

ENGINEERING EVALUATION
AUTHORITY TO CONSTRUCT

Facility Name: City of San Diego
Equipment Type: 34H – Emergency Diesel Engine
Application #: APCD2023-APP-007710
ID#: APCD2023-SITE-04293
Equipment/Facility Address: 6751 La Jolla Scenic Drive, San Diego, CA 92101
Facility Contact: Bernie Labiano
619-668-2796
blabiano@sandiego.gov

 Recoverable Signature

X Fahmy Attar

Air Pollution Control Engineer

Permit Engineer:

Signed by: Fahmy Attar

10/19/2023

X Nicholas Horres

Senior Air Pollution Control Engineer

Senior Engineer Signature:

Signed by: NHorres

1.0 Background

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

1.2 Permit History: This is the initial application for this engine.

1.3 Facility Description: This is the first application submitted for this new site. This site is a pump station facility.

1.4 Other Background Info: The facility does not have any active permits with APCD. There are no hearing board actions, permit denials, legal settlements, NOV, or nuisance complaints. This site is not a Title V facility.

2.0 Process Description

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2.1 Equipment Description.

Emergency Diesel Engine Generator:

Make: John Deere,

Model: 6068HF485T,

S/N: PE6068L009433,

Maximum Horsepower Rating: 315 bhp,

EPA Certification: Tier 3, Engine Family 7JDXL06.8101;

Driving a 200-kW emergency electrical generator;

Vertical exhaust with flapper-type rain cap, 9.5 feet above ground;

Annual testing and maintenance limit: 38 hours.

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 3 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	2.41	1.67	40.16	0.032	63.59
CO	0.45	0.31	7.46	0.0059	11.81
NMHC	0.13	0.088	2.11	0.0017	3.35
PM ₁₀	0.082	0.057	1.37	0.0011	2.17
SO _x	NA	0.0030	0.073	0.000058	0.12

3.2 Estimated Emissions Assumptions.

- Emission factors were EPA certified emission factors.
- District default toxic emission factors (Method E10).
- Calculations assume full load operation, 24 hours per day and total of 38 hours per year.
- 15 ppmw sulfur fuel.
- 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.

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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 Ringlemann 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: Stationary Reciprocating Internal Combustion Engines				
69.4.1(a)(1)	Except as provided in Section (b) - Exemptions, this rule shall apply to stationary internal combustion engines with a brake horsepower (bhp) rating of 50 or greater.	Applicable	Rule 69.4.1 applies to this stationary engine above 50 bhp.	NA
69.4.1(c) (24)	"New Engine" means an engine for which a complete application was submitted to the District after July 8, 2020.	Applicable	Applies to this engine with a complete application dated after July 8, 2020.	NA
69.4.1(c) (33)	"Stationary Internal Combustion Engine" or "Engine" means a spark or compression ignited, reciprocating internal combustion engine which is not a portable emission unit.	Applicable	Applies to this engine that does not meet the definition of a Portable Emission Unit.	NA
69.4.1(c) (27)	"Portable Emission Unit" means the same as defined in Rule 20.1 – New Source Review (NSR) – General Provisions. [Refer to Rule 20.1 NSR (c)(57) "Portable Emission Unit", and Rule 12.1(c)(12) "Location" definitions]	Does not meet the "Portable Emission Unit" definition	This engine will be onsite for more than 12 months, so it does not meet the definition of a Portable Emission Unit. Therefore, this engine is a Stationary Internal Combustion Engine.	NA

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<p>69.4.1(d)(1) (ii)(E)</p>	<p>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 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.</p>	<p>Yes</p>	<p>Use of an EPA certified tier 3 engine ensures that NO_x emissions comply with this requirement</p>	<p>NA</p>
<p>69.4.1(d)(2)</p>	<p>Engines operated on diesel fuel shall use only California Diesel Fuel.</p>	<p>Yes</p>	<p>Permit conditions will require use of CARB diesel fuel (15 ppm Sulfur by weight), which will ensure compliance with this requirement.</p>	<p>C28412</p>
<p>69.4.1(e)(3)</p>	<p>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.</p>	<p>Yes</p>	<p>Permit conditions will require installation of a non-resettable hour meter and specify the requirements for replacement.</p>	<p>C28419</p>
<p>69.4.1(f)(2)</p>	<p>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.</p>	<p>Yes</p>	<p>Annual maintenance of engine according to written procedure will be required by permit conditions.</p>	<p>C43433</p>
<p>69.4.1(g)(1)</p>	<p>Specifies engine information that must be maintained on-site.</p>	<p>Yes</p>	<p>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.</p>	<p>C45251</p>
<p>69.4.1(g)(2)</p>	<p>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 dates maintenance is performed. Engines within 500 feet of schools must</p>	<p>Yes</p>	<p>Compliance with this provision is expected and this requirement is specified in permit conditions.</p>	<p>C45252</p>

