure Duration Bin Distribution
3rd Trimester Bin: 0
0<2 Years Bin: 0
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 25

PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: True
Dermal: True
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

INHALATION

Daily breathing rate: Moderate8HR

Worker Adjustment Factors

NOTE: The worker adjustment factors below are only used for cancer assessments. However, the GLC adjustment factor is also applied to 8-hr noncancer chronic assessments.

Worker adjustments factors enabled: YES

GLC adjustment factor: 4.2

Exposure frequency: 250

Fraction at time at home

3rd Trimester to 16 years: OFF

16 years to 70 years: OFF

SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02

Soil mixing depth (m): 0.01

Dermal climate: Warm

TIER 2 SETTINGS

Tier2 not used.

Calculating cancer risk

Cancer risk saved to: D:\8141_Greystar\8141_HARP\worker_CancerRisk.csv

Calculating chronic risk

Chronic risk saved to: D:\8141_Greystar\8141_HARP\worker_NCChronicRisk.csv

Calculating acute risk

Acute risk saved to: D:\8141_Greystar\8141_HARP\worker_NCAcuteRisk.csv

HRA ran successfully

*** AERMOD - VERSION 23132 *** C:\Modeling Projects\8141_Greystar\8141_Greystar.isc *** 04/02/24
 *** AERMET - VERSION 22112 *** *** 14:15:33
 PAGE 2

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BLDG EXISTS	URBAN SOURCE	CAP/ HOR	EMIS RATE SCALAR VARY BY
STCK1	0	0.10000E+01	484684.7	3620376.6	23.6	3.05	775.93	45.90	0.30	YES	YES	NO	

*** AERMOD - VERSION 23132 *** C:\Modeling Projects\8141_Greystar\8141_Greystar.isc *** 04/02/24
 *** AERMET - VERSION 22112 *** *** 14:15:33
 PAGE 1

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** MODEL SETUP OPTIONS SUMMARY ***

- ** Model Options Selected:
- * Model Uses Regulatory DEFAULT Options
 - * Model Is Setup For Calculation of Average CONCentration Values.
 - * NO GAS DEPOSITION Data Provided.
 - * NO PARTICLE DEPOSITION Data Provided.
 - * Model Uses NO DRY DEPLETION. DDPLETE = F
 - * Model Uses NO WET DEPLETION. WETDPLT = F
 - * Stack-tip Downwash.
 - * Model Accounts for ELEVated Terrain Effects.
 - * Use Calms Processing Routine.
 - * Use Missing Data Processing Routine.
 - * No Exponential Decay.
 - * Model Uses URBAN Dispersion Algorithm for the SBL for 1 Source(s),
 for Total of 1 Urban Area(s):
 Urban Population = 1381162.0 ; Urban Roughness Length = 1.000 m
 - * Urban Roughness Length of 1.0 Meter Used.

* ADJ_U* - Use ADJ_U* option for SBL in AERMET
* CCVR_Sub - Meteorological data includes CCVR substitutions
* TEMP_Sub - Meteorological data includes TEMP substitutions
* Model Assumes No FLAGPOLE Receptor Heights.
* The User Specified a Pollutant Type of: OTHER

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 1 Source(s); 1 Source Group(s); and 40433 Receptor(s)

with: 1 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 0 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with a total of 0 line(s)
and: 0 SWPOINT source(s)

**Model Set To Continue RUNNING After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 22112

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 9.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

Surface file: C:\AERMET\AERMET 21112 PROJECTS\AERMET 22112 data\Lindbergh_2019_2021_v22122.SFC Met Version: 22112
 Profile file: C:\AERMET\AERMET 21112 PROJECTS\AERMET 22112 data\Lindbergh_2019_2021_v22122.PFL
 Surface format: FREE
 Profile format: FREE
 Surface station no.: 23188 Upper air station no.: 3190
 Name: SAN_DIEGO/LINDBERGH_FIELD Name: UNKNOWN
 Year: 2019 Year: 2019

