

ENGINEERING EVALUATION AUTHORITY TO CONSTRUCT

Facility Name: Home Depot
Equipment Type: [34H] California Certified Emergency Engine
Application #: APCD2024-APP-008453
ID#: APCD2024-SITE-04649
Equipment/Facility Address: 1895 Camino Del Rio South
San Diego, CA 92108
Facility Contact: Bryan Chen (Application Preparer/Site Contact)
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 Recoverable Signature

X Austin Stein

Austin Stein
Asst. Air Pollution Control Engineer
Signed by: 89397c20-ac46-428c-b312-4c14f0837c24

Permit Engineer:

X

Joseph N. Herzig
Senior Air Pollution Control Engineer

Senior Engineer Signature:

1.0 Background

1.1 Type of Application: New installation of a diesel emergency engine

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

1.3 Facility Description: This is a Home Depot store. This facility does not have any active permits with APCD. No other applications are open at this site.

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

2.0 Process Description

2.1 Equipment Description.

Emergency Diesel Engine Generator

Manufacturer: Volvo Penta;

Model: TAD1672VE;

S/N: TBD;

Horsepower (maximum rated): 700 BHP;

Model Year: 2024;
EPA Certification Tier: 4 Final certified with Selective Catalytic Reduction (SCR) system;
Engine Family (EPA): RVPXL16.1CJA;
Driving a 400 kW emergency-use standby generator;
4-inch diameter vertical exhaust with flapper raincap; exhausting 13 ft. above ground.

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 for the Home Depot operation.

2.3 Emissions Controls.

This is a Tier 4 Final certified diesel engine. It is equipped with an ammonia slip catalyst, and selective catalytic reduction (SCR) system.

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	0.13	0.20	4.70	0.005	9.79
CO	0	0	0	0	0
NMHC	0.01	0.01	0.28	0.0003	0.58
PM	0.01	0.01	0.28	0.0003	0.58
SO _x	NA	0.00558	0.1340	0.00014	0.279

3.2 Estimated Emissions Assumptions

- Table 1 evaluates the emission unit at 24 hours per day and a total of 50 hours per year, assuming full load operations
- Estimated emissions are calculated for maintenance and testing operations. Emergency use is not counted towards operation limits.
- 15 ppmw sulfur fuel
- Emission factors were EPA certified emission factors; Standard toxics emission factors for diesel engines.
- Expected actual emissions same as PTE.
- Other standard assumptions as stated in calculation sheets

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 50 ≤ bhp < 100; 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 and CO emissions comply with this requirement. This engine is a tier 4 Final; with aftermarket emissions controls. It has a lower level of emissions than tier 2 or 3 engines, therefore it complies with this requirement.	NA

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	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 periodic maintenance on the engine, 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 dates maintenance is performed. Engines within 500 feet of schools must record the time of day when	Yes	Compliance with this provision is expected and this requirement is specified in permit conditions.	C46473

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	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 exemption.	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. At the time of filing, this facility is not considered a 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)	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
<i>Major Modification Threshold (ton/year)</i>	25	25	15	10	40	100	0.6
Major Modification at a Major Source?	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Contemporaneous Calculations Performed?	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Federal Major Stationary Source Threshold (ton/year) (Severe non-attainment status)	25	25	100	100	100	100	100
Federal Major Stationary Source?	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
<i>Federal Major Modification Threshold (ton/year)</i> (Severe non-attainment status)	25	25	15	10	40	100	0.6
Federal Major Modification?	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Contemporaneous Net Calculations Performed	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
<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?	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

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. Requirements of this rule apply; as shown in the table on the following page and sections 20.2(d)(1-2).

Table 4: New Source Review Discussion

Rule/Requirement	Requirement	Applicability	Discussion	Condition
Applicability	Rule 20.2 applies to non-major stationary sources	Yes	This is a non-major stationary source, so Rule 20.2 applies.	NA
Type of application	New	Yes	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	Not triggered, no permit limit	The potential to emit for this pollutant is 4.7 lbs/day, which does not exceed this trigger level, so BACT is not required.	NA
BACT - VOC	Installation of BACT is required if emissions of VOC exceed 10 lbs/day	Not triggered, no permit limit	The potential to emit for this pollutant is 0.3 lbs/day, which 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, no permit limit	The potential to emit for this pollutant is 0.3 lbs/day, which does not exceed this trigger level, so BACT is not required.	NA

BACT - SO_x	Installation of BACT is required if emissions of SO _x exceed 10 lbs/day	Not triggered, no permit limit	The potential to emit for this pollutant is 0.13 lbs/day, which does not exceed this trigger level, so BACT is not required.	NA
20.2(d)(2) – AQIA				
AQIA - NO_x	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr of NO _x calculated as NO ₂	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 - 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 - SO_x	Required for project emission increases in excess of 25 lbs/hr, 250 lbs/day or 40 ton/yr of SO _x calculated as SO ₂	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 - 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	Emissions from this engine do not trigger PSD requirements.	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

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

20.2(d)(2) – AQIA

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

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 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 or specific trace heavy metals and organics (as shown in emission calculations section).
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?	De Minimis	Engine passed de minimis evaluation. See calculations sheet.

Is the Project Equipped with T-BACT?	Yes	This engine is a tier 4 final equipped with a Selective Catalytic Reduction (SCR) system and ammonia slip catalyst.
Cancer Risk increase (per one million)	0.13	Project meets standard of one in 10 million.
Chronic HHI	≤1	Meets standard of one.
Acute HHI	0.69≤1	Meets standard of one.
Passes Rule 1200?	Yes	Maintenance and testing (non-emergency operation) must be limited by permit conditions to 50 hours per calendar year

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 a school (Warren-Walker Middle School; Urban Skills Center; and Cook Education Center), 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 regarding 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.

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	N/A	This engine is a tier 4 final which lowers the engine's PM-10 emission level to <0.01 g/bhp-hr, therefore it is exempt from this rule.	N/A
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 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. This is a tier 4 Final engine which has lower emissions than tier 2 or 3 engines, therefore complies.	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.	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

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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	C46473
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	This engine is certified to Tier 4 Final standards, and therefore is not subject to alternative compliance demonstration requirements.	NA

Table 6a: State and Federal Requirement Discussion (Stationary ATCM)

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	This engine is certified to Tier 4 Final standards, and therefore is not subject to alternative compliance demonstration requirements.	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) with PM emission below this level satisfies this requirement. This is a tier 4 Final engine which has lower emissions	NA

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			than tier 2 or 3 engines, therefore complies.	
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.	C46473
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 *(pending completion of the AB3205 noticing and comment process)* that an authority to construct be issued with the following conditions.

6.0 Recommended Conditions

Conditions APCD2023-CON-002046 with a 50 hour/year limit for non-emergency/maintenance and testing.

All relevant attachments are uploaded to BCMS under the corresponding application number.