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	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.

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Table 4: 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	A BACT review is triggered for NOx. A Tier 3 engine is accepted as BACT as described below.	NA
BACT - VOC	Installation of BACT is required if emissions of VOC exceed 10 lbs/day	Not Triggered	The potential to emit for this pollutant does not exceed this trigger level, so BACT is not required.	NA
BACT - PM-10	Installation of BACT is required if emissions of PM-10 exceed 10 lbs/day	Not Triggered	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	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	Estimated emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is 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	Estimated 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 of SOx calculated as SO2	Not Triggered	Estimated emissions of this air contaminant from this project does not exceed any of these levels, so no AQIA is required.	NA
AQIA - CO	Required for project emission increases in excess of 100 lbs/hr, 550 lbs/day or 1000 ton/yr of CO	Not Triggered	Estimated 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

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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
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20.2(d)(1) – BACT

The post-project NOx PTE is 40.16 lbs/day based on 24 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 and 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 emissions control, a method which is 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.

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The 315 bhp engine proposed under this application would similarly not be cost effective as it has approximately 95% lower uncontrolled NOx emissions compared to a 90% lower power rating, and since costs would be expected to scale roughly linearly based on engine power for a smaller engine, any discrepancy would not be sufficient to alter the conclusion that a tier 4 final engine is not cost effective, especially considering that the 90% emission reduction achieved by SCR/Tier 4f engine would not likely be achieved during most testing and maintenance operations. This makes sense as a tier 3 engine has lower NOx emissions than a tier 2 engine, yet requires a similar level of add-on control costs to achieve tier 4 emission levels. For all these reasons, this demonstrates that a tier 4 engine or similar add-on controls including an SCR would not be cost effective.

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

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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, then the HRA report is attached.

Table 5: Rule 1200 Applicable Requirements and Discussion

Question	Answer	Discussion
Does the application result in an increase in toxic emissions?	Yes	The application results in an increase in toxic emissions of Diesel Particulate Matter and specific trace heavy metals and organics (as shown in emission calculations section)
Do any special exemptions apply to this equipment?	No	NA
Are there any other applications that are part of the project?	None	NA
What type of HRA was used?	Refined	NA
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	Project meets standard of one in one million when limited to 38 hours per calendar year for maintenance and testing.
Chronic HHI	0.000444	Project meets standard of one.
Acute HHI	0.119	Project meets standard of one.
Passes Rule 1200?	Yes	Maintenance and testing (non-emergency operation) must be limited by permit conditions to 38 hours per calendar year.

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

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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 San Diego French American School and within 1320 feet of All Hallows Academy 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.

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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				
93115.2	(a) Except as provided in section 93115.3, this ATCM applies to any person who either sells a stationary CI engine, offers a stationary CI engine for sale, leases a stationary CI engine, or purchases a stationary CI engine for use in California, unless such engine is: (1) a portable CI engine, (2) a CI engine used to provide motive power, (3) an auxiliary CI engine used on a marine vessel, or (4) an agricultural wind machine as defined in section 93115.4. (b) Except as provided in sections 93115.3 and 93115.9, this ATCM applies to any person who owns or operates a stationary CI engine in California with a rated brake horsepower greater than 50 (>50 bhp).	Applicable	Title 17 CCR 93115 (Stationary ATCM) applies to this stationary engine above 50 bhp.	NA
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" (72) "Stationary CI Engine" means a CI engine that is designed to stay in one location, or remains in one location. (46) "Location" means any single site at a facility.	Yes	Permit conditions require that the engine operate only as an emergency engine. This is a stationary IC engine that will stay at the same location for more than 12 months.	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