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS	WD	HT	REF	TA	HT
19	01	01	1	01	-3.8	0.078	-9.000	-9.000	-999.	53.	11.4	0.02	0.83	1.00	1.40	356.	10.0	282.5	2.0			
19	01	01	1	02	-4.6	0.086	-9.000	-9.000	-999.	61.	12.4	0.02	0.83	1.00	1.55	336.	10.0	281.4	2.0			
19	01	01	1	03	-9.4	0.123	-9.000	-9.000	-999.	104.	18.0	0.02	0.83	1.00	2.18	357.	10.0	281.4	2.0			
19	01	01	1	04	-13.9	0.151	-9.000	-9.000	-999.	141.	25.2	0.02	0.83	1.00	2.64	26.	10.0	281.4	2.0			
19	01	01	1	05	-13.7	0.150	-9.000	-9.000	-999.	139.	24.7	0.01	0.83	1.00	2.64	31.	10.0	280.9	2.0			
19	01	01	1	06	-15.6	0.160	-9.000	-9.000	-999.	154.	28.2	0.01	0.83	1.00	2.81	40.	10.0	282.0	2.0			
19	01	01	1	07	-20.6	0.202	-9.000	-9.000	-999.	219.	45.1	0.02	0.83	1.00	3.47	26.	10.0	280.3	2.0			
19	01	01	1	08	-11.1	0.200	-9.000	-9.000	-999.	215.	65.8	0.02	0.83	0.49	3.39	18.	10.0	281.4	2.0			
19	01	01	1	09	36.3	0.219	0.541	0.005	158.	245.	-26.2	0.02	0.83	0.29	3.15	24.	10.0	284.2	2.0			
19	01	01	1	10	80.5	0.251	0.835	0.005	262.	302.	-17.9	0.02	0.83	0.22	3.52	28.	10.0	285.9	2.0			
19	01	01	1	11	110.8	0.250	1.329	0.005	771.	300.	-12.8	0.02	0.83	0.20	3.41	26.	10.0	287.0	2.0			
19	01	01	1	12	125.5	0.288	1.459	0.005	899.	371.	-17.3	0.01	0.83	0.19	4.07	45.	10.0	288.8	2.0			
19	01	01	1	13	118.6	0.434	1.485	0.005	1004.	687.	-62.6	0.01	0.83	0.19	6.63	39.	10.0	288.8	2.0			
19	01	01	1	14	100.0	0.500	1.440	0.005	1085.	848.	-113.5	0.01	0.83	0.20	7.81	34.	10.0	288.8	2.0			
19	01	01	1	15	65.6	0.423	1.270	0.005	1134.	665.	-104.6	0.02	0.83	0.23	6.52	28.	10.0	288.8	2.0			
19	01	01	1	16	18.3	0.364	0.833	0.005	1147.	529.	-238.7	0.01	0.83	0.32	5.79	41.	10.0	288.1	2.0			
19	01	01	1	17	-24.7	0.277	-9.000	-9.000	-999.	355.	84.7	0.01	0.83	0.59	4.73	30.	10.0	286.4	2.0			
19	01	01	1	18	-12.2	0.141	-9.000	-9.000	-999.	141.	22.0	0.01	0.83	1.00	2.50	57.	10.0	285.9	2.0			
19	01	01	1	19	-18.0	0.179	-9.000	-9.000	-999.	182.	35.3	0.01	0.83	1.00	3.12	58.	10.0	284.8	2.0			
19	01	01	1	20	-24.4	0.243	-9.000	-9.000	-999.	287.	64.8	0.01	0.83	1.00	4.17	48.	10.0	284.2	2.0			
19	01	01	1	21	-19.0	0.188	-9.000	-9.000	-999.	197.	39.0	0.02	0.83	1.00	3.24	61.	10.0	283.8	2.0			
19	01	01	1	22	-27.5	0.272	-9.000	-9.000	-999.	341.	81.5	0.02	0.83	1.00	4.61	61.	10.0	283.1	2.0			
19	01	01	1	23	-27.4	0.272	-9.000	-9.000	-999.	341.	81.6	0.02	0.83	1.00	4.61	68.	10.0	283.8	2.0			
19	01	01	1	24	-23.9	0.237	-9.000	-9.000	-999.	277.	61.6	0.02	0.83	1.00	4.03	71.	10.0	283.1	2.0			