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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 Diesel PM emissions less than 0.15 g/bhp-hr	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
93115.6(a) (3)(A)(1) (c)	Restricts maintenance and testing operation to no more than 50 hours per calendar year	Yes	Permit conditions specify this requirement.	C44986
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	C28412
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	Not equipped with a DPF.	NA

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Table 6b: State and Federal Requirement Discussion (NESHAP/NSPS)				
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
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 38 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, C44986

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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.	C40239
40 CFR 60.4214(c)	For engines with DPFs, requires records of corrective actions taken when the high backpressure limit is approached	NA	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

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

6.0 Recommended Conditions

Standard BEC APCD2020-CON-001704 with a 38 hour/year limit for non-emergency/maintenance and testing use.

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All relevant attachments are in BCMS under the corresponding application number.

Rule 1200 Health Risk Assessment

Facility Name: City of San Diego
Facility ID: APCD2023-SITE-04293
Application: APCD2023-APP-007710
Project Engineer: Fahmy Attar
Modeler: Bill Reeve
Toxics Risk Analyst: Stephen Amberg
Date Submitted to Toxics: 6/5/2023
Date Completed by Toxics: 6/21/2023
HRA Tools Used: Lakes-AERMOD (Version 22112)/HARP2 (v22118)

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

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

Estimated Risk Levels:

Maximum Individual Cancer Risk (Resident)	1.31 in one million
Chronic Noncancer Health Hazard Index (Resident)	= 4.44E-04
8-Hour Noncancer Health Hazard Index (Worker)	= NA*
Acute Health Hazard Index (**PMI)	= 0.119

*8-Hour Non-Cancer Health Hazard Index is only applicable when calculating worker risk

**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 38 hours a 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	N/A	2.85E+00
ACETALDEHYDE	1.13E-02	5.64E-01
ACROLEIN	4.88E-04	2.44E-02
ARSENIC COMPOUNDS	2.30E-05	1.15E-03
BENZENE	2.68E-03	1.34E-01
BUTADIENE, 1,3-	3.12E-03	1.56E-01
CADMIUM AND COMPOUNDS	2.16E-05	1.08E-03
CHLOROBENZENE	2.88E-06	1.44E-04
CHROMIUM (HEXAVALENT)	1.44E-06	7.20E-05
COPPER AND COMPOUNDS	5.90E-05	2.95E-03
ETHYL BENZENE	1.57E-04	7.85E-03
FORMALDEHYDE	2.49E-02	1.24E+00
HEXANE-N	3.87E-04	1.94E-02
HYDROCHLORIC ACID	2.68E-03	1.34E-01
LEAD & COMPOUNDS	1.20E-04	5.98E-03
MANGANESE AND COMPOUNDS	4.46E-05	2.23E-03
MERCURY AND COMPOUNDS	2.88E-05	1.44E-03
NAPHTHALENE	2.84E-04	1.42E-02
NICKEL AND NICKEL COMPOUNDS	5.62E-05	2.81E-03
POLYCYCLIC AROM. HC (PAH) [Treat as B(a)P for HRA]	5.21E-04	2.61E-02
PROPYLENE	6.72E-03	3.36E-01
SELENIUM AND COMPOUNDS	3.17E-05	1.58E-03
TOLUENE	1.52E-03	7.59E-02
XYLENES	6.11E-04	3.05E-02

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)	0.08206
Engine horsepower (bhp)	315
Fuel Consumption (gal/hr)	14.4
Annual hours of operation	50

Release Parameters:

Stack Height (ft)	9.5
Stack Diameter (ft)	0.33
Temperature deg F	745
Exhaust Flow Rate (acfm)	1165

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 Del Mar 2010/2012 sigma theta 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.

Since there is no school within a 1 in one million residential cancer risk isopleth, a fraction of time (FAH) was applied to ages less than 16 years.