First hour of profile data

YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV
19 01 01 01 10.0 1 356. 1.40 282.6 99.0 -99.00 -99.00

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 23132 *** C:\Modeling Projects\8141_Greystar\8141_Greystar.isc
*** AERMET - VERSION 22112 ***

*** 04/02/24
*** 14:15:33
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*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (26304 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	63.25629 AT (484687.01, 3620386.88,	23.98, 23.98, 0.00)	DC
	2ND HIGHEST VALUE IS	61.96373 AT (484687.05, 3620382.15,	23.90, 23.90, 0.00)	DC
	3RD HIGHEST VALUE IS	60.71945 AT (484686.96, 3620391.61,	24.02, 24.02, 0.00)	DC
	4TH HIGHEST VALUE IS	57.92385 AT (484687.09, 3620377.41,	23.82, 23.82, 0.00)	DC
	5TH HIGHEST VALUE IS	55.93399 AT (484686.92, 3620396.35,	24.05, 24.43, 0.00)	DC
	6TH HIGHEST VALUE IS	52.56392 AT (484682.57, 3620372.62,	23.37, 23.37, 0.00)	DC
	7TH HIGHEST VALUE IS	52.16559 AT (484687.13, 3620372.68,	23.70, 23.70, 0.00)	DC
	8TH HIGHEST VALUE IS	51.01027 AT (484678.01, 3620372.57,	23.12, 23.12, 0.00)	DC
	9TH HIGHEST VALUE IS	50.59677 AT (484686.88, 3620401.08,	24.10, 24.10, 0.00)	DC
	10TH HIGHEST VALUE IS	48.23372 AT (484699.00, 3620377.00,	24.18, 24.18, 0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

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*** AERMET - VERSION 22112 ***

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*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL HIGH	1ST HIGH VALUE IS 296.96858	ON 19043009	AT (484686.80, 3620410.54, 24.23, 24.23, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

▲ *** AERMOD - VERSION 23132 *** C:\Modeling Projects\8141_Greystar\8141_Greystar.isc
*** AERMET - VERSION 22112 ***

*** 04/02/24
*** 14:15:33
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*** MODELOPTs: RegDEFAULT CONC ELEV URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 682 Informational Message(s)

A Total of 26304 Hours Were Processed

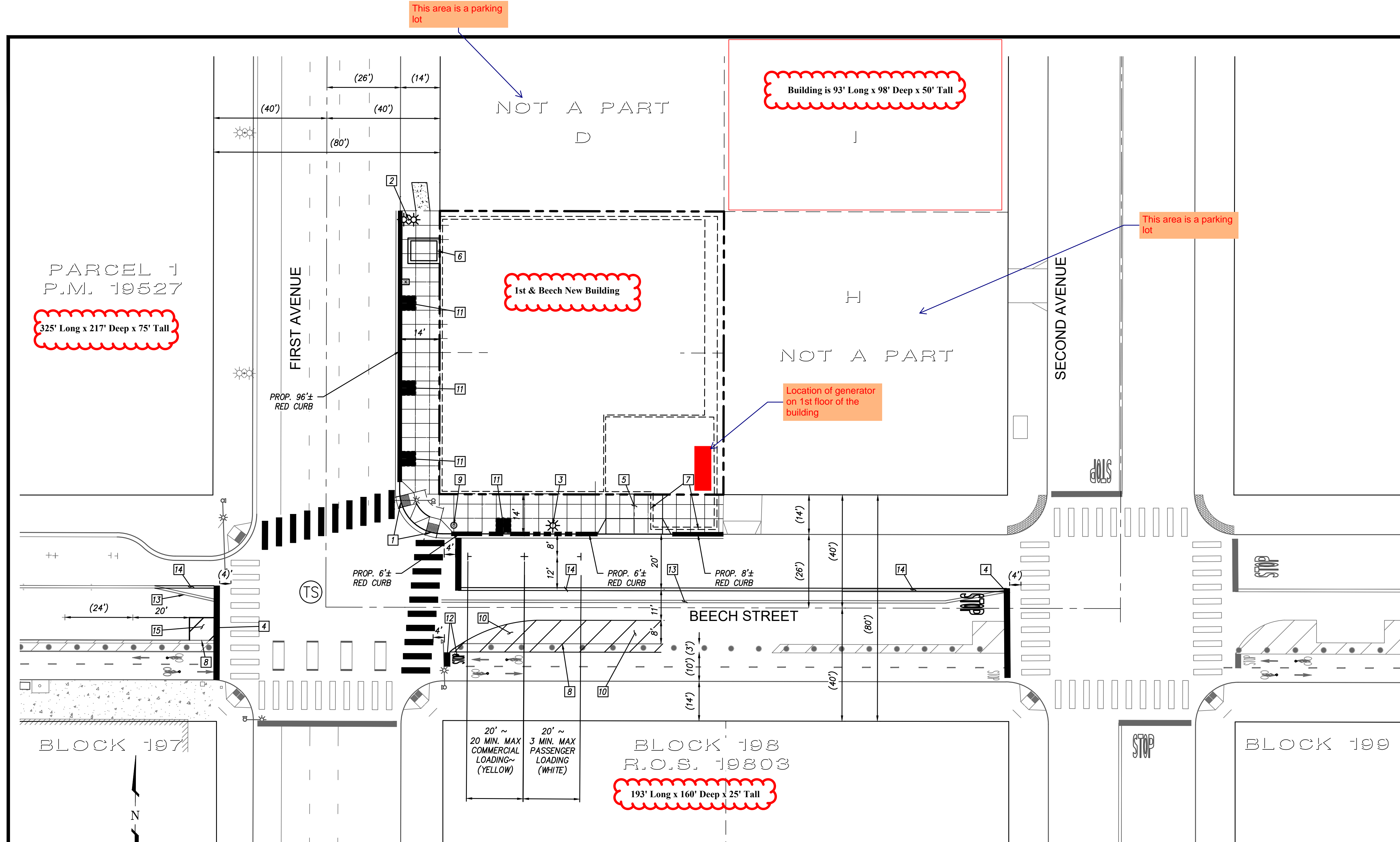
A Total of 249 Calm Hours Identified

A Total of 433 Missing Hours Identified (1.65 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****

ME W186	100	MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used	0.50
ME W187	100	MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET	



This area is a parking lot

Building is 93' Long x 98' Deep x 50' Tall

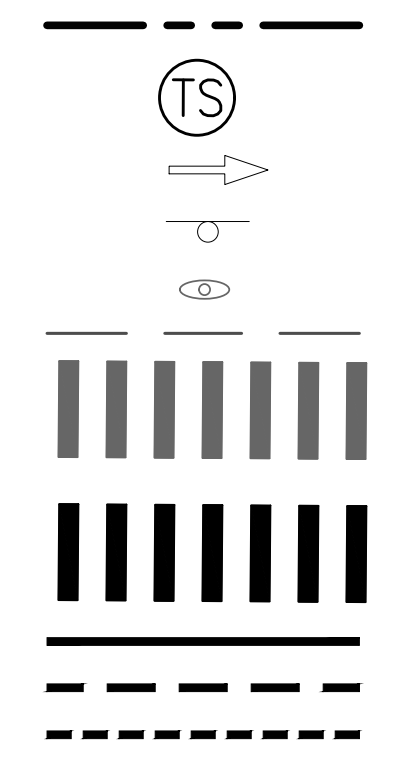
This area is a parking lot

Location of generator on 1st floor of the building

PROPOSED CURB USAGE

LEGEND

- RIGHT OF WAY (R/W) AND OR PROPERTY LINE (PL)
- SIGNAL CONTROLLED INTERSECTION
- TRAFFIC FLOW DIRECTION
- EXISTING STREET SIGN
- EXISTING PARKING METER (PM)
- EXISTING LANE STRIPE
- EXISTING CONTINENTAL CROSSWALK
- PROPOSED CONTINENTAL CROSSWALK PER SDM-116
- PROPOSED RED CURB
- PROPOSED YELLOW CURB
- PROPOSED WHITE CURB