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 6/21/2023 11:19:58 AM - Cancer Risk

INDEX	GRP1	POLID	POLABBRE'	CONC	RISK_SUM	SCENARIO
1	Engine	9901	DieselExhP	0.00222	1.31E-06	30YrCancerRMP_InhSoilDermMMilk_FAH3to7

*HARP - HRACalc v22118 6/21/2023 11:19:58 AM - Chronic Risk

INDEX	GRP1	POLID	POLABBRE'	CONC	RESP	SCENARIO
1	Engine	9901	DieselExhP	0.00222	4.44E-04	NonCancerChronicDerived_InhSoilDermMMil

*HARP - HRACalc v22118 6/21/2023 11:19:58 AM - Acute Risk

INDEX	GRP1	POLID	POLABBRE'	CONC	EYE	SCENARIO
1	Engine	9901	DieselExhP	0	0.00E+00	NonCancerAcute
2	Engine	75070	Acetaldehy	1.99	4.23E-03	NonCancerAcute
3	Engine	107028	Acrolein	0.0863	3.45E-02	NonCancerAcute
4	Engine	7440382	Arsenic	0.00407	0.00E+00	NonCancerAcute
5	Engine	71432	Benzene	0.474	0.00E+00	NonCancerAcute
6	Engine	106990	1,3-Butadie	0.552	0.00E+00	NonCancerAcute
7	Engine	7440439	Cadmium	0.00382	0.00E+00	NonCancerAcute
8	Engine	108907	Chlorobenz	0.000509	0.00E+00	NonCancerAcute
9	Engine	18540299	Cr(VI)	0.000255	0.00E+00	NonCancerAcute
10	Engine	7440508	Copper	0.0104	0.00E+00	NonCancerAcute
11	Engine	100414	Ethyl Benz	0.0277	0.00E+00	NonCancerAcute
12	Engine	50000	Formaldehy	4.39	7.98E-02	NonCancerAcute
13	Engine	110543	Hexane	0.0685	0.00E+00	NonCancerAcute
14	Engine	7647010	HCl	0.474	2.26E-04	NonCancerAcute
15	Engine	7439921	Lead	0.0211	0.00E+00	NonCancerAcute
16	Engine	7439965	Manganes	0.00789	0.00E+00	NonCancerAcute
17	Engine	7439976	Mercury	0.00509	0.00E+00	NonCancerAcute
18	Engine	91203	Naphthale	0.0502	0.00E+00	NonCancerAcute
19	Engine	7440020	Nickel	0.00993	0.00E+00	NonCancerAcute
20	Engine	1151	PAHs-w/o	0.0922	0.00E+00	NonCancerAcute
21	Engine	115071	Propylene	1.19	0.00E+00	NonCancerAcute
22	Engine	7782492	Selenium	0.0056	0.00E+00	NonCancerAcute
23	Engine	108883	Toluene	0.268	5.36E-05	NonCancerAcute
24	Engine	1330207	Xylenes	0.108	4.91E-06	NonCancerAcute
					1.19E-01	

PROJECT TITLE:
APP007710
Hourly x/q

COMMENTS:

SOURCES:

1

RECEPTORS:

40418

OUTPUT TYPE:

Concentration

MAX:

1403 ug/m³

COMPANY NAME:

MODELER:

DATE:

6/21/2023

SCALE:

1:3,055

0  0.05 km

PROJECT NO.:



PROJECT TITLE:
APP007710
annual x/q

COMMENTS:



SOURCES:

1

RECEPTORS:

40418

OUTPUT TYPE:

Concentration

MAX:

54.3 ug/m³

COMPANY NAME:

MODELER:

DATE:

6/21/2023

SCALE:

1:1,462

0  0.04 km

PROJECT NO.:

Facility Name: City of San Diego
 Application Number: APCD2023-APP-007710
 Site ID Number: APCD2023-SITE-04293
 Equipment Address: 6751 La Jolla Scenic Drive, San Diego, CA 92101
 Project Description: 315 bhp (ATCM Portable) Emergency Diesel Engine.

Project Engineer: Fahmy Attar

Make: John Deere
 Model: 6068HF485T
 S/N: PE6068L009433
 Fuel Type: diesel
 BHP Rating: 315
 Model Year: 2007
 Tier Level: 3
 Engine Family Number: 7JDXL06.8101
 Device Driven: 200-kWe generator
 Emissions Controls: NA

CARB EO U-R-004-0280

NOx, g/BHP-hr:	2.41	3.23	g/kW-hr
CO, g/BHP-hr:	0.45	0.60	g/kW-hr
NMHC, g/BHP-hr:	0.13	0.17	g/kW-hr
PM10, g/BHP-hr:	0.08	0.11	g/kW-hr

NOx, g/BHP-hr: + NMHC, g/BHP-hr: 2.54

Rule 69.4.1 Standards: g/BHP-hr Pass

NOx	3.00	Yes
CO	2.60	Yes

ATCM Standards g/BHP-hr Pass Portable ATCM

NOx + NMHC	3.0	Yes
CO	2.6	Yes
PM	0.15	Yes

Fuel Usage, gal/hr: 14.4
 Operating Schedule, hrs/day: 1
 Operating Schedule, hrs/yr: 50

Exhaust Flow Rate, cfm: 1165
 Exhaust Temperature, °F: 745
 Stack Height above ground, ft: 9.5
 Stack Diameter, ft: 0.3

Nearest School, ft: 950.00
 Residential Receptor, m: 25.00 25 ft
 Occupational Receptor, m: 182.88 600 ft

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

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

Facility Name:	City of San Diego			
Equipment Location:	6751 La Jolla Scenic Drive, 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)	9.50		
Stack Diameter (or length x width) (ft)	0.33		
Exhaust Gas Temperature (°F) ¹	745.000		
Exhaust Gas Flow (ACFM)	1165.000		
Direction of Flow ²	vertical		
Flow Obstruction ³	no		
Distance to Nearest Property Line (+/- 10ft)	25.00		

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-04293
Project Engineer:	Fahmy Attar	Appl. Number(s):	APCD2023-APP-007710
Fees Collected:		PTO No. (if existing):	

FACILITY NAME: City of San Diego

Fuel Consumption (gal/hr): 14.40
 Diesel Particulate Emission Factor (g/hp-hr): 0.08206
 Brake Horsepower (hp): 315
 Annual Hours of Operation (hrs): 50

FACILITY ID: APCD2023-SITE-04293
 APPLICATION NO.: APCD2023-APP-007710
 ENGINEER: Fahmy Attar

RISK ANALYST ONLY

DISPERSION MODELING DATA

Annual Receptor Type: Resident
 ANNUAL DISPERSION FACTOR (µg/m3)/(g/s): **54.3**
 Distance (m):
 Hourly Receptor Type: Resident
 HOURLY DISPERSION FACTOR (µg/m3)/(g/s): **1403.1**
 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			2.85E+00		4.09E-05		2.22E-03
ACETALDEHYDE	7.83E-01	1.13E-02	5.64E-01	1.42E-03		1.99E+00	
ACROLEIN	3.39E-02	4.88E-04	2.44E-02	6.15E-05		8.63E-02	
ARSENIC COMPOUNDS	1.60E-03	2.30E-05	1.15E-03	2.90E-06		4.07E-03	
BENZENE	1.86E-01	2.68E-03	1.34E-01	3.38E-04		4.74E-01	
BUTADIENE, 1,3-	2.17E-01	3.12E-03	1.56E-01	3.94E-04		0.5524431	
CADMIUM AND COMPOUNDS	1.50E-03	2.16E-05	1.08E-03	2.72E-06		3.82E-03	
CHLOROBENZENE	2.00E-04	2.88E-06	1.44E-04	3.63E-07		5.09E-04	
CHROMIUM (HEXAVALENT)	1.00E-04	1.44E-06	7.20E-05	1.81E-07		2.55E-04	
COPPER AND COMPOUNDS	4.10E-03	5.90E-05	2.95E-03	7.44E-06		1.04E-02	
ETHYL BENZENE	1.09E-02	1.57E-04	7.85E-03	1.98E-05		2.77E-02	
FORMALDEHYDE	1.73E+00	2.49E-02	1.24E+00	3.13E-03		4.39E+00	
HEXANE-N	2.69E-02	3.87E-04	1.94E-02	4.88E-05		6.85E-02	
HYDROCHLORIC ACID	1.86E-01	2.68E-03	1.34E-01	3.38E-04		4.74E-01	
LEAD & COMPOUNDS	8.30E-03	1.20E-04	5.98E-03	1.51E-05		2.11E-02	
MANGANESE AND COMPOUNDS	3.10E-03	4.46E-05	2.23E-03	5.62E-06		7.89E-03	
MERCURY AND COMPOUNDS (INORGANIC)	2.00E-03	2.88E-05	1.44E-03	3.63E-06		5.09E-03	
NAPHTHALENE	1.97E-02	2.84E-04	1.42E-02	3.57E-05		5.02E-02	
NICKEL AND NICKEL COMPOUNDS	3.90E-03	5.62E-05	2.81E-03	7.08E-06		9.93E-03	
POLYCYCLIC AROM. HC (PAH) [Treat as B(a)P for h	3.62E-02	5.21E-04	2.61E-02	6.57E-05		9.22E-02	
PROPYLENE	4.67E-01	6.72E-03	3.36E-01	8.47E-04		1.19E+00	
SELENIUM AND COMPOUNDS	2.20E-03	3.17E-05	1.58E-03	3.99E-06		5.60E-03	
TOLUENE	1.05E-01	1.52E-03	7.59E-02	1.91E-04		2.68E-01	
XYLENES	4.24E-02	6.11E-04	3.05E-02	7.69E-05		1.08E-01	