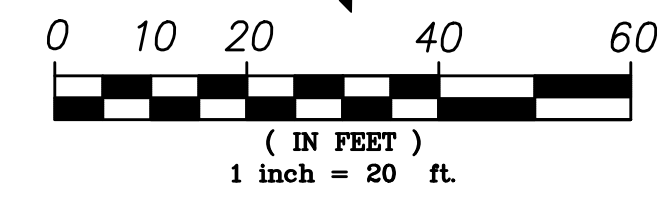
PARKING SUMMARY

	EXISTING	PROPOSED
FIRST AVENUE	0 STANDARD	0 STANDARD
BEECH STREET	4 STANDARD	(1)-COMMERCIAL LOADING/(1)- PASSENGER LOADING
TOTAL	4 STANDARD	0 STANDARD/(2)-SEE ABOVE

STRIPING AND SIGNING GENERAL NOTES

- INSTALLATION OF ALL STRIPING, SIGNS AND PAVEMENT MARKERS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL STRIPING AND SIGNING SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE FOLLOWING MANUALS:

DESCRIPTION	EDITION	DOCUMENT NO.
STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (THE "GREENBOOK")	2021	PWP1010119-01
CITY OF SAN DIEGO STANDARD DRAWINGS	2021	ECPI010122-03
CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD) REVISION 6	2014	PWP1060121-10
- ALL SIGNING AND STRIPING IS SUBJECT TO THE APPROVAL OF THE CITY ENGINEER PRIOR TO INSTALLATION AND/OR REMOVAL.
- THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING, PAVEMENT MARKINGS AND LEGENDS BY SANDBLASTING AND/OR GRINDING WITH THE SEAL. ANY DEBRIS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
- SIGN POSTS SHALL BE INSTALLED WITH SQUARE PERFORATED STEEL TUBING WITH A BREAKAWAY BASE PER CITY OF SAN DIEGO STANDARD DRAWING M-45.
- ALL RAISED MEDIAN NOSES SHALL BE PAINTED YELLOW.
- ALL SIGNS SHOWN ON THE STRIPING AND SIGNING PLANS SHALL BE NEW SIGNS PROVIDED AND INSTALLED BY THE CONTRACTOR, EXCEPT FOR EXISTING SIGNS SPECIFICALLY INDICATED TO BE RELOCATED OR TO REMAIN.
- STRIPED CROSSWALKS SHALL HAVE AN INSIDE DIMENSION OF 10 FEET UNLESS INDICATED OTHERWISE.
- ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS (EXCEPT WITHIN BIKE LANES) SHALL BE THERMOPLASTIC.
- THE CONTRACTOR SHALL NOTIFY THE CITY TRAFFIC ENGINEER AT (858) 495-4741 A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO AND UPON COMPLETION OF STRIPING AND SIGNING.

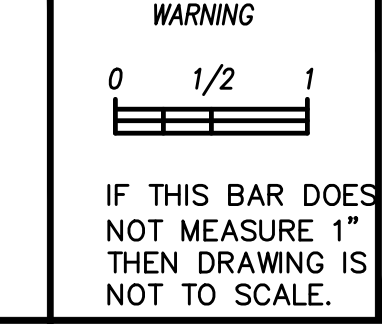


PLAN
SCALE: 1"=20'

CONSTRUCTION NOTES

- PROPOSED CURB RAMP (TYPE A) PER SDG-134.
- PROPOSED STREET LIGHT (GATEWAY).
- PROPOSED STREET LIGHT (TYPE C).
- RESTRIPE EXISTING STOP BAR.
- PROPOSED 20' WIDE DRIVEWAY.
- PROPOSED WATER METER VAULT.
- PROPOSED TRANSFORMER VAULT ROOM PER BUILDING PLANS.
- REMOVED EXISTING STRIPING.
- PROPOSED LITTER RECEPTACLE PER LANDSCAPE PLANS.
- PROPOSED 6" WHITE DIAGONAL CROSS HATCHING STRIPE, ANGLED AT 30 DEGREES AND AT 10' INTERVALS.
- PROPOSED STREET TREE W/GRAPE PER LANDSCAPE PLANS.
- PROPOSED STOP BAR.
- REMOVED EXISTING BOUBLE STRIPE CENTERLINE.
- PROPOSED DOUBLE STRIPE CENTERLINE PER DETAIL 21.
- PROPOSED 6" WHITE DIAGONAL CROSS HATCHING STRIPE, ANGLED AT 30 DEGREES.