HARP2 - HRACalc (dated 22118) 6/21/2023 11:19:58 AM - Output Log

GLCs loaded successfully

Pollutants loaded successfully

RISK SCENARIO SETTINGS

Receptor Type: Resident

Scenario: All

Calculation Method: Derived

EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25

Total Exposure Duration: 30

Exposure Duration Bin Distribution

3rd Trimester Bin: 0.25

0<2 Years Bin: 2

2<9 Years Bin: 0

2<16 Years Bin: 14

16<30 Years Bin: 14

16 to 70 Years Bin: 0

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: True

Water: False

Fish: False

Homegrown crops: False

Beef: False

Dairy: False

Pig: False

Chicken: False

Egg: False

INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors

Worker adjustment factors enabled: NO

****Fraction at time at home****

3rd Trimester to 16 years: ON

16 years to 70 years: ON

School Risk = $(2.83 \text{ ug/m}^3 / 54.29 \text{ ug/m}^3) * 1.313$ resident cancer risk = 0.068

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: C:\1200\7710_City of San Diego\RAST\Resident_FAH_CancerRisk.csv

Calculating chronic risk

Chronic risk saved to: C:\1200\7710_City of San Diego\RAST\Resident_FAH_NCChronicRisk.csv

Calculating acute risk

Acute risk saved to: C:\1200\7710_City of San Diego\RAST\Resident_FAH_NCAcuteRisk.csv

HRA ran successfully

▲ *** AERMOD - VERSION 22112 *** C:\Modeling Projects\7710_City of San Diego\7710_City of San Diego.i ***
*** AERMET - VERSION 22112 ***

06/13/23
10:44:32
PAGE 2

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN SigA Data

*** 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	476733.7	3633326.1	217.7	2.90	669.26	69.19	0.10	YES	YES	NO	

▲ *** AERMOD - VERSION 22112 *** C:\Modeling Projects\7710_City of San Diego\7710_City of San Diego.i ***
*** AERMET - VERSION 22112 ***

06/13/23
10:44:32
PAGE 1

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN SigA Data

*** 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.
- * CCVR_Sub - Meteorological data includes CCVR 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 40418 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) = 39.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 8.1 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

**Detailed Error/Message File: 7710_City of San Diego.err
**File for Summary of Results: 7710_City of San Diego.sum

↑ *** AERMOD - VERSION 22112 *** C:\Modeling Projects\7710_City of San Diego\7710_City of San Diego.i *** 06/13/23
*** AERMET - VERSION 22112 *** *** 10:44:32

PAGE 2

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN SigA Data

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1			

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

↑ *** AERMOD - VERSION 22112 *** C:\Modeling Projects\7710_City of San Diego\7710_City of San Diego.i *** 06/13/23
*** AERMET - VERSION 22112 *** *** 10:44:32

PAGE 3

*** MODELOPTs: RegDEFAULT CONC ELEV URBAN SigA Data

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: C:\AERMET\AERMET 21112 PROJECTS\AERMET 22112 data\DMR 2010_2012_sigma_v22112.SFC Met Version: 22112
 Profile file: C:\AERMET\AERMET 21112 PROJECTS\AERMET 22112 data\DMR 2010_2012_sigma_v22112.PFL
 Surface format: FREE
 Profile format: FREE
 Surface station no.: 3177 Upper air station no.: 3190
 Name: UNKNOWN Name: UNKNOWN
 Year: 2010 Year: 2010

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
10	01	01	1	01	-2.6	0.050	-9.000	-9.000	-999.	27.	4.3	0.04	0.32	1.00	1.34	57.	10.0	284.2	2.0			
10	01	01	1	02	-2.6	0.050	-9.000	-9.000	-999.	27.	4.3	0.04	0.32	1.00	1.34	59.	10.0	283.8	2.0			
10	01	01	1	03	-4.5	0.066	-9.000	-9.000	-999.	40.	5.6	0.04	0.32	1.00	1.78	72.	10.0	283.1	2.0			
10	01	01	1	04	-1.1	0.033	-9.000	-9.000	-999.	14.	2.8	0.04	0.32	1.00	0.89	52.	10.0	283.1	2.0			
10	01	01	1	05	-0.3	0.016	-9.000	-9.000	-999.	5.	1.4	0.04	0.32	1.00	0.44	60.	10.0	283.1	2.0			
10	01	01	1	06	-2.6	0.049	-9.000	-9.000	-999.	26.	4.2	0.04	0.32	1.00	1.34	77.	10.0	283.1	2.0			
10	01	01	1	07	-4.5	0.066	-9.000	-9.000	-999.	40.	5.6	0.04	0.32	1.00	1.78	80.	10.0	282.0	2.0			
10	01	01	1	08	-5.7	0.082	-9.000	-9.000	-999.	57.	8.8	0.04	0.32	0.47	2.23	89.	10.0	283.8	2.0			
10	01	01	1	09	17.6	0.041	0.281	0.016	46.	20.	-1.0	0.01	0.32	0.26	0.44	301.	10.0	287.5	2.0			
10	01	01	1	10	42.3	0.127	0.475	0.010	91.	108.	-4.4	0.03	0.32	0.19	1.34	356.	10.0	289.2	2.0			
10	01	01	1	11	59.7	0.075	0.671	0.009	182.	50.	-1.0	0.01	0.32	0.17	0.89	318.	10.0	292.0	2.0			
10	01	01	1	12	67.5	0.101	0.839	0.008	315.	77.	-1.4	0.01	0.32	0.16	1.34	321.	10.0	291.4	2.0			
10	01	01	1	13	66.3	0.124	0.907	0.008	405.	105.	-2.6	0.01	0.32	0.16	1.78	320.	10.0	290.9	2.0			
10	01	01	1	14	55.8	0.123	0.898	0.008	466.	103.	-3.0	0.01	0.32	0.17	1.78	309.	10.0	289.8	2.0			
10	01	01	1	15	37.0	0.119	0.804	0.008	504.	98.	-4.1	0.01	0.32	0.20	1.78	321.	10.0	290.3	2.0			
10	01	01	1	16	11.0	0.113	0.540	0.008	514.	91.	-11.7	0.03	0.32	0.29	1.34	341.	10.0	289.8	2.0			
10	01	01	1	17	-1.0	0.031	-9.000	-9.000	-999.	20.	2.8	0.03	0.32	0.57	0.89	340.	10.0	288.8	2.0			
10	01	01	1	18	-0.2	0.015	-9.000	-9.000	-999.	5.	1.3	0.03	0.32	1.00	0.44	341.	10.0	287.5	2.0			
10	01	01	1	19	-2.3	0.049	-9.000	-9.000	-999.	26.	4.5	0.04	0.32	1.00	1.34	18.	10.0	287.0	2.0			
10	01	01	1	20	-2.5	0.050	-9.000	-9.000	-999.	27.	4.3	0.04	0.32	1.00	1.34	38.	10.0	287.0	2.0			
10	01	01	1	21	-1.1	0.033	-9.000	-9.000	-999.	14.	2.8	0.04	0.32	1.00	0.89	63.	10.0	285.9	2.0			
10	01	01	1	22	-1.1	0.033	-9.000	-9.000	-999.	14.	2.8	0.04	0.32	1.00	0.89	65.	10.0	285.3	2.0			
10	01	01	1	23	-1.1	0.033	-9.000	-9.000	-999.	14.	2.8	0.04	0.32	1.00	0.89	56.	10.0	285.3	2.0			
10	01	01	1	24	-1.1	0.033	-9.000	-9.000	-999.	14.	2.8	0.04	0.32	1.00	0.89	51.	10.0	285.3	2.0			