PRIVATE CONTRACT



PROPOSED CURB UTILIZATION PLAN FOR:
FIRST AND BEECH
LOTS E AND F IN BLOCK 207 OF HORTON'S ADDITION

KETTLER LEWECK
ENGINEERING
1620 FIFTH AVENUE, SUITE 675
SAN DIEGO, CA 92101
t: 619 269-3444 | f: 619 269-3459
www.kettlerleweck.com



LISA M. LEWECK R.C.E. NO. C54320 EXP. 12-31-23 DATE

The City of **SAN DIEGO**
FOR CITY APPROVAL

DEVELOPMENT SERVICES DEPARTMENT				PMT No. 3166447
SHEET 10 OF 23 SHEETS				PRJ NO 1063684
FOR CITY ENGINEER		DATE		1842-6279 NAD83 COORDINATES
DESCRIPTION	BY	APPROVED	DATE	202-1719 LAMBERT COORDINATES
ORIGINAL	KLE			DRAWING NO. 100455-10-D
AS BUILTS				C08
CONTRACTOR		DATE STARTED		
INSPECTOR		DATE COMPLETED		

Galvez, Maria

From: Swaney, Jim
Sent: Wednesday, April 3, 2024 4:53 PM
To: Galvez, Maria
Cc: Muhamed, Hawzhin S
Subject: FW: HRA Request 8141_Greystar
Attachments: APP-008141_Calculation.xlsm

Maria, this is assigned to you.

From: Reeve, Bill <Bill.Reeve@sdapcd.org>
Sent: Tuesday, April 2, 2024 4:27 PM
To: Amberg, Stephen <Stephen.Amberg@sdapcd.org>; Bernabe, Andrew <Andrew.Bernabe@sdapcd.org>; Canter, Adam <Adam.Canter@sdapcd.org>; DiFulvio, Jaime <Jaime.DiFulvio@sdapcd.org>; Galvez, Maria <Maria.Galvez@sdapcd.org>; Nguyen, Tony <Tony.Nguyen2@sdapcd.org>; Ossowski, Peter <Peter.Ossowski@sdapcd.org>; Swaney, Jim <Jim.Swaney@sdapcd.org>; Wong, Benjamin <Benjamin.Wong@sdapcd.org>
Cc: Muhamed, Hawzhin S <HawzhinS.Muhamed@sdapcd.org>
Subject: FW: HRA Request 8141_Greystar

I have completed the modeling for Greystar. The zipped modeling files are in [☐ 8141 Greystar](#)

Thanks,
Bill

Bill Reeve
Associate Meteorologist
San Diego County Air Pollution Control District
Bill.Reeve@sdapcd.org
O 858-586-2773 M 858-945-3732
<http://www.sdapcd.org>
10124 Old Grove Rd, San Diego CA, 92131

From: Muhamed, Hawzhin S <HawzhinS.Muhamed@sdapcd.org>
Sent: Wednesday, March 13, 2024 11:44 AM
To: Reeve, Bill <Bill.Reeve@sdapcd.org>; Nguyen, Tony <Tony.Nguyen2@sdapcd.org>
Cc: Swaney, Jim <Jim.Swaney@sdapcd.org>; Canter, Adam <Adam.Canter@sdapcd.org>
Subject: HRA Request 8141_Greystar

Hi all,

This is an HRA request for an emergency diesel engine.

An HRA was conducted for this site, but the facility changed the engine to another make /model, a copy of the previous HRA uploaded in the below link.

Please post the modelling results here: [☐ 8141 Greystar](#)

Please let me know if any additional information is required!