First hour of profile data

YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV
10 01 01 01 10.0 1 57. 1.34 -999.0 30.0 -99.00 0.62

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

*** AERMOD - VERSION 22112 *** C:\Modeling Projects\7710_City of San Diego\7710_City of San Diego.i ***
*** AERMET - VERSION 22112 *** ***

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*** MODELOPTs: RegDEFAULT CONC ELEV URBAN SigA Data

*** 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	54.28736 AT (476694.00, 3633308.00, 217.36, 243.10, 0.00)	DC	
	2ND HIGHEST VALUE IS	54.03514 AT (476694.00, 3633318.00, 217.48, 243.10, 0.00)	DC	
	3RD HIGHEST VALUE IS	53.85233 AT (476674.00, 3633318.00, 222.12, 243.10, 0.00)	DC	
	4TH HIGHEST VALUE IS	51.49453 AT (476684.00, 3633308.00, 219.55, 243.10, 0.00)	DC	
	5TH HIGHEST VALUE IS	47.99415 AT (476674.00, 3633308.00, 221.70, 243.10, 0.00)	DC	
	6TH HIGHEST VALUE IS	46.58841 AT (476664.00, 3633318.00, 222.74, 243.10, 0.00)	DC	
	7TH HIGHEST VALUE IS	46.05309 AT (476664.00, 3633308.00, 222.33, 243.10, 0.00)	DC	
	8TH HIGHEST VALUE IS	45.80107 AT (476744.00, 3633378.00, 228.05, 240.10, 0.00)	DC	
	9TH HIGHEST VALUE IS	45.19033 AT (476754.00, 3633358.00, 224.13, 242.97, 0.00)	DC	
	10TH HIGHEST VALUE IS	44.65941 AT (476746.08, 3633361.47, 223.63, 243.10, 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 SigA Data

*** 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 1403.11983	ON 11122808:	AT (476684.00, 3633288.00, 218.95, 243.10, 0.00)	DC	

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

▲ *** AERMOD - VERSION 22112 *** C:\Modeling Projects\7710_City of San Diego\7710_City of San Diego.i *** 06/13/23
*** AERMET - VERSION 22112 *** *** *** 10:44:32
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*** MODELOPTs: RegDEFAULT CONC ELEV URBAN SigA Data

*** 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 2296 Informational Message(s)

A Total of 26304 Hours Were Processed

A Total of 1791 Calm Hours Identified

A Total of 505 Missing Hours Identified (1.92 Percent)

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

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

SO W320	38	PPARM: Input Parameter May Be Out-of-Range for Parameter	VS
MX W403	101	PFLCNV: Turbulence data is being used w/o ADJ_U* option	SigA Data

SOLEDAD WPS



● Pump Station Building

● Site Boundary

● Engine Location

Amberg, Stephen

From: Attar, Fahmy
Sent: Monday, June 5, 2023 9:45 AM
To: Reeve, Bill; Nguyen, Tony
Cc: Swaney, Jim; Canter, Adam
Subject: 7710_City of San Diego HRA Request

Hello Bill and Tony,

Please post the results in [7710 City of San Diego](#)
Please let me know if extra TNS funds are necessary for the HRA.

Thank you,

Fahmy Attar | Assistant APC Engineer
Fahmy.Attar@sdapcd.org | M: (858) 736-6108
In-Office: T/W | Telework: M/Thu | 7:30 a.m. - 6:00 p.m.
<http://www.sdapcd.org> | 10124 Old Grove Rd, San Diego CA, 92131

